

# QUE'S SPECIAL EDITION SHOWCASE

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# Sharing Documents Within a Workgroup

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## Keeping Shared Documents Secure

If you're thinking of sharing a document—whether giving people access through your company's file server via the company intranet, or onto the Internet at an FTP or Web site—you should first consider how you're going to protect the document, both from prying eyes and from malicious (or even accidental!) changes.

### Protecting Office Documents with Passwords

Your first level of defense lies in password protecting the documents themselves. Many experienced Office 2000 users are surprised to find that no single password protection scheme exists for all of Office. In fact, different parts of Office are protected in a wide variety of ways.

Word documents and Excel workbooks can be password protected, with separate passwords for read-only and read-write access. Word and Excel use 40-bit RC4 encryption, which is the strongest *encryption* that (as of this writing) has been approved by the U.S. government for export.

#### Note

40-bit RC4 encoding is pretty darn hard to crack on a typical PC. If the password is more or less random (that is, it doesn't appear in a typical cracking dictionary), it can take a day or more of PC time *per character* to crack the password.

Of course, the people who work for "those" agencies (the ones with three-letter acronyms for names) crack 40-bit RC4 encoded documents in the time it takes to down a tall latte. Supercomputers and massively parallel processors hardly break a sweat. That's why the government allows the technology to be exported.

- ➔ To learn more about sharing your documents with other members of your workgroup, see "Sharing Documents," p. 285
- ➔ Want to keep your sensitive documents safe from prying eyes? Then see "Using Passwords to Restrict Access to a Workbook," p. 592

That's the good news, if you're concerned about security (or the bad news, if you've forgotten your document's password). Password protection used elsewhere in Office is much, much simpler.

#### Tip #67 from



It's important that you know which passwords are easy to break, so you don't rely on an "easy" password protection scheme to keep your documents private. Believe us, the bad guys know all about password crackers.

The forms of password protection vary slightly from application to application:

- Word allows you to password protect documents to track changes, only allow comments, or for forms, on the Protect Document dialog box (choose Tools, Protect Document). All of those passwords are trivial to break.

- Excel allows you to protect individual sheets (contents, objects, and scenarios), workbooks (structure, windows), or just protect the change history logs, all by choosing **T**ools, **P**rotection. These passwords are also easy to crack with any commercial password cracker.
- Outlook offers password protection for individual \*.pst files. These passwords are also easy to break.
- Access security differs from the other Office applications. You can password-protect a database, but that allows only the password holders to get into the database. If user-level security definitions are in the database, being able to open the database won't accomplish much. Database passwords are easy to crack, but the internal security definitions are much more difficult.
- PowerPoint, Publisher, and FrontPage have no document password security, period.
- Visual Basic for Applications modules can be password protected (VBA calls it "locked for viewing"). VBA passwords can be cracked easily.

**Note**

Although macro software developers decry VBA's weak password protection, there's a hitch: Some macro viruses are designed to encrypt VBA modules. If the VBA password protection were stronger, antivirus products would have a much harder time rooting out viruses.



*If you've forgotten your password, see "Forgotten Passwords" in the Troubleshooting section at the end of this chapter.*

If you need more sophisticated file protection security, OfficeLock (<http://www.officelock.com>) has a product that hooks directly into Office and provides full *PGP* level security. (PGP, "Pretty Good Privacy," is a legendary technique for encryption that far exceeds the moniker "pretty good.") Although an ongoing battle exists between PGP proponents and the U.S. government over exportability, the fact is that PGP is widely available outside the United States. PGP security runs rings around 40-bit RC4. OfficeLock works on Access databases and PowerPoint presentations, as well as Word documents and Excel workbooks.

➔ To learn more about creating good passwords, see "Using Passwords to Restrict Access to a Workbook," p. 592

## How Office Locks Documents to Prevent Conflicts

Office keeps track of which documents are open on the network. If you try to open a document that's already in use by someone else, you'll receive a warning message such as that in Figure 7.1.

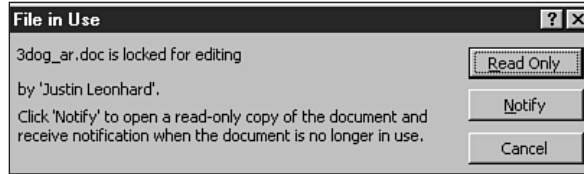
This kind of protection is necessary to keep two different people from making unsynchronized changes to the same document.



*If you get File in Use messages when you're the only user attempting to use a document, see "Hidden Applications Lock Files" in the Troubleshooting section at the end of this chapter.*

**Figure 7.1**

Word and PowerPoint won't let two people change the same document simultaneously. At best, one can edit the document while everyone else can only view it (that is, open it as Read Only).



Excel allows more than one person to work on a workbook simultaneously, but you have to set up the sharing before others on the network start opening the workbook.

- ➔ If you want to share your Excel workbooks with other users on your network, see “Sharing a Workbook,” p. 595

If you get into a situation in which you have to have more than one person edit a Word document simultaneously, set up the document to track revisions, and have each participant work on copies of the document. You can then accept or reject the revisions, and compare different versions of the document to highlight differences.

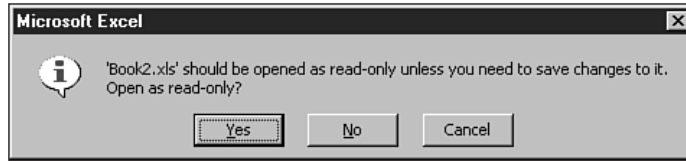
- ➔ If you want to share your Word documents with other users on your network, see “Sharing Documents,” p. 285

## Opening Documents in Read-Only Mode

Office contains an array of features for helping, or forcing, your correspondents to open a file in read-only mode. As its name implies, read-only limits the opener to viewing the contents of the document. If they feel they must make changes, they can always save a copy and make changes to the copy.

Some of your read-only options include the following:

- When you or your correspondents open a document in Word, Excel, PowerPoint, or Publisher, you can open it as a read-only file. To do so, bring up the Open dialog box (by clicking the Open icon, or choosing **File, O**pen), and then click the arrow next to the **O**pen button. Choose **O**pen **R**ead-Only.
- When you save a document, you can tell Word or Excel to recommend that anyone opening the document do so read-only; they'll see the dialog box in Figure 7.2. To make it so, choose **F**ile, **S**ave **A**s. In the Save As dialog box, click **T**ools, **G**eneral Options. Check the **R**ead-only Recommended box and click OK.
- When you save a document, you can assign separate passwords in Word or Excel for read-only access or full read-write access. If you assign a read-write password and no read-only password, your correspondents will be able to open read-only, but will require the password to make changes to the file.
- You can use Windows to restrict access to the file, as described in the next section.



**Figure 7.2**  
When you save a file and have Word or Excel “Recommend read only,” this is the dialog box that appears when someone opens the file.

## Controlling File Access with Windows Permissions

You can control access to a file via Windows itself. You should be aware of these few key points about file access control in Windows:

- Windows NT running the NT File System (NTFS) provides the only secure Windows environment for controlling access to files. Although it isn’t absolutely perfect, NTFS lets you restrict access to files or folders for individuals, groups, or based on passwords.

### Note

For more information on NTFS, see *Special Edition Using Windows NT 4.0*, published by Que.

- Windows NT Server working with FAT16 or FAT32 file systems provides some degree of control over access, although a knowledgeable user can bypass the controls.
- Windows 95 and Windows 98 peer-to-peer networking provides minimal access control, primarily password-based, that can be overridden easily. Sharing is enabled on a Win95/98 machine by going into the Control Panel’s Network applet and clicking the button marked **F**ile and Printer Sharing. After file sharing has been established, go into Windows Explorer, right-click on a disk or folder, and choose Sharing to specify who may access the disk or folder, and whether or not they need a password.

### Note

To learn more about peer-to-peer networking with Windows 95 and Windows 98, see *Special Edition Using Windows 98*, published by Que.

## Mailing and Routing Documents

Sometimes server-based collaboration just doesn’t have the urgency of email: You can tell people over and over that they need to connect to the server and make their comments, and some never will. But if they receive the document by email, the immediacy can help spur them to action. Add a routing slip that details how long an individual has been procrastinating, and you may have enough incentive to move mountains.

Office includes several tools that help you mail, route, and control your documents.

## Sending a Document As Email

The simplest way to send a document to an individual or group is by sending it as an email message, in HTML format. You can do that in Word, Excel, and PowerPoint:

1. Open (or create) the document.



2. Click the E-mail icon on the Standard toolbar. The application responds with an email “send” bar, as in Figure 7.3.

**Figure 7.3**

You can send a document as an email message, in native HTML format, while inside Word, Excel, or PowerPoint.



3. Fill out the To, CC, and Subject lines, just as you would in Outlook.
4. Click Send a Copy on the Email toolbar. The application attempts to send the message immediately, using your default email application and its default email account.

### Caution

If the message cannot be delivered immediately, you will see a warning, but no reminder will be stored for you in the email application. You have to remember to resend the message at a later date.

When the document is sent as an HTML message, each recipient can modify the document directly, as long as the recipient's email reader can handle Office's particular version of HTML (Outlook 98 and Netscape mail reader 4.5 or later can; Outlook 97, and many others, cannot). They can then send the message back to you, and you are left with the challenge of assembling the HTML messages, converting them to native Office file formats, and comparing the results.

**Tip #68 from***EQ & Woody*

Expect many minor inconsistencies. For example, characters as simple as “curly” quotes aren’t legible on many HTML email readers. And complex formatting can cause no end of trouble—up to and including General Protection Faults on your recipients’ computers.

## Sending a Document As an Email Attachment

If all your correspondents are using Office 97 or Office 2000, you’ll no doubt find it much more reliable to send the document as an attachment to an email message.

➔ To send and receive files via email, see “Exchanging Items via Email,” p. 673

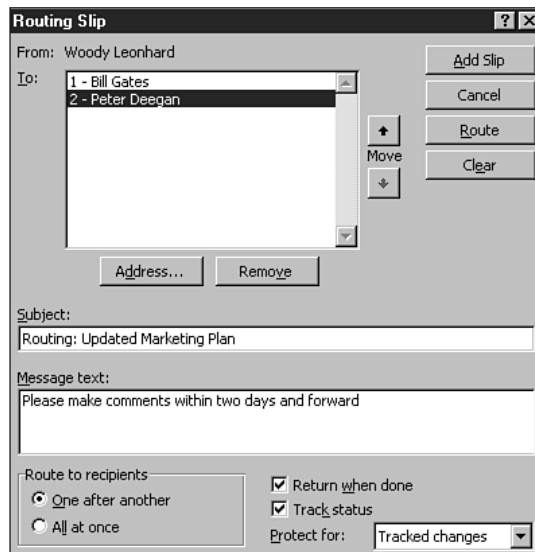
## Adding a Routing Slip

Two reasons you might want to route a document sequentially to a series of people for review are

- You want to have edits proceed one person at a time so that, say, a project manager can add comments prior to his or her underlings.
- You want to deal with all the proposed revisions at one time, instead of tackling each individual’s proposals separately.

Routing slips let you control who receives the file, and in what order, providing the recipients are willing and able to forward the document properly. They are available in Word, Excel, and PowerPoint. To create a routing slip:

1. Create or open the document you want to route.
2. Choose **File**, **Send To**, **Routing Recipient**. The Routing Slip dialog box appears as shown in Figure 7.4.

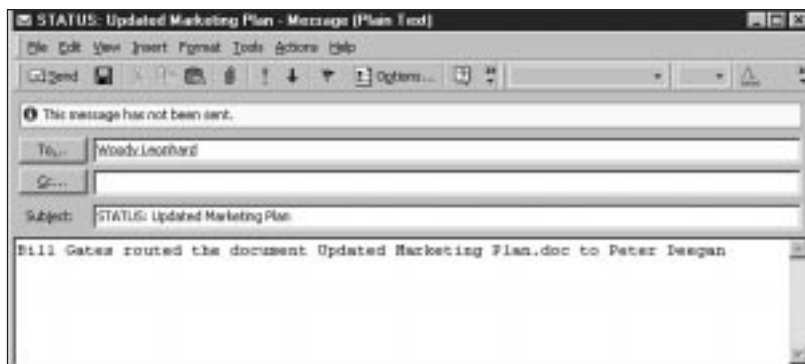


**Figure 7.4**  
Word, Excel, and PowerPoint let you choose a predetermined routing order for a document.



3. Add recipients by clicking the **A**ddress button and choosing from your Outlook Contacts list. Change the order of recipients with the **M**ove buttons.
4. If you want the document to be returned to you after the last person on the routing slip has finished, check the **R**eturn **W**hen Done box.
5. If you want to receive an automatically generated email message each time the document is forwarded (see Figure 7.5), check the **T**rack **S**tatus box.

**Figure 7.5**  
The notification message was automatically generated when the document was forwarded using the routing slip.



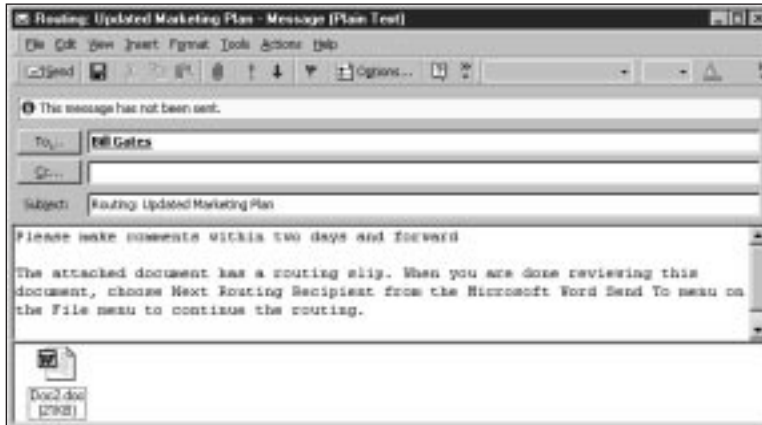
6. If you're ready to send the document to the first person on the routing list, click the **R**oute button. Word generates a message, attaches the document, and places the message with attached document in your Outlook outbox, so it will be sent the next time you send mail.
7. If you're not ready to send the document, click the **A**dd Slip button. Make any final corrections you like to the document and, when you're ready, choose **F**ile, **S**end To, **N**ext Routing Recipient.

The document itself is attached to a message that looks like the one in Figure 7.6.

The key point, of course, is that each person in the routing chain has to know, understand, and follow the protocol for forwarding the message to the next person on the routing slip. To do so, they may save the document or open it directly from Outlook. But when their edits are complete, they must choose **F**ile, **S**end To, **N**ext Routing Recipient.

#### Note

If you receive a routed document and want to route it to someone not on the routing slip, you may do so by choosing **F**ile, **S**end to, **Q**ther Routing Recipient, and selecting the new recipient. When that person is done with the file, they can resume the routing slip sequence by choosing **F**ile, **S**end to, **N**ext Routing Recipient.



**Figure 7.6**  
The message attached to a routed document gives full instructions for routing the document to the next recipient on the routing list.

Anyone along the chain can change the order of people on the routing slip. To do so, choose **File**, **S**end To, and choose **O**ther Routing Recipient. Then move the names up and down with the Move arrows. Click the **R**oute button and the document is routed immediately, via the Outlook Outbox.

## Using NetMeeting for Online Collaboration

If you and your coworkers are all using Office 2000, you can take advantage of a Microsoft Internet Explorer feature called NetMeeting, which allows you to collaborate interactively.

Before you try to use NetMeeting, be aware of these facts:

- It requires enormous bandwidth among the participants. If you're using a 56K modem to talk with your colleagues, the results will be less than satisfactory, even painful.
- NetMeeting has problems working with *firewalls*. (Most corporations, and many smaller installations, connect to the Internet through a firewall.) Although it's possible to manually bypass the firewall problems in some circumstances, it's not a job for the inexperienced or fainthearted.
- Office needs NetMeeting version 2.11 or later. If you installed Internet Explorer 5 from the Office 2000 CD, you'll have a working version. However, if you decided not to install Internet Explorer 5, you'll have to go back into Internet Explorer setup on the CD or download the latest version of NetMeeting from [www.microsoft.com/netmeeting](http://www.microsoft.com/netmeeting).
- You need to work with a server that's running NetMeeting-specific support software. Office Server Extensions includes the requisite software (additional information is at [www.microsoft.com/netmeeting/ils](http://www.microsoft.com/netmeeting/ils)).

Given the restrictions, NetMeeting is best suited for the corporate intranet. If you have reliable, fast connections to a suitable server, NetMeeting can actually be useful.

NetMeeting has several useful features that aren't indigenous to Office, including voice, video, chat (where participants type messages to each other), and the whiteboard (where participants can draw freehand in a common shared area).

The first time you invoke NetMeeting from Word, Excel, or PowerPoint (choose Tools, Online Collaboration, Meet Now), NetMeeting requires you to sign up (see Figure 7.7).

**Figure 7.7**  
NetMeeting has a general sign-up screen.

Microsoft NetMeeting

Enter information about yourself for use with NetMeeting.  
Note: You must supply your first name, last name, and E-mail address before you can continue.

First name:

Last name:

E-mail address:

City/State:

Country(Region):

Comments:

< Back    Next >    Cancel

You must then choose an Internet Locator Service (an ILS). Microsoft and 411.com both have public ILSs that you can use, available in the Server Name drop-down list. Unfortunately, the public ILSs have huge numbers of participants, and it can be difficult weeding your way through the lists.

The details for organizing a NetMeeting online meeting and joining a meeting are handled by NetMeeting itself. If you've initiated the meeting from one of the three Office applications, the participants will be able to see the document that was active when the meeting was called. The person originating the meeting can then allow others to edit the document, at which point only one participant at a time can make changes to the document. Others can collaborate in the usual way through voice, chat, or cameras. Collaboration in the whiteboard is possible only when editing on the document has been turned off.

**Note**

If you want to learn more about NetMeeting, see *Special Edition Using Windows 98*, published by Que.

# Troubleshooting

## Forgotten Passwords

*You saved a document with a password months ago. Now you're trying to open the document, but you've forgotten the password. What do you do?*

If you forgot a Word document's or Excel worksheet's password, brace yourself: It's going to take a long time to recover the password, if it can be recovered at all. Start by ordering one of the commercial password cracking programs at <http://www.accessdata.com> or <http://www.lostpassword.com>. If you need to crack only one document, ask the manufacturer whether they'll give you a money-back guarantee that their product will be successful.

On the other hand, if you lost a different kind of password, your task is much simpler. You can check with either of the previously mentioned companies, or search on the Web for many other "crackers."

## Hidden Applications Lock Files

*When you try to open a Word document or Excel workbook, you see the File in Use dialog box. You're certain no one else has the file open. In some cases, the dialog box may even accuse you of being the one using the file. In any case, the program allows you to open the file only as Read Only.*

If you know that nobody else on your network has the file open and you get the File in Use dialog box, chances are good that a hidden instance of one of the Office apps is holding on to the file. That can happen when someone on the network gets a General Protection Fault with the document open. It can also happen when a hidden instance of Word is running as WordMail.

In either case, you have two choices: You can either use the Windows Task Manager (Ctrl+Alt+Del) to find and end the hidden task, or you can restart Windows on the offending machine.



# Office on the Web for Experts

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## Office and the Web

Office 2000 extends Microsoft's embrace of Web technology. With a few minor exceptions (for example, Publisher), Office is truly Web-enabled, with HTML, the language of the Web, serving as a native file format for Office applications.

This means that the long-elusive “round trip” is a reality: You really can take a Word document, Excel workbook, or PowerPoint presentation, save it to the Web, then open it in a browser, and end up with the same document you saved. That's important because the little details that always seemed to go wrong in earlier versions of Office—dating all the way back to Word's original Internet Assistant—appear to have been ironed out. You can create and modify Web pages with confidence, knowing that what you see in an application is what you'll get when surfing. Web support no longer seems tacked on to the Office applications; instead, it's a central feature.

This chapter is designed to bring expert Office users up-to-date on the Web and show how Office works with the Web. It won't make you an expert on Web page design or managing Web sites—for that, you should look at the next two chapters, plus Chapters 48-51, which cover FrontPage, Office's premiere Web-centric application.

## How Office Handles HTML Documents

All the major Office 2000 applications include a Save As Web Page command that lets you translate a file into HTML format and save it locally or publish it to a Web server.

When you create a document in Word, Excel, PowerPoint, or Access and save it as a Web page, the resulting file uses HTML as a companion format along with the application's native format. (FrontPage, of course, has always used HTML as its native file format.) As a result, all your formatting and most features can survive the “round trip” from Office application to browser; when you open the file for editing, all your formatting should survive the round trip.

### Note

The requirement for 100% HTML compatibility is so stringent in Word, Excel, PowerPoint, Access, and FrontPage that Microsoft has adopted HTML as its primary format for use on the Clipboard. If you copy data from Excel to PowerPoint, for example, the data is translated into HTML as an intermediary format. If you copy anything from a Web browser into one of those Office applications, it should come across completely intact.

HTML compatibility and round-trip capabilities aren't the whole story. If you create a Web page in Word, for example, then you edit the page manually, then open the page and save it again in Word, there is *no* guarantee that Word will maintain your manual edits (although it leaves tags it doesn't understand intact). The possibility of Word modifying a handwritten tag can be confusing and frustrating to experienced Web page designers.

## Tip #69 from



Because FrontPage was designed from the ground up as an HTML editor, it does a superb job of maintaining the integrity of tags and edits you construct manually. If you're an experienced HTML editor and you want the freedom to edit tags by hand at any time, stick with FrontPage.

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HTML (Hypertext Markup Language) is the fundamental language behind all Web activity. It defines a set of operators, called *tags*, that control how information is displayed in a browser, and how the browser is to react to certain events. There is (at least in theory) only one correct way to display each tag: An <H1> heading in one browser should look the same as an <H1> heading in all browsers.

HTML is the basic (some would say “old”) technology that drives the Web: Any browser will support early versions of HTML, and most HTML pages based on the classic (read: “old”) tags will display perfectly well in any browser. But like so many other components of the Web, HTML has evolved on Web time, mutating so quickly that it's difficult to keep track of the various standards from day to day.

Office applications take advantage of many advanced HTML features, including those that go way beyond the traditional HTML tags. The following features in particular are likely to cause some document formatting to display incorrectly when viewed in particular browsers:

- *Extensible Markup Language (XML)* incorporates tags that go beyond the capability of standard HTML to describe and present data. It takes HTML further by introducing the concept of a *style sheet*. Style sheets add a new dimension to HTML. They allow an individual user to specify how the browser should interpret a tag. If your machine has a style sheet that declares all <H1> headers appear in blue, then they'll always appear in blue—on your machine. Most advanced Office features rely on XML to help them survive the round trip between the application that created them and the browser.

## Note

For more details on the XML standard, point your browser to <http://www.w3.org/xml>.

- *Cascading style sheets (CSS)* make style sheets more flexible by allowing inheritance (similar to Word's “Based On” styles), and automatically generated text and graphics. They extend basic HTML with style properties that define fonts, colors, margins, and other formatting properties. If you view a Web page that contains a CSS in a browser that can't interpret it, the browser displays the page using its default fonts and layout properties.
- *Dynamic HTML (DHTML)* allows a Web page designer to add effects to text and images, such as hiding or displaying a block of text when the user clicks it.

The structural differences between HTML and XML are extensive. For example, in HTML you specify where you want a paragraph mark (with the <P> tag), and the browser



puts a carriage return/line feed in that location. But in XML, you specify where a paragraph starts and ends (with <PARA> and </PARA> pairs), and the style sheet tells the browser how to format the paragraph.

If your browser can't support these features, pages you generate in Office won't look right. Table 8.1 summarizes the key features, and which browsers can handle them.

**Table 8.1** Advanced Features Supported by Different Browsers

Browser	HTML 3.2	CSS* 2.0	DHTML**	XML***
Navigator 3.x	Yes	No	No	No
Navigator 4.03+	Yes	Yes	No	No
IE 3.x	Yes	No	No	No
IE 4.01+	Yes	Yes	Yes	No
IE 5	Yes	Yes	Yes	Yes

\* *Cascading Style Sheets*

\*\* *Dynamic HTML*

\*\*\* *Extensible Markup Language*

## Choosing the Right Tool for the Job

Which Office program should you use to create Web pages? There's no universal answer to that question. Instead, the correct answer varies, depending on the task you're trying to accomplish and your level of Web sophistication.

Each application, however, has its own strengths, weaknesses, nuances, and gotchas. If you're trying to maintain a complex Web site, with a constantly changing lineup of links, or if your pages contain scripts and custom HTML tags, FrontPage is your only reasonable choice. On the other hand, if you just want to slap together a simple Web page with minimal fuss, Publisher may be able to handle it—as long as you don't mind the fact that Publisher won't be able to open the page after you convert it to HTML format.

### Caution

It bears repeating. Publisher can save a document as a Web page. But it can't open any Web page—least of all, one that's been generated by Publisher. Using Publisher to generate Web pages is a one-way trip. If you want to make changes to the Web page, you have to open the original publication file, make your edits, and then run the Save As Web Page routine again. If you delete anything (graphics files, for example), Publisher leaves the orphaned files behind.

### Word

With a few small exceptions (such as VBA/Word macros, field codes, and hidden text), anything you can put in a Word document will appear on a Web page, as in the example in Figure 8.1. Even the items that don't appear on the page will survive a round trip: Write a

VBA/Word macro for a document, save it as a Web page, then open the Web page in Word, and the macro works just fine.



**Figure 8.1** Word can handle small Web sites, and pages that include frames.

Word is an excellent choice for creating and maintaining relatively simple Web pages. Although it has no features for tracing or maintaining hyperlinks across a site, experienced Word users will find it easy to use and understand. The extensive *frames* (page 1186) capabilities (available when you choose **F**ormat, **F**rames) make it easy to create framed Web pages.

Word ships with a handful of useful templates and a wizard devoted exclusively to creating Web pages.

- ➔ To learn more about creating Web pages using Word templates, see "Using Word's Built-In Templates," p. 359

## Excel

As with Word, a few Excel features won't appear when you save a workbook as a Web page: custom views, nested functions, scenarios, and some advanced formatting don't appear on the Web page. Nonetheless, those features all survive a round trip, and Excel does a good job of not clobbering tags it doesn't understand.

Although it's true that you can use Excel to publish almost anything to the Web—entire workbooks go up easily, and static tables and charts pose no problem with any version 3.0 or later browser—the most interesting Excel Web pages provide interactivity. To create an interactive Web page, use the **A**dd Interactivity check box on Excel's Save As dialog box, as shown in Figure 8.2.

**Figure 8.2**  
Interactive spreadsheets, charts, and PivotTables start with the **Add Interactivity** box on the Save As dialog box.



This interactivity comes in two different forms:

- You can allow the viewer, using his or her browser (Internet Explorer 4.01 or later), to manipulate the data, just as they would if they were running Excel itself. They can change data, move or copy cells, change formulas, and the like, and see the impact of those changes in spreadsheets, charts, or PivotTables.

### Caution

If you expect that some persons will use Internet Explorer 3.x or any version of Netscape Navigator to open a Web page you create in Excel, do not use Web components to add interactivity. Only Internet Explorer 4.01 or later correctly displays content using these browser components.

- You can have Excel tap into a database on the server, so the data is updated in real time. Using this “data binding,” the latest data is reflected on the Web page.

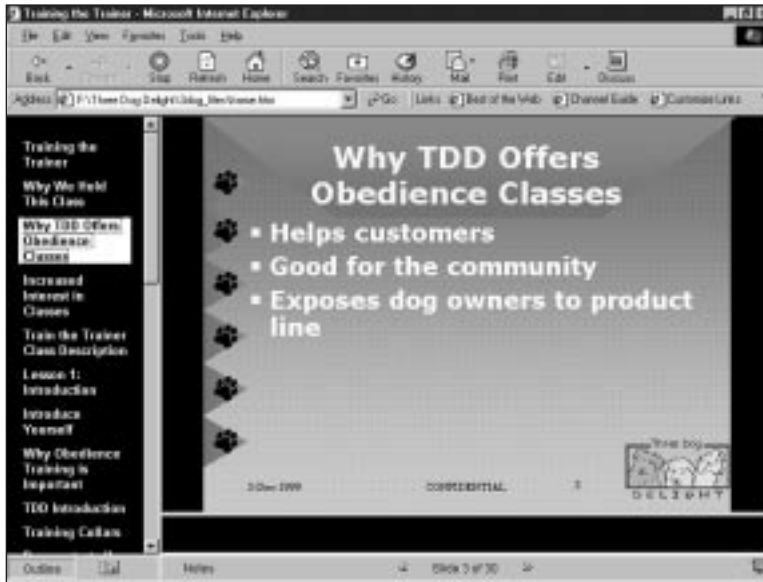
➔ If you want to liven your Web pages with interactive content, see “Creating Interactive Web Pages with Office Components,” p. 192

If you want to add interactive spreadsheets, charts, and PivotTables to a Web page, create the page in Excel, and then import it into FrontPage or Access (as a Data Access page) for additional polishing.

## PowerPoint

PowerPoint is suitable for generating Web pages if you are willing to abide by its strict structure: PowerPoint creates a slideshow on the Web, and not much else.

Although a great deal of flexibility exists in the format of the slideshow—you can put slide titles in a pane, as in Figure 8.3, and you can set up your own navigation buttons if the ones at the bottom don't ring your chimes—the end result is a slideshow, pure and simple.



**Figure 8.3** PowerPoint creates excellent Web-based slideshows—as long as what you really wanted was a slideshow.

**Tip #70 from**



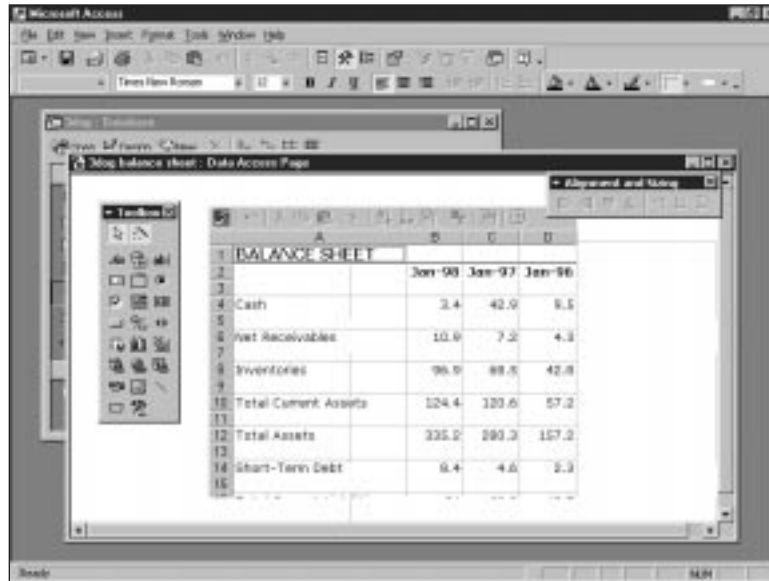
PowerPoint also hooks directly into Microsoft's NetShow, a group collaboration technology. If you use NetShow, you can conduct a presentation live over the ether, to people all over the world—at least in theory. In practice, NetShow is a true "version 1.0" Microsoft product, hobbled by a pervasive lack of communication bandwidth. If you want to broadcast a presentation to a few people in your office all connected to a hefty server via an unused 100Mbps network, or on T-1 lines connected directly to an Internet backbone, by all means give it a try. For almost anyone working in less-than-gold-plated quarters, however, it's an exercise in futility.

- ➔ If you want to publish your PowerPoint presentations to the Web, see "Creating Presentations for the Web," p. 926

**Access**

Access 2000's primary means of working on the Web involves a database object called a *data access page*. (Figure 8.4 shows an example.) When you place data on a data access page (as opposed to an Access form or report), it can be viewed and edited by anyone with Internet Explorer 5.0 or later. Data access pages in other browsers are static. The data on the page can be bound to a database residing on the server.

**Figure 8.4**  
An Excel spreadsheet  
is embedded in an  
Access data access  
page.



Only consider data access pages if you know that all your users will be running Internet Explorer 5.0 or later, and that all of them will have valid licenses for Office 2000 (a Microsoft legal requirement). Providing you can meet those stringent requirements, you can use data access pages to

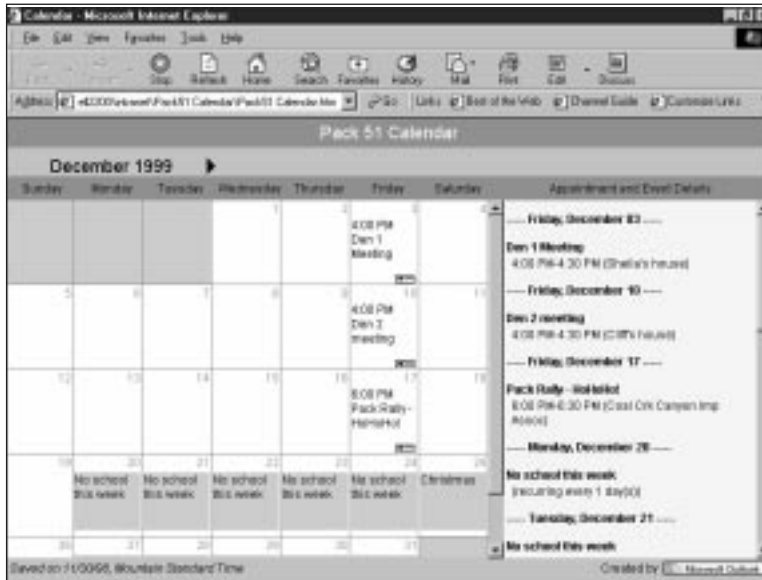
- Enter, view, and edit data using standard Access controls.
  - Bind any of the three interactive Excel Web components—spreadsheets, charts, or PivotTables—to underlying data on the server.
- ➔ For details on how to use Office components, see “Creating Interactive Web Pages with Office Components,” p. 192

## Outlook

Outlook 2000 uses the Internet and the Web for all sorts of things—meeting schedule conflict checking; to-do list status reports; vCard dissemination of Contact information; and much more—with one exception; it isn’t designed to create Web pages.

That one exception, however, is a humdinger: Outlook will publish a professional-looking calendar, encompassing all of your appointments, as a Web page. Although the mechanism for doing so is inordinately complex, the results (as shown in Figure 8.5) are worth the effort.

- ➔ To learn more about using Outlook to publish your calendar, see “Publishing a Calendar As a Web Page,” p. 781



**Figure 8.5**  
Outlook will publish your (or an organization's) appointment calendar to the Web.

## Publisher

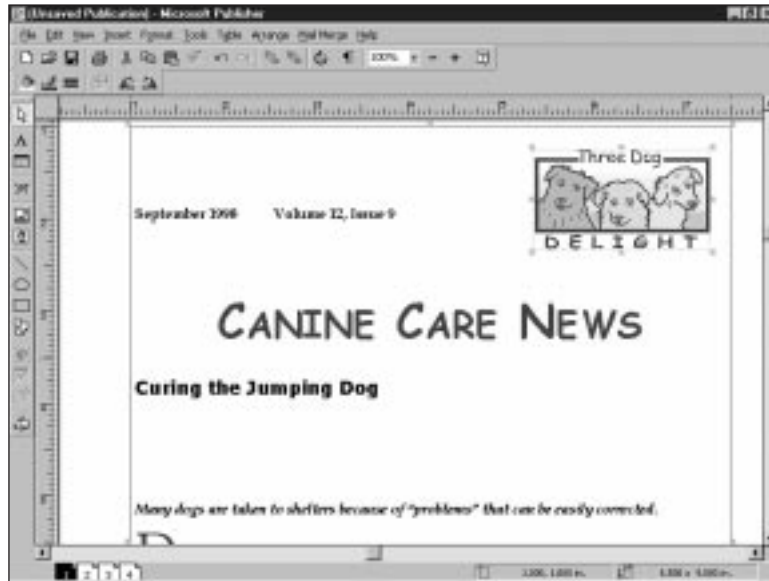
If you're familiar with Publisher and like its easy wizard-based construction methods, go ahead and use it to create a simple Web page, as in the example in Figure 8.6. But be aware of the fact that Publisher, after it has created a Web page, cannot go back and open that page. Instead, you have to open the original publication file, edit it, and save the changed version as a new Web page. If you have only one or two pages, that may not prove an insurmountable burden. But if you need to create more than a handful—particularly if you're not too conscientious about keeping extensive backups—that limitation will drive you nuts.

## FrontPage

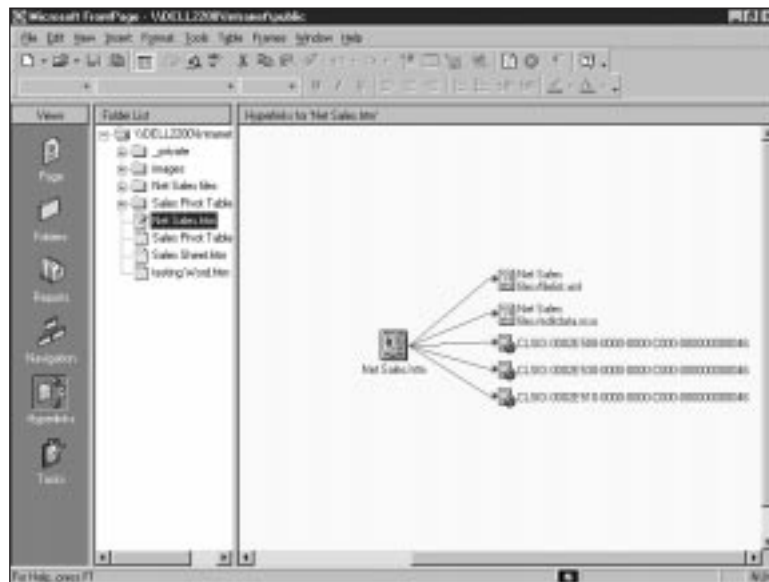
FrontPage 2000, by contrast, does anything and everything with Web pages, from easy visual placement of page elements to sophisticated support for HTML tags and script coding. It also enables you to manage even a large Web site, using comprehensive maps of links like the one shown in Figure 8.7. FrontPage also supports sophisticated management features so groups of people can work on a site simultaneously without getting in one another's way or inadvertently overwriting one another's pages.

FrontPage uses all the Office import filters, so it's easy to open almost any kind of file and turn it into a Web page. Because Word, Excel, PowerPoint, and Access support HTML as a native file format and common copy format (and FrontPage's native file format has always been HTML), copying and moving data among these Office applications is a breeze.

**Figure 8.6**  
Publisher is adequate for producing Web pages if you don't mind its inability to open and edit those pages later with Publisher.



**Figure 8.7**  
FrontPage's Hyperlinks view gives you a concise picture of all the hyperlinks in a Web site.



In general, if you're serious about page design and, especially, Web site management, you should always use FrontPage, unless

- You already know one of the other Office applications well, and your needs don't exceed the capabilities of the application.

- You want the specific controls provided by Excel (spreadsheet, chart, and PivotTable). Even then, it's a good idea to run the data through Excel, and do everything else with FrontPage.
- You require the data binding available in Access's data access pages. Again, running the pages through FrontPage for everything but the data-specific work can save a lot of time.
- You want a special feature in one of the Office applications (Outlook's calendar publisher, for example, or one of the Word Web Wizards) that precisely meets your needs.

## PhotoDraw

Although PhotoDraw is capable of opening files on the Web and saving files to the Web, its primary claim to Web fame is its capability to convert graphic file formats quickly and accurately.

Where you once might have used two or three different draw packages—one for scanning and retouching photos, another for graphic design or freehand drawing, and still another for file format translation—PhotoDraw bundles all those capabilities (and several more) into one package. Used in conjunction with FrontPage, the two represent a formidable one-two punch for most Web page design tasks.

➔ For an overview of PhotoDraw and FrontPage, see Chapter 52, "PhotoDraw Essentials."

## Moving Between HTML and Office Formats

When Office 2000 applications create HTML files, they usually store the identity of the creating program in an XML tag at the beginning of the document. For example, a Web page created in Word 2000 will have these tags:

```
html xmlns:v="urn:schemas-microsoft-com:vml"  
xmlns:o="urn:schemas-microsoft-com:office:office"  
xmlns:w="urn:schemas-microsoft-com:office:word" xmlns="-//W3C//DTD HTML 4.0//EN">
```

When you attempt to open an HTML file with any Office application, the File/Open routine looks for these tags; if it finds one, it automatically launches the associated program. So if you're working in FrontPage and you try to open a Web page created in Word, FrontPage launches Word and feeds it the HTML file.

If you look closely at the icon associated with an HTML file created in one of the Office applications in the Open File dialog box, you can see a tiny icon in the upper-left corner that identifies the originating application, as shown in Figure 8.8.



*If you need to open an HTML file in an Office application other than the one that originated it, see "Opening Office-generated HTML Files" in the Troubleshooting section at the end of this chapter.*

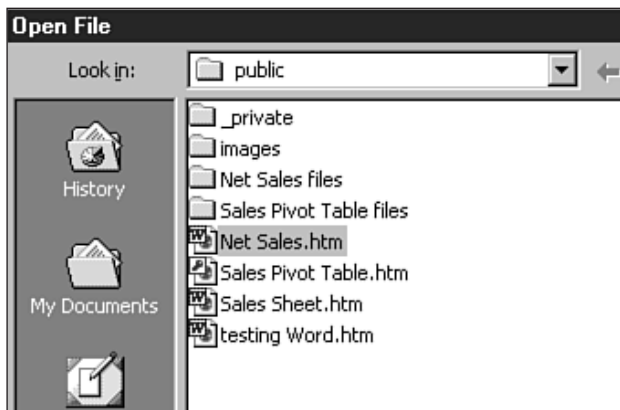
Not all browsers support the advanced features that the Office applications use (refer to Table 8.1 earlier in this chapter). FrontPage gives you great flexibility in specifying precisely which features you want to include in generated Web pages, by choosing Tools, Page



Options, and clicking the Compatibility tab. Word and Excel give you a lesser (but still useful) range of compatibility choices; to access them, choose **T**ools, **O**ptions, click the General tab, and then click the **W**eb Options button. You see a dialog box like the one in Figure 8.9.

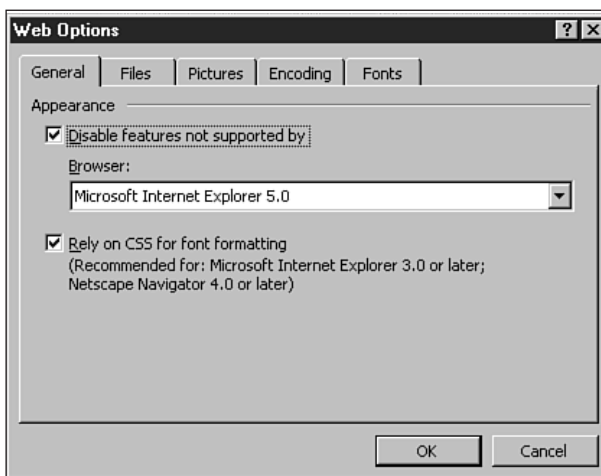
**Figure 8.8**

A tiny icon superimposed on the upper-left corner of the Web icon tells you which Office application originated the HTML file.



**Figure 8.9**

Word and Excel let you “dumb down” your pages so that they’ll look better in less-capable browsers.



HTML files are plain text files; they cannot contain graphics. If you construct a Web page in Word, Excel, PowerPoint, Outlook, Access, or Publisher, and the page contains a picture or other item (such as a macro or an embedded Excel interactive control), the application has to store the picture (or other item) outside the HTML file, and create a link to the picture within the text of the HTML file.

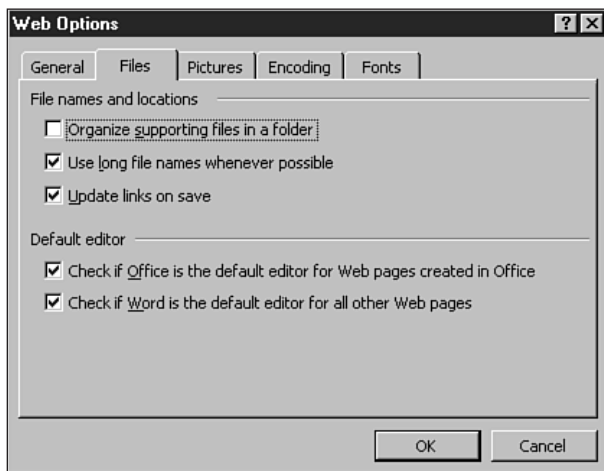
All the Office applications will translate the graphic, if need be, into a GIF or JPEG file, which can be readily viewed on the Web. The rest of the story, however, isn't so simple.

Word, Excel, PowerPoint, and Access solve the problem in an elegant (if potentially dangerous) way: They create a folder with the same name as the file, and put the graphics (and other items) in the folder. Say you create a graphic-laden Web page in Word that's called 3dog.htm, and save it in the folder \Intranet\public. If you look at the folder, you'll find the original Word file, \Intranet\public\3dog.htm. You'll also find a folder called \Intranet\public\3dog Files, which contains all the graphics from the original page, translated (if necessary) into GIF or JPEG format.

**Caution**

The links between the HTML file and the graphics are hard-coded to refer to an appropriately named subfolder. (For those of you who may have encountered this problem in other guises, Office stores relative addresses, not absolute addresses.) If you move an Office-generated HTML file—in this case, 3dog.htm—you must move the supporting folder—3dog Files—and all the contents along with it. Otherwise, the links will be broken.

Word, Excel, and PowerPoint (but not Access) let you change this behavior, if you like, so all the files—main page and supporting files alike—go into a single folder. To do so, choose **T**ools, **O**ptions. Click the **G**eneral tab, and then click the **W**eb Options button. Click the **F**iles tab (see Figure 8.10), and clear the **O**rganize **S**upporting **F**iles in a **F**older box.



**Figure 8.10**  
Word, Excel, and PowerPoint let you choose whether supporting files should be placed in their own folder.

Publisher behaves differently. You set up a folder for the HTML file, and everything gets dumped into that one folder—main page, supporting files, the works. The main page of the Publisher document is named Index.html. So, for example, a Publisher Web page called Invitations is stored in a folder called \Invitations, and the main page is Index.html.

Outlook's calendar pages are different still. The calendar main page and all its supporting data are also dumped in the same folder. But the initial page of the calendar is given the name of the folder. So, if you save a calendar called *Status Meetings*, all the supporting data is placed in a folder called *\Status Meetings*. The main page goes in the same folder, and it is called *Status Meetings.htm*.

#### Note

Office saves *VBA (page 1298)* projects in a binary file called *Editdata.mso* and stores it along with associated files for that page. Similarly, Word, Excel, and PowerPoint store XML-formatted lists of support files in *Filelist.xml*, and PowerPoint and Outlook store Cascading style sheets in various \*.css files.

## Web Page Design Essentials

Web page design is an art unto itself, with a broad array of graphic considerations that don't apply when you're working with printed media. Most computer magazines run design articles from time to time, and no two seem to agree on what constitutes an outstanding design. A topic as simple as frames versus no frames can trigger flame mail worthy of a barroom brawl.

That said, all would-be Web page designers should keep a few simple tips in mind:

- Obey the Web design corollary to the KISS principle—Keep It Small, Stupid. Nobody likes to wait for downloads.

#### Tip #71 from



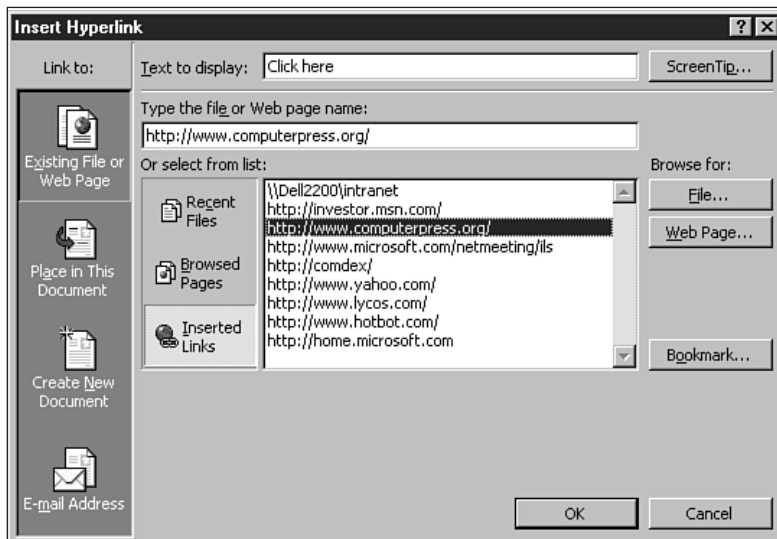
FrontPage has a handy reminder, down on the status bar, that tells you approximately how long it will take to download the page you're constructing, using a 28.8 modem.

- Avoid ransom note typography. Two different fonts on a page make your point. Three annoy anyone trying to read the page. Four convinces them to click another link and go read something else.
- Make colors work together. Magenta text on a red background may be (barely) legible on some monitors. It won't be legible at all on many.
- Don't break the law. Copyright protection applies in cyberspace, too. It may be easy to reproduce copyrighted work on your page, but that doesn't make it legal.

➔ To learn more about creating Web pages, effective design, and so forth, see Chapter 9, "Advanced Web Page Techniques," and Chapters 48-51, covering FrontPage.

## Working with Hyperlinks

Word, Excel, PowerPoint, and Access all allow you to put a hyperlink in your documents using the same Insert Hyperlink dialog box (choose **I**nsert, **H**yperlink), shown in Figure 8.11. (FrontPage's Insert Hyperlink dialog box is slightly different, but accomplishes the same thing.)



**Figure 8.11**  
The Insert Hyperlink dialog box allows you to create “hot” links to Web pages, files, or locations within files, with a few simple clicks.

### Note

The list of Web site URLs you'll see when you click the **I**nserted Links button is the same one you'll see in Internet Explorer's **A**ddress drop-down list. There is no easy way to modify the list, short of starting Internet Explorer, and typing in a few favorite URLs.

It's important to realize that hyperlinks in Office aren't limited to Web pages: They can just as easily specify files located on a server, or locations within files on your hard drive, or even `mailto:` links for email addresses.

Hyperlinks are implemented differently in each of the Office applications. That can lead to some bizarre, and confusing, differences:

- In Word, if you don't select any text before invoking the Insert Hyperlink dialog box, Word creates a hyperlink with display text that shows the name of the destination. The hyperlink doesn't change if you alter the displayed text. So, if you insert a hyperlink to `www.mcp.com` and then you edit the hyperlink text in the document so that it reads `www.m.com`, the link still points to `www.mcp.com`. Click the edited `www.m.com` and you'll end up at the Web site `www.mcp.com`. Very confusing.

- In Excel, if you don't select any text before invoking the Insert Hyperlink dialog box, you'll also get the name of the destination as the displayed text for the link. But in Excel's case, if you edit the text, the link changes. So if you change the hyperlink text `www.mcp.com` to `www.m.com`, and then click it, Excel looks for `www.m.com`.
- In PowerPoint, if you don't select any text before invoking the Insert Hyperlink dialog box, the nearest word is selected, and that becomes the display text for the hyperlink.

Although these odd exceptions may throw you, in general hyperlinks can be copied, moved, or deleted, much as you would copy, move, or delete text.

You can find advanced discussions about hyperlinking as it pertains to each individual Office application throughout this book.

## Troubleshooting

### Retrieving Publisher Files

*You created a publication with Publisher, then saved it as a Web page and deleted the original file. Now Publisher won't open the Web page.*

Try to open the file with Word 2000, and then save it as a Word document. Publisher can then open the Word document file, although the results frequently leave much to be desired.

### Opening Office-generated HTML Files

*You created a Word document and saved it as a Web page, and now you want to edit it in FrontPage. Every time you try to open the HTML file in FrontPage, however, Word opens instead.*

You have several options; the following two are the easiest:

- Open the Web page in IE5, click the arrow to the right of the Edit button on the browser's Standard toolbar, and then choose Edit with Microsoft FrontPage.
- From FrontPage, choose File, Open; in the Open dialog box, right-click the icon for the file you're trying to open, and choose Open in Microsoft FrontPage.

## Secrets of the Office Masters: Keys to Effective Web Page Design

When designing a Web page, keep in mind some of the techniques used in the following page, the home site for Macmillan Publishing, parent of Que books.



In particular,

- The page is relatively compact, at 90KB—with 60KB of that total consumed by the banner ad at the top and the logos near the center of the page.
- The most important information appears at the top, where it's both easy to find and fast to load.
- Using drop-down lists saves space and time (the text in them downloads quickly), while giving users a wide assortment of easily used options.
- Different fonts are used sparingly: All the text (outside the graphics) is simple Arial.
- Colors blend together well, and color contrasts highlight changes in emphasis.
- There's no question about how to navigate from this page, no ambiguity about what clicking on a particular element will accomplish.



# Outlook Essentials

## In this chapter

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- Using and Customizing the Outlook Interface 657
- Creating, Editing, and Managing Outlook Items 661
- Viewing Personal Information in Outlook 674
- Managing Files and Folders in Outlook 683
- Finding Outlook Items 684
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## Choosing an Outlook Configuration

When you install Outlook 2000 for the first time on a new PC, you have to make a crucial configuration decision. The choice you make determines which support files Outlook uses to process incoming mail, and if you make the wrong decision you may discover that some features required on your corporate network aren't available. If you upgrade over a previous version, Outlook may make this decision automatically, without ever alerting you that you had a choice.

### Note

In Outlook 97 and Outlook 98, changing configurations was an arduous process that essentially required completely reinstalling the software. In Outlook 2000, on the other hand, it's relatively easy to change configurations. That capability is valuable if you normally use only Internet mail but occasionally need to connect to an Exchange Server or other MAPI-based mail system. For users who need to switch configurations regularly, this improvement alone is worth the cost of the upgrade to Office 2000.

Throughout Outlook's Help files and online documentation in the Microsoft Knowledge Base, you will see countless references to *Internet Mail Only (IMO)* mode and *Corporate/Workgroup (CW)* mode. Outlook also offers a *No email* option, which allows you to use it strictly for managing contacts and calendar information, without enabling email support. Although the basic Outlook interface looks the same in both IMO and CW modes, your setup options and some key features are dramatically different, depending on which of these options you choose. In any case, understanding exactly how each configuration works is essential to making this large, complex program do your bidding.

## Upgrading over a Previous Version of Outlook

The first time you start Outlook 2000, the program looks for details of a previous configuration of Outlook 97 or Outlook 98. If you upgraded over a working version of Outlook, you'll see a dialog box asking you whether you want to use the same configuration as the previously installed version. Answer carefully:

- If you choose Yes, Outlook selects a configuration type for you and then migrates your server and user settings. If your previous Outlook configuration included only the Internet Mail service, Outlook 2000 sets itself up in Internet Mail Only mode, and you won't be able to add *MAPI (page 654)* services or set up a user profile. If your previous Outlook configuration used any other services, including those for Microsoft Exchange Server, Microsoft Fax, or Microsoft Mail, Outlook 2000 sets up in Corporate/Workgroup mode. In either case, you will see a succession of further dialog boxes that allow you to confirm and, if necessary, change the details (but not the type) of your configuration.

- If you choose No, Outlook searches for other email programs, such as Outlook Express, Eudora, or Netscape Mail, and displays a dialog box listing the programs it discovered. If you pick any of the programs listed, Outlook configures itself to use Internet Mail Only mode, importing the settings from the package you selected. Choose None of the Above if you want to reserve the right to choose your own configuration mode.

If you say no at each upgrade dialog box, or if Outlook did not find a previous version, eventually you will see the dialog box shown in Figure 27.1, which allows you to choose one of three options that control how you want to configure email services.



**Figure 27.1**  
If you reach this dialog box, congratulations—you're free to configure Outlook exactly the way you want it.

## Internet Mail Only

Choose **I**nternet Only if your only email account is with an Internet service provider (including The Microsoft Network) that uses standard *SMTP* (page 696) and *POP3* (page 696) or *IMAP* (page 696) servers. Although you can connect to this type of mail server in Corporate/Workgroup mode as well, the IMO mail transport is much faster and easier to configure. IMO mode does not enable you to create multiple *profiles* (page 654) as CW mode does; you will also be unable to use IMO mode to access Personal Address Books created in Windows Messaging, Outlook 97, or Outlook 98/2000 in CW mode, although you can import this data into your Contacts folder.

- ➔ For instructions on setting up a new or existing Internet mail account, see “Setting Up Internet Email Accounts,” p. 696

## Corporate/Workgroup

Choose the Corporate or Workgroup option if you're installing Outlook 2000 on a company PC connected to a mail server running Microsoft Exchange Server, Microsoft Mail, or another mail program that uses MAPI drivers. In CW mode, you can use any of the MAPI messaging services that you used in a previous Outlook or Exchange profile. You can also connect to an Internet-standard SMTP mail server, although doing so requires you to install services rather than configure an account as in IMO mode. To work in CW mode, you must create a profile that consists of individual MAPI services.

If you've used email software included with Windows 95 and Windows NT 4.0—including Exchange Inbox and Windows Messaging—these configuration steps will be familiar. CW mode offers full support for the group scheduling features of Exchange Server, as well as some mail options such as voting buttons and the capability to request delivery receipts or recall messages.

## No Email

Choose No E-mail if you currently use another mail program (such as Eudora or Lotus Notes) and you want to continue to use it for email, or if you do not want to send or receive email at all. Note that you cannot switch between IMO or CW mode and No Email mode.

## Changing Modes On-the-Fly

To see which configuration type you're currently using, choose Help, About and look at the line just below the Outlook version number.

To switch from IMO to CW mode (and vice versa), choose Tools, Options and click the Mail Services tab (CW mode) or the Mail Delivery tab (IMO mode), and then click the Reconfigure Mail Support button. Outlook displays the same dialog box you see at initial setup, with the No E-mail choice grayed out. Choose an option and follow the prompts to finish the setup.

## How Outlook Stores Your Data

Outlook stores many types of information in a simple *flat-file* database. In Outlook parlance, each record in this database is an *item*, and the type of item—email message, contact, appointment, and so on—defines which fields are available for entering and displaying information. Each of Outlook's default folders displays items of a single type, and you can create new folders as well.

**Note**

Outlook's flat-file architecture makes it fast, but it also means it's incapable of some fairly basic *one-to-many* (page 976) tasks. For example, if a number of items in your Contacts folder belong to people who work for the same company, you have to update each one individually if the company changes its name or phone number. If the structure of the database were *relational*, you could create a *many-to-one* (page 976) relationship between the contacts and the company and update all contacts by changing the company record.

When new mail arrives, or when you create and save a new item in one of Outlook's default folders (Contacts, for example), Outlook adds the new item to the location specified as the *primary store*. That location might be a local file, or it could be a set of folders on a Microsoft Exchange Server. The exact location depends on how you (and, in some cases, your network administrator) have configured Outlook. In most of the examples in this book, we assume your primary store is a Personal Folders file (with a .pst extension) stored on your local PC.

## Personal Folders Files

A *Personal Folders file* is the basic storage format for a single user's data. These files use the extension .pst. When you configure Outlook 2000 for use in Internet Mail Only (IMO) mode, Outlook creates a single Personal Folders file called Outlook.pst and stores it in the Application Data\Microsoft\Outlook folder. In this configuration, the Personal Folders file is the primary store: New messages are delivered to the Inbox in that file, and all other default Outlook folders are stored there as well. In Corporate/Workgroup (CW) mode, a Personal Folders file is optional. Regardless of your email configuration, however, the file format is identical.

- ➔ For a detailed explanation of how Office creates and manages folders for application and user data, see "Choosing a Default Storage Location," p. 66

Typically, Personal Folders files are stored on a user's local hard drive, although it is possible to store a file on a network server. You can also create multiple Personal Folders files and access them at the same time. In this configuration, the additional Personal Folders files are defined as *secondary stores*. Outlook does not save new items directly in these files, but you can move items into a secondary store by dragging and dropping them from your primary store, or you can define rules that automatically move incoming messages into the secondary store based on their content.

Although there are limits on the size of a Personal Folders file, in practice most users won't ever come close to hitting the maximum size. A Personal Folders file can be up to 2GB in size and can contain up to 16,384 folders, with each folder containing a maximum of 16,384 subfolders. If your Personal Folders files reach even a few hundred megabytes, you should seriously consider breaking them into multiple files for ease of management.

- ➔ For advice on how to manage Outlook data using multiple Personal Folders files, see "Managing Outlook Data Files," p. 799

To create a new Personal Folders file, choose **F**ile, **N**ew, Personal Folders **F**ile (.pst). Give the file a name, choose a location, and click OK. You'll see the dialog box shown in Figure 27.2, which allows you to define the name that appears in Outlook's Folders List and set compression and encryption options.

**Figure 27.2**

Outlook uses the name you enter here to identify the top-level folder for a Personal Folders file.



**Tip #307 from**



There's no relationship at all between the name of the Personal Folders file and the text that appears in the Folders List. If you create a second file that you intend to use for messages from mailing lists, for example, you might choose to use a filename such as Lists.pst, and then change the top-level folder name to My Mailing Lists.

After creating the additional Personal Folders file, Outlook automatically opens it. To close the file, right-click its icon in the Outlook Bar or the Folder List. You can also use this shortcut menu to adjust the properties of any Personal Folders file.

**Caution**

Personal Folders files are remarkably resilient, but not indestructible. If you keep irreplaceable information such as important email or contact information in one of these files, back it up regularly—preferably to a tape or server stored in a different physical location. You must shut down Outlook before you can copy a Personal Folders file. It's also possible to export your .pst files directly from Outlook; see Chapter 33, “Administering Outlook.”

## Offline Store Files

If you connect to a Microsoft Exchange Server, you can create one (and only one) *Offline Store file* and store it on your computer. This file type, which uses the extension .ost, closely resembles a Personal Folders file, with the following exceptions:

- The Offline Store file is always your primary store. When new mail arrives, Outlook delivers it to the Inbox in this file. All other default Outlook folders are stored in this file as well.
- Items in an Offline Store file can also be stored in your Mailbox folder on an Exchange server. As the name implies, you can *synchronize* (page 796) your Offline Store file with the Mailbox folders so they always contain the same information. This enables you to read and compose email or other items when the server is unavailable—for example, when you’re reading mail from a home PC or from a notebook computer on the road. When you connect to the server via remote access, or when you return to the office and reconnect your notebook computer to the network, use the Synchronize option on the File menu. Outlook compares the contents of the Offline Store file with those on the server, transferring changes in both directions.

**Tip #308 from**

How do you synchronize your mail when you have a notebook and desktop PC but you don't connect via an Exchange server? Check Microsoft's Office Update Web site (<http://officeupdate.microsoft.com>) for an add-in called Outlook Sync Folders. This utility enables you to transfer changed data between two Personal Folders files without copying the entire large file each time.

When your primary store is an Offline Store file, you can still create and use any number of Personal Folders files. All such files will be secondary stores. You might choose this strategy if you want to save network space or reduce synchronization time by archiving messages to a local file for ready access.

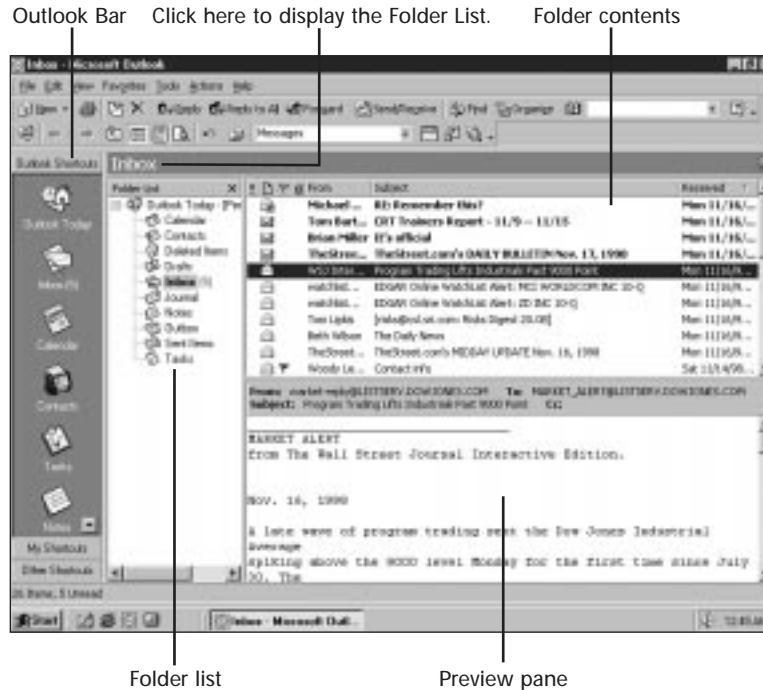
## Mailbox Folders on an Exchange Server

If you use Outlook to connect to a Microsoft Exchange Server, you can access mail in your Mailbox folders on the server. If you lose the network connection, you lose all access to your data. This option is typically found in highly managed corporations where administrators are concerned about security and/or local storage space on users' computers.

# Using and Customizing the Outlook Interface

Outlook's interface resembles that of other Office programs with one noteworthy exception: Along the left edge of the main program window is the Outlook Bar, which contains icons that you can click to display any of Outlook's default folders. At the top of the Outlook Bar is an icon that lets you jump to the Outlook Today page, which summarizes current tasks, appointments, and messages. Although it's not immediately obvious, you can also see an Explorer-style folder list by clicking the heading just above the window that displays the contents of the current folder. Figure 27.3 shows all these interface elements.

**Figure 27.3**  
Normally, the Folder List shown here is hidden; click the Inbox label to drop it down, and then click the pushpin icon to lock it in place.



When you install Outlook for the first time, it creates a full set of default folders in the primary store—one for every available type of item. The Outlook Bar contains an icon for each of these folders; click any of these icons to display the contents of that folder in the window to the right.

Folder	Item Type
Outlook Today	Provides a Web-style overview of your current appointments, tasks, and messages.
Inbox	In the primary store, holds all incoming email messages.
Calendar	Tracks scheduled appointments and events, including <i>recurring items</i> (page 738) such as weekly meetings.
Contacts	Stores names, addresses, phone numbers, email addresses, and other details about people and companies.
Tasks	Outlook's to-do list; arrange items by category and by priority, and delegate <i>tasks</i> (page 784) to others.
Notes	Freeform notes that resemble the sticky yellow squares that have taken over most offices.
Deleted Items	Holding area for items you delete from any Outlook folder; enables you to undelete items if you discover you deleted them by mistake.

➔ For details on setting up and managing mail accounts, see “Expert Email Management,” p. 693

- ➔ For details on scheduling meetings and appointments, see “Using Calendar,” p. 733
- ➔ To learn how to work with Outlook’s Contacts folder, see “Managing a Contacts List,” p. 749
- ➔ For information on how to use notes and tasks, see “Tracking Tasks and Taking Notes,” p. 783

## Customizing the Outlook Today Page

*Outlook Today* is a Web-style view of selected items in your primary store; it shows upcoming appointments, current tasks, and unread messages in a single convenient location, as shown in Figure 27.4.



**Figure 27.4**  
The Outlook Today view displays upcoming appointments, tasks, and unread messages in this HTML view.

If you prefer this “day-at-a-glance” style, you can make Outlook Today your default view. You can also customize this template, but only in limited ways.

### Note

The Journal folder included in previous versions of Outlook is no longer on the Outlook Bar by default. The functions of the Journal folder have been largely replaced by activity-tracking features you use in the Contacts folder.

- ➔ For more details on the Contacts folder, see “Tracking Activities for Each Contact,” p. 761

To customize the Outlook Today page, click its icon in the Outlook Bar, and then click the **C**ustomize Outlook Today link on the page itself (the exact location of this link varies depending on the style you’ve selected). You can choose from the following options:



- **Startup**—Check this box if you want to see the Outlook Today page every time you start Outlook.
- **Messages**—Click the Choose Folders button and check the folders whose names you want to display on the Outlook Today page. By default, the Inbox, Outbox, and Drafts folders are checked. This option is most useful if you've defined rules that automatically move some new messages into alternate folders as they arrive; in that case, add the names of the destination folders here and you can see at a glance whether any new messages are in those folders as well.
- **Calendar**—Choose a number between one and seven to display upcoming appointments only for today, or up to a week in advance.
- **Tasks**—Select which tasks you want to include on the Outlook Today page and define sorting options.
- **Styles**—Choose one of several alternate layouts from this drop-down list.

**Note**

Each Outlook Today layout is based on an HTML template, but these pages are not available as separate files. Instead, they're contained as embedded resources within a custom dynamic link library and thus are not available for direct editing. Microsoft has hinted that they may release a utility that lets you build custom Outlook Today templates. If they follow through on this promise, you'll find the utility on the Office Web site at <http://officeupdate.microsoft.com>.

## Customizing the Outlook Bar

The *Outlook Bar* is fully customizable. You can add new icons and delete existing ones, change the name or rearrange the order of icons, and reorganize icons into groups. For that matter, you can hide the Outlook Bar and use only the Folder List for navigation, if you prefer that view.

Outlook Bar icons are shortcuts, and as with any Windows object, you can right-click to see a full range of available options. Use shortcut menus to rename or remove an Outlook Bar icon; drag and drop icons to rearrange them in the Outlook Bar. To see more icons in the same space, right-click in any empty space in the Outlook Bar and choose **S**mall Icons.

To add a new icon to the Outlook Bar, drag any icon from the Folder List and drop it in an empty space. Alternatively, you can right-click any empty space in the Outlook Bar and choose **O**utlook **B**ar Shortcut; the resulting dialog box lets you select any existing Outlook or Windows folder and add its icon.

Although the most visible group of icons on the Outlook Bar is the default set of folders, there are actually three different *groups* of Outlook Bar shortcuts, and you can add groups of your own as well.

- The Outlook Shortcuts group displays large icons for each of the standard folders.
  - The group labeled My Shortcuts includes the Journal folder and all mail folders except the Inbox—Drafts, Outbox, and Sent Items. When you create a new folder, Outlook displays a dialog box offering to create a new Outlook Bar shortcut here.
  - The final default group, Other Shortcuts, includes three icons you can click to browse the contents of the My Computer window, Internet shortcuts in your Favorites folder, and the My Documents folder. These file listings appear in the Outlook window, where you can manage them just as you would in an Explorer window.
- ➔ For a full explanation of how to use Integrated File Management in Outlook, see “Managing Files and Folders in Outlook,” p. 683

To display the contents of a different Outlook Bar, click its title. To create a new Outlook group, right-click any existing group heading and choose Add New Group. You can create up to 12 groups on the Outlook Bar.

As you’ll see shortly, icons on the Outlook Bar serve one other important function. You can drag any item out of the main Outlook window and drop it onto one of the Outlook Bar icons to create a brand-new item, using the original item as a starting point.

## Customizing the Folder List



If you’ve organized your Outlook items into a large number of folders, you may find it easier to work with Outlook’s Explorer-style Folder List instead of the Outlook Bar. Drag-and-drop actions work identically regardless of which shortcuts you use. Click the Folder List button on the Advanced toolbar or choose View, Folder List to open the complete list in its own pane.

To display the Folder List temporarily so you can switch to a different folder or move items, click the folder name just above the contents window. As the arrow to the right of the folder name suggests, this action displays the drop-down version of the list; click anywhere outside the pane to hide it after switching folders or dropping an item on a folder. Click the pushpin icon to lock the Folder List into position.

If you prefer to use the Folder List instead of the Outlook Bar, clear the check mark next to the Outlook Bar entry on the View menu. Click the Close (x) button to hide the Folder List.

## Creating, Editing, and Managing Outlook Items

When you create, view, and edit items, Outlook uses a variety of standard and custom forms to control which fields are visible. When you double-click any item, it opens using the default form for its type.

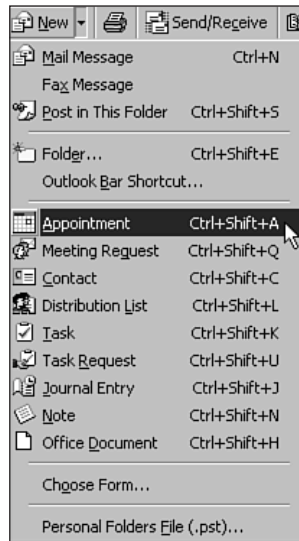
## Creating a New Item

When you click the New button on the Standard toolbar, Outlook displays the standard form used to create a new item in the current folder. The exact layout of each form is different, depending on the type of data appropriate for that folder's item type.

You can also use the New button to open the form for an item other than the type in the current folder. Click the drop-down arrow to the right of the New button to choose from a list of all available item types, as shown in Figure 27.5.

**Figure 27.5**

Use this menu (or the listed keyboard shortcuts) to create a new item regardless of the current folder.



### Tip #309 from

*EQ & Woody*

Most options on the **New** menu have their own keyboard shortcuts, **Ctrl+Shift+letter**. Expert typists can work faster by memorizing the most common ones. **Ctrl+Shift+A**, for example, creates a new Appointment item, and **Ctrl+Shift+C** opens a new Contact item. All these keyboard shortcuts are listed alongside the menu choices when you choose **File, New**, or when you click the drop-down list of New items at the left of the Standard toolbar.

Dragging items from one folder and dropping them into another folder can save you time by helping to fill in some information on a form. As with other Outlook features, however, dragging and dropping doesn't always work as you might expect.

When you drag an item from the main window and drop it on an icon in the Outlook Bar or the Folder List, Outlook creates a new item using the default settings for the combination of item and destination folder you selected. For example, you can perform the following operations by dragging items from one folder to another:

- Drag a task onto the Calendar icon to turn the task into an appointment, and then add start and end times, reminders, and other appointment-related details.
- Drag an email message onto the Contacts icon to create a new Contact record automatically, using the name and email address of the person who sent the message. Outlook displays the new record in a form so you can add other details, such as address and phone number.

**Caution**

Watch out for duplicate records when you create new contacts by dropping an email message into the Contacts folder. Outlook uses the name defined in the email header to create the new record; if you already have an item for that contact under a slightly different name, you'll end up with two records for one contact, with no warning.

- Select an address card from the Contacts folder and drag it onto the Notes icon to create a yellow sticky note with that person's name and address, and then add your own notes.

Most of the default drag-and-drop actions assume you work in an office where Outlook is the standard contact manager. As a result, dragging an item out of the Contacts folder and dropping it on the Calendar icon causes Outlook to open a meeting invitation form, with the selected contact in the Address box. Likewise, dragging a Contact item onto the Tasks icon causes Outlook to open a *Task Assignment form* (page 784).

If you use Outlook strictly to manage personal information, you're more likely to want to drop a Contact record onto the Calendar or Tasks icon so you can create an appointment or task in your own personal calendar that includes information about the contact. You can do exactly that by dragging the item with the right mouse button and dropping it on the appropriate Outlook Bar icon. As in other Office applications, right-dragging displays a shortcut menu that lets you override the default settings. Typically, you can choose any of the following five options; in each case, the item type is determined by the destination folder you select:

- **A**ddress New Item adds the email address from any Contact item to a meeting request, task request, or mail message. This is the default action.
- **C**opy Here As Item with **T**ext creates a new item and inserts the message text, contact information, or other data as text in the Notes area of the new item.
- **C**opy Here As Item with **S**hortcut creates a new item and adds a shortcut in the Notes box; the item you dragged and dropped remains in its original folder.
- **C**opy Here As Item with **A**ttachment creates a new item and attaches a copy of the item you dragged and dropped; double-click the icon in the Notes box to view the attachment.

**Caution**

When you choose to create a new task or appointment that includes an attached Contact item, Outlook does not maintain a link between the original item in the Contacts folder and the new item you created in the appointment or task. If you change information (such as an address or phone number) in one item, the other item will continue to reflect the outdated information.

- **M**ove Here As Item with Attachment creates a new item and attaches the item you dragged and dropped; this choice deletes the original item. Use this option if you want to turn an email message into a task or appointment while simultaneously deleting the message from your Inbox.

## Moving, Copying, and Deleting Items

To move or copy items between Outlook folders, you can use many of the same techniques you use to manage files in an Explorer window. Drag an item out of one folder and drop it into another to move the item; hold down the Ctrl key while dragging to make a copy. Or use shortcut keys to cut (Ctrl+X) or copy (Ctrl+C) and then paste (Ctrl+V) the item into the destination folder. Curiously, although Outlook's pull-down **E**dit menu includes all three choices, the right-click shortcut menus don't allow you to cut, copy, or paste.



*If you try to move an item into a folder and it opens a new item instead, see "Dragging Doesn't Always Move an Item" in the Troubleshooting section at the end of this chapter.*

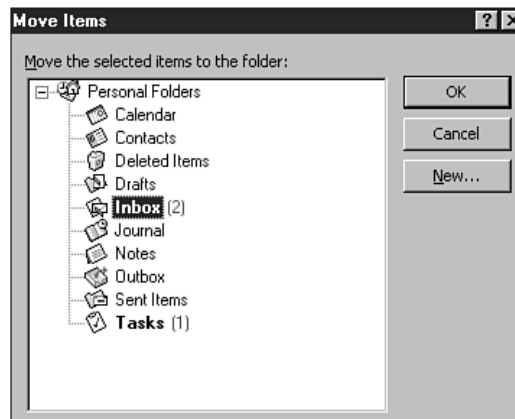
Although it's possible to create multiple folders for other types of items, you'll most commonly use subfolders to manage email messages. To do major message management, open the Folder List by clicking the folder name just above the display of items; click the pushpin icon to lock the list in place, and drag messages directly onto folders as you would in Windows Explorer.



To move one or more selected messages into folders without using the Folder List, click the Move to Folder button on the Standard toolbar. This displays a menu showing the folders you've used most recently. If the folder you want isn't listed, choose **M**ove to Folder from the bottom of the menu. (This option is also available if you right-click selected items to display the shortcut menu.) The dialog box shown in Figure 27.6 appears.

**Figure 27.6**

Drag and drop or use this dialog box to move Outlook items (typically email messages) to another folder.



Select the folder to which you want to move the selected items. Click the plus sign next to any folder to see its subfolders. Click the **N**ew button to create a new folder in any open Personal Folders file. Click OK to move the selected items and close the dialog box.

➔ For instruction on how to work with folders in a different Personal Folders file, see “How Outlook Stores Your Data,” p. 654

**Tip #310 from**

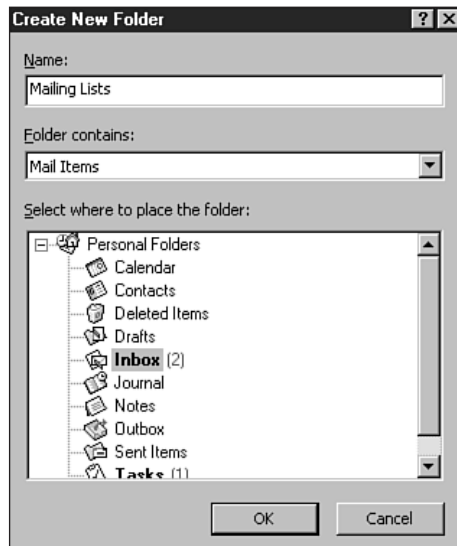
*EQ & Wendy*

You can drag any item onto the Windows desktop or into a folder to create a copy of that item. This capability is a convenient way to keep a contact's personal information at hand or to save a copy of a mail message where you can find it easily. When you create a copy using this technique, you create a new file containing only that item. Be careful when using such a copy, however: Because there is no link between the item you create on the desktop and the one that remains in Outlook, any changes you make in either place are not reflected in the other.

✕ To delete any item or items in any Outlook folder, click the Delete button on the Standard toolbar, use the keyboard shortcut Ctrl+D, or drag the item and drop it on the Deleted Items icon in the Outlook Bar or the Folder List.

By default, Outlook saves the contents of the Deleted Items folder until the next time you archive. To empty this folder manually, right-click its shortcut in the Outlook Bar and choose **E**mpy “Deleted Items” Folder. If you prefer to empty this folder automatically every time you close Outlook, choose **T**ools, **O**ptions, click the Other tab, and check **E**mpy the Deleted Items Folder upon Exiting.

To create a new folder at any time, choose **F**ile, **N**ew, Folder. In the Create New Folder dialog box (see Figure 27.7), enter the name of the new folder, specify the type of items you want to store in the folder, select the folder in which you want to store the new subfolder, and then click OK.



**Figure 27.7**

When creating a new folder, be sure you specify the correct type of item you want to store in the folder.

To move, copy, delete, or rename a folder, open the Folder List, lock it in place, and use the right-click shortcut menus.

## Entering Dates and Times Automatically

One of Outlook's most impressive time-saving features is its capability to interpret dates using almost any text you enter. To enter a date in any date *field* (page 675) in any type of Outlook item, use any of the following techniques:

### Tip #311 from

*EQ & Wendy*

These techniques are useful throughout Outlook, not just in appointments or meetings. For example, you can use AutoDate shortcuts to define the dates for follow-up flags on email messages, or to specify the due date for an upcoming task.

- Type the date in a format that Outlook recognizes, such as 9-29-99, 9/29, or Sep 29. If you omit the year, Outlook automatically fills in this year's date if that date is in the future; if adding this year's date results in a date that has already passed, Outlook uses next year's date instead.
- To pick dates from a calendar, click the drop-down arrow to the right of the date field to display a control showing the current month (see Figure 27.8). Use the arrows to scroll backward or forward, and click to insert any date in the current field.
- When you enter dates and times for appointments, you can also use words and phrases and let Outlook use its AutoDate feature to interpret your meaning.



Figure 27.8

Outlook can recognize text such as next Thursday, one week from today, or tomorrow, substituting the correct date for you. To schedule a staff meeting for next Wednesday at 2:00 p.m., for example, click in the Start Time box and enter next wed, and then press Tab and type 2 (Outlook assumes that times you enter are during the default workday unless you specify otherwise).

AutoDate understands dates and times that you spell out or abbreviate, such as 6a (for 6:00 a.m.), or first of jan. If you type 30 days in the Start Time box, Outlook converts it to the date 30 days from today; if you enter that same text as the end time, Outlook adds 30 days to the start date you specified. AutoDate recognizes holidays that fall on the same day every year, such as Halloween, New Year's Eve, and Christmas. It can also correctly interpret dozens of words you might use to define a date or an interval of time, including now, yesterday, today, tomorrow, next, following, through, and until.

### Caution

You can't use AutoDate to define a recurring appointment. If you enter every other Wednesday in the Start Time box, for example, Outlook will appear to accept your entry, but it will ignore the first two words, setting the appointment for the coming Wednesday and ignoring your attempt to create a recurring appointment.

## Assigning Items to Categories

You can assign most Outlook items, including email messages, contacts, appointments, meetings, and tasks, to *categories*. Using categories can be a powerful way to extract groups of information from a list of contacts or to categorize email messages by client or project.

By default, Outlook 2000 includes a Master Category List containing 20 entries. You can add your own categories to this list, and then assign items to categories individually or in groups. In the case of email messages, you can assign categories automatically, by defining *rules*.

- ➔ For more details on how to create rules for handling incoming mail, see “Using the Rules Wizard to Sort and Process Mail,” p. 724

### Tip #312 from

*EQ & Wendy*

You can assign a single item to multiple categories. This flexibility lets you work with the same item in multiple contexts—for example, you might assign a contact to the Key Customer, VIP, and Holiday Cards categories to make sure that her name is included each time you assemble a mailing list based on any of these categories.

To assign a single item to a category, open the item and click the Categories button; you can also select the item, right-click, and choose Categories from the shortcut menu. Either action displays the Categories dialog box shown in Figure 27.9.



**Figure 27.9**

To assign categories to Outlook items, use the check boxes in this list.

Check the box to the left of the categories to which you want to assign the item. To add a new category and make it available to all items, click the Master Category List button, and then type the name of the new category and click Add. A category name can contain up to 255 characters, including spaces, but in practice you should keep category names much shorter.



**Caution**

It's possible to assign categories directly by typing in the box to the right of the Categories button in each item. We recommend avoiding this practice, however, because even a slight difference in spelling or style (VIPs instead of VIP, for example) will result in inconsistent categories and will cause errors when you try to filter or group by category.

In some cases, you might want to assign multiple items to the same category. For example, if you've formed a new advisory board whose members are all listed in your Contacts folder, you could add a new Advisory Board category and assign that category to all its members in a single action. Use either of the following techniques:

- Select the items by Shift-clicking in any view, or use the Find or Advanced Find dialog boxes to search for a group of items and select all of them. Right-click and choose Categories from the shortcut menu, and then follow the same procedures as you would to categorize a single item.
- In the Calendar, Contacts, or Tasks folder, switch to By Category view. Expand the list if necessary, and then drag individual items or an entire group onto the category to which you want to assign them. If you want to add everyone in the Personal category to your Holiday Cards list, for example, drag the Personal group heading and drop it on the Holiday Cards heading.

If you type a previously unused category name directly into the Categories list, Outlook does not add it to the Master Category List. Likewise, if you delete a category from the Master Category List or click the Reset button to remove all categories you've added, the categories remain in the items to which they're currently attached. This option allows you to work with categories that you know you won't reuse, without cluttering up the master list.

You can combine categories with color coding as a powerful way to quickly identify key contacts. (This technique works with other types of Outlook items as well, but it's especially effective with contacts.) For example, let's say you want all contacts you add to the VIP category to display in red italic when viewed in Address Cards view, while those in the Key Customer category show as green. To make this happen automatically, you need to define a rule that Outlook uses for formatting:

1. Display the contents of the Contacts folder and, if necessary, switch to Address Cards view.

**Note**

This procedure works by customizing a view, so if you want to color-code categories in multiple views, you'll need to repeat this process for each additional view.

2. Choose View, Current View, Customize Current View. In the View Summary dialog box, click the Automatic Formatting button.
3. Click Add and type a name for the new rule—in this case, VIP Contacts.
4. Click the Font button and select the color and font attributes you want to use—in this case, red and italic. Click OK.

5. Click the Condition button to open a Filter dialog box. Click the More Choices tab, click the Categories button, and select the VIP category. Click OK to close the Categories dialog box and click OK to close the Filter dialog box.

**Note**

The Filter dialog box is identical to the Advanced Find dialog box described later in this chapter.

6. Repeat steps 3–5 to define a rule for the Key Customer category, using green italic formatting. Close all open dialog boxes to return to the Contacts folder with all items color-coded.

## Creating Reminders and Flagging Items for Follow-Up

Entering information into Outlook is only half the job. If you expect to succeed in business, you need to create systems that remind you of important meetings and tasks before they're due and help you follow up on commitments, especially the casual variety.

Outlook allows you to attach *reminders* to any type of item except a note. In the case of appointments and tasks, the default form allows you to define the date and time when you want to see a reminder. For an email message or Contact item, you must create a *follow-up flag* before you can set a reminder.



*In some cases, reminders and follow-up flags simply won't work. For an explanation, see "Alarms Fail to Go Off," and "Alarms Work Only in Four Key Folders" in the Troubleshooting section at the end of this chapter.*

Pop-up reminders can help you avoid the embarrassment of missing a meeting because you forgot to check your calendar. By default, Outlook adds a reminder to all meetings and appointments, set for 15 minutes before the scheduled time. To change this setting, choose Tools, Options, click the Preferences tab, and set the preferred interval by using the pull-down list (or typing an entry) in the Default Reminder box.

You can enter or edit the reminder for an appointment or meeting by opening the item and selecting or entering a time from the drop-down Reminder list. This time is always relative to the start time of the appointment or meeting; you can request a reminder by entering any number of minutes, hours, days, weeks, months, or years in this box. For example, if you enter 1 week, Outlook dutifully pops up a reminder exactly one week before the meeting is scheduled to start. You cannot, however, enter a specific date or time when you want to receive a reminder.

**Tip #313 from**

If you use Outlook's Calendar regularly, you may find the constant pop-up reminders distracting. To specify that you do not want new appointments to include reminders, choose Tools, Options, click the Preferences tab, and clear the Default Reminder check box. You can still add a reminder to any appointment, but you'll need to do so manually for each one.

Outlook automatically includes reminders for tasks as well, using the date you enter in the **Due Date** field and a default time of 8:00 a.m. If your workday begins earlier, you can change this default: Choose **T**ools, **O**ptions, click the Preferences tab, and select a new time from the drop-down list in the **Tasks** section.

To prevent Outlook from automatically setting a reminder on every new task, you must dig through three layers of dialog boxes. Choose **T**ools, **O**ptions, click the Other tab, and then click the **A**dvanced **O**ptions button. Click the **A**dvanced **T**asks button and clear the **S**et **R**eminders on **T**asks with **D**ue Dates check box. Click **OK** in each of the three open dialog boxes to return to Outlook.

To set a reminder for an email message or a contact, you must first assign a follow-up flag for that item. Unlike task and appointment reminders, which display the Subject line of the item, you can define custom text that appears in the pop-up reminder notice.

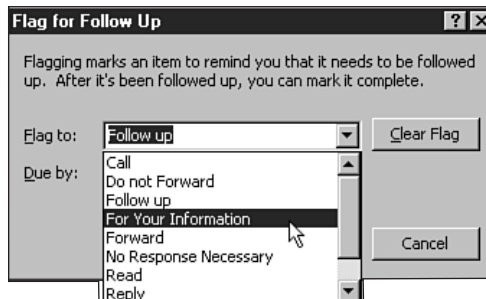
If a coworker sends you a status report via email, for example, you might want to set a reminder to yourself to follow up on unfinished items next week. Or, if you want to call a handful of key customers next Monday after your company makes an important announcement, you can select the corresponding items in the **Contacts** folder and flag each one for a phone call.



To flag an open email message or **Contact** item, click the **Flag for Follow Up** button on the **Standard** toolbar. To flag one or more messages or contacts, select the items, right-click, and choose **F**lag for **F**ollow **U**p. In either case, you'll see the dialog box shown in Figure 27.10.

**Figure 27.10**

To flag a message or contact, choose one of the canned messages in this drop-down list, or enter a text message of your own.

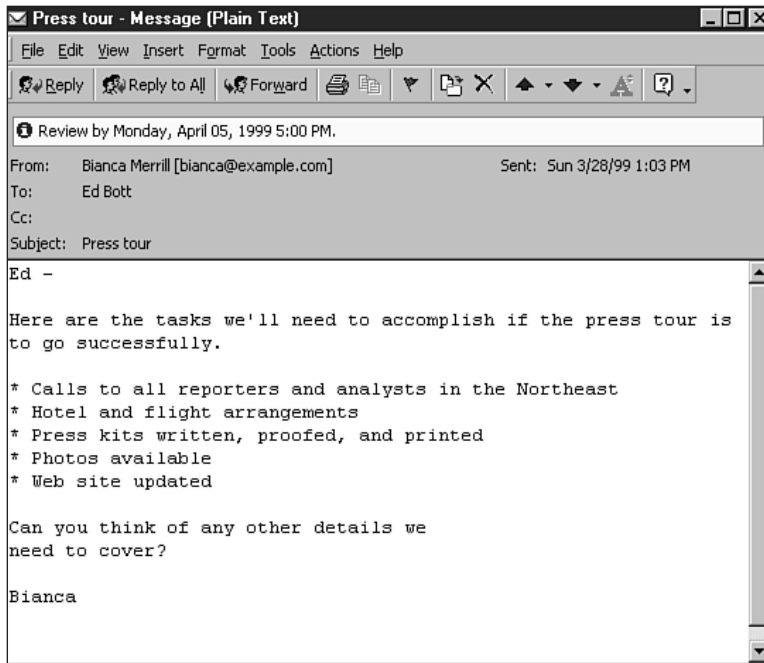


The default text in a flag is **Follow Up**. You can choose from other alternatives, including **Call**, **Read**, or **Review**. If none of the canned alternatives is suitable, you can enter your own text. For example, if you're expecting a shipment of catalogs from the printer next Monday and you want to make sure your best customers get a copy ASAP, you can flag a group of contacts with the text **Send Catalog** and set a reminder for next Monday.

The reminder date and time are optional parts of a follow-up flag. Enter a value here if you want a reminder to pop up at a specified date or time. By default, if you enter a date, Outlook adds the time 5:00 p.m. You can enter a specific reminder time for any follow-up

flag by using the exact date and time or any text that Outlook's AutoDate feature recognizes. If you received an email from a key customer and you need to follow up first thing next week, for example, enter next mon 9am in the **Due By** box and Outlook translates the date and time for you.

In table views, flagged items include a flag icon and appear in red text. When you open the item, the follow-up message text and date appear in the information header at the top of a flagged message or contact, as shown in Figure 27.11.



**Figure 27.11**

When you flag a mail message or contact for follow-up, the text and date you specify appear in this info bar at the top of the item.

**Tip #314 from**

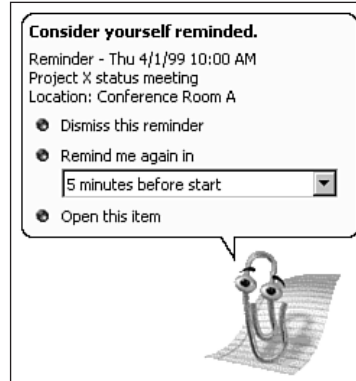
*EQ & Woody*

You can use follow-up flags in mail you send to other people as well; if they use Outlook, they'll see the flag text and due date in the info bar at the top of the message when they read it. (Sending a flagged message with a due date does not set a pop-up reminder for the recipient, however.) Several of the choices in the Follow Up Flag dialog box, in fact, are available precisely for this purpose. While composing a message, click the Flag for Follow Up button and choose For Your Information or No Reply Necessary to alert the receiver that they needn't act on the message. Or choose Review and add a due date; even if the text of your message includes a request to reply by a certain time, this technique adds emphasis.

Regardless of how you set a reminder, when the specified time rolls around, Outlook plays a sound (if you selected that option) and pops up a reminder message. If the Office Assistant is visible, it displays a set of choices as shown in Figure 27.12. If the Outlook Assistant is hidden, you'll see a conventional dialog box offering the exact same choices.

**Figure 27.12**

If the Outlook Assistant is visible, it displays reminder messages like this one.

**Tip #315 from**

*EQ & Wendy*

If you normally manage Outlook information on a desktop PC but occasionally travel with a notebook computer, you may want to disable all reminders on the portable computer. This prevents the annoyance of starting up Outlook and having to close multiple reminders whose due dates have already passed. Choose **T**ools, **O**ptions, click the **O**ther tab, and click the **A**dvanced **O**ptions button. Click the **R**eminder **O**ptions button and clear the check box next to both boxes to disable pop-up reminders and the sounds associated with them.

When you see a reminder, you have three choices:

- Choose **Dismiss This Reminder** if you don't need to see the message again.
- **Remind Me Again In** lets you reset the reminder time, much like hitting the snooze button on an alarm clock. By default, this option hides the reminder and displays it again in five minutes, but you can use the drop-down list to select a new reminder time as much as one week later. If you have a major event coming up, you can set an initial reminder six or eight weeks out, and then reset the reminder a week at a time to jog your memory every week.
- **Open This Item** displays the appointment, message, task, or contact that includes the reminder. This option is especially useful when you want to review notes for an upcoming appointment or look up the phone number of a contact you plan to call.



*If reminders don't appear when you expect them to, see "Alarms Fail to Go Off" in the Troubleshooting section at the end of this chapter.*

**Tip #316 from**

*EQ & Wendy*

To see all flagged messages or contacts, display the **Inbox** or **Contacts** folder and then switch to the built-in **By Follow-up Flag** view. This table view shows all items that include flags at the top of the list.

After you've finished working with a flagged item, you have two choices to remove the flag. Flag the item as complete if you want it to show in views that include flags, or clear the flag completely. Either option is available from right-click shortcut menus or in the Flag for Follow Up dialog box.

## Exchanging Items via Email

It's extremely easy to exchange items with other Outlook users. For example, if you've asked a coworker to follow up with a customer on your behalf, you can make the job easier by forwarding a copy of that person's item from your Contacts folder. If you're certain the other person uses Outlook, the procedure is easy: Drag the item from the Contacts folder and drop it in the message window and send it as an *attachment*. Your coworker can add the item to her Contacts folder by opening the message and dragging the attached item onto the Contacts icon on the Outlook Bar.

What if you want to exchange information with someone who doesn't use Outlook? Outlook fully supports two emerging standards for exchanging contact information over the Internet:

- Use the *vCard* format (short for "virtual business card"), to translate standard name, business, address, and phone fields into a simple text file that other compatible programs can import. When you send your vCard to another person via email, that person can easily add your address information into Outlook, Lotus Organizer, the Netscape Personal Address Book, or any compatible contact-management program. You can also turn any item from your Contacts folder into a vCard and attach it to an email message.

### Tip #317 from



Unless you're absolutely certain the person to whom you're sending a mail message uses Outlook, you should send contact information in vCard format. In fact, because this card uses plain text, your recipient can read its contents even without a compatible contact manager—just open the file in a text editor, such as Notepad.

- Use the *iCalendar* format to exchange appointment information with other people who use contact-management software that supports this standard. The underlying principle is the same as that used in the vCard format, although fewer programs support this standard. Sidekick 98 and 99 and Lotus Organizer 5.0 are among those that can exchange data in iCalendar format.

To send a vCard via email, select the item in your Contacts folder, and then choose **Actions**, **Forward As vCard**. To send an appointment as an iCalendar item, select the item from your Calendar folder and choose **Actions**, **Forward As iCalendar**. In either case, Outlook saves the information as a file with the appropriate extension, opens a blank email form, and attaches the file. Address the message, add explanatory text if you want, and send it just as you would any email message.

If you receive any type of Outlook item in an email message, regardless of whether it's in Outlook format or one of the Internet-standard equivalents, just double-click to open the item. Edit the information if you want, and then click Save and Close to add it to your Contacts or Calendar folder.

## Viewing Personal Information in Outlook

Outlook uses *forms* to display the data in individual items. To see groups of items within a folder, you use *views*. By default, every Outlook folder includes a selection of built-in views available to all folders containing that item type. It's easy to switch between these built-in views, but for specific tasks you'll want to create custom views so you can sort, filter, and group items as required.

### Using Views to Display, Sort, and Filter Items

Every calendar starts with a default view. For example, when you first open the Calendar folder you see today's appointments alongside a list of tasks; you can switch to Recurring Appointments view to see a list of all recurring items, grouped according to whether they repeat Daily, Weekly, Monthly, or Yearly. Likewise, items in the Contacts folder appear by default as address cards with minimal details, but you can choose to see more detailed cards or a simple Phone List view with one contact per row instead.

#### Tip #318 from

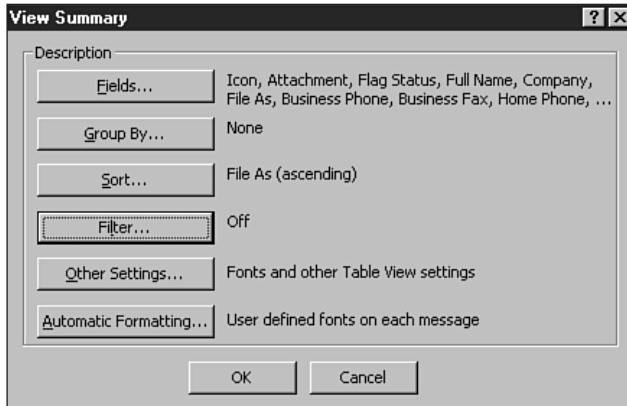



The Organize button on the Inbox toolbar offers a useful set of shortcuts for creating mail-processing rules, but in all other folders this button slows you down. All it offers is an oversized interface for applying views and categories and moving contacts and tasks to other folders. To switch views with maximum efficiency, use the drop-down list on the Advanced toolbar. Advanced users who frequently modify views should remove the Organize button from the Standard toolbar in the Contacts, Tasks, and Calendar folders and replace it with the Define Views button.

To switch between built-in views, use the drop-down list on the Advanced toolbar, or choose View, Current View and select an entry from the list of defined views. Outlook remembers the view you used most recently and reapplies that view whenever you return to that folder.

### Customizing an Existing View

If none of the built-in views offers the arrangement of data you're looking for, you can customize the current view. As we'll explain shortly, you can change some aspects of a view directly, without using dialog boxes. To see all your customization options, choose View, Current View, Customize Current View. The View Summary dialog box appears, as shown in Figure 27.13.



**Figure 27.13**  
Use this dialog box to customize all available options for the current view. Depending on the view type, some options will be unavailable.

The sections that follow explain how to modify each characteristic of the selected view; note that some of these options will not be available for specific view types. For example, you can't group items in the Contacts folder's Address Cards or Detailed Address Cards view. In Table-based views, you can also apply changes to the current view interactively.

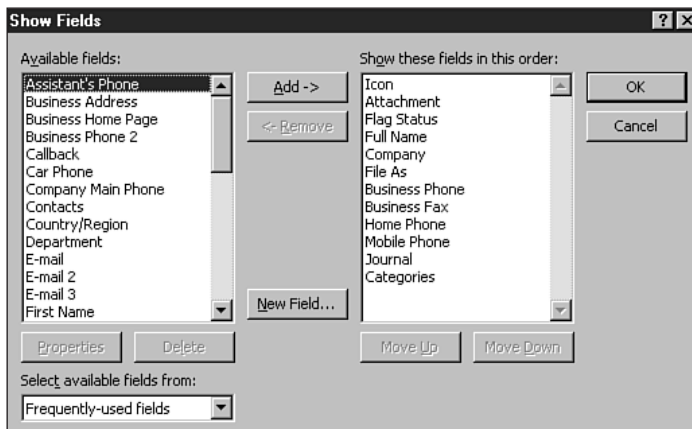


*If you've customized a built-in view and you need to undo your settings, see "Resetting the Standard Views" in the Troubleshooting section at the end of this chapter.*

## Customizing Fields

You can add fields to the current view. If many of your contacts have cellular phones, for example, you might want to include that field in the Address Cards view of the Contacts folder. You can also remove fields from any view.

Using the View Summary dialog box, click the **F**ields button to display the Show Fields dialog box (see Figure 27.14). Select fields from the list on the left and click the **A**dd button to add them to the current view. Select fields from the list on the right and click **R**emove to eliminate them from the view.



**Figure 27.14**  
Use this dialog box to control exactly which fields appear in a custom view.

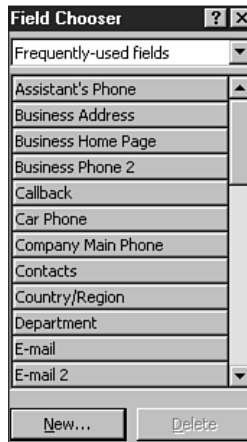




If you're customizing a table-based view, such as the Messages view of the Inbox or the Phone List view of the Contacts folder, you can drag and drop to add or remove fields. Click the Field Chooser button on the Advanced toolbar or right-click the field headings and choose Field Chooser to display a list such as the one shown in Figure 27.15. Drag fields onto the headings in the current view to add them to the view; to remove fields, drag column headings down onto the list itself, and release when you see the large X. Drag headings from side to side to change their left-to-right order in the list.

**Figure 27.15**

The Field Chooser lets you add fields to a view by dragging and dropping.



**Tip #319 from**

*EQ & Wendy*

When you add fields to a view using either the View Summary dialog box or the Field Chooser, Outlook displays only its limited selection of frequently used fields. To see a broader list of available fields, use the drop-down list in either dialog box. For example, if a folder contains Contact items, you can see all Name fields, all Phone Number fields, or an enormous list of all Contact fields.

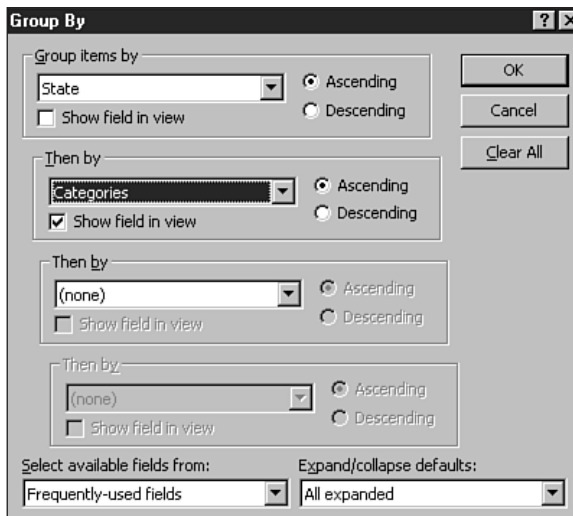
### Grouping Items

Outlook's grouping options let you arrange the contents of a folder in outline style, with each item in the outline corresponding to a field you select. Most folders include ready-made By Category views—such as the one in Figure 27.16, for example—which enable you to collapse or expand a list of items according to categories. The Contacts folder also includes three additional built-in views that use grouping—By Company, By Location, or By Follow-up Flag.

For maximum control over grouping options, click the Group By button in the View Summary dialog box. This displays the Group By dialog box shown in Figure 27.17.



**Figure 27.16**  
Use the plus and minus signs to the left of each group to expand or collapse the list of items in that group.



**Figure 27.17**  
Use this dialog box to define grouping levels; note that you can choose whether the view starts with all items expanded or collapsed.

You can group by multiple fields; for example, if you're planning a business trip you might want to group by State and then by Category to see all the contacts in a particular area organized according to categories you've defined.

You can also change grouping on-the-fly in any table-based view. To group by any field that's visible, right-click its column heading and choose **Group By this Field**. You can also drag headings into or out of the Group By box, which appears just above the column headings. Click the Group By Box button or right-click the column heading and choose **Group By Box** from the shortcut menus to show or hide this area.

### Sorting Items

In any view, you can *sort* your data in a specific order—by due date, for example, or by last name. In the View Summary dialog box, click the **Sort** button to choose up to four fields for sorting. In table-based views, click a column heading to quickly sort by that column. Click again to sort in reverse order.

#### Tip #320 from



Normally, the Messages view of your Inbox shows all mail sorted by the date and time it was received. Want to find mail from a specific person in a hurry? Click the **From** heading to sort the folder's contents by the sender's name, and then quickly type the first few letters of the sender's name as it is displayed in this list. Outlook jumps immediately to the first message in the list, and you can scroll to see all other messages from that person, sorted by date received.

### Filtering Items

*Filters* show a subset of the items in any folder, based on criteria you define. The **Overdue Tasks** view in the **Tasks** folder, for example, displays only those tasks that you should have completed by now; if you inspect this view, you'll see that it uses a filter consisting of two items: **Complete equals no**, and **Due Date on or before Yesterday**. Likewise, the **Annual Events** view of the **Calendar** folder shows all the birthdays and anniversaries you've defined using a custom filter that shows only all-day events that recur yearly.

In combination with custom views, filters are a powerful way to manage information. In the **Contacts** folder, for example, you can define filters that show you only people who work for a specific company or who belong to a category you define. If you have a large family, you can create a filtered view of your **Contacts** folder that includes only people who share your last name or who belong to the **Family** category.

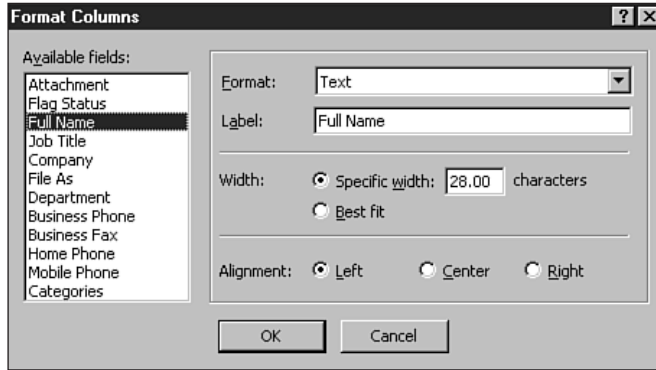
To define a filter for any view, open the View Summary dialog box, click the **Filter** button, and select the criteria you want to use in your filter. This dialog box is identical to the one used in the **Advanced Find** dialog box.

➔ For more information about how to define filters and searches, see ["Advanced Search Techniques," p. 687](#)

### Formats and Other View Settings

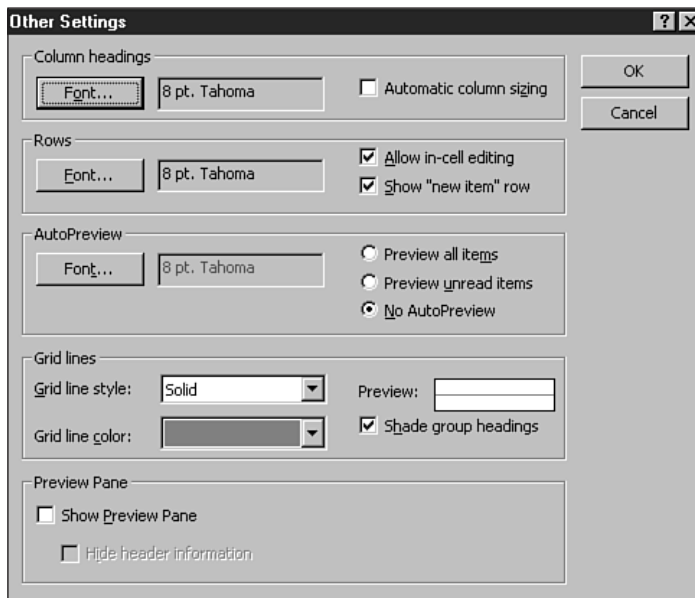
You can define custom font formats for many items in many views. In general, these options are available from shortcut menus. For example, in a table view you can right-click any

column heading to set its alignment (left, right, or center), change its column size to automatically fit the widest entry in the view, or display a dialog box with additional formatting options, such as those shown in Figure 27.18.



**Figure 27.18**  
Outlook lets you define formatting details such as column width and alignment for most fields in most views.

From the View Summary dialog box, you can also set a variety of other options. Click the **Other Settings** button to see a dialog box like the one in Figure 27.19. The specific options vary by the type of view selected; in table views, as shown here, you can control whether or not it's permitted to edit in rows and whether gridlines appear.



**Figure 27.19**  
Use this dialog box to set overall formatting options for a table or other type of view.

The AutoPreview option is a useful way to see additional information about items that contain details. In your Inbox folder, it shows the first three lines of each message so you can tell at a glance what's inside without having to open and read each message. In other folders, you can use it to see details—notes about each person in your Contacts folder, for example, or the beginning of an appointment's description.



To add the AutoPreview option to a view's settings, use the View Summary dialog box, or click the AutoPreview button on the Advanced toolbar to hide and show this information on-the-fly.

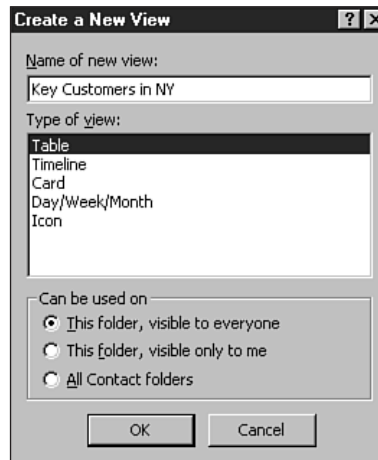
#### Note

Don't confuse AutoPreview with the Preview pane. When the Preview pane is visible, you can read an entire mail message in a window just below the message list; by contrast, the AutoPreview feature shows only the first three lines of a message, and it disappears after you've opened and read the message. If you use AutoPreview in other folder types, the text remains visible at all times.

## Creating a New Custom View

Sometimes the fastest and surest way to create the view you're looking for is to start from scratch. To begin defining a new custom view, switch to the folder that contains the items you want to view, and then choose **V**iew, **C**urrent **V**iew, **D**efine **V**iews. Click the **N**ew button to display the dialog box shown in Figure 27.20.

**Figure 27.20**  
When defining a new view, you must start by defining a view type.



#### Note

You can't change a view's type after you create it—you can't convert a Card-style view to a Table-style view, for example. When you first create a new view, you have one, and only one, opportunity to make this choice.

All views start with one of the following arrangements:

Type of View	Description
Table	Default view for the Tasks folder and the Inbox, although you can use it with any folder. Outlook displays data in worksheet style, with each item in its own row, each field in its own column, and headings for each column. This view is useful for displaying relatively simple lists of any type of items.
Timeline	A bar along the top of the window displays days or hours; tiny icons underneath show all the items in the folder according to when they were created, received, or started. Especially useful when viewing the Tasks folder.
Card	Displays the item title in bold, with selected details underneath. Most useful in the Contacts folder, which includes two built-in Card views.
Day/Week/Month	Available for all folders, but appropriate only for the Calendar folder. Options determine how many days you can see at once; the more days you select, the less detail you see for each entry.
Icon	Displays each item as a large or small icon with title text underneath, similar to what you see in an Explorer window. Does not allow you to add fields or group by different fields. This is the default view for the Notes folder, but it's inappropriate for most other item types.

After you select a view type, choose where you want to use the view from the set of three options at the bottom of the dialog box. Choose either of the options beginning with `This folder...` if you do not want the view to be available from the list of named views in other folders that contain the same type of data.

#### Note

The top choice (`This Folder, Visible to Everyone`) is applicable if you're creating a view for a public folder on an Exchange Server, or if you've chosen to share a particular personal folder with other Exchange users. This option has no effect if you're not connected to an Exchange Server.

If you want the custom view type to be available for all folders containing the same type of items as the current folder, choose `All <Item Type> Folders`. In general, this is your best choice; make an exception when you've defined a view that is relevant only to a specific folder. For example, if you've created a mail folder that contains messages you receive from a mailing list, you might create a filtered view that shows only those messages that contain your name. This view would be irrelevant in your Inbox, so in this case it makes sense to specify that you want this view to apply only to this folder.

After completing this step, the process of creating a new view is identical to the procedure for customizing an existing view. Add fields, set grouping and filter options if necessary, and save the view under a new name.

## Managing Custom Views

Outlook gives you a complete set of tools for managing custom views you create. Choose `View, Current View, Define Views` to display a dialog box listing all views available for the current folder. Select any entry in this list and use the following buttons to work with that view:

- Click **C**opy to make a copy of the selected view. Give the view a new name to add it to the list. This technique lets you experiment with view options without worrying that you'll mess up a view you've carefully constructed.
- Click **M**odify to edit any available view setting for the selected view. Note that you cannot change the view type, and some settings are unavailable for certain views.
- Click **R**ename to give a view a different name; the name you enter is the one that appears in the drop-down list on the Advanced toolbar.
- Click **D**elete to remove a custom view completely. Note that you cannot remove or rename Outlook's built-in views, although you can edit their settings.
- Click **R**eset to remove all customizations from a built-in Outlook view. This option is not available for custom views.

## Opening a Folder in a Separate Window

If you use a single Outlook window, you'll notice after switching to a new folder that the Back and Forward buttons are no longer grayed out. These buttons are identical in function to those on the Internet Explorer toolbar: Click the drop-down arrows to the right of either button to see a list of previously viewed folders.

On a fast PC with sufficient memory, Outlook is quick to switch the display of information between folders. However, if you use Outlook regularly, you may prefer to open multiple windows—for example, one window to show your email, another for your Calendar, and a third for Contacts. Outlook lets you open an unlimited number of windows at any time, and each can display any folder using any view.

To open an Outlook folder in its own window, right-click its icon in the Outlook Bar or in the Folder List and choose Open in New **W**indow. The second and subsequent windows don't include the Outlook Bar, and each window gets its own taskbar button.

## Using the Clipboard with Outlook

Outlook lets you cut, copy, and paste items using Windows-standard menus and keyboard shortcuts. When you paste an item, the results depend on the item type and view you start with and the destination you select. Outlook follows consistent rules, but the results may not be what you expect:

- If you paste an item from the Clipboard into a folder that holds the same type of item as the one on the Clipboard, you'll get a new item. If the item you pasted already exists in the destination folder, Outlook creates a duplicate item without warning you.
- If you paste an item into a folder that contains a different type of item, Outlook creates a new item using information from the pasted item. The effect is the same as if you had dragged the original item and dropped it onto the new folder's icon in the Outlook Bar.

➔ For a list of default drag-and-drop actions, see "Creating a New Item," p. 662

- If you paste an item into another application, be prepared to experiment, because the results are wildly variable. Pasting into Word yields an embedded Outlook object, for

example. If you want to paste plain text into a Word document, use the Edit, Paste Special command instead and choose the Unformatted Text option; the result includes all information from the fields that are visible in the current view. When you paste into Excel, on the other hand, the result is always plain text. If you start with a table view, the pasted text includes field names in the first row, whereas starting with the Address Cards view places a field name at the beginning of each field in each pasted record.

## Managing Files and Folders in Outlook

An Outlook option called *Integrated File Management* enables you to view files and folders directly in an Outlook window. Why choose this option over a conventional Windows Explorer view? The major advantage is that you can customize the view to display additional document properties and to filter by those properties. For example, if all the members of your workgroup save files to a single location, you can group those files by author name or by title, instead of being limited to viewing by filename and type. If you enable AutoPreview, you can also see any text in a file's Comments field, as in the example in Figure 27.21.



**Figure 27.21**  
When you use Outlook as a file manager, you can group, sort, and display many more fields than in Windows Explorer.

To see Integrated File Management in action, display the Other Shortcuts group on the Outlook bar. This collection includes shortcuts to three file locations: My Computer, My Documents, and the Favorites folder. You can add additional drives or folders to the Outlook bar by dragging and dropping their icons from the Folder List.



**Tip #321 from**

If you choose to use Outlook as a file manager, consider adding new groups to the Outlook Bar to store collections of related shortcuts, rather than putting all such icons in the My Shortcuts bar. Also, consider displaying the newly created Outlook Bar group in Small Icons view, so you can see more shortcuts at a time.

When you double-click a drive or folder icon, Outlook displays the contents of the specified folder in the current window. To see the selected drive or folder in its own window, right-click the icon and choose Open in New Window.

Use standard Outlook techniques to customize view settings; right-click the headings to add new fields, for example, or use filters to restrict which files and folders Outlook displays. These changes are persistent: Every time you display that folder's contents, you'll see the custom view you created for that folder. When you switch to a new drive or folder, the view changes to the default view for that folder.

**Tip #322 from**

You can define named custom views and apply them to folder windows in Outlook. For example, you can create a custom view that shows only Microsoft Word documents, grouped by author, with fields of your choosing. By saving that view, you can quickly apply it to any folder. Use the techniques described in the previous section to create and save a custom view; as the final step in the process, be sure to choose the option that lets you apply the view to All File Folders.

## Finding Outlook Items

If you use Outlook regularly, your collection of personal data will eventually become so large that you won't be able to find information simply by browsing through items. Outlook offers two tools to help you track down items based on their content. The Find pane, accessible via a button on Outlook's Standard toolbar, is fast and simple—sometimes too simple. The Advanced Find dialog box requires much more work, but it allows you to pinpoint a single item or snag an entire group of items with precision.

**Tip #323 from**

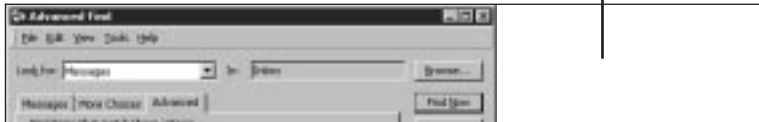
For some tasks, using built-in or custom Outlook views is faster and easier than performing a search. For example, if you use categories in the Contacts, Calendar, and Tasks folders, switching to the built-in By Category view makes it easy to locate all related items. Likewise, try the By Sender view in the Inbox folder to see all messages from a specific person, or the By Company view in the Contacts folder to organize all contacts based on the companies they work for.

## Finding Contact Information Fast

By far the fastest way to open any Contact's record is with the undocumented and unlabeled Find a Contact text box at the right of Outlook's Standard toolbar (see Figure 27.22). The only clue as to the purpose of this box is the ScreenTip that appears when you point to it.

Enter a part of any person's name or email address, and then press Enter. If only one item matches the text you entered, Outlook opens that record. If more than one contact's name includes the text you specified, you'll have to pick from the full list of matching names in the Choose Contacts dialog box. If multiple matches appear in the email address field, you'll see the Check Names dialog box from the Outlook Address Book; pick a name and click OK to open that contact's record.

Search for any part of a Contact's name.



**Figure 27.22**

Use the Find pane to search for items in the current Outlook folder. This technique can be blazingly fast, but your search options are limited.

## Using the Find Pane for Simple Searches



To use the Find pane, first switch to the folder in which you want to search, and then click the Find button on Outlook's Standard toolbar. The Find pane slides open just above the Contents pane, as shown in Figure 27.23.



**Figure 27.23**

Use the Find pane to search for items in the current Outlook folder. This technique can be blazingly fast, but your search options are limited.

Enter a word or phrase in the Look For box. To search through all text in all items in the folder, check the Search All Text in the <Item Type>. Click the Find Now button to begin the search. The search results replace the contents below the Find pane.

**Tip #324 from**

The Find pane displays the search results using the same view you start with. You can't change the view of the search results, so be sure you select the proper view before you click the Find Now button.

When you use the Find pane, be aware of the following limitations:

- Your search covers only items in the current folder. You can't use the Find pane for more than one folder at a time.
- When you use the Find pane, Outlook searches only in specific fields, based on the type of items the folder contains. You can't change the lineup of fields shown here; however, for some types of items you can check a box to search all text in all items in the folder.
- Outlook searches for the exact text in the Look For box; if you enter two or more words separated by a space or punctuation, all the words you entered must appear in the same field.
- Searches are not cumulative. Each time you click the Find Now button, Outlook searches the entire folder and replaces the results of your previous search.

**Tip #325 from**

If you want to perform a series of searches to narrow down a large group of items, use the Advanced Find dialog box instead.

It's tempting to dismiss the Find pane as too simple, but you'll find it is surprisingly useful when you want to see a list of all your contacts who live in Boston, find your next staff meeting or dentist appointment, or track down an email message from a specific person. Because Outlook maintains indexes for the most common fields, these searches are blazingly fast, even in large personal store files.

The text at the left of the Find pane tells you which fields Outlook will search. In the Inbox and other mail folders, for example, this option looks in the From and Subject fields. In the Contacts folder, Outlook searches within all name fields (including email addresses), the Company and Category fields, and all addresses. In the Contacts and Calendar folders and all folders that contain email messages, a Search All Text option is available.

**Caution**

As soon as you click the Find Now button, Outlook begins searching, and you can't stop the search while it's in progress. For searching the Contacts or Calendar folder, this is rarely a problem. However, when searching a folder that contains a large number of email messages, checking the Search All Text box can tie up your computer for several frustrating minutes. Always clear this box when searching mail folders; to search for text in mail messages, use the Advanced Find dialog box, which works in the background and includes a Stop button.

## Advanced Search Techniques

If the Find pane doesn't turn up the information you're looking for, use the more sophisticated (and complex) Advanced Find dialog box. This option lets you find items that contain specific types of information; you can also use it to search for virtually unlimited combinations of *criteria*. For searches you run regularly, you can save and reuse any set of Advanced Find criteria.

The Advanced Find dialog box is most useful when you want to search using multiple criteria or within specific date ranges.

- When filling out an expense report, you might search for appointments that include the word “Dinner” in the description and that occurred in the current month.
- If you've spent the first two months of the year gathering ideas for a new marketing campaign from a group of coworkers, you can find all those messages by searching for items in your Inbox that are addressed directly to you (excluding those where you were on the cc list), were sent between January 1 and February 28, and include the word marketing.
- If you use follow-up flags to identify email messages that require further attention, you can find only those messages that include a flag with specific text, such as Send Catalog.
- Before leaving on a road trip, search for contacts that you've assigned to the Business or Key Customer category and who are located in the cities or states you're planning to visit.

### Tip #326 from



If you regularly use Advanced Find, learn its keyboard shortcut—F3—or add an Advanced Find button to Outlook's Standard toolbar.

➔ For more details on how to add buttons to Office toolbars, see “Customizing Toolbars,” p. 39

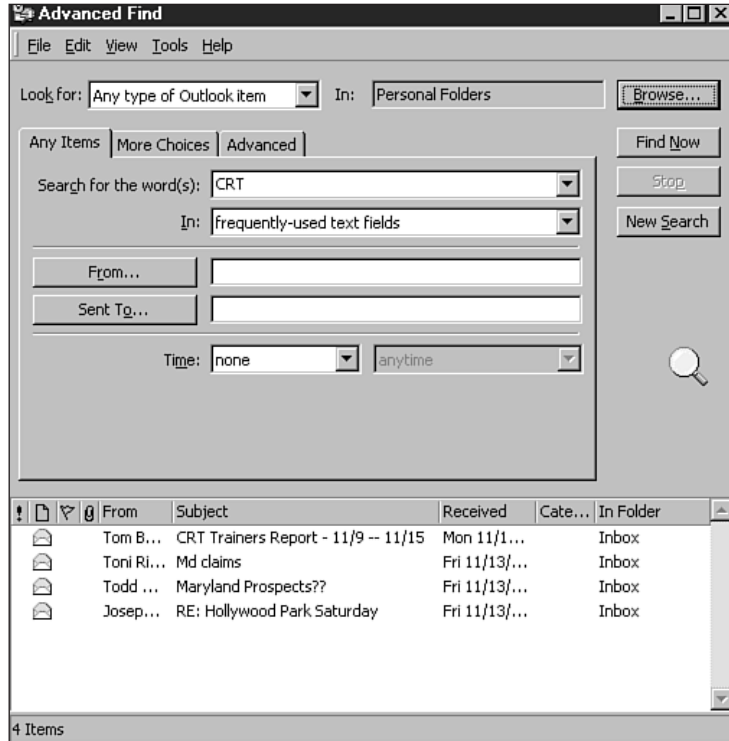
### Tip #327 from



When you're reading a specific email message, two built-in shortcuts are especially useful for locating related messages or for finding all messages from the same sender. Select a message, and then right-click and choose Find All. Choose Related Messages to find all messages that are in the current message thread; choose Messages from Sender to display a list of all messages in the current folder from the sender of the selected message. In either case, Outlook opens the Advanced Find dialog box and displays the results there.

To open the Advanced Find dialog box, choose Tools, Advanced Find. If the Find pane is visible, you can bypass the menus and click the Advanced Find link at the top right. In either case, you'll see the dialog box shown in Figure 27.24.

**Figure 27.24**  
Use this dialog box to search for Outlook items using a combination of criteria.



1. Use the drop-down **Look For** list to specify the type of items you want to search for—messages or appointments, for example. By default, this value is set to the type of item stored in the current folder. For the widest possible search, choose **Any Type of Outlook Item**—this option is useful if you want to search for all messages, contacts, appointments, and tasks related to a specific company, for example.
2. By default, your search covers only the current folder. To change that folder or select more than one folder, click the **Browse** button and check or uncheck boxes as needed.

#### Note

You can search multiple folders within only a single Personal Folders file. Thus, to search for related messages in current and archived folders, you'll need to perform two searches. Open a second copy of the Advanced Find dialog box if you want to see all search results simultaneously.

- Fill in your search criteria using one or more of the three tabs in the Advanced Find dialog box.

Figure 27.25

Figure 27.26

Field	Condition	Value
Sent	on or after	1/1/99
Message	contains	budget

Figure 27.27

- The most common options appear on the first tab; the name of this tab and the exact choices available vary slightly, depending on the type of item you're looking for. For example, when searching through mail messages you can look for text in the subject field only, in the subject field and message body (as shown in Figure 27.25), or in frequently used text fields.
  - Click the More Choices tab to see additional options that are specific to the type of item you're looking for. When searching for Outlook items, this tab always lets you select from the Categories field or find items based on their size. As Figure 27.26 demonstrates, you can use this tab to recover space in your Inbox by selecting messages that contain file attachments over a specified size, and then deleting them or moving them to a new location.
  - Use the Advanced tab (see Figure 27.27) to define criteria based on any Outlook field. Click the **F**ield button to select a field, and then enter a **C**ondition and (if necessary) a **V**alue. Click the **A**dd to List button to insert the criteria in the box above the button.
- Click the **F**ind **N**ow button to begin the search, using the criteria you entered. The results of the search appear in a simple list below the Advanced Find dialog box. Click the **S**top button to interrupt the search at any point.

Double-click to open any item in the search results list. To move, copy, delete, or edit items, use right-click shortcut menus (or click and drag to folders in the Outlook window). You can't choose a view other than the Table view; however, you can customize the fields that appear in the search results, change the sort order, and apply grouping. Right-click any column headings in the search results to display these options.

**Tip #328 from**



The settings in the Advanced Find dialog box are identical to those in the Filter dialog box that you use to define a custom view. Unfortunately, you can't transfer settings between these two dialog boxes. When you use the Advanced Find dialog box, you can view the results only as a simple list; if you want to see the search results in a different view, such as Address Cards, define a new view and create a filter for it.

Click the New Search button to clear all previously defined criteria and start from scratch.

## Saving and Reusing Outlook Searches

If you've performed a complex search, you can save the *parameters* and reuse them later. For example, if business takes you to a certain region regularly, you can create and save a search that finds all contacts for friends and business associates in that region; then you can save the search to display the most up-to-date version of the list later.

To save a search as a shortcut, first select its settings in the Advanced Find dialog box, and then choose File, Save Search. Enter a name and location for the file; your settings are stored in a small (about 4KB) Office Search shortcut file with the extension .oss. To reuse a saved search, double-click its icon, or open the Advanced Find dialog box, and then choose File, Open Search and select the shortcut.

**Tip #329 from**



Saved searches are most useful when stored on the desktop, in the My Documents folder, or (for those you use frequently) on the Start menu.

## Troubleshooting

### Dragging Doesn't Always Move an Item

*You tried to move an item from one folder to another, but Outlook opened the form for a new item instead.*

You can move items only to folders capable of storing that type of item. If you try to move one type of item (such as an email message) to a folder intended for a different item (such as the Contacts folder), Outlook assumes you want to create a new item, just as if you had dropped the original icon on the folder's shortcut in the Outlook Bar. Choose a different destination folder.

### Alarms Fail to Go Off

*You set a reminder on an Outlook item, but you never received a pop-up reminder.*

It sounds obvious, but Outlook must be running if you expect to receive reminders. Outlook displays past-due reminders the next time you start the program, but these reminders don't do you much good if you've already missed an important meeting or appointment. To ensure that Outlook runs every time you start your computer, place a shortcut to the program in your Startup group. And if you use reminders, avoid shutting down Outlook except when you plan to turn off your PC.

### Alarms Work Only in Four Key Folders

*Outlook was running, but you still never received a pop-up reminder for an item.*

Check the folder the item is stored in. This problem is most common when you use rules to automatically move incoming messages to a folder other than the Inbox. Outlook monitors only four specific folders for reminders and follow-up flags: Inbox, Calendar, Contacts, and Tasks. If an item is in another folder, even if it's a subfolder to one of these folders, Outlook will allow you to set the reminder, but it won't pop up the notice when you expect it. When you move the item back to one of these four folders, you'll see an Overdue reminder immediately.

### Resetting the Standard Views

*When you view information using a built-in Outlook view, some fields are missing, or the sorting and grouping options aren't what you want.*

Outlook makes it too easy to customize the built-in views, which is usually the cause when fields disappear from standard views. Fortunately, it's also easy to return a built-in Outlook view to its original settings. If you've messed up the Messages view of the Inbox or the Address Cards view of the Contacts folder, for example, just choose View, Current View, Define Views, and then select the view name and click Reset. This option is not available for custom views.

## Secrets of the Office Masters: Building a Library of Saved Searches

Outlook's Advanced Find dialog box is powerful but frustrating to use. Setting up even a moderately complex search typically requires a frightening number of mouse clicks in drop-down lists. One way to dramatically increase your productivity is to build a library of saved searches that you can reopen easily. Even if you need to modify one or two details of a saved search, it's usually much easier to do so than to start from scratch.

Create a subfolder in the My Documents folder called Saved Outlook Searches. Whenever you create and save a search, store it here so that you can access it again.

Next, open the Advanced Find dialog box and begin building the following library of universal searches. For each search, establish the type of item to look for: Messages, Contacts, or

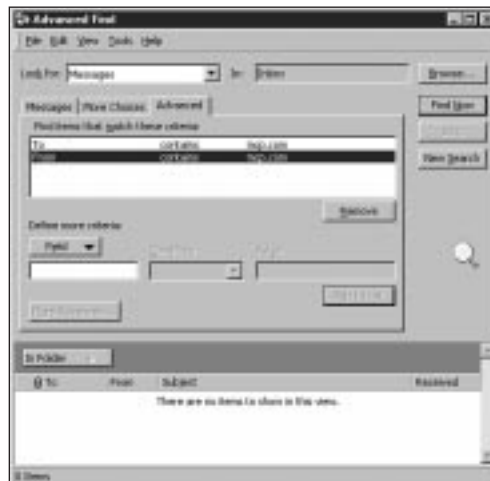


Tasks, for example. Next, specify which folders you want Outlook to search. If you've set up rules to process incoming messages into multiple folders, be sure to select all those folders; remember to create separate searches to cover archived messages in separate PST files.

One trick that even many Outlook experts don't realize is that you can customize the display of found items in the results pane at the bottom of the Advanced Find window. Right-click the column headings and use the Field Chooser to add or remove columns; you can also group messages in this display. When you save the search, these settings are saved also.

Use the bold text in each item as the name of the saved search. Feel free to add your own ideas or customize these suggestions with your own. To use one of the following searches, choose **File**, **Open Search** from the Advanced Find window.

- **Messages Received Since Beginning of Last Month**—Choose *Messages* from the **Look For** list, and then choose the **Inbox** and any other folders you use for incoming messages, especially those included as part of rules. Click the **Advanced** tab and add two criteria: **Received This Month** and **Received Last Month**.
- **Messages Received Since Beginning of Last Week**—Same as the previous item, but use **Received This Week** and **Received Last Week** as the criteria on the **Advanced** tab.
- **Messages Sent Since Beginning of Last Month** and **Messages Sent Since Beginning of Last Week**—Same as previous two items; specify the **Sent Items** folder as the location in which to search.
- **Company Mail**—Specify *Messages* as the **Item Type**. Choose the **Inbox**, the **Sent Items** folder, and any other commonly used message folders as the locations in which to look. On the **Advanced** tab, use criteria that search for a specific domain name in the **To** and **From** fields. For example, if you work for **MCP** and your email address is at **mcp.com**, add the criteria **To contains mcp.com** and **From contains mcp.com**; this will find all messages to or from other people in that domain. Use the **Field Chooser** to remove unnecessary icon fields and show both the **To** and **From** fields in the results pane; then group the results by the **In Folder** field.



# CHAPTER 28



## Expert Email Management

### In this chapter

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## Setting Up Internet Email Accounts

Before you can send or receive email over the Internet, you have to configure Outlook to communicate with incoming and outgoing mail servers. In this section, we focus on the most popular configuration by far: an Internet-standard SMTP server that supports POP3 connections.

### Note

Outlook also allows connections to several types of non-SMTP mail servers, including *Microsoft Exchange Server* (page 796). In all such configurations, you must choose CW mode, and then install and configure the appropriate MAPI service. This task is best performed by (or at least with the active cooperation of) the mail system's administrator.

Configuring a default account is usually a straightforward process; if you upgrade to Outlook from a previous version or any popular Internet mail client, Outlook migrates your settings automatically. The procedure to set up a new account depends on how you've configured Outlook. In *Internet Mail Only (IMO) mode*, a wizard steps you through the setup process, whereas in *Corporate/Workgroup (CW) mode*, you must fill in user, server, and connection details in a dialog box.

➔ For full details on the differences between Outlook's setup modes, see "Choosing an Outlook Configuration," p. 652

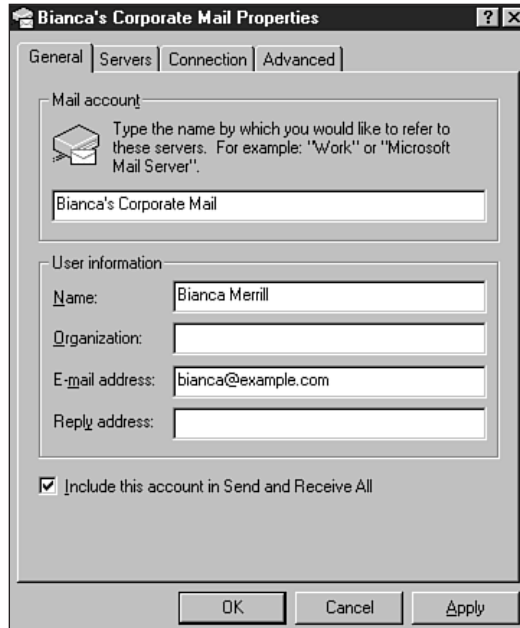
In either mode, it's possible to configure multiple email accounts. You must designate one of those accounts as your default account; you can configure additional accounts so that you check for new mail automatically, every time you check your default account, or only on demand.

- If you've configured Outlook to use CW mode, you need to fill in account information manually. Choose Tools, Services. In the Services dialog box, click the Add button, choose Internet E-mail from the Add Service to Profile dialog box, and click OK. Outlook displays the Properties dialog box, shown in Figure 28.1. To complete the configuration, you must supply information on at least three of the four tabs shown here.
- If you use Outlook in IMO mode, use the Internet Connection Wizard to fill in the basic details of a new account. Choose Tools, Accounts to display the Internet Accounts dialog box, which shows all accounts you've already set up. Click the Add button, and then choose Mail to launch the wizard. Follow its prompts to enter required information, such as the server names shown in Figure 28.2.

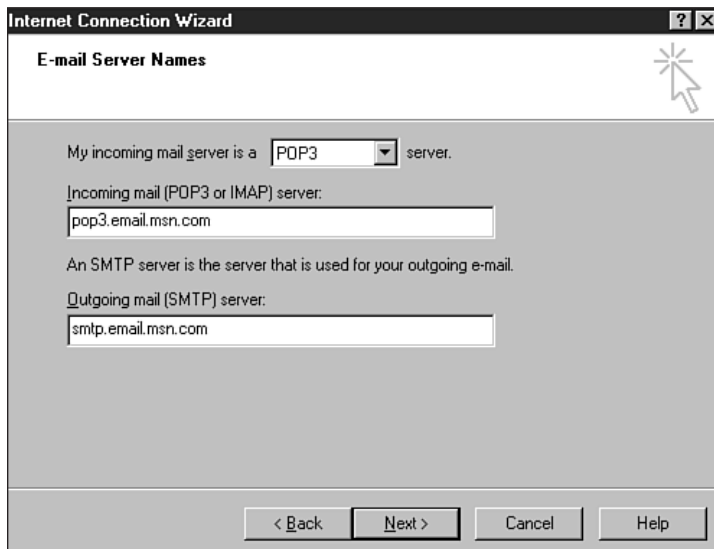
### Tip #330 from



The Internet Connection Wizard fills in only the most basic account information. After using it to create a new account, we recommend that you click the Properties button and adjust the information on the General tab (refer to Figure 28.1). In particular, give the account a friendly name (the default is the name of the incoming mail server) and fill in the Organization and Reply Address fields. The default settings also tell Outlook to check the account every time you click the Send/Receive button or synchronize; clear the check box at the bottom of the dialog box if you want to control when you check for new mail.



**Figure 28.1**  
Use this dialog box to configure a new Internet mail account in CW mode; the same dialog box appears when you want to adjust the properties of an account in either mode.



**Figure 28.2**  
The Internet Connection Wizard helps you fill in required information for Internet mail accounts.

To configure an account from scratch in CW mode, you must use the properties dialog box for that account. Use the same dialog box to reconfigure an account: In IMO mode, choose **T**ools, **A**ccounts, select the account name, and click **P**roperties; in CW mode, choose **T**ools, **S**ervices, click the Services tab, select an Internet Email account, and click the **P**roperties button. The four sections that follow describe available settings on each of the four tabs of the Properties dialog box.

## User Information

Click the General tab to fill in basic information about yourself and the account. Start with the account name at the top of the dialog box: Whatever you enter here appears on the list of available accounts when you choose **T**ools, **S**end/Receive. The name can contain up to 255 characters, including spaces. For the sake of convenience, we recommend you keep account names to 20 characters or fewer.

In IMO mode, the Internet Connection Wizard fills in the **N**ame and **E**-mail Address fields. Use the dialog box to add your company name in the **O**rganization field; Outlook doesn't use or display this information, but some mail readers do. Fill in the **R**eply Address field if you have multiple email accounts and you want to direct recipients to send replies to a different account. (See the following section for more advice on how to make best use of multiple email accounts.)

### Tip #331 from



If you use more than one mail account, enter slightly different information in the **N**ame field for each one. For example, in the account you use to send and receive mail through a corporate server, add your company name in parentheses after your username. When you receive replies to messages you sent through that account, you'll be able to spot them quickly just by looking at the name in the **T**o field.

## Server Names and Logon Information

On the Servers tab, specify the connection *protocol* your server requires client software to use to collect incoming mail: POP3 (Post Office Protocol) or IMAP (Internet Mail Access Protocol). On mail servers that use IMAP, messages are stored on the server itself rather than in your Personal Folders file. If you check this option, you will see an additional tab (IMAP) on the **<Account>** Properties dialog box, and the account name will appear in your folder list as a new icon at the same level as your Personal Folders file.

### Note

The IMAP protocol offers options that are especially useful over slow connections, but it also creates major configuration headaches when using Outlook in IMO mode. You can't automatically save copies of sent messages, for example, and you won't receive notifications of new mail, even if you've set up Outlook to do so. For a detailed list of problems and possible solutions, see Knowledge Base article Q185820, "Using an IMAP Server with Outlook."

In the Server Information section, you must specify fully qualified domain names for both incoming and outgoing mail servers. At some Internet service providers, both names are identical, usually in the form mail.example.com. Other common configurations use smtp, pop, or pop3 as the server name. MSN users should specify pop3.email.msn.com and smtp.email.msn.com, for example. Most ISPs provide this information when you establish an account, and those that care about their customers also make it easily available on the Web.



If you're trying to use Outlook to send and receive mail through America Online, see "Outlook and AOL Are Like Oil and Water," in the Troubleshooting section at the end of this chapter.

Most ISPs and corporate mail systems use a POP login, in which you specify a username and password. If that's true for the account you're trying to configure, enter your username in the **A**ccount Name field under the Incoming Mail Server section. If you want Outlook to supply your password automatically each time you connect to the server, enter it in the **P**assword field and check the Remember **P**assword box.

#### Note

Leave the password box blank if you want to eliminate the possibility that another user can send mail from your computer using this account; in that configuration, Outlook prompts you for your password the first time you connect to the server after starting Outlook.

On mail systems that use *Secure Password Authentication (SPA)*, a separate security package prompts the user for credentials when logging in to a server. This option is extremely rare at ISPs, with two noteworthy exceptions—The Microsoft Network (MSN) and CompuServe. If you use either of these ISPs, here's how to configure Outlook to authenticate passwords using SPA:

- If you have an account at The Microsoft Network (MSN), you must leave the **A**ccount Name and **P**assword fields blank and check the Logon Using **S**ecure Password Authentication option. When you first attempt to connect to an MSN mail server in an Outlook session, you'll see an MSN password dialog box.
- CompuServe users may choose this option or the simpler POP login. See the CompuServe configuration instructions for more details.

#### Tip #332 from

Because it uses SPA, MSN allows subscribers to send outgoing mail even if they're connected through a different network. This option enables you to send mail through a personal MSN account from your Internet connection at work, for example. For this configuration to work, however, you must specify `secure.smtp.email.msn.com` as the name of the outgoing server.

## Connection Options

For each Internet email account you set up, Outlook lets you specify separate connection options. In IMO mode, the Internet Connection Wizard handles this chore; click the Connection tab of the properties dialog box to specify how you want to access the server, using any of the three options shown in Figure 28.3.

**Figure 28.3**  
Use this dialog box to specify connection options for each account separately.



- **Connect Using My Local Area Network (LAN)**—The LAN option assumes you have a full-time connection to the Internet through a *local area network*. Unless you choose to work offline, Outlook checks for mail every 10 minutes. If you work in a corporate environment with a constant connection to a mail server, this most likely will be the best option for you. It's also the right choice for anyone with an “always on” Internet connection, such as a DSL or cable modem.
- **Connect Using My Phone Line**—This option uses the *Dial-Up Networking (DUN)* features in your version of Windows to make an Internet connection every time you send or receive email. Choose an existing DUN connection from the list at the bottom of this dialog box, or click the Add button to create a new one. When Outlook attempts to connect with your mail server, Windows displays the DUN dialog box for the connection you selected.

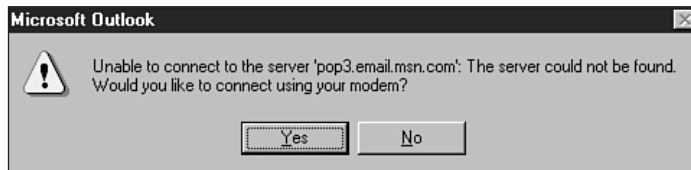
#### Note

For detailed instructions on how to configure a Dial-Up Networking connection in Windows 98, including hands-free options, see Chapter 26, “Establishing a Dial-Up Internet Connection,” in *Special Edition Using Windows 98*, by Ed Bott and Ron Person (also published by Que, ISBN: 0-7897-1488-4).

- **Connect Using Internet Explorer's or a 3rd Party Dialer**—In this configuration, Outlook does not dial or disconnect automatically. This option is your best choice if you use the same phone line for voice calls and Internet access and you want to control exactly when you connect to the Internet.

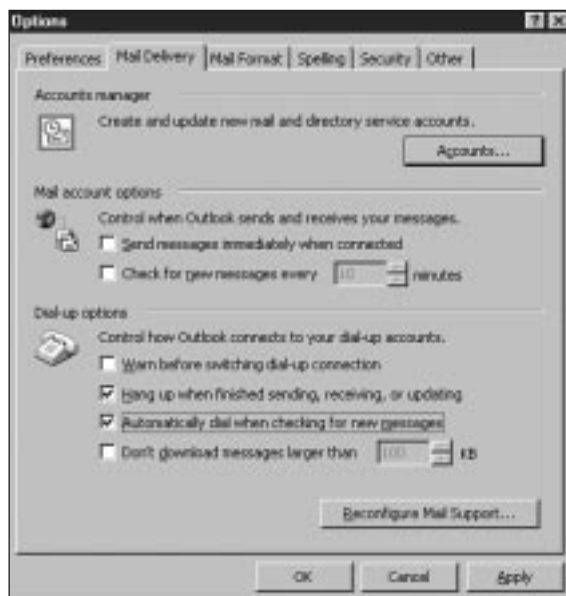
On a computer that is permanently connected to the Internet through a corporate network, you can set all accounts for LAN access; this option allows you to receive mail from any Internet account.

On a notebook computer that is occasionally connected to the Internet via a corporate network and at other times uses a dial-up connection, choose the LAN option, and then check the **Connect via Modem If the LAN Is Not Available** box (refer to Figure 28.3). This sets up a hybrid LAN/Dial connection option; if you attempt to check your mail and Outlook cannot find the specified server, you see the dialog box shown in Figure 28.4, which offers to make a dial-up connection for you.



**Figure 28.4**  
With a hybrid LAN/Dial configuration, Outlook offers to use a Dial-Up Networking connection when the network is unavailable.

On a computer that uses only dial-up connections, you can configure a variety of dial-up options. In IMO mode, choose **T**ools, **O**ptions, and then click the **Mail Delivery** tab to display the dialog box shown in Figure 28.5. Use these options to control whether Outlook dials and hangs up automatically after it finishes sending and receiving mail. Note that these options apply to all dial-up connections; you cannot apply separate dial-up options to individual accounts. (CW users can choose a subset of these options from the Internet E-mail tab.)



**Figure 28.5**  
Use the options shown here to create a hands-free connection for checking Internet mail.



**Tip #333 from***EQ & Woody*

If you have a dedicated line for dial-up Internet access and you want to check your messages automatically every two hours without disturbing a current connection or leaving a connection open unnecessarily, create a LAN/Dial configuration for the account. Choose **T**ools, **O**ptions, click the Mail Delivery tab, and specify that you want to check for new messages every 120 minutes. Check the Automatically Dial When Checking for New Messages and Hang Up When Finished Sending, Receiving, or Updating boxes.



If you experience problems sending mail through multiple accounts from a single connection, see “Working Around Anti-Spam Filters” in the Troubleshooting section at the end of this chapter.

## Advanced Options

In IMO mode, click the Advanced tab of the account properties dialog box to set any of the following options (in CW mode, these options are on the Internet E-mail tab):

- If your mail server uses nonstandard *TCP/IP* port numbers or requires a *Secure Sockets Layer (SSL)* connection to send or receive mail, use the boxes in the *Server Port Numbers* section. Outlook’s default settings use widely accepted Internet standards, and the overwhelming majority of users will never need to change these settings; do so only if your mail server administrator provides specific instructions.
- Use the Server Timeouts slider to control how long Outlook attempts to connect to the server before timing out and displaying an error message. The default is 1 minute; you can adjust this setting in 30-second increments to any value between 30 seconds and 5 minutes. Set a longer value if you get frequent error messages when trying to send or retrieve mail over a slow connection or a poor-quality phone line.
- Use the **B**reak Apart Messages Larger Than *nn* KB option only with older mail servers that cannot properly handle large messages. This option is rarely necessary; check it only when specifically instructed to do so by the administrator of a mail server. Use the spinner box to adjust the maximum message size your mail server can handle.
- Check the **L**eave a Copy of Messages on Server box when configuring a copy of Outlook to retrieve mail from a location other than the one at which you normally receive mail. For example, if you occasionally check your office mail from a home PC, but you want to maintain a complete archive of messages on your office computer, check this option on the home PC and leave it unchecked at the office. Any messages you download at home will remain on the server; when you return to the office and retrieve your messages, they will be available for you.

## Setting a Default Email Account

In both IMO and CW modes, you can create and use multiple Internet mail accounts. In IMO mode, Outlook designates the first account you create as the default, which will be used whenever you send mail without specifying a particular account. To designate another account as the default, choose its entry on the Mail tab in the Internet Accounts dialog box and click the Set As **D**efault button.

## Note

In environments where security is important, you can configure Outlook to use digital signatures, encryption, and other security options. For details on these extremely complex settings, we recommend that you pick up a copy of *Special Edition Using Microsoft Outlook 2000*, by Gordon Padwick (also published by Que, ISBN: 0-7897-1909-6).

## Choosing a Message Format

Outlook 2000 enables you to choose from three distinct message formats. In some circumstances, it makes the choice of format for you, and you have to specifically override that decision. If you're picky about which message format you send out, pay attention to the fine details in this section, because the obvious options do not always behave as you expect.

- **Plain Text**—Transmits nothing but letters, numbers, and symbols in the character set you use to create the message. Outlook strips any formatting, including colors, fonts, and inline pictures, when it sends the message.
- **Microsoft Outlook Rich Text**—The latest version of a format developed by Microsoft years ago, before HTML became popular. Using Rich Text format enables you to specify fonts, colors, bullets, and other text attributes, with one major caveat: Only recipients who use Outlook or another Exchange client will be able to correctly view that formatted information. If you send a Rich Text message to a recipient who is using another client program, they will see most of the text in your message as well as an attachment called Winmail.dat, which contains useless information. Outlook automatically creates messages in Rich Text format when you use group-oriented features such as voting buttons, Net Folders, meeting invitations, and task requests.
- **HTML**—Offers the same formatting options as Rich Text format, plus the capability to specify styles, automatically number lines, and add horizontal rules. Because the underlying format is the same as a Web page, you can also define background graphics and insert images into a message. Most modern Internet mail client programs are capable of reading HTML-formatted messages, including all versions of Netscape Mail and Outlook Express, as well as most recent Eudora versions. If the recipient's mail client software can't interpret HTML, the recipient sees a plain text version of the message with an attachment that can be viewed in any Web browser.

## Tip #334 from

Using HTML format, you can insert any image file into a message and send it via email with full confidence that the recipient can view that picture using an HTML-aware mail client or a browser. If you create an HTML document that contains a link to a picture file on your own computer, or if you forward a Web page containing graphics via email, you must take one extra step to ensure that the message contains the picture itself rather than a link to the file. Using Outlook's message editor, choose **Format**, **Send Pictures from the Internet**. If you've configured Outlook to use Word as your email editor, select the picture and choose **Edit**, **Links**; then check the **Save Picture in Document** box and click **OK**.

Which of these three formats will Outlook use when you create a message? As with so many configurable settings throughout Office, the correct answer is: It depends.

When you create a new message from scratch, Outlook uses the default format; choose **T**ools, **O**ptions and click the Mail Format tab to choose any of the three supported formats.

When you reply to a message, Outlook ignores the preferences you specified as your default and uses the format of the original message. This isn't as rude as it sounds: If you receive a message that was composed in HTML or Rich Text format, you can be certain that the sender is capable of reading messages in that format. On the other hand, when you receive a message in Plain Text format, the most conservative response is to assume that the sender either can't work with other formats or chooses not to use formatted mail, and thus to respond in kind.

### Caution

Pay close attention to message formats when you reply to messages. If the original message was in Rich Text format, your reply to the original sender uses that format as well; if you add recipients and they use mail client software that is incapable of reading Rich Text format, they'll be unable to read the original message or your reply.

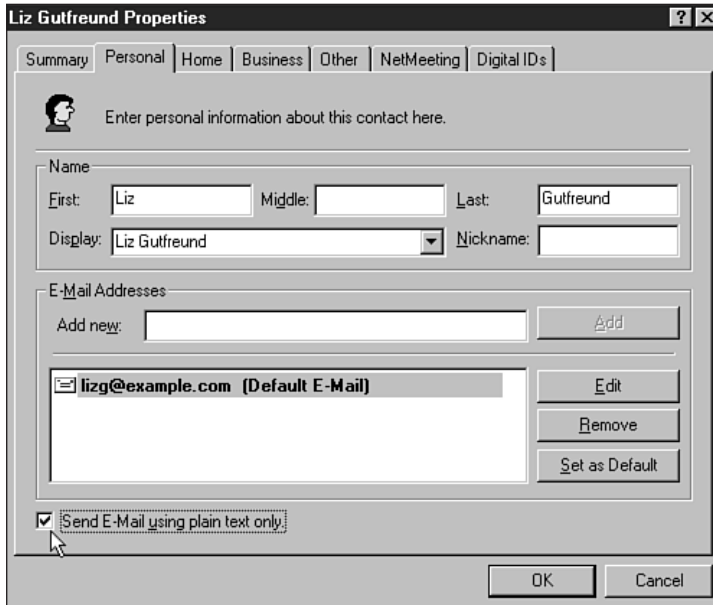
When you use Outlook's editor to compose mail messages, you can switch on-the-fly to a new message format. Choose **F**ormat, **P**lain **T**ext, **H**TML, or **R**ich Text. Note that you can't switch directly from HTML to Rich Text or vice versa; in either case, you have to first convert the message to Plain Text format, losing all formatting, and then choose the other format.

## Forcing Outlook to Use Plain Text Format

In one specific circumstance, Outlook uses Plain Text format, regardless of whether you are creating a new message or replying to an existing one. This option is useful when a particular contact has made it clear that he or she absolutely despises formatted messages; if your boss says "No HTML messages," you'd better listen. You would think that checking the Send Using Plain Text box on the General tab of your boss's Contact record would do the trick, right? Wrong. That option, despite its misleading label, affects only messages you send using Rich Text format. If you want to avoid sending HTML messages to a particular recipient, you have to set an additional option using the Outlook Address Book.

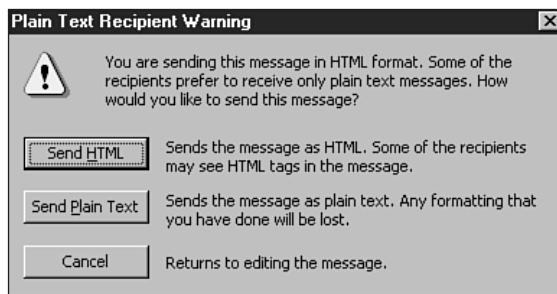


Click the Address Book icon and open that person's record. Click the Name tab to display the dialog box shown in Figure 28.6. Check the Send E-Mail Using Plain Text Only box. Despite the fact that these two options are worded in nearly identical fashion, they mean two different things; if you truly want to restrict a particular recipient to Plain Text format, you must check this option in both places.



**Figure 28.6**  
Don't be fooled by the similar-sounding option in the Contacts folder—this option in the Outlook Address Book is the only way to guarantee you'll send text messages to a particular recipient.

When you set both of these options correctly, you'll see a warning dialog box like the one in Figure 28.7 every time you try to send a formatted message to a recipient who prefers Plain Text format. If you prepare the message in Rich Text format, and you've set the plain text option in the Contacts folder, you'll see a nearly identical dialog box warning you that you're about to send an RTF message to a text recipient. In either case, you can convert the message to Plain Text format and send it immediately (losing all formatting in the process), or override the setting and send the formatted message anyway.



**Figure 28.7**  
Outlook warns you if you try to send an HTML-formatted message to a recipient that prefers to receive plain text messages.

## Advanced Message Format Options

Both Plain Text and HTML formats include advanced settings that can make your messages easier to read. (If you mess with these options too much, you can also turn outgoing text into garbage, so be careful.) To see and adjust these settings, choose **T**ools, **O**ptions, and click the Mail Format tab. In the Message Format section, choose Plain Text or HTML, and then click the **S**ettings button. The following options are available in each:

- Do you want to use *MIME* (the default) or *Uuencode* to handle attachments? This option is available in Plain Text formats only; HTML format always uses MIME to encode messages. Most modern mail clients speak perfect MIME; this option should be necessary only if you're trying to communicate with a truly ancient mail server.

#### Note

MIME stands for Multipurpose Internet Mail Extensions, an Internet standard for converting binary files and formatting into plain text so that it can pass through mail servers without getting scrambled. The name Uuencode derives from the phrase UNIX-to-UNIX encoding, although most modern mail clients on non-UNIX platforms also support this standard.

- For either format, you can select MIME encoding options: None (default), *Quoted Printable*, or *Base 64*. (For obvious reasons, these options are not available if you've chosen the Uuencode option.) You can also check a box to allow 8-bit characters in headers (the default is off). The default settings work best under most circumstances; in fact, we strongly recommend that most users avoid tampering with these settings unless specifically requested to do so by a mail server administrator.



*If recipients complain that your messages are filled with stray characters, especially equal signs, see "Stomping Out Stray Equal Signs" in the Troubleshooting section at the end of this chapter.*

- For HTML format only, check the Send Pictures from the Internet with Messages option if you always want to convert linked images in HTML documents to embedded graphics. By default, this option is off, and for good reason: Including those files can cause message sizes to soar. In general, it's preferable to enable this option on a per-message basis.
- In both formats, you can define the number of characters that Outlook allows on each line before inserting a carriage return and wrapping to a new line. By default, the wrap setting is 76 characters; you can reset this value to anything between 30 characters and 132. We don't recommend adjusting this setting.

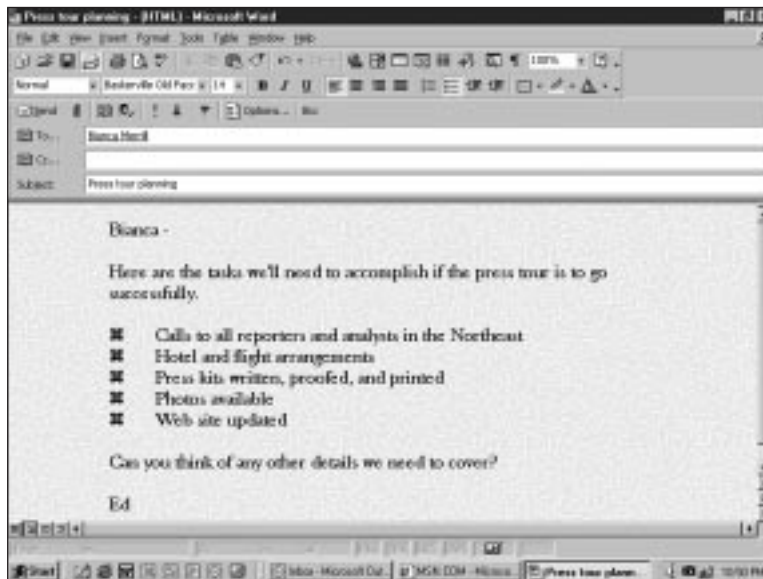
## Using Word As an Email Editor

Outlook enables you to replace its built-in editor with Word. In previous Outlook versions, this option was known as WordMail, and we haven't found many serious Outlook users who did more than experiment with it. In Outlook 97, switching on WordMail was guaranteed to slow down your system and sooner or later—usually sooner—cause your system to crash.

In Outlook 2000, the integration between Word and Outlook is much improved, but still far from perfect. If you configure Outlook to use Word as its default editor, you have to deal with the following tradeoffs:

- On the plus side, you get to use Word's much more sophisticated editing tools to compose messages. That means you can take advantage of AutoText and AutoCorrect in messages, and you can use macros and templates to automate message creation. If your default format is HTML, you'll appreciate Word's editing tools, especially because you can use Word tables and text boxes to organize an HTML message. You can use *themes* (page 1181) to add personality to your messages. And Word's unlimited undo feature is a godsend when composing messages.
- On the downside, you have to load Word to compose a new message; that slows down performance initially and uses more memory than Outlook alone. You can't choose a message format—whichever format Outlook chooses is the one you're stuck with. And despite dramatic improvements in this version, you can expect the Word-Outlook combination to crash more often than either program would on its own.

To use Word as the default editor for all new messages, replies, and forwards, choose Tools, Options, click the Mail Format tab, and check the Use Microsoft Word to Edit E-Mail Messages box. Figure 28.8 shows the result: a Word window with one extra toolbar and a set of address headers at the top of the document.



**Figure 28.8**  
When you use Word as your email editor, you get a richer set of editing tools, but you also lose some options.



If you're not willing to configure Word as your full-time mail editor, you can still get most of the benefits of this configuration and choose exactly when you want to use it. Instead of using Outlook to compose a new message, open a new Word document instead, then click the Email button on the Standard toolbar. This adds the address toolbars to the document, enabling you to create and send a message in HTML format. You can't use this option for replies or forwards, however.

**Tip #335 from**


To put Word's editor at your fingertips on a per-message basis in Outlook, add a custom button to Outlook's Standard toolbar. Open the Inbox and choose **T**ools, **C**ustomize. Click Actions in the Categories list; then scroll through the Commands list, select the Microsoft Word option (it will be followed by your default message format—HTML, Plain Text, or Rich Text), and drag it onto the toolbar. Repeat these steps for the Contacts window, the Outlook Today page, and any other windows where you may want to use this button.

## Creating, Managing, and Using Email Addresses

In terms of complexity, Outlook's address-book structure falls somewhere between baseball's infield-fly rule and the U.S. tax code. What looks simple on the surface quickly becomes baffling, thanks to the many locations in which Outlook can store email addresses and other contact information, and two completely different interfaces for viewing and editing that information.

### Locating Your Outlook Addresses

Where are your email addresses stored? Depending on your configuration, Outlook may use any of the locations listed in Table 28.1.

**Table 28.1 Outlook Address Book Options**

Location	Mode	Description
Global Address Book	CW only	This is the master address book on a network running Microsoft Exchange Server.
Offline Address Book	CW only	Available only on networks running Exchange Server; by default, it includes all addresses from your site, typically a subset of the Global Address Book.
Contacts folder	IMO and CW	The default location for addresses in your <i>primary store</i> (page 655); you can create additional folders containing Contact items and make them available for use with email messages as well.
Personal Address Book (*.pab)	CW only	The original address-book format for Exchange clients; this option is still available in Outlook 2000, primarily for backward-compatibility purposes. You can have one and only one PAB file per Outlook profile.
Windows Address Book (*.wab)	IMO and CW	This application, included with Outlook Express, can store addresses in its own file format (WAB) or can share information with Outlook's Contacts folder (in IMO mode only).
Other MAPI-based address books	CW only	Third-party software developers can hook address books into Outlook as services, using their own file formats to store address information.

Did you notice we didn't mention the Outlook Address Book? In CW mode, the Outlook Address Book is an extremely useful service; in IMO mode, it represents an important alternative method for viewing the contents of the Contacts folder. Curiously, however, in both configurations the Outlook Address Book does not represent a physical location for storing addresses. As we'll see shortly, this is a crucial concept in understanding how to configure Outlook addresses.

**Tip #336 from**

When you install other programs, they may take over functions you expect Outlook to handle, including email and address-book management. To specify that you want to use Outlook as your default email, calendar, and contact manager, open Internet Explorer and choose **Tools**, **Internet Options** (or double-click the Internet Options icon in Control Panel); then click the **Programs** tab and choose Microsoft Outlook from the drop-down list next to each category.

Outlook includes the Contacts folder as a default store for contact information, but you may find it useful to create additional contact folders. For example, at work you might want to segregate information about friends and family in one folder and reserve your main contacts folder for business contacts. If your collection of contacts is particularly large, you may choose to subdivide it even further, into separate folders for Customers and Suppliers, for example, all stored as subfolders under the Contacts folder.

## Configuring the Outlook Address Book



Savvy Outlook users do most address management from the Contacts folder. Its default data-entry form is the most flexible way to enter new items, and its support for custom views and filters makes it the best choice for quickly viewing information. But Outlook also offers another view of the Contacts folder; click the Address Book button on the Standard toolbar to display a window on your Contacts like the one shown in Figure 28.9.

➔ For full details on how to use the Contacts folder, see "Managing Your List of Contacts," p. 750

It's possible—no, make that way too easy—to inadvertently configure Outlook so that you have more than one address book. We strongly recommend that you double-check your Outlook setup to make sure you've eliminated the possibility of creating duplicate addresses in more than one address book.

In CW mode, follow these steps:

1. Import the contents of your Personal Address Book into your Contacts folder.

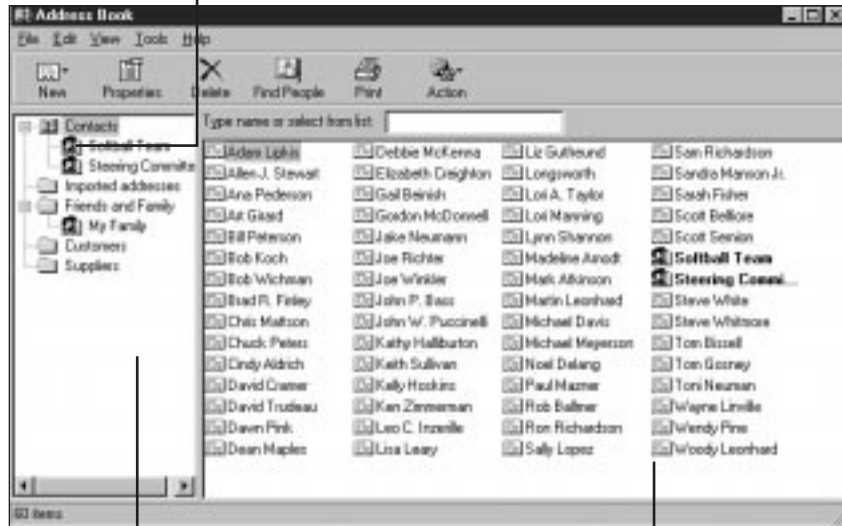
➔ For step-by-step instructions on how to import information into Outlook, see "Importing and Exporting Outlook Information," p. 804

2. Choose **Tools**, **Services**, and remove the Personal Address Book from your list of installed services.



Distribution Lists (called Groups in the Address Book view) appear here.

**Figure 28.9**  
If you've configured Outlook correctly, the Address Book view shows information that's stored in your Contacts folder.



Choose View, Folders and Groups to display this list.

As in any Explorer window, you can change this view to show large or small icons, details, or this list.

3. If the Outlook Address Book is not in your profile, click the **Add** button in the Services dialog box and install it. Close and restart Outlook if prompted.
4. Right-click the Contacts folder icon in the Outlook Bar and choose **Properties**. On the Outlook Address Book tab, check the **Show This Folder As an E-mail Address Book** box. Click **OK** to close the dialog box and repeat this process for any other folders that contain contact items with email addresses.
5. Choose **Tools**, **Services** again. Click the **Addressing** tab and make sure the Contacts folder is specified as the default location in the top two boxes. If you specified other contact folders in step 4, click the **Add** button and add their names to the list of folders Outlook checks when addressing messages. Adjust the order of names shown here if necessary. When you finish, the list should resemble the one in Figure 28.10.
6. Click **OK** to close the Services dialog box; then choose **Tools**, **Address Book** and verify that the folders you specified are the only ones shown in the Address Book.



**Figure 28.10**  
In CW mode, configure Outlook to always check your Contacts folders first.

**Note**

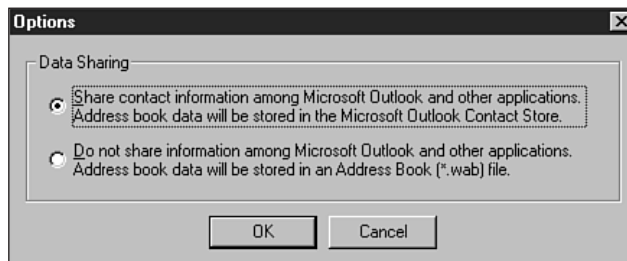
If you receive email through an Exchange Server, your profile may also include an Offline Address Book. Do not remove this entry from your profile.

In IMO mode, the process is far simpler:

1. Click the Start button, choose Run, type wab, and press Enter. The Windows Address Book opens.
2. Choose Tools, Options to display the dialog box shown in Figure 28.11. Choose the option that allows contact managers to share applications and store all items in the Contacts folder.

**Note**

This option is not available if you've configured Outlook in CW mode.



**Figure 28.11**  
In IMO mode, make sure you set this option so that the Windows Address Book doesn't store duplicate items.

3. By default, the contents of the Contacts folder are always available in your Address Book view. Right-click the icon for any other folder that contains contact items with email addresses and choose Properties. Then click the Outlook Address Book tab and check the Show This Folder as an E-mail Address Book box. Click OK to close the dialog box. Repeat for each additional contact folder.
4. Choose Tools, Address Book and verify that all the folders you selected are available.

**Tip #337 from***EQ & Wendy*

You don't have to designate all contact folders as address books. For example, you might create a folder with contact items that identify restaurants, hotels, airlines, and other travel-related institutions. Because you'll usually want to call these contacts rather than sending them email, don't designate this folder as an address book.



When you click the Address Book button on Outlook's Standard toolbar, the view you see is slightly different depending on your Outlook configuration.

- When you create a new Address Book item or open an existing one in CW mode, Outlook displays the default form used by the Contacts folder. As a result, the Address Book is not particularly useful in this mode, although as we'll demonstrate shortly, a slightly different view of the Address Book pops up whenever you want to add an email address to a message.
- In IMO mode, the Address Book button actually opens the Address Book application, and when you create a new Address Book item or open an existing one, you use a different dialog box than the one in the Contacts folder. In general, it's much easier to edit email addresses in this view; it's also easier to view and edit personal information, such as the name of a contact's spouse and children, as well as birthdays and anniversary dates. If you've configured the Address Book and Contacts folder to share information, entering or editing an item in either window changes the information in the Contacts folder.

**Tip #338 from***EQ & Wendy*

One aspect of the Address Book is supremely annoying, and there's no easy way to work around it. When you create a new record in the Contacts folder, it shows up in the Address Book in "First Name Last Name" format. You can change each record individually to display last name first, with or without a comma; however, there's no easy way to make this change globally.

**Tip #339 from***EQ & Wendy*

When you create multiple address books, it's also easier to share them without compromising personal information. For example, share a folder full of business addresses with a coworker, while keeping your personal addresses in an unshared folder.

## Addressing an Email Message

When addressing an email message, you have several options:

- The most reliable way to make sure you address each message correctly is to reply to an email message you've received. In this situation, you can guarantee that the address is accurate.



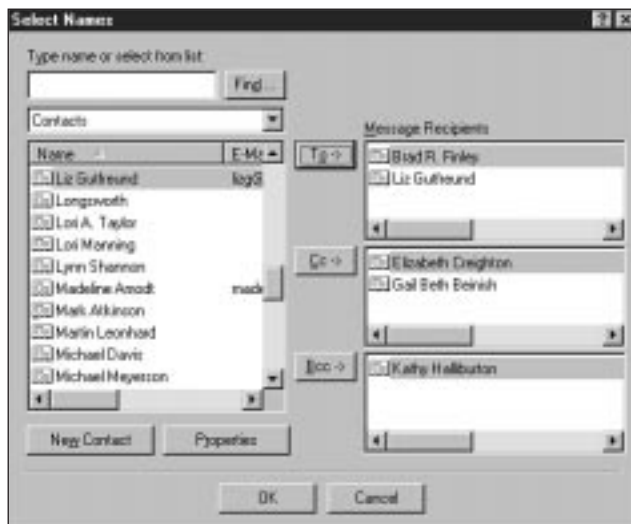
*If you reply to a message and get a delivery failure, see "When Your Email Bounces" in the Troubleshooting section at the end of this chapter.*

### Tip #340 from

*EQ & Wendy*

Although it's not immediately obvious, all address information in the header of a message you receive is "live." Right-click any address to display a shortcut menu. Choose **A**dd to **C**ontacts to create a new item in your Contacts folder using the name and email address displayed in the header, or choose **L**ook Up **C**ontact to search your Contacts folder for an item that contains a matching email address. You can also use the shortcut menu to copy the address and paste it into another message.

- For one-off addresses you don't plan to reuse (such as a request for information from a merchant), enter the full email address in the **T**o, **C**c, or **B**cc box. If the email address you enter matches one in the Contacts folder, Outlook replaces the information you typed with the display name from that item.
- Open the Address Book and choose **A**ction, **S**end Mail, or open the Contacts folder and choose **A**ctions, **N**ew **M**essage to **C**ontact.
- Click the **T**o, **C**c, or **B**cc buttons to display the Select Names dialog box, which is actually a different view of the Address Book. Figure 28.12 shows what this view looks like in IMO mode; use the buttons shown here to add addresses to any of the three envelope fields, or to create a new item or open an existing one. This is the easiest way to add a large number of addresses to a message quickly and accurately.



**Figure 28.12**

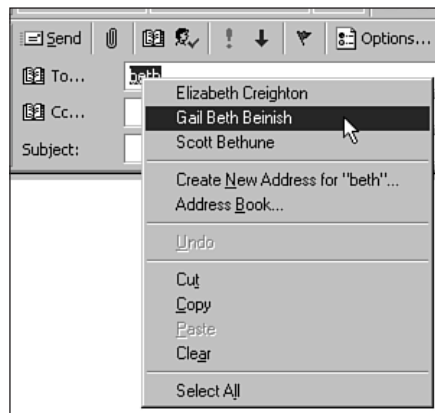
Select one or more names from the list on the left; then click one of the three buttons to add the selected addresses to the fields on the right.

- For people you send mail to most frequently, enter any portion of the recipient's name in any envelope field (To, Cc, or Bcc) and let Outlook's AutoComplete feature resolve the address for you. (To enter multiple names this way, separate each name with a comma.)

AutoComplete is a power user's dream. If Outlook finds one and only one matching item in your Address Book, it completes the name automatically. If Outlook finds multiple matching names, it underlines the text you entered with a red wavy line; right-click to pick from a menu of possible matches, as shown in Figure 28.13. If you recently used the same name, Outlook resolves it to the name you used last time and underlines it with a green dotted line; if the name is not correct, right-click to choose another one.

**Figure 28.13**

Use this shortcut menu to resolve names when the text you enter matches several entries in the Address Book.



**Tip #341 from**

*EQ & Woody*

Most Outlook experts don't even know this tip: Every contact item includes a field called Nickname that you can use to make name matching more precise. To find this field, open the contact's record in the Address Book (not the Contacts folder) and click the Personal tab. Enter the text you want to use as a shortcut when addressing mail to that person; try to find a nickname that isn't also part of other names. For example, if one of your contacts is named James R. Jones, enter JRJ as his nickname and you can avoid seeing the red wavy lines in the future.

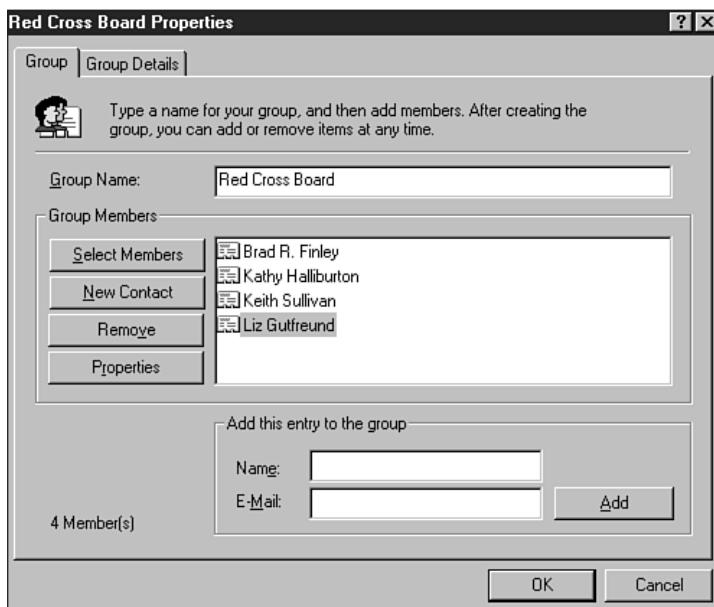
How do you deal with contacts that have multiple email addresses? Don't create multiple Contact items, each with a different address; that will cause a mess when Outlook tries to resolve the addresses for you. Instead, enter each different email address as part of the same Contact item. When you use the Contacts folder, you can enter up to three email addresses; the first is the default address that Outlook uses when sending mail to that person. To enter more than three addresses for one person, click the Name tab in the Address Book (in some versions of Address Book, you may have to click the Personal tab instead), enter the address, and then click the Add button. You can also use this dialog box to change the default address so that you can send mail using that address.

- ➔ If you've inadvertently created multiple Contact items for the same person, you may be able to merge them into a single record; for details, see "Merging Duplicate Contact Items," p. 758

## Creating and Using Personal Distribution Lists

Outlook 2000 enables you to create a single alias called a *Personal Distribution List* that represents a group of email addresses. Use this option to avoid having to repeatedly enter a slew of addresses when you routinely send mail to the same group of people. For example, if you're on the board of a local charity, you can create a Personal Distribution List that includes all the other members of the board, and then name it Board. When you type that name in an envelope field on a message form, Outlook recognizes the list and resolves it for you. When you send the message, Outlook substitutes all the individual names so that your message is delivered correctly.

To create a Personal Distribution List in the Contacts folder, choose File, New, Distribution List. From the Address Book, choose File, New Group. Although the dialog boxes are completely different in these two methods, the basic order of steps is the same. Figure 28.14 shows the dialog box that appears when you use the Address Book to create a new group.



**Figure 28.14**  
Use this dialog box to add names to a Personal Distribution List.

Enter the name you want to use for the list in the Group Name field. Click the Select Members button to add names from the Address Book. Click the New Contact button to create a new item so you can add it to the list; if you want to add a name and address to this group without creating a new item in the Contacts folder, click the Add button. If you need to change the lineup of names that make up the list—if a member of the board quits and another takes his or her place, for example—open this dialog box again and use the Remove button to get rid of the names you no longer need.

**Tip #342 from**


If you routinely send messages to a large number of recipients—more than 10, for example—think carefully about how to address the message. If it's not necessary for any of the recipients to respond to all others on the list, consider addressing the message to yourself and adding the other recipients' names to the **Bcc** field. Your message is far more likely to be read in this format, especially by people using mail software that displays the entire message header—a list of 20 or so names takes up the entire screen and pushes your message completely out of sight otherwise.

## Creating and Sending Messages

After successfully addressing a message, composing a message is a reasonably straightforward process. If you've chosen Plain Text format, enter text and add attachments (you can drag any file from an Explorer window into the message window to attach it, or choose **I**nsert, **F**ile to choose items from a dialog box). For Rich Text messages, you can also use font and paragraph formatting. HTML messages give you the option to add pictures, background colors and graphics, and other Web-style formatting. Depending on the message type you've selected, you can also choose several advanced options.

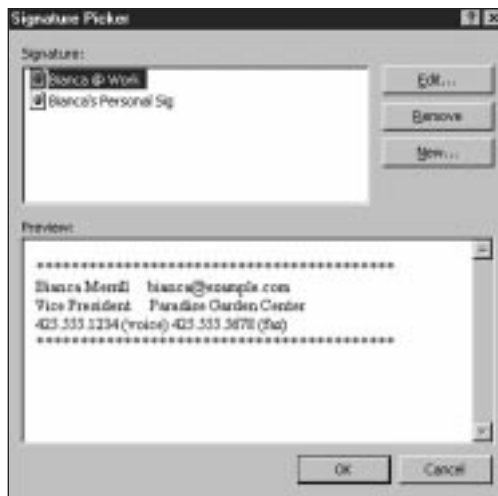
### Using Signatures

Outlook enables you to create a *signature*—a short block of text (and, optionally, graphics or HTML code) that identifies you and perhaps supplies some information about you or your company.

If you use Outlook as your message editor, you can create one or more signatures for use with all outgoing messages.

1. Choose **T**ools, **O**ptions, click the Message Format tab, and then click the Signature Picker button. The Signature Picker dialog box (see Figure 28.15) shows all the signatures you've created so far.

**Figure 28.15**  
Create multiple signatures for use with different types of messages.



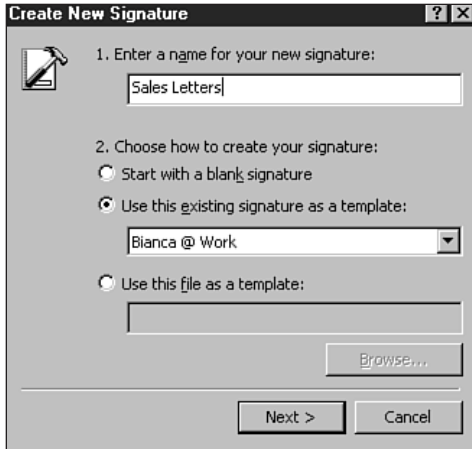


Figure 28.16

2. Click the **N**ew button. In the Create New Signature dialog box (see Figure 28.16), enter a descriptive name for your signature and specify whether you want to create it from scratch or base it on an existing signature or file. Click Next to continue.
3. In the Edit Signature dialog box (see Figure 28.17), enter the text you want to use for your signature.
4. Click the **F**ont and **P**aragraph buttons to add formatting to selected text. To add advanced formatting using an HTML editor such as FrontPage, click the **A**dvanced Edit button.
5. Click **F**inish to save your signature.

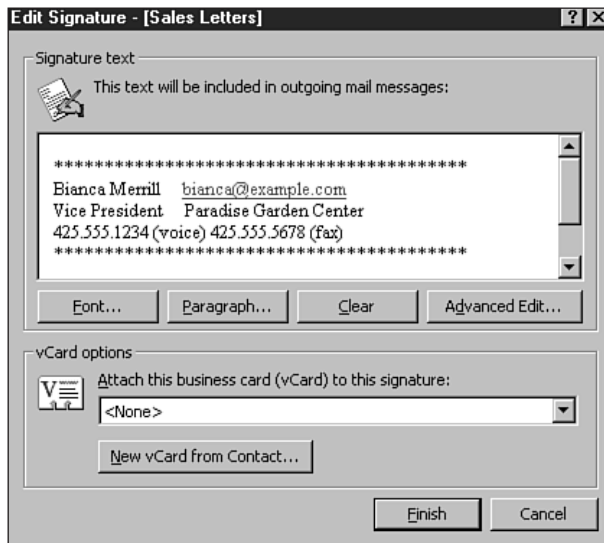


Figure 28.17

Your signature can include just your name and title, your email address, or complete contact information.

## Tip #343 from



Although no button is available to rename an existing signature, it's easy to accomplish the same goal. Select the signature you want to rename and click the **N**ew button. In the Create New Signature dialog box, enter the name you want to use, and then select the Use This **E**xisting Signature as a Template option. Click Next to continue, and then click **F**inish to save the signature under the new name without editing it. Finally, select the original signature and click **R**emove.



When you specify a default signature on the Mail Format tab of the Options dialog box, Outlook automatically adds that text to the end of every new message you create. A check box lets you specify whether you want to include the signature with replies and forwards. To choose which signature you want to use on each new message you create, choose <None> as the default signature. When creating a new message, choose Insert, Signature, and select an entry from the list of available signature files. Note that if you use a default signature, you must delete that text before you insert a new one; this routine dumps the new text into your message body without deleting the old signature.

To create a signature when you use Word as your email editor, open Word and choose Tools, Options, click the General tab, and click the E-mail Options button. Although this dialog box differs slightly from the Outlook version, the basic steps are the same.

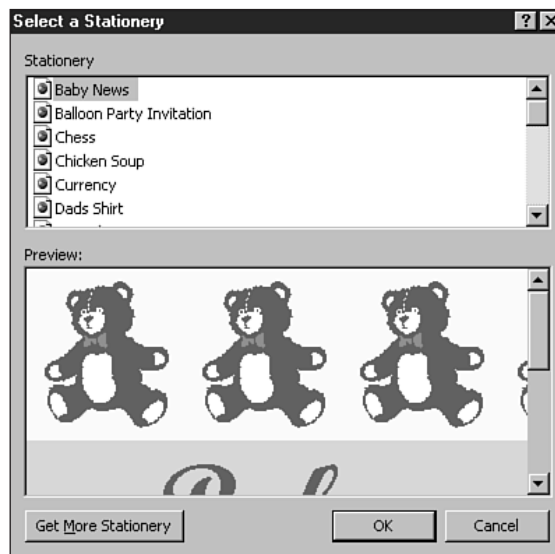
## Using Stationery and Fonts in Formatted Messages

Want to impress some message recipients and annoy others—sometimes even in the same message? Use a graphic image and predefined fonts as *stationery* for an email message. Like a Web page theme, stationery adds consistent formatting to an email message that you compose in HTML format. If you stick with a simple color and font selection, the effect can subtly enhance your message; if you go too far, it adds unnecessary distraction and can make message text nearly impossible to read. Outlook's stunningly inconsistent collection of built-in stationery choices offers plenty of examples of both.

The procedures for using stationery are slightly different, depending on whether you use Outlook or Word as your email editor.

If you use Outlook as your message editor, you can make a particular stationery selection your default for every new message. Choose Tools, Options, select the Mail Format tab, and click the Stationery Picker button. Select a background image from the Select a Stationery dialog box (see Figure 28.18) and click OK.

**Figure 28.18**  
Most of Outlook's default stationery selections are corny graphics like this one.

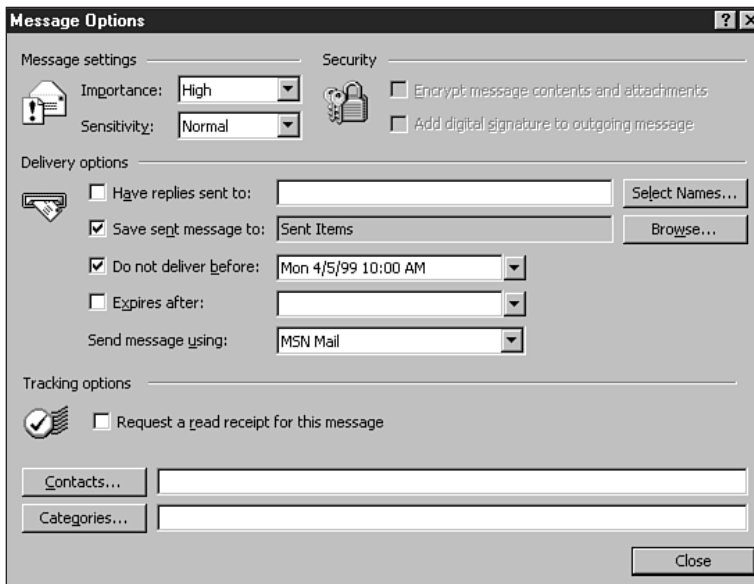


Stationery is appropriate for one-shot “gag” messages. Use the Running Birthday Stationery to send a humorous happy birthday message to a friend or family member, for example; choose **A**ctions, **N**ew **M**ail Message **U**sing. The cascading menu that appears here includes the stationery types you’ve used most recently; if you want to choose another one, click **M**ore Stationery.

If you use Word as your email editor, personal stationery is tied to your collection of Web themes. To choose a default background image or color and matching fonts for messages you create using Word, open Word, choose **T**ools, **O**ptions, click the **E-mail Options** button, and set options on the Personal Stationery tab.

## Setting Message Options

When you click the Send button after composing a message, you tell Outlook to deliver the message using all your default settings: The message goes to your default mail server, you get a copy in your Sent Items folder, and that’s about it. If you want the message to have special handling, click the Options button and adjust any of the settings in the Message Options dialog box shown in Figure 28.19.



**Figure 28.19**

Several options in this dialog box, such as the capability to defer sending a message, can be extremely useful in business.

In the Message Settings box, use the drop-down Importance and Sensitivity lists to change these fields from their default setting of Normal to Low or High. Other Outlook users will see a blue down-arrow in the message list for Low Importance messages, and a red up-arrow for High Importance messages.

## Tip #344 from

EQ &amp; Wendy



If you encourage coworkers to use the Low and High Importance settings for messages, you can use the Rules Wizard to automatically highlight or file messages based on this setting. Skip the Options button and use the High and Low Importance buttons on the Standard toolbar when composing a message.

The five choices in the Delivery options section are probably the most useful:

- Check the **H**ave Replies Sent To box and enter an alternate Reply-to address. This option is especially useful when you want an outgoing message to go out under your name, but you want to redirect replies to a different address. As the president of a company, for example, you might want to announce a new benefits plan for your employees; if you specify the human resource director's name in this box, you can encourage employees to reply directly to your message for more information.
- Clear the **S**ave Sent Message To box if you don't want to save a copy of the current message, or click the **B**rowse button to select a different folder.
- Check the **D**o Not Deliver **B**efore box and enter a date if you want to compose a message and send it automatically at a time you specify. This option can be extremely useful when the timing of a message is crucial but you won't be physically present to send the message. For example, let's say you're planning an important announcement for Monday at 10 a.m.; go ahead and prepare the press release, and then enter `Monday 10am` in this box. Make sure to leave Outlook running with the option to automatically send and receive mail every 10 minutes or so, and your message will go out within 10 minutes of the time you specify, even if you're out of the office.

## Note

If you use the deferred delivery option to schedule messages far in the future, be prepared for an annoying side effect of this option. Every time you close Office, you'll see a dialog box warning you that there are still messages in your Outbox and asking whether you want to exit anyway. If you know you'll restart Office before the message is due to be sent out, click OK.

➔ For more details on how to enter dates using plain-English equivalents in any Outlook item, see "Entering Dates and Times Automatically," p. 666

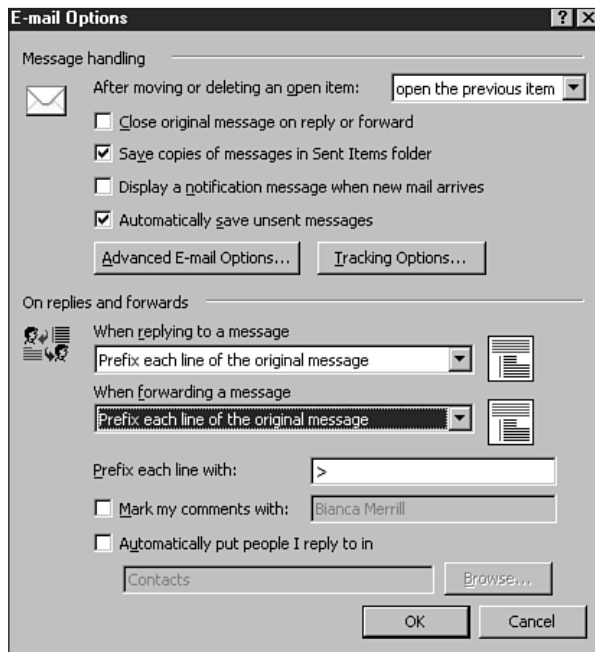
- Check the **E**xpires After box if you use Exchange Server and your message has a time element to it. For example, if you're sending a reminder of a meeting that starts in an hour, add an expiration time that matches the start of the meeting. Anyone who checks their email before the start of the meeting will see the message. In the case of recipients who haven't picked up the message by its expiration time, the Exchange Server automatically deletes it, and you avoid cluttering up their Inboxes.
- Click the **S**end Message **U**sing drop-down list to choose an email account other than the default. This option has the same effect as choosing **F**ile, **S**end Using, and the account name.

Are you tempted by the check box in the Tracking Options section that enables you to request a receipt when your message is read? Temper your expectations. If your message is going over an Exchange Server to another user on the same server, this option works exactly as you expect: When the recipient opens and reads it, the server sends you a delivery notice. But if your message has to pass through an SMTP server before reaching its destination, it's extremely unlikely you'll see a receipt—most Internet-standard servers do not support this feature.

## Setting Reply and Forward Options

When you reply to a message, it's customary to include some or all of the original message to give the recipient a context for your answer. Outlook lets you choose from several formatting options to help make the original message text stand out. You can also define how Outlook identifies the original message text when you forward a message to someone else. Regardless of which option you choose, the insertion point appears at the top of the message window, with the original message below it.

To set either or both options, choose **T**ools, **O**ptions, click the Preferences tab, and click the E-mail Options button. If you routinely use HTML format, you can include the original message, or include and indent the original message. If you use Plain Text as your default format, we recommend that you choose the Prefix Each Line of the Original Message option and select the default quote character, a greater than (>) sign, as shown in Figure 28.20.



**Figure 28.20**  
If you send mostly Plain Text messages, use the options shown here to prefix the original message in replies and forwards.

**Caution**

Avoid two options available in this dialog box. Specifying Do Not Include Original Message for replies makes it difficult (and sometimes impossible) for recipients to figure out what you're responding to. The Attach Original Message option forces recipients to go through the extra step of detaching and opening an attachment to read the original message. They won't thank you for the extra work.

## Checking Your Mail and Reading New Messages

Some experts recommend that you check email only twice a day—any more often, they say, and you won't be able to concentrate on what's really important. At companies that live and die by email (including many in the computer and Internet industries), following that advice would be a classic career-limiting move.

Still, the general point is valid: Figure out how often you need to check email, and use Outlook to do as much of the work as possible. You have a variety of manual and automatic choices that control how you check messages.

### Checking Messages Automatically

By default, Outlook offers to check messages every 10 minutes when you have a permanent Internet connection. In IMO mode, you can adjust this setting by choosing options on the Mail Delivery tab of the Options dialog box; CW users need to work with the Internet E-mail tab of the same dialog box.

→ For more details on how to work with dial-up connections, see "Connection Options," p. 697

### Checking for Messages Manually

Under several circumstances, you might prefer to check your email manually rather than setting an automatic option:

- If you're on a business trip and using Outlook on a notebook computer, you can't predict when you'll have an Internet connection. Configure Outlook to make a manual connection.
- For secondary mail accounts that you use only sporadically, you might choose to check your mail once every few days or even less frequently. When setting up a mail account in this configuration, clear the Include This Account When Receiving Mail or Synchronizing check box.
- If you're expecting an important message and your next scheduled automatic connection is hours away, make a manual connection.
- If you have only one phone line at home, you probably want to check for mail only when you're certain other family members aren't on the phone.

When you click the Send/Receive button on the Standard toolbar, Outlook checks all accounts for which you've specified this option. To check a single account, choose **T**ools, **S**end/Receive, and select the correct account from the cascading menu.

## Setting Notifications

Outlook offers to notify you in several ways when you've received new mail.

- The two most subtle options play a sound and briefly change the mouse pointer when you receive new mail. To adjust either setting, you need to burrow several dialog boxes into the Outlook interface. Choose **T**ools, **O**ptions, click the Preferences tab, click the **E**-mail Options button, and click the **A**dvanced E-mail Options button. If you're not at your computer, you'll completely miss both these cues.
- A more persistent but still subtle reminder is the icon that appears in the notification area to the right of the Windows taskbar (this area is also sometimes called the tray). An envelope icon here means you've received new mail; double-click the icon to open the Inbox and read the messages. You can't eliminate this icon.
- The most intrusive form of email notification is a pop-up message that takes over your screen when new mail arrives. By default, this option is off, thankfully. Although we don't recommend enabling it, you can do so by opening the Options dialog box and clicking the **E**-mail Options button on the Preferences tab.

## Speed-Reading New Messages with the Preview Pane

As we noted at the beginning of this chapter, heavy email users sometimes get hundreds of messages a day, and dealing with them all means you have to make decisions in seconds. When time is of the essence, we suggest you use the Preview pane to blast through messages at lightning speed.



1. Switch to Unread Messages view. We recommend keeping the Advanced toolbar visible at all times so you can use the Views drop-down list to switch views anytime.
2. If the Preview pane at the bottom of the message window isn't visible, click the Preview Pane button. Using this pane lets you quickly scan any message without having to open it.
3. Choose **T**ools, **O**ptions, click the **O**ther tab, and click the **P**review Pane button to display the Preview Pane dialog box shown in Figure 28.21. Check the bottom two boxes here to mark mail as read when you view it in the Preview pane; if you want to be able to skip over some and leave them marked as unread, check the top box instead.



If you're unable to view some messages in the Preview pane, see "When Active Means Invisible" in the Troubleshooting section at the end of this chapter.

4. Begin reading your mail. Use the Spacebar to move through each message without using the arrow keys. As you finish with each message, press Ctrl+R to compose a reply, Ctrl+Shift+R to reply to all. Press the Delete key to trash the message, or press the Spacebar to move to the next message. When you do so, Outlook marks the previous message as read, removes it from the current view (but leaves it in the Inbox folder), and jumps to the next message.

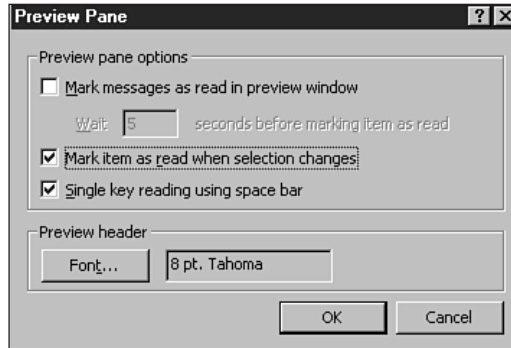


Figure 28.21

## Organizing Your Email

In some organizations, email is the preferred mode of communication, and it's not uncommon for a busy manager to receive hundreds of messages per day. Trying to process that tidal wave of mail can be an overwhelming task if you're not in front of a computer constantly. At an average of a minute per message, including replies and forwards, even a relatively light load of 30 messages a day represents a half-hour daily commitment. If you receive 200 messages each day and give each one an average of 20 seconds' worth of attention, it will take you an hour of intense concentration to work through the entire list.

Over time, experienced Outlook users usually develop the ability to blast through a crowded Inbox in record time, using the Preview pane and message headers to quickly make snap judgments about which messages are worth reading and which can safely be tossed. Really smart Outlook users create *rules* (page 724) that process messages automatically. In less than the time it takes to process a day's email, you can create a set of rules that can easily help you avoid wasting time on junk email and also ensure that you never miss an important message because it was buried in your Inbox.



To launch Outlook's most basic message-processing tool, open your Inbox and click the Organize button on the Standard toolbar. The Organize pane slides into position just above the message window, as shown in Figure 28.22. Under the right circumstances, three of the options shown here are useful.

- ➔ For details on how you can highlight contacts, mail messages, and other items, see "Assigning Items to Categories," p. 667

**Figure 28.22**

The Organize pane lets you create one specific type of rule to sort mail to or from a specific address.

- Select a message, and then click the Using Folders option to instantly create a rule that moves mail from the sender of that message to a folder you specify. This option is especially useful for dealing with messages you receive because you subscribe to a particular mailing list; for example, if you receive daily digests from the Doberman Fanciers list and you want to file those into their own folder so you can read them during a break. In some cases, you may need to click the drop-down arrow and define a Sent To rule. This option is appropriate when you subscribe to a list where the sender's name differs each time but the recipient is always the same.
- Click the Using Colors option to specify that you want all messages from or sent to a specific person to appear in your Inbox in a certain color. Use this option to format messages from your boss in bright red, for example.
- Click the Junk E-Mail option to turn on Outlook's automatic rules for filtering suspected *junk mail* (page 729) and so-called *adult content* (page 729), such as come-ons for X-rated Web sites. (We'll explain how the junk-mail filters work a little later in this section.)

The Organize pane is a bare-bones tool with virtually no options, designed to build a rule from the current message. As long as you understand its limitations, you can make good use of it. It's most effective for mail that is highly predictable, always arriving in exactly the same format from the same sender. Rules you create this way will search for text that precisely matches the entry in the current message. If you receive mail from a correspondent who uses multiple email accounts with different Sender names, you'll need to define multiple rules to correctly process the mail.

**Tip #345 from**

*EQ & Wendy*

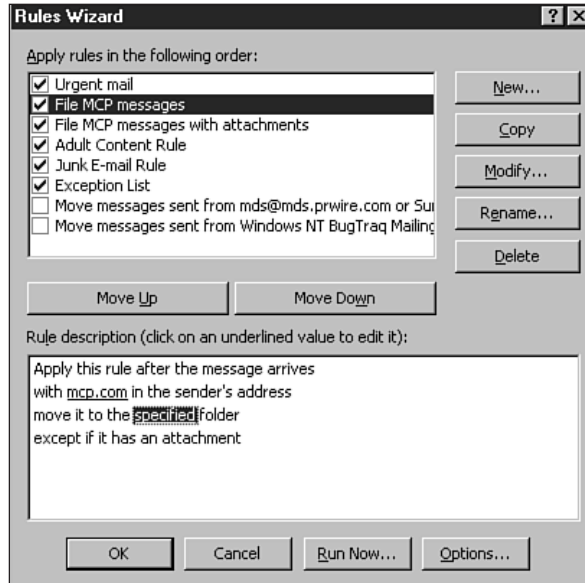
Don't dismiss the Organize pane out of hand. Although its utility is limited, it has one praiseworthy feature: When you create multiple rules to move messages from different senders to a common folder, it consolidates those rules into one. So if you determine that some people in your company never, ever send you important messages, create a folder called Boring Company Mail (BCM). Each time you identify another coworker who's consistently wasting your time with trivial email, select a message from that person, click the Organize button, and create a rule to send all future messages from that dullard to the BCM folder. Eventually, this rule will define a list of the least interesting people in your organization!



## Using the Rules Wizard to Sort and Process Mail

For the bulk of mail-handling situations, you'll need greater control over the conditions and actions defined in rules. To use these more advanced options, choose **T**ools, Rules Wizard. The Rules Wizard dialog box (see Figure 28.23) shows you all the rules you've previously defined and lets you create new rules and manage existing ones from a central location.

**Figure 28.23**  
The Rules Wizard builds mail-processing rules one step at a time; the Rule Description pane (bottom) shows details of the selected rule.



Use custom rules to handle the following categories of messages:

- **Urgent mail**—If you sometimes receive messages from key contacts who need immediate assistance, you want to know ASAP. Create a rule that pops up a dialog box as soon as messages containing hot-button words—urgent or problem, for example—arrive from particular senders.
- **Personal mail**—Move personal messages from family members and friends into a designated folder when they arrive in the Inbox.
- **Posts to mailing lists**—Delete messages you send to mailing lists instead of saving them in your Sent Items folder, because you'll receive your message when you receive the next edition of the list.
- **Mail from other accounts**—Move all mail you receive from a particular account (a personal account you check at work, for example) into a special folder so you can clearly segregate it.

- Commercial mail—Identify commercial email from companies that you truly want to hear from. If your favorite online bookstore or music dealer occasionally sends you notices of new books or CDs you might be interested in, you can flag these messages for special handling.
- General clutter—Create a set of cleanup rules you run periodically before archiving messages, such as one that identifies messages with large attachments and moves them to a special folder. Set these rules so they don't run automatically on new messages you receive in the Inbox; instead, use the Run Now button in the Rules Wizard to apply them to selected folders, including your archive folders, when you're ready to perform major cleanup operations on a Personal Folders file.

**Tip #346 from**

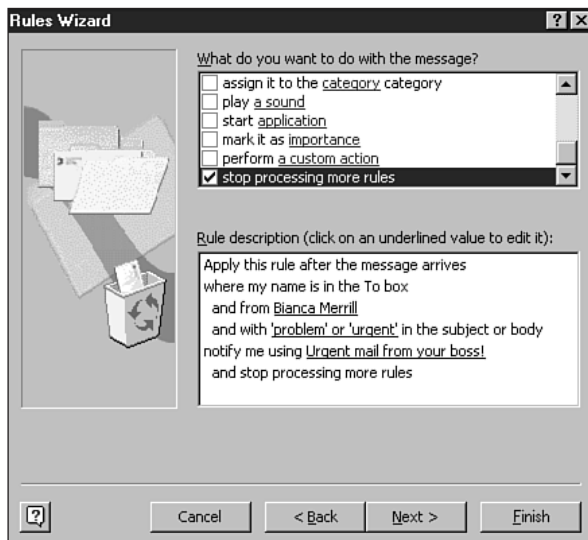
*EQ & Wendy*

Outlook stores all rules you define in a file called Microsoft Internet Settings.rwz, in a subfolder of your personal profile, if applicable (on a Windows 98 system with profiles enabled, for example, you'll find this file in C:\Windows\Profiles\*<username>*\Application Data\Microsoft\Outlook). It's always a good idea to back up your current rules to a new file; as a bonus, you can use this feature to share mail-handling rules with other people or with multiple systems. To save rules in a file, choose Tools, Rules Wizard, click the Options button, and choose Export Rules. To restore rules from this file or to add rules that a friend or coworker defined and sent to you, choose Import Rules.

To begin creating a rule, choose Tools, Rules Wizard. The wizard, shown in Figure 28.24, walks you through five steps. As you check options in the top of the dialog box, the rule appears in the bottom pane; when you see underlined text in the condition or action, click to pop up a dialog box to add more details. (Editing a rule works the same way; just open the Rules Wizard dialog box, select a rule, and click the Edit button.)



*If you've defined a rule and it doesn't work properly on incoming messages, see "A Rule Isn't Working As You Expect" in the Troubleshooting section at the end of this chapter.*



**Figure 28.24**

As you add conditions and actions, the Rules Wizard shows you the rule in the bottom pane. Click the underlined text to add details.

## Specify the Type of Rule

You can choose from 11 categories here, most of which are predefined combinations of options available in succeeding steps. If your rule doesn't fit into any of these predefined categories, stick with the two general-purpose rules: Check Messages When They Arrive and Check Messages After Sending.

## Choose Conditions

The Rules Wizard offers a list of 26 options you can use to define *conditions*, in almost any combination. Your range of options is impressive:

### Tip #347 from



If you don't specify a condition, the rule will apply to every message you receive. This setting is a useful way to forward messages to another account temporarily. Create a rule that forwards messages to the account you specify, and move that rule to the top of the list. Until you disable the rule, Outlook forwards all your mail to the specified address until you tell it to stop.

- By account (Choose the When Received Through the Specified Account option).
  - Is an incoming message addressed specifically to you? Rules can determine whether your name is or is not in the To or Cc box, for example, or when a message is sent only to you. Fine-tune combinations of conditions to highlight mail that is indisputably for you (Sent Only to Me, especially when you add conditions that test who sent the message) or identify less important mail (Where My Name Is Not in the To Box).
  - Attach conditions that test for a specific sender or recipient: From People or Distribution List or Sent to People or Distribution List. These conditions depend on Outlook's capability to resolve an address in your Address Book.
- ➔ To learn more about handling Personal Distribution Lists, see "Creating and Using Personal Distribution Lists," p. 713
- Use two extremely powerful conditions to fine-tune rules that search for mail from a specific person or group of people, regardless of whether they're in your Address Book. Check With Specific Words in the Recipient's Address or With Specific Words in the Sender's Address, and then enter any part of the email address you want to test for.

### Tip #348 from



Use this option to identify all mail that arrives from anyone in a particular organization or domain. While working on this book, for example, we created a rule and applied special handling to any message that arrived from any recipient whose address contained `mcp.com`.

- Search for specific words in the subject or body, or in the message header. Use this condition in combination with those that search for messages from a specific person to look for hot-button words: With mcp.com in the Recipient's Address and With deadline in the Subject or Body, for example.
- To create cleanup rules, or to identify messages that might bloat your mail file on a system with limited storage, use the conditions that test whether a message has an attachment or has a size in a specific range.

## Specify One or More Actions

Outlook applies actions you choose here to messages that meet the conditions you specify. Note that if you've selected many of the prebuilt rules in step 1 of the wizard, some options will already be checked.

- One of the most powerful options available is Notify Me Using a [Specific Message](#). Using this option, you can tell Outlook to interrupt whatever you're doing and display a dialog box that alerts you to important incoming messages. If you're working on a group project under deadline pressure, for example, you might define this type of rule for messages from any address in your company that contains an attachment. If your stockbroker uses email to alert you to important developments in the stock market, you can tell Outlook you want to know immediately whenever you receive a message from that address. Figure 28.25 shows an example of a dialog box generated by an Outlook rule.

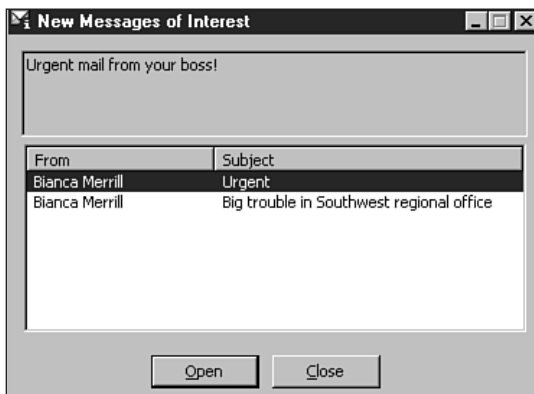


Figure 28.25

- One of the most interesting options available here is the Stop Processing More Rules choice. Use this option to avoid unintended consequences when rules collide. For example, if you want to be notified when you receive a message sent only to you from your boss, check the proper conditions and actions; then scroll to the bottom of this dialog box and click this option. Make sure rules using this option are high on your list.
- You can move matching messages to a specified folder, copy them to a folder (including a public folder on an Exchange server), delete them (move to Deleted Items folder), or permanently delete them.

### Caution

Never, ever use the Permanently Delete It action on rules that apply to incoming messages. No matter how carefully you define a rule, it's possible that the Rules Wizard will inadvertently apply it to the wrong message; use the Delete It condition to move messages to the Deleted Items folder instead, where it's possible to recover messages moved by mistake. Reserve the permanent option for cleanup rules only.

- Forward messages to an address you select, either as an email message or as an attachment. Use the latter option if you want the recipient to be able to see the message exactly as it was received.
- The Reply Using a [Specific Template](#) option is powerful and potentially dangerous. You might be tempted to use this option to automatically send a message to anyone who sends you mail, alerting them that you've gone on vacation. Unfortunately, if you

apply that option to all incoming messages, you risk creating an email loop with automated message senders. If you receive a message from a mailing list and Outlook replies automatically to the list, for example, the list server may send a message telling you that you're not authorized to post to the list; if Outlook replies to that message, the loop begins. Craft this type of rule carefully and test it before deploying it in a production environment.

- Flag a message for action in a specified number of days (or clear a flag, useful in a cleanup rule), assign it to a category, change its Importance setting, play a sound, or start an application.

#### Note

Most Outlook users can safely ignore the Perform a [Custom Action](#) option, which applies only when you have a third-party add-in that defines special actions for incoming messages.

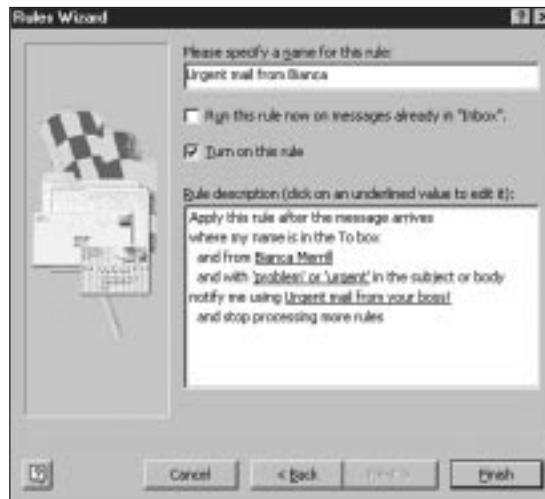
### Add Any Exceptions

In general, the 24 built-in categories here mirror the conditions you specify in step 2 of the wizard. Defining exceptions is a powerful way to fine-tune rules: “Delete all messages from John Smith except if my name is in the To or Cc box” will squelch posts from particularly annoying senders who post to mailing lists you receive.

### Save the Rule

In the Rules Wizard's final step, give the rule a name and check all conditions, actions, and exceptions in the dialog box shown in Figure 28.26. Use the two check boxes here to specify whether you want to run the rule on the contents of the current folder immediately and whether you want to enable the rule. Clear the second check box for “cleanup” rules you want to run occasionally.

**Figure 28.26**  
The final step of the Rules Wizard lets you confirm all the steps in your rule and run it on the current folder.



## Using Outlook's Junk Mail Filters

As we mentioned earlier, Outlook includes two built-in junk-mail filters that try to identify adult content (solicitations to visit pornographic Web sites, for example) and junk mail (also known as Unsolicited Commercial Email, or *spam*). The exact details of how both filters work are a closely guarded trade secret at Microsoft, for obvious reasons: When spammers learn how filters work, they generally find ways to work around the filters.

In general, however, it's safe to say these filters use lists of known attributes and keywords common to both types of unwanted messages. Triggers include messages sent using ALL CAPS, multiple exclamation points, and dollar signs in the subject line: Any message headed \$\$\$ MAKE MONEY FAST!!! \$\$\$ is nearly certain to trigger the junk-mail filters.

You can add specific addresses to the list of senders you want to process using these filters; you can also define exceptions to avoid false positives. If your baby sister can't resist adding exclamation points to her subject line and your accountant routinely puts dollar signs in his messages, add both addresses to the Exceptions list.

There's nothing magical about the Junk Mail and Adult Content filters; enabling either or both options (which are off by default) adds new rules in the Rules Wizard: an Adult Content rule, a Junk E-mail rule, and an Exceptions List rule. To enable and configure either or both filters, follow these steps:



1. Switch to the Inbox, click the Organize button on the Standard toolbar, and click the Junk E-mail link.
2. Use the options shown in Figure 28.27 to specify whether you want to color-code messages that match either filter or move them to another folder.

### Tip #349 from

*EQ & Woody*

Don't automatically move either type of message to the Deleted Items folder—at least not until you're certain the filters work reliably for you. Instead, move each type of message to its own folder. For the first few weeks after enabling either of these filters, you'll typically need to do some fine-tuning to avoid inadvertently detecting messages you want to read as junk email.



**Figure 28.27** Although you can color-code messages that match either filter, we recommend moving them to another folder instead.

3. Click the Turn On button to the right of either filter type to enable the specified filter. (This button changes to read Turn Off after you've applied the filter.)
4. To add a sender to either list, regardless of the content of messages they send, select a message from that sender in the Inbox; then right-click and choose Junk E-mail, Add to Junk Senders List or Add to Adult Content Senders List.
5. To add any sender's name to the Exception list, open a message from that sender, right-click the From address, and choose Copy. Then open the Rules Wizard, select the Exception List rule, and click the underlined text in the description pane at the bottom of the dialog box. Click the Add button and paste the address you copied into the text box. Close all dialog boxes.
6. Occasionally, Microsoft issues updates to its junk-mail and adult content filters. Click the link at the bottom of the Junk Mail Organizer pane to download this update.

## Troubleshooting

### Outlook and AOL Are Like Oil and Water

*You're trying to configure Outlook 2000 to send and receive mail through your America Online account, but none of the configuration options you choose seem to work.*

As of this writing, AOL mail does not work with any Internet-standard (POP3, IMAP, or SMTP) mail client software. Although it is possible that AOL will add this support sometime in the future, at this time you must use AOL's access software to send and receive mail.

### Working Around Anti-Spam Filters

*You have two Internet service providers. One is a local provider you use at home, because you like their speed and service. For business trips, you use an account with a national Internet service provider, to avoid having to access the Internet via a long-distance call at exorbitant hotel rates. While on the road, you have no trouble receiving mail from your regular ISP, but when you try to reply to email you receive, you get an error message that says something like "This server does not allow relaying."*

Most ISPs restrict access to SMTP servers for sending outgoing mail—typically, the mail server checks your IP address before allowing you to connect to the SMTP server. This step verifies that you are an authenticated user on the network, as is the case when you dial in directly. If you connect from another ISP, the server doesn't recognize your IP address and blocks your attempt. This configuration prevents unauthorized users from hijacking the mail server to unleash a flood of spam, but it also prevents you from connecting to the outgoing mail server to relay messages. On the road, set up another Internet mail account, and adjust your configuration so you send mail through the SMTP server that belongs to the account you dialed in with, but receive messages on your regular POP3 server. To make sure that recipients send replies to the right address, be sure to specify your regular (home) mail account as the Reply-To address on this new account.

## When Active Means Invisible

*The preview pane says it can't display the message because it contains active content.*

That's Outlook's maddeningly roundabout way of telling you the message is in Rich Text format and contains VBScript. Open the message to read it.

## Stomping Out Stray Equal Signs

*Recipients complain that messages you send contain stray characters, usually preceded by an equal sign. For example, plain text messages include a single equal sign or =20 at the end of each line, with other codes where apostrophes and other special characters should be.*

Somehow you've turned on Quoted Printable MIME, which uses an equal sign to designate the encoding that converts high ASCII characters to readable symbols. To turn off this option in HTML messages, choose **T**ools, **O**ptions, and click the Mail Format tab. Select HTML from the drop-down list in the Message Format area, then click the **S**ettings button and change the **E**ncode Text Using option to None. Click OK to save that change; if you prefer Plain Text as your default format, be sure to change the message format back to that setting before you close this dialog box.

## When Your Email Bounces

*You replied to a post on an Internet newsgroup via email, but your mail server bounced the message back to you, saying the recipient doesn't exist.*

More than anywhere else, people who post to public newsgroups are likely to disguise their true email address. The reason is to prevent bulk-mail artists—spammers—from harvesting their address and reselling it to scam artists. Check the header on the message carefully to see whether the true email address is hidden. Sometimes the solution is as simple as removing the phrase *no.spam* from an address such as *bianca@no.spam.example.com*.

## A Rule Isn't Working As You Expect

*You've used the Rules Wizard to define a mail-processing rule, but Outlook isn't processing the message as you expect.*

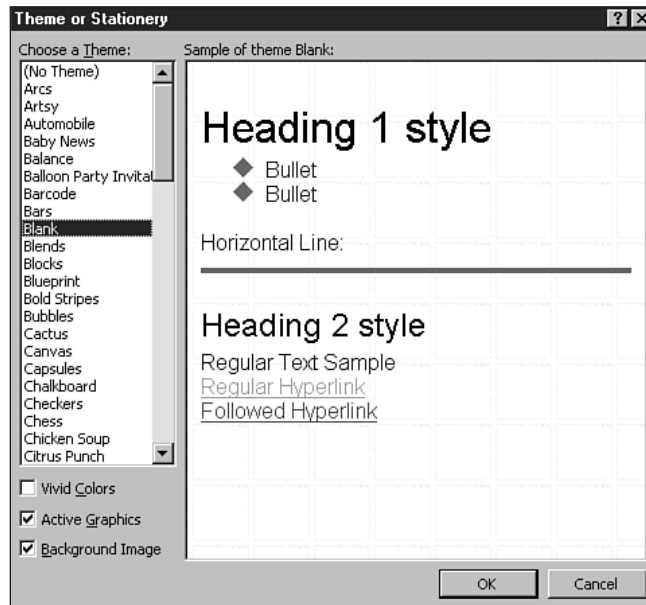
This problem is almost always the result of conflicting actions from multiple rules. First things first: Check the order of rules, and pay special attention to any rule that contains the Stop Processing More Rules action. You may have defined two rules that apply to the message in question (it's from a specific person and it contains a certain phrase, for example), and each rule wants to move the message to a different folder. When the actions in two or more rules conflict in this way, the one that's higher in the list wins. Try changing the order of the rules, using the **M**ove **U**p and **M**ove **D**own buttons. Finally, be especially careful with rules that create message flags with reminders; if another rule also moves that message to a different folder, you'll never see the reminder, because Outlook monitors flags only on messages in the Inbox. Rules that attach message flags should always be high in the list, and they should include a Stop Processing More Rules action.



## Secrets of the Office Masters: Tasteful Stationery

Most of Outlook's canned stationery choices are unbearably corny and probably won't impress your regular message recipients, especially if they're business contacts. Worse, any Office user will instantly recognize these canned backgrounds. If you must use stationery for HTML messages, consider customizing an existing pattern or creating a new one from scratch.

The procedures are slightly different, depending on your choice of email editors. Outlook's editor allows you to choose *stationery*, which despite the fancy name, is simply an HTML document. Word can also use stationery, or you can choose *themes*, which are compiled collections of backgrounds, bullet formats, and font information.



- If you use Word as your email Editor, choose the Blank theme, shown in this figure. The background image is about as subtle as you can get and the fonts are extremely readable. To choose this or any other theme, open Word, choose **T**ools, **O**ptions, click the E-mail Options button on the General tab, and then click the **T**heme button on the Personal Stationery tab. The dialog box shows all of Word's built-in themes as well as the selection of Stationery available from Outlook. Unfortunately, you cannot use Word to customize the background or bullets in a theme, although you can change the fonts used with new messages.
- If you use Outlook's editor, choose **T**ools, **O**ptions, click the Mail Format tab, and click the **S**tationery Picker button. Click the **N**ew button, and follow the wizard's prompts to adapt an existing stationery selection or use any HTML page as your base stationery. You can also start from scratch and define default fonts, indents, and a background color for messages, although you can't save a bullet selection.

# Managing a Contacts List

## In this chapter

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## Managing Your List of Contacts

Outlook's Contacts folder is a useful place to store names, addresses, phone numbers, and other important information about friends, family members, and business associates. If you use the Contacts folder only to manage email addresses and occasionally print an address book, it will certainly be worth the minimal effort it takes to enter and update contact information. But if you're willing to learn Outlook's secrets, you can make it do much more. For example:

- Quickly add addresses to letters and envelopes you create with Word. After you learn how the Outlook Address Book works, you can configure each entry so names and addresses appear in the correct format.
- Build lists of related contacts for use in *mail merge* (page 396) projects.
- Dial your phone and log calls automatically. If you provide professional services and bill by the hour, Outlook can track the time you spend on the phone with each contact, for later billing.
- Flag one Contact item or a group for a follow-up reminder.
- Use categories to print specialized phone books. If you frequently travel to another city, for example, enter names, phone numbers, and notes for your favorite restaurants in that city, and then print a list of just those items before you leave.

➔ The Contacts folder and the Outlook Address Book offer different views of the same information; for full details, see "Configuring the Outlook Address Book," p. 707



When you click the Contacts folder icon in the Outlook Bar, you see the default Address Cards view, shown in Figure 30.1. This view includes the contact's name (as defined in the File As field), plus the mailing address and as many phone numbers as you've defined for the contact. This view lets you see a fairly large number of records at one time, but it doesn't display company or job title information.

To see more information about each contact, switch to the Detailed Address Cards view, which displays virtually all fields in each contact record.

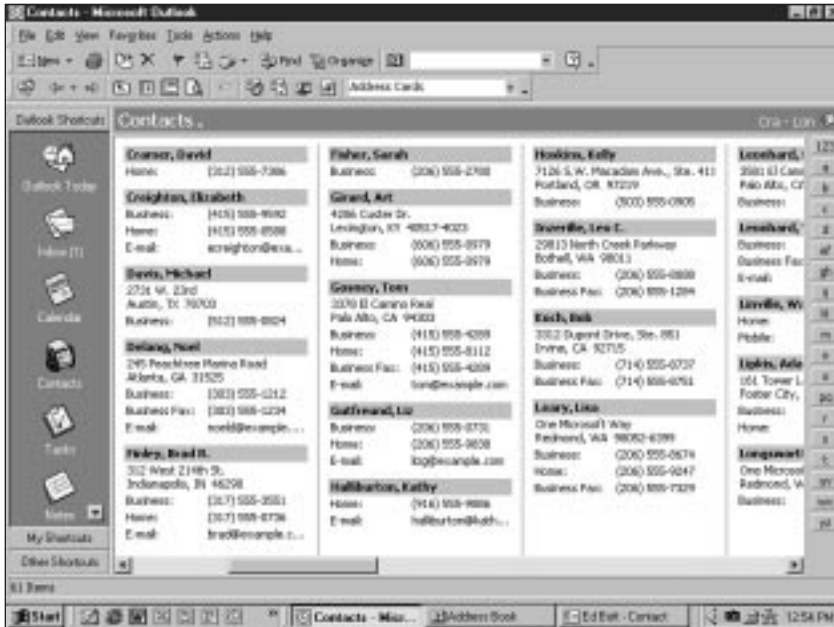
➔ Outlook gives a variety of options for sorting and filtering your Outlook items; see "Using Views to Display, Sort, and Filter Items," p. 674

## Creating a New Contact Item

To begin creating a new contact from scratch, use any of the following techniques:

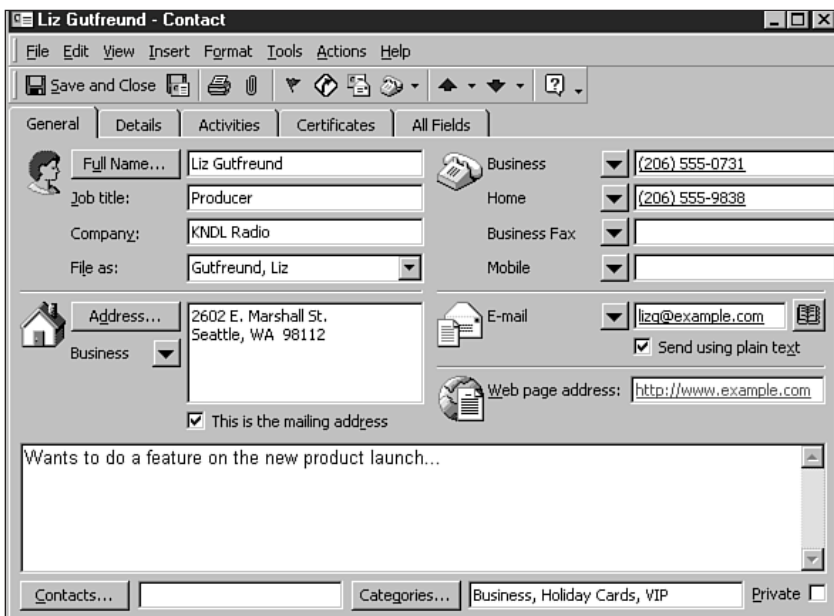


- Click the New Contact button.
- Press Ctrl+Shift+C.
- Choose File, New, Contact.



**Figure 30.1**  
The default Address Cards view packs the maximum number of records onto the screen by displaying only essential address and phone information.

Outlook's form for creating a new item in the Contacts folder includes a number of smart features that help you enter properly formatted information quickly and accurately. Start in the Full Name field and use the Tab key to jump from field to field. After you've entered all the information, click the Save and Close button at the top of the dialog box to store the new item. Figure 30.2 shows a filled-in Contact form.



**Figure 30.2**  
Outlook automatically fills in some of the blanks when you create a new item in the Contacts folder, and it checks the rest to make sure that you left nothing out.

In all, each Contact item you create can hold more than 120 fields of information, although only a fraction of these fields are visible on the General tab of the default Contact form. To see more information, click the All Fields tab; then use the drop-down list to filter the collection of fields so you see a manageable subset, such as all Address fields, all Name fields, and so on. Choose All Contact fields to see (and edit) the entire list of available fields, in alphabetical order, as shown in Figure 30.3.

**Figure 30.3**

The last tab of the default Contact form lets you scroll through (and edit) more than 120 fields in each item.

Name	Value
Private	No
Profession	
Radio Phone	
Read	Yes
Referred By	
Reminder	No
Reminder Time	None
Reminder Topic	
Send Plain Text Only	Yes
Sensitivity	Normal
Size	988 B
Spouse	Tom Gutfreund
State	WA
Street Address	2602 E. Marshall St.
Subject	Liz Gutfreund
Suffix	



*If you're having trouble selecting or deleting a field's contents, see "Selecting and Deleting Field Contents" in the Troubleshooting section at the end of this chapter.*

## Entering Names

When you enter a new contact's name in the Full Name field, Outlook slices and dices it into as many as nine separate fields. You will rarely see most of these fields, but knowing how Outlook *parses* names—that is, breaks them into their component parts—lets you control the process, which will pay off later when you use items from the Contacts folder as the source for email, letters, envelopes, and mail merge projects.

### Tip #358 from

Don't bother with the Shift key when you enter Contact names. If you enter a name in all lowercase letters, Outlook automatically capitalizes each name as soon as you Tab out of the field.

As soon as you enter the full name, in any order, Outlook attempts to break it into five subfields, including first, middle, and last name, as well as any prefix or suffix. To view (and edit) the contents of these fields, click the **F**ull Name button, which opens the Check Full Name dialog box, shown in Figure 30.4. If any information is incorrect, edit it here.

**Figure 30.4**

When you enter a full name, Outlook automatically breaks it into these subfields; if any information is incorrect, edit it here.

**Tip #359 from**

*EQ & Wendy*

How do you include a courtesy title such as Mr., Ms., or Dr. in each new Contact item? Get in the habit of entering the title at the beginning of the Full Name field. Outlook recognizes the following titles, which are also on the **T**itle drop-down list in the Check Full Name dialog box: Dr., Prof., Mr., Mrs., Ms., and Miss. Even if a title is not available on the drop-down list, it may still work. For example, beginning a name with Sir, Herr, Fraulein, Monsieur, Madame, or Signore will correctly fill in the Title field. If you're not sure a prefix will work, try it in a new, blank Contact form.

Based on what you type in the **F**ull Name field, Outlook also fills in two additional fields automatically:

- The **F**ile As field controls the order in which the Contacts folder displays items when you switch to Address Cards or Detailed Address Cards view. Although Outlook automatically fills in this field using its default format, Last Name first, you can easily change it.
- The **S**ubject field, which does not appear on any built-in forms but is accessible on the All Fields tab, defines how each Contact item appears when you display the *Address Book* (page 316). By default, Outlook fills in this field with the First Name field first.

➔ To learn more about how Outlook files your Contact items, see “Changing the Way a Contact Item Is Filed,” p. 756



*If you don't want Outlook to automatically (and incorrectly) split company names in your Contacts Folder into first and last names, see “Using Company Names in Your Contacts” in the Troubleshooting section at the end of this chapter.*

## Entering Addresses

Just as with name fields, when you enter a mailing address in the **A**ddress field on the default Contact form, Outlook splits the address into component parts and stores

the information in 31 separate fields. You can store up to three addresses per contact; click the drop-down list just below the Address button to choose Business, Home, or Other.

When you enter an address, Outlook parses the address into separate fields for the street, city, state, and other fields. If you enter information in a format that Outlook doesn't recognize—if you omit the city or state, or if you accidentally leave a digit off the zip code—Outlook pops up the Check Address dialog box shown in Figure 30.5 (you can also click the Address button to display this dialog box). This display shows how Outlook proposes to divide the information into subfields. Click OK to save the record as typed, or edit the contents of any field.

**Figure 30.5**

This dialog box shows you how Outlook proposes to parse the address you entered into subfields.

When you check the This Is the Mailing Address box, Outlook copies this address to the fields that are used when you create letters, envelopes, or mail merge lists in Word.

- ➔ To learn more about using Word's mail merge capabilities, see "Using Mail Merge to Personalize Form Letters," p. 398

## Entering Job and Company Details

On the General tab of the default Contact form, you'll find two boxes for entering work-related information about a contact: Job Title and Company. Click the Details tab to enter other work-related information, such as Department and Manager's Name.

### Tip #360 from

*EQ & Woody*

Although the Details tab includes a field for Assistant's Name, the field for Assistant's Phone Number is buried in the full list of fields on the last tab of the dialog box. A much easier way to enter this information exists, however: Click the drop-down arrow to the left of any of the four phone number boxes and select Assistant, and then enter the number. After you enter the number, it will be visible in both Address Card views.

## Entering Phone, Fax, and Other Numbers

The General page has room to enter up to four phone numbers—by default, you can fill in Business, Home, Business Fax, and Mobile numbers. You're certainly not limited to those options, however; you can actually enter as many as 19 separate phone numbers, using the drop-down lists at the left of each number to select different fields.

**Note**

Both default Address Card views display as many phone numbers as you've defined for a contact. These appear in an order that is determined by this form, with most business-related numbers at the top. Curiously, however, the Business Fax field appears at the bottom of each list, and we can't find any way to change this order.

You can enter phone numbers any way you like, with or without punctuation; when you exit the field, Outlook automatically reformats the numbers using standard punctuation—parentheses around the area code and a hyphen after the first three digits of the phone number. If you omit the area code, Outlook assumes the number is in your local dialing area, so it adds your area code to the entry.

If a contact's phone number includes an extension, add this information at the end of the phone number, preceded by a space and the letters x or ext. Outlook ignores this information when formatting the phone number or using the *AutoDial* feature. You can also add text before or after a phone number; for example, if one of your contacts is bicoastal, you might enter a number in both the Business and Business 2 fields, and then label them LA and NY.

## Entering Email and Web Addresses

You can store up to three email addresses per contact. Click the drop-arrow next to the E-mail box to choose any of these three blanks, and then enter the address. Click the Address Book button at the right of this box to view email addresses in the Windows Address Book, which uses a different form to display information.

- ➔ For an authoritative explanation of how the Outlook Address Book works, see "Configuring the Outlook Address Book," p. 707
- ➔ To find out how Outlook uses Address Book information to fill in addresses on email messages, see "Creating, Managing, and Using Email Addresses," p. 706

The General tab of the default Contact form also includes a blank where you can enter a Web page address; if you enter a recognizable *URL* (page 1113), Outlook converts it to a *hyperlink* (page 187) so you can jump to a contact's personal or corporate Web page.

**Note**

Click the Details tab to add other online information, including settings for NetMeeting calls and the server where the contact publishes his or her Internet Free/Busy Time.

## Entering Personal Information

Click the Details tab to add some personal information about each contact. Fields on this tab include Nickname, Spouse's Name, Birthday, and Anniversary. You can see still more fields in this category (including one where you can enter the names of children or specify a contact's hobbies) by clicking the All Fields tab.



## Entering Other Details

As in virtually all Outlook items, the Notes area at the bottom of the Default Contact form lets you add extensive notes and comments, as well as shortcuts to other Outlook items or to files, or file attachments. Click the Categories button to assign each entry to one or more categories; the long list of built-in categories includes a Holiday Cards choice that lets you quickly print a list of friends, family, and business associates to whom you'll send season's greetings.

### Tip #361 from



If you click the Contacts button, Outlook pops up a dialog box that lets you link one Contact item to another. You might want to do that with business partners, for example, or to link the individual records for a husband-and-wife team to a third record that tracks details about them as a couple. Use that last record in your holiday cards list.

➔ To learn more about categorizing Outlook items, see "Assigning Items to Categories," p. 667

## Changing the Way a Contact Item Is Filed

In both built-in Address Card views, the field used for sorting and displaying information is the File As field. By default, Outlook fills in this field by using the information you type in the Full Name field, displaying it last name first. If you don't enter a name, Outlook assumes the record refers to a business and uses the information from the Company field. You can accept the default, or you can change the information displayed here.

Although organizing an address book by last name is traditional, you might choose to mix different filing orders within the Contacts folder. For example, when you enter a record for a person who serves as your main contact with a company, file the record under the company name, with the person's name in parentheses. In some cases, you might even use simple generic descriptions such as Drugstore or Travel Agent.

### Tip #362 from



If you can't remember how you filed a Contact item, click the Find button on the Standard toolbar. A simple search looks through all name, company, and address fields. Check the Search All text box to look for specific information in a Contact's Notes field.

To change the way a specific Contact item is filed, double-click to open the item. In the File As field, click the drop-down arrow. If both the Full Name and Company fields contain data, Outlook offers the following five choices:

- Full name, first name first
- Full name, last name first
- Company name
- Full name, last name first, followed by company name in parentheses
- Company name, followed by full name, last name first, in parentheses

To file the item using any other text, replace the contents of the File As field. Whatever you type appears in alphabetical order in all views of your Contacts folder.

To change the default order for all new contacts, choose Tools, Options, click the Preferences tab, and click the Contact Options button. Two drop-down boxes let you choose a default for the Full Name field and the File As field—they don't have to be the same.

## Entering Several New Contact Items at Once

Have you ever returned from a meeting or trade show with an inch-thick bundle of business cards? Typing the details from those cards into Outlook can be a tedious process. Here are three time-saving shortcuts to help make shorter work of that stack:

- Enter data by using a table-based view instead of the default Contact form. Click in the empty box in the top line to begin entering a new item. Press Tab to move from field to field. When you press Enter, Outlook stores the record and moves the insertion point back to the beginning of the first line, where you can begin a new item immediately.

### Tip #363 from



If you just want to get a few crucial names, phone numbers, and email addresses into Outlook, create a custom Table view that contains only the fields you need and no more. Be sure to include the Categories field so you can identify the trade show or meeting where you met this person (ABA Conference 1999, for example).

- If you prefer to use a Contact form, enter the information for the first card in the stack; then choose File, Save and New. This hidden menu option saves the item you just entered and clears the form so you can begin a new contact immediately. After you enter the last card in the stack, press Esc to clear the blank form.
- When you have two or more cards from people who work in the same office, let Outlook copy key information to the new Contact item. Open the item, click the Actions menu, and choose New Contact from Same Company. Outlook creates a new item, entering the company name, address, and phone number from the previous item, but clearing all other fields.

## Editing One or More Contact Records

If you want to change an address or phone number or edit a misspelled name, you don't need to open a Contact item. You can edit directly in any Card view (Detailed Address Cards, for example) or Table view (such as Phone List). Click the letter along the right side of the window that matches the first letter of the item you're looking for; use the scroll bars, if necessary, to find the name you're looking for and then just click and start typing.

It's also possible (although difficult) to update the same field in a group of records, all at one time. Let's say stodgy old XYZ Corp., in its desire to display a fresh new cyber-identity, changes its name to xyz.com. If your Contacts folder includes a few dozen records for people who work at XYZ Corp., you can change the company name for all those records in one operation, rather than opening and editing each one individually.

#### Note

Unfortunately, this technique has some serious limitations. It will not allow you to update phone numbers when an area code changes, for example—an increasingly common situation in the United States—because the area code is not stored in a separate field from the rest of the number. Nor can you sort and update using fields based on formulas.

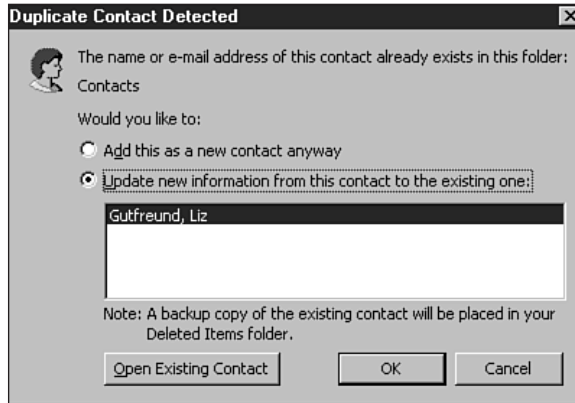
1. Switch to a view that shows all Contacts grouped by the field you want to change. In this example, you can use the built-in By Company view; to change another field, you may need to create a custom view.
- ➔ To learn more about using Outlook's built-in view or to create your own custom views, see "Using Views to Display, Sort, and Filter Items," p. 674
2. Choose **V**iew, **E**xpand/Collapse Groups, **C**ollapse All. Find the group that contains the items you want to change and click the plus sign to expand only that group.
3. Select one item in the group and edit the Company field so that it contains the correct information—in this example, change XYZ Corp. to xyz.com. As soon as you save the change, you'll see a new group in your list, containing the item you just changed.
4. Drag the Group bar from the group of records with the old Company name and drop it onto the Group bar for the item you just changed. As you drag the Group bar, a ScreenTip will alert you that you're about to change the Company name to xyz.com.

You don't need to use this technique to assign multiple contacts to categories, however. Instead, select a group of records, either individually or by using *filters* (page 678); then right-click and choose **C**ategories from the shortcut menu.

## Merging Duplicate Contact Items

How do you deal with duplicate Contact items? This problem is particularly prevalent if you use incoming email as the basis for a Contact item. When you drag a message from the Inbox and drop it in the Contacts folder, Outlook creates a new Contact item using the sender's name as it appears in the From box. If one person occasionally sends messages using a different display name, eventually you'll wind up with two, three, or more Contact items for a single person—most consisting of just an email address.

In some cases, Outlook can combine duplicate records for you. If you attempt to enter a record using exactly the same name as an existing Contact item, Outlook displays the dialog box shown in Figure 30.6.

**Figure 30.6**

When you try to enter a new Contact item with the same name as an existing one, Outlook offers to merge the two records.

If you intended to create a duplicate record, choose the **Add This as a New Contact Anyway** option. If you choose the default option, **Update New Information from This Contact to the Existing One**, Outlook replaces every field in the existing item if the new item contains information in that field. If you're not sure whether to update the record, click the **Open Existing Contact** button and compare the contents of the two items.

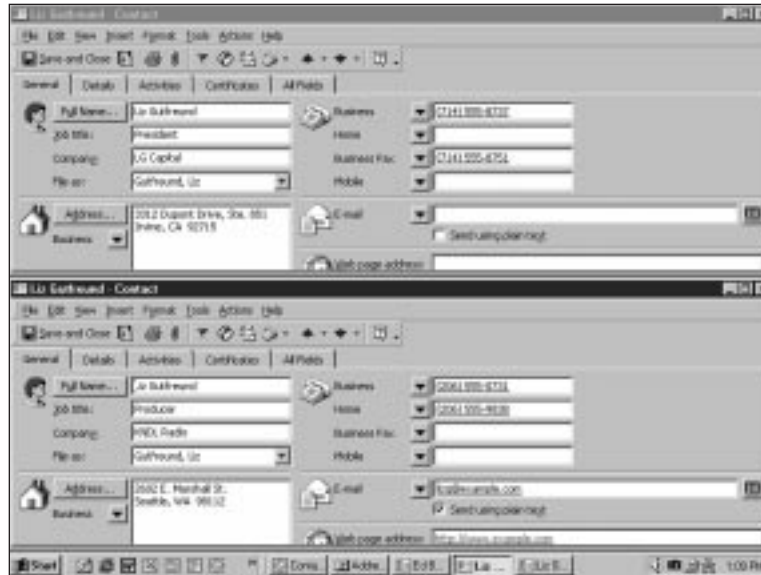
**Caution**

Think before you automatically update a contact record. Outlook does not show you what it's going to do before you merge items, and there's no record afterward of which fields changed and which stayed the same. If the new record has any information at all in the Notes field, for example, it will completely erase any notes and file attachments or shortcuts in the existing record. If you inadvertently delete important information, you may be able to recover it from the Deleted Items folder.

Outlook offers to merge items only when the name you enter in the **Full Name** field is absolutely identical to an existing item, and the offer is good only when you create the duplicate item. If you've added several items to your Contacts folder that refer to the same person with slightly different names—William Gates and William H. Gates, for example—the only way to merge the records is manually; there's no automatic way to merge fields from two separate records. Fortunately, it's relatively easy to move information such as email addresses from one item to another:

1. Open the two Contact items you want to merge; then right-click any empty space in the taskbar and choose **M**inimize All Windows.
2. Click the two taskbar buttons to restore the windows for the Contact items you opened, and then right-click the taskbar again and choose **T**ile Windows **H**orizontally. Your display should look like the one in Figure 30.7.
3. If the *master record*—the item that contains the information you want to keep—already contains an email address, click the E-mail drop-down arrow to select a blank field for an email address.

**Figure 30.7**  
The easiest way to deal with duplicate Contact items is to arrange them like this, and then drag fields from one to the other.



4. Drag the email address from the duplicate record and drop it into the blank address field in the master record.
5. Click the Delete button on the duplicate record to delete it.
6. Click the Save and Close button on the master record to save your changes.




#### Tip #364 from

*EQ & Woody*

Outlook remembers the size of the last Contact window you closed. If you don't want all your Contact windows to occupy half the screen after you use this technique, resize the Contact window before you save and close the item you just edited.

## Mapping a Contact's Address

 In Outlook 2000, Microsoft has quietly added a new option that lets you use the Internet to see a contact's address on a map. Open the Contact item and select the address you want to map; then click the Display Map of Address button or choose Actions, Display Map of Address. This option sends you to Microsoft's *Expedia Maps* page, where you'll see a view like the one in Figure 30.8.



*Does the Expedia Maps page tell you there's no address to map? If so, see "Getting the Right Address" in the Troubleshooting section at the end of this chapter.*



**Figure 30.8**  
An Outlook menu choice lets you see where your contact is located on an up-to-date map. Zoom in (or click the Driving Directions link) for more detail.

## Tracking Activities for Each Contact

Having a contact's name, address, and phone number in your Contacts folder is only a start. If you use Outlook regularly to create letters, dial the phone, and schedule meetings or appointments that involve other people, you can maintain *links* between each contact and all activities that have to do with him or her. Then you can use those links to see, at a glance, the history of all the interactions you've had with that contact.

### Caution

Outlook wasn't originally designed as a contact-tracking program, and its capabilities in this regard sometimes feel like an afterthought. If your job depends on closely tracking activities with contacts and keeping that information available at a moment's notice, Outlook probably isn't powerful enough for you. Many salespeople, for example, use Symantec's ACT! or similar software to maintain detailed information about customers, prospects, sales calls, and follow-up strategies.

Earlier versions of Outlook used the Journal folder to create separate items that contained this link information. In Outlook 2000, the Journal folder is unnecessary for most activity tracking, because contacts can maintain links to tasks and appointments directly.

The Journal folder is still necessary in two situations: When you create a link between a document and a Contact item, Outlook creates a Journal item with all the correct links, adding a shortcut to the document in that item. And if you use the phone dialer to make a call based on a Contact item, you also have the option to create a Journal item. These are the only situations in which activity links use the Journal folder.

In theory, you can link any Outlook item or file to a contact, but these are the most common:

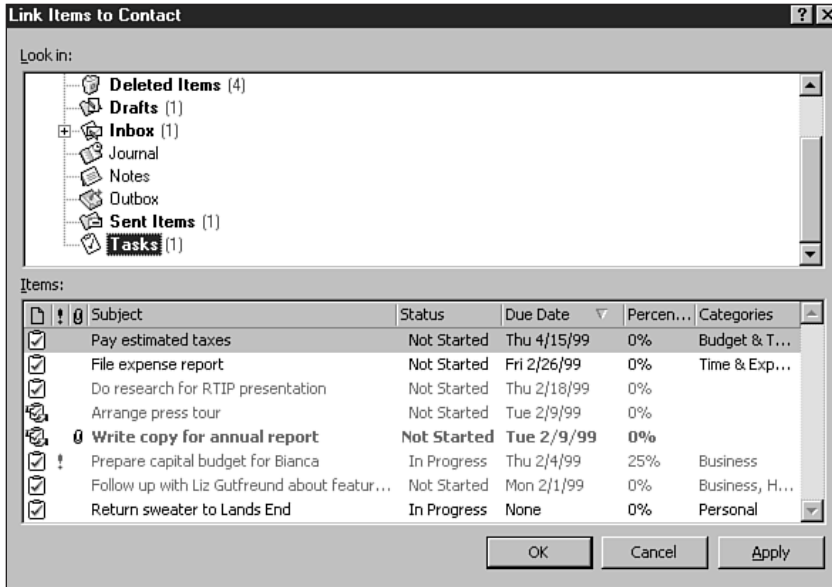
- Email messages—When you send or receive a message, Outlook automatically creates links between the message and any contacts, based on email address fields.
- Meetings and appointments—Outlook automatically creates links to meetings when you send an invitation; if you're scheduling an appointment with a person in your Contacts folder, you must manually create a link between the appointment and the contact.
- Tasks—Outlook automatically creates links when you assign a task to another person; you must manually create links for items that exist only in your own Tasks folder.
- Documents—You can manually create a link between a contact and a Word document, Excel worksheet, PowerPoint presentation, or any other file.

➔ To learn how to use Outlook to set up a meeting, see "Planning a Meeting with Outlook," p. 772

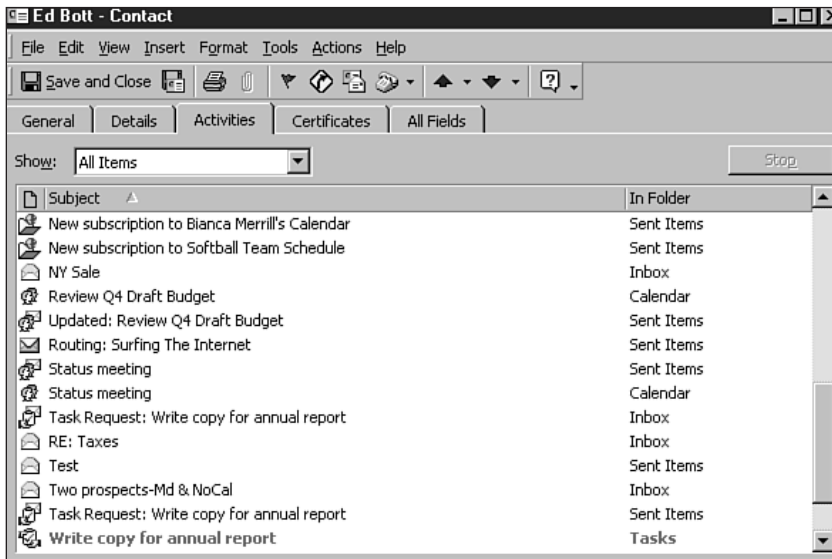
As noted in the previous list, you don't need to do anything to create a link between a contact and a mail message or meeting request. To manually link a contact to a file or another item, use any of the following three techniques:

- Open the item, click the Contacts button at the bottom of the form, and select one or more names from the pop-up list. Click OK to add the link. Links appear in the item as underlined hyperlinks.
- Open the Contacts folder and select an item; then choose the Actions menu and choose any of the options that begin with New. For example, New Task for Contact creates a Task item and adds the contact's name as a link. These menu choices are also available when you use the default Contact form to view an item.
- To manually create links between a contact and one or more items or documents, start by selecting the Contact item. Then choose Actions, Link, Items, or Actions, Link, File. Select one or more documents from the Open dialog box, or choose links from the dialog box shown in Figure 30.9.

To see all activities that are linked to a contact, open the Contact item and click the Activities tab. Figure 30.10 shows a full list, but you can also click the Show drop-down list to restrict the search to only email messages, documents, upcoming activities such as meetings or appointments, or other specific categories.



**Figure 30.9**  
Choose one or more items from this list to manually create links between a Contact item and other Outlook items.



**Figure 30.10**  
Use this list to see activities that you've linked to an individual contact.

## Addressing Letters and Envelopes Using Your Contacts List

Word and Outlook can work together with varying degrees of success to help you generate properly addressed letters and envelopes. Outlook's **A**ctions menu, in fact, includes a **N**ew **L**etter to **C**ontact choice that ostensibly does exactly that. What it actually does, however, is



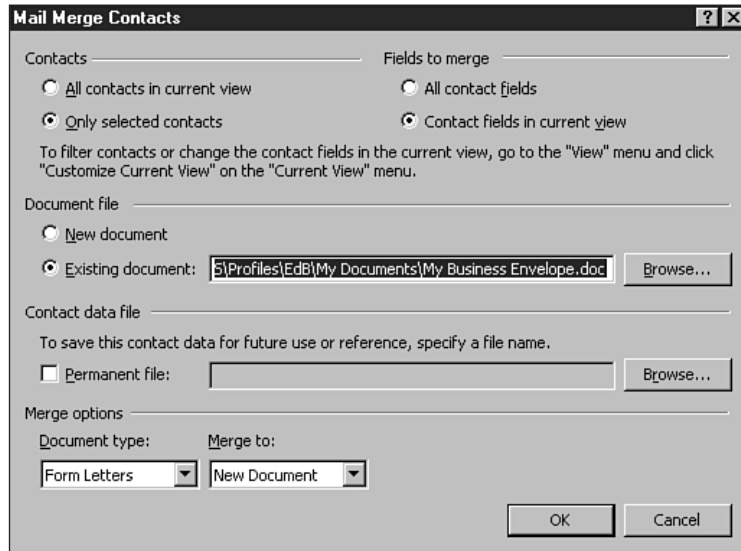
kick off Word's Letter Wizard—an option that always works better when started from within Word. We don't recommend that you choose this option from Outlook; instead, always start with Word when you want to create a letter or envelope with the Letter Wizard.

- ➔ For full details on the only effective way to use Word's Letter Wizard, see "Creating and Editing Letters," p. 312

A brand-new feature in Outlook 2000 allows you to kick off a Word mail merge from Outlook. Surprisingly, this process can be extremely effective, especially if you're willing to create a custom view and filter your Contacts list first. Start by opening the Contacts folder, and then choose **V**iew, **C**urrent **V**iew, **D**efine Views. Click the **N**ew button and define a Table or Card view that contains all the fields you need for your merge. For example, if you're planning to mail letters to customers, make sure the list of fields includes Title, First Name, Last Name, Suffix, and all the Business Address fields. Don't use the Full Name or Mailing Address fields, which may contain home addresses or names that are formatted incorrectly. Save the view with a name such as Business Mail Merge.

- ➔ For instructions on how to create a new view, see "Creating a New Custom View," p. 680
  1. If you want to send the mailing to a subset of your list, select the individual items manually, using Ctrl+click, or choose **V**iew, **C**urrent **V**iew, **C**ustomize Current View and define a filter.
- ➔ For details on how to create a filter in Outlook, see "Customizing an Existing View," p. 674
  2. Choose **T**ools, **M**ail Merge. The Mail Merge Contacts dialog box opens, as shown in Figure 30.11.

**Figure 30.11**  
Use these options, combined with a custom Outlook view, to quickly create a Word mail merge document.



3. From the Contacts section, choose whether you want All Contacts in Current View or Only Selected Contacts. From the Fields to Merge section, choose whether you want All Contact Fields or Contact Fields in Current View. If you've created a custom view as we recommend, choose the latter option.

**Tip #365 from**

You can merge using the entire list of fields from the Contacts folder. If you do that, however, the list of merge fields will include all 120-something fields from Outlook, and scrolling through the list will be a chore. Trust us—creating a custom view will save you a lot of time.

4. From the Document File section, choose whether you want to use a New Document or an Existing Document. Use the Browse button to select a file. If you want, you can pause here, create your document in Word, save it and close it, and return to the dialog box to continue.

**Tip #366 from**

Using an existing document is a great way to print custom envelopes easily, using a return address of your choosing. Run this mail merge routine and create an envelope that contains the First Name, Last Name, and appropriate Business Address fields. Add a text box containing your return address (with a logo, if you want), and save the file using a name such as My Business Envelope.doc. The next time you want to create an envelope, select one or more items from your Contacts folder, and use Outlook's mail merge features with the document you just created. The results are nearly foolproof—and you can use the same technique for letters as well, producing much better results than the Letter Wizard.

5. In the Contact Data File section, check the Permanent File box if you want to save the filtered data from your Contacts folder in a separate file for reuse later. If you've defined a custom view, this step is not necessary; it's most applicable if you want to share the data file with another Word user who doesn't have access to your Contacts folder.
6. Choose a Document Type from the Merge Options section of the dialog box; normally, you'll use the Form Letters option, but you can also choose Mailing Labels, Envelopes, or Catalog. These options are the same as those available using Word's Mail Merge Wizard. Choose one of three Merge To destinations as well: a new document, the printer, or email.
7. Click OK to launch Word with the document and data you specified ready to merge. If you started with a new document, you'll need to add merge fields and text; if you began with an existing document that already contained merge fields and text, you're ready to go.

➔ For more details about how to use Word's mail merge capabilities, see "Merging Data and Documents," p. 395

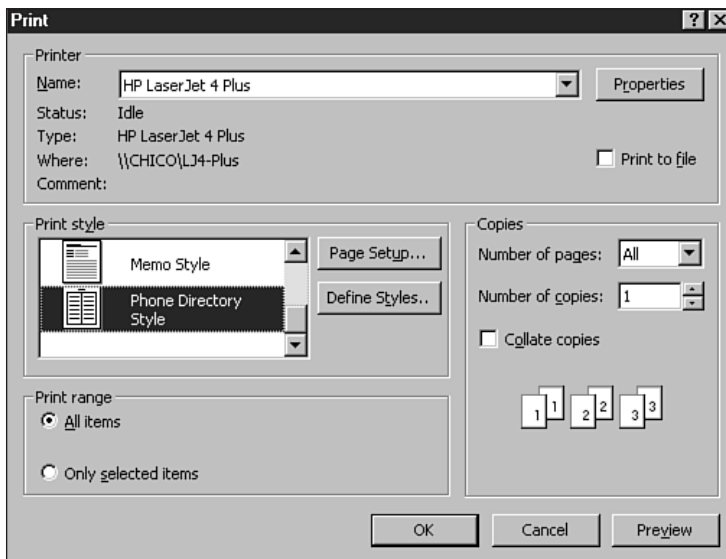
## Printing Phone Lists from Your Contacts List

You can print contact lists in a variety of styles and formats, using all the items in your Contacts folder or only a subset of them. You can even turn your address list into a booklet printed on both sides and small enough to fit in a shirt pocket—although you'll need to be willing to hover over the printer while it spits out pages. (You'll also have to resign yourself to wasting many sheets of paper while you figure out the precise order in which to perform each step.) This feature can be useful when you're heading off on a business trip, for example, and you want to print the addresses and phone numbers of contacts in that area.

The steps required to print an address book or phone list containing items from your Contacts folder are nearly identical to those for printing a calendar. If you want to print a subset of the folder's contents, use one of the following techniques:

- To select a contiguous block of items, click the first item; then hold down the Shift key and click the last item in the group.
  - To select individual items that are not adjacent, hold down Ctrl while clicking each one.
  - To show only items that match specific criteria, use the Find button or the Advanced Find dialog box.
  - Customize the current view or switch to another view and filter the list.
- ➔ To learn more about using views to display, sort, and filter Outlook items, see "Using Views to Display, Sort, and Filter Items," p. 674
- ➔ To learn more about Outlook's powerful searching capabilities, see "Finding Outlook Items," p. 684
- ➔ To learn more about printing calendars, see "Printing a Calendar," p. 745
1. Switch to any Card view and click the Print button. Outlook displays the Print dialog box shown in Figure 30.12.

**Figure 30.12**  
Choose the Phone Directory Style option to print all the names and phone numbers in your Contacts folder, with no company or address information.



- Choose one of the five page formats from the Print Style list.



*Are you having problems seeing all the Print Style choices in the Print Dialog Box? If so, see “Setting Print Styles” in the Troubleshooting section at the end of this chapter.*

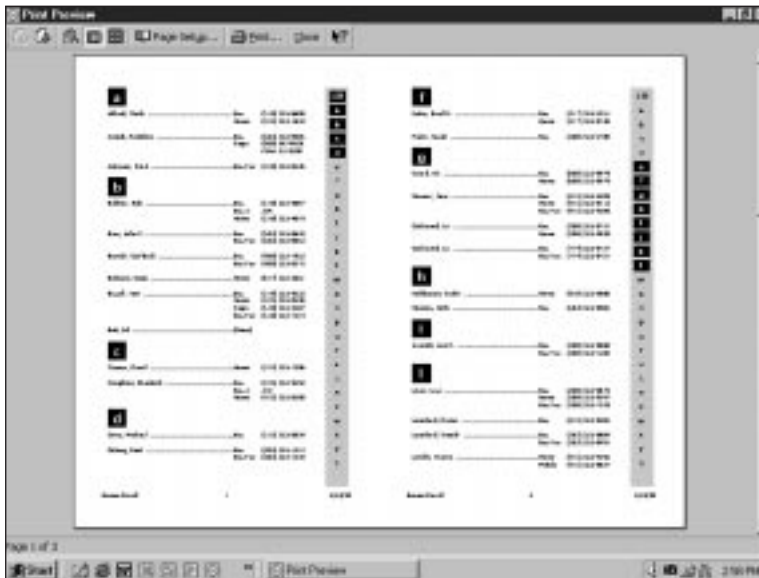
- In the Print Range box, choose whether you want to print All Items or Only Selected Items.

**Tip #367 from**

*EQ & Woody*

Have you used the Notes field to keep track of a lot of information about some contacts? To extract the maximum amount of information when printing, choose Memo Style, check the options to start each item on its own page, and print all attachments. Be careful, however; this option can chew through a ream of paper faster than you can say, “Save the rainforest.”

- Click the Preview button to see what your page will look like when printed. Use the Page Up and Page Down keys (or the corresponding toolbar buttons) to see additional pages in the Preview window, as shown in Figure 30.13.



**Figure 30.13**  
Preview an address book or phone list before printing to make sure the format matches what you expect.

- Click the Page Setup button in the Preview window or in the Print dialog box to adjust layout options, paper sizes, fonts, headers, footers, and other settings.
- Click Print to send the job to the printer.

When you print your phone book, choose from the following five formats:

- **Card Style**—Shows all the details from the underlying Card view. Switching to Detailed Card view adds more fields to each item but also extends the size of your printed book.

- **Small Booklet Style**—Prints in Card view, with each page shrunk to 1/8 normal size. Default settings suggest you should print this booklet using both sides of the paper. If you don't have a printer capable of handling two-sided printing, you can get the same effect, tediously, by using the manual feed option in your printer and feeding each sheet through individually.
- **Medium Booklet Style**—Also prints a two-sided booklet, but each page in this style is only 1/4 the size of the printed page. Experiment with a four-page sample before printing your entire phone book.
- **Memo Style**—Prints every bit of information about a contact, including all notes. To print a single contact in Memo Style, bypassing all dialog boxes, open the item and click the Print button.
- **Phone Directory Style**—Prints the name and all phone numbers for each contact in a two-column format that takes up the full width of an 8 1/2×11-inch sheet of paper. Although you can change the number of columns and the fonts used in this style, you can't add new fields.

➔ If none of the built-in print formats is exactly right, try creating a custom format using the same techniques as with a calendar; see "Using Calendar," p. 733

## Troubleshooting

### Selecting and Deleting Field Contents

*When working with the All Contact fields list on the last tab of a Contact form, Outlook won't let you edit the File As field, the names of email entries, and several other fields. So, how do you select or delete the contents of these fields?*

Outlook won't let you edit a handful of fields in this list; most of these are fields that Outlook generates automatically based on the contents of other fields. Use the General tab of the Contact form to change this information.

### Using Company Names in Your Contacts

*You've entered a company name in the Contacts folder, but Outlook insists on splitting it into first and last names—so that Acme Industries becomes Industries, Acme.*

When entering a new Contact item for a company, leave the Full Name field blank and instead press the Tab key twice, to jump to the Company field. Whatever you type in that field also appears in the File As and Subject fields, exactly as you typed it.

### Getting the Right Address

*You've chosen the option to display a map of a contact's address, but Expedia tells you there's no address to map. You're certain the street exists. What's wrong?*

This option uses the address that's visible in the current window. Switch between Home, Business, and Other addresses until the one you want is visible, and then try again. If that

still doesn't work, try editing the address in the browser window. Pay particular attention to abbreviations, which can confuse Expedia Maps—for example, if the address is on N. E. 20th St., try entering it as NE 20th Street, instead.

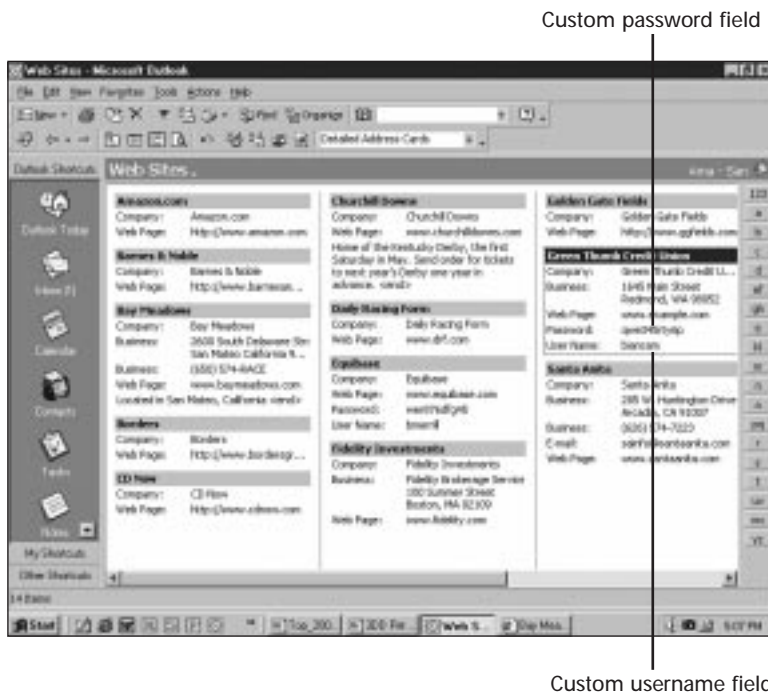
### Setting Print Styles

*You clicked the Print button, but you see only one print style choice in the Print dialog box. Naturally, it's not the one you want.*

This occurs when you click the Print button while displaying the Contacts folder in a Table view, such as Phone List view. Exit the Print dialog box and switch to a Card view, such as Address Cards or Detailed Address Cards, and then try again.

## Secrets of the Office Masters: Create a Contacts Folder for Web-Based Businesses

Who says that Contacts folders are strictly for names of people? Keep your friends, family, and business associates in your main Contacts folder, but create a new folder containing Contact items and use it exclusively to keep track of Web-based businesses. If you shop for books, CDs, and computer supplies online, this is a great way to track your favorite sites. It's also an effective way to keep brokerages and bank accounts from getting lost in your Web browser's Favorites list.



The secret is filling in the Company and Web Page Address fields; if you also need to keep track of the company's email address, snail-mail details, and phone number, add them, too. View the contents of the folder by using the Detailed Address Cards view to be sure you can spot the Web page address at a glance. Use the Notes field to track purchases you make on e-commerce sites. If the security of your Outlook data file isn't a problem, you can also create custom fields to store your username and password for each account. Click the All Fields tab, choose User-Defined Fields in This Item from the Select From list, and click the New button to add those fields.



To jump straight from an item in the Contacts folder to its Web page, click the Explore Web Page button on the Advanced toolbar. When you click this button, Outlook opens Internet Explorer and goes straight to the Web page defined in the selected item. If any of your regular contacts have personal or business Web pages, be sure to use this shortcut with their records as well.

# Getting Started with Excel

## In this chapter

- Starting and Exiting the Excel Program 10
- Identifying Workbook Elements 12
- Working with Workbooks 21
- Navigating the Workbook 25
- Troubleshooting 29
- Excel in Practice 29

*by Laurie Ann Ulrich*  
*[laurie@limehat.com](mailto:laurie@limehat.com)*



## Starting and Exiting the Excel Program

If you're new to Excel, it won't be long before you're accustomed to performing various spreadsheet tasks simply and quickly. You'll want to start the program with as much speed and simplicity as possible. Choose one of the following methods to start Excel:

- From the Start menu, choose Programs, and then select Microsoft Excel from the list. This method isn't the fastest, but you don't need to do anything special to use it—the menus are set up for you through your installation of Microsoft Office.
- Choose New Office Document from the Start menu, and choose the Blank Workbook icon from the General tab. Click OK to open Excel. Again, this isn't the fastest method, but the tools are already set up for you.
- Click the Excel icon on the Office Shortcut Bar. This opens Excel and a blank workbook for you. Many users may opt not to display this toolbar, but its presence on the desktop is part of the typical installation of Office. If left on the desktop, the Office Shortcut Bar provides a quick method for accessing all the applications in Office 2000.
- Open an existing Excel workbook from within Windows Explorer, My Computer, or by using a desktop shortcut to that particular file.

➔ To learn how to open an existing workbook file, see "Opening a Saved File," p. 51

- Create and use a shortcut icon on the desktop that takes you right into Excel. This requires you to create the icon in the first place, but you would have to do that only once. From then on, you'd have the fastest method of starting Excel right on your desktop. To create a shortcut, follow these steps:
  1. Right-click any empty spot on your Windows desktop.
  2. Choose New, Shortcut from the shortcut menu.
  3. In the Command line text box, enter the path and filename for Excel, which may be in a Microsoft Office folder on your local drive. The default path is C:\Program Files\Microsoft Office\Office\Excel.exe.

### Tip #1 from

*Laurie*

If you're not sure of the exact location, click Browse. When you've found the program file (Excel.exe), double-click it or click Open to return to the Create Shortcut dialog box.

4. Click Next.
  5. Type a name for your shortcut, or accept the default name as it appears in the Select a Name for the Shortcut text box.
  6. Click Finish. Your shortcut appears on the desktop. (You can tell a shortcut from a program icon that exists nowhere but the desktop by the small arrow in the lower-left corner of the icon image. Only shortcuts have this arrow.)
- Add Excel to your Startup folder so that the program begins as soon as you start your computer and Windows opens. This also must be set up, which takes time. Consider

this method only if Excel is the first program you use each day, and the primary program you work with throughout the day. To add Excel to your Startup folder, follow these steps:

1. Choose Settings, Taskbar & Start Menu from the Start menu.
2. Click the Start Menu Programs tab.
3. Click the Add button to start the Create Shortcut dialog box.
4. Enter the path and filename for Excel (Excel.exe) in the Command Line text box.  
If you aren't sure of the exact path to your program file, click Browse, and then double-click the Excel program file, which probably is located in your C:\Program Files\Microsoft Office\Office folder.
5. Click Next.
6. Scroll down in the Select Folder to Place Shortcut In box, until you find Startup. Click it once.
7. Click Next.
8. Enter a name for the shortcut, as you want it to appear in the Start menu (or accept the default name).
9. Click Finish.

When you start Excel, you are immediately presented with a blank Excel workbook, ready for you to begin entering and editing your data.

Exiting Excel can be performed in any one of the following ways:

- Choose File, Exit. Any open and unsaved workbooks will result in a prompt, asking you whether you want to save your work. After you respond to these prompts, the program will close.
- Click the Close button in the upper-right corner of the Excel application window. Using this button also results in prompts asking you to save any unsaved work, after which the application will be shut down. If you see two Close buttons, be sure to click the one on the Excel title bar; otherwise, you'll just close the workbook window.
- Right-click the taskbar icon for each of your Excel workbooks (a separate button appears on the taskbar for each open workbook) and choose Close from the shortcut menu for each open workbook. When all workbooks are closed, right-click the remaining Excel application button on the taskbar, and choose Close. The application will now be closed.
- Press Alt+F4 to exit the program.

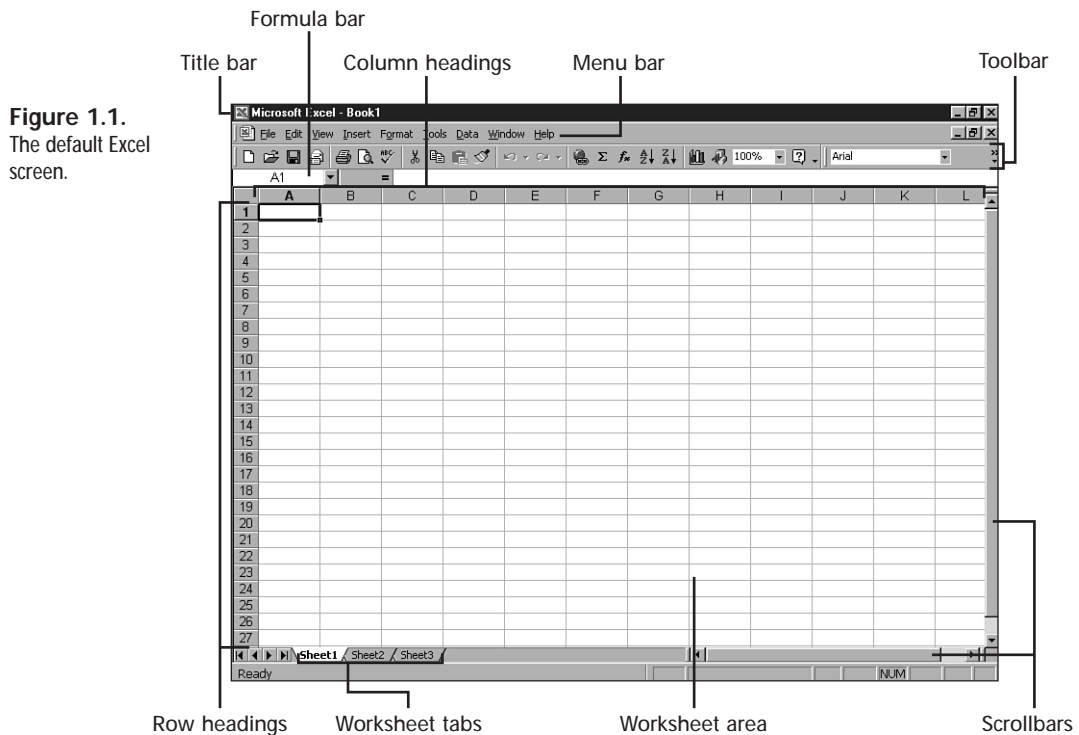
If you need to close only the workbook you're working on and want to keep Excel open to work on other workbook files, choose File, Close from the menu, or press Ctrl+F4. If you haven't saved your work, you'll be prompted to do so before the workbook is closed. Find out more about saving your workbooks in Chapter 2, "Entering and Saving Worksheet Data."

## Identifying Workbook Elements

Before you start entering any text or numbers into your blank Excel workbook, it's a good idea to become familiar with the entire Excel window. Your Excel window contains the following main elements:

- Title bar
- Menu bar
- Toolbars
- Formula bar
- Scrollbars
- Worksheet columns and rows
- Worksheet tabs
- Status bar

Figure 1.1 shows a typical blank Excel workbook.



When a workbook is open, the Excel window contains two sets of Minimize, Maximize, and Close buttons. The uppermost set is associated with the Excel *application* (program), the lower set controls the workbook window.

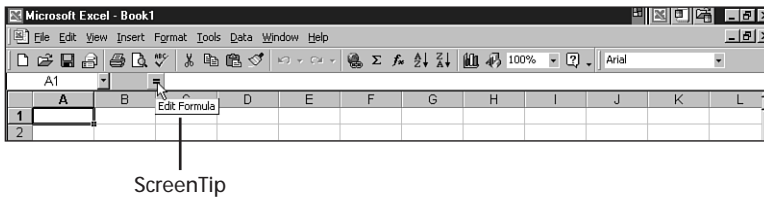
### Tip #2 from

*Laurie*

If you're using the Microsoft IntelliMouse or Microsoft IntelliMouse TrackBall, you can hold down the wheel button and drag up, down, left, or right within the window to scroll through your worksheet.

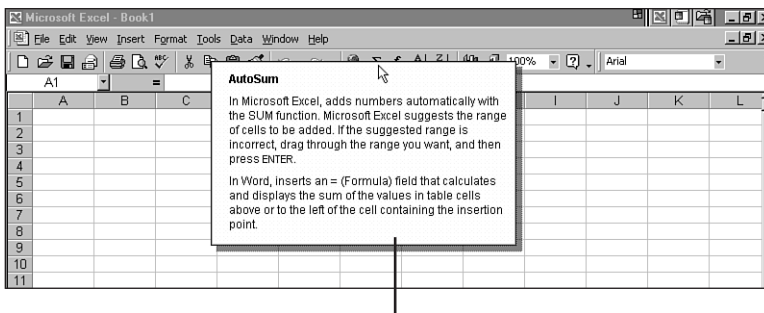
## Using ScreenTips and What's This? Help

You can point to any element in your Excel window and, after a brief pause, a *ScreenTip* will appear to tell you the name of that particular element (see Figure 1.2).



**Figure 1.2.** Use ScreenTips to help familiarize yourself with the names of your Excel window elements.

If you want to know more, press Shift+F1 or choose Help, What's This? on the menu, which turns on your *What's This? Help*. Your cursor then appears with a question mark attached to it. Point to any element and click. A pop-up description of the element (this is also called a ScreenTip) appears, as shown in Figure 1.3. Press Esc or click outside the ScreenTip to close the ScreenTip.



**Figure 1.3.** By pressing Shift+F1, you can turn your cursor into a point-and-click help tool.

ScreenTips that appear when you're using What's This? provide more info than the regular ScreenTips, which indicate the name of the element.

**Tip #3 from***Carrie*

What's This? Help is a great alternative to the standard Microsoft help because you don't need to know the name of a feature to find out more about it. Dialog boxes also include What's This? Help buttons that you can use to get information about the buttons, tabs, options, and so on, in the dialog box. The What's This? button displays a question mark, and is located next to the Close button in the upper-right corner of the dialog box.

To gain access to Excel's full set of help files, choose **H**elp, Microsoft Excel **H**elp or press F1. If the Office Assistant is enabled, this command displays the Assistant (see the next section for details). If the Office Assistant has been disabled or you're using the standalone version of Excel, this command displays the Help window.

In the Help window, you can search by topic using the **C**ontents tab, alphabetically using the **I**ndex tab, or by typing a question in the Answer Wizard tab. (If necessary, click the Show button on the toolbar in the Help window to display these tabs.)

## Getting Answers with the Office Assistant

An animated character provided to give you a friendly tool for accessing Office help files, the *Office Assistant* enables you to ask a question or type a series of keywords and follow a series of prompts to reach help for any Office 2000 application feature.

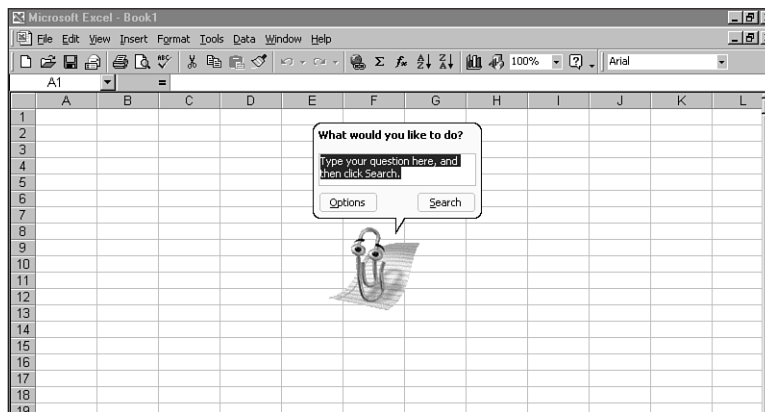
To access the Office Assistant, use one of the following methods:



- Click the Office Assistant button on the toolbar. The Assistant appears and prompts you to ask your question (see Figure 1.4). Right-click on the Office Assistant and select **C**hoose Assistant to obtain access to the Office Assistant **G**allery. Eight animated assistants are available.

**Figure 1.4.**

Type your request in question format, such as "How do I use formulas?" and a list of likely topics will be presented.



- Choose **H**elp, Show the **O**ffice Assistant. This method also opens the Office Assistant, and you can type your question or keywords.

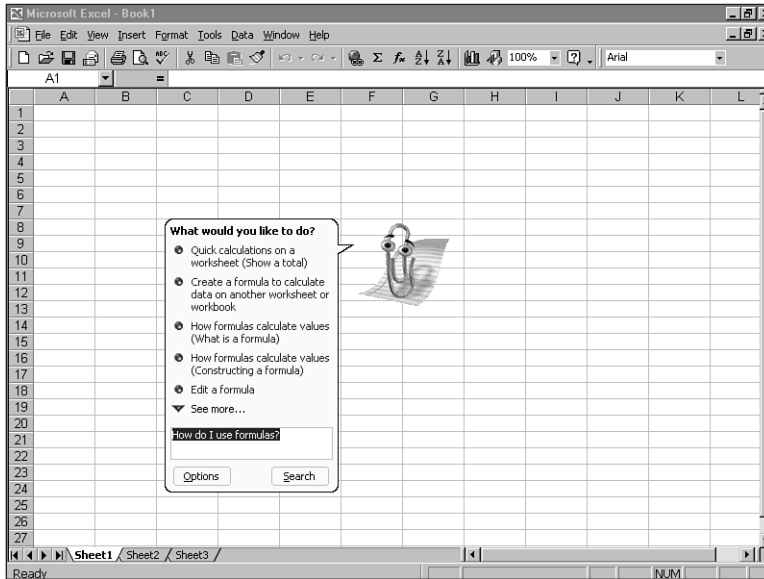
- Press F1. Using this method does two things. It opens the Office Assistant and forces it to guess the topic for which you need help (see Figure 1.5). This context-sensitive help is based on the dialog box, menu, or feature that's in use at the time you press F1.

#### Tip #4 from

*Cassie*

If you prefer not to use the Office Assistant at all, choose the **O**ptions button in the Office Assistant's dialog box, or right-click the Assistant and choose **O**ptions. Deselect the option **U**se the Office Assistant.

If you want Excel to display the Help window when you press F1, rather than displaying the Office Assistant, deselect the **R**espond to F1 Key option in the Office Assistant dialog box.



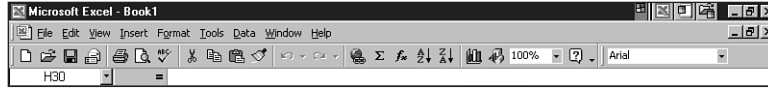
**Figure 1.5.** Choose the topic that most closely matches your requested information. You can also type a new question and click **S**earch.

When you're finished using the Office Assistant, you can right-click the Assistant character and choose **H**ide from the shortcut menu. If you don't hide the character, it will remain onscreen while you're working, and will become active if you press F1 or click the Office Assistant button on the toolbar. If you decide to leave the Assistant onscreen, it should change size or position automatically as necessary to move out of the way as you work. If the Assistant obscures a portion of the screen you need to see, however, just drag the Assistant out of the way.

## Viewing Toolbars

The Excel window opens with one toolbar displayed—a combination of the Standard and Formatting toolbars (see Figure 1.6). This toolbar contains buttons that represent the most frequently used Excel commands, as well as a great number of buttons that you'll recognize from other Microsoft Office programs, assuming that you installed Excel with Microsoft Office instead of installing Excel as a standalone program.

**Figure 1.6.**  
The most commonly used buttons from the Standard and Formatting toolbars are displayed in one toolbar strip.



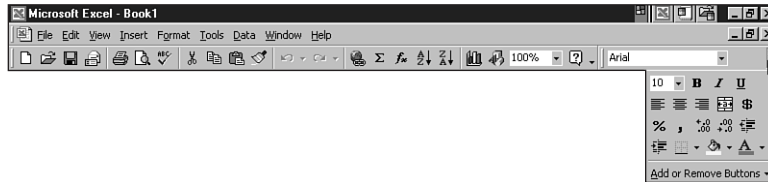
This toolbar configuration is new to Excel 2000, and although it's the default, you may prefer to see both toolbars at once. To reset your toolbars and turn off the default, choose **T**ools, **C**ustomize, and click the **O**ptions tab. Remove the check mark from the Standard and Formatting toolbars **S**hare One Row option.

**Note**





In this book, most figures show the Standard toolbar appearing below the menu bar, followed by the Formatting toolbar on a separate strip.

This toolbar contains more buttons than can be displayed onscreen at one time. To view these obscured buttons, click the More Buttons button at the far-right end of the toolbar (see Figure 1.7).

**Figure 1.7.**  
Tools for formatting appear in a tool palette when More Buttons is clicked.



Tables 1.1 and 1.2 list each of the toolbar buttons on the Standard and Formatting toolbars and briefly explain their functions.

Table 1.1. Buttons on the Standard Toolbar		
Button	Name	Description
	New	Creates a blank workbook.
	Open	Displays the Open dialog box, from which you can browse to find an existing file.
	Save	For a first-time save, this tool opens the Save As dialog box, enabling you to give the file a name and choose a location to save it. After you save the file, this button updates the saved file to include your latest changes.
	Email	Sends either the entire open workbook or the current worksheet as an email attachment.




















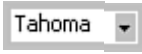


















Button	Name	Description
	Print	Sends the currently selected sheet(s) directly to the printer.
	Print Preview	Displays a thumbnail sketch of the worksheet.
	Spelling	Runs a spell check of the text in the workbook.
	Cut	Removes the selected content and places it on the Clipboard. Normally followed procedurally by pasting.
	Copy	Places a duplicate of the selected content on the Clipboard.
	Paste	Places the cut or copied content from the Clipboard to a new location.
	Format Painter	Copies formatting from one range of cells to another.
	Undo	Cancels the last action. You can undo multiple operations by clicking the down arrow and selecting from the list.
	Redo	Reverses previous Undo operation(s).
	Hyperlink	Opens a dialog box from which you can choose to create a link to a document on your local or network drive, or to a Web page on the Internet.
	AutoSum	Automatically sums a column or row of numbers. Click once to choose the numbers to be summed, click again or press Enter to perform the calculation and insert the result.
	Paste Function	Opens the Function Wizard, a series of dialog boxes that enable you to choose a mathematical function and then select the cells you want to use in the calculation.
	Sort Ascending	Performs an A–Z or 1–10 sort for a series of rows.
	Sort Descending	Performs a Z–A or 10–1 sort for a series of rows.
	Chart Wizard	Opens a wizard you can use to build a chart from selected cells in your worksheet.
	Map	Opens an application called Microsoft Map, which runs within Excel. Choose a region of the world, and a map is created. Mapping tools also appear, which you can use to format the map.
	Drawing	Displays the Drawing toolbar, a series of tools for creating and formatting hand-drawn shapes and lines.
	Zoom	Enlarges or reduces the display of your currently viewed worksheet area.
	Microsoft Excel Help	Activates the Office Assistant—an animated character you can use to get help on a variety of Excel topics. (Microsoft Office installations only.)



Table 1.2. Buttons on the Formatting Toolbar

Button	Name	Description
	Font	Shows the font currently in use; click the down-arrow button to see a list of fonts that you can apply.
	Font Size	Indicates the current point size; click the down-arrow button to see a list of available point sizes. Choose one from the list or type your own number.
	Bold	Makes the selection bold.
	Italic	Makes the selection italic.
	Underline	Underlines the selection.
	Align Left	Text is left-aligned by default. Use this button to realign previously centered or right-aligned text or to left-align numeric content.
	Center	Moves text or numeric content to the center of the cell.
	Align Right	Aligns the content of selected cells along the right side of the cell.
	Merge and Center	Used primarily for titles, this button takes cell content in one cell and centers it across several contiguous (adjacent) cells, merging the cells into one long cell.
	Currency Style	Turns standard numbers into currency by adding decimals, commas, and a dollar sign.
	Percent Style	Turns standard numbers into a percent, with a percent sign.
	Comma Style	Adds commas to numbers in excess of 999.99.
	Increase Decimal	Extends the display of numbers to the right of the decimal point. The number 5.6, for example, can become 5.58 or 5.579. Each click of the button extends the number one digit.
	Decrease Decimal	Reduces the number of digits to the right of the decimal point. Each click takes away one number.
	Decrease Indent	Moves the cell content in selected cells closer to the left side of the cell, if any indent had been applied in the cell.
	Increase Indent	Moves cell content to the right.
	Borders	Opens a palette of border options for placing borders on any side of a cell or block of cells, including thick and double bottom borders.

Button	Name	Description
	Fill Color	Applies or removes solid color fills in cell backgrounds.
	Font Color	Changes the color of text or numbers in selected cells.

Many of Excel's tools require that you select a cell or cells before using the tool, so that Excel knows where you want to apply the format or perform the action that the button represents. If you don't consciously select a cell or cells, the toolbar will act upon the active cell.

#### Tip #5 from

*Laurie*

Use What's This? Help to identify and get a brief description of the function of any toolbar button.

Although you may not feel the need to do so until you're more familiar with Excel, you can always add and delete toolbars from your Excel window. To see a list of the different toolbars available in Excel, right-click any of the displayed toolbars, or choose **V**iew, **T**oolbars. Click the name of the toolbar you want to add to the screen.

To remove a currently displayed toolbar, display the list of toolbars and select the name of the toolbar you want to remove. The toolbar list is a toggle list—select them once, they're on; select them again, they're off.

➔ For more information on customizing Excel's toolbars, see "Modifying Toolbars," p. 869

## Working with Excel Menus

The Excel menus contain all of the same tools that are represented on the toolbars, and more. To access Excel menus, click the name of the menu, or press Alt plus the underlined letter in the menu name. To close a menu you opened accidentally, press Esc or click the menu name again.

Microsoft Office menus contain the following three main features:

- **Commands.** The words you click to make things happen. If the words are followed by an ellipsis (...), a dialog box will open. If the command is followed by a right-pointing triangle, a submenu will appear.
- **Toolbar reference icons.** To familiarize you with the toolbar buttons that match your menu commands, they're reiterated in the menus.
- **Keyboard shortcuts.** If a keyboard shortcut is assigned to a given command, that shortcut will appear to the right of the command text.

In case you prefer using the keyboard whenever possible, you can also issue menu commands by pressing the underlined letter in the command while the menu is displayed.

## Tip #6 from



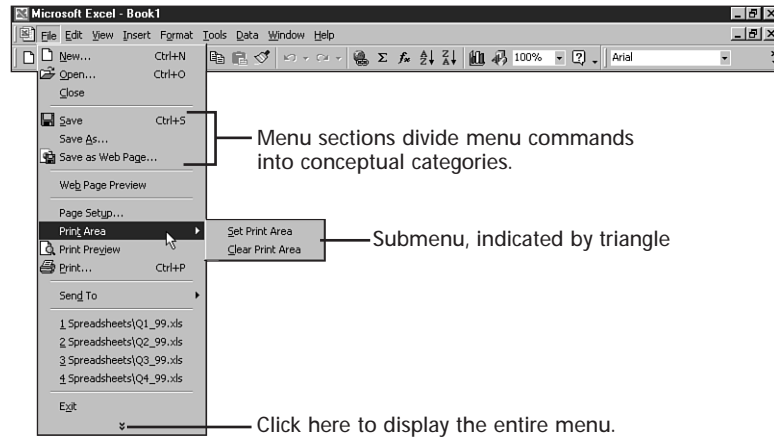
If Excel beeps repeatedly or refuses to insert entries as you type, you may have accidentally pressed the Alt key, which activates the menu bar without actually opening any particular menu. If one of the menu names looks different from the other menu names—boxed, or like a button—press Alt or Esc to deactivate the menu bar and return to the worksheet area.

A new feature in Office 2000 is the *personalized menus*, which are designed to be sensitive to the user. Each program begins by displaying a default set of commands when you open the menu; if you keep the menu open for a few seconds, additional (less used) commands also appear. As you use these less-common commands, they join the others in the default set; the menus thus adapt to match your use of the program. If you prefer to have your menu commands remain static rather than personalized, you can turn off this feature. Choose **T**ools, **C**ustomize, and turn off the **M**enus Show Recently Used Commands First option from the **O**ptions tab. Click Close to put this change into effect and close the dialog box.

Figure 1.8 shows a typical Excel menu.

**Figure 1.8.**

Although some commands are available only from the menus, most have toolbar and keyboard equivalents. Dimmed commands on menus are not available under the current circumstances.



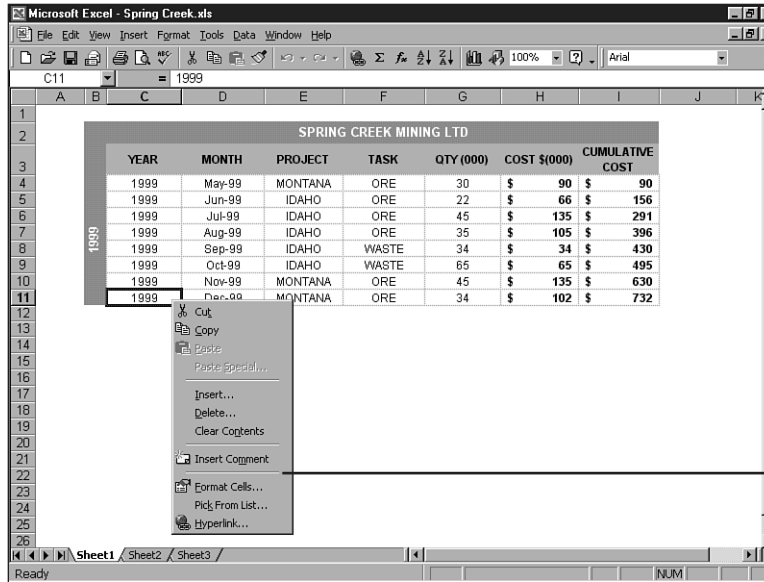
## Tip #7 from



When personalized menus are in use, you can display the entire menu immediately by double-clicking, rather than single-clicking, the top menu item (File, Edit, and so on). You also can click the last item on the open menu—a pair of downward-pointing arrows.

## Working with Shortcut Menus

*Shortcut menus* (also called *context menus*) are another type of menu that you'll find throughout Excel and all of the other Office 2000 applications. By right-clicking various items in your workbook window, you can open menus that offer context-sensitive commands. Figure 1.9 shows a typical shortcut menu that appears when you right-click any cell (or selected range of cells) in your worksheet.

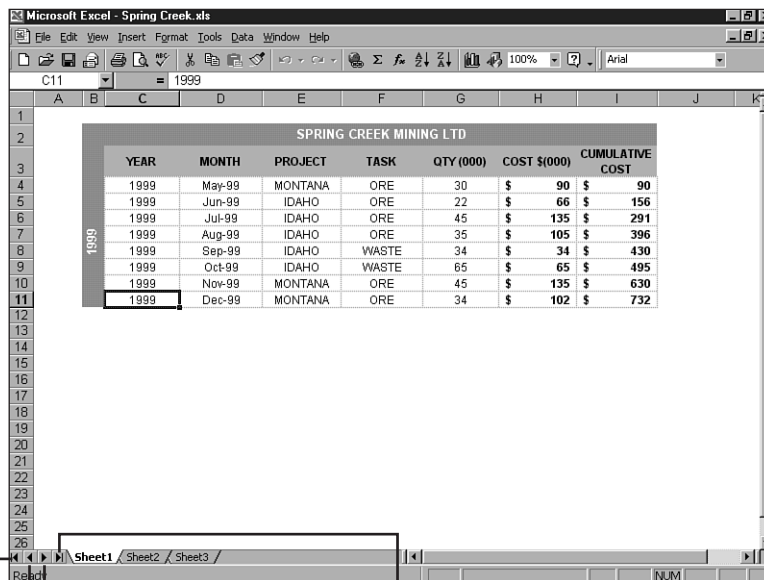


**Figure 1.9.** Commands appropriate for selected cells or cell content are displayed in the shortcut menu when you right-click any cell.

Shortcut menu

## Working with Workbooks

It's important to understand one concept from the outset—Excel files are *workbooks*, each of which contains three *worksheets* by default. These worksheets can be accessed by clicking their *sheet tabs*, or by using the *tab scrolling buttons* to the left of the tabs, as shown in Figure 1.10.



**Figure 1.10.** Click a worksheet's tab to select it. If you can't see the sheet you want, click the tab scrolling buttons to bring it into view.

First sheet Previous sheet Next sheet Last sheet

**Tip #8 from***Laurie*

If you want to quickly select a sheet that's out of view, right-click the tab scrolling buttons to see a shortcut menu listing all the sheets in the workbook. Select the sheet you want by choosing its name from the list.

Why have separate sheets? That's a good and common question, as versions of Excel prior to 5.0 didn't have worksheets—each Excel file was one big spreadsheet, with just two dimensions—width and height. Since version 5.0, however, Excel files have had depth as well as vertical and horizontal dimensions. The following list describes standard workbook modifications:

- You can add sheets to the default three with which each workbook starts. The number of sheets per workbook is limited only by the amount of memory on your computer.
- You can change sheet names. Sheet1, Sheet2, and so on, are default sheet names. Worksheet names can be up to 31 characters long.
- You can rearrange worksheet order and delete sheets.
- If you need to create a new worksheet that resembles an existing worksheet, you can copy the existing worksheet, paste the copy into the workbook, and edit the copy to meet your needs.
- You can group your worksheets, and create several identical worksheets all at once. Or you can create one worksheet and make a copy of it.

After you've added sheets, you can go to any one of them quickly by right-clicking the sheet scrolling buttons and choosing the sheet by name.

**Tip #9 from***Laurie*

You can change the default number of sheets that any new workbook opens with by choosing **T**ools, **O**ptions and clicking the General tab. Change the setting for **S**heets in New Workbook, and click OK. For more information about customizing Excel to meet your needs, see Chapter 28, "Customizing Excel to Fit Your Working Style."

## Inserting and Deleting Sheets

If the three sheets that came with your blank workbook aren't enough for you, add new ones. To insert a new worksheet, choose **I**nsert, **W**orksheet. A new sheet appears to the left of the currently active sheet. To delete a sheet, right-click the sheet tab and choose **D**el~~e~~**t**e; then confirm that you want to permanently delete the sheet.

New sheets are added chronologically. For example, if you add Sheet 4 and then delete it, the next new sheet will be called Sheet 5, even though Sheet 4 is no longer in the workbook.

## Naming Worksheets

Numeric worksheet names (Sheet1, Sheet2) don't tell you about the content of your sheets. Unless you happen to remember what data you've entered on your individual sheets, you're likely to spend a lot of time clicking through the worksheets.

To name a worksheet, use the following methods:

- Choose **F**ormat, **S**heet, **R**ename.
- Double-click the sheet tab or right-click it and choose **R**ename.
- Right-click the tab for the worksheet you want to rename and choose **R**ename from the shortcut menu.

All three techniques have the same result—the current sheet name is highlighted, and you can type the replacement text (see Figure 1.11). To confirm your entry, click in any cell on the current sheet, click another sheet tab, or press Enter. To keep the previous name, press Esc before confirming the new name.



This sheet has been renamed from Sheet1 to 1999 Costs.

**Figure 1.11.** Type a short and simple sheet name to identify the contents of that sheet for you and other users of the workbook.

## Rearranging Worksheets

When you insert a new sheet, it's added to the left of the sheet that was active at the time. In many cases, this new sheet isn't in the position where you want it, relative to the existing sheets.

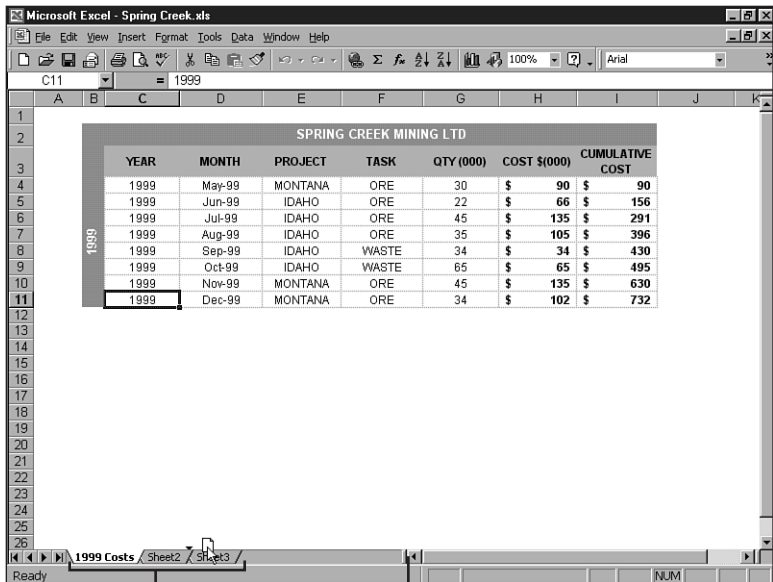
To move a sheet, click the sheet tab and drag it to a new position, watching the small down-pointing triangle that appears and follows the tab as you move it left and right. Your mouse pointer also is accompanied by a small page icon. When the triangle is pointing to the spot where you want to place your tab, release the mouse. Figure 1.12 shows a sheet tab being moved.

## Grouping and Ungrouping Sheets

Sheets can be *grouped* (connected) to facilitate creating or formatting two or more identical sheets. For example, you can create one sheet and copy it to two other sheets, or you can group three blank sheets and enter the sales report content once—no subsequent copying is required. Because the sheets are connected before any content is entered, all the content is automatically placed on all the grouped sheets.

To group sheets, click one of the tabs that you want in the group and press the Ctrl key. With the Ctrl key held down, click the remaining tabs in the intended group of sheets. All the grouped sheets' tabs will turn white, and the indicator [Group] will appear in the title bar after the workbook name, as shown in Figure 1.13.

**Figure 1.12.** Rearrange your sheet tabs by dragging left and/or right until you find the correct location.

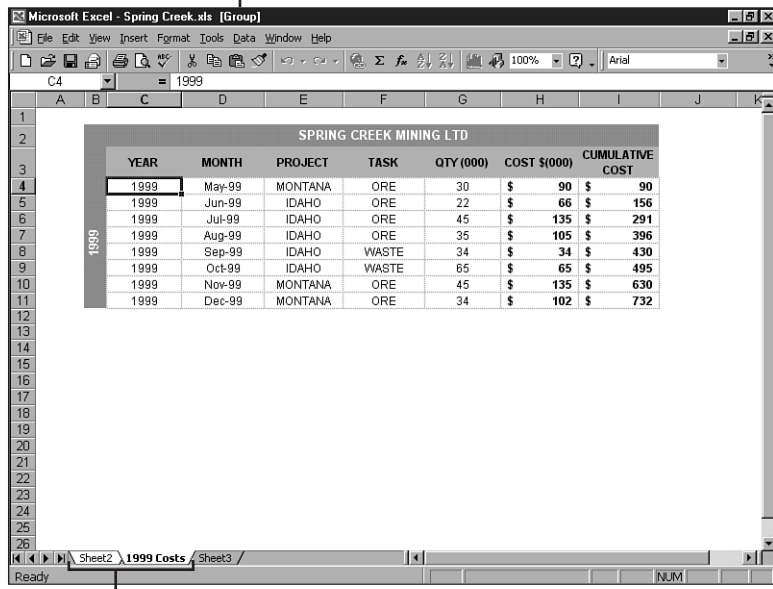


The 1999 Costs sheet tab is moving between sheet2 and sheet3.

Drag the tab split box to create more room for your tabs.

Notice the [Group] indicator in the title bar.

**Figure 1.13.** Select as many sheets as you need for your group with the Ctrl key.



These two sheets are grouped.

**Tip #10 from***Laurie*

You can group a series of sheets by pressing the Shift key as you click the first and then the last tabs in the series. All the sheets between the first and last tab will be included in the group.

You can group *all* the sheets in a workbook by right-clicking any sheet and choosing Select All Sheets from the shortcut menu.

To *ungroup* your grouped sheets, click on a sheet tab outside of the group, or right-click any of the grouped tabs and choose Ungroup Sheets from the shortcut menu.

**Caution**

When entering group content, be sure to enter only the content that you want to be common to all of the sheets in the group. If the group of sheets are intended to be quarterly sales reports for two or more companies, for example, stop entering group content and ungroup the sheets before entering any content specific to any individual company.

## Navigating the Workbook

While you're entering data into a worksheet, you may be working in a confined area of the sheet and find that using the mouse and your arrow keys to make short-distance moves is completely adequate. When you start working with many columns and rows within a single worksheet or with multiple sheets, however, you'll want to make long-distance moves as quickly and easily as possible.

You can feel in control of a workbook and the worksheets within it only if you know how to move from one cell to another, one sheet to another, or to another open workbook and back again.

### Understanding Cell Addresses

A cell's *address* is its location—an intersection of a *column* (vertical position) and a *row* (horizontal position). Cell C7, for example, is found at the intersection of column C and row 7, as shown in Figure 1.14. The Name box indicates the selected cell's address; the row and column headings for the selected cell appear bold and are "raised" to look like gray buttons.

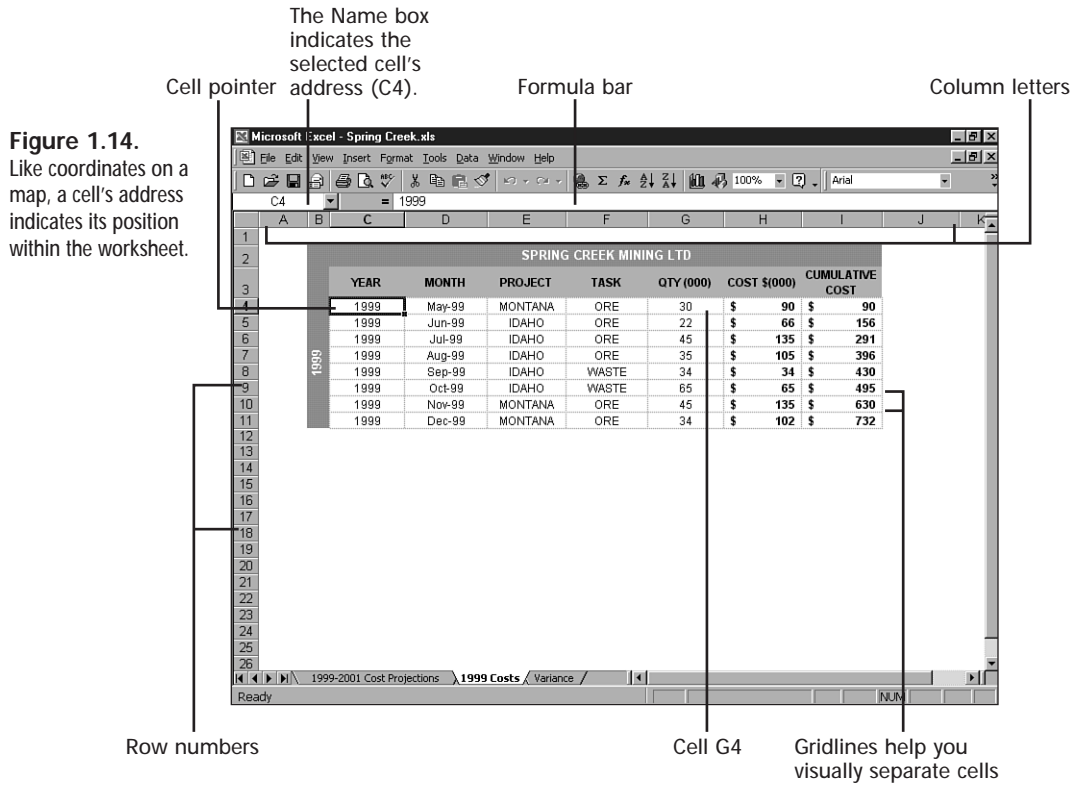
**Note**

There are 256 columns in each worksheet—lettered A through Z, and then AA through IV. Use Alt+Page Down to page quickly across the width of your worksheet and familiarize yourself with the column letters.

When referring to a range of cells in a formula or to select them using the Go To dialog box, use a colon between the first and last cell in the range (see Figure 1.15).



For more information on selecting cells and ranges, see Chapter 3, “Selecting and Naming Cells and Ranges.” To learn more about using and referring to cell addresses, see Chapter 10, “Constructing Excel Formulas.”

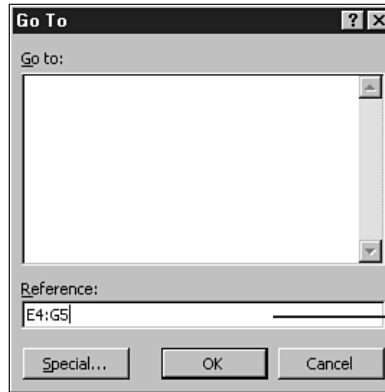


## Moving Through a Worksheet

Worksheets are the major components of a workbook. There are over 16 million cells per worksheet. The columns range from A to IV and each worksheet includes 65,536 rows. Using your mouse and keyboard, you can move great distances—from cell A1 to IV65536 or right next door from A1 to A2. For most moves, you have more than one option.

### Note

A standard three-sheet workbook includes over 50 million cells. You probably won't use even one percent of them in any of your worksheets, so don't worry about running out of space for your work!



**Figure 1.15.**  
Type the first and last cells in your range and separate them with a colon.

Specify the desired range or address here.

### Using Worksheet Keyboard Shortcuts

With more than 16 million cells in a single worksheet, it's important to get where you're going as quickly as possible. Table 1.3 lists the keyboard shortcuts you can use to move from cell to cell in a worksheet.

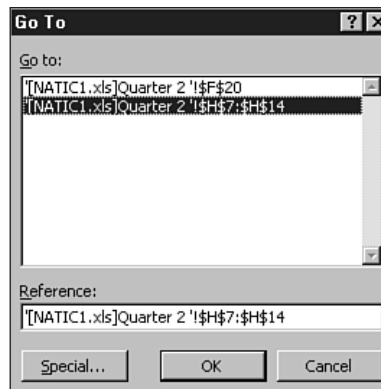
**Table 1.3. Keyboard Worksheet Navigation**

Keyboard Shortcut	Result
Tab	Moves one cell to the right.
Shift+Tab	Moves one cell to the left.
Enter	Moves one cell down.
Ctrl+Home	Moves back to cell A1 (called Home) from anywhere in the worksheet.
Ctrl+End	Moves to the last cell containing content in the worksheet.
Home	Moves to the beginning of the current row.
Page Down	Moves down one screen.
Page Up	Moves up one screen.
Alt+Page Down	Moves one screen to the right.
Alt+Page Up	Moves one screen to the left.
Ctrl+Page Down	Moves to the next worksheet in the workbook
Ctrl+Page Up	Moves to the previous sheet in the workbook.

## Accessing Cells with Go To

While most keyboard shortcuts take you to a cell in relation to the cell you're in, the Go To shortcut—which you access by pressing the F5 key or Ctrl+G—opens a dialog box into which you can type any cell address (see Figure 1.16). Press Enter after typing the address, and you are automatically placed in that cell. You can also type an address in the Name box and press Enter to jump to that address. The Go To dialog box offers an advantage over the Name box; the dialog box displays the address where the cell pointer was located before you jumped, so it's easy to jump back to where you came from. You can also access the Go To dialog box by choosing **E**dit, **G**o To. The **S**pecial button opens the Go To Special dialog box, which lets you access formulas, conditional formatting, precedents, dependents, and more in an Excel workbook. Go To Special is also a good tool to use when auditing a workbook created by others.

**Figure 1.16.**  
Use the Go To command to jump to cell references within a workbook.



**Figure 1.17.**  
To access special formulas and features added to the workbook, use the Go To Special dialog box.



# Troubleshooting

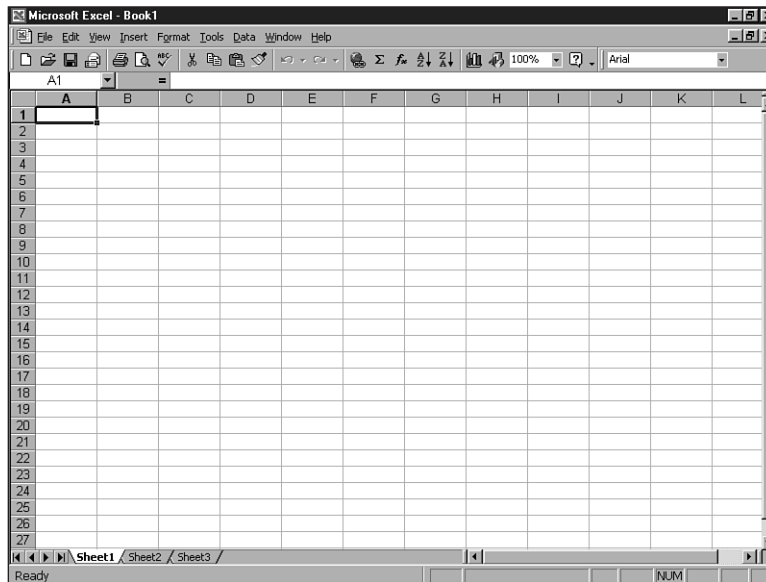
## Viewing More Sheet Tabs

*How can I see more of my sheet tabs?*

After you've added and named sheets, you may find that not all of them are visible at the same time. You can do two things to avoid/rectify this situation. First, try to keep your sheet names short, using abbreviations such as Qtr1 Sales/Exp instead of First Quarter Sales and Expenses. Second, expand the sheet tab display area by clicking the *tab split box*—the little vertical bar at the left end of the horizontal scrollbar—and dragging it to the right. This reduces the width of the scrollbar, and allows more room for your tabs.

## Excel in Practice

You can get rid of the gray lines a worksheet uses by default to show cell borders. Figure 1.18 shows these gray lines.

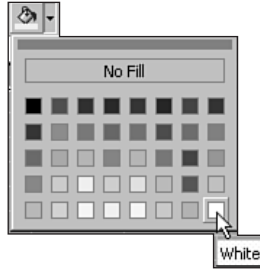


**Figure 1.18.** Worksheets use gray grid lines to show cell boundaries.

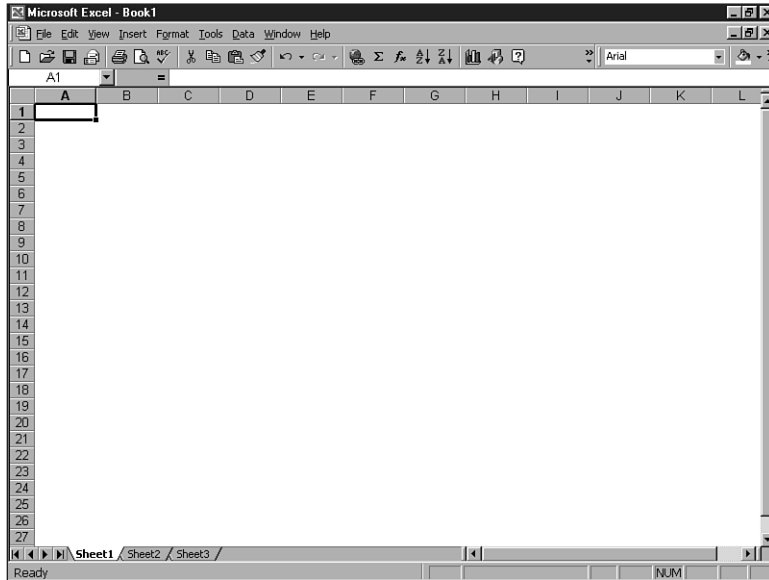
To hide the gridlines, create a white background. Click the Select All button in the upper-left corner of the worksheet (it's to the left of the column A heading). Then click the arrow at the right of the Fill Color button in the Formatting toolbar, and choose white, as Figure 1.19 shows.

Figure 1.20 shows the resulting white background.

**Figure 1.19.**  
After you select the entire sheet, click the Fill Color button and choose white.



**Figure 1.20.**  
The gridlines are no longer visible.



# Entering and Saving Worksheet Data

## In this chapter

- Planning Your Worksheet 32
- Understanding Cell Basics 32
- Entering Text 34
- Entering Numeric Data 45
- Saving Excel Data 47
- Controlling the Worksheet View 61
- Troubleshooting 68
- Excel in Practice 69

*by Laurie Ann Ulrich*  
*[laurie@limehat.com](mailto:laurie@limehat.com)*

## Planning Your Worksheet

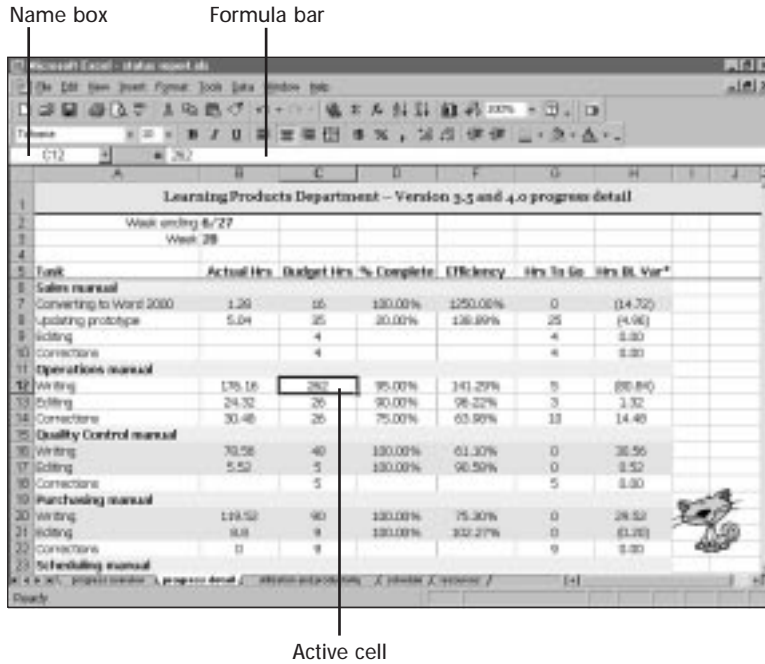
Whether your workbook will include one worksheet or hundreds, the process of building the workbook should begin with planning. You should have some mental picture of the workbook before you start entering data into the cells. For many spreadsheets, the structure you need is obvious; for others, you may go through a trial-and-error period where you find that the workbook you set up just doesn't meet your needs. Plenty of tools are available to help you reorganize and reuse your entries so that the restructuring process isn't too troublesome; they're discussed throughout this book.

Getting it right the first time is everyone's goal, but rarely happens. If you need to sketch your worksheet on paper before typing it in, do that. If you need to test some sample data before setting up hundreds of rows of data, do it. When you're confident that you know where and how to enter your worksheet content, roll up your sleeves and get started!

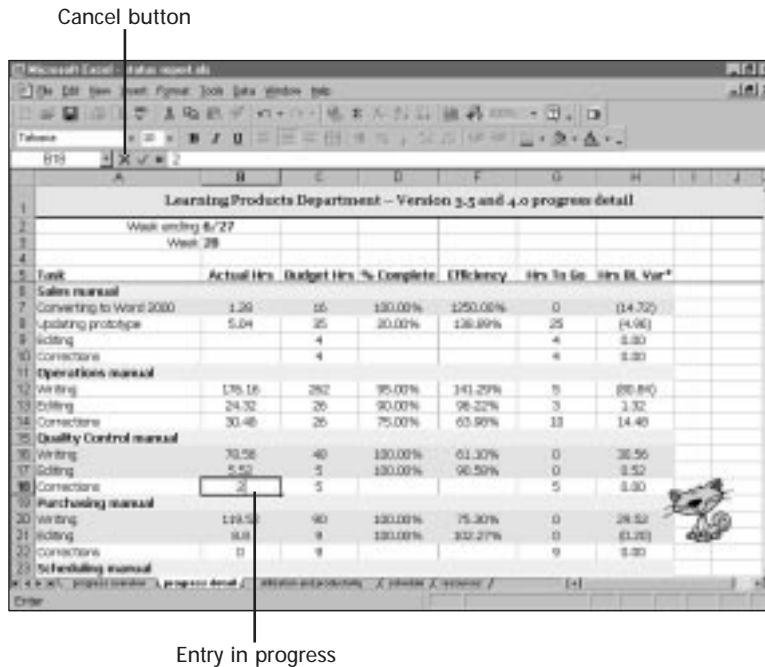
## Understanding Cell Basics

*Cells* are the bricks that build your worksheets and workbooks, each playing an integral part in the storage and manipulation of your text and numeric data. You can think of each cell as an individual container capable of storing text, numbers, and so on. The following is a list of basic information about cells—things that you should know to improve your use and understanding of Excel:

- A cell can hold up to 65,000 characters, which can consist of text, numbers, formulas, graphics, or any combination of these. The amount of text you can view in a cell depends on the width of the column the cell is in and the formatting applied to the cell and its contents.
- Text, numbers, and formulas you type in a cell are immediately displayed in the Formula bar.
- Whenever a worksheet is active, at least one cell is also active (called the *active cell*). The active cell is designated by a heavy border around the cell, usually black. If the Excel window is the active application, and the workbook window is active within it, that one cell's content—or lack thereof in the case of an empty cell—will appear in the Formula bar. The address of the cell (or name, if you've named it) will appear in the Name box (see Figure 2.1).
- After you type data into a cell, press Enter to accept the entry and move down one cell, press the Tab key to accept the entry and move one cell to the right, or press an arrow key to accept the entry and move one cell in the direction of the arrow (pressing the up-arrow key, for instance, moves one cell up). During the time a cell's entry is unfinished (designated by a cursor blinking inside the cell or on the Formula bar), many of Excel's commands cannot be executed.
- If you change your mind about an entry prior to finishing it, press Esc or click the Cancel button (the red X on the formula bar) to nullify the entry and start over (see Figure 2.2).



**Figure 2.1.** Notice the address and content of the active cell. The active cell can be seen clearly here with its black border. The column letter and row number of the active cell are bold and appear as raised buttons to aid the eye in referencing the cell's location.



**Figure 2.2.** Change your mind? Click the Cancel button or press Esc to delete the entry.



- If you've already pressed Enter after completing an entry, you can reselect the cell and press Delete to quickly remove the entry.

**Tip #11 from***Laurie*

Almost everyone at one time or another forgets to finish entering data in a cell before attempting to access a command or some other object in the workbook. In many cases, Excel will finish entering the data for you. In some cases, though, Excel will beep.

If you can't access something that you think you should be able to access, check two things:

- Do you see the Cancel (red X) and Enter (green check mark) buttons on the Formula bar?
- Does the word Enter appear on the status bar at the bottom of the Excel window?

If the answer is yes, you forgot to finish entering data into a cell. Do so by pressing Enter, Tab, or using one of the arrow keys.

The remaining sections of this chapter discuss the intricacies of entering text and numbers into worksheet cells.

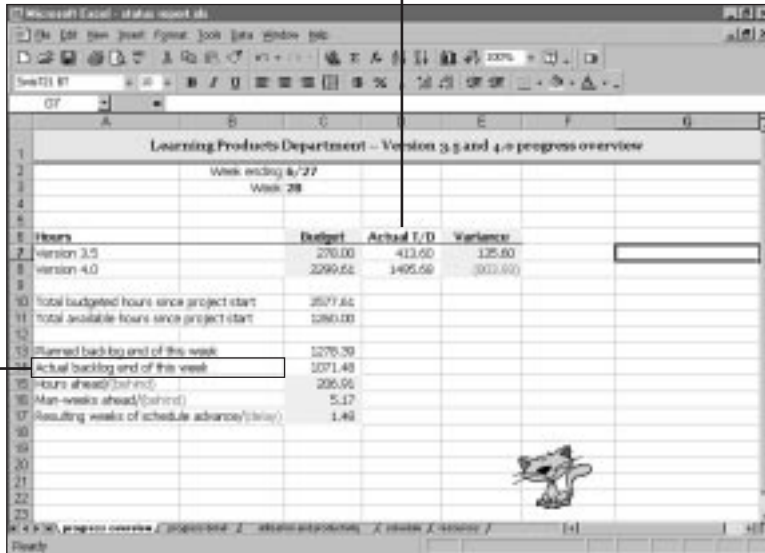
## Entering Text

Text content in a spreadsheet seems like unnecessary fluff to some hard-core financial users. A necessary evil, text tells you which numbers are in which columns and rows, and which cells contain the results of formulas. For some users, that's more than enough text. For other users, however, Excel is a rich program capable of storing text in databases (names, addresses, comments), and can even be used for minor word processing. Figure 2.3 shows a worksheet that contains both minimal and more extensive use of text.

No matter how detailed or concise your text entries are, Excel applies the following defaults to text:

- Text is automatically left-aligned. This includes numbers that Excel perceives as text due to the inclusion of nonnumeric content, such as Social Security numbers that include hyphens.
- Text doesn't wrap unless you tell it to. If you type text that exceeds the width of the cell, text will appear to flow into the next cell. If there is already data in the adjacent cell, the overflow will be *truncated*, meaning that the excess won't display unless you widen the column (this technique is covered later in this chapter). Even if the column isn't widened, the truncated content is merely hidden—it isn't deleted, proof of which can be found by examining the cell's content in the Formula bar, which displays the active cell's entire content, including the hidden overflow (see Figure 2.4).

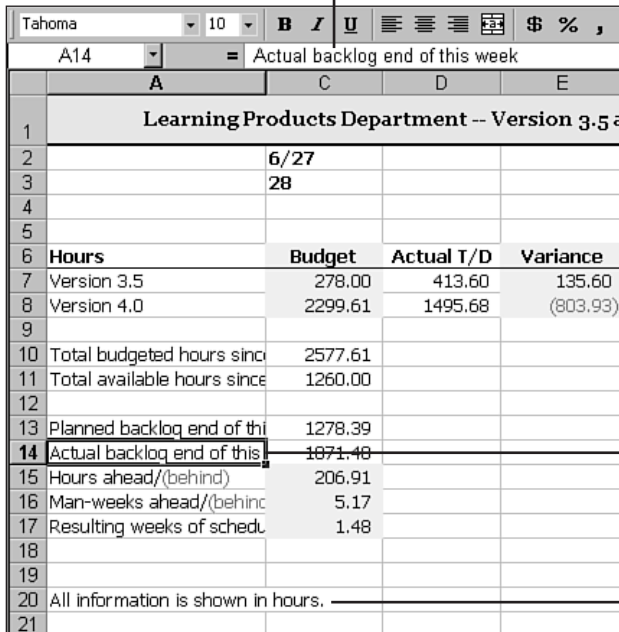
Abbreviated column labels give bare essentials.



**Figure 2.3.** Column and row labels can be as concise or detailed as you want. Text also can be used to explain and support the data on a worksheet.

Text typed into one cell overflows into empty adjacent cells.

The full contents appear in the Formula bar.



**Figure 2.4.** Text that exceeds column width will either overflow into an empty cell or be truncated at the column's right edge.

Truncated text

Overflow text with empty adjacent cells

- Text is 10-point Arial by default. You can reset this default as needed.
- If you start to type an entry that resembles one you typed elsewhere in the same column, Excel may *AutoComplete* the entry for you.
- You can select from a list of entries you've already typed in the current column. Right-click the cell and select *Pick From List* from the context menu. Then select the entry you want to repeat.
- If you misspell a common word, you may notice that Microsoft Excel corrects it for you. Excel includes an extensive set of *AutoCorrect* entries, shared with the other Office programs, that correct common misspellings, capitalization mishaps such as two initial capital letters at the beginning of a name, and so on. This feature can be a great help, but you may find some of the settings annoying. For details on changing the AutoCorrect settings or adding your own AutoCorrect entries, see Chapter 4.

**Tip #12 from***Laurie*

You can check the spelling of all text entries—including sheet names, list headings, and so on—by choosing **I**ools, **S**pelling or clicking the Spelling button on the Standard toolbar. See Chapter 4, “Editing Cell Content,” to find out more about checking your spelling in Excel.

For more information on formatting the appearance and alignment of text, see Chapter 6, “Formatting Worksheets.” To find out more about setting Excel defaults, see Chapter 28, “Customizing Excel to Fit Your Working Style.”

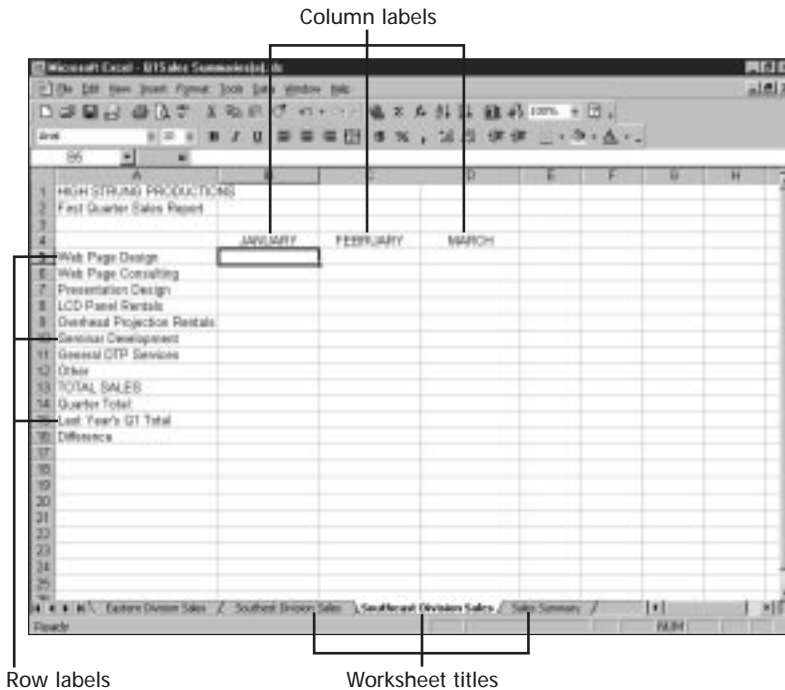
## Labeling Columns and Rows

Aside from the worksheet's title (which normally goes into cell A1), the first cells you normally fill in are column and row labels. These are the cells that tell you (and any other users of the worksheet) what to expect in the remaining cells in the worksheet. Figure 2.5 shows a worksheet in its first stages of development. By reading the labels that the user has typed into strategic locations, you can tell exactly what type of information will be stored, and how it will be manipulated. You even have an idea of what types of formulas will be used.

**Tip #13 from***Laurie*

If the current worksheet's information will be repeated on other sheets in the workbook, group the sheets before you type the labels and common content to save time and effort.

➔ To learn how to group and ungroup worksheets, see “Grouping and Ungrouping Sheets,” p. 23



**Figure 2.5.** Other than the use of in-house jargon, make the worksheet labels as clear and concise as possible, designing the sheet as though someone unfamiliar with the data will be using it.

**Tip #14 from**

*Laurie*

First things first! Don't concern yourself with formatting the cells until the majority of the data is entered. Let the worksheet defaults for fonts, number formats, and alignment take over until you're ready to publish your efforts. When you're ready to make it look great, see Part III of this book, "Formatting and Printing Excel Worksheets."

## Adjusting Column Width and Row Height

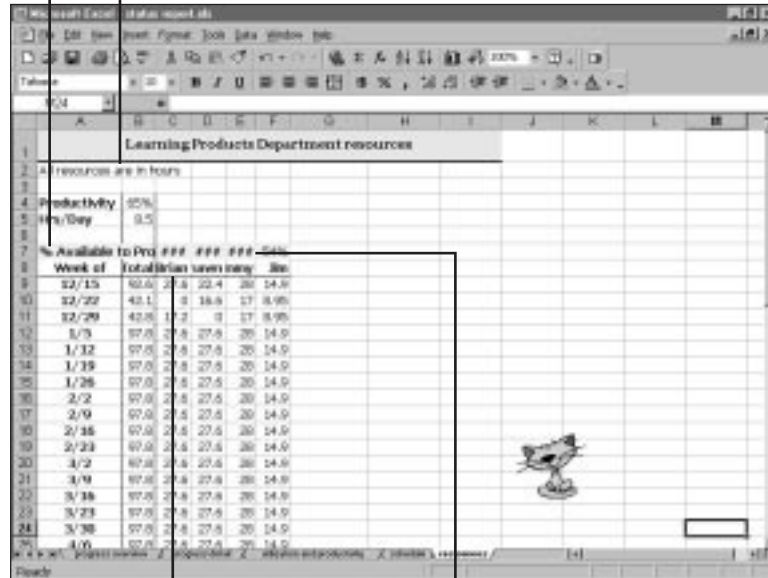
As you type the worksheet titles, column headings, and row labels (as well as the data in the worksheet), you may see the need to make columns wider or narrower, or to adjust the height of the rows. Figure 2.6 shows a worksheet with text and numeric content that requires some manual adjustment.

Excel will generally widen a column automatically to accommodate numeric entries (see the following Note), but text entries require manual adjustment. Row height will automatically increase if font size increases, but again, manual adjustments may become necessary from an aesthetic standpoint.

**Figure 2.6.** Truncated (chopped off) text, error messages, and a cramped appearance to the worksheet content are all reasons to adjust the column width and row height.

Text appears truncated when adjacent cells are not empty.

Overflow into empty adjacent cells requires no action.



Although the label fits, it's a tight squeeze.

Numeric content that exceeds column width due to formatting will display as number signs.

### Note

It's important to note when entering numbers that, regardless of what's displayed in the cell, Excel stores the entire number with a precision of 15 significant digits. Digits after 15 are also stored, but rounded to zero.

By default, cells in a new worksheet use General format, and Excel automatically adjusts column width to display numbers you type into cells. Except for date formats and certain custom formats, if you apply a particular number format to a cell, such as Currency with two decimal places, Excel widens the cell to accommodate the specified format, but may round the decimal places.

In General format, column width is automatically adjusted as follows when you enter numbers:

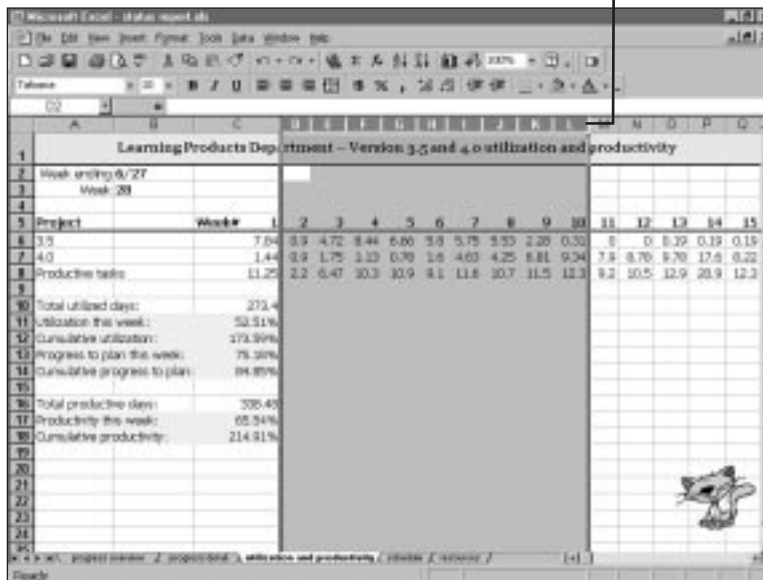
- Numbers containing decimals but with fewer than 11 total characters are rounded visually to fit the default column width. (Excel retains the entire number value, of course, as you can see in the Formula bar when the cell is selected.)
- Numbers containing more than 11 total characters appear in *scientific notation* (page 41).
- Columns are widened to accommodate numbers entered with commas, dollar signs, or percent signs, regardless of the number of digits, although decimals may be rounded.

- When numbers with fractions are entered, the column is adjusted to display the entire number, regardless of the number of digits (example: 1111111111111111<sup>1</sup>/<sub>2</sub>). Digits beyond 15 are rounded to zero as usual.
- Numbers consisting entirely of decimals are rounded to fit in the cell.

Excel provides several methods for adjusting the size of rows and columns, as shown in the following list:

- The *AutoFit* feature adjusts columns or rows to accommodate the longest or tallest entry, respectively. Using the row and column control buttons, double-click the bottom boundary on the selected row(s) or the right boundary on the selected column(s), as shown in Figure 2.7. The row/column will adjust to the size that fits the largest/widest entry. You also can invoke AutoFit by selecting the column(s) or row(s) and choosing Format, Column, AutoFit Selection or Format, Row, AutoFit.

Double-click here to adjust the entire set of selected columns.



**Figure 2.7.** Select a single column or row, or drag through a series of columns or rows, and adjust the width or height with one double-click.

- Choose Format, Column, Width or Format, Row, Height. In the resulting dialog box, enter an exact measurement for the selected column(s) or row(s). Figure 2.8 shows the Column Width dialog box.
- Drag the right boundary of a column or the bottom boundary of a row. When dragging, the direction you drag determines the column's or row's new dimensions—drag to the right to widen a column, drag down to make a row taller. If you select more than

one column or row, dragging the boundary of any column or row in the selection adjusts all of the columns or rows in the selection. Figure 2.9 shows a set of columns being widened by dragging.

**Figure 2.8.**

For column width, enter the number of characters you want to fit in the column.

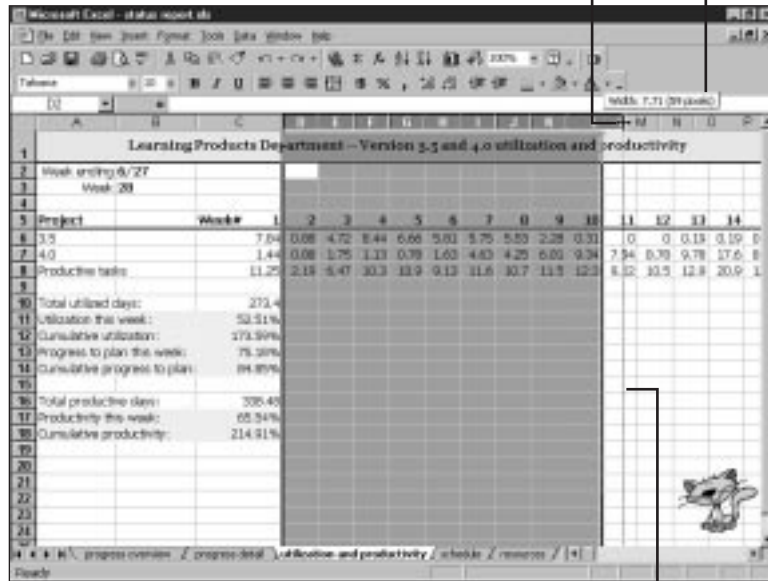


A ScreenTip shows the exact measurement as you drag the mouse.

A two-headed arrow appears when you point to the column's boundary.

**Figure 2.9.**

Drag the boundary of one of the selected columns or rows to adjust the whole selection. Drag left or right to change the width of the selected column(s) or drag up or down to change the height of selected row(s).

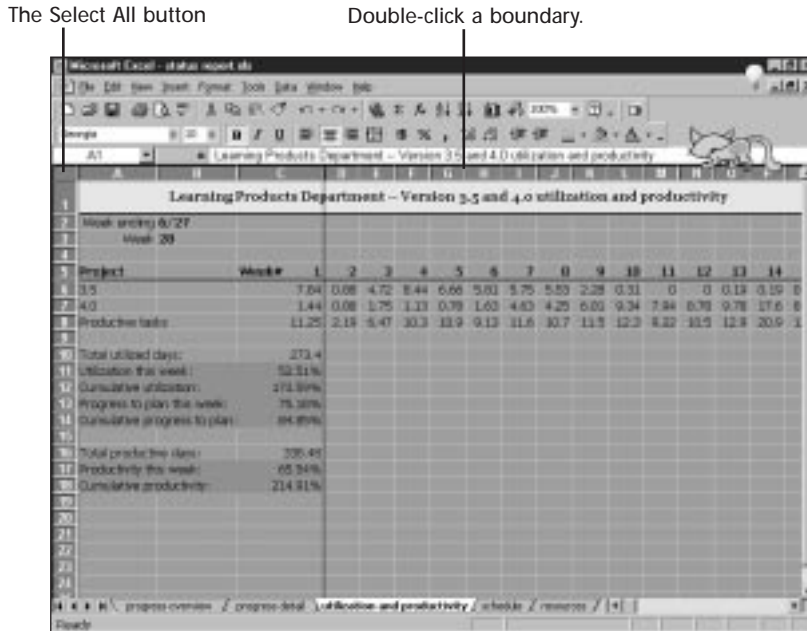


A vertical line shows the new column width.

**Caution**

If you adjust row height manually once and then make the content larger at a later time (requiring a taller row), the row will no longer adjust automatically. Once you have tinkered with row height, you can continue to adjust row height manually each time you increase/decrease the font size, or you can double-click the bottom boundary of the row(s) to return to using automatic adjustment.

- To AutoFit an entire worksheet with one double-click, select the entire worksheet by clicking the Select All button in the upper-left corner of the worksheet window (see Figure 2.10). Then double-click any boundary between column control buttons to AutoFit all the columns, or any boundary between row control buttons to AutoFit all the rows. Click any individual cell to deselect the worksheet after making the desired adjustments.



**Figure 2.10.** You can make global adjustments by using AutoFit to adjust all rows and columns to fit their largest entries.

**Caution**

If cells display numbers in scientific notation, such as 78123E+12, AutoFit won't adjust the column to the width required to display the entire number. You may have to change the format of the cell for the number to display properly. See Chapter 7 for more information on formatting numeric entries.

### Using Custom Lists to Speed Data Entry

Excel provides a powerful and flexible tool for creating row and column labels, known as *custom lists*. Custom lists are lists of words installed with the Excel program that enable you to build a series of labels by typing just one of the words in the list. Excel's built-in custom lists include the following:

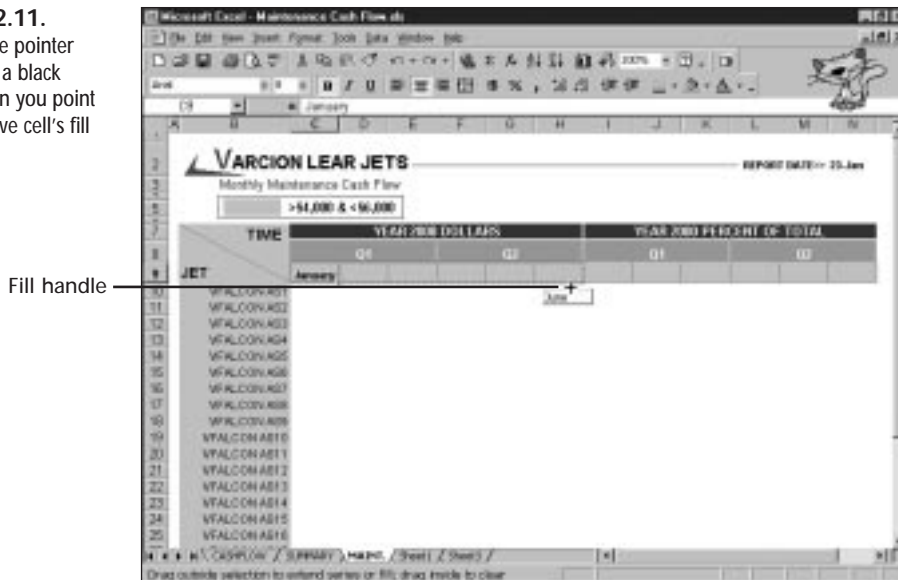


- Months of the year (spelled out or abbreviated)
- Days of the week (spelled out or abbreviated)
- Fiscal quarters (Q1, Qtr 1, Quarter 1, and so on)

If a worksheet tracks sales over a series of months, for example, the column headings for January through December need not be typed individually. You need only type January and follow the steps below to create a 12-month series:

1. Click in the cell that will contain the first entry from the custom list.
2. Type the first entry (in this case, January).
3. Point to the fill handle (the small black square located in the lower-right corner of the active cell). The mouse pointer will change into a black cross.
4. Holding down the primary mouse button, drag across the cells that will contain the labels, releasing the mouse when the number of cells through which you've dragged equals the number of labels you need (see Figure 2.11).

**Figure 2.11.**  
The mouse pointer turns into a black cross when you point to the active cell's fill handle.



Excel is also able to recognize simple numeric patterns. Suppose that you're creating a pricing worksheet, and you want to show the price charged for quantity purchases of 10, 20, and 30 units, and so on. Rather than type the numbers 10, 20, 30, 40, and so forth, create a two-number pattern as an example, and use the fill handle to complete the list. This feature is called *AutoFill*. Figure 2.12 shows a worksheet with a numeric pattern created by dragging the fill handle. A series of decreasing numbers is created by selecting and dragging .25 and .20.

A series of decreasing numbers was created by selecting and dragging .25 and .20.

16						
17	Paper Grade	A	B	C	D	E
18	# of copies	0.25	0.20	0.15	0.10	0.05
19	1200	300	240	180	120	60
20	2500	625	500	375	250	125
21	5000	1250	1000	750	500	250
22						
23						

**Figure 2.12.** Use a single-digit increment to create product or record numbers in the worksheet.

Follow these steps to create a pattern and fill in column or row labels of your own:

1. Click in the first cell that will contain a number in the series.
2. Type the first number, and then move to the cell that will contain the next number in the series.
3. Type the second number in the series. These two cells will be used to establish the pattern.
4. Highlight the two cells, and use the fill handle in the second cell to drag through the contiguous (adjacent) cells that will contain the series (see Figure 2.13).

2		
3	Department #	Department
4	1	Accounting
5	2	Administration
6		Communication
7		Human Resources
8		Marketing
9		Operations
10		Sales
11		Shipping
12		Warehouse

**Figure 2.13.** When establishing a pattern, using the fill handle after both cells have been selected ensures that both cells are used in creating the series.

Fill handle in the second cell of the series, used to carry the pattern forward through the target cells

Based on the established pattern, the remaining cells are filled with numbers—increasing or decreasing in specific increments.

**Tip #15 from**

*Laurie*

AutoFill isn't just for numeric entries; you also can drag the AutoFill handle to repeat text entries. You can use the AutoFill handle to enter repeated content into contiguous cells. Select the cell containing the text (or numbers) that you want to repeat, and drag the AutoFill handle through any range of contiguous cells.

### Creating Custom Lists

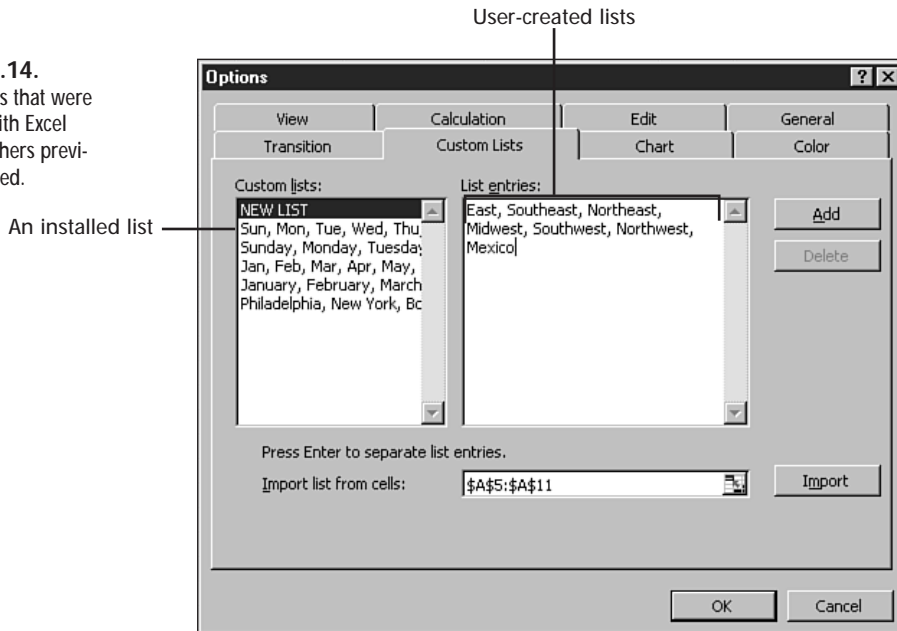
What if Excel's custom lists aren't enough for you? For many users, they're not. Imagine that you have five divisions in your company, and you're repeatedly typing them in as row labels in various worksheets. They're always entered in the same order, and their names

never change. The division names are a perfect choice for your own custom list. So are compass points, names of your staff or coworkers, or deliverables for a project.

To build your own custom list, follow these steps:

1. If you already have a group of entries listed in a range of cells, select the range.
2. Choose **T**ools, **O**ptions. The Options dialog box opens.
3. Click the Custom Lists tab (see Figure 2.14).

**Figure 2.14.**  
See the lists that were installed with Excel and any others previously created.



4. With **NEW LIST** highlighted by default in the Custom **L**ists box, click in the List **E**ntries box.
5. Type the list, each item separated by a comma and a space. (If you selected the list before opening the dialog box, you can click the **I**mport button to immediately add the range to the list.)
6. Click **A**dd.
7. Repeat steps 2 through 5 for any additional lists you want to create.
8. Click **O**K to close the dialog box.

Test your lists to make sure you spelled things right and that you have the items in the proper order. Remember that you can start the series anywhere—with the second or seventh item in the list, for example—and the filled series will continue from that item through

to the end and start over. The number of cells through which you drag when filling the list determines whether the list begins again, as shown in Figure 2.15.

	A	B	C	D	E	F	G	H
1								
2	<b>ERPmatic Quarterly Sales (millions)</b>							
3								
4		<b>1999</b>		<b>2000</b>				
5		Q3	Q4	Q1	Q2	Q3	Q4	
6	<b>Southeast</b>	1.3	1.9	2.5	3.1	3.7	4.3	
7	<b>Northeast</b>	0.9	1.9	2.9	3.5	4.1	5.1	
8	<b>Midwest</b>	2.1	3.8	5.5	7.2	7.1	8.9	
9	<b>Southwest</b>	0.7	1.4	2.1	2.8	2.8	4.2	
10	<b>Northwest</b>	1.4	2.1	2.8	3.5	2.9	4.9	
11								
12								

**Figure 2.15.**  
The fiscal quarters of the year end with 4 and start over with 1, through as many cells as you drag the series.

This series rolled over to its first value after reaching its last.

**Tip #16 from**

*Laurie*

For fiscal quarters, you can abbreviate Quarter as Q or Qtr (with or without a period). You also can spell the word out as Quarter. Other abbreviations, such as Qt., will be interpreted as quarts, or won't be recognized, and the fill series won't work properly.

To remove a custom list entry, select it in the Custom Lists box and click the Delete button.

## Entering Numeric Data

There's really no trick to entering numeric data—simply click in the cell that will contain the number, and type it, using either the number keys above the alpha-keyboard, or the numeric keypad (be sure NumLock is on). You'll notice that as soon as you press Enter or Tab (or the arrow keys) to move to another cell, the numeric content is automatically right-aligned. This is because columns of numbers are best viewed with their decimals (or lack thereof) lined up on the right, as shown in Figure 2.16.

Excel makes some formatting decisions of its own that you can either accept or reformat later, when all of the entries are made, or before you make any entries at all. It's a good idea to familiarize yourself with the following list of numeric tricks as performed by Excel:

- When entering dates, you'll find that Excel automatically formats them in M/D/YY format (if all three elements are provided) or in D-MMM format. Figure 2.17 shows a series of dates as entered, and as Excel formatted them.
- If you want to insert numeric content such as Social Security numbers or product numbers that contain dashes, slashes, or periods, the numbers will left justify because the nonnumeric content causes Excel to treat the entry as though it were text, which is automatically left-justified.

**Figure 2.16.**

If the numeric content doesn't automatically right align, check for nonnumeric content, improper comma use, or a previously applied number format.

Week of	Mileage	Resource	Planned \$	Planned hrs	Actual Applied	Remaining \$
12/15	Design complete	86.04	3799.15	3050	74.24	3704.76
12/22		27.973	2731.19		14.89	3707.69
12/29		28.623	3692.56		51.76	3715.82
1/5		82.04	3600.52		76.56	3628.36
1/12		82.04	3506.48		58.52	3578.84
1/19		82.04	3416.44		58.52	3529.32
1/26		82.04	3324.40		83.04	3447.28
2/2		82.04	3232.36		78.24	3369.04
2/9		82.04	3140.32		72.72	3296.32
2/16		82.04	3048.28		77.20	3223.32
2/23		82.04	2956.24		63.52	3159.80
3/2		82.04	2864.20		79.24	3079.36
3/9		82.04	2772.16		79.76	2999.80
3/16		82.04	2680.12		142.56	2857.04
3/23		82.04	2588.08		67.20	2789.76
3/30		82.04	2496.04		104.24	2684.52
4/6		82.04	2404.00		79.52	2604.00
4/13		82.04	2311.96		61.76	2542.24
4/20		86.04	2219.92		203.76	2439.48
4/27 (Final)		82.04	2127.88		116.48	2311.00
5/4		88.232	2034.85		92.04	2222.96
5/11		27.04	1937.82			2195.82

**Figure 2.17.**

The date format that Excel uses depends on how much of the date you enter, and what country you indicated you're in when Windows was installed.

Date Submitted	Entered as
4-Feb	Entered as 2/4
2/4/98	Entered as 2/4/98
5-Feb	Entered as Feb 5
15/2	Entered as 15/2 (dd/m format)
12-Feb	Entered as February 12

**Tip #17 from**

*Laurie*

If you decide to type the commas into numbers greater than 999.99, be sure to place them correctly—if Excel sees improperly used commas, it will treat the numbers as text.

- Numeric content can contain as many decimal places as you want. If you type zeros at the end of the decimal place(s), however, Excel will chop off the zero(s) and display just the numbers prior to the zero(s).

**Tip #18 from**

*Laurie*

You can format the cells containing zeros in the decimal places so that the decimals display in the cell. Click the Increase Decimal button on the Formatting toolbar.

- Unlike text, numbers must fit within the cell boundaries; they don't spill over into the next cell to the right. Earlier versions of Excel displayed number signs (#) instead of numbers if the number exceeded the cell width. In Excel 2000, Excel automatically

resizes the column width to accommodate wider numbers (up to 11 digits) as you enter them. See the earlier section “Adjusting Column Width and Row Height” for details on how Excel automatically adjusts column width or cell entries to fit numbers.

### Caution

If numbers exceed 11 digits, Excel displays the entry in *scientific notation*. If you enter 100000000000, for example, Excel displays 1E+11. The E+11 in the notation indicates that the decimal place actually goes 11 digits to the right. A notation of 1E-11 indicates that the decimal place goes 11 digits to the left.

If the column width has been manually adjusted, number signs may be displayed when a number exceeding the column width is entered.

➔ For more about formatting numeric worksheet content, see “Modifying Numbers and Dates,” p. 165

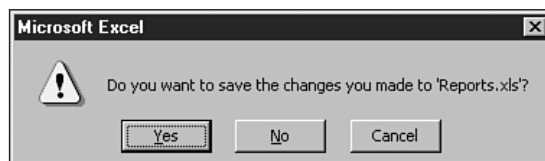
## Saving Excel Data

The first rule you should learn with regard to any computer application is to save your work early, and often. Excel is no exception to this rule, and is perhaps one of the applications where the rule is most important.

When is “early”? As soon as you’ve entered the worksheet title and column/row labels. Don’t wait until you’ve entered all of the numbers and built the formulas. Why save so early? Because programs crash, power failures happen unexpectedly, and we all make mistakes, such as closing a file without saving.

How often is often? Whenever you’ve entered more data or performed more calculations or formatting than you’d want to repeat. Every five or ten minutes, depending on how fast you’re working, isn’t too often.

Excel, like all of the Microsoft Office applications, makes it easy to save your work, providing toolbar buttons, menu commands, and keyboard shortcuts to accommodate anyone’s work style. In addition, you’re prompted before exiting a file without saving, as shown in Figure 2.18. (If you have the Office Assistant turned on, it asks this question in a dialog balloon.)



**Figure 2.18.** If you never have saved the file or you have made changes since the last time you saved, this prompt appears when you choose to close a file.

## Performing a First-Time Save

The first time you save an Excel workbook (hopefully early in the worksheet development process), you'll need to name the file, choose a location for it, and in some cases choose a file format in which to save it.

A first-time save can be executed by any of the following methods:

- Choose **F**ile, **S**ave.
- Choose **F**ile, **S**ave **A**s.
- Press Ctrl+S.
- Press Alt+F2, Alt+Shift+F2, or Shift+F12.
- Click the Save button on the Standard toolbar.

Whichever method you choose, the Save As dialog box opens the first time you save a file. Because Excel correctly assesses that the file hasn't been saved before, it opens this dialog box and gives you the opportunity to name the file and choose a folder in which to save it (see Figure 2.19).

**Figure 2.19.**  
All Microsoft Office files will save to the My Documents folder by default. You can choose any folder you want.



**Tip #19 from**  
*Laurie*

It's a good idea to create subfolders (normally within a folder called My Documents) to categorize your files. By creating these folders, you make it easier to find the files, and simpler to copy or move them as a group to a backup disk or a network drive. You can create them within the Save As dialog box or through My Computer or Windows Explorer.

## Naming Your Files

When the Save As dialog box opens, the default name (Book#) appears highlighted in the File Name box. With the default name highlighted, you can simply type over this name—no need to press Delete, just type the name you want to use—and then press Enter to accept the default My Documents folder as the location to save the file.

As in any other Microsoft Office application, an Excel filename can have up to 255 characters, including spaces. You can use dashes and exclamation points in filenames, but no slashes (/), question marks (?), or asterisks (\*).

### Tip #20 from

*Laurie*

Keep filenames reasonably short, so that they're easy to read in the Explorer window and in Open dialog boxes. Also, if you'll be sharing files with users on a DOS-based network or in a Windows 3.1 environment, they won't see the whole filename—by keeping the filename short, you make the filename clearer to these users.

### Note

You don't have to type the extension for the filename. Excel applies the default file extension, .xls, to whatever you type.

## Choosing a Disk and Folder for the File

The default location for workbook files you create and save is My Documents. If you want to save the file to another folder, you can do so by following these steps:

1. After typing a name for the file, click the Save In list box, and choose the drive letter to which you want to save the file.
2. The folders on that drive are displayed. Double-click one of them to display the contents of that folder, including any subfolders.
3. Keep double-clicking subfolders until you reach the one into which you want to save the file. Then, click Save.

If you attempt to save any other workbooks during the current Excel session, the Save As dialog box will default to the last folder in which you saved a file. The My Documents default won't return until you close and then reopen Excel.

### Tip #21 from

*Laurie*

If you want to change the default folder in which workbook files are saved, choose Tools, Options, and click the General tab. In the Default file location text box, enter the path and folder name to which you want to save files, such as C:\My Documents\Workbooks, "Workbooks" being a subfolder you might have created to separate Excel files from other Office documents and presentations. See Chapter 28, "Customizing Excel to Fit Your Working Style," for more ideas on resetting Excel's options and defaults.



## Saving Your Workbook with a Password

If the content of your workbook is confidential, you can apply a password that will keep others from opening and/or editing the workbook. This security measure would be in addition to any security afforded by your network or by the Excel Protection feature (as discussed in Chapter 18, “Using Excel’s Data-Management Features”).

A password can be set up on the first save, or by using **File**, **S**ave **A**s any time after that. Follow these steps to apply a password to the workbook:

1. In the Save As dialog box, open the Tools drop-down list and select **G**eneral Options. The Save Options dialog box opens (see Figure 2.20).
2. To set a password that will be required each time the file is opened, type the password in the Password to **O**pen box. The password will appear as asterisks to keep anyone from seeing what you’ve typed.
3. For further security, add a password for modification in the Password to **M**odify box. This option requires the user to enter an additional password in order to be able to edit the workbook.
4. Click OK.
5. Reenter the password(s) in the Confirm Password dialog box, and click OK.

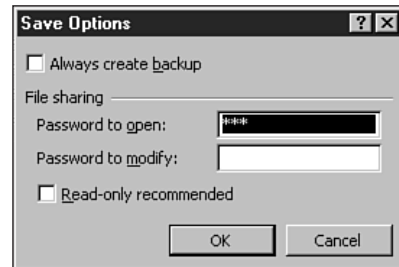


Figure 2.20.

### Caution

Don't forget your passwords! If you do, you won't be able to open and/or modify the file (depending on which functions you chose to secure with a password). There's no way to retrieve a forgotten password or reset it to a new password without the existing password.

### Tip #22 from

*Laurie*

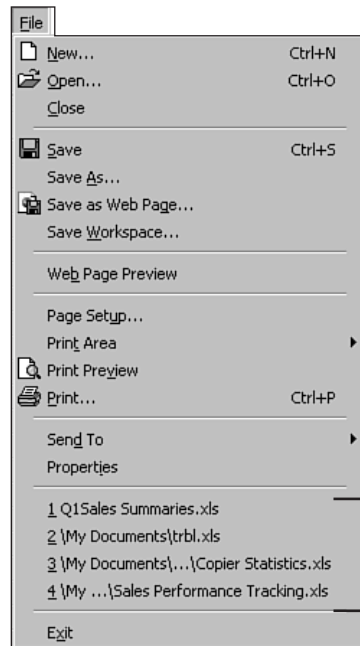
Choose a password you won't forget, but that others can't guess. Passwords of five to eight characters are long enough to be harder to decipher, but not so long you forget them. If you password-protect a lot of spreadsheets, you could keep a list of your passwords in a secure place, just in case you forget. Or you could always set your passwords to be the first five characters of the filename, but rotated forward some number of characters. For example, the password for Project Status.xls could be tvrni. T is four letters after p, y is four letters after r, and so on. With this method, all you must remember is your rule. Finally, you could simply use the same password for all your workbooks.

None of these methods provides unbreakable security—someone could find your password list, figure out your single password, or figure out your password system. But all of these methods deliver acceptable security for routine situations.

## Opening a Saved File

After you've created, saved, and closed the file, you'll probably need to reopen it at some time in the future—to edit it, to print an extra copy, or to simply check it for important information. Excel (and Windows) provides a variety of ways to open existing workbook files:

- Most recently used files.** The MRUs (as they're often called) appear at the end of the File menu (see Figure 2.21). By default, the four most recently used files are listed, numbered in order of use. You can click the name of the file you want, or just type the number to the left of the filename.



The most recently used files appear at the bottom of the File menu.

**Figure 2.21.** The most recently used file will appear in the first position, followed by the last three files you used prior to that in the current session or previous Excel sessions.

**Tip #23 from**  
*Laurie*

You can reset the default number of MRUs by choosing Tools, Options, and changing the Recently used file list setting on the General tab. The maximum number allowed is nine.

- Use the Open dialog box.** Choose File, Open, and navigate to the folder that contains the workbook you want to open. From within the Open dialog box, you can choose to open the file as read-only or as a copy of the original by clicking the down-arrow button to the right of the Open button and selecting the option you want (see Figure 2.22). Opening a copy or in read-only mode allows you to protect the original version from any changes you might make. If you make changes to a read-only file, you must save the file with a new name in order to keep the changes.

**Figure 2.22.**

Open a file as read-only to prevent accidental changes or deletions as you review the worksheet.



- **Use Windows Explorer or My Computer.** Open the folder containing the file, and double-click the file.
- **Click the Windows Start button and look in the Documents list.** If the desired file is one of the last 15 files you've used on your computer (not just in Excel), you'll find it in the Documents menu. Click the file in the list to open it.

If you have used previous versions of Excel, you may notice that the Open dialog box has changed quite a bit. One particularly nice feature of this dialog box is the vertical bar at the left side of the dialog box. By clicking the History button, you can display an extended list of Excel files you've opened recently, as well as shortcuts to folders you've used to open Office documents. If Excel files are stored on your company's intranet or Web server, the Favorites and Web Folders buttons also are handy for quick access.

At the top of the dialog box, the button with a left-pointing blue arrow (think of it as the Back button) goes back to the last folder you opened in the same session, the one before that, and so on. The ScreenTip for this button names the folder that will be displayed if you click the button.

## Updating Your Work

As you work on a previously saved workbook, you'll want to continue to save it periodically so that your additions and changes are reflected in the saved version of the file. To perform an update save, choose one of the following methods:

- Press Ctrl+S. This is a good choice if you're doing a lot of text and number entry. Your hands are already on the keyboard, so the time and extra thought required to click a button or menu with the mouse is avoided.

- Click the Save button on the Standard toolbar.
- Choose File, Save from the menu. Don't choose File, Save As unless you want to change the file name or location of the file.

None of these update save methods opens a dialog box to hinder your work. A progress bar and a floppy disk icon will flash briefly on the status bar in the Excel window. If the Office Assistant is visible, saving a file animates the Assistant briefly. You may not even notice these incidents, depending on the size of the file and the speed of the computer.

**Caution**

Don't assume that because you've saved recently you can answer No to the prompt that asks whether you want to save the file before closing it. Any entry or editing at all, no matter how slight (and even if you undo it), will result in the prompt appearing. Always answer Yes unless you specifically want to keep the current version of the file intact.

## Renaming and Relocating Files

At times, you may want to rename a saved file or save it to a new location. You might want to save the file with a new name to preserve the current version of the file, for example, or to create a duplicate file with a different name. You can always change a file's name and location by using Windows Explorer or My Computer, but you also can perform this task from within Excel.

To save a file with a new name or to a new disk/folder, follow these steps:

1. Choose File, Save As to open the Save As dialog box.
2. The file's current name appears in the File Name box (see Figure 2.23). If you want to save the file with a new name, type the new name.
3. As needed, click the Save In list box and choose a new disk or folder for the file.
4. Click Save or press Enter to save the file with a new name and/or to a new location.

**Tip #24 from**

A popular method of creating a second version of a file is to append a 2 or an A to the original filename, so that the filenames resemble each other, but the second version is obvious.

When you save a file with a new name or new location, the previous version of the file is automatically closed, leaving the new version open. If you want to use the original version of the file, you must reopen it. The fastest method is to select it from the list of most recently used files in the File menu.

**Figure 2.23.**

No need to delete the current name—merely type the new name to replace the high-lighted text.



This filename will appear on the title bar when the file is open.

## Saving Excel Files in Alternative Formats

Most of the time, you'll want to let Excel save your files in the default .xls format for the currently installed version of Excel. This ensures that you'll be able to open the file in the current version of the software, and that all the formatting will be preserved with the file.

Sometimes, however, you'll need to save files to another file format. Following are some reasons for this change:

- You're going to share the file with a user who has an older version of Excel. Each new release of Excel has features the previous release didn't. Saving to an older version strips out those features so that the recipient using an older version of Excel can open and use the file.
- You'll be sending the file via email, and you don't know what software the recipient has. Saving the file in tab-delimited text (.txt) format will enable the user to open the file in any word processing program, where the spreadsheet will appear as a block of tabbed text. When you save to this format, tabs are inserted between each cell so that the overall layout is preserved.
- You're sharing the file with someone who uses Lotus 1-2-3, Quattro Pro, Excel for the Macintosh, or dBASE. Choose the appropriate format for the software the recipient uses.

**Tip #25 from***Laurie*

When saving a file in another spreadsheet software format (.WK1, .WKS, .WQ1, .DBF), if you're not sure of the version number, choose an older version (lower version number) so that you don't give the recipient a file that his or her version can't open or display properly.

- The current version of Excel is presenting problems and software errors, and it's been suggested that you save to a format that doesn't save the particular element that's causing problems. Normally, if this occurs, a Microsoft technical support person will tell you to save to the previous version of Excel or a tab-delimited text (.txt) format so you don't lose your work, reopen the file in the current version of Excel, and then try again.
- You're working on your company's intranet or Web server, or working internationally with other users and creating or saving files elsewhere via the Web. For these arrangements, you'll probably want to save the Excel files in HTML format (the language of the Web) rather than .xls format. To find out more about publishing Excel worksheets to the Web, read Chapter 31, "Using Excel on the Web."

To save a file to a new format, follow these steps:

1. Choose **F**ile, **S**ave **A**s.
2. If necessary, choose a location and type a name for the file.
3. Open the Save as **T**ype list box and scroll through the formats, as shown in Figure 2.24.
4. Select a format by clicking it in the list. Excel appends the extension for the selected format to the filename in the File **N**ame box.
5. Press Enter or click **S**ave.

**Tip #26 from***Laurie*

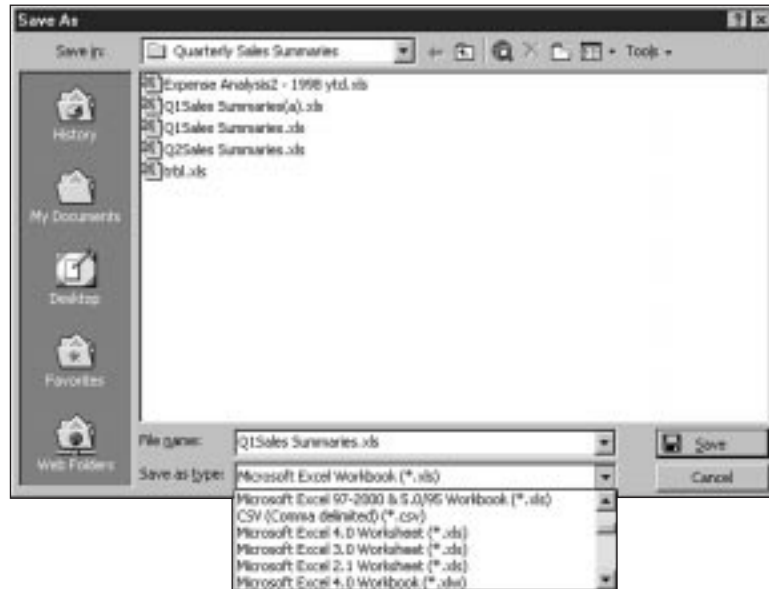
If you're creating a new version of the file in an alternative format (for sharing with another user or as backup), give the file a different name (perhaps including the format's extension in the filename). You could add a 2 or A to the existing filename so that even if you aren't displaying file extensions in the dialog boxes, you'll be able to tell the files apart.

## Preventing and Recovering from Disaster—Using AutoSave and Automatic Backups

When your computer and software are working well, it's easy to forget that at some point something will fail. A sudden power outage, a system crash, or even an incorrect response to a prompt can cause you to lose data that took time, thought, and effort to enter. The best preventive measure is to save your work early and often, as mentioned earlier. The next defense is to have backup files and be able to restore from them as needed.

**Figure 2.24.**

Excel offers dozens of different file formats. You may have fewer to choose from if you did a Minimum or Custom installation.



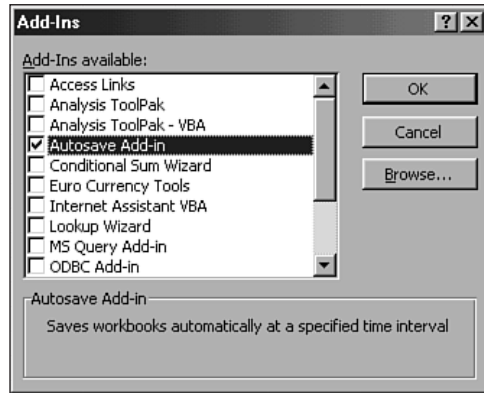
### Setting Up the AutoSave Add-in

*AutoSave* is an add-in program that enables you to set up periodic saves of your open workbooks. This is an emergency program that often can recover most or all of a workbook file if the power goes off suddenly while you're working on the file in Excel. Because *AutoSave* is an add-in—not part of the typical installation of Excel or Office—you must install it separately.

First, check to see whether *AutoSave* is already running on your computer. If *AutoSave* isn't a menu command on the Excel Tools menu, then you need to install it using the following steps:

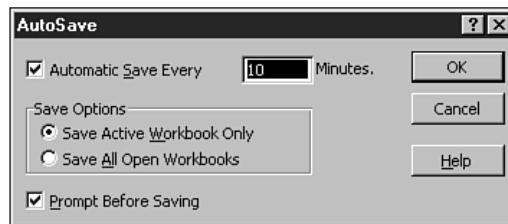
1. Choose Tools, Add-Ins to display the Add-Ins dialog box.
2. Select Autosave Add-in from the list of available add-ins (see Figure 2.25). Then click OK.
3. Excel asks you whether you want to install the add-in. Choose Yes. (If prompted, insert the Microsoft Office CD.)

As Excel installs the add-in, you may see additional dialog boxes that indicate the progress of the installation. When the process is complete, the dialog boxes disappear and the AutoSave option is included on the Tools menu. The option is selected, as indicated by a check mark next to the option on the menu.



**Figure 2.25.** In this dialog box, specify that you want to install the AutoSave add-in.

By default, AutoSave will save the active workbook in Excel every 10 minutes, and will prompt you to confirm the save process. To change the default settings for AutoSave, choose **T**ools, **A**utoSave to display the AutoSave dialog box (see Figure 2.26). Change the settings as desired and then click OK. To turn off the AutoSave feature completely, deselect the **A**utomatic **S**ave Every xx Minutes option. The AutoSave option will remain on the **T**ools menu, but won't be selected. To remove the option from the menu, choose **T**ools, **A**dd-**I**ns to display the Add-Ins dialog box, and deselect Autosave Add-in. If the AutoSave add-in is installed but not currently enabled, you can activate it in the same dialog box.



**Figure 2.26.** You can change the AutoSave settings in this dialog box.

## Backing Up Your Workbooks Automatically

By default, Excel does not make a backup copy when you save a file. If you tend to tinker with your worksheets—for example, creating different scenarios for use at a sales conference or experimenting with formatting of the worksheet—you may accidentally overwrite the original version of the file with the experimental version, and you can't undo a save operation.



With no backup copy, there's no easy way to recover from an accidental overwrite. To prevent this problem, you can tell Excel to automatically make a backup copy. This feature saves a second file (with the extension `.xlb`) whenever you save the original. (Unfortunately, this feature isn't universal; you must select it for each file for which you want backup copies.) Follow these steps:

1. Choose **F**ile, **S**ave **A**s.
2. In the Open dialog box, click open the **T**ools list and choose **G**eneral Options.
3. In the Save Options dialog box, select the Always Create **B**ackup option and choose **O**K to close the dialog box. Excel returns you to the Open dialog box.
4. Specify the filename and path, if necessary, and choose **S**ave. If prompted, replace the existing version on disk.

After you have set up backups, Excel saves the previous version of the file to the `.xlb` format each time you save the file. Notice that the safety margin isn't huge. You can only recover from a single accidental save operation—if you save again, the original file now incorporates the new changes—but a workbook that needs this sort of protection usually is important enough that you'll realize it immediately when you've mistakenly saved.

If you need to restore a file from the backup version, open the backup file named Backup of *filename*, where *filename* is the name of the original file. Then choose **F**ile, **S**ave **A**s, and select *filename* (the original file). When prompted, choose **Y**es to replace the file with its backup copy. You're now back to where you were before the accidental save.

It's important to note that backup copies do take disk space, just like the original files. If you reach a point where disk space is at a premium, consider deleting backup files for workbooks that are complete, locked and protected, or no longer in active use.

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**Tip #27 from***Laurie*

If you're careful not to save accidentally, you can experiment at will with your workbooks. Save the workbook to disk before you start fooling around with it. Then make any desired changes. When you're ready to get back to the original version, close the file without saving the changes, and reopen the original file. Alternatively, you can close the file after saving it and then open a copy for use in experimenting.

## Saving an Excel Workbook As a Reusable Template

If the workbook you've created is one that you can envision creating again in the future, it's a labor-saving idea to save it as a *template* in addition to saving it as a normal Excel file.

Why a template? Because templates are like cookie cutters for new workbooks. When a file is saved as a template, it becomes a potential foundation for future workbooks, containing all the text, numbers, formulas, and formats that the file has in it. By using the template to start a new file, you save yourself all the entry and formatting that went into the creation of the original file.

**Note**

Whether you realize it or not, you're already using a template. When you started Excel with a blank workbook, the blank workbook was based on a template called Blank Workbook.XLT, the *T* standing for *template*. This seemingly blank document contains all of the defaults you count on for consistency and to enable you to jump in and start typing the minute the workbook appears. Font sizes, alignment, custom lists, the number of blank worksheets you start with—these are all the products of this “blank” template!

## Creating Template Content

It's important that your template not contain data that isn't applicable to each use of the template. For example, if you're saving a sales report workbook as a template, make sure that when you save it, none of the specific sales numbers are in the cells. You want the column and row labels, a generic title, and the formulas to be part of the file, but not any esoteric information that will have to be changed or deleted when you use the template.

To save the current workbook as a template, follow these steps:

1. Choose **F**ile, **S**ave **A**s to open the Save As dialog box.
2. As needed, change the name of the file. Do not change the location, as Excel will dictate this as soon as you choose the Template format for the file.
3. Open the Save as **T**ype list box and choose Template (.xlt) from the list. The Save **I**n box automatically switches to the folder c:\Windows\Application Data\Microsoft\Templates, as shown in Figure 2.27.
4. Click **S**ave.

**Tip #28 from**
*Laurie*

You can create subfolder(s) within the Templates folder to house new templates. Templates stored in the Templates folder appear on the General tab in the New dialog box; templates stored in a subfolder of Templates are listed on a separate tab named for the subfolder.



*If you've created or placed templates in a folder other than Templates and now can't see them, see “Why Save to the Templates Folder?” in the Troubleshooting section at the end of this chapter.*

## Starting a New Workbook from a Template

Whether you're starting a new workbook from a template you created or one of the installed Excel templates, follow these steps:

1. Choose **F**ile, **N**ew. The New dialog box opens, as shown in Figure 2.28.
2. Click the tab that corresponds to the name of the subfolder in which the template file is stored.

**Figure 2.27.**  
Don't redirect the Save In box to any other drive or folder other than Templates or one of its subfolders. If you do, you won't be able to access the template automatically in the future.

The Save In list shows the location of the Templates folder.



The .xlt format is selected.

**Figure 2.28.**  
Excel looks for .xlt files in the Templates folder and all of its subfolders. It displays a tab for any folder found to contain an .xlt formatted file.



3. Double-click the template on which you want to base the new workbook, or click it once and press Enter.

The new workbook opens, filled with whatever content and formatting was part of the template file.

**Note**

You aren't opening the template itself when you start a new workbook with a template. You're using the template as a foundation, creating a completely separate file that contains the information, content, and settings you established in the template. Notice that the file is named Book#, and the template filename doesn't appear on the title bar.

## Controlling the Worksheet View

Control means having things the way you want them. Controlling Excel means having the power to manipulate what you see on the worksheet. You can switch between open workbook windows to tile or cascade the open windows; you can freeze a row of column headings onscreen for simplified data entry, or even hide a column or row of confidential information (so that it's not visible onscreen). Figure 2.29 shows a project status report with frozen column headings and a hidden column. The following sections describe the techniques for freezing and hiding columns and rows, as well as how to split the window into multiple panes to focus in on multiple sections of the worksheet simultaneously.

Note the row number of the next displayed record. Column E is hidden.

The screenshot shows a Microsoft Excel window titled 'Microsoft Excel - status report.xls'. The worksheet is titled 'Learning Products Department - Version 3.0 and 4.0 progress detail'. The data is organized into sections: 'Week ending 6/27', 'Week 28', 'Systems Administration manual', 'Getting Started manual', 'Online Help', and 'General tasks'. The columns are labeled 'Task', 'Actual Hrs.', 'Budget Hrs.', '% Complete', 'Efficiency', 'Hrs. to Go', and 'Hrs. B. Var.'. Column E is hidden, as indicated by the text 'Column E is hidden.' and a bracket pointing to the gap between columns D and F. The rows of data exceed one screen, yet the column headings in row 5 are still visible.

Task	Actual Hrs.	Budget Hrs.	% Complete	Efficiency	Hrs. to Go	Hrs. B. Var.
<b>Systems Administration manual</b>						
Writing	129.08	126	98.30%	98.54%	7	3.08
Colling		13			13	0.00
Connectors		13			13	0.00
<b>Getting Started manual</b>						
Writing	37.6	136	100.00%	261.79%	0	(98.40)
Colling	11.52	64	100.00%	121.52%	0	(51.46)
Connectors	0.48	64	60.93%	233.12%	3	(51.52)
<b>Online Help</b>						
Construction	43.72	426	9.9%	100.00%	394.28	0.00
Coordination		330			330	0.00
Colling		90			90	0.00
Connectors		90			90	0.00
<b>General tasks</b>						
help Detailed Design	22.0	40	60.30%	204.26%	18	(59.22)
Move to Office 2000	1.52	12	100.00%	765.47%	0	(20.44)
book template development	11.68	16	100.00%	100.00%	0	(4.32)
help template development	11.04	16	100.00%	144.00%	0	(4.96)
book cover design control		16			16	0.00
Development/Author/Author/Author	1.87	24	30.30%	173.69%	12	(77.49)

**Figure 2.29.** Make data entry easier and maintain confidentiality by controlling your worksheet view.

The rows of data exceed one screen, yet the column headings in row 5 are still visible.

## Switching Between Open Workbooks

Windows gives you the power to have more than one program running at the same time, and within each program, more than one file open at a time. This capability would have little or no benefit if you couldn't also *switch* between those files and programs quickly and efficiently.

To switch between open Excel workbook windows, use one of the following methods:

- Open the Window menu and choose the numbered workbook file from the list.

### Caution

Watch out for slow responses, video pauses, or problems with screen colors when you have several workbooks open at the same time. The amount of memory in your computer will dictate how many workbooks you can have open without performance suffering. If you try to do too many things at once, Excel may crash or become unresponsive.

- Click the Taskbar button for the workbook to which you'd like to switch. Office 2000 displays each open file with its own button on the Taskbar, not just a button for the application itself. With this new feature, you also can use Alt+Tab to switch between workbooks (keep in mind that this shortcut cycles between all open programs).
- Press Ctrl+F6 or Ctrl+Tab to move to the next workbook. This workbook now becomes the active file.
- Press Ctrl+Shift+F6 or Ctrl+Shift+Tab to move to the previous workbook, making it the active file.

You also can view different workbooks at the same time, each in its own document window within the application window. The best way to do this is to choose Window, Arrange, and then choose Tiled or Horizontal from the Arrange Windows dialog box, as shown in Figure 2.30. (Choosing Tiled automatically tiles the windows vertically.) Figure 2.31 shows the same pair of workbooks, this time tiled horizontally.

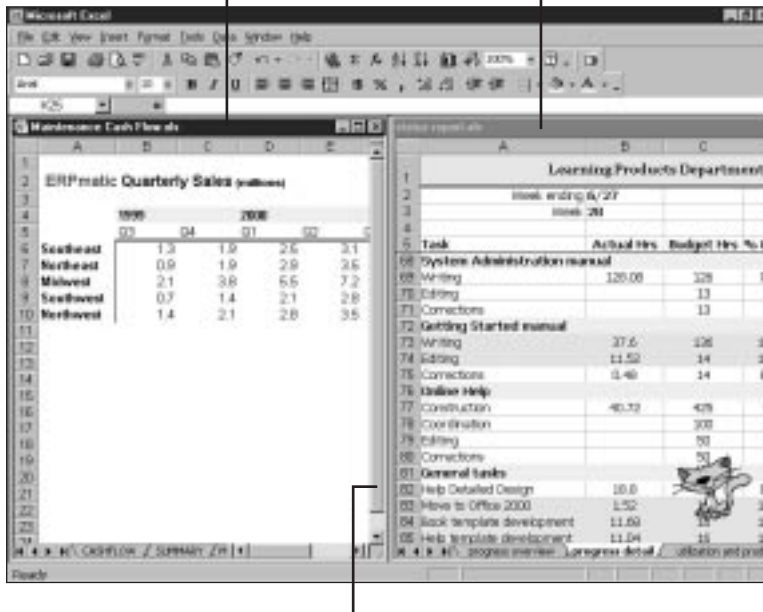
- ➔ To learn how to copy content between workbooks, between worksheets, and within a single sheet, see p. 116

### Tip #29 from

*Laurie*

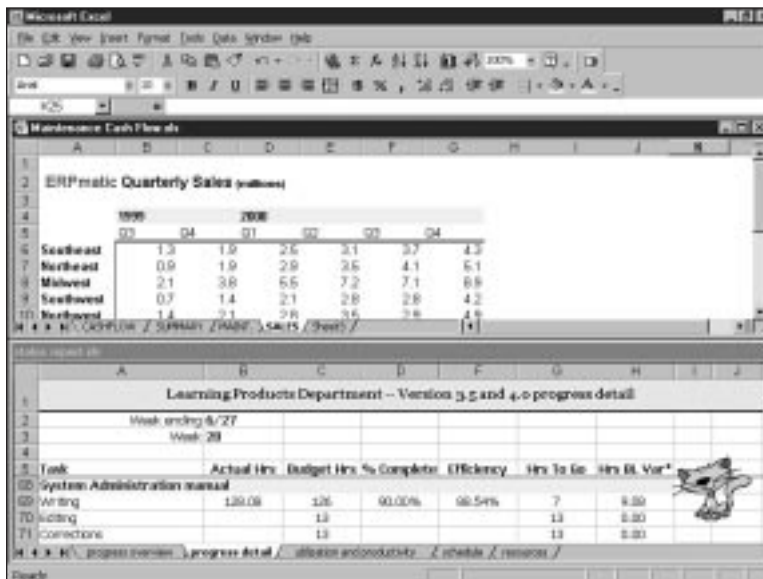
Obviously, if you have too many workbooks open at the same time, tiling them will create too many small windows. It's virtually impossible to view an entire spreadsheet through a small window. To make the tiled view more effective, keep the number of workbooks open to three or less, so that each window gives you enough room to scroll around and see a reasonable amount of content within each window.

Each workbook has its own title bar.



**Figure 2.30.** Choose horizontal or vertical tiling based on the layout of the workbooks. In this example, the workbooks are tiled vertically.

The active workbook has a scrollbar, and the title bar may be a different color or shade.

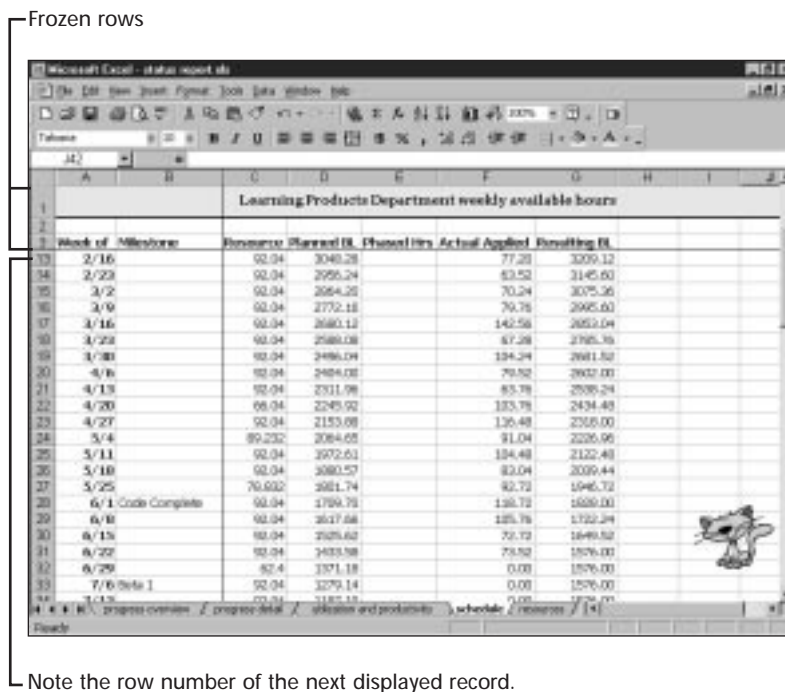


**Figure 2.31.** Compare the contents of related workbooks or use the Clipboard to copy and paste between them.

## Freezing Columns and Rows

*Freezing* part of a worksheet holds that part onscreen as you scroll the remainder of the worksheet. The most commonly frozen part of a worksheet is the row of column headings at the top of a long series of rows containing data, such as in a name and address list. By freezing this row of headings, you can still see what data goes in which cell as you scroll down the rows, as shown in Figure 2.32.

**Figure 2.32.** Freezing keeps the column headings onscreen no matter how many rows of data you must enter or edit.



To freeze a row in the worksheet, follow these steps:

1. Click the row number *below* the row you want to freeze.
2. Choose Window, Freeze Panes. Everything above the selected row is now frozen in place.

If you scroll through the rows, you'll see that the frozen rows remain onscreen, regardless of how far down you scroll.

Freezing a column (normally column A) keeps vertical headings onscreen so that you can enter data that exceeds screen width from left to right. To freeze a column, select the column to the right of the one you want to freeze, and choose Window, Freeze Panes. When you scroll to the right, the frozen column remains onscreen.

## Tip #30 from



You can freeze columns and rows at the same time by selecting a single cell and choosing **Window, Freeze Panes**. The rows above and columns to the left of the selected cell will be frozen. Use this technique to freeze row labels and column headings at the same time.

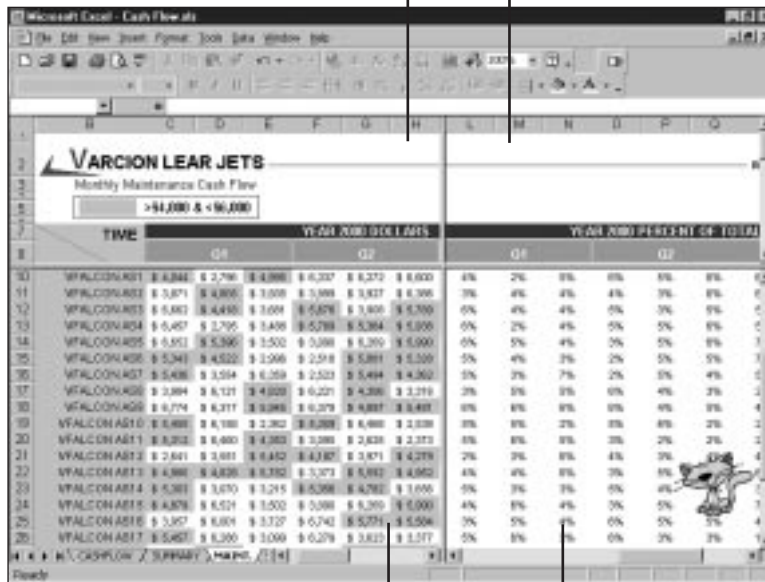
To unfreeze a frozen window, choose **Window, Unfreeze Panes**.

## Splitting the Screen

*Splitting* the Excel screen allows you to see two or four distinct parts of the same worksheet at the same time. You'll find this feature particularly useful when comparing content within a worksheet, or if you need to cut or copy content from one area to another. Imagine that you have a worksheet containing data for all four quarters of the year—by splitting the screen into four parts, each one displaying a different quarter, you can do a quick visual analysis of the entire year.

By splitting the screen, you create the effect of two or four “cameras” on the worksheet content, each aimed at a different section of the sheet. Each camera can scroll and pan around the section at which it's aimed, and of course, you can remove the split(s) when the need has passed. Figure 2.33 shows a worksheet window split into two parts.

The top two panes give context for the information in the bottom panes by showing the column headings.



TIME	Y1-A11 2000 Q1-Q4				Y1-A11 2000 P1-P4 NI 54 101A1							
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
WALCON A01	\$ 4,284	\$ 2,796	\$ 4,988	\$ 6,227	\$ 6,227	\$ 6,600	4%	2%	8%	8%	8%	8%
WALCON A02	\$ 3,871	\$ 4,800	\$ 3,000	\$ 3,989	\$ 3,827	\$ 4,306	3%	4%	4%	4%	3%	8%
WALCON A03	\$ 5,832	\$ 4,400	\$ 3,001	\$ 5,878	\$ 3,800	\$ 5,700	6%	4%	4%	5%	3%	8%
WALCON A04	\$ 6,457	\$ 2,705	\$ 3,499	\$ 5,789	\$ 5,384	\$ 5,000	6%	2%	4%	5%	5%	8%
WALCON A05	\$ 6,551	\$ 5,390	\$ 3,502	\$ 5,080	\$ 4,200	\$ 5,000	6%	5%	4%	2%	5%	8%
WALCON A06	\$ 5,341	\$ 4,522	\$ 3,266	\$ 2,518	\$ 5,891	\$ 5,200	5%	4%	3%	2%	5%	7%
WALCON A07	\$ 5,408	\$ 3,554	\$ 6,259	\$ 2,523	\$ 5,494	\$ 4,362	3%	3%	7%	2%	3%	4%
WALCON A08	\$ 3,894	\$ 6,121	\$ 4,020	\$ 6,221	\$ 4,386	\$ 3,219	2%	3%	3%	6%	4%	2%
WALCON A09	\$ 6,774	\$ 6,377	\$ 3,985	\$ 6,279	\$ 4,897	\$ 3,449	8%	8%	8%	8%	4%	8%
WALCON A10	\$ 5,688	\$ 4,188	\$ 3,382	\$ 3,889	\$ 4,480	\$ 2,108	8%	8%	2%	3%	8%	2%
WALCON A11	\$ 8,322	\$ 6,480	\$ 4,383	\$ 3,888	\$ 2,828	\$ 2,373	8%	8%	8%	3%	2%	2%
WALCON A12	\$ 2,641	\$ 3,681	\$ 4,442	\$ 4,387	\$ 3,871	\$ 4,278	2%	3%	8%	4%	3%	4%
WALCON A13	\$ 4,986	\$ 4,826	\$ 4,752	\$ 3,272	\$ 5,942	\$ 4,952	4%	4%	8%	3%	8%	4%
WALCON A14	\$ 5,381	\$ 3,870	\$ 3,215	\$ 5,368	\$ 4,782	\$ 3,600	5%	3%	3%	6%	4%	5%
WALCON A15	\$ 4,878	\$ 4,521	\$ 3,502	\$ 5,080	\$ 4,200	\$ 5,000	4%	8%	4%	3%	5%	7%
WALCON A16	\$ 3,857	\$ 4,804	\$ 3,727	\$ 6,742	\$ 5,221	\$ 5,504	3%	5%	4%	6%	5%	5%
WALCON A17	\$ 5,487	\$ 4,350	\$ 3,049	\$ 6,279	\$ 3,823	\$ 3,377	5%	8%	6%	6%	2%	7%

**Figure 2.33.** If you need to compare or copy content from one area to another, split the worksheet window into two parts.

Scroll through the bottom two panes to compare maintenance cost to the percent each cost is of the total.



To split the worksheet window into two parts, follow these steps:

1. To split into two panes, select the row or column that will mark the split by clicking its number or letter, respectively. Or, to split into four panes, click in one cell.
2. Choose Window, Split.

The worksheet now has either two or four sets of scrollbars for each side of the split, enabling you to scroll up, down, left, or right, within each section of the screen. Conceivably, you can be looking at the same cells in both sides of the split.

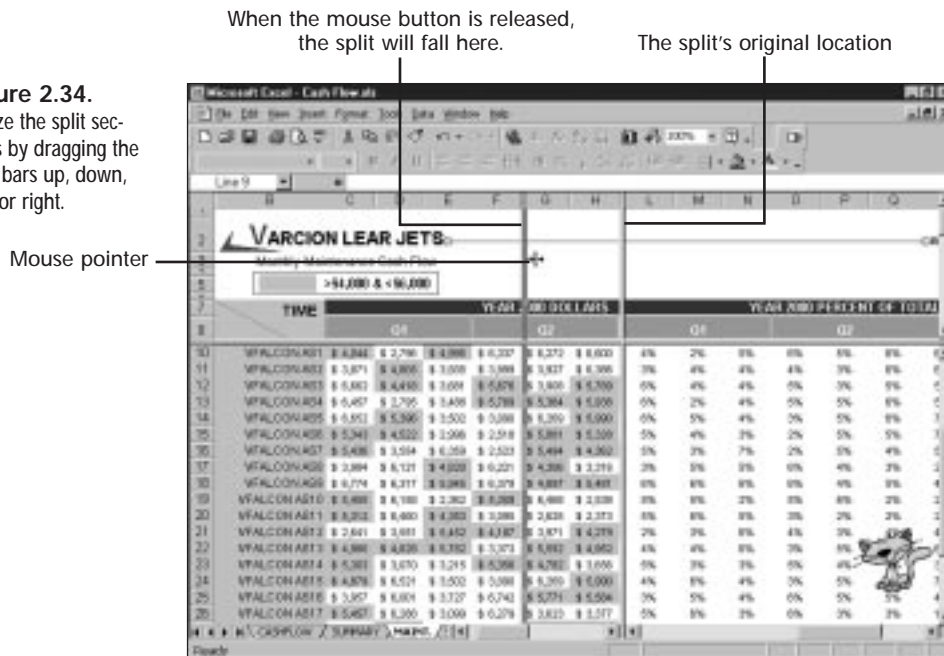
After creating the split, you can scroll to any location in the worksheet from within any and all of the sections.

#### Note

With a four-pane window split, the panes scroll in pairs. When scrolling up and down, the two upper panes scroll together. When scrolling left and right, the two left panes scroll together, and the two right panes scroll together.

Moving the *split bars* enables you to increase or decrease the size of any of the sections. To move a split bar, point to the bar. The mouse pointer turns into a two-headed arrow, as shown in Figure 2.34. Horizontal bars can be moved up or down, vertical bars left or right.

**Figure 2.34.** Resize the split sections by dragging the split bars up, down, left, or right.



**Tip #31 from***Laurie*

To move all four sides of the split, point to the intersection of the vertical and horizontal bars. When the mouse pointer turns into a four-headed arrow, click and drag to move the intersection.

To remove the split, choose one of the following methods:

- Choose Window, Remove Split. All split bars will be removed.
- Double-click one split bar to remove it. To remove a four-way split, double-click the intersection of the two splits.
- Drag one of the split bars off the worksheet.

**Tip #32 from***Laurie*

Use the *split boxes*, small buttons at the top of the vertical scrollbar and to the right of the horizontal scrollbar, to insert and move split bars. If you can't see the split boxes, unfreeze the window—you can't split a frozen window.

## Hiding and Unhiding Rows and Columns

The word *hiding* can give the impression that something sneaky is happening, that something is being kept a secret. That may be your motive for hiding a column or row in your worksheet, but it's probably not the only one. Hiding rows and/or columns allows you to keep something from being printed if the content is of no interest to the person who'll be reading the printout (that may even be you), or to simplify the view of the worksheet, removing distracting or visually cluttering content while you work.

**Tip #33 from***Laurie*

Hiding content also can be used to make confidential content invisible, but there are better ways to do that, such as password-protecting a workbook or placing the file in a network drive to which only you have access.

To hide a column or row, you can choose from the following two methods:

- Resize the column or row until it is so narrow that it literally disappears.
- Select the row(s) or column(s) and choose Format, Column (or Row), Hide, or right-click the selection and choose Hide from the context menu.

When a column or row is hidden, a thick border appears between the headings of the visible rows or columns where the hidden number or letter would normally appear. Figure 2.35 shows the special split two-headed arrow that only appears on a boundary where one or more rows or columns are hidden.

**Figure 2.35.**  
Make sure the mouse pointer is a split two-headed arrow before un hiding columns or rows.

Split two-headed arrow mouse pointer

C	D	E	F
ts Department -- Version 3.5 and 4			
Budget Hrs	% Complete	Efficiency	
16	100.00%	1250.00%	

To reveal hidden columns or rows, choose one of the following methods:

- Point to the thick boundary between column letters or row numbers. When the mouse pointer turns into a split two-headed arrow, double-click (refer to Figure 2.34).
- Select the columns or rows that appear on either side of the hidden content, and choose **F**ormat, **C**olumn (or **R**ow), **U**nhide.

### Caution

Observe the two-headed arrow carefully—a solid two-headed arrow is used for resizing columns and rows, a split two-headed arrow is used for un hiding a column or row.

➔ For more information on using protection to control changes to your workbooks, see “Protecting Your Data,” p. 520

## Troubleshooting

### Distinguishing One Version of a File from Another

*How do I determine which file is which?*

Aside from doing a visual check for differences in content, you can distinguish two different versions of an Excel file by checking the date and time modified for each file. You can see this information in the Open dialog box, Windows Explorer, or My Computer (in Details view), or by choosing **F**ile, **P**roperties when the workbook is active onscreen. The Statistics tab in the Properties dialog box shows the date and time the file was last modified.

### Creating a Template from an Existing Workbook

*What if I've already added data to the file that I want to use as a template?*

Before you save the file as a template, save it one last time in its current format. Then delete any specific data, leaving only the labels, formulas, and any other text that you want to have on every worksheet created with the template. When you save the workbook as a template, the original file, prior to the deletions, will be left intact.

## Why Save to the Templates Folder?

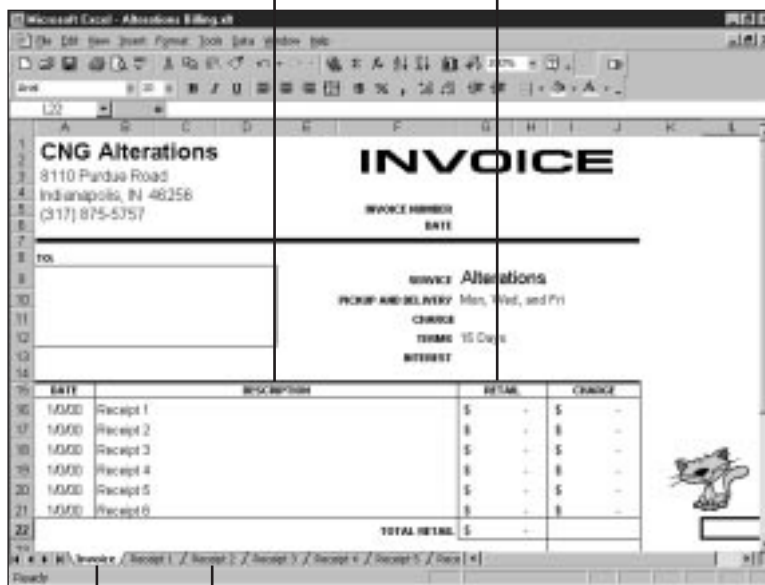
*I've placed my templates in a folder other than the Templates folder, and now I can't see them in the New dialog box. What do I do?*

Only templates that are in the Templates folder or one of its direct subfolders (such as Spreadsheet Solutions) will appear in the New dialog box when you choose to create a new workbook based on a template. If you created or placed templates in some other folder, copy or move the templates—or the folder with its templates—to place them in c:\Windows\Application Data\Microsoft\Templates. If you prefer to keep the templates where they are, use the Open dialog box to open a template, and then immediately save it with its new workbook name before making any changes (to avoid changing the template).

## Excel in Practice

You can use several of Excel's features to enhance any template you create. Beyond entering basic cell content to instruct or guide the template's users, adding settings such as frozen panes, prenamed sheet tabs, and hidden columns will help the user understand your goals for use of the template, not simply *how* to use it. Figures 2.36 and 2.37 show two different levels of template preparation.

Column headings indicate the type of data to be stored.

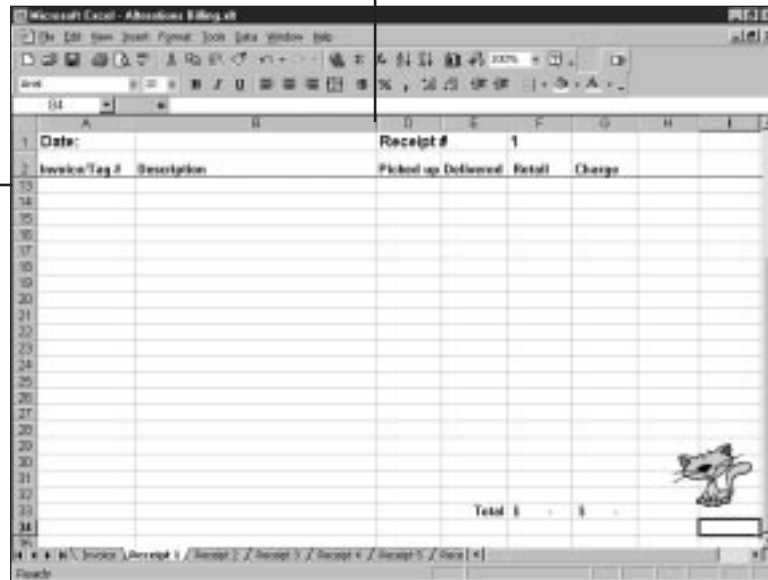


**Figure 2.36.** This template is set up for a small alterations business to use for customer invoices.

Sheet tabs are named to guide the user through the template.

**Figure 2.37.**  
 Saving the template with a frozen pane in place and the salary column hidden help the user make better use of the template.

The Client Error? column is hidden to keep that information from printing.



Note the row number under the frozen row—the user can enter more than a screenful of records and still see the column headings.

# CHAPTER 23

## Innovative Ways to Use Excel

### In this chapter

- Thinking “Out of the Box” with Excel 676
- Value Chains 676
- Value Matrices 679
- Using Drawing Tools to Create Quadrants 683
- Creating Gantt Charts in Excel 686
- Advanced Process Principles 713
- A Brief Overview of Critical Path 714
- Troubleshooting 716
- Excel in Practice 716

*by Patrick D. Blattner*  
*Patrick@BlattnerBooks.com*

## Thinking “Out of the Box” with Excel

Excel’s flexibility enables you to go above and beyond the conventional wisdom in which the program was originally designed. By understanding formatting, formulas, form controls, and charts, you can start to use Excel’s flexibility to solve just about any problem. This chapter taps into utilizing Excel in interesting and unusual ways. From strategic planning to conventional techniques in business, you can start to visualize the application’s sheer strength and understand the power of Excel.

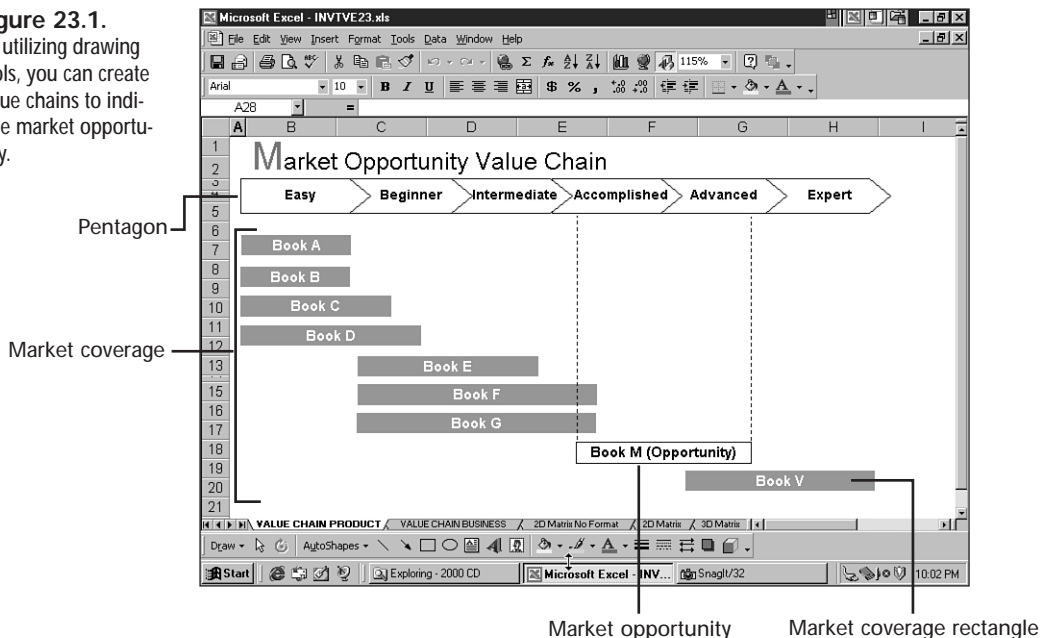
## Value Chains

*Value chains* measure the value of process or products over a range of variables, such as steps in process or capabilities. You can use value chains to measure product coverage in the marketplace against competitors, or as a strategic business measure to understand the most logical approach in weighing risk factors.

### Creating a Market Opportunity Value Chain

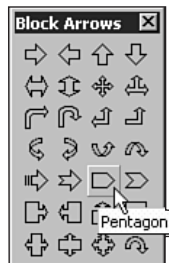
A *market opportunity value chain* measures market coverage either internally—within an organization—or against competitors. Notice in Figure 23.1 that the market opportunity value chain for a small publisher measures the coverage of their books’ accomplishment level and the company’s coverage against it. By utilizing Excel’s formatting and drawing tools, you can create value chains for presentations or strategic initiatives for future approaches to the marketplace.

**Figure 23.1.**  
By utilizing drawing tools, you can create value chains to indicate market opportunity.



When creating a value chain, think in terms of the market or process as a whole with the different sections broken out from least to most, lowest to highest, easiest to hardest, and so on. Use the rectangle as the measurement tool that plots against the value chain.

To create the value chain shown in Figure 23.1, use the pentagon shape for the process or market analysis across the top of the sheet. The pentagon shape in the form of a chain represents the steps in the process, or the sectors in the marketplace. (Click the **AutoShapes** button and choose **Block Arrows** from the pop-up list; then click the **Pentagon** button as shown in Figure 23.2.)



**Figure 23.2.**  
The pentagon shape is used to create the value chain.

**Tip #261 from**

*Subik*

You can duplicate the first pentagon by holding down the **Ctrl** key and dragging, or by pressing **Ctrl+D**. Pressing **Ctrl+Shift** and dragging creates a duplicate while keeping the horizontal alignment intact.

Use the **Bring to Front** or **Send to Back** buttons to create the overlap between the pentagons (the point of one pentagon placed on top of the next pentagon). To add text inside the shape, simply select the shape and type; then press **Esc** twice when you're done typing.

**Tip #262 from**

*Subik*

When adding drawn shapes to your charts and worksheets, you're likely to need four toolbar buttons quite often: **Bring to Front**, **Send to Back**, **Bring Forward**, and **Send Backward**. You can place these buttons on a toolbar within easy access by using one of these methods:

- **Add the buttons to the Drawing toolbar.** Right-click on the toolbar and select **Customize** to open the **Customize** dialog box. In the **Categories** list on the **Commands** tab, choose **Drawing**; then scroll the **Commands** list to find the commands for **Bring to Front**, **Send to Back**, and so on, and drag them to the toolbar. Close the **Customize** dialog box when you're finished.
- **Tear off the Order toolbar.** Click the **Draw** button on the **Drawing** toolbar to open the pop-up menu. Click the **Order** option to display the submenu, and then drag the submenu's title bar away from the **Draw** menu to create a floating **Order** toolbar.

To create the product bars, use the **Rectangle** AutoShape from the **Drawing** toolbar. To create a white background, select the worksheet and use a white fill color (or just turn off the



gridlines by choosing **T**ools, **O**ptions, clicking the View tab, and deselecting the **G**ridlines option in the Window Options section of the dialog box).

To create the dotted vertical lines shown on the sides of the opportunity block, click the Line button on the Drawing toolbar, draw the line, and then click the Dash Style button and select a style. You can draw an identical line on the other side, or Ctrl+Shift+drag to create the line and position it exactly parallel to the first line.

## Creating a Strategic Risk Factor Value Chain

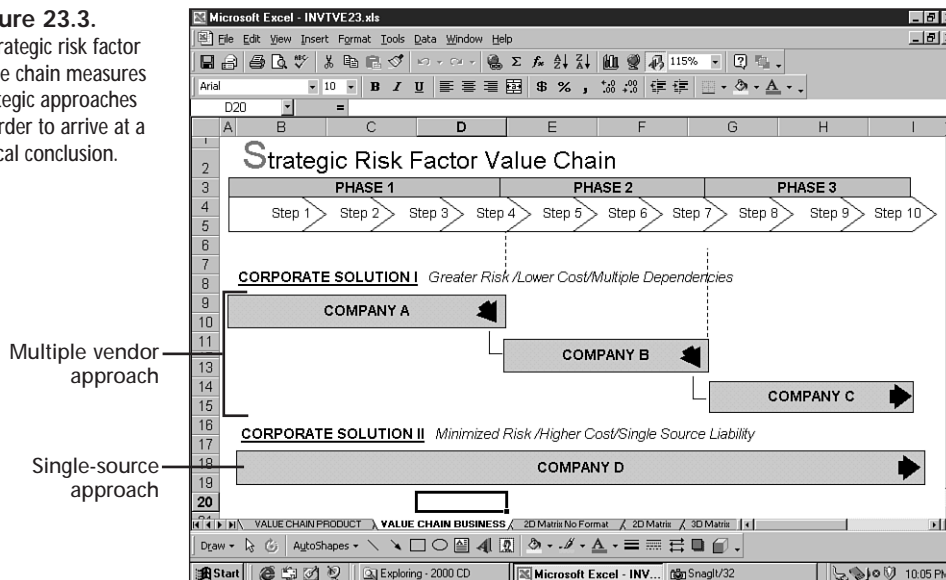
A *strategic risk factor value chain* enables you to measure business risk against different strategy approaches. In Figure 23.3, the solutions take a multiple-vendor approach against a single-source solution—the value chain measures the different steps in creating the product. Two approaches to producing the product are shown:

- Corporate Solution I shows multiple processes divided among several companies. This strategy creates dependencies on the other companies, thus creating greater risk, but lower cost in the short term; however, it ultimately will cost more in time and delivery risk.
- Corporate Solution II creates a single-source dependency with one company. The short-term cost may be a bit higher, but risk is minimized with sole control and single-source dependencies.

This example may seem a bit complex, but think in terms of your business and the different steps required to produce a service or product. Then look at the opportunities available to create the same product or process, and the risks and cost associated with that opportunity.

**Figure 23.3.**

A strategic risk factor value chain measures strategic approaches in order to arrive at a logical conclusion.



By utilizing the pentagon shape, lines or connectors, arrows, and text, you can create strategic approaches to arrive at business conclusions.

## Value Matrices

You use a *value matrix* to measure multiple components of processes or products. They're created with two forms: two-dimensional and three-dimensional. Value chains are created primarily with drawing programs for presentations; however, considering that most number decisions are based in Excel, you also can create matrices and metrics in Excel for presentations or strategic cross sections of a market or business.

### Creating a 2D Matrix

A *two-dimensional matrix* is a cross section between components where the equal components or intersections are checked. Figures 23.4 and 23.5 show two matrices: one to show the structure on the worksheet, and the second to illustrate a final form with formatting. In Figure 23.4, the two-dimensional matrix measures the product and the components within the product. It provides a cross section overview of the product's components as a whole. Figure 23.5 shows the matrix in final formatted form.

➔ For details on creating professional-looking formats for your matrices, see "Professional Tables," p. 726

		TEXT	MUSIC	ACTIVITY	INTRO	ENDING	TEMPLATES	GAMES	PRINTING
1	INCLUDE ELEMENTS								
2	PRODUCT								
4	PRODUCT 1	X	-	X	X	X	X	-	X
5	PRODUCT 2	-	X	X	-	X	X	X	-
6	PRODUCT 3	X	-	-	X	X	-	-	-
7	PRODUCT 4	X	X	-	X	-	X	X	X
8	PRODUCT 5	X	-	X	X	X	-	-	X
9	PRODUCT 6	-	X	-	X	X	X	-	X
10	PRODUCT 7	-	X	X	X	-	X	X	X
11	PRODUCT 8	-	X	X	-	X	X	-	X
13	PRODUCT ELEMENT MATRIX				YES	X		NO	-

**Figure 23.4**  
An unformatted, two-dimensional matrix shows the simple layout required.

Intersecting points

#### Note

Obviously, the grayscale used for printing this book can only distantly represent the colors used in charts and other graphics. To see the actual worksheets, refer to the CD accompanying this book.

**Figure 23.5.**  
The final formatted  
two-dimensional  
matrix.

INCLUDE ELEMENTS		TEXT	MUSIC	ACTIVITY	INTRO	ENDING	TEMPLATES	GAMES	PRIVATE
PRODUCT 1		X	-	X	X	X	X	-	X
PRODUCT 2		-	X	X	-	X	X	X	-
PRODUCT 3		X	-	-	X	X	-	-	-
PRODUCT 4		X	X	-	X	-	X	X	X
PRODUCT 5		X	-	X	X	X	-	-	X
PRODUCT 6		-	X	-	X	X	X	-	X
PRODUCT 7		-	X	X	X	-	X	X	X
PRODUCT 8		-	X	X	-	X	X	-	X

PRODUCT ELEMENT MATRIX      YES X      NO -

Suppose that your business distributes 10 different types of products throughout the United States. The 10 products could be listed across the top and the states along the left side, and the products distributed within the states would then be checked at the intersections. A matrix creates a simple intersecting picture that helps visualize complex cross sections of data.

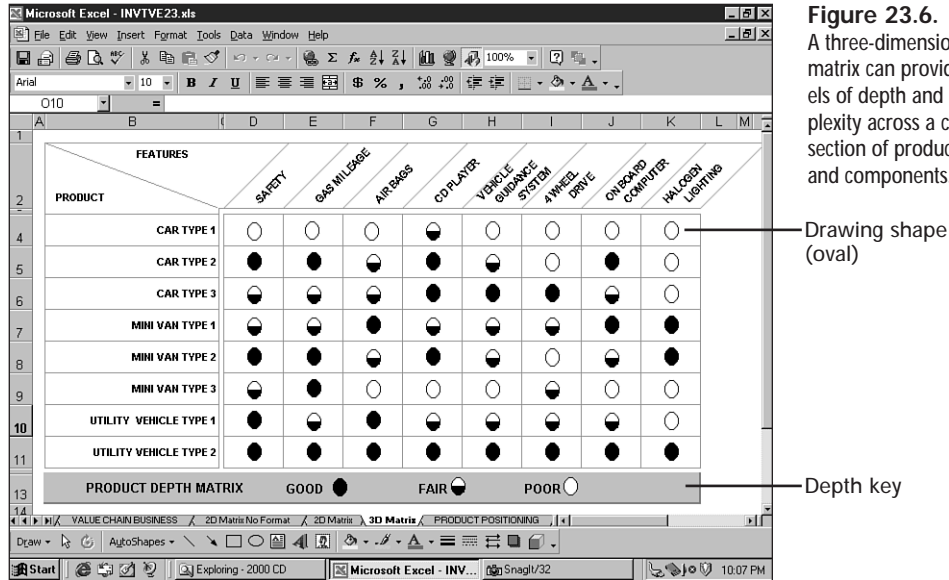
To create a two-dimensional matrix, follow these steps:

1. Align the products or companies in the first column.
2. Align the components across the top in one or more rows.
3. Add an X, check mark, or other graphic where categories cross.

By adjusting column and row heights and centering text horizontally and vertically, you can establish a balanced matrix that resembles one created in a drawing program.

## Creating a 3D Matrix

A *three-dimensional matrix* is used when levels of complexity are involved, adding a depth measure to the 2D matrix. Depth can include performance, perceived value, cost associated with like items, and so on. For example, if you have three cars with like components, but the cost associated with the components is extremely different, the depth could be measured in cost as inexpensive, moderate, and expensive. In Figure 23.6, the three-dimensional matrix measures several components, as well as the value of items associated with the vehicle type. The structure of the matrix is the same as the two-dimensional matrix covered previously; however, the three-dimensional component is created with shapes from the Drawing toolbar to display depth: the level of performance.



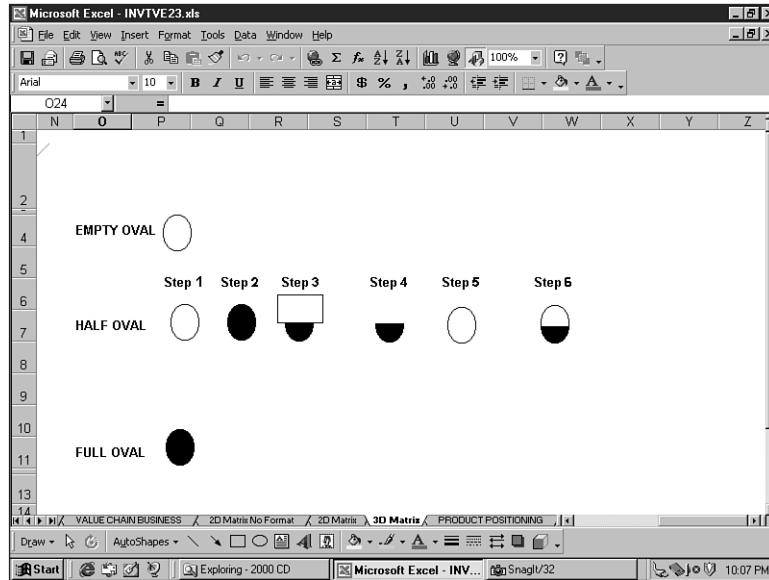
**Figure 23.6.** A three-dimensional matrix can provide levels of depth and complexity across a cross section of products and components.

To create the ovals as measuring tools for the matrix, perform the following steps:

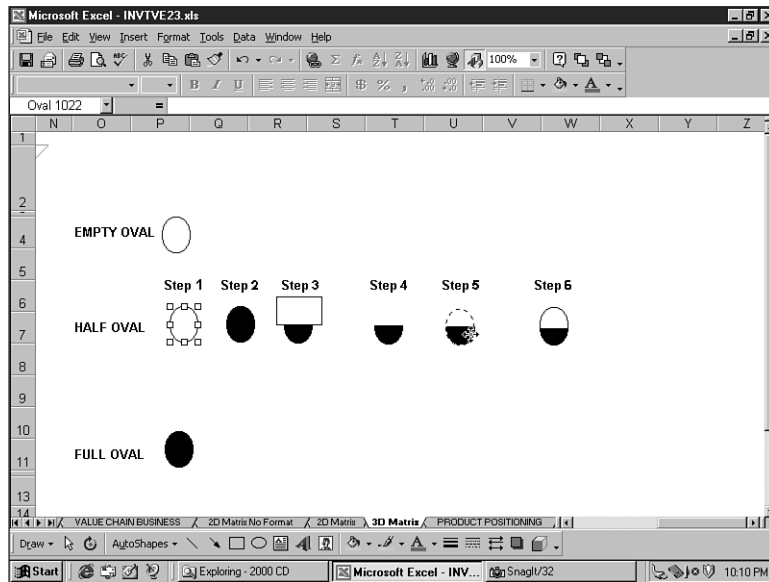
1. Create an empty oval, as shown in Figure 23.7.
2. Copy and paste the empty oval and fill it with black to create a full oval.
3. Copy and paste the empty oval again for use as the half oval (I'll describe how to make it a half shortly).
4. Copy and paste the half oval, filling it with black so that you have one full and one empty oval for use as half ovals.
5. From the Drawing toolbar, select the Rectangle AutoShape and drag it over half the oval, as shown in step 3 in Figure 23.7.
6. Keeping the rectangle selected, choose **Format**, **AutoShape** to open the Format AutoShape dialog box. Select the **Colors and Lines** tab. In the **Line** section of the dialog box, choose **No Line** for the **Color** option.  
Step 4 in Figure 23.7 illustrates the result.
7. Place the empty oval from step 1 in Figure 23.8 over step 5, making sure the oval has no fill color.
8. Bring the empty oval to the front, if necessary, and the final result is shown as step 6 in the figure.
9. Select each of the shapes in step 6 in the figure (the filled oval, the empty oval, and the "invisible" rectangle). Click the **Draw** button on the Drawing toolbar and select **Group** to group the pieces of the new shape together so that you can copy or move them as one unit.

10. Select and place the individual ovals in the cross section of the matrix that best suits the performance level.

**Figure 23.7.**  
Create the shapes for the three-dimensional matrix with drawing tools.



**Figure 23.8.**  
By using multiple shapes, you can create the half-full effect.



**Tip #263 from**

When the “half oval” is complete, you can resize it by dragging. To move the filled half of the oval to the top, click the **Draw** button, select **Rotate** or **Flip**, select the **Free Rotate** option, and drag one of the handles until the shape is positioned as desired.

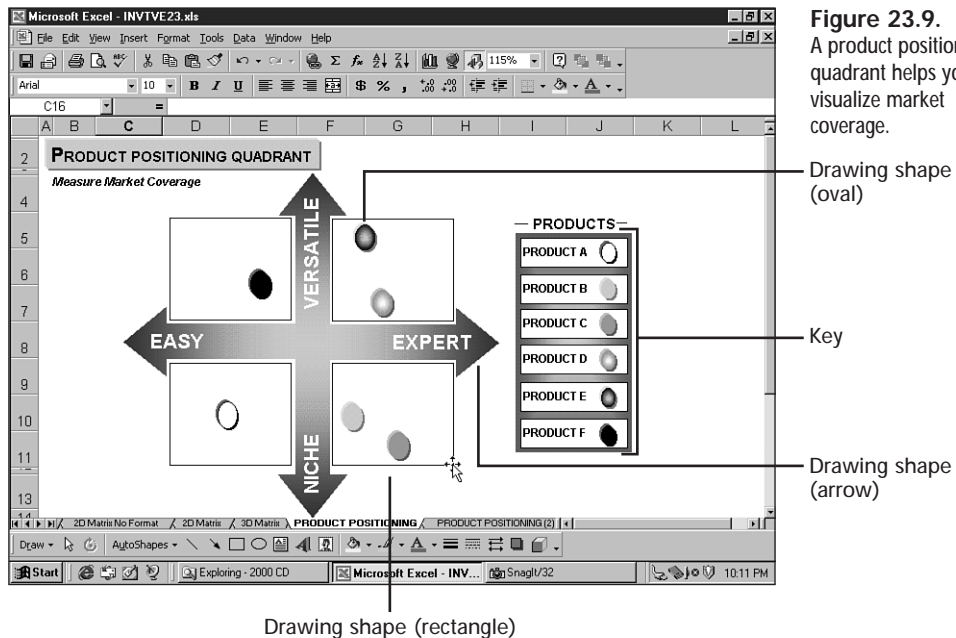
## Using Drawing Tools to Create Quadrants

*Quadrants* are used to measure market penetration in several forms. You can use quadrants to understand your product mix in the marketplace and compare your strategy to that of other businesses in the same market. You also can measure your market share and penetration per quadrant. Another way to use quadrants is in conjunction with comparative analysis for two market factors, such as market penetration and consumer dollar spending. The quadrant examples in the following sections show effective solutions for business strategies and fully utilize Excel's drawing tools to solve problems—not just to place boxes on the worksheet—thus using Excel the way it was meant to be used.

For details on using Excel's drawing tools, see Chapter 8, “Using Excel's Drawing Tools.”

### Measuring Product Placement with Product Positioning Quadrants

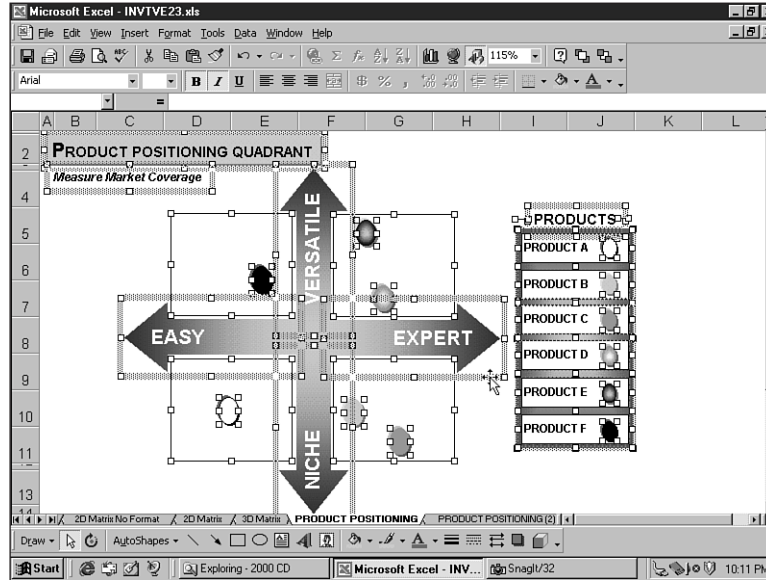
A *product positioning quadrant* helps you visualize your market coverage per product. Combinations of drawing tools create visual presentations that can help your company make effective decisions. The quadrant in Figure 23.9, for example, measures the market categories by using arrows from the Drawing toolbar. Insert the quadrants with the rectangle on the Drawing toolbar, and use shapes, letters, or names to call out the product.



Notice that the ovals in this example tend toward different locations in the quadrant. This is due to the product's coverage. For example, product C's location in the lower-right quadrant indicates that this product reaches the extreme edge of the niche market and the mid-expert level.

To create the quadrant arrows, simply use one of the Drawing toolbar's block arrows. Then click the **D**raw button and use the **R**otate and **F**lip option to place the arrows facing opposite directions. Figure 23.10 shows all the individual drawing objects selected, to show the extended use of drawing tools to create the quadrant.

**Figure 23.10.** Notice the extended use of Excel's drawing tools to create the quadrant.

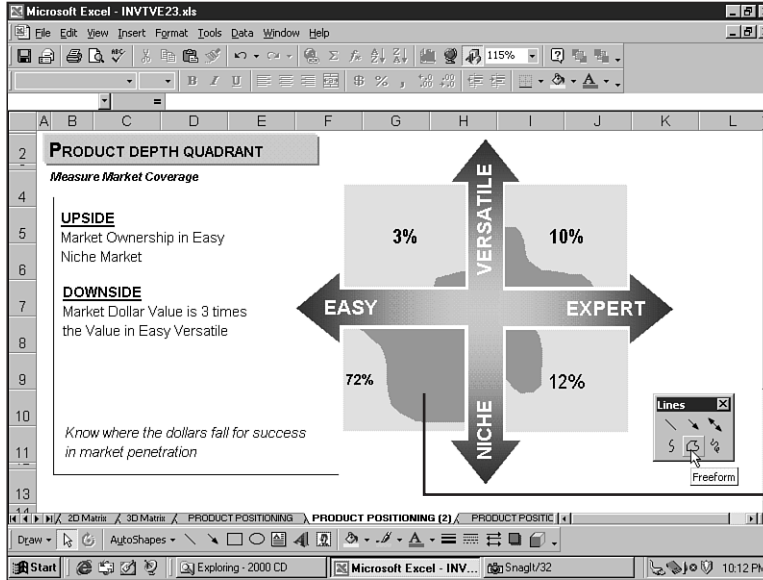


## Measuring Market Penetration with Product Depth Quadrants

Quadrants can reflect product or positioning focus in a particular market, or the marketplace as a whole. Use drawing tools to further measure and display penetration into market categories. In Figure 23.11, the market share per quadrant shows the depth and areas of coverage into the marketplace. Use the Freeform tool on the Drawing toolbar to draw the market penetration into the quadrant and then fill the new freeform shape with a fill color. Use text to apply the percentages to the quadrant.

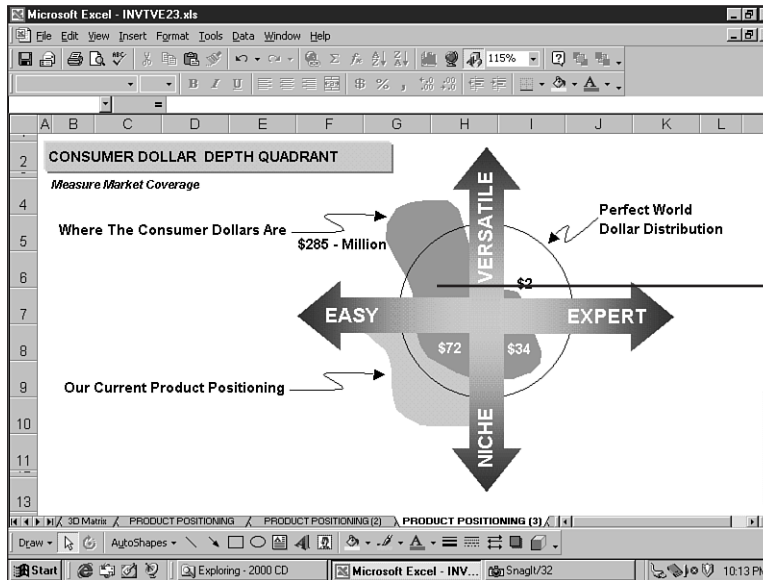
To measure your company's market penetration in comparison to the consumer dollar distribution, use drawing tools in quadrant form to visually create the market. By using drawing tools effectively, you can understand where your market opportunities lie (see Figure 23.12).

Notice the "perfect world" dollar distribution among the categories. Business would be simpler if we could segment the world this way, in even amounts, wouldn't it? In real life, of course, the consumer determines the profitable market, and this example clearly indicates that more opportunities and dollars are available in the easy/versatile quadrant for this publishing company.



**Figure 23.11.** Use a product depth quadrant to illustrate market severity and penetration.

Current company market coverage



**Figure 23.12.** Use the dollar depth quadrant to compare your market penetration and focus against the dollar distribution.

Consumer spending

As another example, suppose your particular industry is construction. You want to determine where your focus should be in current and future markets. If you do state work, you could look at the dollars being let for bridges, roads, dams, and tunnels, and compare your focus against the distribution of the total dollars being allocated by the state over the next few years.



## Creating Gantt Charts in Excel

You may be surprised to learn that you can use Excel for project management, resource loading, forecasting, marketing management, and any process that occurs over time. You can create static Gantt charts for visual representation, or dynamic Gantt charts that calculate durations and automatically plot, coupled with charts and formulas. With the proper approach, Excel can be used to tackle just about any problem.

It's likely that project management for your business is currently a combination of using project management software coupled with Excel to calculate durations. But the illustrations and examples in the following sections show how Excel can handle all your project and scheduling needs, without requiring the use of project management software.

Here's a question. What happens if you have a thousand lines of information in a project and you have to put in a duration (an "educated guess") for each line? That's right, after a thousand educated guesses for the project, you're still in trouble, because durations should really take into account several factors that are a calculation of some type (hours per day minus 15 percent times 6 days a week, and so on). Now what if you have several release dates for different projects and you need to know when you have to start each project to get it completed by the scheduled release date?

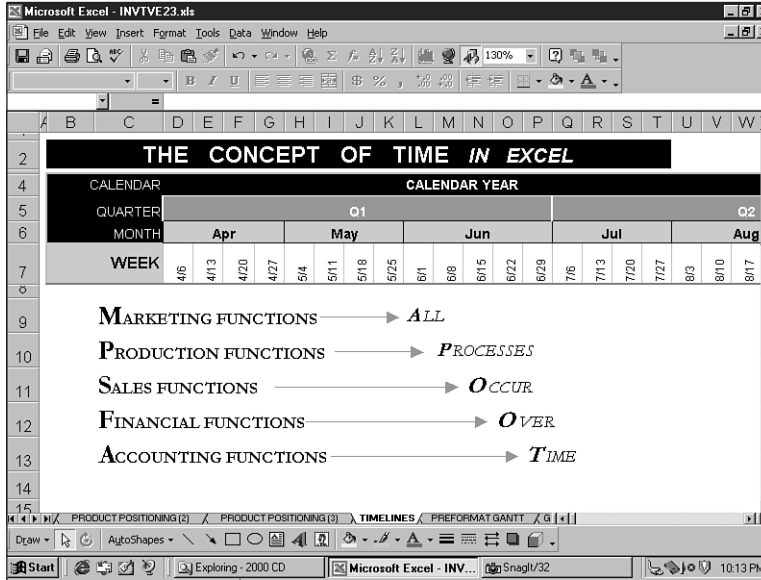
These are examples of one of the biggest headaches in business today—whether you're writing a book, managing multiple projects, or building software. By understanding spreadsheet design and layout, coupled with formulas and proper referencing, you'll soon discover how Excel can work effectively for you to solve these kinds of problems.

Because all processes occur over time, you can use Excel to calculate dollars over time and process over time for marketing, production, sales, finance, and accounting, as well as any other function of business. By setting up timelines appropriately, down to the level of tracking and forecasting required by your situation, you can tie or reference formulas to the timeline to shift events, move money, forecast widgets, and so on, as shown in Figure 23.13.

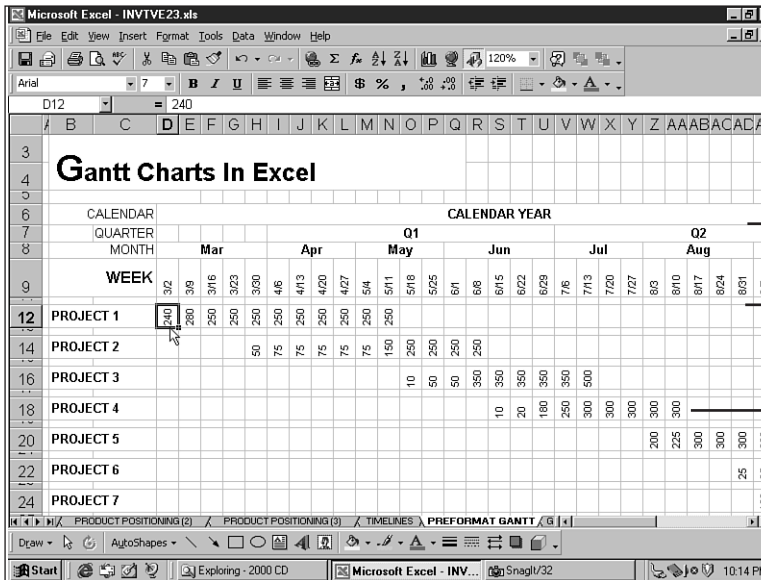
From marketing to finance to production, Excel is the most flexible tool on the market, and can cover and manage any sector in business today. The following sections show you how to get started using Excel for project management in your business.

### Creating a Basic Static Gantt Chart

Figure 23.14 illustrates a simple multiple-project Gantt chart. In this example, the output levels per week are directly aligned with the week and project. Figure 23.15 illustrates formats applied to the Gantt chart. You can see the value of formatting in this comparison. Based on this principle, you can apply charts for resource loading, create employee allocation charts for understanding future needs, and apply formulas and form controls to automate the Gantt chart, as described later in the chapter.



**Figure 23.13.** By utilizing timelines appropriately, you can start to make Excel into a powerful forecasting and process program.



**Figure 23.14.** This layout illustrates a simple multiple-project Gantt chart layout in Excel.

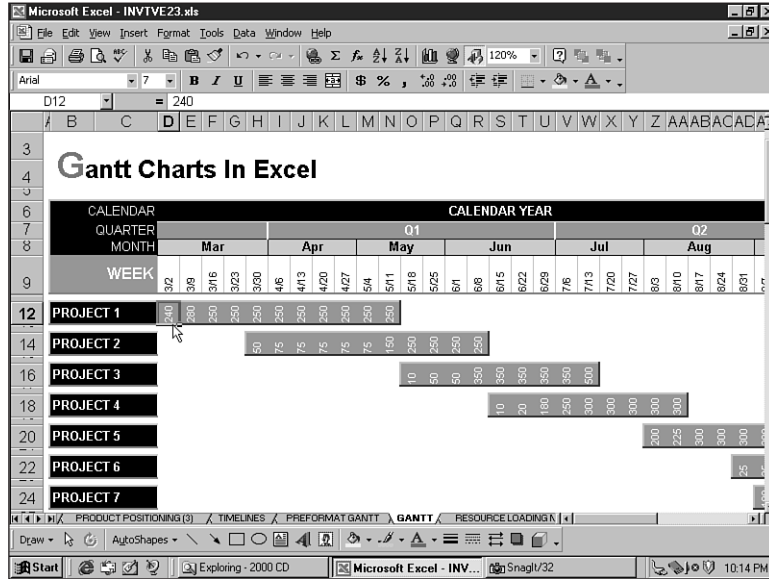
Tiered timeline

Output demand

**Note**

The best way to learn how to create and use Gantt charts in Excel is to experiment with a working Gantt chart. All the worksheets in this chapter are included on the CD in the back of this book.

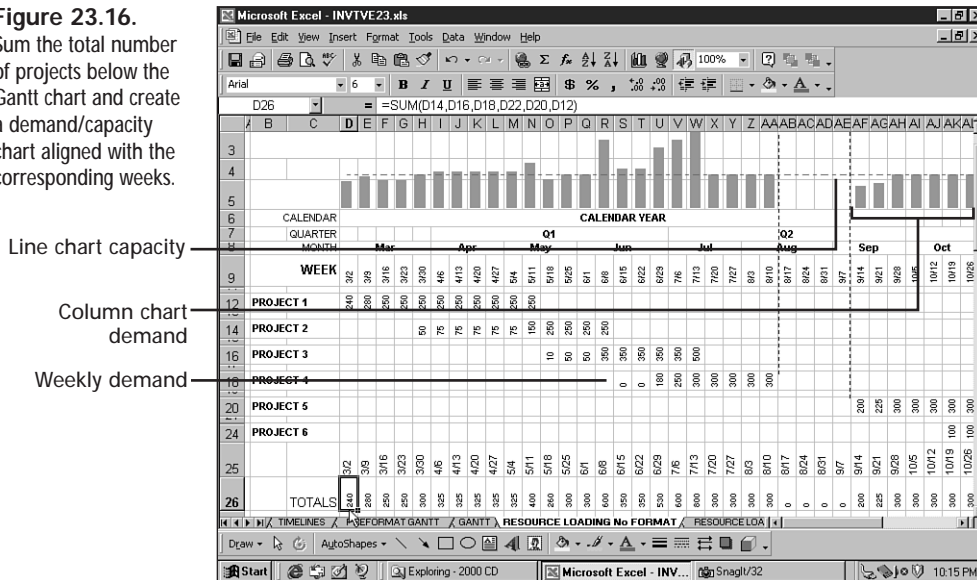
**Figure 23.15.** By utilizing Excel's formatting tools, you can provide clear, concise pictures of your production process.



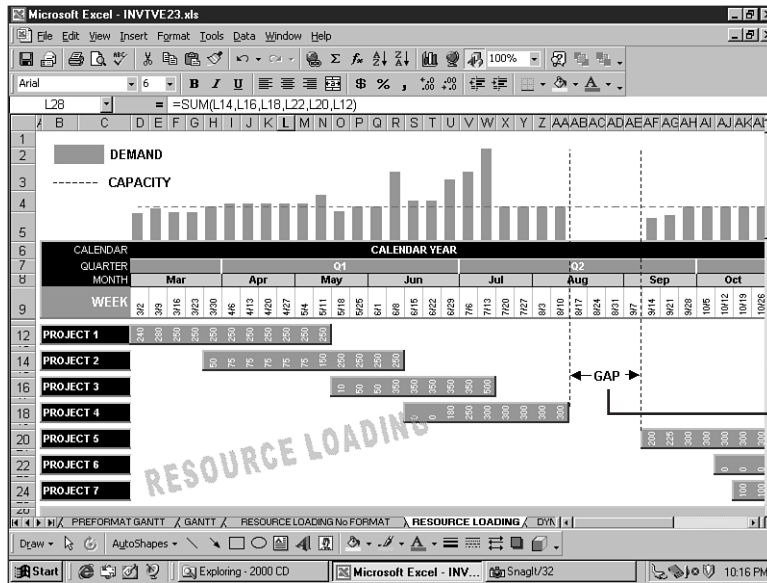
### Adding a Resource Loading Chart to a Gantt Chart

With a basic Gantt layout in place, you can apply a demand/capacity chart for resource loading, people utilization, and so on. To do this, simply create a row under the projects that corresponds with the week above, and sum up the total number of project rows, as illustrated in Figure 23.16. Drag the formula to the right to carry out the SUM formula through the weeks.

**Figure 23.16.** Sum the total number of projects below the Gantt chart and create a demand/capacity chart aligned with the corresponding weeks.



You also can apply a capacity row directly under the SUM formula. Select the entire range summed (including the date range) to create the chart. Then align the chart above the Gantt chart and eliminate the borders and background of the new chart. Now, whenever a project moves from its original production window, the chart automatically reflects the change. This works well with dynamic Gantt charts to run scenarios in production. Notice in Figure 23.17 that June and July are running over the current capacity of the resource or production facilities. There’s also a period of time in August and early September where no demand appears. By setting up a resource-loading chart above the Gantt grid as shown, you can smooth out your production plan and optimize your resources. This principle could also apply to cash flow. Because costs are associated with each event, you can lay out cash flow against the production plan as well, and even track actual costs associated with the plan.



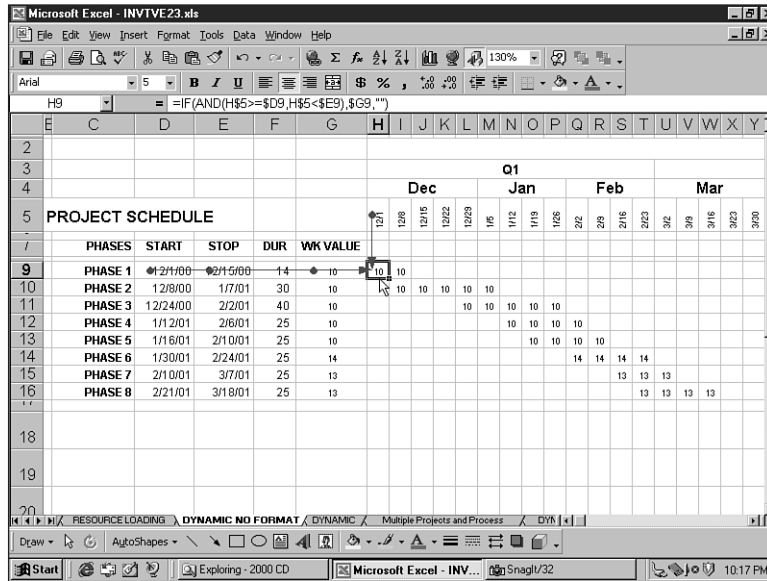
**Figure 23.17.** By formatting the Gantt chart, you can see an effective display of time you need to utilize—in this case, the dead zone in the month of August.

Expedite project to fill resource gap.

## Creating Dynamic Gantt Charts

Dynamic Gantt charts are driven by timelines and start-and-stop dates. The duration drives the period between the start date and stop date and the week value plots the output per week. The week value also can be a percentage, a unit, a person, and so on. (For more information, see the later section “Advanced Gantt Chart Principles.”) The key is that the Gantt bar is a dynamic moving timeline based on a simple formula that references the weeks and the week value. The week value can be a name, letter, or number (see cell G9 of Figure 23.18). Notice in the figure how the formula is tied to four key cells: the timeline in cell H5, the start date in cell D9, the stop date in cell E9, and the plotted week value in cell G9. The duration drives the time between the start and stop dates and can be derived with calculations—a key difference between project management programs and Excel.

**Figure 23.18.** With the right layout approach, a simple formula can be created to automate Excel into a production tool to drive processes.



**Tip #264 from**

*Richard*

Review this worksheet on the CD as you follow the steps, so that you can see the formulas and scroll all rows and columns into view as needed.

To create an automated Gantt chart in Excel, follow these steps:

1. Set up the timeline or weeks. This example starts in cell H5 of the worksheet with the date 12/1/2000.
2. Create a seven-day increment of the original timeline date. For this example, the formula in cell I5 is  $=H5+7$ , filled to the right to the desired end date of the timeline.
3. Set up the key information to prepare your Gantt references. In Figure 23.18, row 7 contains the titles.
4. Enter the start date for phase 1 (cell D9, 12/1/2000 in this example). The start date will drive all phases in this example because you'll establish links between the phases.
5. Type a formula to provide the end result once a duration is entered. In the example, cell E9 contains this formula:  $=D9+F9$ . This example uses a static duration. This means that you'll just enter a number. You can get creative with formulas to drive the duration as well, however, and even use Goal Seek. (See Chapter 22, "Using Excel's Analysis Tools," for more details on using Goal Seek.)
6. Enter the duration for phase 1. In the example, cell F9 contains the duration 14, which adds 14 days to the start date, and the stop date is therefore 12/15/00.

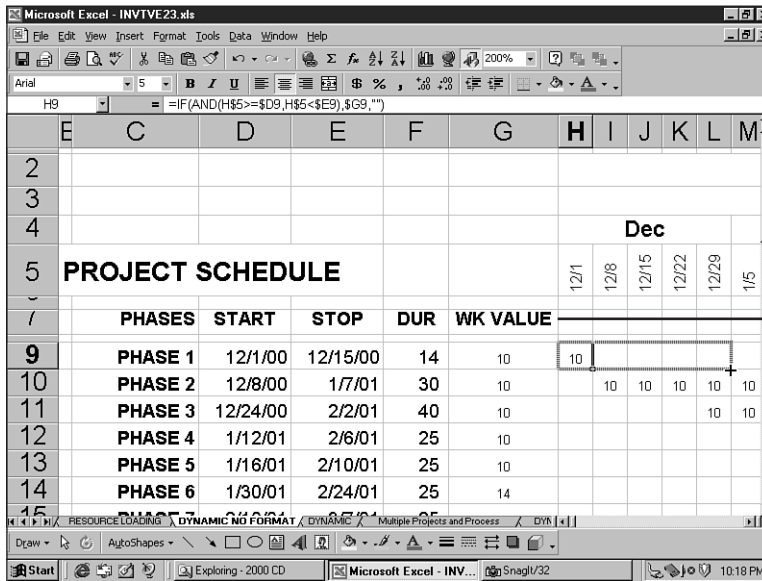
7. Enter a value for the week. This is optional, depending on what you want to track. You also could enter a percent. For this example, 10 was entered in cell G9.

The value for the week can represent unit output, percent of total, or even a name. This is one of the key values in Excel and building Gantt charts, and helps you visually understand complex timing issues associated with multiple productions.

8. Type the formula for the calculation (in cell H9 in the example.) Be sure to use absolute references in the right place in order to be able to drag the formula to the right and down.

In cell H9 of the example, the formula is `=IF(AND(H$5>=$D9,H$5<=$E9), $G9, "")`. The formula reads: If the timeline is greater than or equal to the start date and the timeline is less than the stop date, plot the value in cell G9.

9. Drag and fill the formula to the right and the Gantt automatically plots the week value to the start and stop dates (see Figure 23.19).



**Figure 23.19.** Making sure your absolute references are properly placed, drag and fill the formula to the right. Fill to the end of the timeline.

Week values can also be text.

10. Link another phase under the first phase by following the previous steps; however, in the first cell (cell D10 in the example), enter a formula to link to the first phase. In Figure 23.20, the formula entered is `=D9+7`. Whenever the start date of the project changes, phase 2 automatically responds.

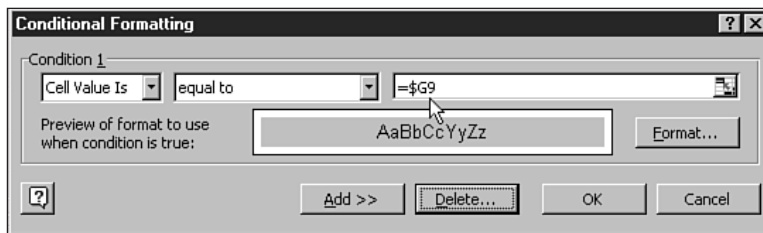
**Figure 23.20.**  
To add another phase and link it to the project, simply establish a formula that responds to the start date or stop date of the previous phase.

	C	D	E	F	G	H	I	J	K	L	M	
2												
3												
4												
5	<b>PROJECT SCHEDULE</b>											
7												
	<b>PHASES</b>	<b>START</b>	<b>STOP</b>	<b>DUR</b>	<b>WK VALUE</b>							
9	<b>PHASE 1</b>	12/1/00	12/15/00	14	10	10	10					
10	<b>PHASE 2</b>	12/8/00	1/7/01	30	10		10	10	10	10	10	
11	<b>PHASE 3</b>	12/24/00	2/2/01	40	10					10	10	
12	<b>PHASE 4</b>	1/12/01	2/6/01	25	10							
13	<b>PHASE 5</b>	1/16/01	2/10/01	25	10							
14	<b>PHASE 6</b>	1/30/01	2/24/01	25	14							

11. Add conditional formatting to complete the automated Gantt chart. Notice in Figure 23.21 the first condition in the Conditional Formatting dialog box. If the cell value is equal to the week value, then Excel will format the cell.

Make sure that the formula is mixed—absolute column reference and relative row reference—so you can drag the formula down and the conditional formatting will be applied to the week value for each phase.

**Figure 23.21.**  
When applying a conditional format to the Gantt, make the row reference relative so that you can drag the formula down and it will reference the week value in the corresponding row.



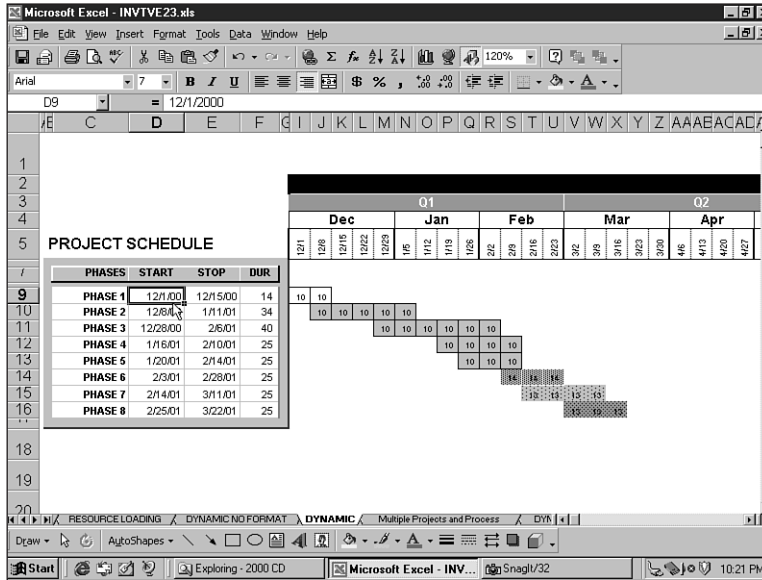
#### Note

It's important to establish the absolute references in the right places when using formulas in both cells and conditional formatting commands, so that you have to create them only once.

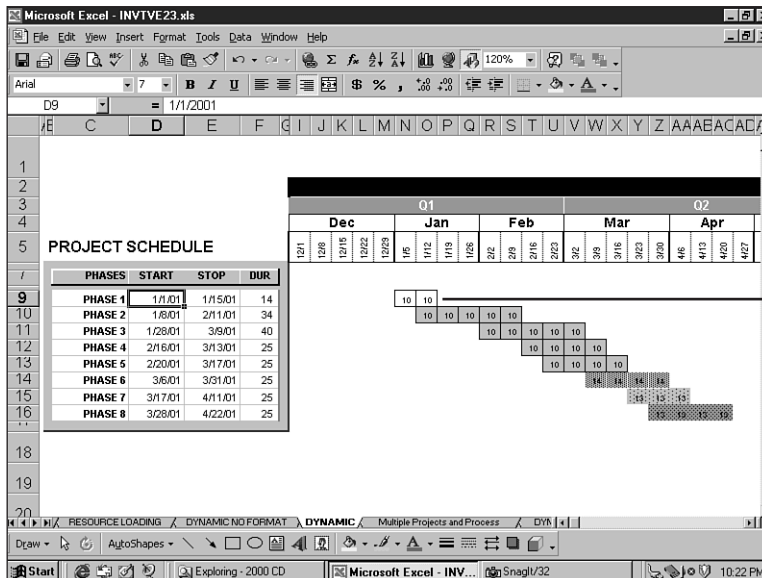
Now that you have the basic structure of the Gantt chart set up, you can apply formats to complete the Gantt. The chart in Figure 23.22 uses a start date of 12/1/2000. With the

proper links in place, if I shift the start date to 1/1/2001, the whole project automatically shifts, as shown in Figure 23.23.

To see this example with all the formulas and links in place, open the file from the CD. You also will get a better understanding of how the conditional formatting was applied.



**Figure 23.22.** A simple project with phases linked to each other and durations for each phase. The week value that plots the number in the timeline is hidden (refer to Column G in Figure 23.20 to see the column).



**Figure 23.23.** By changing the start date in cell D9 to 1/1/2001, the project dates automatically shift and the automated Gantt chart “walks” (plots) to correspond with the timeline.

Project automatically shifts based on new start date.



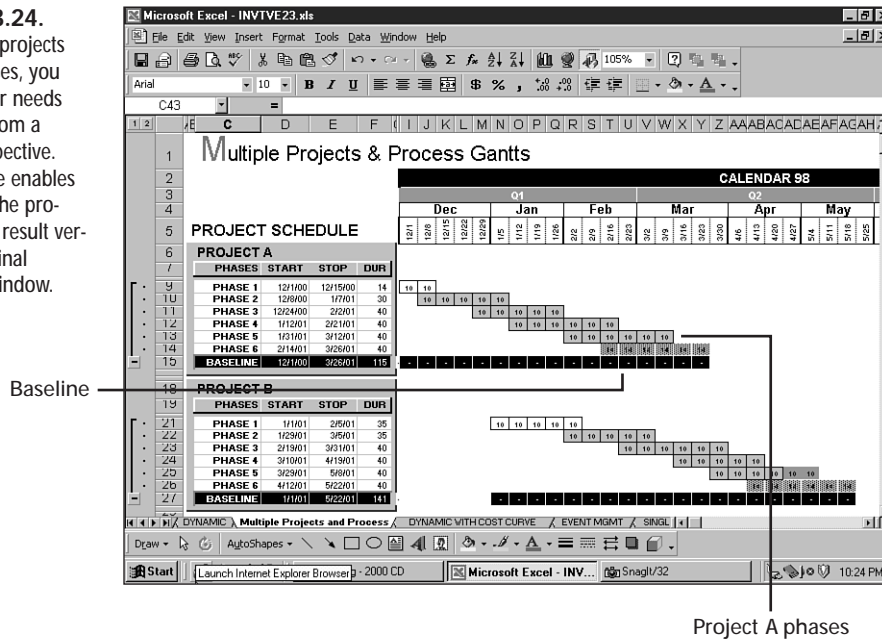
## Stacking Projects

When you understand the fundamentals of setting up a Gantt chart in Excel, you can go on to establish multiple projects that overlap, and begin to extract by phases of production, according to your needs. You can add the like phases of multiple projects to discern future monetary needs by multiplying dollar values in a table against the like phases added together. When projects shift, the dollars automatically reflect the change in time.

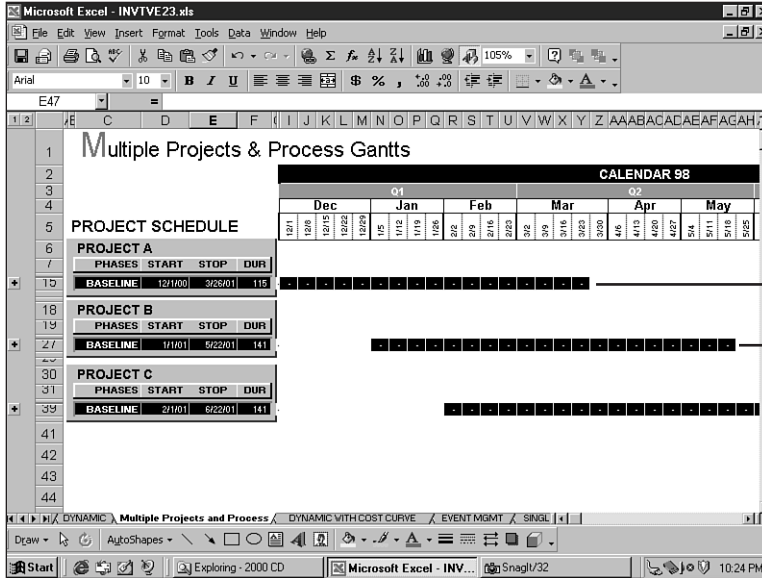
Suppose you know that every phase 2 unit costs seven dollars. You have two projects going on during the year, Project A and Project B, each one listed down the side of the timeline, and stacked one on top of the other. You sum up all phase 2 values for the first week in the timeline and then multiply the total by seven. This will give you the monetary requirement (cost) for phase 2 for the first week. You then can drag the formula across the length of the timeline to determine cost per week of phase 2 over the entire length of the timeline. (Another use might be comparing staffing against the phases of production to project head-count needs for resource or employee utilization.)

Figure 23.24 shows this chart. In addition, this Gantt includes a baseline that shows the original projected start and stop dates. Because the baseline isn't linked to the project, when a project shifts its schedule you can see the actual dates versus projected dates. I've also grouped the phases so that I can roll the project up to baseline, as shown in Figure 23.25.

**Figure 23.24.** By stacking projects and processes, you can see your needs over time from a global perspective. The baseline enables you to see the project's actual result versus the original projected window.



➔ For details on using Excel's outlining and grouping capabilities, see "Grouping and Outlining Data," p. 528

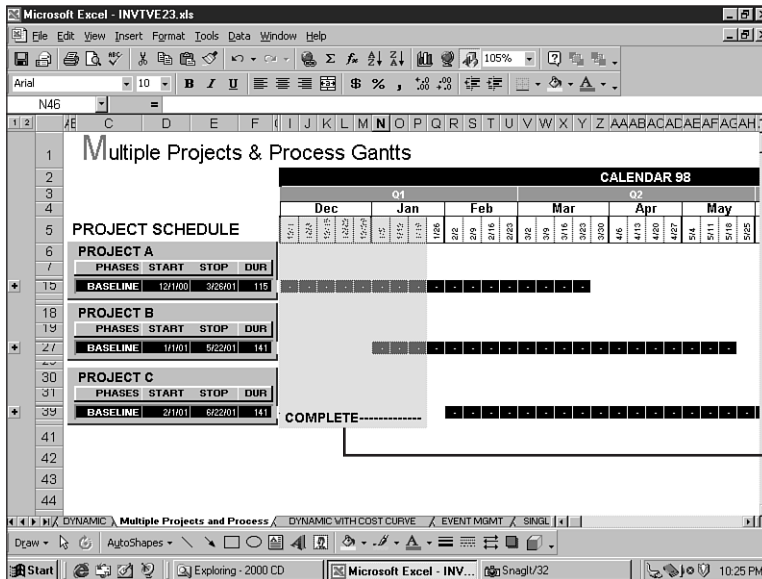


**Figure 23.25.** By grouping the phases of a project, you can roll up to baseline for a high-level view.

### Illustrating Time Completed

Use Excel's drawing tools to illustrate the time completed or passed for a project, or even the percentage complete. In Figure 23.26, a shaded rectangle helps the worksheet's audience to picture the time passed.

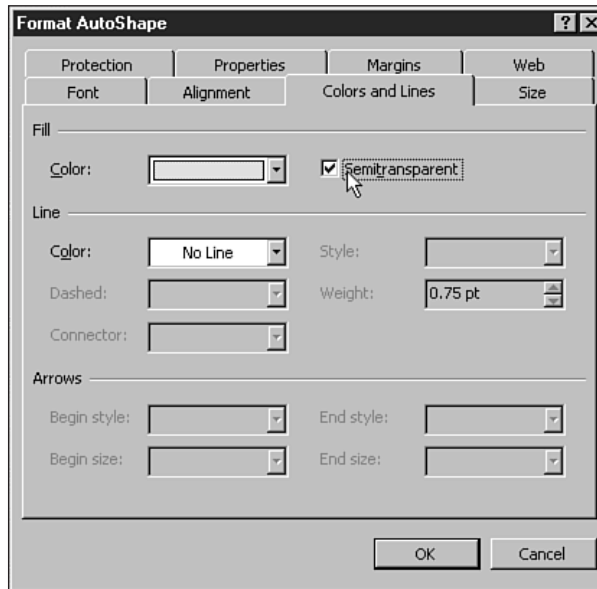
- ➔ If you really want to get fancy, you can use conditional formatting to automate the time passed. For details on using conditional formatting, see "Conditional Formatting," p. 176



**Figure 23.26.** Utilize Excel's drawing tools to demonstrate the time passed.

To create the “curtain” (the semitransparent covered area), simply use a rectangle from the Drawing toolbar. After creating the shape, right-click it and choose Format AutoShape from the context menu to open the Format AutoShape dialog box. On the Colors and Lines tab, select a light gray fill and check the Semitransparent option. Select No Line for the Color setting in the Line section of the dialog box, as shown in Figure 23.27.

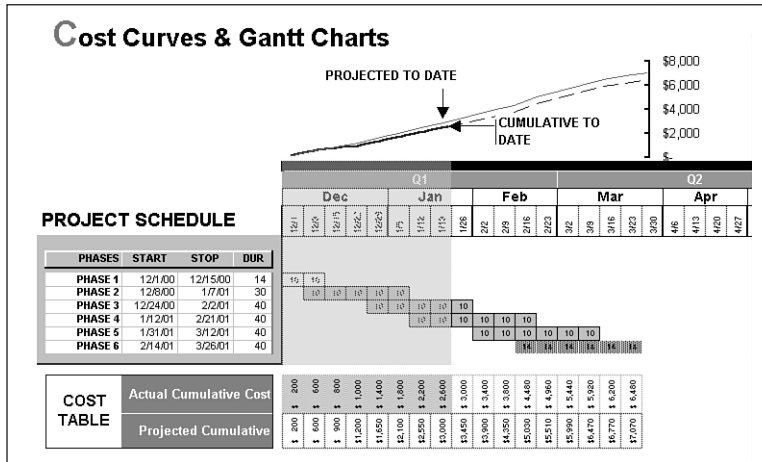
**Figure 23.27.** Create a semitransparent curtain with the Format AutoShapes dialog box.



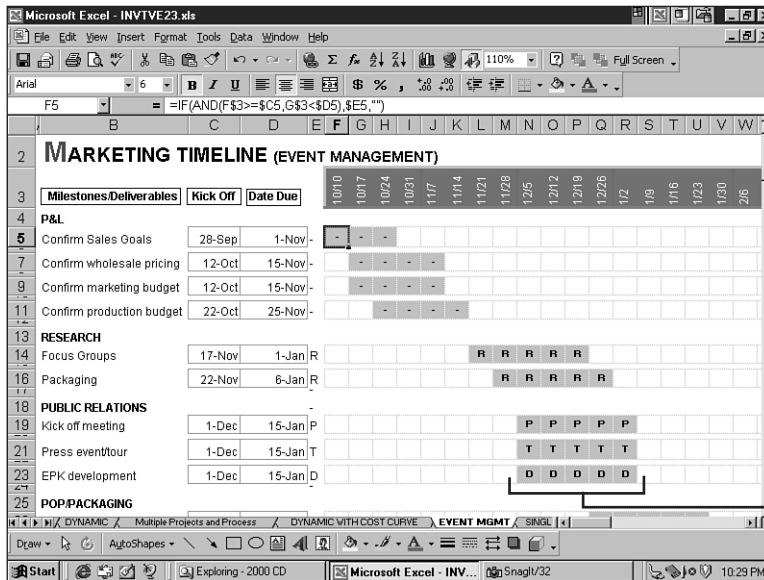
## Event Management

Whether you’re creating timelines for marketing, production, sales, or other departments, the basic principle is that you incur cost over time for every week. When you accumulate the costs, you can see the total cost for the project to date. If you accumulate the projected cost, you could establish the variance, projected against actual. The worksheet in Figure 23.28 illustrates this point with two visual references: the cost table beneath the body of the Gantt chart; and a line chart, created from the cost table, which shows projected cumulative and actual cumulative costs. The chart visibly shows the variance in actual cost over time against the projected cost laid out over the Gantt chart.

When you understand how to create dynamic schedules that refer to timelines and start-and-stop dates, you can use Excel to manage events in ways you may never before have tried. In Figure 23.29, the marketing events that need to occur are grouped together, and the dates on which the events occur are to the right of the event. The dynamic Gantt that refers to the timeline, kick off, and date due event, plots the window in which the event is to occur. Using the same formula and setup as described in the earlier section “Creating Dynamic Gantt Charts,” conditional formatting is applied to refer to the cell right of the Date Due column.



**Figure 23.28.** With cost occurring over time, you can use Excel to cumulate the cost and provide a visible analysis of the project's current state in time.



**Figure 23.29.** Event management in Excel can be applied to marketing, finance, production, or just about any process that occurs over time.

**Note**

Remember to adjust the absolute reference in the conditional formatting equal to the cell with the plotted value: =\$(Column)Row. Now when you copy the formula, the conditional format always refers to the line item.

You also could apply projected dates and insert actual occurrences beneath the projected date.

Independent task timelines

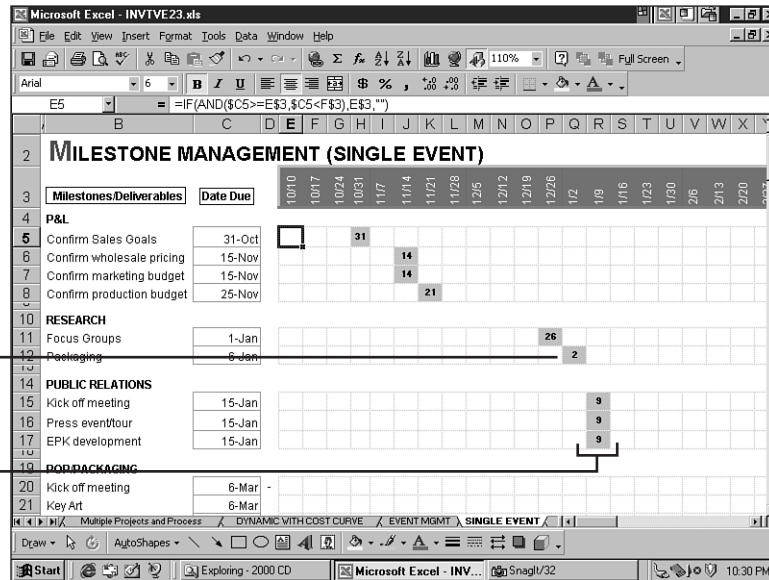
## Milestone Management (Single Event)

Milestone management is used when important events occur. *Milestone* is a term used to describe a point in time in the future. For example, if your project requires certain deliveries or achievements by key dates in the future, you could establish a milestone schedule as a reminder of the key dates, as shown in Figure 23.30. The events are just occurrences tied to one date—in this case, the date due.

**Figure 23.30.** Manage key dates with a milestone Gantt chart. By tying the formula to the timeline and date due, Excel creates a dynamic model.

Single event week value as day from timeline

Single event week value as text



The formula is different from the start-and-stop date formula previously described. The timeline reference is pointing to the date due cell per event only, and the plot text or result cell refers to the timeline plotting the day of the event. To establish a milestone management schedule, follow these steps:

1. Create your timeline. In Figure 23.30, the timeline is every seven days starting in cell E3.
2. Create the Date Due column (in the example, starting in cell C5).
3. Type the formula. In the example, cell E5 contains this formula:  
`=IF(AND($C5>=E$3,$C5<F$3),E$3,"")`
4. Apply the conditional formatting (Format, Conditional Formatting). For this example, the condition is Cell Value Is equal to =E\$3 (the date from the timeline), and a fill color is applied if the condition is met.

Tip #265 from

*Adrian*

Notice that the conditional formula uses an absolute row reference (\$3), which enables you to copy the conditional formatting so that all the pasted conditional formulas still look to row 3 for its timeline date.

5. To display the day from the timeline, open the Format Cells dialog box. On the Number tab, choose Custom in the Category list. In the Type box, enter **d** to display the day.
6. Drag the formula to the right, as well as filling the formula down.

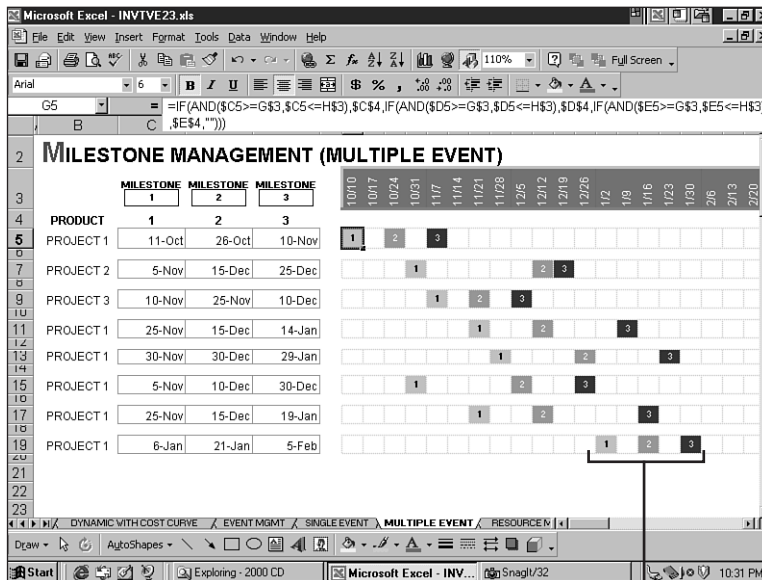
Now, when you drag the formula to the right, references to the date due stay intact. When you drag the formula down, the new formulas still refer to the timeline dates.

### Milestone Management (Multiple Event)

You can manage Gantt charts and milestones with multiple events occurring on the same line. Suppose that you have a product that has three milestone completion dates and the dates are quantified with a percentage completion. Broken out evenly, you would see milestone completions of 33.33 percent per milestone. If you have 30 or 40 projects to view, this is a good way to manage the view from a high level. Notice the example in Figure 23.31. By adding conditional IF(AND statements, as shown in Figure 23.32, you can tie multiple dates to the same row or line. Use the conditional formatting tool to fill the cells when a number occurs.

**Note**

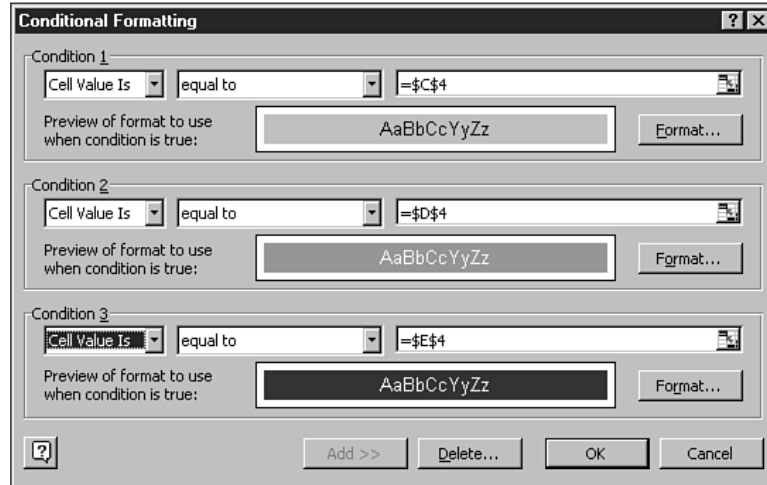
The example shows numbers; however, you can apply names, percentages, dates, or any other type of grid information that would be applicable to the elements scheduled.



**Figure 23.31.** By applying IF(AND statements, you can track multiple milestone events.

Multiple events moving along the same timeline

**Figure 23.32.** Apply conditional formats to the line of information so that when a date or number falls on the timeline, it's highlighted with a format.



## Building a Resource Chart

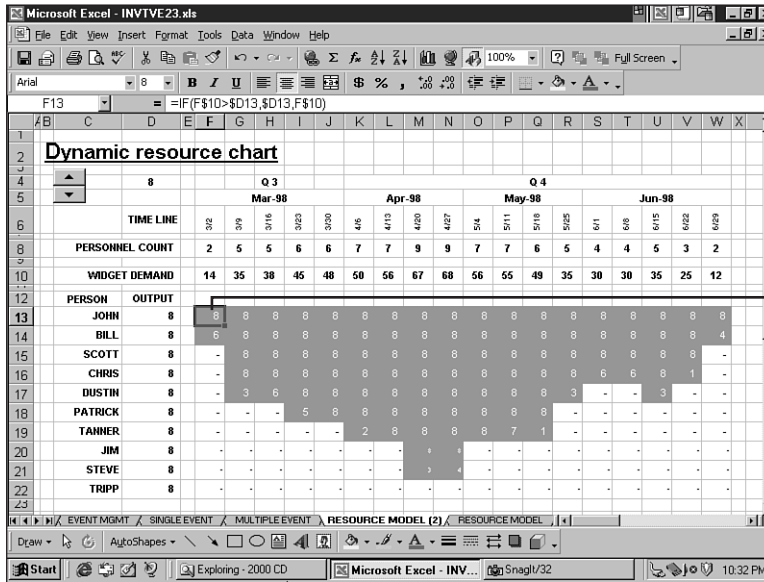
A resource chart can be placed under a Gantt chart to automatically tie the automated Gantt chart to the total number of machines, people, or resources of any kind. This approach can be used for marketing, finance, accounting, and other divisions, as well as production, to take the guesswork out of future needs. This is the last element in creating a fully dynamic system on one worksheet that will allow you to load resources, account for costs, forecast for future resource needs, and compute just about anything—all on one worksheet within one workbook. Why have multiple systems when the right approach the first time can actually automate your environment?

Figures 23.33, 23.34, and 23.35 show three of the formulas used for driving the resource chart. (The formulas are displayed in the Formula bar.)

To create this dynamic resource chart, follow these steps:

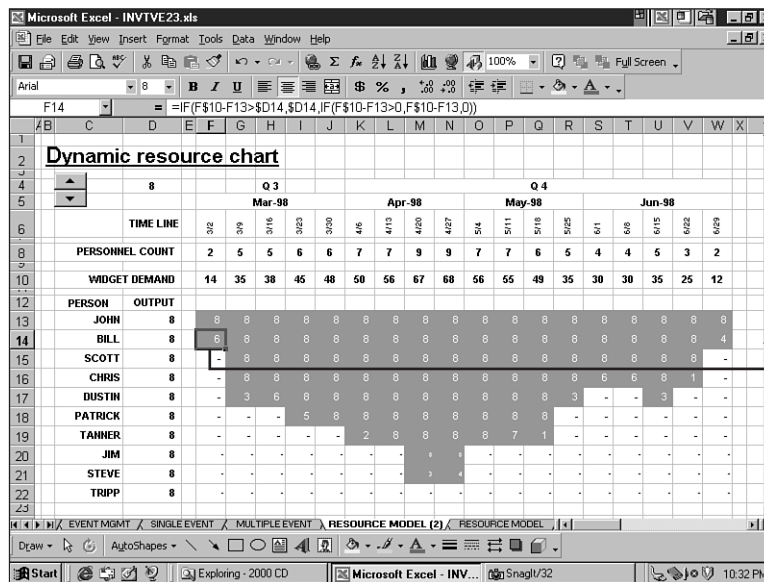
1. The resource chart is based on weekly demand, so establish the weekly demand in F10:W10. Demand can be static or based on a weekly demand Gantt chart.
2. Set up the person, machine, or whatever you're tracking, and the associated output capacity per week. In Figures 23.33, 23.34, and 23.35, the cells populated are C13:D22. Enter the names in the C column and the weekly output in the D column from D13:D22.
3. In cell F13, type the formula `=IF(F$10>$D13,$D13,F$10)`. (Figure 23.33 shows the example.)
4. In cell F14, type the formula `=IF(F$10-F13>$D14,$D14,IF(F$10-F13>0,F$10-F13,0))`. (Figure 23.34 shows the example.)

- In cell F15, type the formula  $=IF(F\$10-SUM(F\$13:F14)>\$D15,\$D15,IF(F\$10-SUM(F\$13:F14)>0,F\$10-SUM(F\$13:F14),0))$ . (Figure 23.35 shows the example.)
- Drag the formula in cell F15 down to cell F22, and then select F13:F22 and drag the formulas to the right through to column W.



**Figure 23.33.** The first formula of the dynamic resource chart references widget demand and John's weekly output.

First of three formulas



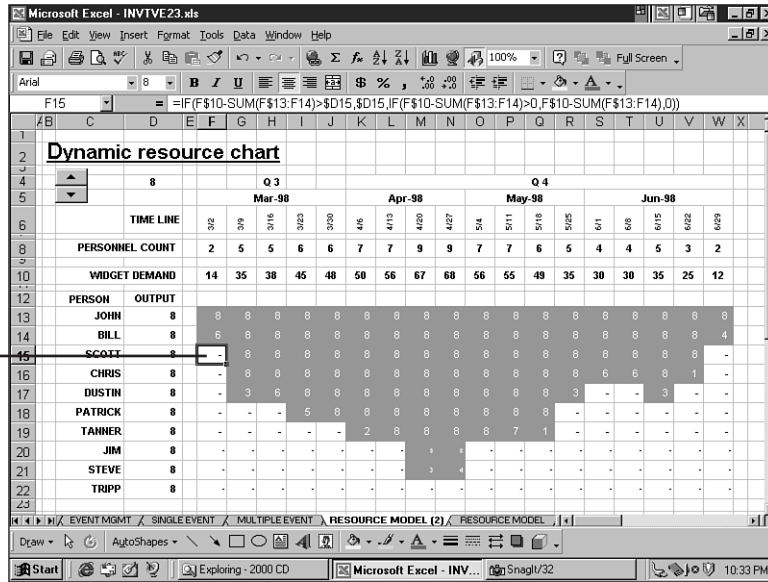
**Figure 23.34.** The second formula of the dynamic resource chart subtracts from the first widget demand and applies the remainder from Bill's weekly output.

Second of three formulas



**Figure 23.35.** The third formula of the dynamic resource chart subtracts from the widget demand and sums up the previous cells and applies the remainder from Scott's weekly output.

Third of three formulas



**Tip #266 from**



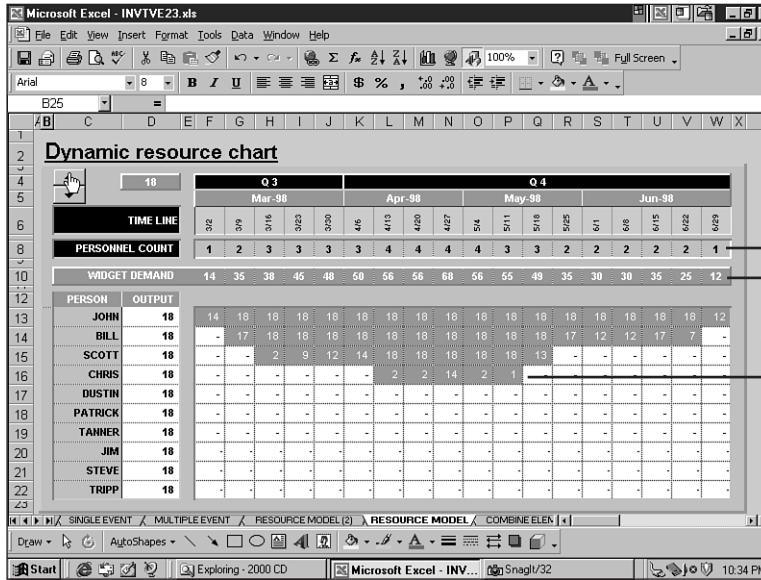
Add a spinner to the output cells to toggle the output levels if all are constant. You also could apply a counter in F8:W8 with the formula that counts the weekly personnel or machine needs. The formula starting in cell F8 is =COUNTIF(F13:F22, ">1"). For details on using spinners, counters, and so on, see Chapter 21, "Managing Data with Formulas and Form Controls."

Figure 23.36 shows the final formatted example (including the optional form controls mentioned in the Tip). As capacity increases to from 8 to 18 units per week, and the demand is the same, fewer resources are needed to complete the tasks.

To further illustrate the point, look at Figure 23.37. If Bill’s capacity is increased to an extreme level of 70, Bill can handle the overflow of demand and the resources (personnel count) needed throughout the period drops to 2. Of course, humans as well as machines have unit output limits.

**Tying Gantt Charts Together**

By applying the principles discussed in this chapter, you can create a dynamic Gantt chart—with a resource-loading demand/capacity chart above the Gantt chart and a resource needs chart below the Gantt chart—for a fully dynamic project management spreadsheet. Of course, there are ways to create a more “micro” approach, but the examples show a high-level approach on how you can start to use Excel as a fully functional project management tool.

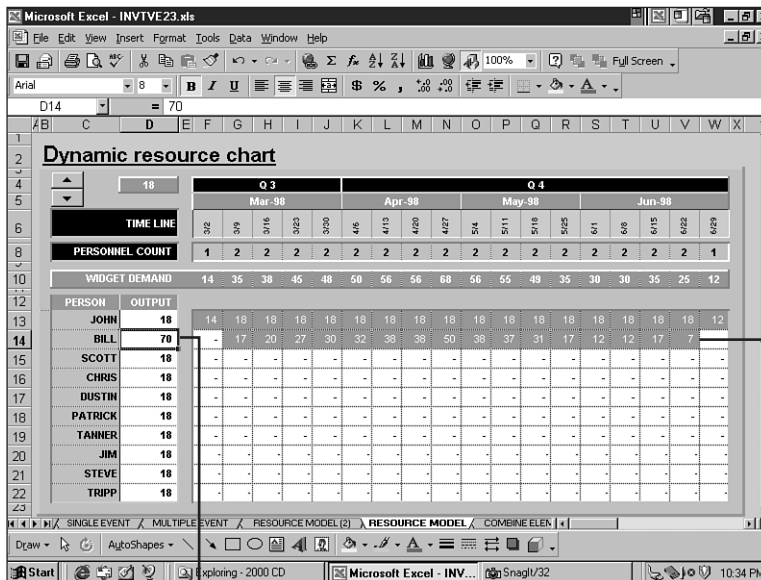


**Figure 23.36.** The final formatted example shows capacity increases with steady demand.

Number of people

Weekly demand

People needed to achieve demand



**Figure 23.37.** If a resource's capacity is increased, the overflow of demand can be handled with fewer resources.

Fewer resources needed

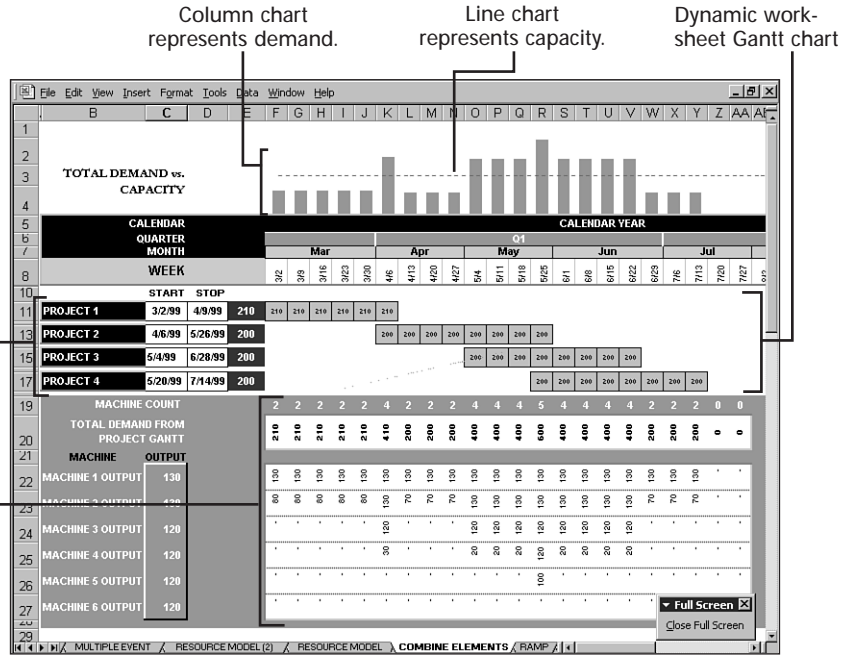
Increased output ability

As the Gantt chart in Figure 23.38 moves, the resource charts above and below the Gantt chart react accordingly. Now look at the example in Figure 23.39. If the projects are stacked, the charts again respond to the Gantt chart.

**Figure 23.38.**  
By tying Gantt charts to resource charts, you can manage resource loading and resource needs, based on the Gantt chart's windows of production.

Staggered projects

Dynamic resource needs chart

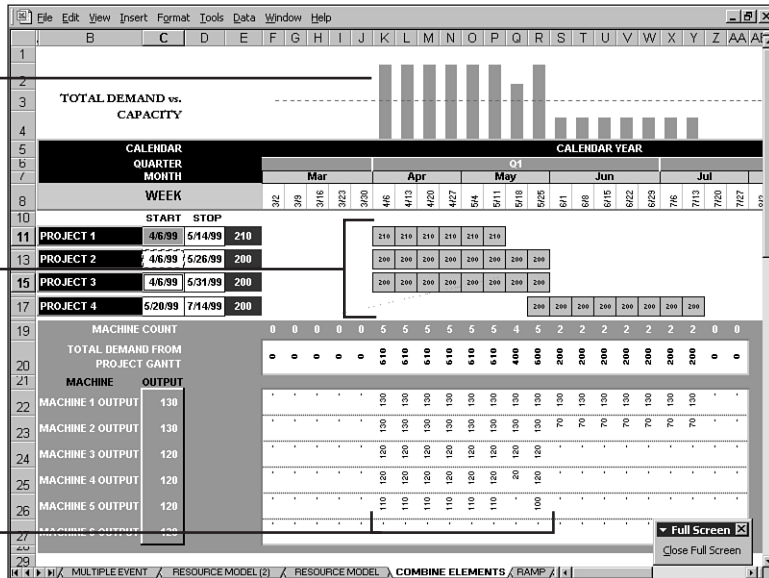


**Figure 23.39.**  
If the projects are stacked over one another in the Gantt chart, the resource charts respond accordingly.

Demand exceeds capacity.

Projects stacked

Resources needed to achieve demand



### Advanced Gantt Chart Principles

Earlier in the chapter, some basic techniques were discussed for dealing with time and process with Gantt charts. Now, take a situation in which you have multiple variables to deal with. What if you need to know when you have to start a certain project to complete it on time,

or by a certain release date? This probably is the biggest question in business today. Or what if you have a required total unit output for a project, or tons of material to produce or mine? You can expect to produce a certain amount per week—the delivered average—and you have start and stop dates per phase. These issues are why project programs fall short—because you can't play with multiple scenarios, such as in the examples in the following sections.

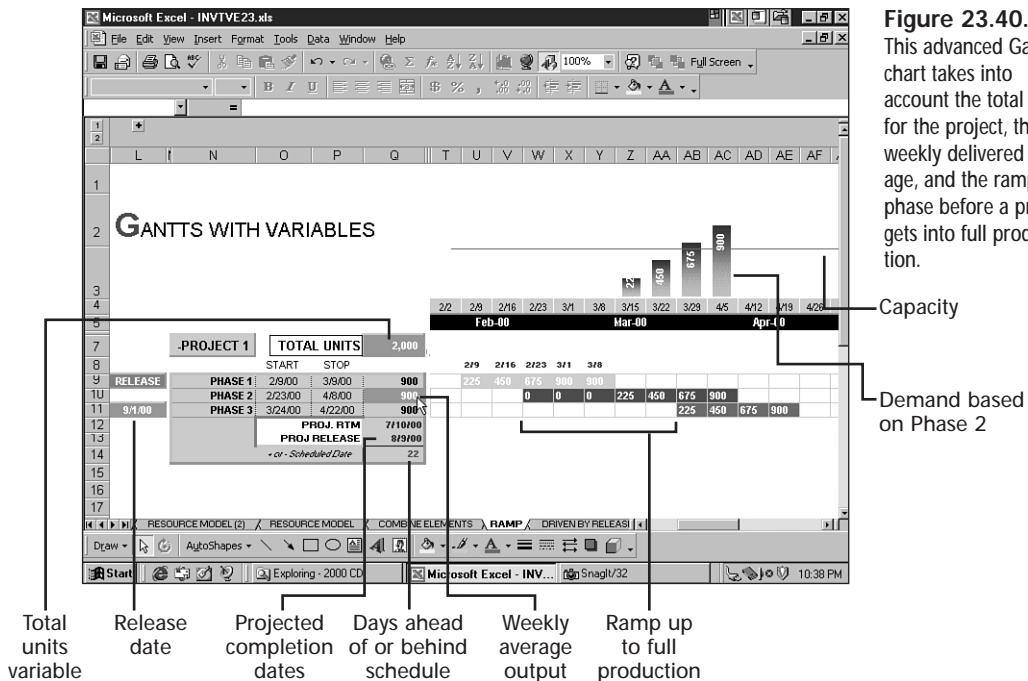
**Tip #267 from**



Most of the examples are on the CD, so that you can see how they work with your particular situation.

**Gantt Charts Driven by Total Units and Weekly Output Capacity**

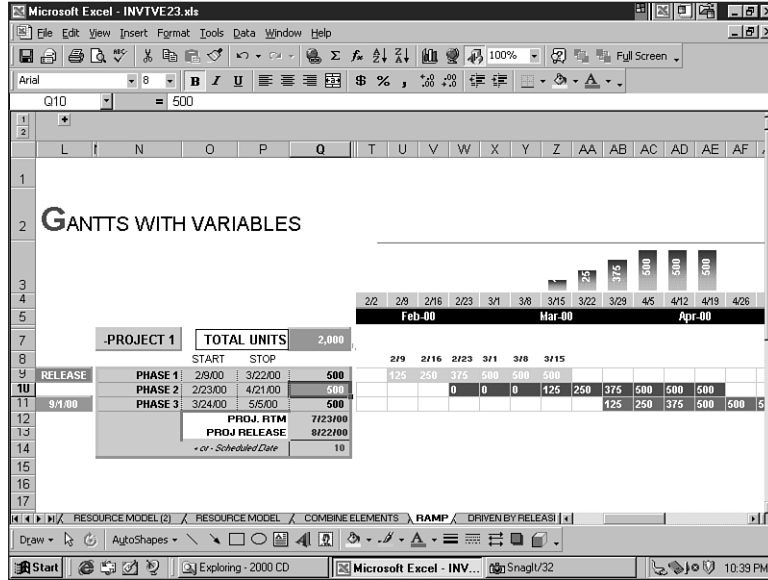
One powerful approach to event management is a Gantt chart driven by total number of units to produce and capacity to produce (on a units-per-week basis). Look at the example in Figure 23.40. The total number of units for the project is 2,000 and the weekly output is 900. Also included is a ramp up (the startup period before the phase reaches optimum production) for each phase before it reaches its optimum capacity or output. The demand chart is based above the timeline on phase 2.



**Figure 23.40.** This advanced Gantt chart takes into account the total units for the project, the weekly delivered average, and the ramp-up phase before a project gets into full production.

Now, watch what happens when the weekly output is changed to 500. The Gantt chart adds two additional weeks to complete the project (see Figure 23.41). If you reduce the total units for the project to 1,000 but leave the weekly output at 500, the Gantt chart automatically accounts for the change and reduces the time frame of production by two weeks (see Figure 23.42). This approach can be tied to units, elements, tonnage, or any other type of occurrence over time.

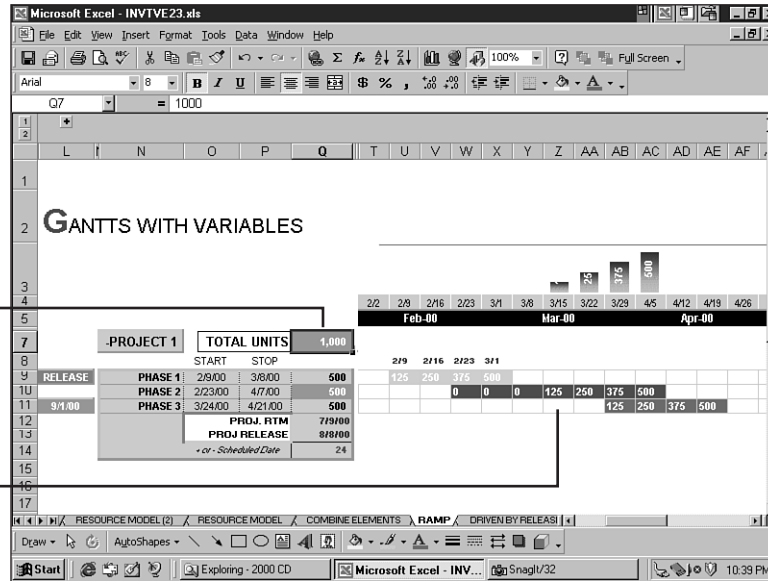
**Figure 23.41.** By changing the weekly output from 900 to 500 a week, this Gantt chart automatically adds two more weeks to complete the project.



**Figure 23.42.** The Gantt chart automatically adjusts for a change in total units.

Reduction in total units from 2,000 to 1,000

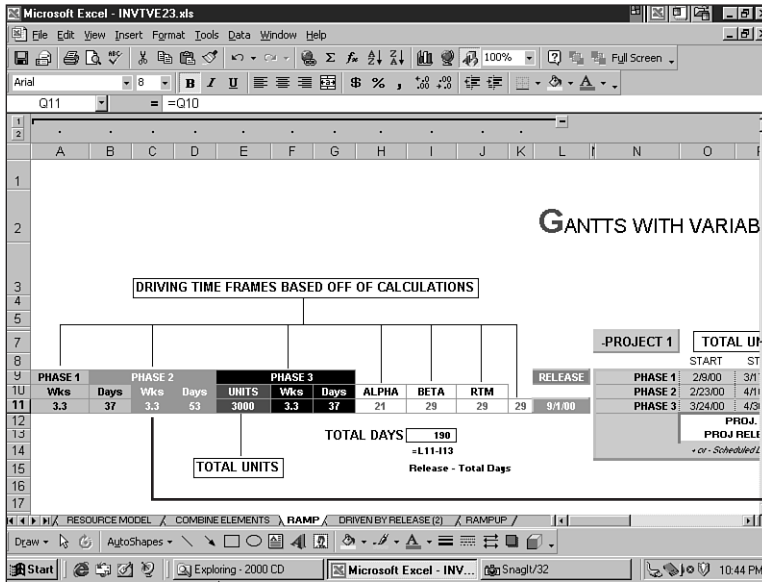
Shortened timeline



### Gantt Charts Driven by Release or Completion Dates

A Gantt chart can tell you when to start a project in order to complete it on time. This type of chart helps you manage resource needs, forecast production schedules—even manage inventory needs based on replenishment cycles. The following example uses three phases within a production cycle; the other variables are known time frames. The example takes

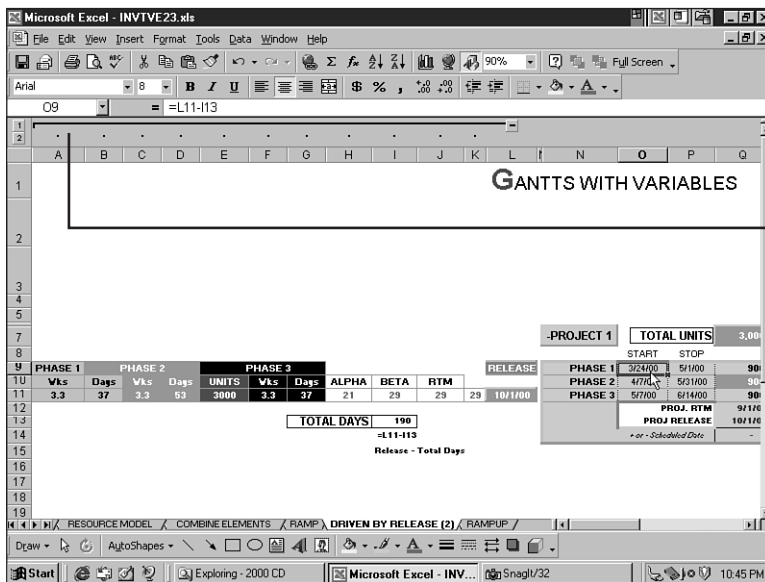
into account the following variables: release date, output per week, and total quantity to produce. I show the setup a bit later in the chapter; meanwhile, look at Figure 23.43 to see the behind-the-scenes calculations that make up the phase time frames to the release date.



**Figure 23.43.** These calculations make up the amount of time each phase will take, all the way to the release date.

Driving factors to completion

Figure 23.44 subtracts the release date from the total days to give you the start date of the project. Changing the variables, such as weekly output and total quantity, is just part of the equation. If the weekly output decreases, the Gantt chart moves the project to start earlier.

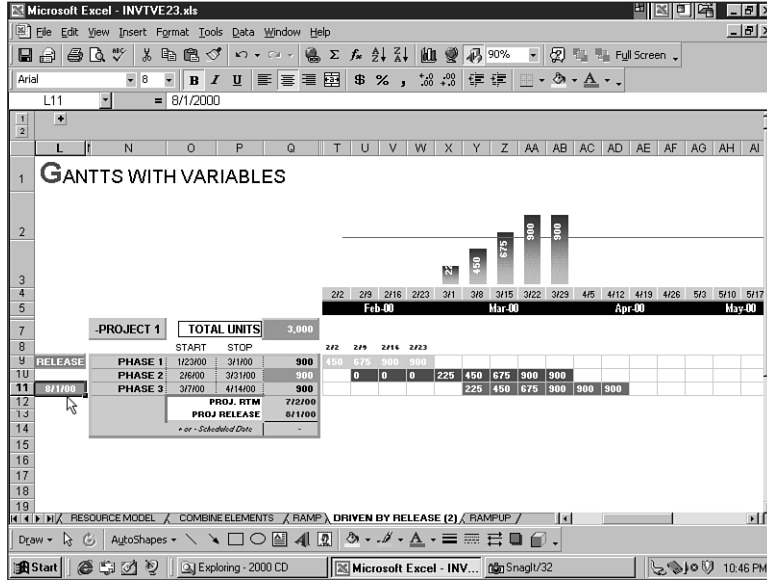


**Figure 23.44.** The start date is the release date minus the total days of the phases, with overlap calculations taken into account.

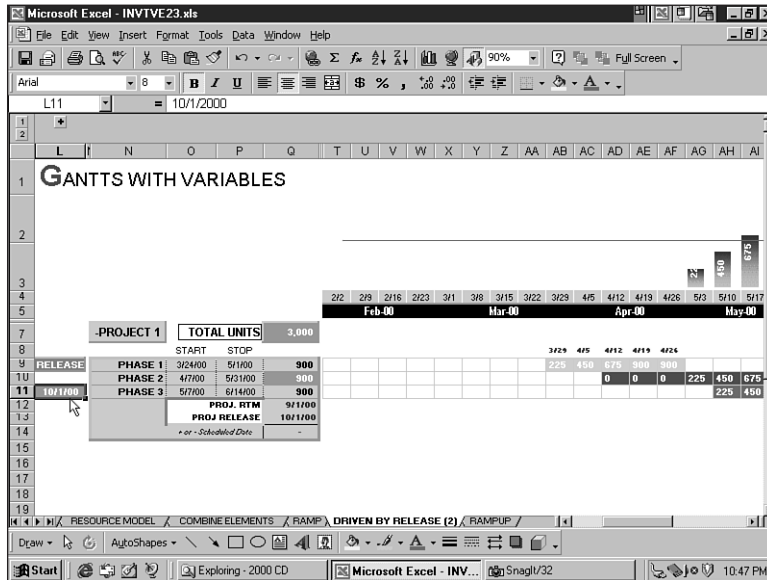
Grouped project drivers

Watch what happens when you change the release date from 8/1/00 to 10/1/00 (see Figure 23.45). The time frame shifts out two months, given that the total units and weekly output remain the same (see Figure 23.46).

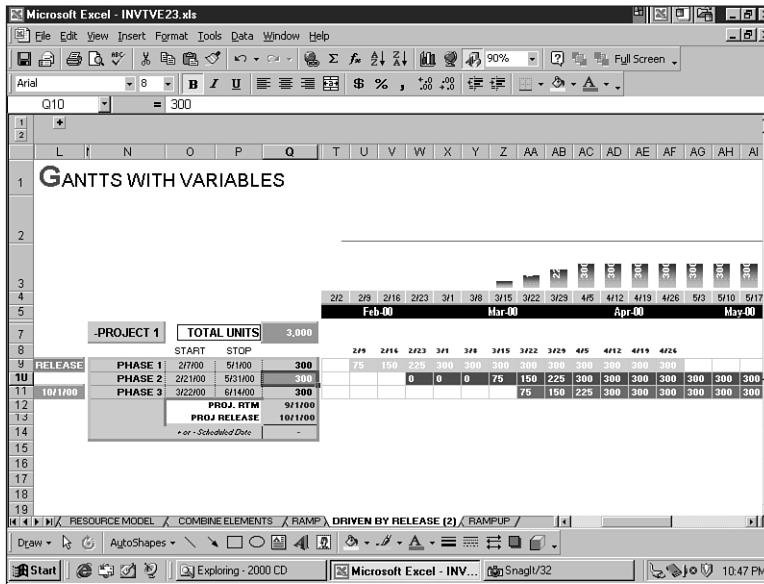
**Figure 23.45.**  
The release date of 8/1/00.



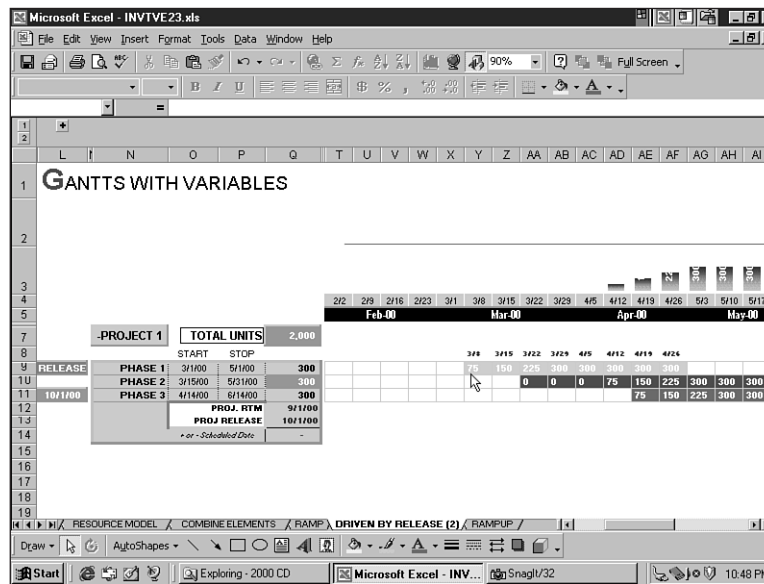
**Figure 23.46.**  
By changing the release date to 10/1/00 (two months later), the project start date automatically shifts to a later date.



If the weekly output changes to 300, however, and the total quantity remains the same, the Gantt takes into account the additional time needed, based on a reduced weekly output, and then plots to start sooner because the cycle of the project will last longer (see Figure 23.47). Last, if the total units for the project changes from 3,000 down to 2,000, the weekly output remains at 300, and the release date remains at 10/1/00, the Gantt chart automatically takes all these factors into account and plots the start date to start later (see Figure 23.48).



**Figure 23.47.** The Gantt chart automatically plots out the additional time needed to complete the project based on a reduction in output, and starts the project sooner.



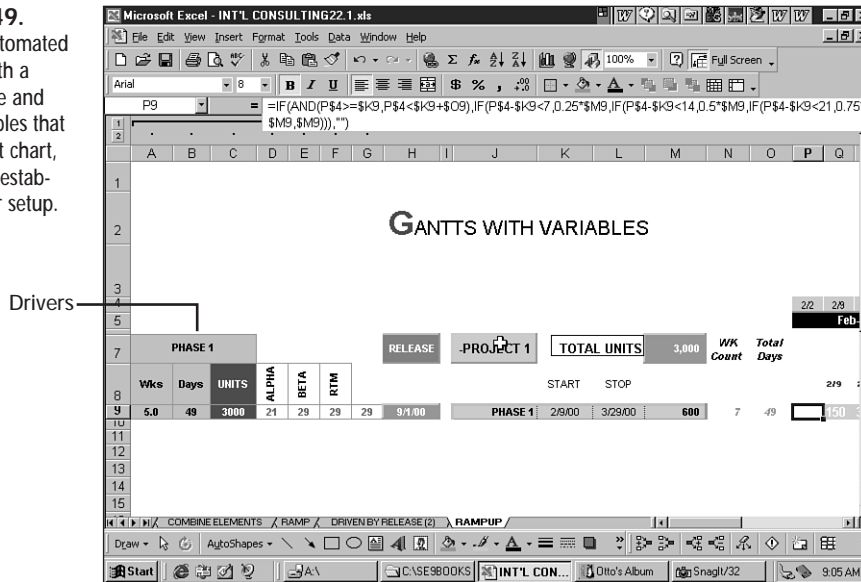
**Figure 23.48.** Reducing the total quantity while maintaining the release date and weekly output causes the Gantt chart to plot a new start date.



To build a Gantt chart with multiple variables, we'll use one phase of the previous examples (notice the setup behind the scenes in Figure 23.49). Perform the following steps:

1. Set up the timeline with seven-day intervals, starting with 2/2/2000 in P4:AX4.
2. Place the total units of 3000 in cell M7.

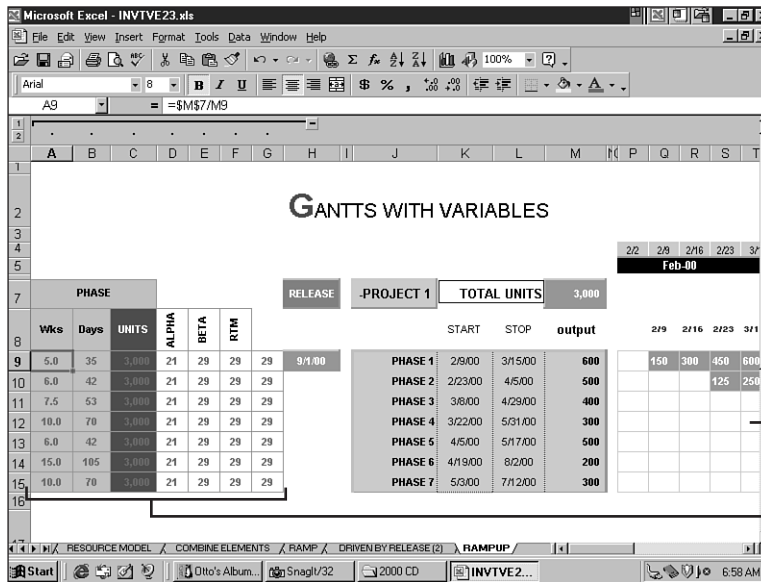
**Figure 23.49.** To build an automated Gantt chart with a ramp-up phase and multiple variables that drive the Gantt chart, you'll need to establish the proper setup.



3. Establish the release date in cell H9 as 9/1/00.
4. Type the formula  $=M7$  in cell C9.
5. Type the weekly output average number in cell M9: for this example, type 600.
6. Type the formula  $=M7/M9$  in cell A9. This is the week calculation.
7. In cell B9, type the formula  $=A9*7$ . This converts weeks into days.
8. In cell D9, type 21. This is a known time frame between the release date and the end of the phase.
9. In cell E9, type 29.
10. In cell F9, type 29.
11. In cell G9, type 29.
12. In cell J9, type Phase 1.

13. In cell K9, type the start date of 2/9/00. (To have the start date driven by the release date, refer to Figure 23.44.)
14. In cell L9, type the formula =K9+B9.
15. In cell N9, type the formula =Count(P9:AX9).
16. In cell O9, type the formula =B9.
17. And last, in cell P9, type the formula =IF(AND(P\$4>=\$K9,P\$4<\$K9+\$O9),IF(P\$4-\$K9<7,0.25\*\$M9,IF(P\$4-\$K9<14,0.5\*\$M9,IF(P\$4-\$K9<21,0.75\*\$M9,\$M9))),"").
18. Drag the formula to the right the length of the timeline from P9:AX9.

The changing variables in this example are the start date, total units, and weekly output. Change the quantities or dates, and the Gantt chart walks along the timeline and plots the phase window of production. With this setup, you can build a hidden table that calculates behind the scenes the different phases of the production (see Figure 23.50). Make sure your weeks and units in the table are absolute references before you drag and copy down the table. Also notice in Figure 23.51 the different outputs associated with each phase.



**Figure 23.50.** With the proper setup, you can create the calculation table behind the scenes and drag and copy the formula down so you have to do it only once. This way, you can copy, paste, and stack projects, and processes as well.

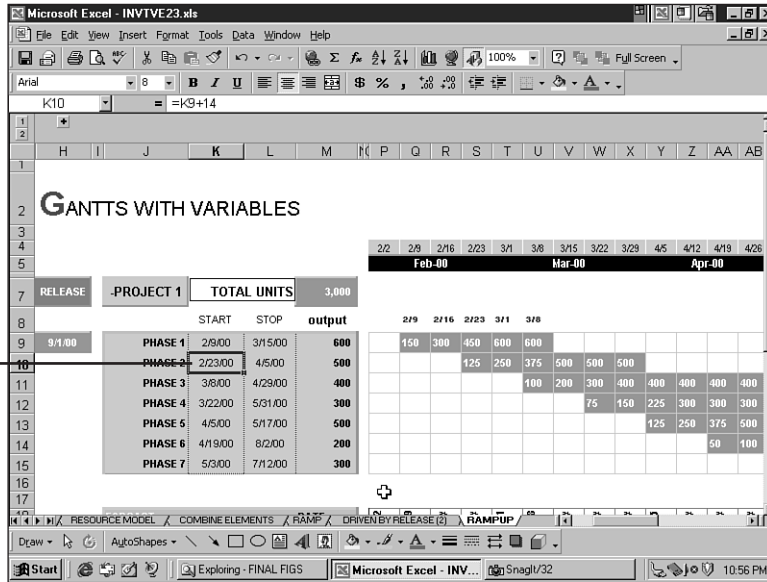
Formulas reference key points from table and timeline.

Phase driver table

And last, notice the floating timeline in Figure 23.52. To attach a floating timeline to the Gantt chart, type the formula =IF(ISNUMBER(P9),P\$4,"") beginning in cell P8. Drag the formula the length of the timeline, through AX8.

**Figure 23.51.** Hide the table and link the phases, if necessary, as shown with the start date of phase 2 linked to phase 1, plus 14 days.

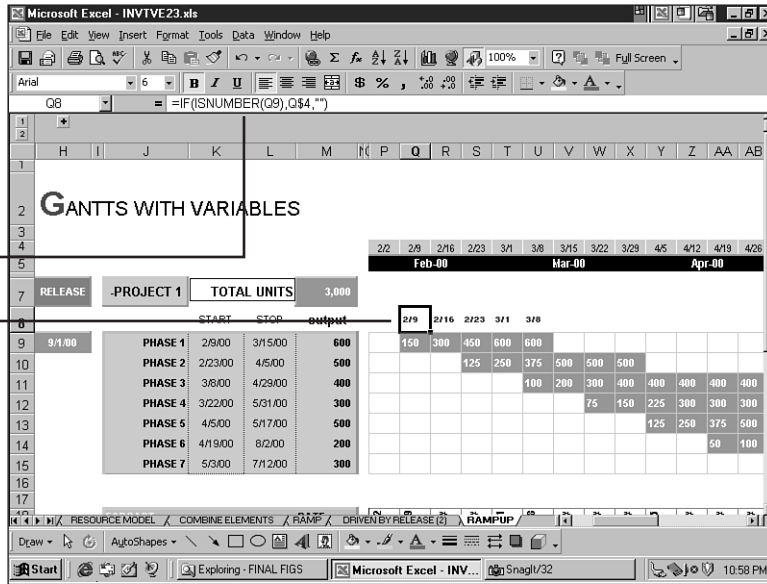
Linking phases



**Figure 23.52.** The floating timeline shows a date only if there's a number in the cell, always giving a quick date reference of when the timeline begins.

Timeline formula

Automated floating timeline



# Advanced Process Principles

Production timelines consist of independent outputs or multiple steps to achieve an output. For example, Figure 23.53 shows a production process in which between step 1 and step 2 are six phases that must be completed before a unit is output. This could be steps in a production line before one unit is complete, for example. In the example, step 2 is the baseline of production units to output; the vertical production process that takes place before one unit is complete is illustrated as phases one through six.

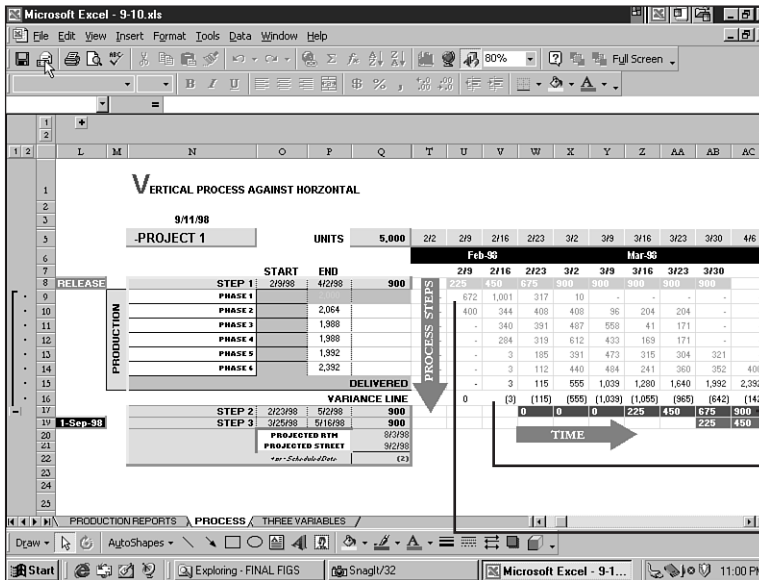


Figure 23.53. Vertical process steps to complete one unit against baseline.

Actual  
Projected  
First units through the pipeline  
Filling the pipeline

To create or implement the multiple phases that can occur against the baseline Gantt chart, just insert rows between the Gantt chart lines, and place the steps in vertical process columns from the top down (in the example, column N starting on row 9). Now, notice the formula that extracts the process step from the production log sheet in Figure 23.54. This formula refers to a sheet that logs the steps in the process against the phase (see Figure 23.55).

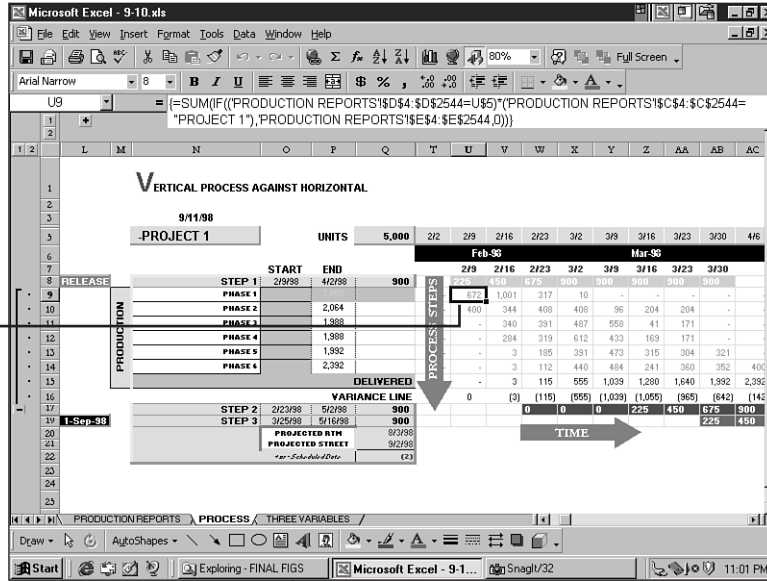
Use formulas to automate the actual production that occurs against projected baseline. Actual production can have several steps before production of one unit is complete. The formula to extract from the production log sheet syntax reads as follows:

```
{=SUM( IF( Sheet !DateRange=WeekDate ) * ( Sheet !ProjectRange="Project " ) ,  
Sheet !PhaseRange , 0 ) }
```

For the italicized variables in the formula, substitute the correct sheet names, date ranges, and so on.

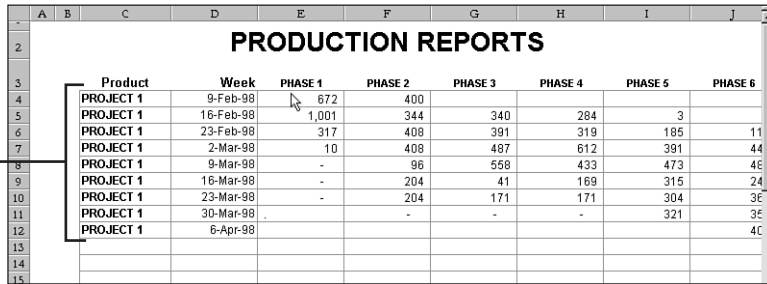
**Figure 23.54.**  
The SUM(IF formula extracts the process step from the production log sheet.

Formula looks up information from production report sheet (as shown in Figure 23.55).



**Figure 23.55.**  
The production log sheet logs the steps in the process to complete one unit in production.

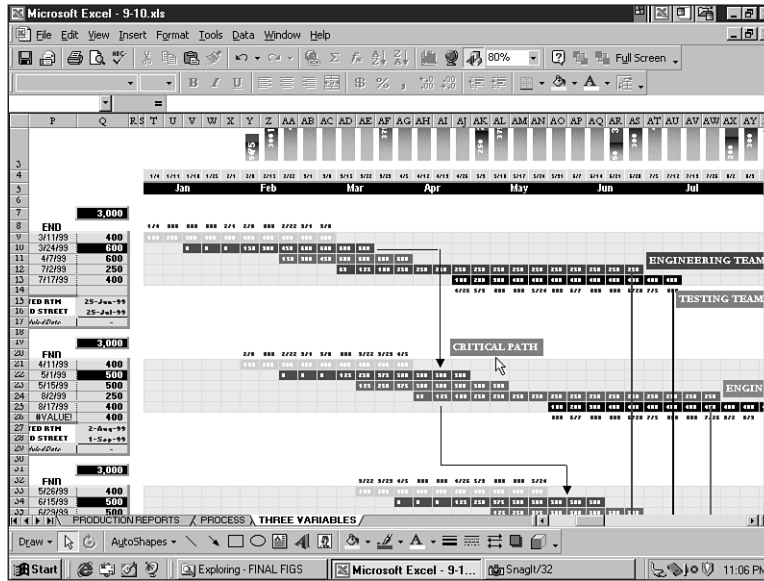
Production report sheet



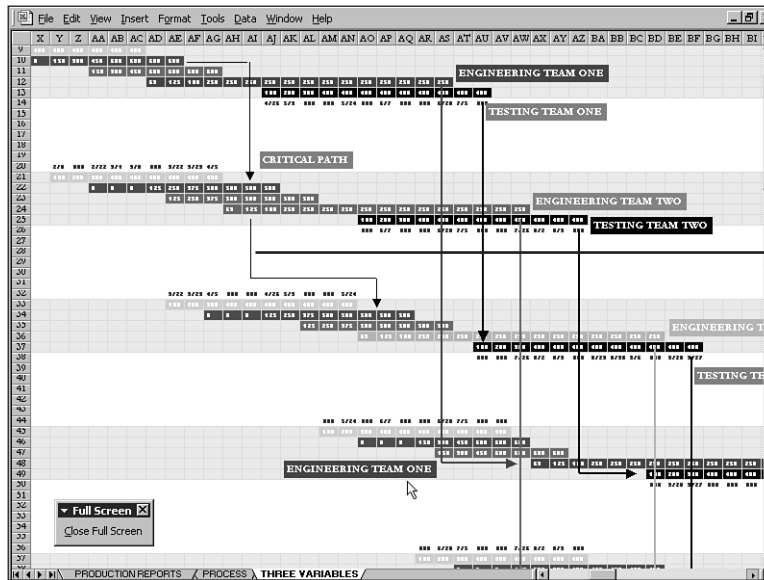
## A Brief Overview of Critical Path

*Critical path* is the path that cannot be interrupted in production; if interrupted, it throws off all timelines with dependencies. Let's say you're building software and you have multiple teams of engineers. However, you have just one team to animate the 3D or 2D animation; this is the *gating factor* in production. If the gating factor is delayed, it can create a chain-reaction bottleneck that affects other lines of production that follow.

Figure 23.56 shows the staggered approach to three phases of three projects. This is the critical path stage that needs to be closely managed for multiple-product production. Notice in Figure 23.57 how the critical path has multiple-team dependencies that have to ultimately flow off one project to another. If critical path slips on one project, multiple teams are affected. (Be sure to look for this worksheet on the CD to analyze the layout more closely.)



**Figure 23.56.** The critical path of production is the gating factor that controls all dependency time frames.



**Figure 23.57.** If the critical path slips, the multiple-team dependencies will be affected.

— Critical path

I could go on for several more chapters about project management with Excel, but space doesn't allow for that. However, I hope that this brief overview gives you some ideas on how you can use the flexibility of Excel to fit your project-management environment.

## Troubleshooting

### Selecting a Chart with No Background or Borders

*Excel won't let me select a chart after I set the background and borders to none.*

Use the Select Objects button on the Drawing toolbar to select the chart.

### Aligning a Chart to the Grid on a Worksheet

*Is there a way to align a chart with the grid of the worksheet?*

It's a bit tricky. Align the chart as best you can to the grid. Then select the columns that span over the range of columns and chart, resize the columns to a larger size, and then resize them back to the smaller size. The chart bars now should align pretty closely.

### Absolute Referencing

*When I drag my automated Gantt formula down or to the right, it doesn't seem to work.*

Several things could be going on here. The most likely problem is your formula referencing. Make sure that you make the right rows or columns absolute with dollar signs (\$). If the formula works in one row, it should work in the next row as well, if the absolute references are set up correctly.

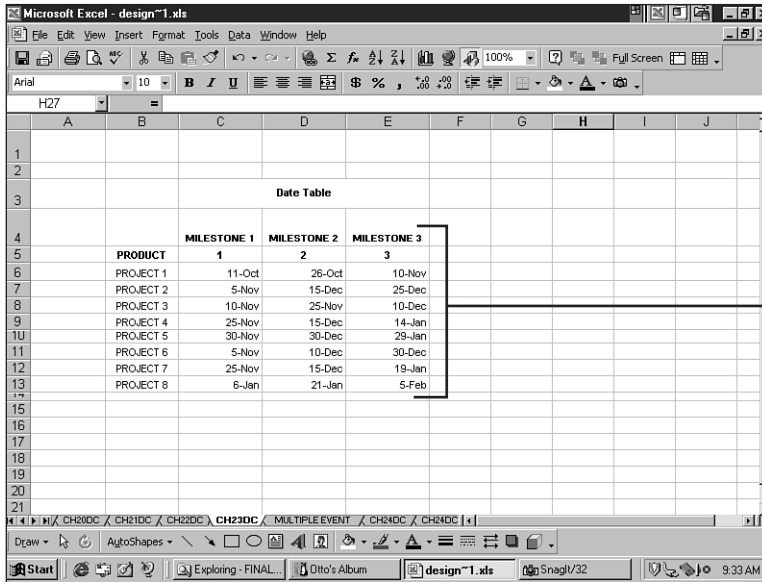
### Pasting a Conditional Format

*Excel won't let me copy and paste a conditional format without it referencing the original cell reference.*

Make sure the column reference is absolute, but not the row reference.

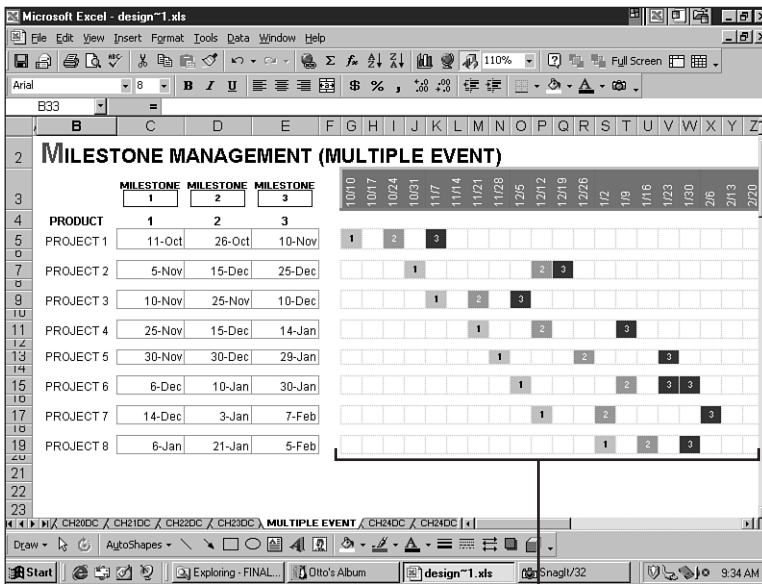
## Excel in Practice

Instead of managing by a table of dates as shown in Figure 23.58, create a table and link the table with an IF(AND formula, conditional formatting, and a dateline to plot the milestone dates for you. By looking at dates sorted in order of occurrence, you can grasp vast amounts of information with just a glance, as shown in Figure 23.59.



**Figure 23.58.** The typical date table provides limited useful information on a single level.

Visually difficult to grasp



**Figure 23.59.** A milestone table creates a visual reference to the date table, making the information understandable.

Automated milestones move along timeline.





# CHAPTER 25



## Using Excel with Word and PowerPoint

### In this chapter

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*by Laurie Ann Ulrich*  
*[laurie@limehat.com](mailto:laurie@limehat.com)*

## Using Excel with Other Microsoft Office Programs

Interoperability is probably the main reason that users purchase a suite of products rather than buying word processing programs, spreadsheet software, and presentation products individually. The pricing of suite software is generally attractive, but the capability to share content between applications easily, with predictable results, is a powerful incentive.

Office 2000's focus on Web-enabled collaboration improves upon previous versions' collaborative tools. Microsoft's vision for the workplace requires that everyone's efforts be shared, and toward that end, HTML becomes the common file format among applications. The result? Through the Clipboard and **I**nsert menu, you can insert as much or as little as you like of one application's content into another application's file quickly and easily, retaining as much or as little as you like of the source application's formatting.

## Copying Excel Data to a Word Document

Why add Excel content to a Word document? To save time and effort in reentering existing text and/or numbers, and to ensure consistency between files. If your Word document discusses numbers already entered into an Excel worksheet, don't create a Word table and reenter the numbers—copy them from Excel and paste them into the Word document. The result is an instant table, containing the numbers as they appeared in Excel.

Using Excel for tables that contain numeric data also gives you access to Excel's tools for calculation and numeric formatting, which you don't have to the same extent in Word. Therefore, you should try to create, format, and add formulas to the table in Excel—before you copy the table to a Word document.

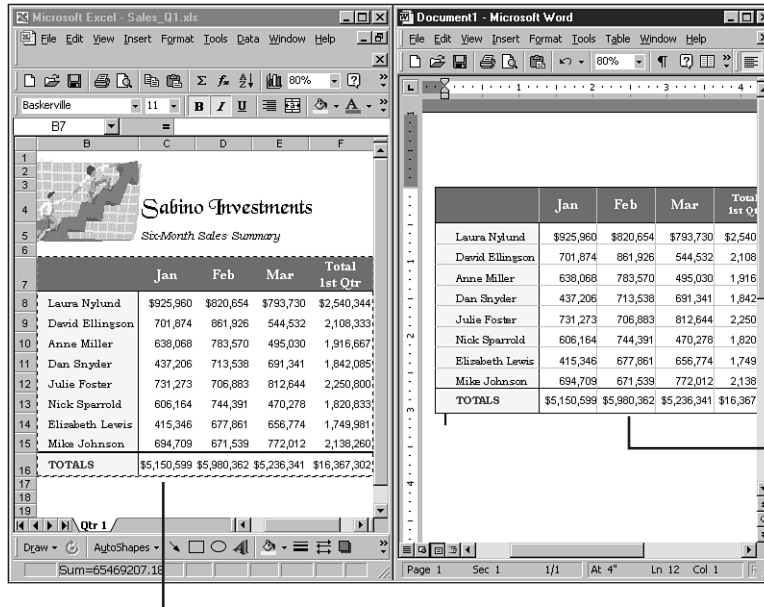
Figure 25.1 shows the Word and Excel application windows tiled, with a selection in Excel pasted into a Word document. When Excel data is copied to a Word document, it appears in table format—the worksheet cells become table cells that match the dimensions of the selected range of cells from Excel. All of Word's formatting and table tools are at your disposal—just as though the table were originally created in Word.

---

**Tip #274 from***Laurie*

If you can't see the table's gridlines, choose **T**able, **S**how **G**ridlines in Word. Nonprinting gridlines such as those in Excel will appear.

If you create charts in Excel, you can also copy those charts to a Word document (for instance, to support data presented in a written proposal). Excel provides extensive charting capabilities, whereas Word provides only limited chart features through the use of Microsoft Graph.



**Figure 25.1.** Although you needn't tile the applications to share content between them, viewing the source and target simultaneously can be helpful.

Table created in Word by pasting the Excel selection

Source content selected in the Excel worksheet

You can add Excel content to a Word document in one of two ways:

- Copy the Excel source content (such as a range of cells or a chart) to the Clipboard, and paste it into the Word document.
- Insert an Excel workbook in its entirety or select an individual worksheet to insert.

## Pasting Excel Data As a Word Table

One of the simplest ways to take Excel content and place it in a Word document is to use the Clipboard. In Office 2000, the Clipboard toolbar can hold up to 12 items, making the Clipboard a much more powerful and flexible tool than in previous versions.

To paste Excel data into a Word document, follow these steps:

1. In an Excel worksheet, select the cell or range you want to copy.
2. Choose Edit, Copy, click the Copy button, or press Ctrl+C.
3. Switch to Word, and click in the document to position the insertion point where you want to place the Excel data.
4. In Word, choose Edit, Paste, click the Paste button, or press Ctrl+V.

The Excel content appears as a table, in Arial, 10-point text (or whatever default font you have set in Excel).

**Tip #275 from***Laurie*

If you want to copy all the data in a worksheet, press Ctrl+A in the Excel worksheet to select all the cells. Only the range of cells that contain data will be pasted in Word.

- ➔ For more information on using the improved Clipboard feature in Office 2000, see “Using the Clipboard to Move and Copy Data,” p. 116

## Inserting an Excel File

In many cases, especially in the case of large reports developed in Word, the need arises to paste an entire Excel workbook (or an entire worksheet) into the Word document. Doing so saves you the time of selecting small sections of the worksheets one at a time and pasting them from Excel to Word individually. Inserting the workbook or worksheet saves not only time and effort, but eliminates the possibility of missing a particular section of a worksheet or pasting worksheet sections out of order in the Word document.

**Note**

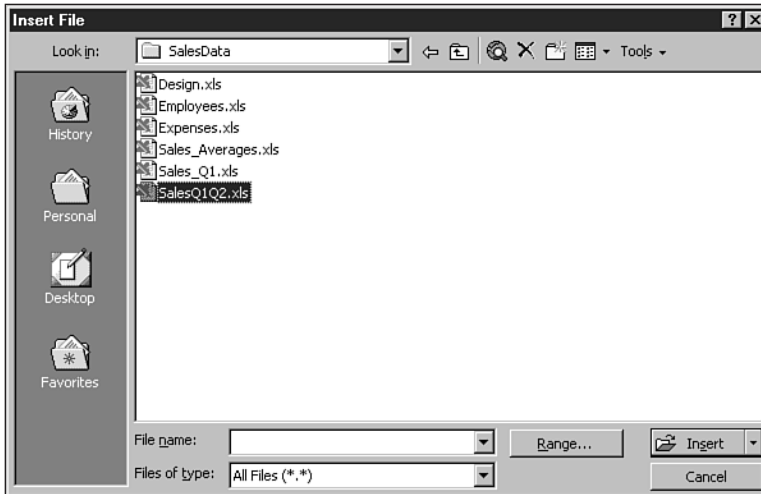
When inserting an entire workbook or even an individual worksheet, only the portion of the worksheets that contain data will be inserted—you won't see 256 columns and thousands of rows appear in the Word document.

Also, when you use the **Insert, File** command, you may need to reformat the data after you insert it in a Word document. For example, if your Excel data uses fill colors or font colors, these colors won't transfer to Word—instead, all the data appears in black and white. You may prefer to use the Clipboard to copy data if you want to retain all your Excel formats, including colors.

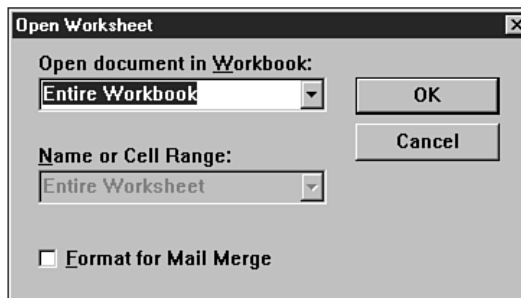
## Inserting an Excel Workbook

Before you can insert a workbook into a Word file, you must ensure that you've already saved the workbook. To insert a workbook into a Word document, follow these steps:

1. In the Word document, position the insertion point at the point where you want to insert the workbook.
2. Choose **I**nsert, **F**ile.
3. In the resulting Insert File dialog box, change the Files of **T**ype to All Files (\*.\*) .
4. Using the Look **I**n list box and/or the list of files and folders displayed, locate the workbook file you want to use (see Figure 25.2).
5. Double-click the desired file, or click it once and choose the Insert button.
6. In the Open Worksheet dialog box, leave Entire Workbook selected in the Open Document in **W**orkbook list box, and choose OK (see Figure 25.3).



**Figure 25.2.**  
Use the Insert File dialog box to search for the .xls file you want to insert.



**Figure 25.3.**  
By default, the entire workbook will be inserted into the Word document.

The entire workbook will be inserted into the Word document, appearing as a table. If you want to maintain a connection between the Excel source workbook and the data copied to the target Word document, you can insert the file as a link. To do so, in the Insert File dialog box, click the drop-down arrow beside the **Insert** button and choose **Insert As Link**. As long as your source and target files remain in the same locations and retain the same names, the link will remain intact. Each time the target file is opened, you can choose to update the link, and any changes to the source workbook will be updated in the document. You can also preserve the Word document's current content by not updating the linked content.

### Inserting an Individual Worksheet

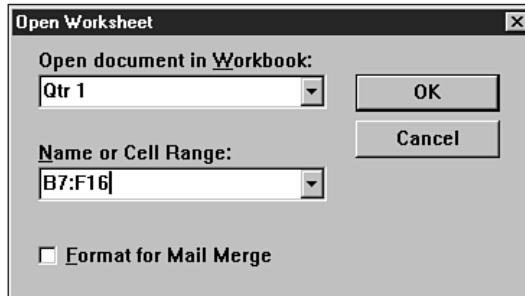
Perhaps your Word document doesn't require all the data in the entire workbook—maybe one or two specific sheets from a workbook contain the data you need. To insert an individual sheet from a workbook file, follow these steps:

1. In the Word document, position the insertion point where you want the inserted worksheet(s) placed.

2. Choose **I**nsert, **F**ile.
3. In the Insert File dialog box, select All Files (\*.\*) from the Files of **T**ype list box.
4. Navigate to the workbook file that contains the sheet you want to use, and double-click the filename.
5. In the Open Worksheet dialog box, click the Open Document in **W**orkbook list box, and select the name of the sheet that you want to insert.
6. In the **N**ame or Cell Range list box, select Entire Worksheet to insert the whole worksheet, or type a range of cell addresses (B7:F16, for example) or a named range from within the selected worksheet to insert just that range of cells (see Figure 25.4).

**Figure 25.4.**

If you've named any ranges in the worksheet, you can type the name to select that range of cells for insertion.



7. Choose OK to close the Open Worksheet dialog box and insert the data.

Once inserted, the data appears and functions as a Word table, and can be formatted by using Word's table, text, and paragraph formatting tools.

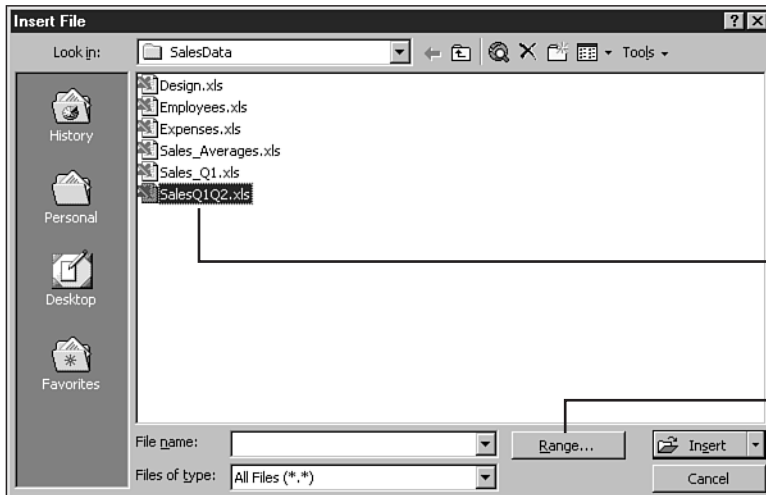
### Inserting a Worksheet Range

In some cases, you may want to insert just a portion of your Excel worksheet—perhaps just a few cells are of use, or you want a large section, but not the entire sheet and the inherent increase in file size for your target Word document. Whereas you could just copy and paste the range, inserting it instead frees you to add the content even if your Clipboard is full.

To insert a worksheet range in a Word document, follow these steps:

1. In the Word document, position the cursor at the point where you want to insert the Excel range.
2. Choose **I**nsert, **F**ile.
3. In the Insert File dialog box, select All Files (\*.\*) from the Files of **T**ype list box.
4. Navigate to the folder containing the workbook from which you want to insert a range, and click on the workbook file once to select it (see Figure 25.5).
5. Choose the **R**ange button in the Insert File dialog box.
6. Enter the range addresses (such as B7:F16) in the Set Range dialog box (see Figure 25.6), and choose OK.

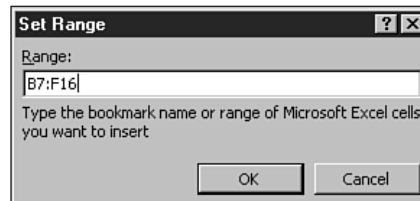
- In the Insert File dialog box, choose Insert to add the specified range to your Word document.



**Figure 25.5.** In the Insert File dialog box, select the file from which you want to insert a range of cells.

Select the file containing the range you want to copy.

Range button



**Figure 25.6.** Type your range of cells by entering two cell addresses separated by a colon.

## Merging Excel Data into Word Mail Merge Documents

An Excel list database can be used as the data source for your Word form letters, labels, and catalogs. When a Mail Merge is performed in Word, a document (such as a letter or sheet of labels) is combined with a table of data, which provides the data called for in the document. For example, in a form letter, *merge codes* are inserted to tell Word where to place the recipient's name. When the document and the data are merged, Word goes to the cited database and extracts data from the field (or column, in Excel) that contains the requested data, such as First Name or Last Name. The data is inserted within the letter's body text, and a form letter is completed.

Your Excel list database must be set up properly. The complete set of rules for proper data entry is described in detail in Chapter 17, "Setting Up a List or Database in Excel." The basic requirements are as follows:

- Your column labels become your field names, also known as a header row. Choose short, illustrative names such as First Name or Product Number. Each column label should be unique.



- Break down your data into as many fields as possible. For example, break your address data down into Address 1, Address 2, City, State, and Zip. A single “Address” field would be too hard to use for mailings restricted to people in a particular town or state.
- Leave no blank rows between your column labels and the first record (row) in your database. There can be no blank rows within your data, either.
- Each row (after the column labels) is a record, made up of data entered into the fields that are created by your column headings. Figure 25.7 shows an example of an employee database.

**Figure 25.7.**  
The more care you put into the building of your Excel database, the more you'll be able to do with it.

	A	B	C	D	E	F	G	H
10	Last Name	First Name	Empl ID #	Hire Date	Title	Location	Weekly Salary	Annual Salary
11	Brown	Julia	4456	6/24/1997	Trainer	Tucson	\$ 1,431.00	\$ 74,412.00
12	Edwards	Phyllis	4697	5/2/1998	Sr. Intern	Phoenix	\$ 954.00	\$ 49,608.00
13	Foster	Leah	4315	1/10/1999	Intern	Flagstaff	\$ 752.60	\$ 39,135.20
14	Fox	Gloria	4278	11/6/1997	Admin. Asst	Phoenix	\$ 552.00	\$ 28,704.00
15	Glass	Robert	5489	2/23/1997	Sr. Trainer	Tucson	\$ 1,739.60	\$ 91,499.20
16	Jensen	Rick	5321	3/25/1998	Sr. Trainer	Flagstaff	\$ 1,643.00	\$ 85,436.00
17	Miller	Andrew	5124	11/21/1998	Intern	Phoenix	\$ 964.60	\$ 50,159.20
18	Peterson	Darla	4237	4/9/1998	Admin. Asst	Flagstaff	\$ 484.00	\$ 25,168.00
19	Reeves	Jim	5178	5/29/1997	Admin. Asst	Tucson	\$ 504.00	\$ 26,208.00
20	Thomas	Susan	4897	8/29/1997	Trainer	Tucson	\$ 1,505.20	\$ 78,270.40
21	Walker	Jan	4307	2/21/1998	Sr. Intern	Phoenix	\$ 1,002.76	\$ 52,143.52
22	Wentworth	Dan	4219	10/7/1998	Sr. Intern	Tucson	\$ 998.00	\$ 51,896.00
23	Bailey	Michael	5422	3/15/1999	Intern	Tucson	\$ 710.20	\$ 36,930.40
24	Jones	Charles	5423	3/15/1999	Intern	Phoenix	\$ 742.00	\$ 38,584.00
25	Trent	Dee Ann	5424	3/15/1999	Intern	Flagstaff	\$ 659.00	\$ 34,268.00

Records

Field names (header row)

After the database has been set up correctly, you can select it as the source for your mail merge data as described in the following steps:

1. In Word, choose **T**ools, Mail Merge. The Mail Merge Helper dialog box opens, as shown in Figure 25.8.

**Figure 25.8.**  
The Mail Merge Helper dialog box is divided into three sections, or steps, to be followed sequentially.

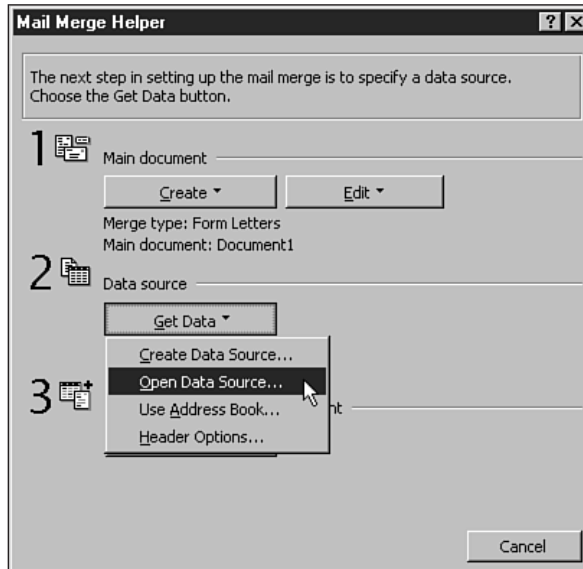
**Mail Merge Helper**

Use this checklist to set up a mail merge. Begin by choosing the Create button.

- 1 Main document  
Create
- 2 Data source  
Get Data
- 3 Merge the data with the document  
Merge...

Cancel

2. In step 1 of the dialog box, choose the **C**reate button, and choose the type of merged document you want to create—**F**orm **L**etters, **M**ailing **L**abels, **E**nvelopes, or **C**atalog.
3. Choose a new window or the current (Active) window for your new document.
4. Choose the **G**et **D**ata button, and choose **O**pen **D**ata **S**ource (see Figure 25.9).



**Figure 25.9.** Among other data sources, Word will accept Word documents (containing a table of data), Excel worksheets, and Access tables (.mdb files) as sources of data for your mail merge.

5. In the Open Data Source dialog box, select All Files (\*.\*) from the Files of **T**ype list box.
6. Navigate to the folder containing the worksheet you want to use, and double-click the filename.
7. In the Microsoft Excel dialog box, select or type the name or cell range in the **N**amed or **C**ell **R**ange text box, and then choose **O**K.
8. Complete your mail merge by editing your document, which includes inserting merge codes (instructions for where to place data and which data to use), and merging the document and the selected data source.

To learn more about the complete process of merging a document and a database, consider the book *Special Edition Using Microsoft Word 2000*, published by Que (ISBN: 0-7897-1852-9).

## Formatting Excel Data in a Word Document

Excel workbooks, worksheets, or cell ranges appear in Word in the form of a Word table—a collection of columns and rows, forming cells. Word provides a significant set of tools for adjusting the dimensions of table columns and rows, and visually formatting table cells and their content.

You can use Word's formatting tools to format the inserted Excel content in the Word document:

- *Change the width of columns and height of rows.* Click anywhere inside the table and choose **Table**, **Table Properties**. Using the **Row** and/or **Column** tabs, adjust the measurement of selected sections of the table.
- *Apply paragraph formatting.* If you want space above or below the cells' text, select the cells and then choose **Format**, **Paragraph**. Enter a point measurement in the **Before** and/or **After** boxes in the **Spacing** section of the **Paragraph** dialog box.
- *Format the text.* Select individual cells or columns/rows, and change alignment, fonts, font sizes, and font styles (such as **Bold**, **Italic**, and **Underline**). You can use the **Formatting** toolbar or the **Font** dialog box (choose **Format**, **Font**).

Unless you don't need or want any formatting of the data in Excel (perhaps the worksheet requires a plain appearance), it may be easier to format the cell content in Excel and utilize the **Paste Special** procedure to preserve formatting.

## Copying Excel Data to a PowerPoint Presentation

PowerPoint presentations often contain numeric data in the form of tables and charts. Charts are perhaps the more prevalent form in which numeric data is presented—they're highly graphical, and if set up properly, easy to interpret. Because presentations are generally best when they contain more pictures than words, charts are an important component.

PowerPoint presentations can display Excel data as cell blocks (which appear as tables) and as charts. You can build the chart in Excel and then copy it to the presentation slide, or you can use Excel data to build the PowerPoint datasheet, which in turn produces a PowerPoint chart.

Deciding which Excel content to use (cell ranges or an Excel chart) depends on what already exists in Excel—if you have only Excel data and haven't created a chart, you can use the data and create the chart in PowerPoint. However, keep in mind that Excel provides more extensive charting capabilities than PowerPoint. You may prefer to complete the chart in Excel and then transfer it to PowerPoint.

### Using Excel Ranges in a PowerPoint Slide

Assuming Excel is your primary tool for storing statistical, financial, and list data, it's very likely that the information you want to use in your PowerPoint presentation already exists in an Excel worksheet. Rather than risk a typo or waste time retyping it into a PowerPoint table, why not use the **Clipboard** and/or Office's **OLE** tools for placing the Excel data into your PowerPoint slide?

It's a simple procedure to take a range of cells from your Excel worksheet and paste them into a PowerPoint slide. Somewhat more complex methods can be employed to insert the

Excel content and at the same time create a link between the worksheet and the slide, enabling you to keep the slide updated when changes are made to the worksheet. The approach you take depends on whether or not you need such a relationship between the source file (Excel worksheet) and the target file (PowerPoint slide).

### Pasting Excel Ranges into a PowerPoint Slide

To paste a range of cells from an Excel worksheet into your PowerPoint slide, follow these steps:

1. In your Excel worksheet, select the contiguous range of cells that you want to use in your PowerPoint slide.
2. Choose Edit, Copy or press Ctrl+C.
3. Switch to or open your PowerPoint presentation, and go to the slide to which you want to add the Excel content. Be sure to use Slide View or Normal View.
4. In the PowerPoint window, choose Edit, Paste, or press Ctrl+V. If the Clipboard toolbar is displayed, click the icon that represents your Excel content.

Your Excel range appears as a table in your PowerPoint slide, and it can be formatted as such by moving, resizing the object as a whole, or by adjusting the dimensions of columns and rows by using PowerPoint's table tools. To find out more about PowerPoint, check out Que's *Special Edition Using Microsoft PowerPoint 2000*, ISBN: 0-7897-1904-5.

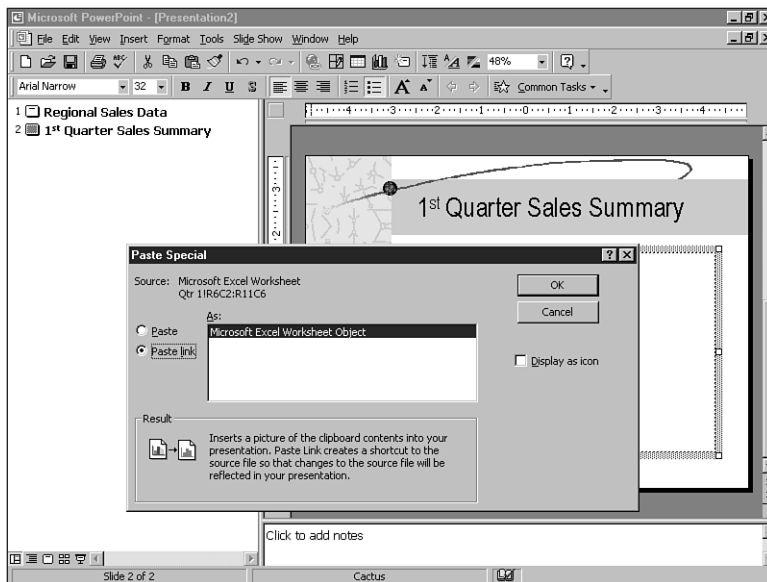
### Linking Excel Data to Your PowerPoint Slide

To create a relationship between your Excel source range and the copy of it pasted on a PowerPoint slide, you must link the two files. Once linked, moving or renaming either the Excel workbook or the PowerPoint presentation severs the link. You can update and break links later should you need to. Chapter 5, "Moving, Copying, Linking, and Embedding Information," explains this process in full detail.

To paste Excel content into your PowerPoint slide and establish a link between the source and target files, follow these steps:

1. In your Excel worksheet, select the contiguous range of cells that you want to use in your PowerPoint slide.
2. Choose Edit, Copy, or press Ctrl+C.
3. Open or switch to your PowerPoint presentation, and use Slide View to display the slide into which you want to paste the Excel content.
4. In the PowerPoint window, choose Edit, Paste Special.
5. In the Paste Special dialog box, choose the Paste Link option (see Figure 25.10).
6. Choose Microsoft Excel Worksheet Object from the As box, and choose OK.

**Figure 25.10.** Your copied Excel content will now be linked to the PowerPoint presentation, and you can keep the data between source and target in sync as needed.



Your linked Excel content appears in the form of a table, and can be moved or resized. To edit its content, double-click it. The Excel worksheet from which it came will open, and any edits you perform there will be updated in the slide. Make your changes, and then switch back to the PowerPoint slide (use the Taskbar or Alt+Tab) and you'll see the changes reflected there.

#### Tip #276 from

*Laurie*

Each time you open the target presentation in the future, you can choose whether or not to update the link—if changes have been made to the source Excel content, you can opt to have them reflected in the presentation. If you choose not to, you can always update them later by choosing Edit, Links and choose the Uppdate Now button.

Excel content can also be embedded in your PowerPoint slide, which will give you not only the existing Excel content, but when the Excel object is active, the tools of Excel as well, right within your PowerPoint window.

- ➔ To find out more about embedding content, see “Embedding Excel Data in Other Office Applications,” p. 129

## Pasting Excel Data in a PowerPoint Datasheet

In addition to using existing Excel data directly on a PowerPoint slide, you can use it to fill in your PowerPoint datasheet when creating a PowerPoint chart. To use Excel data in a PowerPoint datasheet, follow these steps:

1. With both the PowerPoint presentation and Excel worksheet open, select the Excel content you want to use (see Figure 25.11).

Don't select the worksheet titles.

Select column headings that will become category axis labels.

Location	January	February	March	Total 1st Qtr
Flagstaff	\$349,765	\$570,830	\$553,073	\$1,473,668
Phoenix	731,273	706,883	812,644	2,250,800
Tucson	606,164	744,391	470,278	1,820,833
Albuquerque	415,346	677,861	656,774	1,749,981
<b>TOTALS</b>	<b>\$2,102,548</b>	<b>\$2,689,965</b>	<b>\$2,492,769</b>	<b>\$7,295,282</b>

**Figure 25.11.** Keep the chart's content in mind when selecting the range of cells to paste into the PowerPoint datasheet.

Select row headings that will form the legend.

Select the numeric data that will be plotted in the chart.

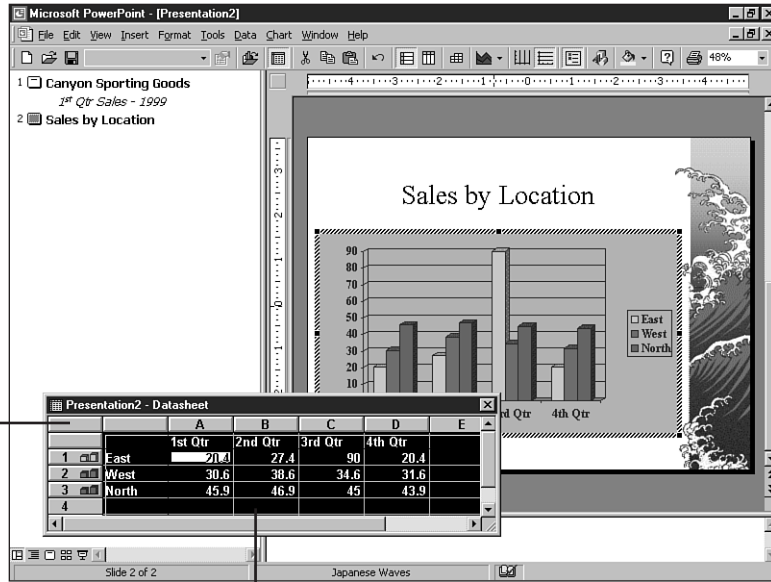
2. Choose Edit, Copy.
3. Switch to the PowerPoint presentation, and go to the slide in which you'll be using the data.
4. Double-click the chart placeholder to display the datasheet. The datasheet appears with sample data inside it.
5. In the PowerPoint datasheet, click the upper-left gray cell to select all the cells in the datasheet (see Figure 25.12).
6. Press Delete to remove the datasheet's sample data.
7. Click in the first cell in the datasheet (above row 1, in the blank column to the left of column A).
8. Choose Edit, Paste. The Excel content appears in the datasheet, and you see a chart form behind the datasheet (see Figure 25.13). Continue the chart-creation process in PowerPoint.

#### Note

You use the first blank column instead of column A in the datasheet because the first blank column contains the chart's legend data. The row above row 1 contains the category axis information. PowerPoint's charting tools will enable you to switch these two groups of data as needed.

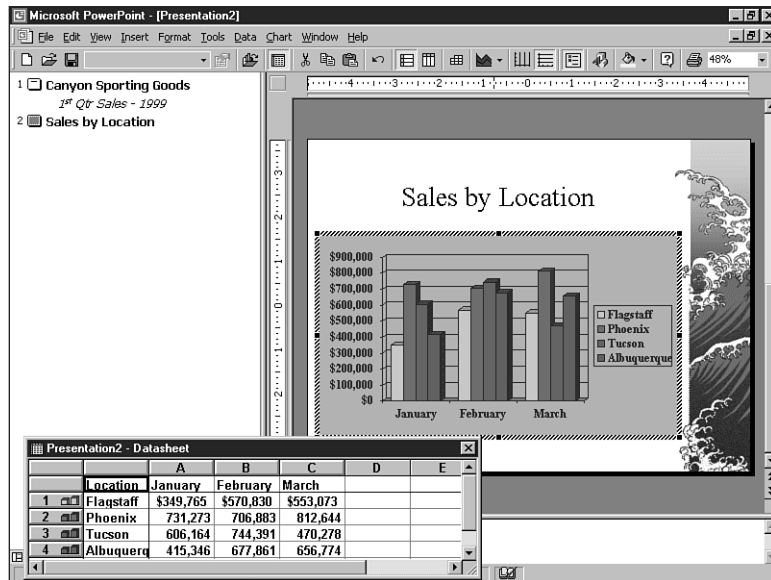
**Figure 25.12.** Selecting all cells before deletion enables you to be certain that all the sample data is removed.

Click here to select all the cells in the datasheet.



Sample data

**Figure 25.13.** The Excel data is immediately used to create a PowerPoint chart.



## Using Excel Charts in a PowerPoint Presentation

If you've already created a chart in Excel, why go through the process of building it again in PowerPoint? Unless you want to create a different type of chart, it's much easier to use the Excel chart in the PowerPoint presentation.

Follow these steps to paste the Excel chart into the PowerPoint slide:

1. With both the Excel worksheet that contains the chart and the target PowerPoint presentation open, click once on the Excel chart to select it.
2. Choose **E**dit, **C**opy.
3. Switch to the PowerPoint presentation, and move to the slide onto which you want to paste the chart.
4. If a chart placeholder appears on the slide, delete it.
5. In PowerPoint, choose **E**dit, **P**aste.

The chart appears in the PowerPoint presentation, exactly as it appeared in Excel. You can move and resize the chart as needed, or double-click it to access Excel's charting tools to make any adjustments to the chart's appearance.

### Note

If you want the Excel data that was used to create the chart to remain linked to this copy of the chart, use Paste Special and choose to paste link the chart. If the chart is linked and not simply pasted, changes to the Excel data will update the chart.

For more information on using Excel to create a chart, see Chapter 13, "Building Charts with Excel." To learn more about formatting Excel charts, see Chapter 15, "Formatting Charts."

➔ You can read more about linking objects from one file to another in "Linking Excel Data," p. 121

## Copying Word and PowerPoint Data to an Excel Worksheet

Whereas Excel data can be a valuable addition to Word documents and PowerPoint presentations, the reverse also is true—you can realize significant savings of time and effort by using existing Word and PowerPoint content in Excel worksheets. Following are some examples of how you can use Word and PowerPoint content:

- If the data's first appearance is in a PowerPoint datasheet, copy it to an Excel worksheet to avail yourself of Excel's superior formatting and calculation tools. If the data is valuable beyond the scope of the presentation, you'll get much more out of it in Excel.
- If a table containing a valuable list already exists in Word, bring it into Excel for quick sorting and filtering. Whereas these features are available in Word, their Excel equivalents are much more powerful and easier to use.



- Reuse clip art or drawn objects from PowerPoint or Word in an Excel worksheet. If the graphic images you need already exist in another file, don't reinsert or redraw—paste them!
- Copy an individual PowerPoint slide into your Word document. If you've created a visually pleasing slide that conveys something valuable for your document, don't waste time re-creating it. Using slide content in your Word documents also contributes to an overall visual consistency between your files.

## Adding Word Text to an Excel Worksheet

Word text appears in two formats that you can use in Excel—paragraph text and table text. Obviously, Word tables are a natural for placing in an Excel worksheet—the data is already arranged in cells. Paragraph text is best used when it appears in the form of short phrases or titles. Unless the Excel cells are formatted for text wrapping, a long sentence or paragraph can cause problems fitting into an existing Excel worksheet. If you insert paragraph text as an object into a worksheet, it will appear as a text box, obscuring worksheet cells.

### Tip #277 from



Your paragraph text can be parsed (separated) into individual cells through Excel's Data, Text to Columns feature, discussed later in this chapter.

You can add Word content, regardless of form, to an Excel worksheet in one of the two following ways:

- *Use the Clipboard.* Copy the Word text and paste it into the Excel worksheet. You can use this method for tables or paragraph text. When pasting, be sure to click in the cell that should contain the text or that will serve as the first cell in the pasted range.
- *Insert a Word object.* In this case, the text is typed into the object after it's inserted (see Figure 25.14). It will be placed in a floating object window, which, when active, will cause Word's tools to take over the Excel toolbars and menus.

## Sorting and Filtering Table Data

One of the primary reasons for bringing Word table data into an Excel worksheet is to avail yourself of Excel's sorting and filtering tools. While you can perform simple sorts in Word, Excel's sorting tools are faster and easier to use, and provide additional sort options.

Sorting and filtering commands are found in the Data menu in Excel. Sorting can be performed on up to three fields, and filtering can be performed on as many fields as you desire.

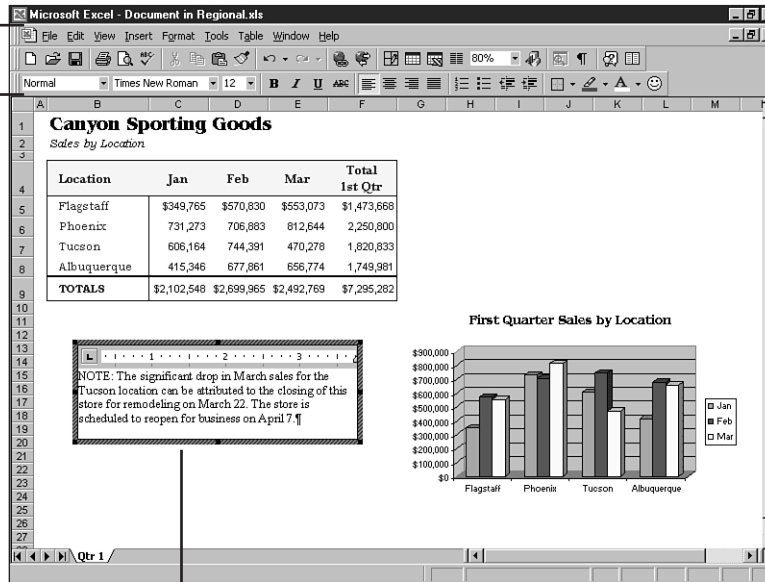
### Tip #278 from



If you still need to use the table data in a Word environment, paste it back into the Word document after you've sorted and/or filtered it in Excel.

- ➔ For more information on sorting and filtering Excel lists, see "Sorting a List," p. 509 and "Filtering a List," p. 513

Word tools in Excel window



**Figure 25.14.** Choose **Insert, Object**, and choose **Microsoft Word Document**. Type the text into the Word window that opens on the worksheet.

Word window on top of worksheet

## Parsing Data

Because users don't expect the level of flexibility in their use of Word tables that one finds in Excel, tables designed and completed in Word don't tend to be as well planned in terms of their use as a database as those that are built from the ground up in Excel. For example, in order to have the greatest degree of sorting and filtering capability, tables should be broken down into as many fields as possible—instead of a "Name" field in a name and address list, the name should be divided into two fields, "First Name" and "Last Name." This gives you the capacity to sort the list by last name, and to use it for a mail merge wherein letters contain a salutation such as "Dear Mr. Smith" or "Dear Bob" instead of "Dear Bob Smith." Also, breaking "Address" down into "Street," "City," "State," and "Zip" makes filtering by city or zip code much easier.

So what do you do if the Word-created table isn't currently conducive to effective sorting and filtering? You parse the table in Excel. Parsing takes larger pieces and breaks them down, making more analysis possible.

### Note

Parsing isn't only for Word lists. You can parse any list that you can import to Excel—including database information from Access, text-formatted lists from other programs, and so on.

To parse table data, follow these steps:

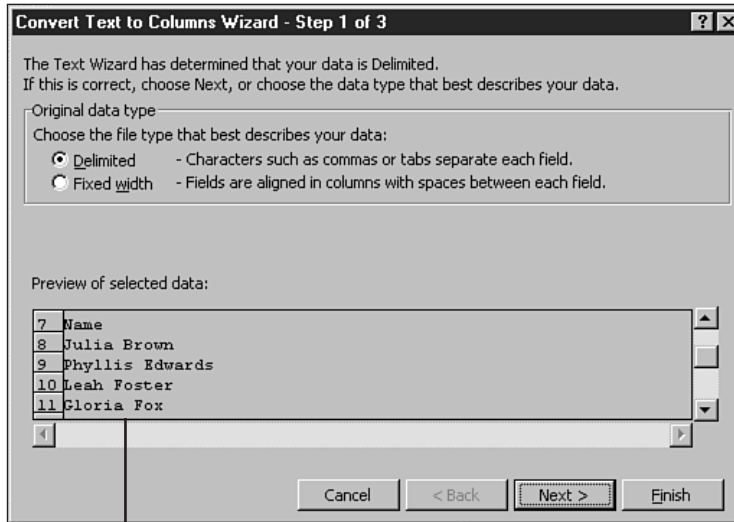
1. If the column to the right of the column you want to parse contains data, insert columns to make room for the parsed information. For example, if you're parsing a single column into three columns, insert two columns to the right of the column you're parsing. To insert a column, select the column before which to insert the column and choose **I**nsert, **C**olumns.
2. After pasting the table from Word into Excel, select the rightmost column that requires further breakdown (see Figure 25.15).

**Figure 25.15.** Working from right to left avoids accidental overwriting of table data with the columns added through parsing. In this example, only the first column needs to be parsed.

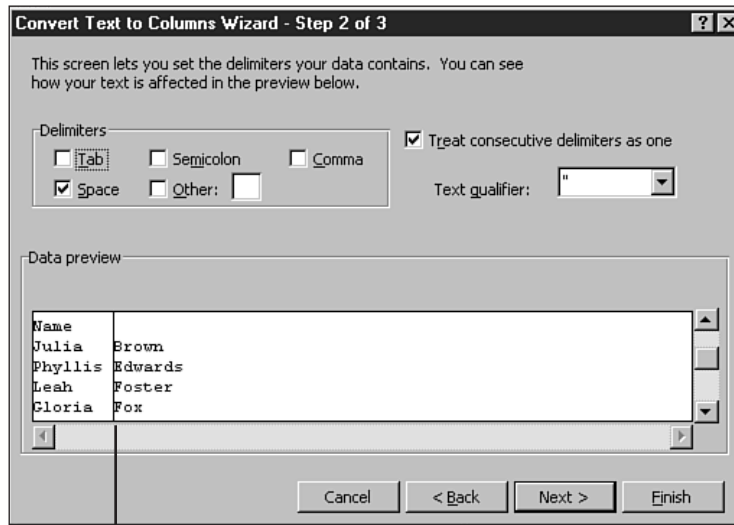
The Name column will become two columns—First Name and Last Name.

Employee Database						
Name	Empl ID #	Hire Date	Title	Location	Weekly Salary	Annual Salary
Julia Brown	4456	6/24/1997	Trainer	Tucson	\$ 1,431.00	\$ 74,412.00
Phyllis Edwards	4697	5/2/1996	Sr. Intern	Phoenix	\$ 964.00	\$ 49,608.00
Leah Foster	4315	1/10/1999	Intern	Flagstaff	\$ 752.60	\$ 39,135.20
Gloria Fox	4278	11/6/1997	Admin. Asst	Phoenix	\$ 552.00	\$ 28,704.00
Robert Glass	5489	2/23/1997	Sr. Trainer	Tucson	\$ 1,759.60	\$ 91,499.20
Rick Jensen	5321	3/25/1996	Sr. Trainer	Flagstaff	\$ 1,643.00	\$ 85,436.00
Andrew Miller	5124	11/21/1996	Intern	Phoenix	\$ 964.60	\$ 50,159.20
Daris Peterson	4237	4/9/1996	Admin. Asst	Flagstaff	\$ 484.00	\$ 25,168.00
Jim Reeves	5178	5/29/1997	Admin. Asst	Tucson	\$ 504.00	\$ 26,208.00
Susan Thomas	4697	8/29/1997	Trainer	Tucson	\$ 1,505.20	\$ 78,270.40
Jan Walker	4307	2/21/1996	Sr. Intern	Phoenix	\$ 1,002.76	\$ 52,143.52
Dan Wentworth	4219	10/7/1996	Sr. Intern	Tucson	\$ 996.00	\$ 51,896.00
Michael Bailey	5422	3/15/1999	Intern	Tucson	\$ 710.20	\$ 36,930.40
Charles Jones	5423	3/15/1999	Intern	Phoenix	\$ 742.00	\$ 38,664.00
Dee Ann Trent	5424	3/15/1999	Intern	Flagstaff	\$ 659.00	\$ 34,268.00

3. Choose **D**ata, **T**ext to Columns.
4. The Convert Text to Columns Wizard opens, as shown in Figure 25.16.
5. In the Original data type box, choose **D**elimited. Delimiters are characters (such as commas, spaces, or semicolons) or codes (such as tabs or hard returns) that are used to break text content into pieces.
6. Choose Next.
7. Choose the delimiters that you want Excel to use in determining where column breaks should occur (see Figure 25.17).
8. Choose Next.
9. After checking the Data Preview in the wizard's final dialog box, choose **F**inish to complete the wizard and apply the commands to the selected column.



Spaces used between first and last names



Vertical line indicates intended column break.

**Figure 25.16.**  
Preview the selected data in Step 1 of 3 of the wizard.

**Figure 25.17.**  
After selecting one or more delimiters, view the Data preview to see how the data will be parsed.

In the wizard's last step, you can also choose to apply General (the default), Text, or Date formats to the new columns. In addition, you can specify a particular Destination for the parsed cells.

You may notice the need to do subsequent parsing, especially when you've used a combination of delimiters in the text. If you didn't use consistent delimiters, you can always reparse one of the new columns and choose a different delimiter for the second conversion of text to columns.

### Tip #279 from

*Laurie*

Sometimes you need to combine text into one cell from separate cells, rather than the other way around. In the target cell where you want the combined data, enter the formula `=CONCATENATE(ce111,ce112)`, where `ce111` is the first cell whose contents you want to include and `ce112` is the second. Excel will combine the text into one cell.

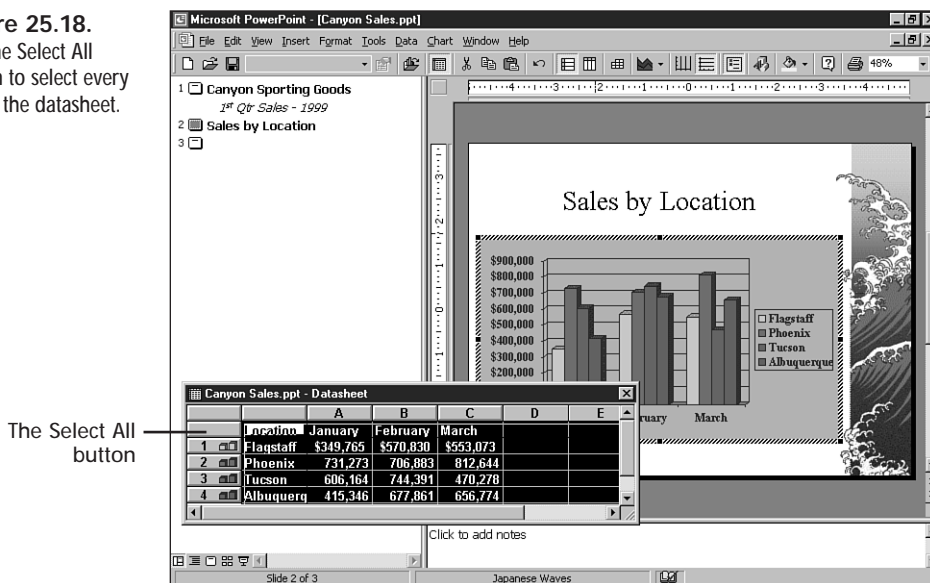
## Using PowerPoint Datasheet Content in Excel

There may be times that your initial use of pertinent data occurs first in PowerPoint—for example, when sales figures are entered into the PowerPoint datasheet for the purpose of creating a chart for a presentation. In these cases, the creation of the PowerPoint datasheet can become the first step in later using the data in Excel, where it can be formatted and used in calculations. The datasheet data can be the start of a new worksheet or can be added to an existing worksheet.

To copy the PowerPoint datasheet content to an Excel worksheet, follow these steps:

1. In the PowerPoint slide, display the datasheet and the content you've entered.
2. Drag through the datasheet's cells or click the Select All button on the datasheet (see Figure 25.18).

**Figure 25.18.**  
Use the Select All button to select every cell in the datasheet.



3. Choose Edit, Copy, or press Ctrl+C.
4. Switch to or open the Excel worksheet, and click in the cell where you'd like the pasted content to begin.
5. Choose Edit, Paste, or press Ctrl+V.

After pasting the datasheet content, you might need to move things around or add column/row labels to fit the desired layout for the Excel worksheet. The data is now ready for any formatting or formulas you want to apply.

**Note**

While you can paste a chart from PowerPoint to Excel, it's generally not a good idea to do so. It's much better to re-create the chart in Excel so that changes and updates to the data (which are more likely to occur in Excel than PowerPoint) can easily update the chart.

## Combining Word, Excel, and PowerPoint Files with Hyperlinks

A powerful way to use Office 2000 applications together is to use hyperlinks. A *hyperlink* is a selection of text or a graphic image that is associated with another file, a Web page on the Internet, or your company's intranet. You can link Word, PowerPoint, and Excel files quickly and easily with hyperlinks, making it possible to open a worksheet from within a Word document, a Word document or Excel worksheet from within a PowerPoint presentation, or a PowerPoint presentation from within a Word document or an Excel worksheet. There is no limit to the number of hyperlinks you can insert into a single file, nor is there a limit to the relationships that hyperlinks can create—for example, a hyperlink in a Word document can point to a presentation that contains an Excel chart, thus combining two applications in a single link.

Following are some ideas for using hyperlinks with Office 2000:

- *Access supporting data.* Create a hyperlink in a PowerPoint presentation that opens a worksheet containing the data that a PowerPoint chart reflects. If someone asks to see the supporting data, you can get to it quickly, but you haven't wasted space on the slide displaying the data.
- *Refer to related documents.* If you're sending a memo that refers to an Excel list (database), include a link to that worksheet. This is more efficient for the memo recipients than merely telling them where the database is stored.
- *Display a chart on command.* What if you don't want to waste space on the worksheet with a chart or have a sheet within the workbook used for the chart? Copy the chart data to another workbook, create a chart from it, and then create a hyperlink in the original workbook that points to the chart. If the chart is of interest, it's accessible, but it's not taking up valuable space.

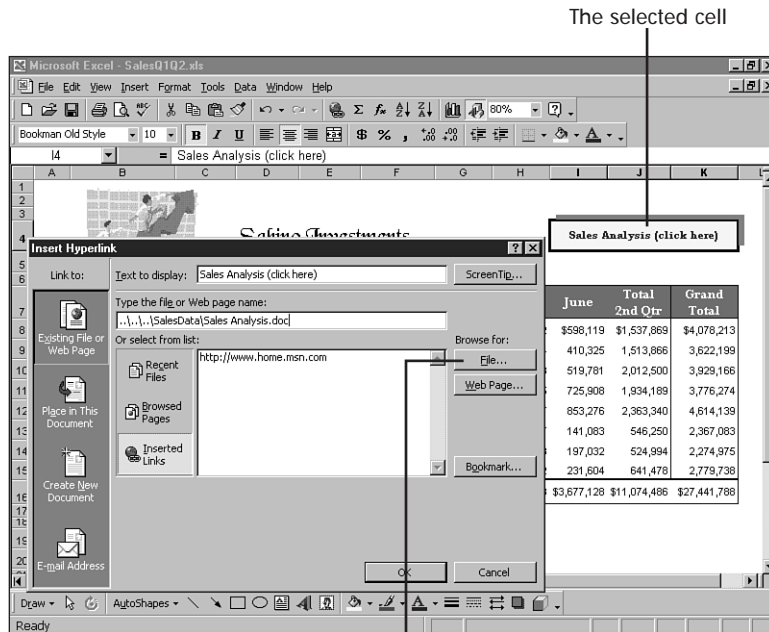
## Creating a Hyperlink

Hyperlinks can be represented by text or graphics. The procedure you use to create hyperlinks is the same for Word, Excel, and PowerPoint.

To create a hyperlink in Word, Excel, or PowerPoint, follow these steps:

1. In the open file, select a single word, short phrase, or a graphic object that you want to use as a hyperlink.
2. Choose **I**nsert, **H**yperlink.
3. In the Insert Hyperlink dialog box, enter a folder and filename (or Web page name) for the file to which the hyperlink should point (see Figure 25.19).

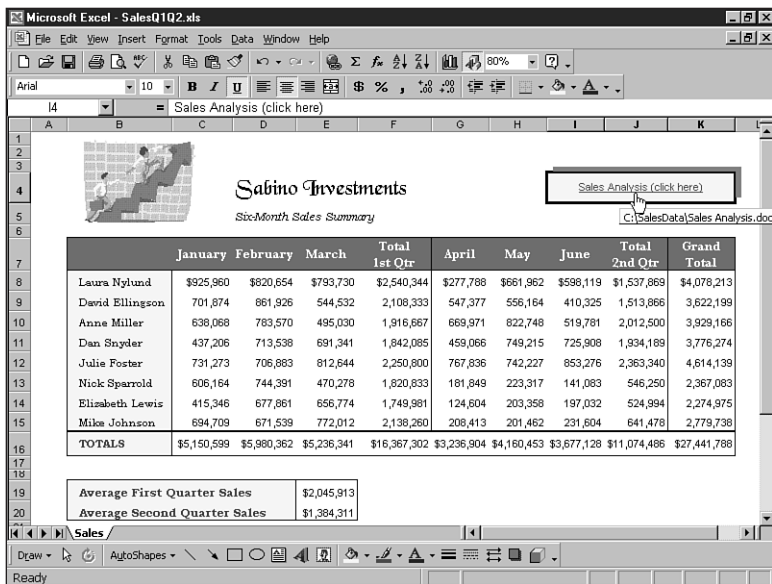
**Figure 25.19.** It's a good idea to browse for the file if you're not absolutely sure of the path and filename.



Choose **F**ile to simultaneously locate and enter the path and filename to which the hyperlink will point.

4. If you don't know the exact folder path to the file or the full filename, choose the **F**ile button on the right.
5. After entering or selecting the file for the hyperlink, choose **O**K.

In the file that contains the hyperlink, test it by pointing to it with the mouse—the mouse pointer should turn into a pointing hand (see Figure 25.20). The file referenced in the link appears in a ScreenTip beside the pointing hand. Click the hyperlink to verify that the link points to the appropriate file.



**Figure 25.20.** When you see the pointing hand, click once to go to the hyperlinked file.

In the destination file (the file that the hyperlink jumps to), you may choose to include another hyperlink that returns the reader to the previous file (the source file containing the first hyperlink). Use the same procedure detailed previously to add the second hyperlink, and then reference the original file in step 3. You also could instruct readers to click the Back button in the Web toolbar (if it appears onscreen) to return to the previous file.

#### Caution

If others within your organization will use the file containing hyperlinks, be sure that the files to which the hyperlinks point will be available to those users. The hyperlinked files should be on network drives to which everyone has access. If the hyperlink is for your own use, the linked files can reside on your local hard drive.

If you'd like a different ScreenTip (other than the filename) to appear onscreen when you point to a hyperlink, choose the ScreenTip button in the Insert Hyperlink dialog box. Type the ScreenTip text in the resulting dialog box, and choose OK.

#### Tip #280 from

*Laurie*

If you'd like the person reviewing the file to be able to easily email you with comments or questions, add a hyperlink that points to an email address. When the link is clicked, a new message window will open, automatically addressed to the address you specify. Choose the E-mail Address button on the left side of the Insert Hyperlink dialog box and supply all requested information.



## Using Hyperlinks to Access a Range of Cells

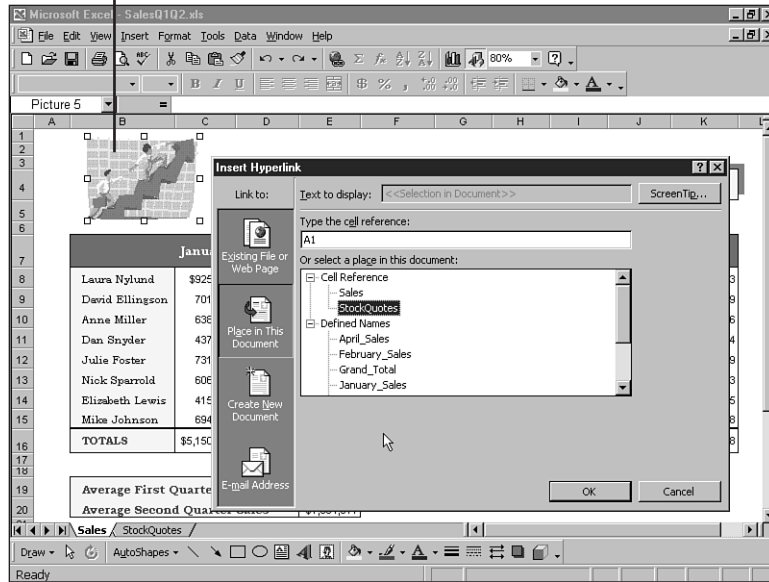
You also can use hyperlinks to navigate within an open Excel workbook. Working similarly to named ranges, hyperlinks can be established in a worksheet, pointing to other cells within the workbook. This quick navigation/access method eliminates the need to create names for the ranges, and makes it possible to create the look and feel of a Web page within the workbook.

To create a hyperlink to access a specific range of cells, follow these steps:

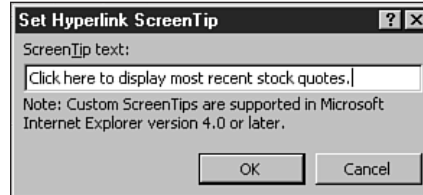
1. In the open workbook, click on the cell or graphic image that will serve as the hyperlink.
2. Choose **Insert**, **Hyperlink**, and choose the **Place in This Document** button on the left side of the dialog box.
3. Type the cell address. It can be a single cell or a range of cells (see Figure 25.21). You also can select a named range from the **Defined Names** list.

This graphic will be used for the hyperlink.

**Figure 25.21.** Create the feel of a Web site within the workbook by creating hyperlinks to cells within the workbook.



4. Choose the **ScreenTip** button, then type the pop-up text that will appear when pointing to the link (see Figure 25.22), and choose **OK**.
5. In the list box, select the worksheet that contains the specified cell or range.
6. Choose **OK**.



**Figure 25.22.**  
Type the name of the cell range or a description of the information to which the hyperlink points.

**Tip #281 from**

*Laurie*

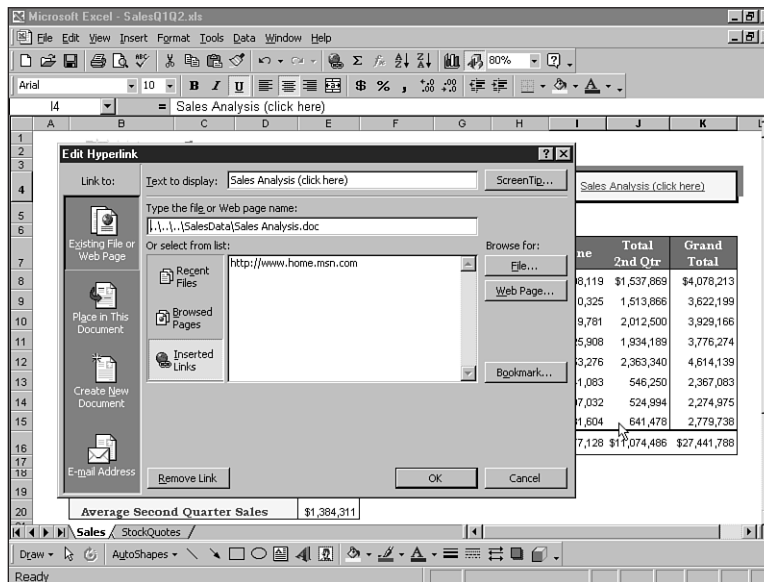
You can nest links by creating a hyperlink in Word or PowerPoint that points to an Excel workbook that contains its own hyperlinks to important locations within its own worksheets.

## Updating Hyperlinks

Over time, hyperlinks can become invalid—perhaps the file to which the hyperlink points has been moved or deleted, or the information considered important enough to link to is no longer of interest. For a multitude of reasons, you’ll want to update the hyperlinks.

To edit the hyperlink, follow these steps:

1. Right-click the hyperlink you want to edit.
2. From the shortcut menu, choose Hyperlink, Edit Hyperlink.
3. The Edit Hyperlink dialog box opens, looking very similar to the Insert Hyperlink dialog box (see Figure 25.23). Click the appropriate Link To button (on the left side of the dialog box) to choose the type of link.
4. Make the desired changes to the link, and choose OK.



**Figure 25.23.**  
Adjust the folder path and filename, or choose a new sheet and/or range of cells for the hyperlink.

## Deleting Hyperlinks

If a hyperlink is no longer of use, you can delete it. Deleting a hyperlink doesn't delete the text or graphic that currently serves as a hyperlink—deleting the link merely eliminates the text or graphic's role as a pointer to another file or range of cells within the worksheet.

To delete the hyperlink, follow these steps:

1. Right-click the hyperlink text or graphic.
2. From the shortcut menu, choose Hyperlink, Remove Hyperlink.

### Tip #282 from

*Laurie*

You also can delete a hyperlink from within the Edit Hyperlink dialog box by clicking the Remove Link button.

## Troubleshooting

### Updating Links Between Files

*The Excel data that I linked to a PowerPoint slide seems to be broken. Whenever I change the data in Excel, these edits aren't reflected in PowerPoint. How do I fix the link?*

Switch to the application containing the link (PowerPoint, in this example), and choose Edit, Links. Then, select the link you want to reconnect from the Links list box and choose the Change Source button. In the Change Source dialog box, select the file you want the linked object to connect to (select another folder from the Look In list, if necessary). Choose the Open button. The file you chose appears in the Links dialog box; choose Close to close the dialog box. The updated link information appears in the application.

### Editing an Existing Hyperlink

*I need to make changes to an existing hyperlink, but when I try to click the hyperlink to select it, I jump to the file referenced in the hyperlink. How do I edit the hyperlink?*

Right-click the hyperlink. Then choose Hyperlink, Edit Hyperlink from the shortcut menu. Make the desired changes in the dialog box, and then choose OK.

If you just want to make simple formatting changes to the hyperlink (such as using a different font or adding italic), right-click the hyperlink and choose Hyperlink, Select Hyperlink. Then use the menus or toolbars to format the text, as usual. Click outside of the hyperlink to deselect it.

### Fixing Invalid Hyperlinks

*The hyperlink I created in an Excel workbook no longer works. How do I fix this?*

Most likely, the file referenced in the hyperlink was moved or deleted, or you moved the Excel file itself. To update the hyperlink, right-click the hyperlink and choose Hyperlink,

Edit Hyperlink. Click the appropriate Link To button, edit the location of the destination file, and choose OK.

If this doesn't seem to be the source of the problem, and the hyperlink references file(s) on a network, ensure that you have access to the files on the network.

## Excel in Practice

Creating consistency between data sources as well as visual consistency is essential to the effective distribution and presentation of data in any business. Providing a similar look and feel to your documents, worksheets, and presentations helps your audience see the connection between them. In addition, ensuring that the source of the data is updated in a timely fashion (and updated to all relevant files) helps the audience feel confident in the data's accuracy and reliability.

Figure 25.24 shows a Word report that contains linked Excel data (a linked range) and a pasted PowerPoint slide that connects the report to a PowerPoint presentation which those people reading the report will view. Tying the report and the presentation together enhances the effectiveness of both.

**Canyon Sporting Goods**  
*Sales Analysis (continued)*

This chart and the underlying data show a significant drop in March sales for the Tucson location. This is attributed, at least in part, to the closing of this store for remodeling on March 22. The Tucson store is scheduled to reopen for business on April 7.

**Sales by Location**

Location	Jan	Feb	Mar	Total
Flagstaff	\$349,765	\$670,830	\$553,073	\$1,473,668
Phoenix	731,273	708,883	812,644	2,250,800
Tucson	606,184	744,391	470,278	1,820,853
Albuquerque	415,340	677,861	656,774	1,749,981
<b>TOTALS</b>	<b>\$2,102,548</b>	<b>\$2,699,965</b>	<b>\$2,492,766</b>	<b>\$7,295,282</b>

Word text that wraps around the graphic from PowerPoint ties the content together.

Excel content is pasted as a link, so that changes to the worksheet can be updated in the report for future publication.

The PowerPoint slide becomes the visual touchstone for the audience, who will see this same data in a PowerPoint presentation.

**Figure 25.24.** Combine Excel and PowerPoint content in your Word documents to give your reports the combined power of the core Office 2000 applications.



# CHAPTER 31



## Using Excel on the Web

### In this chapter

- Exploring Excel's Web Capabilities 956
- Publishing Your Worksheet As a Web Page 956
- Copying Tabular Web Data to an Excel Worksheet 962
- Collaborating Online with Excel 964
- Sending Your Excel Workbook via Email 969

*by Laurie Ann Ulrich*  
*[laurie@limehat.com](mailto:laurie@limehat.com)*

## Exploring Excel's Web Capabilities

*Hypertext markup language (HTML)* format and Web compatibility are a major focus for Office 2000. One of the ways that this is demonstrated is in the improvement of Excel's tools for saving a worksheet as HTML—not only can the worksheet be posted to or used as a Web page, it can be reedited as an .xls-format worksheet in Excel, even after being saved in HTML. This is because HTML is now a companion file format to the standard .xls spreadsheet format, enabling the user to go from viewing a worksheet as a Web page to editing it as a worksheet, and back again. You don't even need to have Excel installed to edit Excel Web pages that are saved in HTML format—all you need is browser software, such as Internet Explorer.

### Note

Changes to the data from the browser program can be saved only with the Save As command. Even then, each time you make changes that you want to save, you'll need to perform another Save As operation. (If you have Excel, of course, you can open the file in Excel and perform a regular save.)

Excel has simplified the Web publishing process significantly—gone is the Internet Assistant wizard, replaced by an extra step in the saving process. This simplification is yet another sign that Office 2000's applications offer complete integration with the Internet—from creating Web pages to retrieving content from the Web for use in local documents.

## Publishing Your Worksheet As a Web Page

Whether you or your organization have a Web site on the Internet and/or on an intranet, you'll find that Excel 2000 makes it easy to turn a workbook, worksheet, or *range* (page 258) of worksheet cells into a Web page. Office 2000 has streamlined the process of saving Excel content as HTML and gives you new options for how that data will be viewed and used by those who visit your Web site:

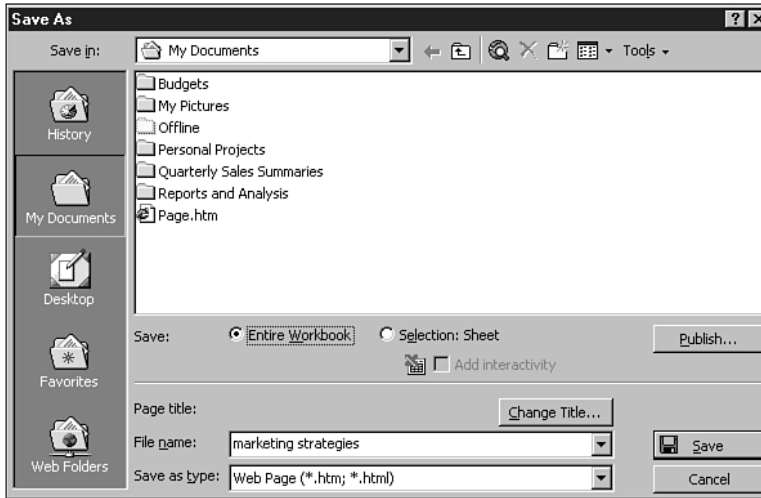
- **Add Interactivity.** Available when publishing a range of cells, this option means that the user on the Web can actually work with the workbook—total, sort, filter, and use the Clipboard to manipulate the content. You even can view and manipulate the selection in *PivotTable* (page 556) format.
- **After Saving, Open Published Web Page in Browser.** This option enables you to quickly view a new page in browser format, immediately upon saving the file as HTML.

### Saving Your Worksheet As HTML

To begin, decide which part of your workbook will be saved as HTML—the entire workbook, a sheet within it, or cells within a single sheet. If a single sheet or cells within it are to be saved as HTML, select them before invoking the Save as Web Page command.

After selecting your desired cells (if necessary), follow these steps to save your Excel content as HTML:

1. Choose **File**, **Save as Web Page**.
2. In the Save As dialog box, type a name for your HTML file (see Figure 31.1). You don't need to type the .htm extension (Excel will insert it for you), but if you need an .html or other extension specifically, type it after the filename.



**Figure 31.1.** Choose a filename for the Web page, remembering that if viewed online, the filename will be part of the address, visible to the user.

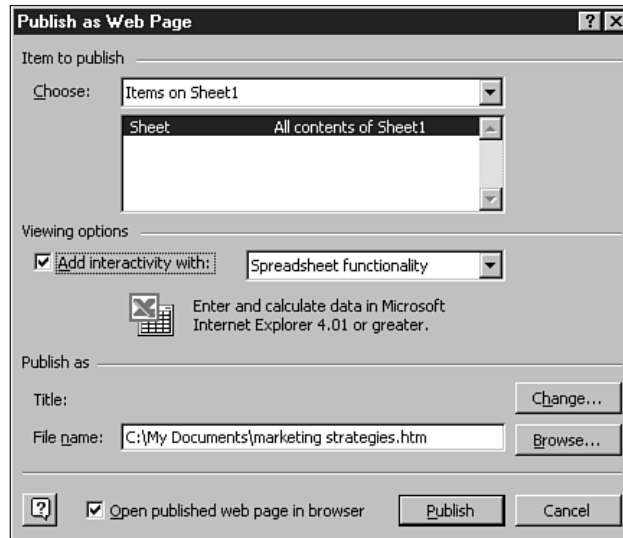
3. Choose a folder into which the file should be saved (if you want it to be saved to your local or a network drive).
4. The Save section of the dialog box indicates whether you're saving the **Entire Workbook** or a **Selection** (followed by the word **Sheet**, or a specific range if you highlighted a range before beginning this procedure). Change this setting if necessary.
5. Click the **Publish** button. This opens the **Publish As Web Page** dialog box (see Figure 31.2).
6. Confirm the item to publish in the **Choose** list box (see Figure 31.3). If you selected a range before starting the procedure, **Range of cells** will be selected in the **Choose** box. You can edit the range manually, or click the **Collapse Dialog** button to expose the worksheet. You can then select the desired cells and reexpand the dialog box to continue.
7. If publishing a range or single sheet, select the **Add Interactivity With** option, and choose **Spreadsheet Functionality** or **PivotTable Functionality** from the drop-down list.

➔ For details on converting Excel PivotTables to Web pages, see “Saving and Editing PivotTables in HTML Format,” p. 596



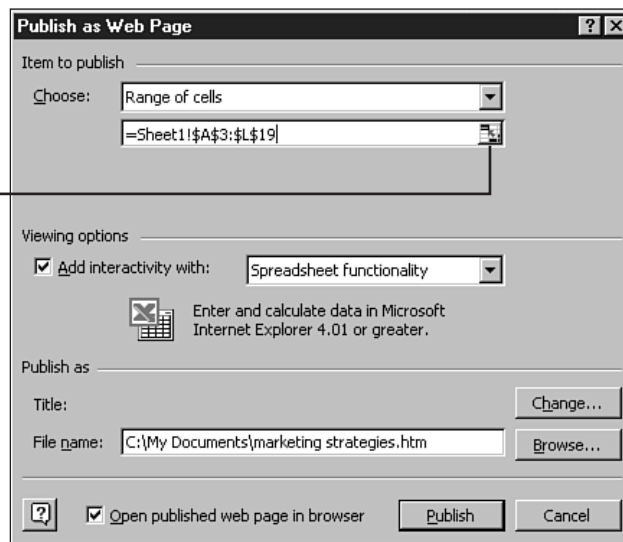
**Figure 31.2.**

If you choose to publish the page (in addition to simply saving it in HTML), the options for how the page will be viewed and used are offered in the Publish As Web Page dialog box.

**Figure 31.3.**

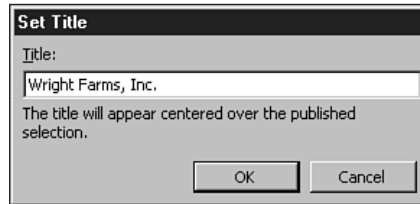
If you want to edit a range or click on another sheet, click the Collapse Dialog button.

Collapse Dialog button



8. In the Publish as section, enter a File Name and path for the file. You can enter an HTTP or FTP address.
9. If your browser program is open, select the Open Published Web Page in Browser option. (This step is optional, but useful.)

10. If you want to add a title centered over the published selection, click the **C**hange button. The Set Title dialog box opens, as shown in Figure 31.4; type a title in the text box and then click OK to return to the Publish as Web Page dialog box.
11. Click **P**ublish.



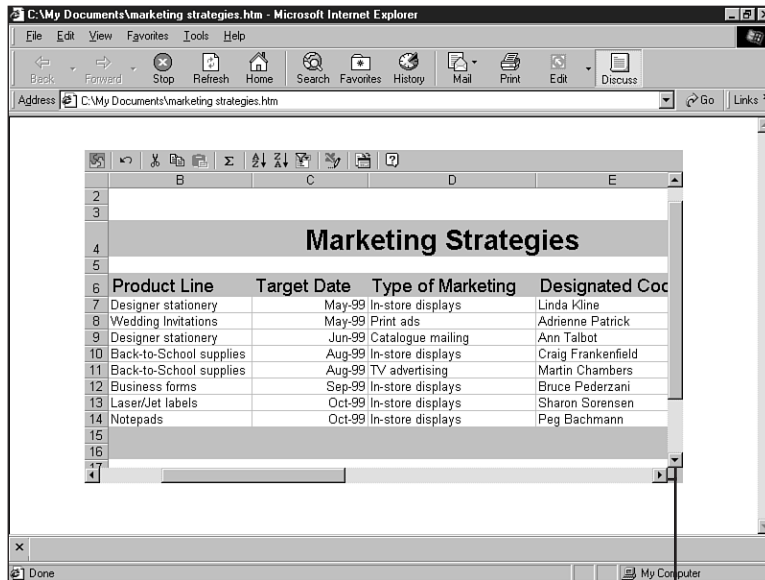
**Figure 31.4.**  
Type a title that you want to display over the published Web content.

#### Note

At this point, you might receive a warning message indicating that certain Excel features included in your workbook won't be supported in the browser.

If the browser isn't open and you've turned on the **O**pen Published Web Page in Browser option, your Web browser will open automatically and display the page.

The workbook, worksheet, or specified section is now published as a Web page, saved in HTML format. Figure 31.5 shows a worksheet section published with interactivity, viewed in an Internet Explorer window.



**Figure 31.5.**  
A set of tools appropriate for the interactivity setting you choose will be displayed with the cells that you published.

Use the scrollbars to see the portions of the published worksheet that don't fit in the view.

**Caution**

If the workbook, worksheet, or range of cells contains hyperlinks, be sure that the files to which the hyperlinks point are available to online viewers—in other words, consider publishing these files to the Web as well. If this isn't possible, delete the hyperlinks before publishing the Web page. If the hyperlinks point to Web sites, it's a good idea to check that they're still valid sites before publishing (and check them later on, too, to ensure that the hyperlinks stay updated).

## Viewing Your Worksheet As a Web Page

You can view the Excel Web page with Excel, Word, or Web browser software (Internet Explorer, Netscape, or other comparable programs). To open a previously published Web page, follow these steps:

1. In Excel, choose **F**ile, **O**pen.
2. In the Files of type list box, select Web Pages, so that you see only HTML-formatted files.
3. Locate the folder that contains the Web page file, and double-click the Web page to open it.

The Web page will open in Microsoft FrontPage if you have that program installed. Otherwise, the file will open in Word. The display will include a toolbar if the page was saved with interactivity added. Depending on the size of your range of cells, there may also be scrollbars around the Web content, in addition to the scrollbars found in the Word window (see Figure 31.6).

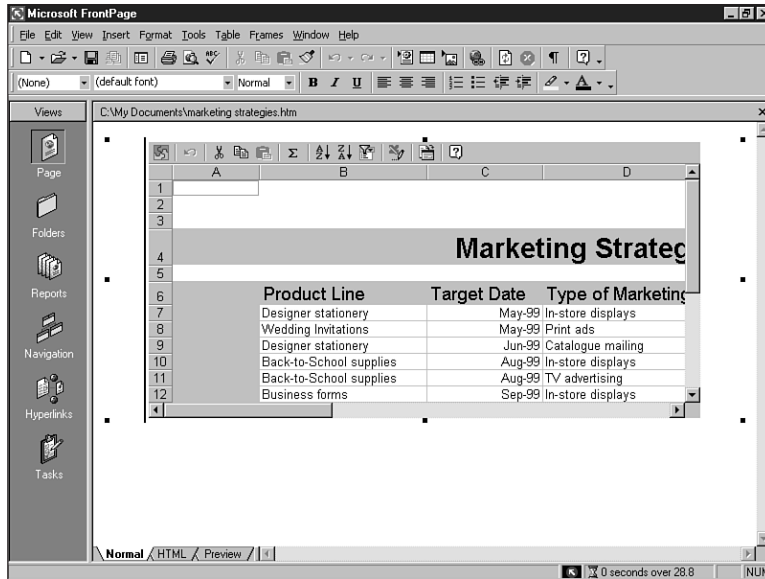
**Tip #354 from**


You can force Excel to open the Web page (thereby bypassing FrontPage and Word) by selecting the file and using the Open in Microsoft Excel command on the **O**pen drop-down list. This leads to a drawback in the HTML feature: Even though you can open the Web file in Excel, you don't gain all of Excel's functionality. You get the same functionality you had in the browser.

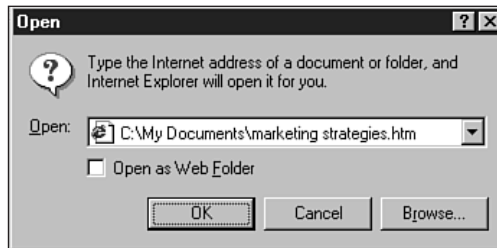
Opening a Web page in Internet Explorer (while offline) is very similar—choose **F**ile, **O**pen, and from within the Open dialog box, click the **B**rowse button to locate the file you want to open (see Figure 31.7). After selecting the file, click OK to close the Open dialog box and view the Web page.

To preview a Web page as it will actually be seen online, type the full path to the file (such as **c:\My Documents\Web Pages\budget.htm**) in the address/URL list box in the browser's window, and the published worksheet will appear onscreen. If the Web page has

already been posted to your Web site, you can use Internet Explorer's address bar to enter the Web address, such as `www.yourcompany.com/travel.htm` (see Figure 31.8). An address such as this will take you to your Web site, and, additionally, go to the .htm file posted at the site.



**Figure 31.6.**  
The Web page is displayed within a FrontPage window.

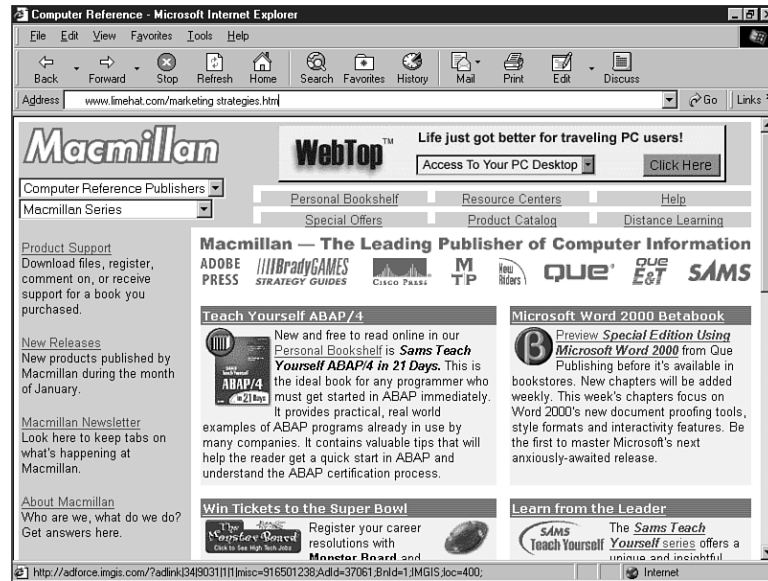


**Figure 31.7.**  
Type the path and file-name, if you know it, or click **Browse** to look for an HTML file.

Tip #355 from  
*Laurie*

If you'll be using or updating this particular page often, add it to your Favorites list in Internet Explorer.

**Figure 31.8.** Type the URL (Web address) of your posted Web page into Internet Explorer's address box.



## Copying Tabular Web Data to an Excel Worksheet

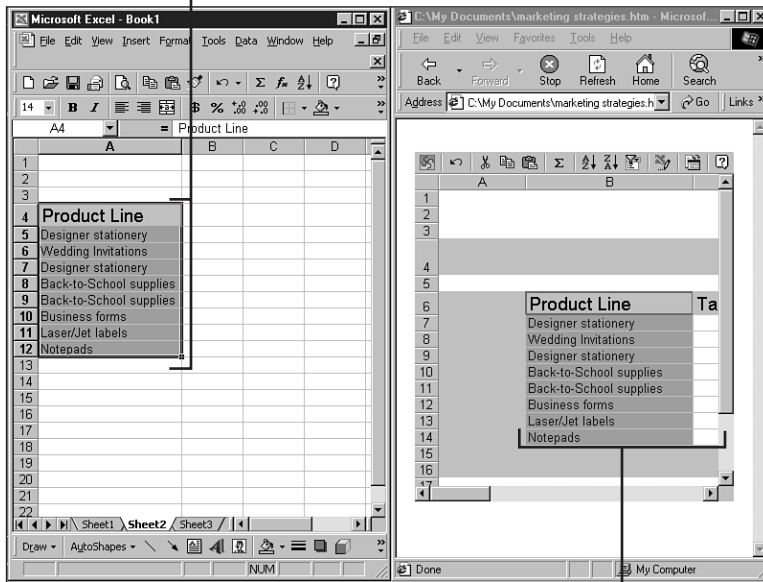
You can copy Web page content—viewed in Excel, Word, or through a browser—to an Excel worksheet by way of the *Clipboard* (page 116) or drag and drop. This capability is a significant benefit to organizations and workgroups: One person can post a worksheet on the Web and other people can not only view but also copy portions of the worksheet to their local Excel workbook, and use the data there.

To copy Excel Web content to another worksheet, follow these steps:

1. With both the Web page (in a Word or browser window) and the target Excel worksheet open, switch to the Web page.
2. Select the source cells within the Web page, and copy them to the Clipboard with your favorite copying method.
3. Switch back to the target worksheet, select the target cell, and paste the data from the Clipboard.

It can be very helpful to tile the two application windows when you're copying Web content—right-click a blank space on the taskbar and choose **Tile Vertically** (or **Horizontally**). As shown in Figure 31.9, this allows you to see both the source (Web page) and target (local worksheet).

Pasted Web content in the worksheet



Web content selected and copied

**Figure 31.9.** Tile the browser and Excel windows to facilitate copying from the Web page to the worksheet.

Using drag and drop is possible only if the application windows are tiled, as you must be able to see both the source and target locations simultaneously.

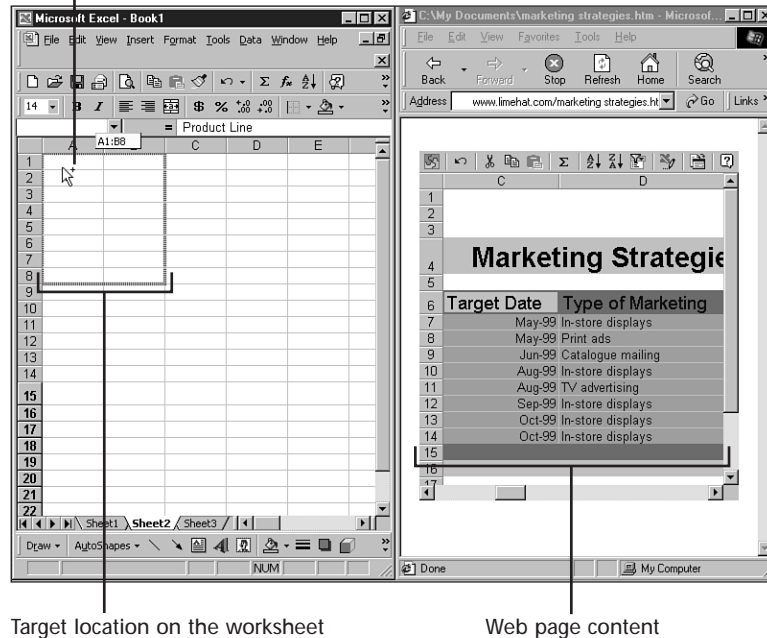
**Tip #356 from**  
*Laurie*

You may be able to drag data from the browser to Word, Excel, and PowerPoint without having to tile the windows. Drag the data from the browser down to the Office program's taskbar button. You'll see a "no drag allowed" symbol, but leave the mouse over the taskbar button for a second or two. If this feature is going to work, the program you're pointing to should activate, at which time you can drag the data up into the newly activated window and release it. (This method doesn't seem to work in all cases.)

When using drag and drop between an online view of the Web content and the local worksheet, a copy will be made by default. If you're using drag and drop between the Web page in Word and an offline view through the browser, you must press the Ctrl key while dragging in order to make a copy. If you forget to use Ctrl in this situation, you risk editing the offline Web content by removing the content that's dragged and dropped onto the worksheet. Figure 31.10 shows content being dragged from the Web page to a worksheet.

Plus sign on the mouse pointer indicates a copy is being dragged.

**Figure 31.10.**  
In lieu of the Clipboard, use drag and drop to copy content from the Web page to a worksheet on a local or network drive.



## Collaborating Online with Excel

Publishing a worksheet to the Web, placing Excel content on a Web page, and using Web content in worksheets on your local drive are significant uses of the Web in relation to Excel. These features truly expand your distribution capabilities and access to Excel data. However, in each of these situations, you're operating alone in that you're not discussing or sharing information interactively. Publishing a Web page and copying Web content to a local workbook are solitary activities, and any questions or ideas that other users might have would need to be shared through an external vehicle such as email or a phone call.

To remedy this situation, Excel 2000's online tools include *online collaboration*, enabling you to communicate live with other users—people within your organization or in the outside world—via the Internet or an intranet. Meetings can be set up for immediate collaboration or scheduled for a future date, and Web discussions can be held to share ideas and information.

### Note

Microsoft NetMeeting, the software used for collaborating "live" online, is beyond the scope of this book, but the following section provides a brief discussion of how it's used.

## Meeting with Coworkers Online

To set up an immediate meeting, choose **T**ools, **O**nline Collaboration, **M**eet Now. The Meeting dialog box opens as shown in Figure 31.11, allowing you to set up your user information—first and last name, email address, and the server to which you'll be attached for the online meeting.

The screenshot shows the Microsoft NetMeeting dialog box with the following details:

- Title Bar:** Microsoft NetMeeting
- My Information:**
  - First name: Mahmud
  - Last name: Ashran
  - Email name: mashran
  - City: Peoria
  - Country/Region: United States
  - Category: Business
- Directory:**
  - Server name: http://mso2000.mcp.com
- Buttons:** OK, Cancel

**Figure 31.11.** Identify yourself and the server to which you and your collaborators will be attached for the meeting.

If you've already provided this information on a previous collaboration, this dialog box will not appear when **M**eet Now is selected. Rather, the Place a Call dialog box will appear, enabling you to select from a list those people with whom you'd like to have an online meeting.

### Tip #357 from

*Laurie*

All the people you call must be running NetMeeting at the time you call them—otherwise, you'll just get an error message. It's a good idea to call your intended collaborators before setting up the meeting, to be sure they're on their computers, logged onto the server, and running NetMeeting.

After your meeting begins, you can use the Online Meeting toolbar to access meeting tools, as described in the following list (see Figure 31.12):

- **Participant List.** Displays a list of the people currently involved in the online collaboration.
- **Call Participant.** Reopens the Place a Call dialog box, in case you need to add a new participant.



- **Remove Participant.** If a participant logs off or exits NetMeeting, it removes him or her from the participant list.
- **Allow Others to Edit.** Gives the other participants the rights to contribute to the meeting and edit the content of the Chat and Whiteboard windows.
- **Display Chat Window.** Opens a chat-room window into which each participant can type text contributions to the meeting conversation.
- **Display Whiteboard.** Displays a window in which you can write, type, and draw, such as a whiteboard or easel in a conference room.
- **End Meeting.** Ends the online collaboration.

**Figure 31.12.**  
Control the list of meeting members or access a chat window from the Online Meeting toolbar.

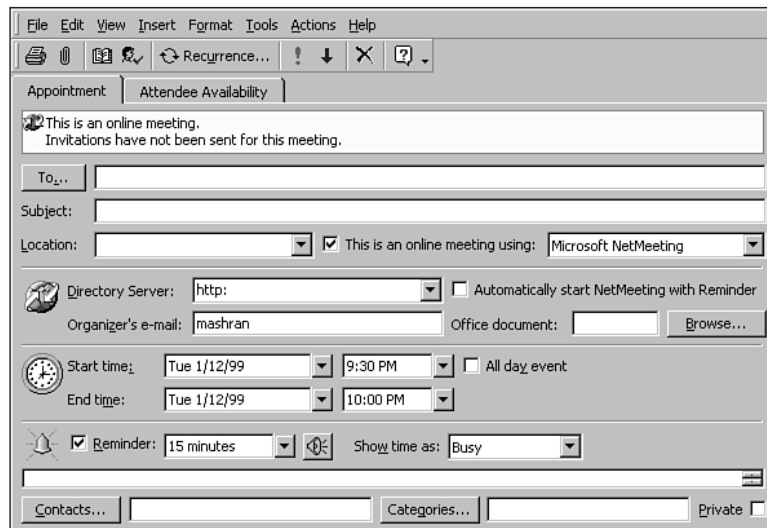


In some cases, the people with whom you'd like to collaborate aren't available right away, and you have to pick a future time to meet online. Excel gives you the ability to set up a meeting in the future, selecting the time and date for the meeting, as well as the names of the people who will be included in the meeting.

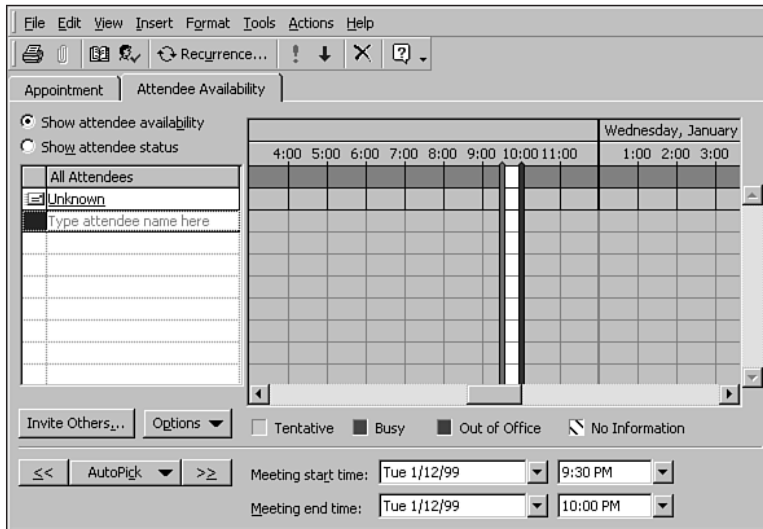
To schedule an online meeting, follow these steps:

1. Choose **T**ools, **O**nline Collaboration, **S**chedule Meeting.
2. In the resulting Outlook Meeting dialog box shown in Figure 31.13, enter the names of the people you want in the meeting, and choose the time and date for the online collaboration.

**Figure 31.13.**  
Select the date, time, and planned duration of your online meeting.



3. If you and those whom you've invited are on a network and can view each other's schedules through Outlook, click the Attendee Availability tab (see Figure 31.14) to select a time at which everyone will be free to participate.



**Figure 31.14.** Coworkers' schedules need to be up-to-date and available to you through your network in order to make proper use of Attendee Availability.

4. Click Send to send the invitations to your attendee list.

#### Note

If you're not a Microsoft Outlook user or you haven't yet set up Outlook as part of Office 2000, starting the process of scheduling an online meeting will generate a wizard that takes you through the process of setting up Outlook so that you can schedule the meeting.

## Discussing Documents Online

By placing Excel documents in HTML format at a central server location, you can collaborate on the design and use of those documents with other users—and no one is required to have Excel for this purpose. This feature is useful for creating new workbooks that will be used by more than one department, redesigning existing worksheets (especially if they're shared cross-country or cross-division), posting proposals or quarterly results, and so on.

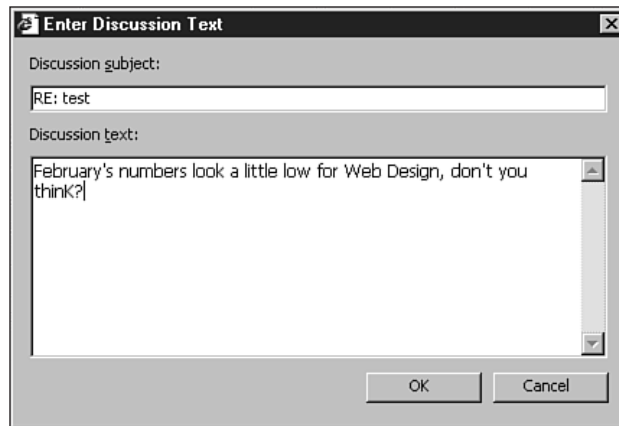
Each person who logs onto the server can open the shared document(s) and provide discussion about the document as needed, replying to existing comments and creating new comments. The discussion works like that of a newsgroup, where you post a comment and other people reply to it, or you reply to other people's comments—no one else has to be online while you are commenting or replying to other users' comments.

To enter or initiate a discussion about a document, log on to the server and open the document. Click the Discussions button on the Discussions toolbar. (If the Discussions pane or toolbar isn't visible in the Internet Explorer window, choose **V**iew, **E**xplorer Bar, **D**iscuss.)

Then choose Insert about the Document to place a comment about the document in the discussion pane, or Insert in the Document to place a comment within the document itself. The discussion pane displays the comments made by each person, his or her user name, and the comments, along with the date and time. As the discussion continues, other users can add comments, reply to comments, add questions for the group, and so forth.

Figure 31.15 shows the Enter Discussion Text dialog box (opened by choosing to insert discussion about the document) and the text of the next comment/question that will appear in the discussion.

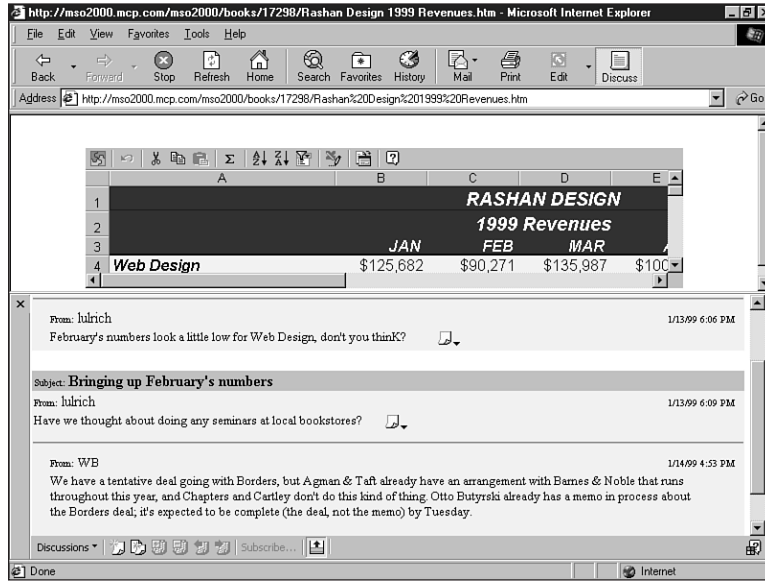
**Figure 31.15.** Type your comment or question in the Discussion Text box, and click OK to insert it into the discussion pane.



As the attendees' comments accumulate, you see them stack up in the discussion pane. Figure 31.16 shows a discussion of marketing tactics underway. To reply to a comment, edit it, or delete it, click the down arrow next to the note icon and select Reply, Edit, or Delete, as appropriate. You may be asked for additional confirmation, depending on the network setup.

#### Note

Changes like this undoubtedly will require you to have certain permissions or rights on the network. If you get error messages when trying to save, edit, or delete discussion comments, consult the network administrator.



**Figure 31.16.** Each comment/question appears with a small note icon, helping to keep each one visually separate.

## Sending Your Excel Workbook via Email

Excel enables you to share Excel workbooks via email by turning a single worksheet into the body of a message or by attaching your workbook file to an email message. When sending a workbook as an attachment, the recipient should also have Excel, and it's a good idea to find out which version she's running, to make sure you save the file in a format that will be compatible with that installed version. If the recipient will be receiving the worksheet as the body of the message, she doesn't need to have Excel unless she wants to take the message content and paste it into a worksheet of her own on her local drive.

### Tip #358 from

*Laurie*

If the recipient is a Lotus 1-2-3 user, save the Excel worksheet to a Lotus 1-2-3 format that matches that version. When in doubt, check with the recipient before sending. If that's not possible, choose the oldest version that supports all of your worksheet's content and formatting.

The exact procedure for attaching the file to the message will vary slightly with different software programs (CompuServe, America Online, Outlook, Netscape, Internet Explorer, among others) but the basic procedure consists of the following steps:

1. In the email message window, click the Attachments button. It may appear as a paper-clip button on the toolbar or as a button with the word Attach or Attachments on it.

2. In the resulting dialog box, navigate to the folder that contains the file you want to attach. Double-click the worksheet file.
3. Click OK to confirm your intention to attach the file.

The attached file will appear as an icon within the message (wherever the insertion point was when you clicked the Attach button) or listed somewhere in the window. When the recipient receives the message, double-clicking the icon in the message or clicking a Download button in the message window opens a dialog box. From there, she can choose a location to save the file or merely opt to view it onscreen without saving it to her local or network drive.

Another easy option for sending workbooks to other users via email is to use the File, Send To command from Excel. This command allows for attaching the active workbook as either body text, in which case you choose Mail Recipient from the submenu, or as an attachment to a mail message, in which case you choose Mail Recipient (as Attachment). The submenu also offers an underused but very effective Routing Recipient command, which sends the active workbook through a series of recipients either one at a time (in any order you choose) or all at once. You can even send the workbook to someone in an online meeting you're currently attending.

# CREATING A BASIC PRESENTATION

## In this chapter

*by Patrice-Anne Rutledge*

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- Saving a Presentation 42
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## UNDERSTANDING POWERPOINT PRESENTATIONS

Once you learn—or refresh your memory of—how to navigate PowerPoint, you can create a basic presentation. This chapter gets you up and running on presentation basics so you can quickly move forward to more advanced and sophisticated PowerPoint techniques.

In PowerPoint, you can create a presentation in several different ways, depending on the amount of content and design assistance you require. You can create

- *A presentation using the AutoContent Wizard* The wizard selects a design template that matches your presentation type and creates a series of slides with content and slide layout suggestions. Using the AutoContent Wizard can help you save time and provide detailed design assistance if you aren't yet design-savvy.
- *A presentation using a design template* This lets you add your own slides and content, but still have a consistent design scheme (layout, colors, fonts, and so on).
- *A blank presentation* This type of presentation includes no preset design, colors, or content suggestions. Create a blank presentation only when you are very experienced with PowerPoint and know you want to create a custom design rather than use one of PowerPoint's existing designs.

### Tip #10 from

*Patricia-Anne Rutledge*

Even if you want to create a custom presentation, it often saves you time to start with an existing design and then customize it.

## UNDERSTANDING DESIGN TEMPLATES

A *design template* (p. 40-41) includes preformatted layouts, fonts, and colors that blend together to create a consistent look and feel for your presentation. Figures 2.1 and 2.2 illustrate two sample design templates that you might use for totally different audiences and purposes.

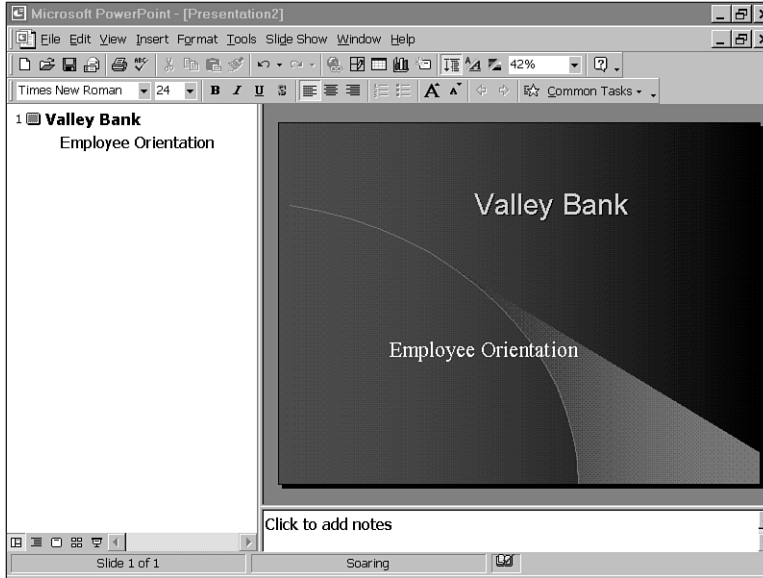
- ➔ To learn how to apply design templates, see “Working with Design Templates,” p. 550

The AutoContent Wizard automatically selects a design template that is suited to the type of presentation you want to make. If you don't use the AutoContent Wizard and instead select your own design template, be sure that the template you select matches your audience and fits the message you want to convey.

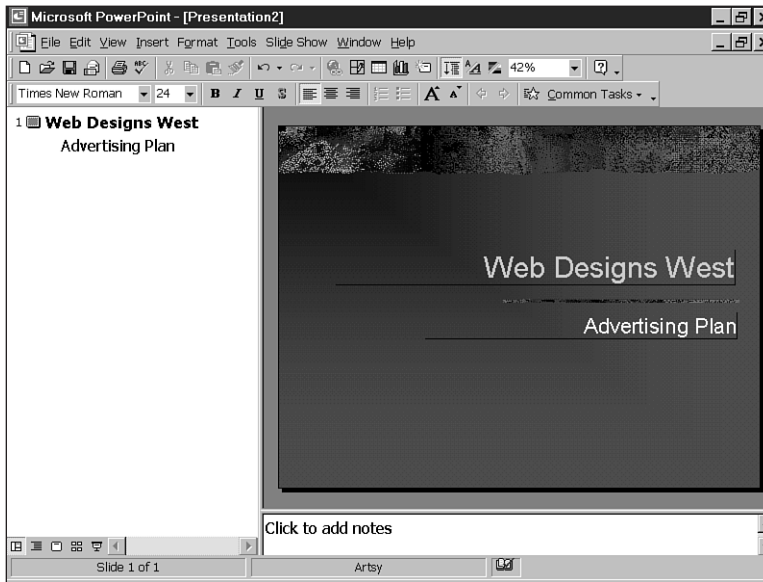
## UNDERSTANDING SLIDE LAYOUTS

In addition to a design template, the other important design feature you need to consider is a slide layout. PowerPoint includes 24 different types of layouts, called *AutoLayouts* (p. 199):

- Title Slide
- Bulleted List
- Two Column Text
- Table
- Text & Chart
- Chart & Text
- Organization Chart
- Chart
- Text & Clip Art



**Figure 2.1**  
A conservative design template such as Soaring suits a corporate audience.



**Figure 2.2**  
A more creative design template such as Artsy works better for an artsy audience.

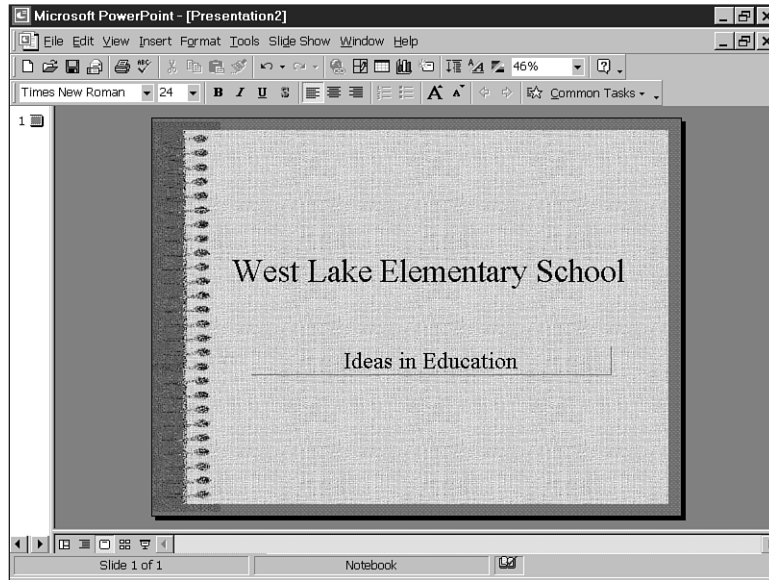
- Clip Art & Text
- Title Only
- Blank
- Text & Object
- Object & Text
- Large Object
- Object
- Text & Media Clip
- Media Clip & Text
- Object over Text
- Text over Object
- Text & Two Objects
- Two Objects & Text
- Two Objects over Text
- Four Objects



Even though PowerPoint provides a multitude of layout combinations from which to choose, these layouts only contain a total of eight different elements. These elements are

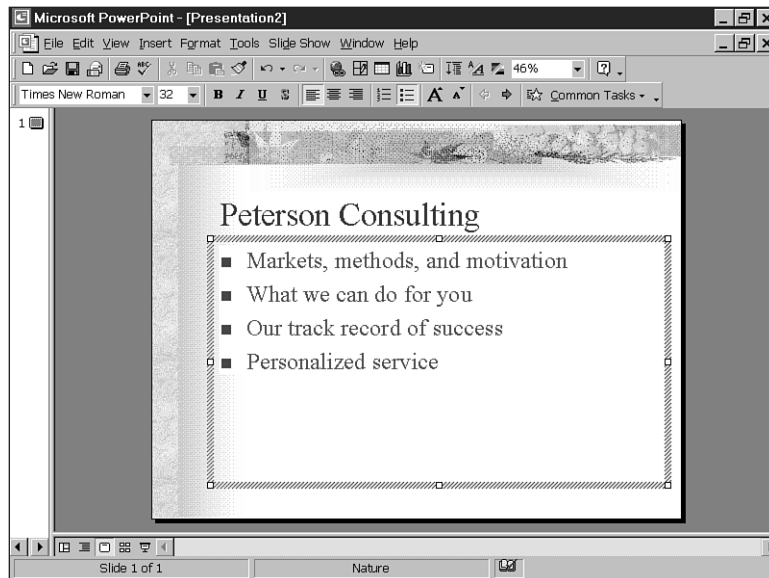
- *Titles* Inserts a text box in which you can enter a title. Figure 2.3 illustrates a title slide.

**Figure 2.3**  
Every presentation should have a title slide.



- *Lists* Inserts a bulleted list on a slide. Figure 2.4 illustrates such a list.

**Figure 2.4**  
Bulleted lists make it easier to read a series of items.

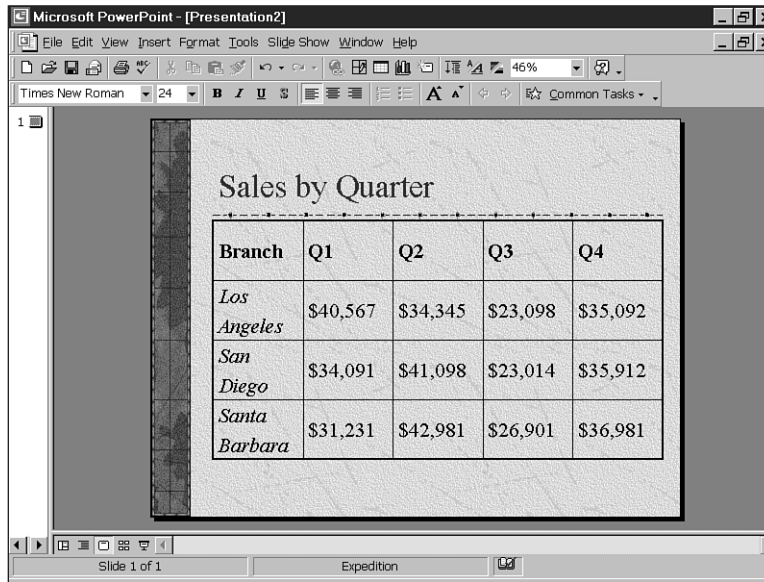


- *Tables* Inserts a table that you can format and customize. Figure 2.5 illustrates a table.
- ➔ To explore the ways you can work with tables even more, see “Working with Tables,” p. 79

**Note**

This procedure inserts a PowerPoint table. For more advanced formatting options, you may want to insert a Microsoft Word table in your presentation. To do so, select **Insert, Picture, Microsoft Word Table**.

- ➔ If you want to learn more about inserting Word tables into PowerPoint presentations, see “Inserting a Word Table,” p. 94



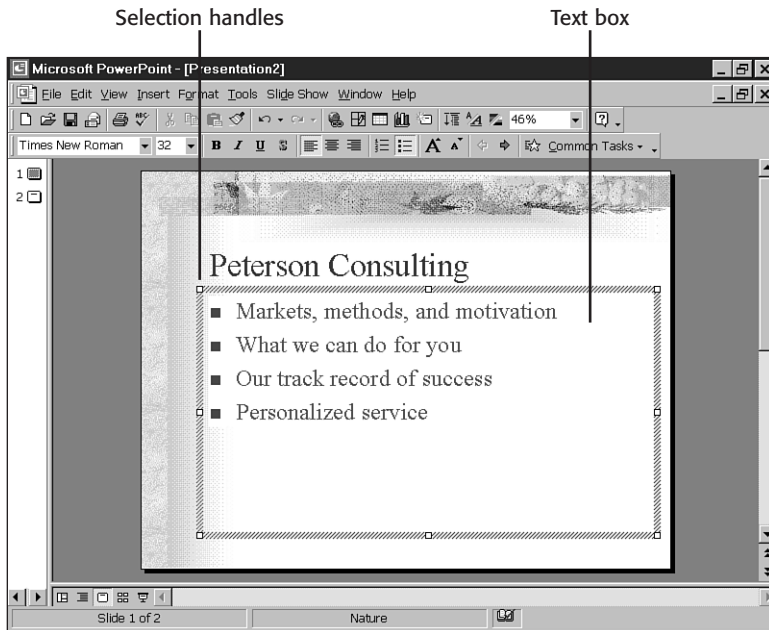
The screenshot shows a Microsoft PowerPoint window with a slide titled "Sales by Quarter". The slide contains a table with the following data:

Branch	Q1	Q2	Q3	Q4
Los Angeles	\$40,567	\$34,345	\$23,098	\$35,092
San Diego	\$34,091	\$41,098	\$23,014	\$35,912
Santa Barbara	\$31,231	\$42,981	\$26,901	\$36,981

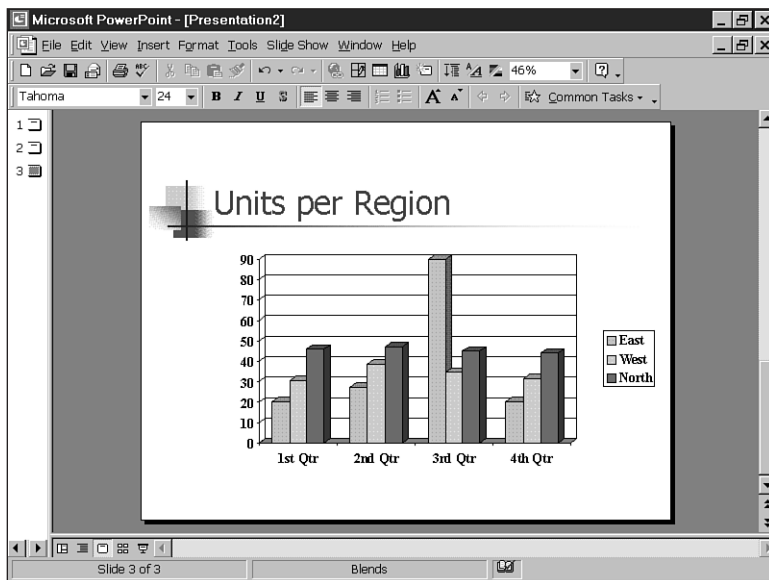
**Figure 2.5** Tables enable you to more easily present detailed information.

- *Text* Inserts a text placeholder on a slide in which you can add the desired text (see Chapter 3, “Working with Text”). Figure 2.6 illustrates a text placeholder.
  - *Charts* Inserts a chart (bar, column, pie, and so on) that you create with Microsoft Graph. Figure 2.7 illustrates a chart.
- ➔ For more information about using charts in PowerPoint, see “Working with Charts,” p. 195
- *Organization Charts* Includes an organization chart that you create with Microsoft Organization Chart (see Chapter 10, “Working with Organization Charts”). Figure 2.8 illustrates such a chart.

**Figure 2.6**  
The way you present text can affect how your presentation is perceived.



**Figure 2.7**  
Charts can add visual punch to a presentation.

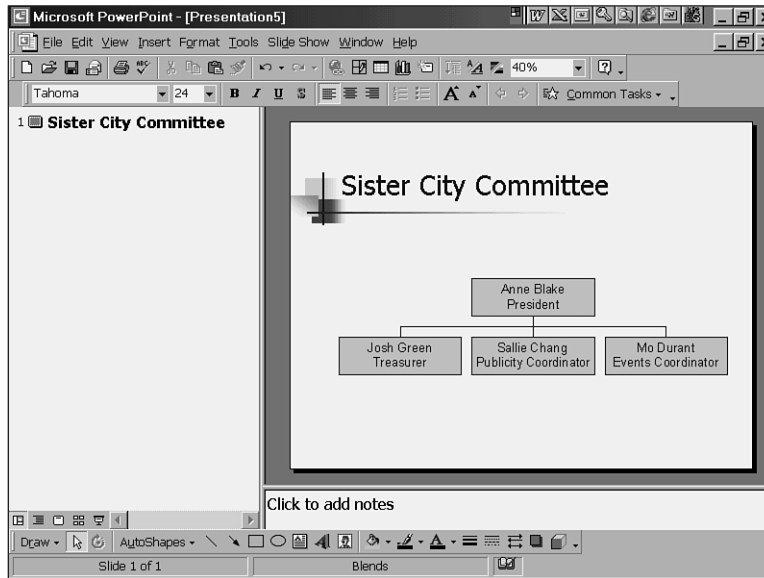


- *Clip Art* Inserts a clip art image you choose from the Clip Gallery. Figure 2.9 illustrates a slide that contains clip art.

**Tip #11 from**  
*Patricia-Anne Rutledge*

Before inserting your own art here, you can first import it into the Clip Gallery.

➔ To learn how to import graphic images into the Clip Gallery, see “Importing Clips,” p. 258



**Figure 2.8** Use an organization chart to help you present your organization to new team members.



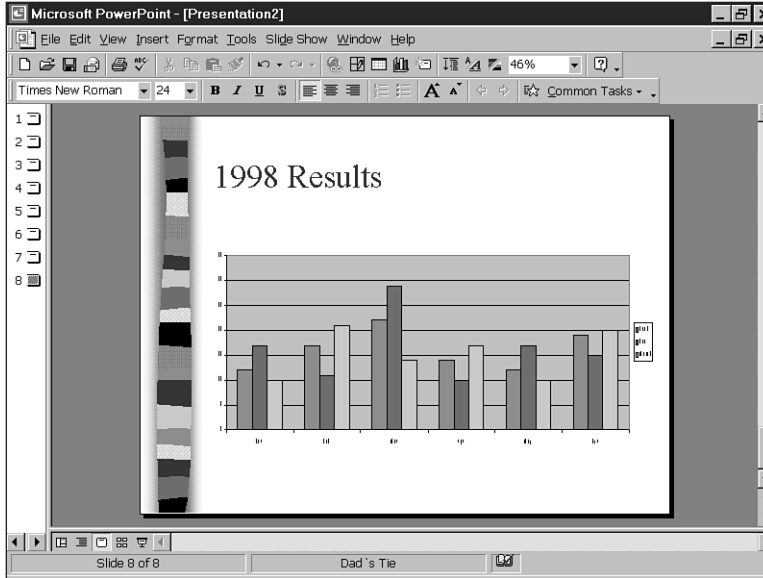
**Figure 2.9** The Clip Gallery provides numerous illustration choices.

When you double-click an object placeholder, the Insert Object dialog box displays. From this dialog box, you can select or create a variety of objects (see Figure 2.10). Some examples include

- Adobe Control for ActiveX
- Adobe Acrobat Object
- Bitmap Image
- Calendar Control 9.0
- Comic Chat Room
- Image Document
- Lotus 1-2-3 97 Workbook
- Lotus Word Pro 97 Document
- Macromedia Shockwave Director Control
- Media Clip
- Microsoft Clip Gallery
- Microsoft Excel Chart
- Microsoft Excel Worksheet
- Microsoft Graph 2000 Chart
- Microsoft PowerPoint Presentation
- Microsoft PowerPoint Slide
- Microsoft Word Document
- Microsoft Word Picture
- MIDI Sequence
- Netscape Hypertext Document
- Package
- Paintbrush Picture
- RegWizCtrl
- Sax Webster Control V2.2
- Video Clip
- Wave Sound
- WordPad Document

➔ For more information about using objects in PowerPoint presentations, see “Creating and Formatting Objects,” p. 267

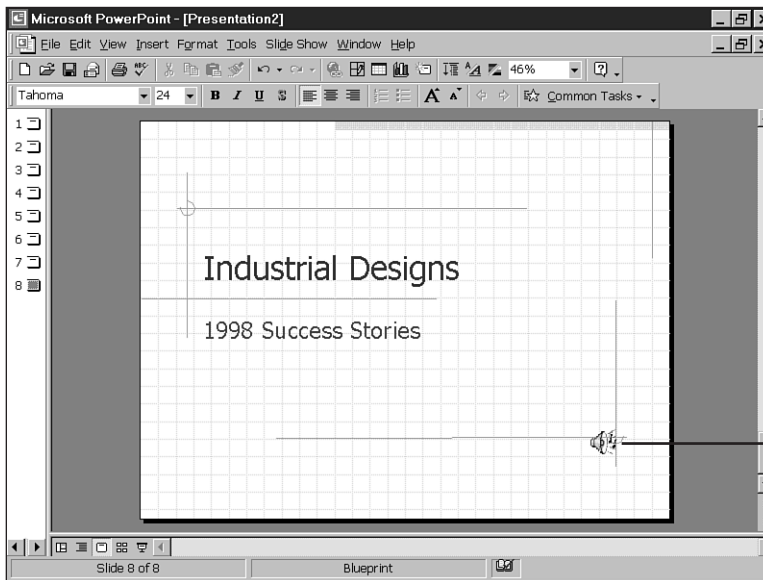
- *Media Clips* Inserts a media clip such as a sound or movie file. Figure 2.11 illustrates a slide that includes a media clip.



**Figure 2.10**  
You can insert a variety of different objects into a PowerPoint presentation, such as this Excel chart.

**Note**

A media clip is a special kind of object that you use specifically to insert a sound or movie file. You can choose an AutoLayout that includes an Object to insert a media clip as well, but it's usually easier to select a layout that specifies Media Clip if this is what you want.



**Figure 2.11**  
PowerPoint offers the ability to insert sound or movie files.

- ➔ To learn more about inserting media clips, see “Adding Movies and Sound,” p. 299

If none of these predefined layouts is what you want, you can modify a blank slide or customize one of the existing layouts by adding, moving, or deleting objects.

## USING THE AUTOCONTENT WIZARD

The AutoContent Wizard guides you step-by-step through the creation of a PowerPoint presentation and is the option that provides the most assistance and automation. You answer a few basic questions about the type of presentation you need to make and PowerPoint does the rest. The end result is a complete series of slides with content suggestions based on the presentation type you chose. PowerPoint also applies a design template suitable to the type of presentation you need to make and applies a layout to each individual slide.

- ➔ To learn techniques for adding dynamic content to your presentations, see “The Message—Scripting the Concept,” p. 493

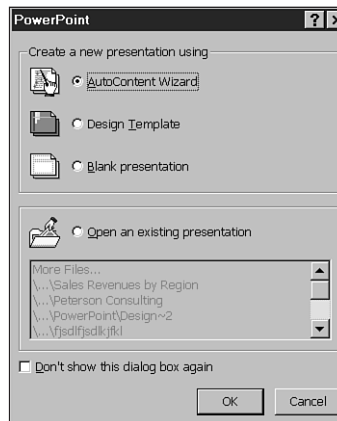
From there you can revise the content suggestions with your own information and you’re ready to do the presentation. Or, you can modify the actual appearance of the presentation by applying a different design template, modifying the design, adding or removing slides, and so forth.

To use the wizard when you first start PowerPoint, follow these steps:

1. Select Start, Programs, Microsoft PowerPoint. The PowerPoint dialog box displays, as shown in Figure 2.12.

**Figure 2.12**

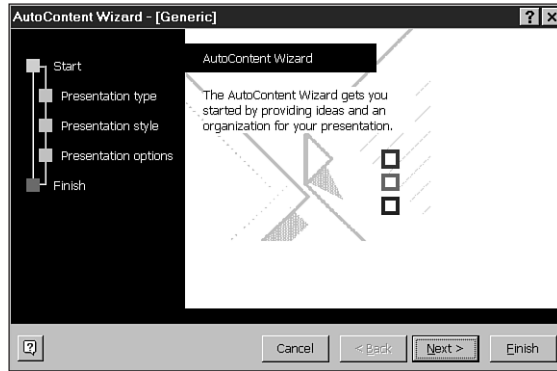
You can choose what you want to do when you first start PowerPoint.



**Tip #12 from**  
*Patricia-Anne Rutledge*

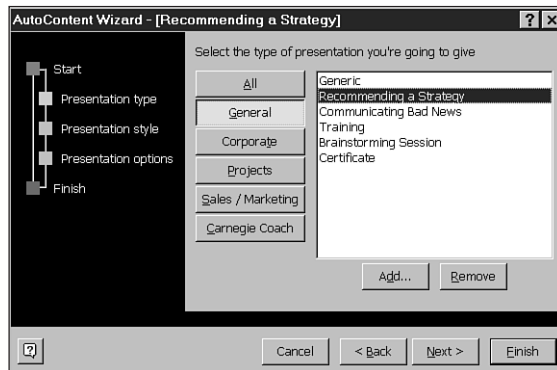
You can also start the AutoContent Wizard from within PowerPoint. To do so, select File, New to display the New Presentation dialog box. Select AutoContent Wizard on the General tab and click OK.

2. Select the AutoContent Wizard option button and click OK. The wizard displays (see Figure 2.13).



**Figure 2.13**  
The AutoContent Wizard offers detailed guidance on creating a presentation.

3. Click **N**ext to continue to the next step, as shown in Figure 2.14.



**Figure 2.14**  
You can choose from a variety of presentations in specific category groups.

4. Click the category button that represents the type of presentation you want to create. The adjacent box displays the available presentations, listed in Table 2.1.

**TABLE 2.1 POWERPOINT PRESENTATION TYPE**

Presentation Type	Options
General	Generic Recommending a Strategy Communicating Bad News Training Brainstorming Session Certificate
Corporate	Business Plan Financial Overview Company Meeting

*continues*



TABLE 2.1 CONTINUED

Presentation Type	Options
Corporate (cont'd)	Employee Orientation Group Home Page Company Handbook
Projects	Project Overview Reporting Progress or Status Project Post-Mortem
Sales/Marketing	Selling a Product or Service Marketing Plan Product/Services Overview
Carnegie Coach	Selling Your Ideas Motivating a Team Facilitating a Meeting Presenting a Technical Report Managing Organizational Change Introducing and Thanking a Speaker

5. Select the presentation you want to use and click Next. Figure 2.15 illustrates the next step.

**Caution**

Not all presentations are initially installed. PowerPoint lets you know if you choose a presentation that isn't currently installed and asks if you want to install it. You must have your Office 2000 installation CD in the CD-ROM drive to do this.

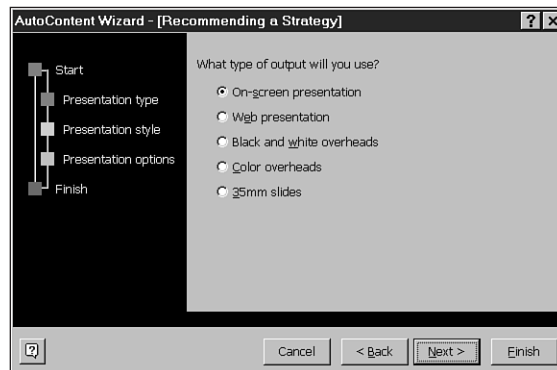
**Tip #13 from**

*Patricia-Anne Rutledge*

To add your own presentation to the AutoContent Wizard, click the **Add** button. To remove a presentation, click **Remove**.

**Figure 2.15**

The type of output you choose affects the presentation background the wizard applies.



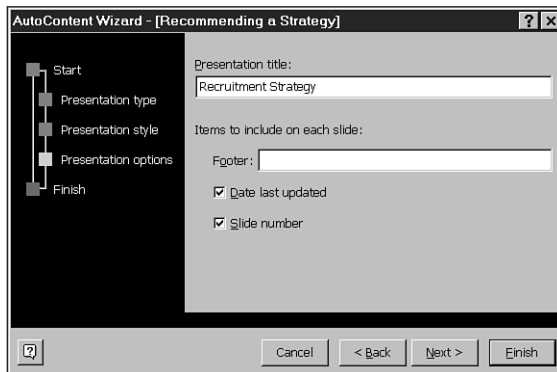
6. Select the type of output to use. Choices include
  - On-screen presentation
  - Web presentation
  - Black-and-white overheads
  - Color overheads
  - 35mm slides

PowerPoint chooses a background and color scheme suited to the output you select.

**Tip #14 from**  
*Patricia-Anne Rutledge*

To change this background after you've created your presentation, select **Format, Slide Color Scheme** to open the Color Scheme dialog box.

7. Click **N**ext to continue, shown in Figure 2.16.



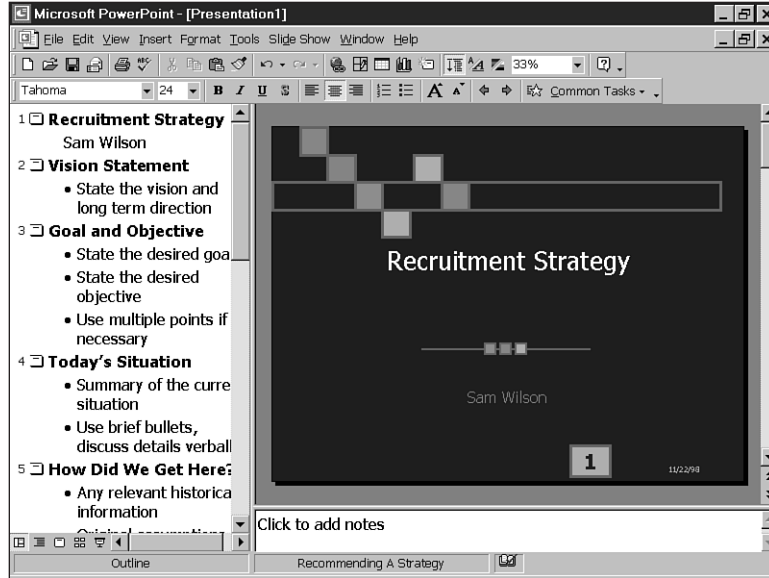
**Figure 2.16**  
In the final step, you enter a title and choose optional footers, numbers, and dates.

8. Enter a presentation title.
9. If you want to include a footer on each slide, enter it.
10. Select **D**ate last updated or **S**lide number to include this information in the presentation.
11. Click **F**inish.

PowerPoint displays a sample presentation with slides you can view from the outline section of the window. Figure 2.17 illustrates a sample presentation for facilitating a meeting.

You can then replace the existing text with content that reflects your own needs. You can also delete images and slides that you don't need, change the design of your presentation, and otherwise modify it to your satisfaction.

**Figure 2.17**  
The AutoContent Wizard includes content suggestions for facilitating a meeting.



## CREATING A PRESENTATION USING A DESIGN TEMPLATE

If you don't need the assistance of the AutoContent Wizard to create sample slides and content for you, you can start with a design template and then add your own slides and content.

To create a presentation with a design template when you first start PowerPoint, follow these steps:

1. Select the Design Template option in the PowerPoint dialog box that displays when you first start PowerPoint. The New Presentation dialog box appears with the Design Templates tab selected, illustrated in Figure 2.18.

**Figure 2.18**  
PowerPoint includes several design templates from which to choose.



**Tip #15 from**  
*Patricia-Anne Rutledge*

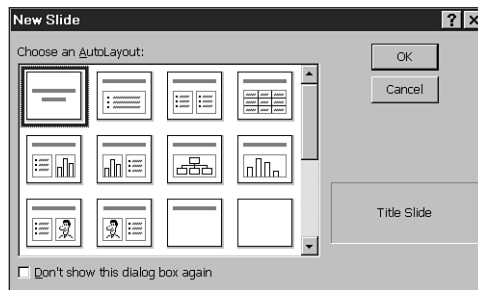
To access this dialog box from within PowerPoint, select **F**ile, **N**ew. You can then select the Design Templates tab to access the various templates.

2. Select the template you want to use; the Preview box lets you see what it looks like.

**Caution**

Not all design templates are already installed. If PowerPoint displays a warning that you need to install a template, be sure to have the program CD in your CD-ROM drive, and then follow the installation instructions in the warning.

3. Click OK to apply the selected template.
4. The New Slide dialog box appears, shown in Figure 2.19.



**Figure 2.19**  
The New Slide dialog box lets you choose the layout for your slide.

5. Select the AutoLayout that you want to use in your first slide and then click OK. Each layout option includes a preview box that shows you approximately what the layout will look like onscreen.
6. Click OK.

**Tip #16 from**  
*Patricia-Anne Rutledge*

You can also create your own design templates and save them for future use. To save a presentation as a design template, choose Design Template in the Save As Type field in the Save As dialog box.

## CREATING A BLANK PRESENTATION

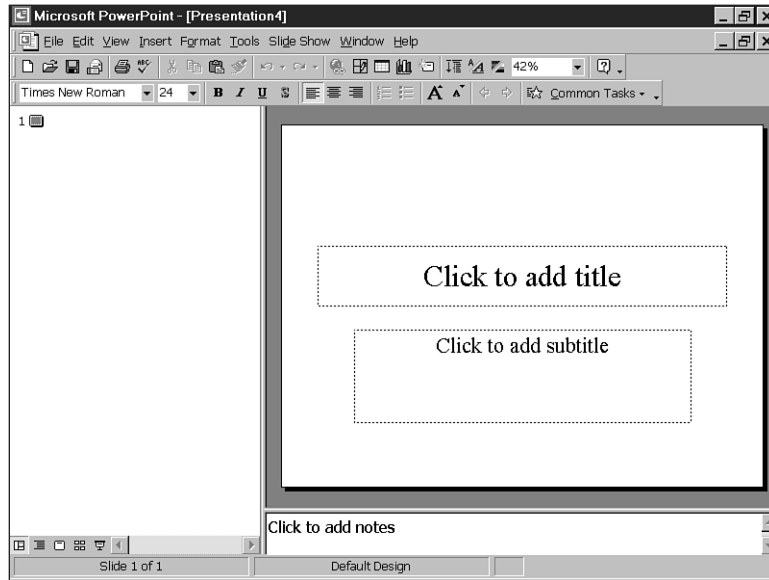
You can create a blank presentation in one of two ways:

- Select the **B**lank Presentation option in the initial PowerPoint dialog box that appears when you first start PowerPoint.
- Select **F**ile, **N**ew and choose Blank Presentation from the New Presentation dialog box General tab.

The New Slide dialog box appears. Choose the AutoLayout you want to use in your presentation and click OK.

Figure 2.20 illustrates a sample blank presentation.

**Figure 2.20**  
To have complete design control you can use a blank presentation.



Remember that a blank presentation doesn't include a design template unless you attach one manually.

### Caution

Creating a blank presentation takes more time and is really recommended only if neither the AutoContent Wizard nor any of the existing design templates suits your needs.

## SAVING A PRESENTATION

To save a PowerPoint presentation you created, follow these steps:

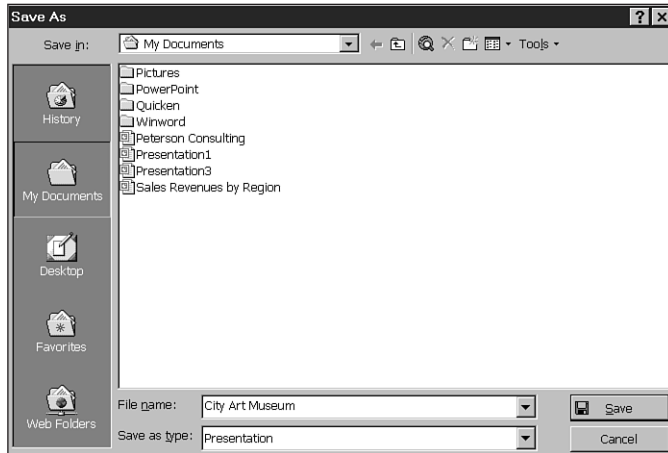


1. Click the Save button on the Standard toolbar. The Save As dialog box displays, shown in Figure 2.21.

**Tip #17 from**  
*Patricia-Anne Rutledge*

You can also press Ctrl+S to open this dialog box.

2. Select the folder in which you want to save your presentation from the Save in drop-down list.



**Figure 2.21**  
Specify save parameters in this dialog box.

**Tip #18 from**  
*Patricia-Anne Rutledge*

The default folder in which to save your presentations is My Documents. You can customize the default folder in the Options dialog box.

3. Enter a name for the presentation in the File name field.

**Caution**

The drop-down list in the File Name field includes previously saved presentations. Be sure not to choose one of these file names and accidentally overwrite an existing presentation.

4. Choose the file format from the Save as type drop-down list.

Presentation is the default file type, but you can also save your PowerPoint presentation as a Web page, a design template, or in a previous PowerPoint version format such as PowerPoint 97 or PowerPoint 95. Table 2.2 lists the available options for saving your presentation:

**TABLE 2.2 POWERPOINT FILE TYPES**

File Type	Extension	Result
Presentation	PPT	Saves as a regular PowerPoint presentation
Web Page	HTM	Saves as a presentation that opens in a Web browser
PowerPoint 95	PPT	Saves in this previous version of PowerPoint
PowerPoint 97-2000 & 95 Presentation	PPT	Saves as a presentation you can open in PowerPoint 95, 97, or 2000

*continues*

TABLE 2.2 CONTINUED

File Type	Extension	Result
PowerPoint 4.0	PPT	Saves as a PowerPoint 4.0 presentation
Design Template	POT	Saves as a design template that you can use for future presentations
PowerPoint Show	PPS	Enables you to run the presentation directly as a slide show
PowerPoint Add-In	PPA	Saves as a custom add-in
GIF Graphical Interchange Format	GIF	Saves as a graphic for use on the Web
JPEG File Interchange Format	JPG	Saves as a graphic for use on the Web
PNG Portable Network Graphic Format	PNG	Saves as a graphic for use on the Web
Device Independent Bitmap	BMP	Saves as a bitmap graphic image
Windows Metafile	WMF	Saves as a graphic image
Outline/RTF	RTF	Saves as an outline
Tag Image File Format	TIF	Saves as a TIFF graphic image

5. Click **S**ave to save the file.

#### Tip #19 from

*Patrice-Anne Rutledge*

After you've saved a presentation, clicking the **S**ave button once saves your changes without opening the Save As dialog box. To access this dialog box from a presentation that you've already saved, choose **F**ile, **S**ave **A**s.

#### Note

To set and modify save options such as fast saves and AutoRecovery, choose **T**ools, **O**ptions and go to the Save tab of the Options dialog box.

➔ To learn more about advanced save options, see "Setting Save Options," p. 472

## OPENING A PRESENTATION

You can open an existing presentation in several different ways:

- Select the **O**pen an existing presentation option when you first start PowerPoint.

#### Tip #20 from

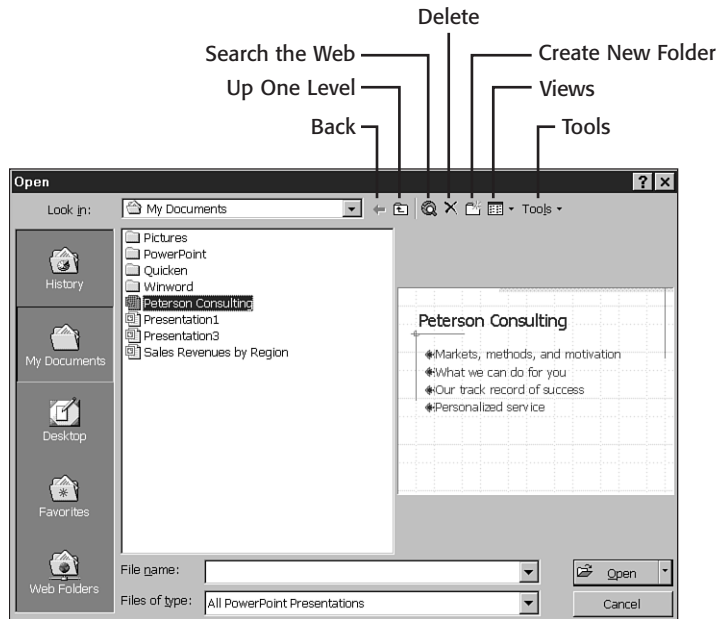
*Patrice-Anne Rutledge*

You can also directly open one of the last four PowerPoint files you used by selecting it in the text box at the bottom of the dialog box. From within PowerPoint, the bottom of the File menu lists previously opened presentations.



- Click the Open button on the standard toolbar if PowerPoint is already open.
- Press Ctrl+O from within PowerPoint.
- Double-click a PowerPoint presentation from the Windows Explorer.
- Choose File, Open from the menu within PowerPoint.

The Open dialog box appears, shown in Figure 2.22.



**Figure 2.22**  
The Open dialog box includes many additional features, including file management and search capabilities.

Select the folder and then the file that you want to open and click Open. PowerPoint opens the selected presentation.

**Tip #21 from**  
*Patrice-Anne Rutledge*

You can use wildcard such as an asterisk (\*) to locate multiple characters or the question mark (?) to locate specific characters in the File Name field.

The down arrow to the right of the Open button provides several other options. You can also

- *Open Read-Only* Opens the file as read-only. To make changes and save this file, choose File, Save As from the menu and save with another name.
- *Open as Copy* Opens the presentation as a copy of the original.
- *Open in Browser* Opens a presentation saved in a Web page format (.HTM, .HTML, .HTX, or .ASP) in your default browser.

➔ If you want to save a presentation as a Web page, see “Saving a Presentation as a Web Page,” p. 353



## EXPLORING THE OPEN DIALOG BOX

The top portion of the Open dialog box includes several buttons that assist with both opening files as well as with file management. These include

- *Back* This button returns you to previous folders or drives you have viewed. It lists the name of the folder as the button name.
- *Up One Level* Moves up one level in the directory structure.
- *Search the Web* Opens the Pick a Search Engine page on the Microsoft Web site.
- *Delete* Deletes the selected file.
- *Create New Folder* Opens the New Folder dialog box in which you can enter a Name for a new folder.
- *Views* Includes several options for displaying your files as well as the ability to arrange icons by name, type, size, and date.
- *Tools* Displays a menu that enables you to find, rename, delete, or print files as well as add them to your favorites folder, map to a network drive to find a file, or display file properties.

### SETTING VIEW OPTIONS

You can view files in four different ways in the Open dialog box. Click the down arrow next to the Views button and choose the view option you prefer:

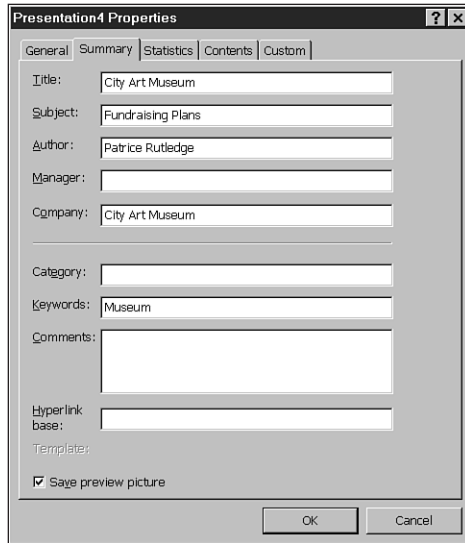
- *List* Lists all files without any detail
- *Details* Lists file size, type, and date last modified
- *Properties* Displays a property sheet for the selected file
- *Preview* Displays a preview of the actual presentation for the selected file

### SEARCHING FOR A FILE

Sometimes you won't be able to immediately find a presentation you want to open. You may have so many saved presentations that it's difficult to find files whose names you've forgotten. Or you may have saved the file you're looking for in another folder and can't locate it. Using the Find dialog box you can conduct sophisticated searches based on presentation properties to help you find the exact file you need.

These properties align to the information you see in the Properties dialog box. To access this dialog box, choose **File, Properties**. Figure 2.23 illustrates the Summary tab of the Presentation Properties dialog box.

- ➔ If you want to know the exact definition of each file property, see "Setting Presentation Properties," p. 475



**Figure 2.23**  
You can search on the properties that display in this dialog box.

Table 2.3 lists all the properties you can search in the Find dialog box as well as the conditions available for each, which fall into three main categories: text, numbers, and dates.

TABLE 2.3 FIND DIALOG BOX PROPERTIES AND CONDITIONS	
Properties	Available Conditions
Application Name	Includes words, Includes phrase, Begins with phrase, Ends with phrase, Includes near each other, Is (exactly), Is not
Author	Includes words, Includes phrase, Begins with phrase, Ends with phrase, Includes near each other, Is (exactly), Is not
Category	Includes words, Includes phrase, Begins with phrase, Ends with phrase, Includes near each other, Is (exactly), Is not
Comments	Includes words, Includes phrase, Begins with phrase, Ends with phrase, Includes near each other, Is (exactly), Is not
Company	Includes words, Includes phrase, Begins with phrase, Ends with phrase, Includes near each other, Is (exactly), Is not
Contents	Includes words, Includes phrase, Includes near each other
Creation date	Yesterday, Today, Last week, This week, Last month, This month, Any time, Anytime between, On, On or after, On or before, In the last
File Name	Includes, Begins with, Ends with
File of type	All files, All PowerPoint presentations, Presentations and shows, Web pages, Design templates, Freelance Windows, All outlines, PowerPoint add-ins

*continues*

TABLE 2.3 CONTINUED

<b>Properties</b>	<b>Available Conditions</b>
Format	Includes words, Includes phrase, Begins with phrase, Ends with phrase, Includes near each other, Is (exactly), Is not
Hyperlink base	Includes words, Includes phrase, Begins with phrase, Ends with phrase, Includes near each other, Is (exactly), Is not
Keywords	Includes words, Includes phrase, Begins with phrase, Ends with phrase, Includes near each other, Is (exactly), Is not
Last modified	Yesterday, Today, Last week, This week, Last month, This month, Any time, Anytime between, On, On or after, On or before, In the last
Last printed	Yesterday, Today, Last week, This week, Last month, This month, Any time, Anytime between, On, On or after, On or before, In the last
Last saved by	Includes words, Includes phrase, Begins with phrase, Ends with phrase, Includes near each other, Is (exactly), Is not
Manager	Includes words, Includes phrase, Begins with phrase, Ends with phrase, Includes near each other, Is (exactly), Is not
Number of characters	Equals, Does not equal, Any number between, At most, At least, More than, Less than
Number of characters and spaces	Equals, Does not equal, Any number between, At most, At least, More than, Less than
Number of hidden slides	Equals, Does not equal, Any number between, At most, At least, More than, Less than
Number of lines	Equals, Does not equal, Any number between, At most, At least, More than, Less than
Number of multimedia clips	Equals, Does not equal, Any number between, At most, At least, More than, Less than
Number of notes	Equals, Does not equal, Any number between, At most, At least, More than, Less than
Number of pages	Equals, Does not equal, Any number between, At most, At least, More than, Less than
Number of paragraphs	Equals, Does not equal, Any number between, At most, At least, More than, Less than
Number of slides	Equals, Does not equal, Any number between, At most, At least, More than, Less than
Number of words	Equals, Does not equal, Any number between, At most, At least, More than, Less than
Revision	Includes words, Includes phrase, Begins with phrase, Ends with phrase, Includes near each other, Is (exactly), Is not
Size	Equals, Does not equal, Any number between, At most, At least, More than, Less than

Properties	Available Conditions
Subject	Includes words, Includes phrase, Begins with phrase, Ends with phrase, Includes near each other, Is (exactly), Is not
Template	Includes words, Includes phrase, Begins with phrase, Ends with phrase, Includes near each other, Is (exactly), Is not
Text or property	Includes words, Includes phrase, Includes near each other
Title	Includes words, Includes phrase, Begins with phrase, Ends with phrase, Includes near each other, Is (exactly), Is not
Total editing time	Equals, Does not equal, Any number between, At most, At least, More than, Less than

Depending on your selection in the Condition field, the Value field may activate. If you search the Last Printed property and choose Yesterday as your condition, no further value is required. However, if you choose to search the Title property and select Includes words as the condition, you have to enter a Value to indicate the exact words to include.

For example, let's say you want to find a specific presentation whose file name you've forgotten. You do remember, however, that you created the presentation sometime last week. To find this file, you could search the Creation Date property for the Last Week condition. Based on this information, you can locate all presentations created within the past week, which should narrow your search considerably.

As another example, let's say you entered a keyword in the Keywords field in the Properties dialog box. You can now search for this word to help you locate an elusive presentation. In this case, you would select Keywords as your property, use the condition Is, and enter the exact Value, such as *Budget* or *Orientation*.

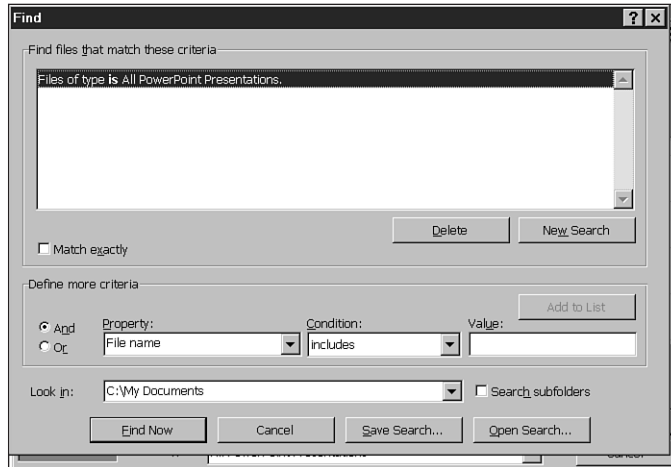
There are several things to keep in mind as you set criteria. You can

- Use wildcards with text conditions such as Is or Includes. A question mark (?) matches a single character and an asterisk (\*) matches multiple characters. For example, pr\* would match both presentation and present. Pr? would match pro, but not presentation or present, because it only looks for single characters.
- Specify the Any Number Between condition by using the following format in the Value field: 1 and 2, 10 and 20, and so forth. Be sure to use the word AND to separate the two conditions.
- Use the operators AND and OR to indicate whether to search for files that meet all criteria or only one of the selected criteria.
- Specify the Any Time Between condition by using the following format in the Value field: 11/1/98 AND 11/30/98, 1/1/99 AND 12/31/99, and so forth.

To use the Find dialog box, follow these steps from the Open dialog box:

1. Select Tools, Find to display the Find dialog box (see Figure 2.24).

**Figure 2.24**  
You can search for a presentation in the Find dialog box.



2. By default, *Files of Type is All PowerPoint Presentations* is listed as a criterion in the top portion of the dialog box. You can leave this criterion in the list, or select it and click the Delete button to remove it.
3. You can add your own criteria in the Define More Criteria group box by selecting a Property and Condition.
4. If required, enter a Value that matches the criterion for which you're searching.
5. Choose either the And or Or option button to specify whether the search should look for this criterion *and* other specified criteria or whether it should look for this criterion *or* other specified criteria.
6. Click the Add to List button to add this search criterion to the list above.
7. Continue adding search criteria in the Define More Criteria group box as needed.
8. In the Look In field, select the folder you want to search from the drop-down list.
9. Click the Search Subfolders check box if you want to search all subfolders of the folder you selected in the previous step.
10. Click Find Now to begin the search.

**Tip #22 from**  
*Patricia-Anne Rutledge*

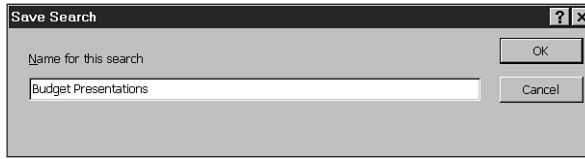
Click the New Search button to delete the criteria you've added and start again.

PowerPoint finds matching presentations and includes them in the Open dialog box.

**Tip #23 from**  
*Patricia-Anne Rutledge*

To locate all PowerPoint presentations on your computer don't enter anything in the Value field, select C:\ in the Look in field, and click Find Now.

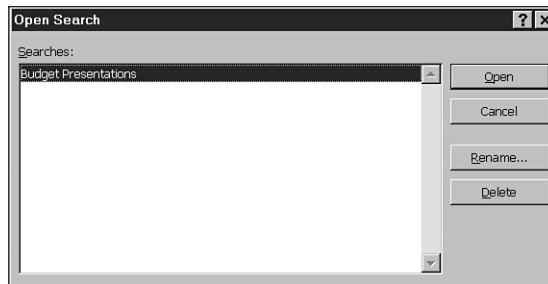
If you want to save these search criteria for a future search, click the Save Search button. Figure 2.25 illustrates the Save Search dialog box which opens.



**Figure 2.25**  
Save a search so you don't have to enter it again.

Enter a Name for this Search and click OK.

To open this search later on without having to enter all the search criteria again, click the Open Search button in the Open dialog box. Figure 2.26 illustrates the Open Search dialog box, which appears.



**Figure 2.26**  
You can open and reuse a saved search.

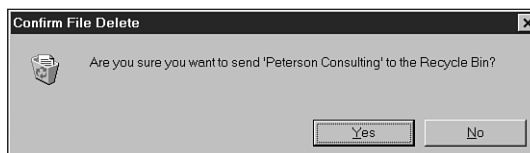
Select the search you want and click Open. The saved search criteria appear in the Open dialog box.

**Tip #24 from**  
*Patrice-Anne Rutledge*

You can also Rename and Delete saved searches in the Open Search dialog box.

## DELETING A PRESENTATION

To delete a PowerPoint presentation you no longer want, select it in the Open dialog box and click the Delete key. A warning dialog box displays, verifying that you want to delete the file and send it to the Recycle Bin. Figure 2.27 illustrates this dialog box. Click Yes to confirm the deletion.



**Figure 2.27**  
PowerPoint confirms you want to delete a presentation.

**Tip #25 from***Patrice-Anne Rutledge*

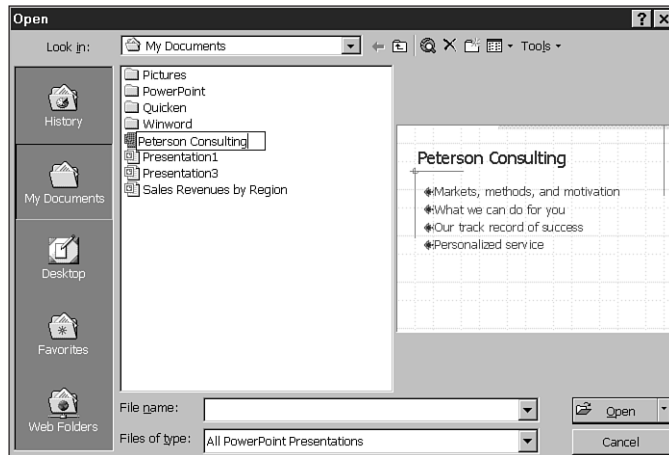
You can also delete a PowerPoint presentation in Windows Explorer. To do so, click on the presentation file in Explorer and press the Delete key to remove the file to the Recycle Bin.

## RENAMING A PRESENTATION

To rename a PowerPoint presentation, select it in the Open dialog box, right-click, and choose Rename from the menu that displays. PowerPoint converts the filename to an edit box in which you can overwrite the filename, as shown in Figure 2.28.

**Figure 2.28**

Rename a presentation to something more meaningful.

**Tip #26 from***Patrice-Anne Rutledge*

You can also convert the field to an edit box by slowly clicking the file you want to rename two times.

**Tip #27 from***Patrice-Anne Rutledge*

Again, you can also rename a PowerPoint presentation in Windows Explorer. To do so, select the file in Explorer, right-click, choose Rename from the menu, and enter a new name for the presentation.

## TROUBLESHOOTING

*My presentation didn't save in the folder I thought it would.*

By default, your presentation is saved in the My Documents folder unless you manually specify another location in the Save As dialog box. To change this default, choose Tools, Options and choose a different Default File Location in the Save tab.

*I can't find a PowerPoint presentation I saved.*

In the Open dialog box, verify that you made the appropriate selection from the Files of Type drop-down list. For example, if you're looking for a PowerPoint Presentation or a Web page, be sure you've selected that option. Also, verify that you're searching in the right folder. If you still can't find your presentation, do a search using the Find dialog box (Tools, Find from within the Open dialog box).

*I want to open my presentation in a browser, but the Open in Browser option isn't available from the menu next to the Open button in the Open dialog box.*

You must have saved the presentation in a Web format (such as .HTM, .HTML, .HTX, or .ASP) in order to open it in a browser. To save as a Web page, choose File, Save as Web Page.

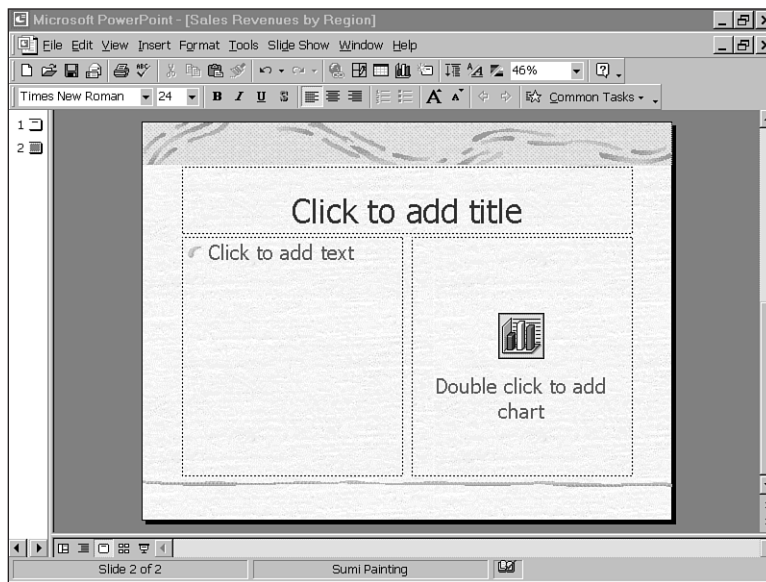
*I don't like any of the existing design templates. What can I do?*

You can create your own design template and then save it for future use. Start by modifying an existing template and then save it as a design template in the Save As dialog box.

## DESIGN CORNER

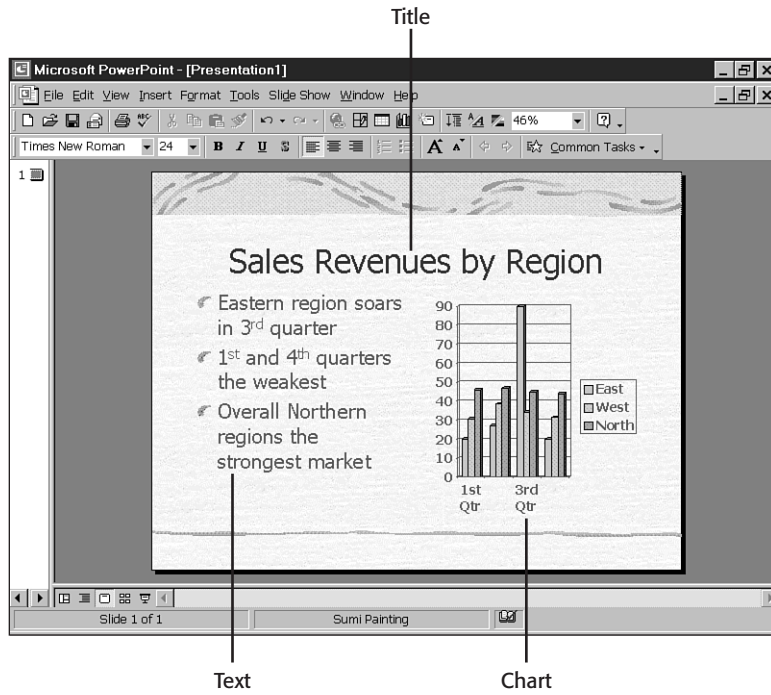
By using the Text & Chart AutoLayout, you can quickly create a slide that includes a title, bulleted list, and chart. The new slide includes placeholders and prompts to help guide you in creating your content.

### BEFORE





AFTER



# ORGANIZING YOUR PRESENTATION IN OUTLINE VIEW

## In this chapter

*by Patrice-Anne Rutledge*

- Exploring PowerPoint's Outlining Features 102
- Organizing Presentations 102
- Understanding Outline View 103
- Using the Outlining Toolbar 104
- Promoting and Demoting Outline Points 105
- Moving Outline Points Up and Down 107
- Collapsing and Expanding Outline Points 108
- Creating a Summary Slide 110
- Showing Slide Formatting 110
- Importing Outlines from Microsoft Word and Other Programs 112
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## EXPLORING POWERPOINT'S OUTLINING FEATURES

PowerPoint's outlining features make it easy to create a well-organized presentation. Using the outline pane in Outline view or Normal view, you can create a basic outline as well as revise, rearrange, and reorganize it. The Outlining toolbar includes buttons that provide even more options and flexibility in outlining, such as the ability to collapse and expand your outline, design a summary slide, or display text formatting. And if you create outlines in other programs such as Word 2000, you can quickly import these into PowerPoint and automatically create a presentation.

In this chapter you learn about specific ways in which PowerPoint organizes your presentation, such as:

- *How to organize your presentation* You have several ways that you can organize a presentation in PowerPoint, depending on how you work best and whether you've already created an outline in another program.
- *Exploring Outline View* Both Outline view and Normal view display the outline pane, in which you can easily organize and rearrange your presentation.
- *How to use the Outlining toolbar* The Outlining toolbar enables you to promote and demote outline points as well as move, collapse, and expand them. You can also create a summary slide or display font formatting as well.
- *Importing outlines from other programs* If you create outlines in Word or another program, you can import them into PowerPoint. PowerPoint also imports other common file formats such as RTF and TXT.

## ORGANIZING PRESENTATIONS

Before you actually create a PowerPoint presentation, you should determine the presentation's purpose, organize your ideas, and establish the flow of what you're going to say. Essentially, you need to create an outline.

➔ To learn some useful outlining techniques, see "Creating an Outline and Storyboard," p. 507

You can create an outline for a PowerPoint presentation in one of four ways:

- Create a presentation in PowerPoint using the outline pane in Outline View or Normal View.
  - Create a presentation in PowerPoint using the AutoContent Wizard to design a basic outline and suggest appropriate content.
- ➔ To learn what this wizard does, see "Using the AutoContent Wizard," p. 36
- Create a presentation in PowerPoint by entering information directly on the slides. This information then displays in the outline pane.
  - Create an outline in another application, such as Word 2000, and import it into PowerPoint.

➔ To learn how to import existing outlines, see “Importing Outlines from Microsoft Word and Other Programs,” p. 112

As you create your basic outline, keep several things in mind:

- You’ll want to start nearly every presentation with a title slide that introduces your topic and its presenter.
- Think of several main points to cover and design your presentation around these talking points.
- Try not to cover more than one main topic or concept in an individual slide.
- Remember that a PowerPoint outline is usually designed to accompany a verbal presentation. Keep in mind what you want your audience to see versus what you want them to listen to during your presentation.
- If you’re going to use bulleted lists extensively, try to keep them balanced and consistent. For example, a single bullet on a slide doesn’t really make sense; a list should contain at least two bullets. Too many bullets on one slide and very few on another also may not work well.
- Consider using a summary slide to summarize the points you made during your presentation and conclude it.

## UNDERSTANDING OUTLINE VIEW

No matter which method you use to create your outline, you need to use PowerPoint’s outline pane to organize this information at some point. The outline pane appears in both Normal view and Outline view in PowerPoint. In Normal view, the outline appears on the left side of the window and shares the desktop with the slide itself and related notes. In Outline view, the outline pane takes up two-thirds of the window space, with smaller panes for viewing the slide and notes.

**Tip #53 from**  
*Patricia-Anne Rutledge*

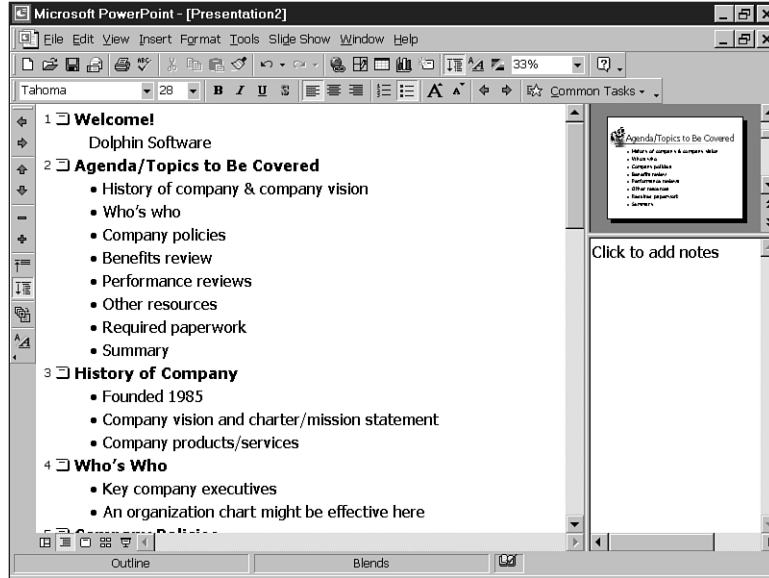
You can change the size of a pane by dragging its border to a new location. This can be done when the cursor changes to a double-headed arrow.



To switch to Outline view, click the Outline View button in the lower-left corner of the PowerPoint window. You can switch back to Normal view, the default, by clicking the Normal View button.

Figure 5.1 shows Outline view.

**Figure 5.1**  
Outline view offers a flexible approach to creating an outline.



Each slide in your presentation is numbered and is followed by a slide icon and the title text. The body text is listed under each slide, up to five levels. This body text includes bulleted and indented lists, as well as other text information. The title text is also referred to as the outline heading and each individual point in the body text as a subheading. Clip art, tables, charts, and other objects don't appear in the outline pane.

#### Note











Any text that you enter other than in the Click to Add Title or the Click to Add Text placeholders doesn't display in the outline either.

Adding new outline information is simple. Enter the content and press the Enter key to move to the next point. To delete a point you no longer need, select it and press the Delete key.

## USING THE OUTLINING TOOLBAR

You can use the Outlining toolbar to help organize and rearrange your slides in the outline pane. To display the toolbar, choose **View**, **Toolbars**, **Outlining**. It appears vertically on the left side of the outline pane. Table 5.1 lists the buttons on this toolbar.

**TABLE 5.1 OUTLINING TOOLBAR BUTTONS**

Button	Name	Description
	Promote	Applies the style/formatting of the level that is one step above the level of the selected text.
	Demote	Applies the style/formatting of the level that is one step below the level of the selected text. Demoting a slide title moves the text of the selected slide to the previous slide.
	Move Up	Moves the selected text ahead of the previous item in the outline.
	Move Down	Moves the selected text beneath the next item in the outline.
	Collapse	Hides all body text for the selected slides.
	Expand	Displays all body text for the selected slides.
	Collapse All	Hides all body text in the outline.
	Expand All	Displays all body text in the outline.
	Summary Slide	Creates a slide that summarizes the presentation by listing slide titles.
	Show Formatting	Shows the actual presentation font formatting in the outline pane.

**Tip #54 from**
*Patricia-Anne Rutledge*

You can move the Outlining toolbar to another location on the screen by dragging the move handle (above the Promote button) to another location.

## PROMOTING AND DEMOTING OUTLINE POINTS

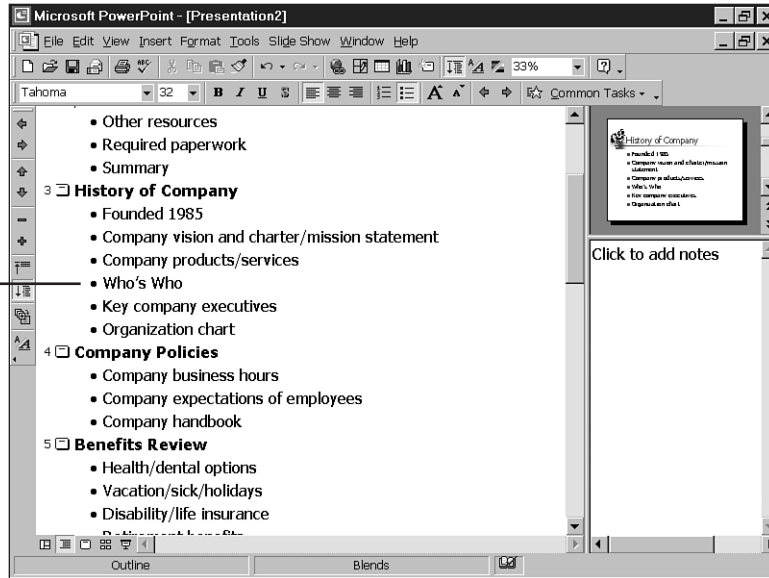
You can demote outline headings and promote and demote subheadings to reorganize and rearrange your presentation. Promoting a first level subheading makes it become a heading (slide title) in a new slide. Promoting a secondary level subheading (such as indented text or lower level bullet) moves it up to the next level.



For example, if you select the text of a second level bullet in the outline and click the Promote button, the bullet becomes a first level bullet. (See Figures 5.2 and 5.3.)

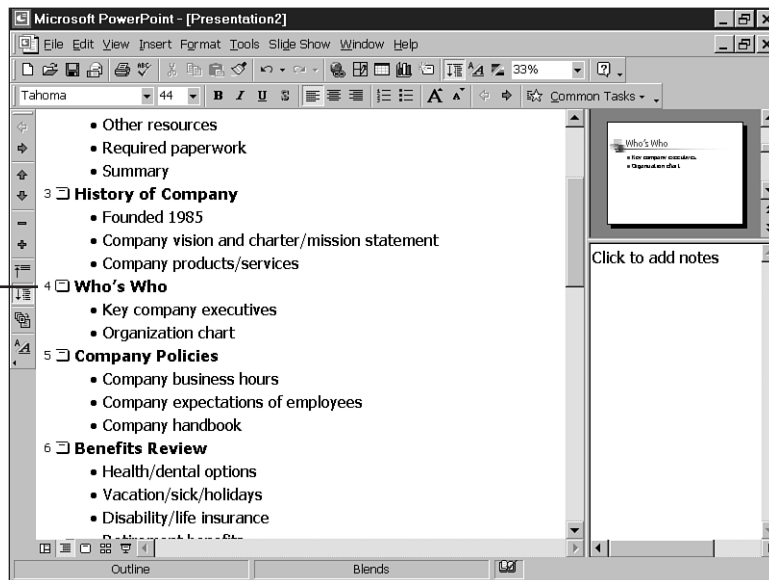
**Figure 5.2**  
The bulleted list item you want to change is currently indented.

Who's Who



**Figure 5.3**  
Promoting the bulleted list item moves it up one level, but doesn't change its location.

Who's Who



If you promote a first level bullet, it becomes a slide title and PowerPoint inserts a new slide into the presentation.

**Note**

Promoting indented text outdents it.



The Demote button works in much the same way as the Promote button. Demoting a sub-heading such as a first level bullet moves the bullet point to a second level bullet. Demoting other text indents the text.

**Tip #55 from**  
*Patricia-Anne Rutledge*

You can also easily demote a specific heading by selecting it and pressing the Tab key.

Demoting an outline heading (slide title) deletes the slide and moves its text content to the bottom of the previous slide. PowerPoint verifies this action before doing it if your slide contains notes or graphics.



**Do you lose notes and graphics when demoting?** See the *Troubleshooting section at the end of the chapter.*

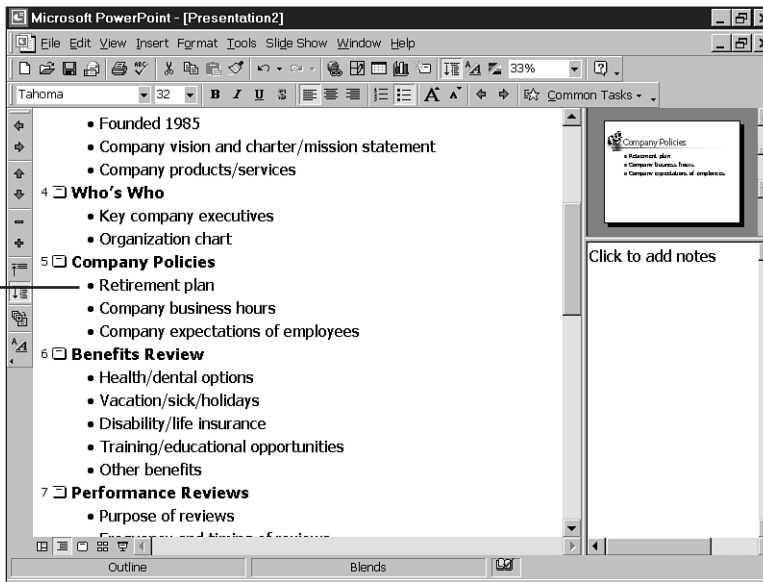
**MOVING OUTLINE POINTS UP AND DOWN**



In addition to promoting and demoting outline points, you can also move the location of each point. For example, to move a numbered list item from the second to the first position in the list, select that second item and click the Move Up button.



Or, let's say you want to move the first of three bulleted list items from one slide to the top of the list in the following slide. To do this, click the Move Down button three times. (See Figures 5.4 and 5.5.)

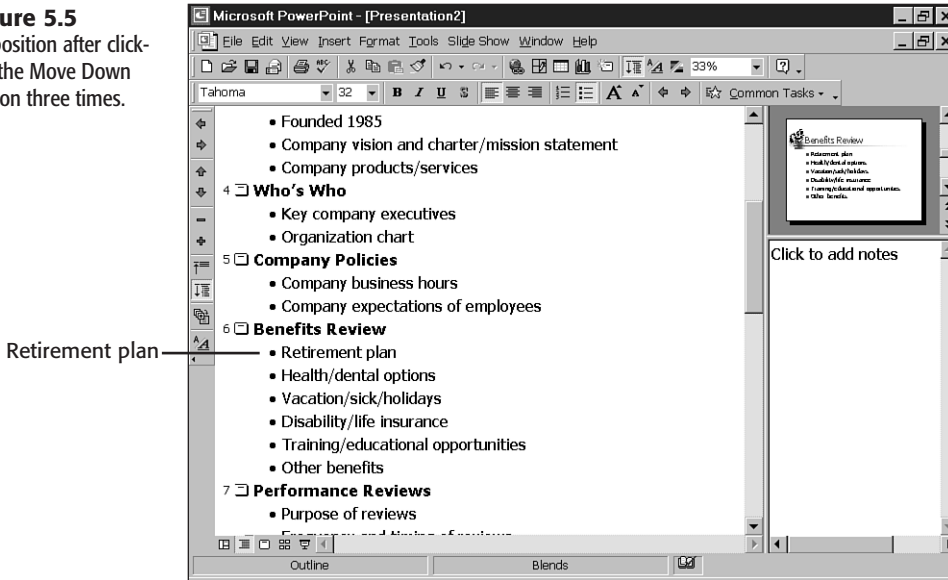


Retirement plan

**Figure 5.4**  
The original bullet position.



**Figure 5.5**  
Its position after clicking the Move Down button three times.



#### Tip #56 from

*Patrice-Anne Rutledge*



To undo moves of more than one position, you should click the Undo button the same number of times that you clicked the Move Up or Move Down button.

- ➔ To learn more about the different ways you can organize slides in PowerPoint, see “Rearranging Slides,” p. 120

#### Tip #57 from

*Patrice-Anne Rutledge*

Use Slide Sorter view to view your actual slides as you rearrange them.

- ➔ For details on this view, see “Using the Slide Sorter View,” p. 123

## COLLAPSING AND EXPANDING OUTLINE POINTS

To make things easier to read in a long outline, you can collapse and expand slides and their body text.



To collapse the body text of an individual slide, select it and click the Collapse button. The slide number and title remain, but the related body text is hidden from view. Figure 5.6 shows a collapsed slide.



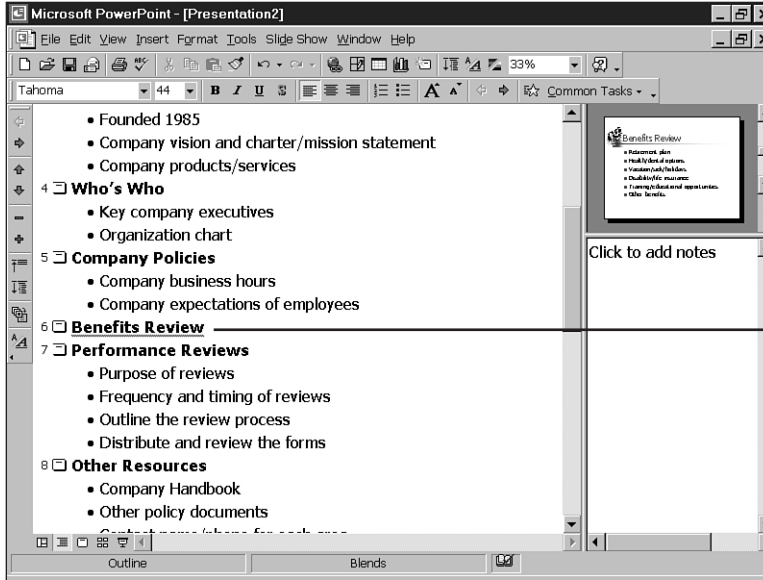
Select the slide again and click Expand to display the hidden text.



To collapse the entire outline, click the Collapse All button. Figure 5.7 illustrates an outline that is entirely collapsed.

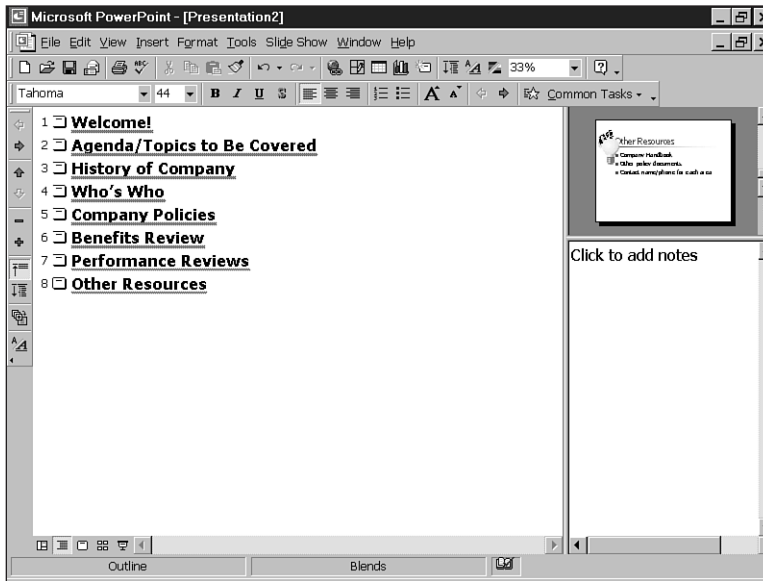


To display the outline details again, click the Expand All button.



**Figure 5.6**  
Collapsing a slide  
hides its body text.

Benefits Review



**Figure 5.7**  
Collapsing an entire  
presentation creates a  
presentation outline  
summary.

**Tip #58 from**  
*Patricia Anne Rutledge*

If you want to collapse and expand more than one slide, but not all slides, press Shift, choose the consecutive slides, and then click the Collapse or Expand button. Note that the slides you select must be consecutive.

Collapsing and expanding your outline make it easier to print as well. You can print an entire outline in detail; only certain sections in detail; or only a collapsed, summary outline.

➔ To learn how to print outlines, see “Printing an Outline,” p. 184

## CREATING A SUMMARY SLIDE

You can create a slide that summarizes the outline headings (the slide titles) for all, or selected, slides in your presentation. You can then use this slide to introduce your presentation, to highlight the areas you’re going to discuss, or to close your presentation by summarizing it. To create a summary slide, select all the slides you want to include in the summary.

### Note

You need to either choose all slides or a series of consecutive slides when you create a summary slide in Outline View. Create a summary slide from Slide Sorter view if you want to choose multiple, non-consecutive slides.



Usually it’s easier to do this if you collapse all the headings by clicking the Collapse All button on the Outlining toolbar.

### Tip #59 from

*Patricia-Anne Rutledge*

You can easily select all slides in the presentation by selecting the first slide and dragging the mouse down to the last slide or by pressing Ctrl+A.



Next, click the Summary Slide button. PowerPoint automatically creates a summary slide that contains a bulleted list of all the selected slide titles in your presentation. The summary slide is inserted before the first selected slide, but you can move it to another location if you want.

Figure 5.8 shows a sample summary slide.

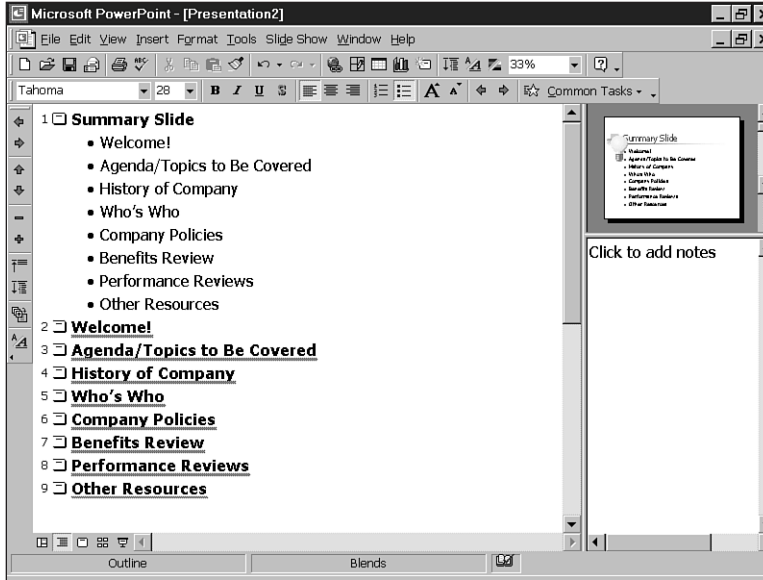
## SHOWING SLIDE FORMATTING



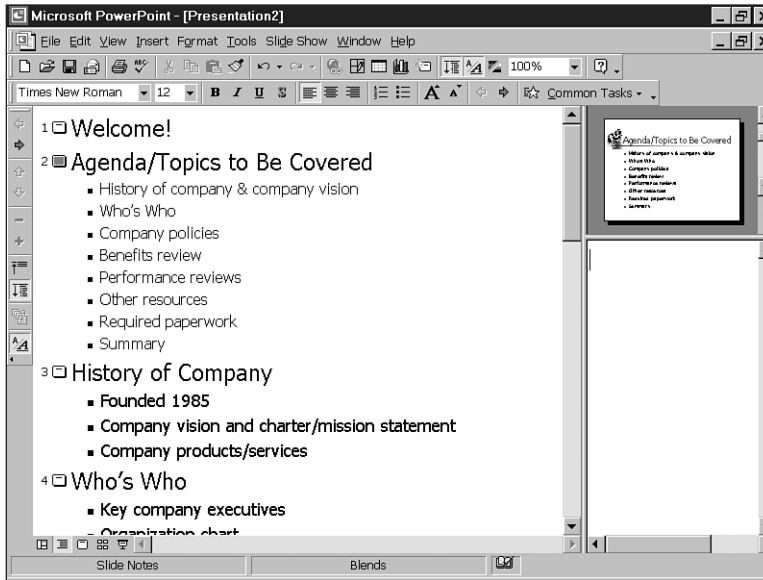
By default, the outline pane displays each heading and subheading in the same font, bolding the headings for emphasis. If you want the outline to display using the actual fonts and formatting of the presentation itself, click the Show Formatting button on the Outlining toolbar.

Figure 5.9 displays a sample outline that shows formatting.

The specific font and attributes such as size, bolding, italics, underlining, and shadow now display in the outline pane. The font color, however, does not display.



**Figure 5.8**  
Create a summary slide to introduce or close your presentation.



**Figure 5.9**  
This outline displays text formatting.

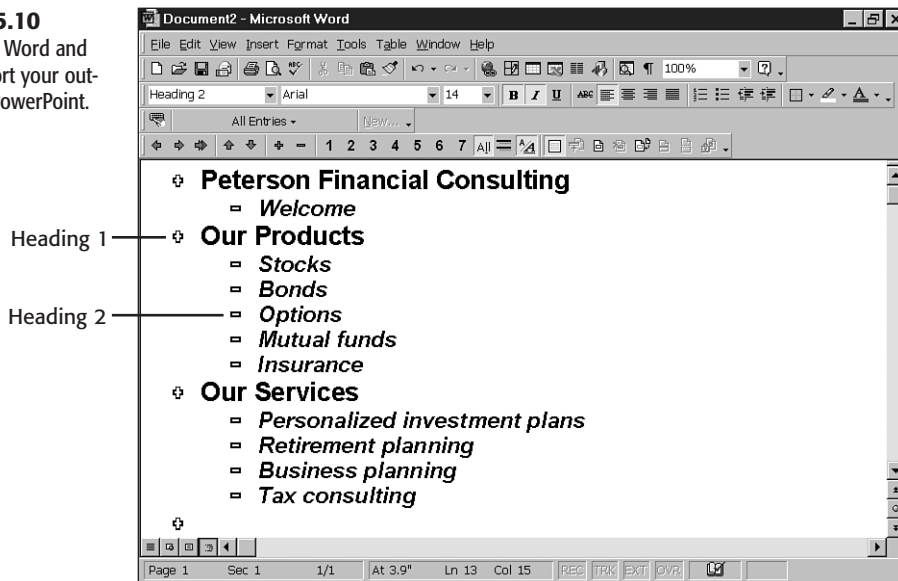
## IMPORTING OUTLINES FROM MICROSOFT WORD AND OTHER PROGRAMS

If you create outlines in other applications such as Microsoft Word, you can easily import them into PowerPoint. PowerPoint can import outlines from many different formats such as:

- Word documents (.DOC)
- Rich Text Format (.RTF)
- Text files (.TXT)
- Excel worksheets (.XLS)
- HTML (.HTM)

For example, if you create an outline in Word 2000, you use heading 1, heading 2, and heading 3 styles to format your document. When PowerPoint imports your outline, each heading 1 becomes a slide title, each heading 2 becomes first level text, and each heading 3 becomes second level text. Figure 5.10 shows a Word outline and its components.

**Figure 5.10**  
Outline in Word and then import your outline into PowerPoint.

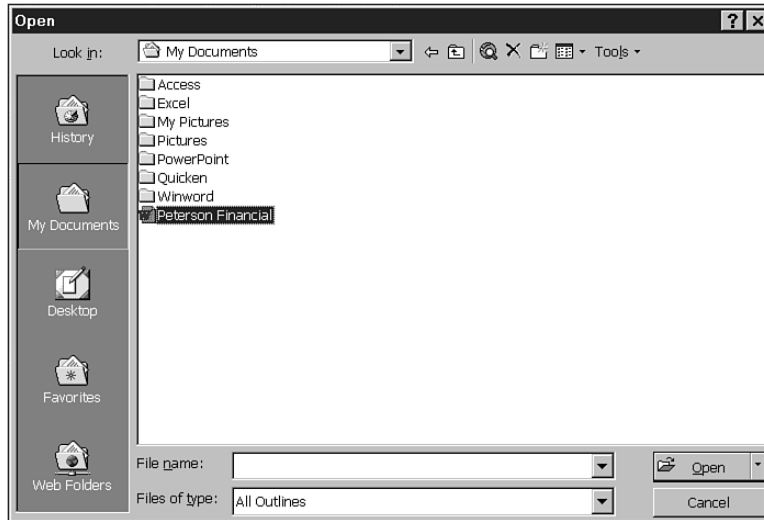


If the file you import doesn't contain these heading styles, PowerPoint uses paragraph indentations and tabs to determine the structure of the outline. Use the Outlining toolbar buttons to reorganize the outline if the initial format isn't correct.

To import the outline into PowerPoint, follow these steps:



1. Click the Open button on the Standard toolbar or choose **File, Open** to display the Open dialog box, shown in Figure 5.11.



**Figure 5.11**  
Select the outline you  
want to import in the  
Open dialog box.

2. Select All Outlines from the Files of Type drop-down list.
3. Navigate to the outline you want to import and select it.
4. Click Open.

#### Caution

The first time you import an outline, PowerPoint may display a warning dialog box telling you that it needs to install a converter. Some converters are tagged as install upon first use if you chose the default setup when you installed Office 2000. Be sure to have your installation CD in your CD-ROM drive before clicking Yes.

#### Tip #60 from

*Patricia-Anne Rutledge*

If you are creating your outline in Word 2000, choose **File**, **Send To**, and then **Microsoft PowerPoint**. PowerPoint automatically creates a presentation from this information. Apply a design template, graphics, and other pizzazz and your presentation is complete.



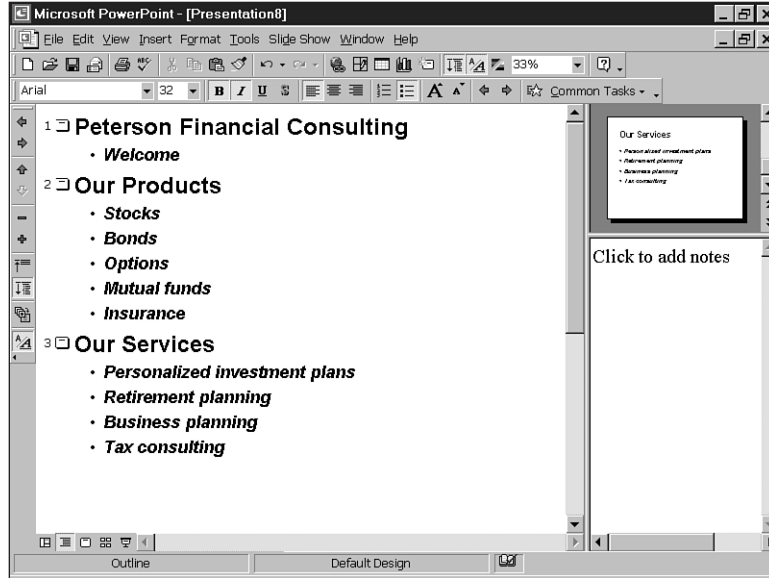
**Does your imported outline look strange?** See the *Troubleshooting* section at the end of the chapter.

PowerPoint imports the outline and creates a presentation from it. Figure 5.12 illustrates an example of an imported outline.

After PowerPoint imports your outline, you should apply a design template and make any other necessary formatting changes.

- ➔ For more information about using these templates in your presentation, see “Understanding Design Templates,” p. 28

**Figure 5.12**  
The outline now displays in a PowerPoint presentation.



#### Note

You can also import an outline into an existing presentation. To do this, select the slide in the outline pane after which you want to insert the new outline. Choose **Insert, Slides from Outline** to open the Insert Outline dialog box. Choose the outline you want to import and click **Insert**.

#### Tip #61 from

*Patrice-Anne Rutledge*

You can also just copy the outline text from the source application, paste into PowerPoint, and reformat to quickly create a basic outline.

## TROUBLESHOOTING

*I imported an outline and it doesn't look right.*

Remember that PowerPoint imports an outline from another application “as is.” Before importing, be sure that the existing document makes a suitable outline. For example, importing a lengthy text file or detailed spreadsheet might not make sense as an outline.

*I demoted a slide and the text moved to the previous slide, but the notes and graphics disappeared.*

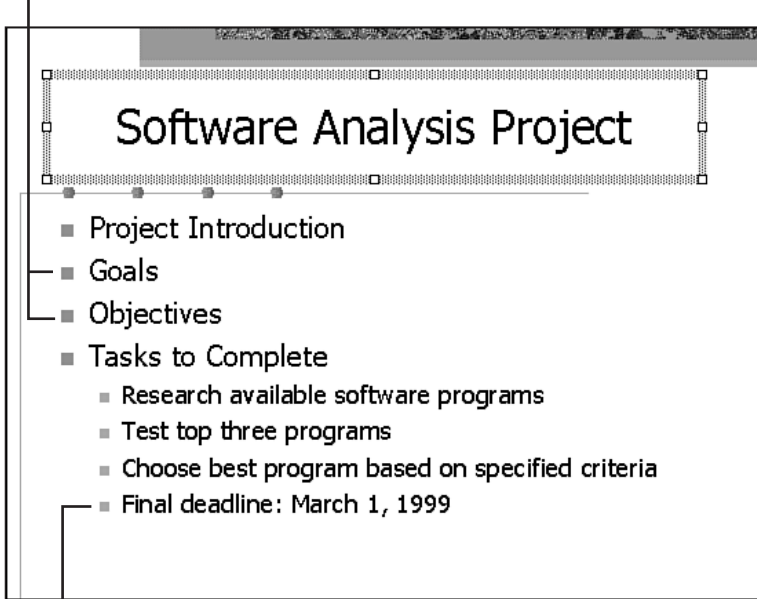
When you demote a slide using the Demote button on the Outlining toolbar, the text content remains and carries over to the previous slide, but any graphics or notes are deleted.

## DESIGN CORNER

Use an outline to ensure a logical flow of thought through your presentation. Often creating an initial outline can call attention to such problems. PowerPoint's outlining features make it easy to correct and perfect your outline.

### BEFORE

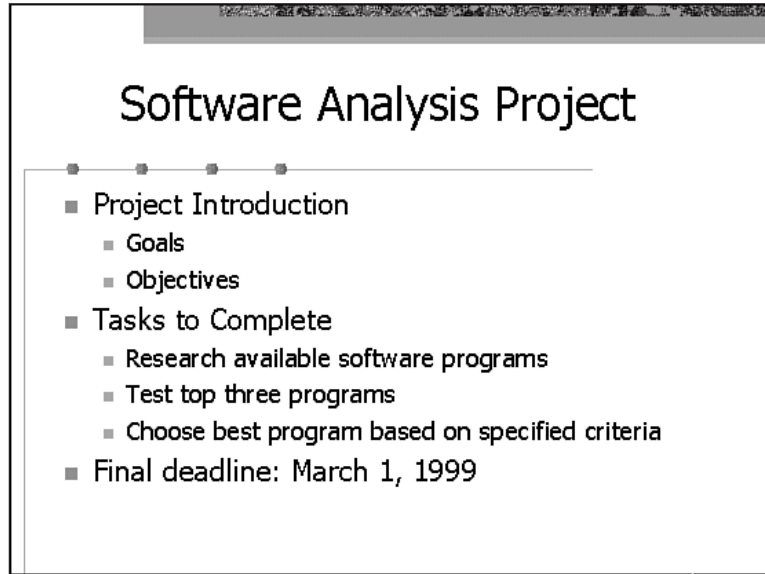
Demote these two bullet points, which are part of the project introduction.



Promote this bullet point, which is its own topic.



AFTER



The slide features a title 'Software Analysis Project' at the top center. Below the title is a horizontal line with four small square markers. The main content is a bulleted list with three primary items: 'Project Introduction', 'Tasks to Complete', and 'Final deadline: March 1, 1999'. The 'Project Introduction' item has two sub-items: 'Goals' and 'Objectives'. The 'Tasks to Complete' item has three sub-items: 'Research available software programs', 'Test top three programs', and 'Choose best program based on specified criteria'.

## Software Analysis Project

- Project Introduction
  - Goals
  - Objectives
- Tasks to Complete
  - Research available software programs
  - Test top three programs
  - Choose best program based on specified criteria
- Final deadline: March 1, 1999

# CHAPTER 18

## INTEGRATING WITH OFFICE 2000

### In this chapter

*by Laurie Ann Ulrich*

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In this chapter, you will explore

- *Linking and embedding objects* Use the Clipboard and Paste Special to insert objects from other applications into your PowerPoint presentation.
- *Building a Word table* If you need the structure of a table in your PowerPoint slide, add a Word table—and access all Word’s table and formatting tools at the same time.
- *Inserting an Excel worksheet* Build an Excel worksheet in your PowerPoint slide, making all Excel’s tools available within your PowerPoint application window.
- *Borrowing PowerPoint content* Use your PowerPoint slides and slide components to enhance your Word and Excel documents.

One of the primary benefits of working with a suite of programs such as Office 2000 is the interoperability that the suite’s programs offer. If it weren’t easy to take content from Word and use it in PowerPoint or PowerPoint content and use it in Excel, there’d be little incentive for you to purchase Office 2000.

Because easy and efficient integration and interoperability exist between the Office 2000 applications, you can use all the applications together to build more effective documents. PowerPoint may be the one application within Office 2000 that makes the greatest use of the other applications within the suite—by its nature as a presentation tool, PowerPoint can work with all your other applications, tools, and documents to create a single powerful and effective slide presentation. You can

- Use an existing Excel worksheet or chart on a PowerPoint slide
- Use text and numbers from a PowerPoint datasheet to spawn a new Excel worksheet
- Take a section of an Excel worksheet and use it as a table in Word and/or a table in PowerPoint
- Take charts or drawn objects from a PowerPoint slide and paste them into a Word document to create visual consistency
- Use an entire PowerPoint slide as a graphic in a Word or Excel document

## LINKING OFFICE OBJECTS

By now, you’ve probably used the Clipboard to cut or copy content between and within Office 2000 applications. The Clipboard is one of the most significant tools that Windows offers, and Office 2000 makes it even more powerful by giving you the ability to cut, copy, and paste several objects as a group or one at a time.

For all that power and convenience, however, the pasting process is limited. For example, after you’ve pasted an Excel chart into your PowerPoint slide, any changes made to the Excel chart or to the data that supports it are not reflected in the pasted copy of the chart in PowerPoint. Simple pasting establishes no connection between the copied chart and its

source. To establish such a connection, you must link the source and the target, so that the target can be updated when opened to reflect changes in the source.

## USING PASTE SPECIAL TO CREATE A LINK

How is a link between two applications established? By using the Edit, Paste Special command as described in the following steps:

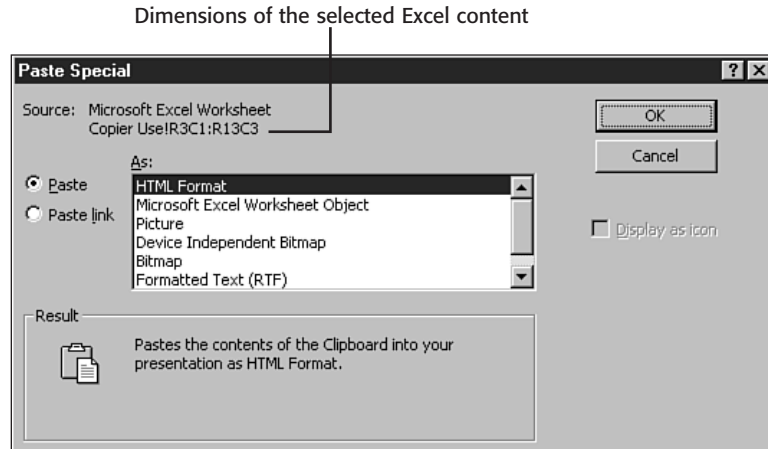
1. In the source document, select the content to be copied to your PowerPoint slide (the target). Figure 18.1 shows a section of an Excel worksheet, selected for copying.

	A	B	C	D	E	F	G	H	I
1	Copier Use by Department								
2									
3	Department #	Department	Q1 Totals	JAN	FEB	MAR			
4	1	Accounting	7200	2520	2230	2450			
5	2	Administration	5324	1679	1750	1895			
6	3	Communications	3919	1202	1352	1365			
7	4	Human Resources	6066	1961	2005	2100			
8	5	Marketing	10980	3615	3800	3565			
9	6	Operations	4566	1492	1576	1498			
10	7	Sales	7889	2537	2649	2703			
11	8	Shipping	2177	780	745	652			
12	9	Warehouse	6086	2005	2103	1978			
13		TOTAL	48121	15786	16107	16228			
14									
15									
16	Copying Costs								
17									
18	Paper Grade	A	B	C	D	E			
19	# of copies								
20	1200	0.25	0.20	0.15	0.10	0.05			
21	2500	300	240	180	120	80			
22	5000	625	500	375	250	125			
23		1250	1000	750	500	250			
24									
25									

**Figure 18.1**  
When selecting content from another application, imagine it in your slide—will it fit? Does its content effectively communicate your information or message?

2. Choose Edit, Copy.
3. Switch to or open your PowerPoint presentation, and go to Slide View of the target slide.
4. Choose Edit, Paste Special. The Paste Special dialog box opens (see Figure 18.2).
5. Click the Paste Link option. If more than one type of object is displayed in the As box, select the one that most closely matches the source of your content. Figure 18.3 shows the As options for the selected Excel content.
6. Click OK to insert the linked content.

**Figure 18.2**  
When pasting Excel worksheet content, PowerPoint displays that object type in the As box.



**Figure 18.3**  
PowerPoint correctly assesses the nature of the content to be linked and offers appropriate options.



**Tip #220 from**  
*Laura A. Ulrich*

Click to place an X in the Display as Icon check box. Your linked object will appear as an icon, its represented content visible only if you (or a person viewing your presentation) want to see it. To view a link icon, double-click it.

After your linked object is inserted, test the link—go back to the source application and make a change to the content. Switch back to the target slide, and view the updated content—it now reflects the change made to the source.

**Tip #221 from**  
*Laura A. Ulrich*

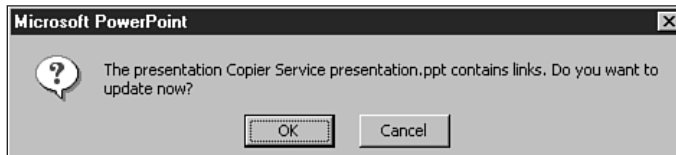
You can resize the linked object by dragging diagonally from the object's corner handles. Drag inward to shrink the object, outward to increase its size.

**Caution**

Excel doesn't work properly unless you make sure you save the workbook file before creating the link the first time.

**UPDATING LINKS**

After a link is established, each time you open the target presentation, you'll be prompted to update the link (see Figure 18.4). This prompt enables you to choose whether to allow any changes that have occurred in the source document to update the linked content in your PowerPoint presentation.

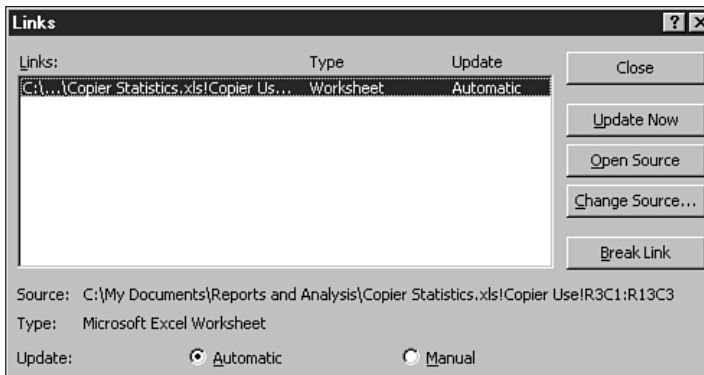


**Figure 18.4**  
Click OK to update the target file with any changes that have been made to the source content.

Why would you choose not to update your target file? Perhaps you need to print the presentation with the older data or save it before changes are made, so that a historical reference will be available in the future. Perhaps your presentation pertains to second-quarter sales, and the source content has been updated with third-quarter data, which you're not ready to use. If for any reason you want to maintain the target data in its current form, click Cancel.

If you choose not to update the links at the time that you open the file, you can always update them later by following these steps:

1. Choose **E**dit, **L**inks. The Links dialog box opens (see Figure 18.5), displaying a list of files that are linked to your open document.



**Figure 18.5**  
Click the Open Source button to view the linked data before updating it.

2. Choose the link you want to update, and click the **Update Now** button.
3. Click **Close** to update the target with any changes to the source.

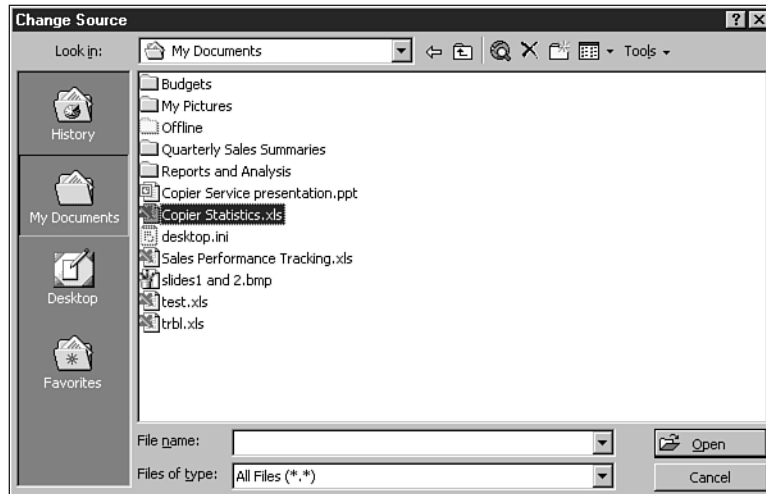
## MAINTAINING LINKS

For the most part, links you establish between files with **Paste Special** require little or no active maintenance on your part. To be sure your links remain intact, simply follow these basic rules:

- Don't rename the source or the target file
- Don't move or delete the source file
- Don't move or delete the target file

If you must move or rename either the source or target file, you will have to reestablish the link through the **Links** dialog box while in the target file. Click the **Change Source** button and navigate to the source file's new location, as shown in Figure 18.6.

**Figure 18.6**  
The **Change Source** dialog box allows you to find, select, and reestablish a link between a source and target if one of the files has been moved or renamed.



When making changes to your source document, remember that it is linked to a target file—whether you're editing content or applying formats, make sure that these changes will be useful in the target document. If you need to make changes to the source that won't be appropriate in the target, consider breaking the link. You'll have to update the former target manually (to make content changes), but you won't risk unwanted changes to the target file.

### Caution

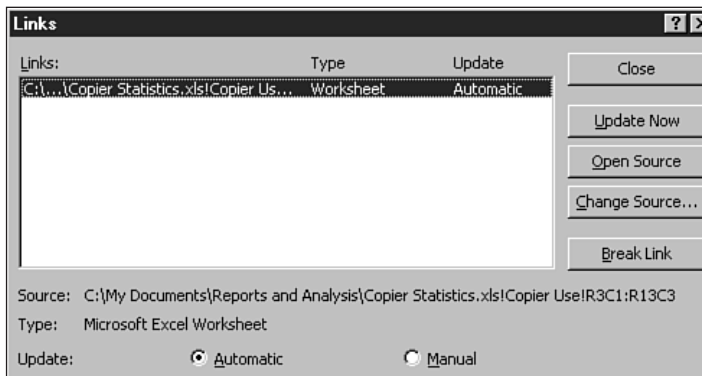
If you aren't the only person using the source or target files, be sure to alert other users to changes you make to the source that may not be appropriate in the target file. If another user chooses to update a link, he or she may be unhappy with the resulting changes.

## REMOVING THE LINK BETWEEN SOURCE AND TARGET FILES

After a link is established, it remains in force (even if updates between the source and target are rarely or never performed) unless one or both of the files are moved or renamed. Moving or renaming either the source or target file breaks the link between the files because the files can't “find” each other anymore.

Although this method technically breaks the link, it doesn't do a very clean job. The target document continues to store a record of a link back to a now-moved or renamed file. To make a clean break, severing all ties and any record between your source and target files, follow these steps:

1. In the target file, choose Edit, Links.
2. In the Links dialog box (see Figure 18.7), select the link you want to break.



**Figure 18.7**  
Formally sever your link between the source and the target file by using the Links dialog box to break the link.

3. Click the Break Link button.

After the link is broken, the pasted content remains in the target document, but retains no connection to the source data. Changes made to the source are not reflected in the target, and when opening the target file, you will not be prompted to update your link.

### Note

A linked paragraph or table from Word or a worksheet section from Excel is seen as an object. After a link is broken, the pasted content is seen as a picture, a simple graphic component of your slide.

### Tip #222 from *Laura Ornelas*

One benefit of breaking a link by moving or renaming the source or target file is that the link can be reestablished easily by putting the file back where it was or renaming it to the original filename. Many users use this technique to make a temporary break, allowing changes to the source without the risk of updating the target until it becomes appropriate.



## WORKING WITH EMBEDDED OFFICE OBJECTS

Whereas linking connects two applications through a pasted file or a portion thereof, embedding places an entire document and makes the tools of its native application available within another application file. Your choice to embed (rather than link) is based on what you want to do with the object and, in some cases, who will be using the application in which the embedded object resides. The following are two situations that support the decision to embed an object:

- *Limited system resources* Rather than have two applications open at once, embed one in another by embedding an object. While the object is active, the object's application is also active (and its tools appear in the target application window). The source application can then be closed after any editing of the object is performed, leaving the object in the target file, and freeing system resources for the target application.
- *Simplicity* Instead of linking (and having to decide when and if to update links), embed an application object and build the content you need, using the embedded application's tools. No need to restrict your moving and renaming of the file because no other files are linked to it.

### EMBEDDING NEW AND EXISTING FILES

Embedded objects can be blank—meaning that you have to build the content within the object after it's embedded—or they can be derived from a file with existing content. This latter approach can save you some work because the content is already there. Consider some of these examples of embedded objects in a PowerPoint presentation:

- *Excel worksheets* Whether you need a block of cells on your slide or need tools for formatting and performing calculations, embed an existing Excel worksheet (if the content of the worksheet will fit on the slide), or start with a blank worksheet and build it within the object.
- *Excel charts* Build a chart in your PowerPoint presentation, using Excel's formidable charting tools. The object will consist of a worksheet with a Chart tab and a Sheet tab, enabling you to enter data and then watch it turn it into any sort of chart you need. This is an excellent approach for a user who spends more time in PowerPoint than Excel, but needs Excel's superior charting and spreadsheet tools to create an effective chart for his or her PowerPoint presentation.
- *Word text* If your content is intended only for use in your PowerPoint presentation, you needn't create it in Word first and then copy it to PowerPoint. Instead, create it in PowerPoint through an embedded Word object. Without switching between applications, you're able to take advantage of Word's extensive text formatting tools. You can use this technique to embed an existing Word document as well.

**Tip #223 from**  
*Laura Klein*

You can also embed a PowerPoint presentation in a Word document or an Excel worksheet. This can be especially useful when sending a presentation and its supporting data to someone for review.

### EMBEDDING A NEW OBJECT

A new object is one that has no content and is not based on an existing file. All content will be built within the embedded object, and the object and its content will exist nowhere beyond the slide in which you embed it.

To embed an object in your PowerPoint presentation, follow these steps:

1. Choose the slide that will contain the object, and switch to Slide View.
2. Choose Insert, Object.
3. In the Insert Object dialog box (see Figure 18.8), select the Object Type.



**Figure 18.8**  
Scroll through the list of object types to find the Microsoft Word or Microsoft Excel object that you need.

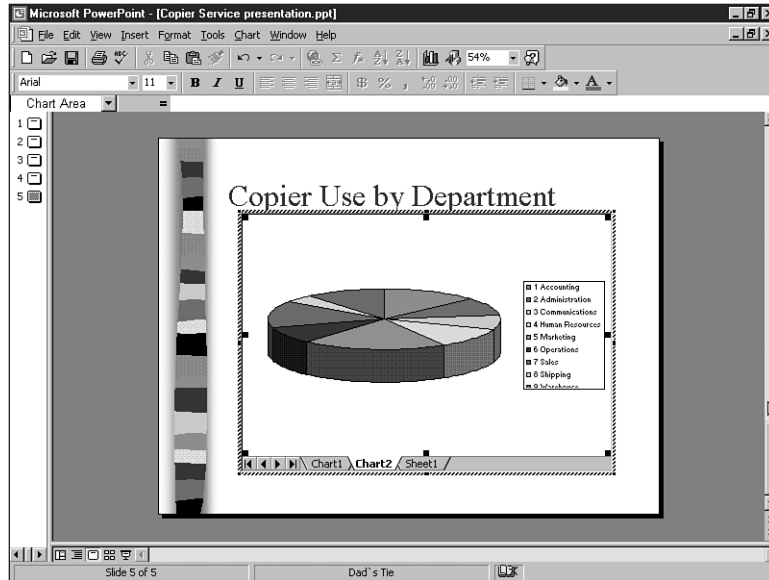
4. If desired, click Display as Icon. This option is useful when you want to save visual space—the object will only open up for entry and editing (or for simply viewing the content) when the icon is double-clicked.
5. Click OK to insert the object.

When inserted, the object can be edited in terms of content and/or formatting, using the tools of the object's native application. Figure 18.9 shows an embedded Excel chart and the Excel toolbar in a PowerPoint presentation window.

**Tip #224 from**  
*Laura Klein*

When the embedded object's application tools appear, they appear as formatted in the source application. If you turned off the option to have the Standard and Formatting toolbars share one row, they appear on two rows in the embedded application as well.

**Figure 18.9**  
An inserted object can be selected for movement or resizing, or activated for editing. Double-click the object to activate it and display the tools of the embedded application.

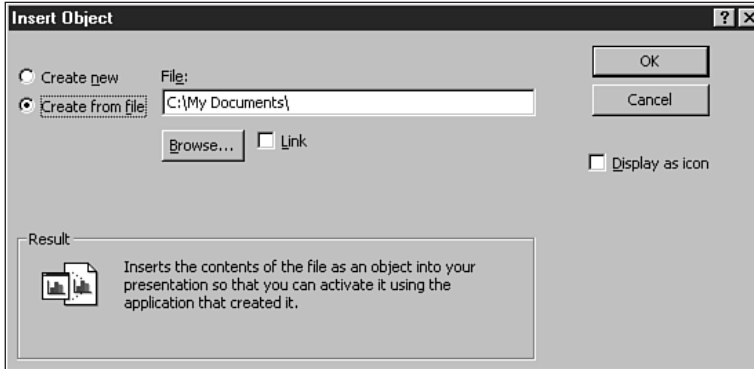


### EMBEDDING AN OBJECT FROM AN EXISTING FILE

Embedding an existing file gives you much of the same power as a linked object—your content need only be updated in one place—and offers all the convenience of an object that “lives” within the target presentation. Because the file and its content already exist, you need only edit and reformat the embedded version of the file if or when it’s required. When such changes are necessary, you have the source application tools at your disposal without having to open a separate application—the object’s application tools appear in the target application window as soon as the object is activated by a double-click.

To embed an existing file in your PowerPoint presentation, follow these steps:

1. In your open PowerPoint application, go to the slide (in Slide View) into which you want to embed the file.
2. Choose Insert, Object.
3. In the Insert Object dialog box, click the Create from File option (see Figure 18.10).
4. Type the path and filename of the file you want to embed, or click the Browse button to find it.
5. If desired, click the Link check box to establish a link between the source file and the embedded object.
6. When the correct path and filename appear in the File box, click OK to insert the object and close the dialog box.



**Figure 18.10**  
Save yourself the time and effort of entering your object's content by embedding an existing file.

### Caution

If you choose to establish a link between the source file and the embedded object, be sure to update the link only when you're sure that changes to the source won't conflict with editing that may have been applied to the embedded object. This is especially true when more than one person will be accessing and editing either one or both files.

## USING WORD TABLES



Just as tables are a powerful feature in Word, they are equally powerful and effective in a PowerPoint presentation. For this reason, one of PowerPoint's slide layouts contains a table (the Table layout), and for inserting tables into a non-table layout, the Insert Table button appears on the Standard toolbar in your PowerPoint application window. If, however, you're more comfortable using Word's table tools (and the complete Table menu found in Word), you can build your table there and paste it into your PowerPoint presentation.

### INSERTING A WORD TABLE

A Word table is simple to insert, and with a little forethought (how many columns and rows do you need?), you can add one to any slide in a matter of seconds. You'll use Word's tools to create it, and then bring the table into your PowerPoint presentation with the following steps:



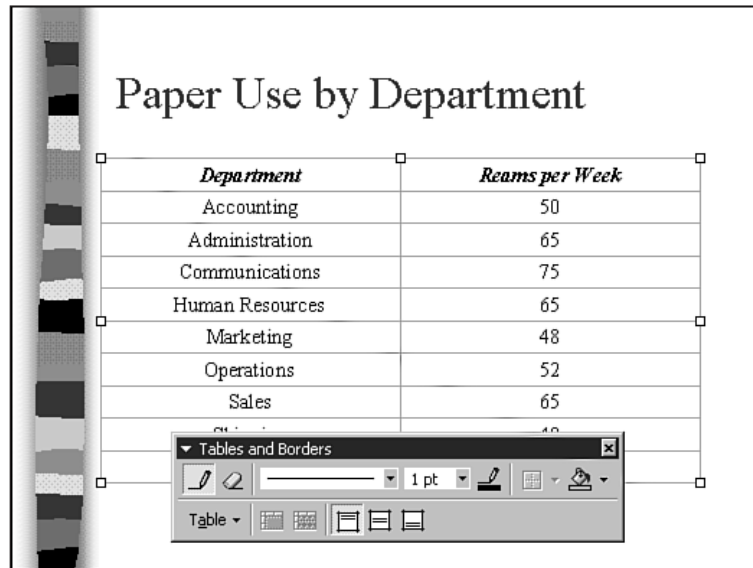
1. Build your table in Word, using your familiar Word tools (found in the Table menu or using the Insert Table button).

2. After building the table, you can enter your content or wait until the table is in your PowerPoint slide.
3. Copy the table to the Clipboard using Edit, Copy or by pressing Ctrl+C.
4. Switch to or open your PowerPoint presentation, and go to the slide (in Slide view) into which you want to paste the Word table.
5. Choose Edit, Paste, or press Ctrl+V to insert the copied table.
6. Edit the content and dimensions of the table using the Tables & Borders toolbar, which appears whenever the table is active (see Figure 18.11).

➔ For more info on the use of these Office table tools, see “Working with Tables,” p. 79

**Figure 18.11**

Insert an existing Word table or build one in Word to make use of more familiar tools, and then edit it in your PowerPoint slide.



**Tip #225 from**

*Laura A. Ulrich*

If your Word table already exists and you wish to reuse it in a PowerPoint slide, you can link it to your slide so that future updates to the table's content can appear in the PowerPoint version as well.

**Tip #226 from**

*Laura A. Ulrich*

Like any slide component (regardless of its source), a table can be deleted easily. Click the table to select it, and then click its border to disable the cursor in the table's cells. To remove the table from your slide, press the Delete key.

## USING POWERPOINT PRESENTATIONS IN OTHER APPLICATIONS

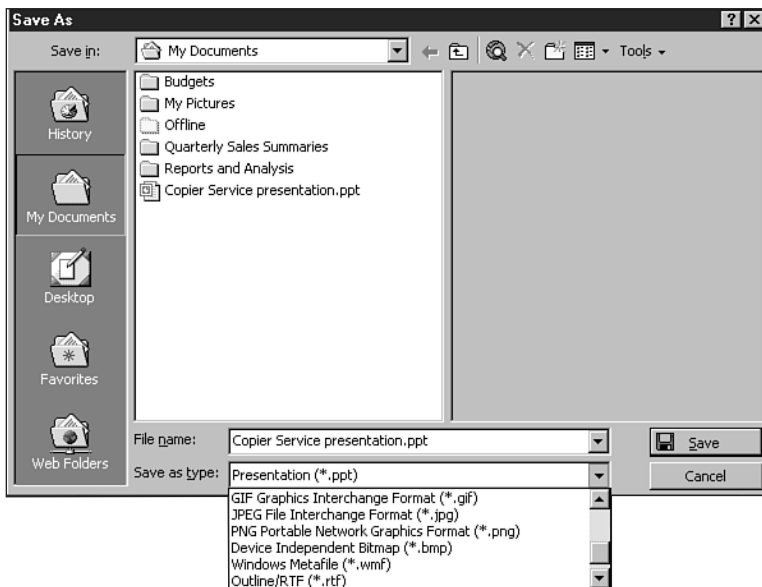
Throughout this chapter, we discuss bringing content and/or tools from Word and Excel into your PowerPoint slides. Although this is the most common type of Office 2000 integration when working with PowerPoint, you will find that you can use PowerPoint content and slides in Word and Excel as well.

Any PowerPoint slide content—graphics, organization charts, text boxes—can be added to a Word document or Excel worksheet by using the Clipboard to copy the content from the slide and paste it into the target Word or Excel file. The pasted content can also be linked (as discussed previously in this chapter), so that changes to the PowerPoint content are reflected in the Word or Excel target.

Another way to use PowerPoint content in other applications is to use entire slides. You can save an individual slide in virtually any graphic file format (such as .GIF, .TIF, .JPG, .PNG, or .BMP), enabling you to insert it as a graphic in any Word or Excel document.

To save a PowerPoint slide as a graphic file, follow these steps:

1. Choose **V**iew, **S**lide Sorter to view your presentation as an array of thumbnail graphics, or make sure you're in Slide View of the slide you wish to save as a graphic.
2. If you're working in Slide Sorter View, click once on the slide you want to save as a graphic.
3. Choose **F**ile, **S**ave **A**s to open the Save As dialog box (see Figure 18.12).



**Figure 18.12** Before saving the file, it pays to check which formats are acceptable to your target application. Choose the most commonly used formats for greatest usability.

4. In the Save as Type list, scroll through the formats and select a graphic file format such as .JPG, .TIF, .GIF, or .BMP (common graphic formats).
5. Type a name for your file in the File Name box and click Save.

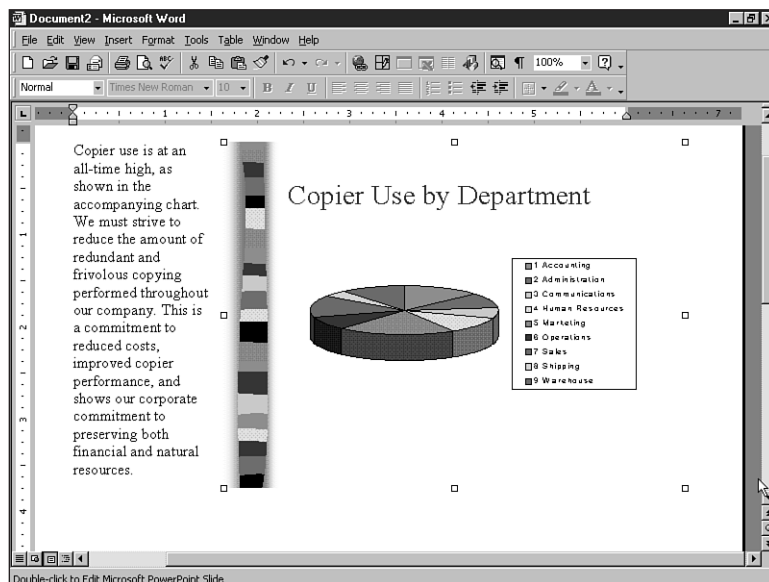
**Tip #227 from***Laura A. Ulrich*

If you're working from within Slide Sorter or Slide View as you save your slide as a graphic, a prompt appears, asking you if you want to export every slide in the presentation or just the selected slide. Click No, which exports (saves) only the selected slide.

When saved as a graphic, use the Insert, Picture command in Word or Excel to insert the graphic. The graphic can be sized for legibility and formatted using the Picture toolbar. Figure 18.13 shows a PowerPoint slide in a Word document.

**Figure 18.13**

If your PowerPoint presentation and your Word document pertain to the same topic and will be distributed to the same audience, use PowerPoint graphics, charts, and slides for visual consistency.

**Tip #228 from***Laura A. Ulrich*

If you'll be using the graphic on a Web site, consider saving it in .GIF format. This format is acceptable to most Web design programs and creates small files, which is desirable for creating fast-loading Web pages.

## TROUBLESHOOTING

*When I paste Excel content into another file, I lose my formatting.*

Excel formatting should be retained when worksheet cells or charts are pasted into your PowerPoint slides. If the pasted content looks different than the source content, however, consider these solutions:

- Delete the pasted content and repeat the Copy and Paste procedure.
- If you're using Paste Special to link the content to the PowerPoint slide be sure that you chose the correct object type.

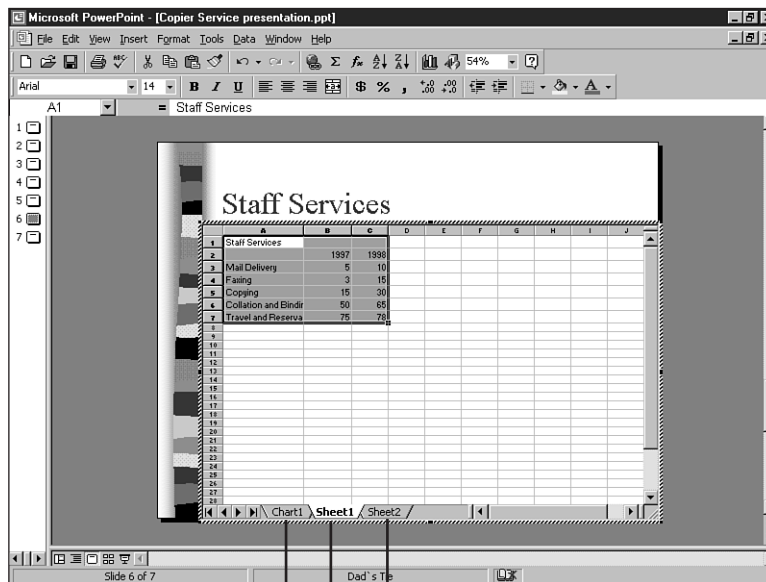
If neither of these options solve the problem, consider embedding an Excel object in the slide, and pasting the content there. You'll be able to edit and format the content in its own application, negating the possibility of lost formatting.

## DESIGN CORNER

PowerPoint becomes a natural place to combine the best results of your efforts in Word and Excel for the purposes of creating an effective presentation. Using the Clipboard and OLE tools to reuse existing Word and Excel content as well as to create new slide elements through embedded Word and Excel objects saves time and effort, and assures consistency throughout your Office documents.

### BEFORE

The next figure shows a slide that contains an Excel chart object, embedded and undergoing changes within the PowerPoint window. Excel's tools are available through the active object, providing fast access to the requisite tools.



**Figure 18.4**  
The entire three-sheet workbook is available, although only part of it (the chart) needs to be shown in the slide.

Chart 1 contains the chart on its own sheet.

Sheet 1 contains the data that will build the chart.

Sheet 2 is unused.



**AFTER**

The last figure shows the chart as it appears on the slide. To the presentation audience, the tools used to build the chart are invisible, but for the person who developed the presentation, having an entire Excel worksheet available through a simple double-click is a significant convenience, despite any costs due to larger file size and increased use of system resources during editing.

**Figure 18.15**  
While inactive, the chart shows no sign of its roots in an Excel object.



# CHAPTER 23

## THE MECHANICS OF FORM— DEVELOPING EXTERNAL PRESENTATION SKILLS

### In this chapter

*by Tom Mucciolo*

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- Avoiding Vocal Problems 619
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## UNDERSTANDING THE OUTSIDE

“It’s not what you say, it’s how you say it!” We’ve all heard that before. And it’s especially true when making a presentation.

A study of intimate relationships found that 55% of everything you say is what you look like when you say it. Another 38% is how you actually deliver the information. And only 7% is what you say. Only 7%! You might say this is a measurement derived from personal relationships and not business ones. I say our personal and business lives are so interrelated that it’s hard to separate them. To me, this says that the biggest part of communication is nonverbal.

### Note

The referenced study is from work done by Albert Mehrabian, PhD, and Professor Emeritus of Psychology, UCLA. Dr. Mehrabian is known for his work in the field of nonverbal communication, particularly body language. His findings on communication are described in his book, *Silent Messages*, which deals with all facets of nonverbal communication and with combinations of verbal and nonverbal messages. The book contains reviews of Dr. Mehrabian’s own and others’ research findings on important elements of subtle or implicit communication. Communicators, leadership trainers, and political campaign managers often make use of these findings.

Dr. Mehrabian specifically notes, “The equations regarding differential importance of verbal and nonverbal messages were derived from experiments dealing with communications about feelings. Unless a communicator is talking about (his) feelings or attitudes, these equations are not applicable.”

In our discussions, feeling is definitely an issue. From a visual presenter’s perspective, the *emotional* link to an audience is critical for an effective delivery of nearly every message and makes this study especially relevant to what is covered in this section of the book. Thank you, Dr. Mehrabian!

Here’s more proof: You can speak up to 150 words per minute, but you can listen to over 700 words per minute. Do the math and you’ll find that more than 75% of the time you are processing nonverbal cues. These cues are important.

Regardless of the exact percentages, the bottom line is that delivery skills make or break the moment. This is not to say that content needs to be ignored, of course. We just spent two chapters on content! That would be like saying a playwright’s words are meaningless. Not at all. But it is true that the success of the spoken lines depends on the actors. And yes, bad Shakespeare does exist—I’ve seen it. (Unfortunately, I’ve even been part of it.) Poetry can easily be ruined by a poor performance.

### A Delicate Balance?

I work on a theatre principle called “off-balance” perspective. I apply this view to the message, the media, and most often to the mechanics of a presentation. The off-balance approach is a one-sided push for consistency. If I can shift your position to one side (off-balance), then I’ve made some change in you.

Your “position” might be your stance on a message. It might be your way of looking at visual content on the screen. It might be your view of the presenter in the room.

It actually matches the rule of thirds in photography. If you look at a framed image in three vertical sections, you should use the outer sections for the subject. In other words, when you take pictures, try not to center your subject. The image is more interesting because a bigger picture emerges for the viewer's eye to complete. This is not always done, but if you glance through magazine photos, you'll notice that most shots of people have them positioned more to one side than the other.

This off-balance approach is very effective. I use it often in developing, designing, and delivering presentations.

The actions of the presenter, from a physical and vocal standpoint, can add value to the visuals and make the entire event more effective. During a presentation, the brain must process a large amount of content. Therefore, the presentation needs to be as streamlined and effective as possible; that is, clear, concise, and to the point.

Okay, now you know that the greatest percent of your communication effort is physical. It is a combination of your visual and vocal delivery. So, you need to develop the related skills to become a more visual presenter. But visual and vocal skills are directly linked to the way you think and feel. Your mind and heart play a significant role in your delivery style, just as your body and your voice do.

Through all of this, don't forget to smile. If you're not having a good time presenting, how can anyone have a good time watching? This doesn't mean that you have to tell jokes all the time, but the presenter has more impact with an inside smile. It's called energy. Without this energy, your speaking will be flat, uninteresting, and definitely less effective. It only takes two muscles to smile. Try it.

The mechanics of delivery are partly external (form) and partly internal (function). That's why two chapters are dedicated to these mechanical skills.

Let's start with the external skills, the mechanics of form, because your form is the first impression processed by the audience. The skills covering external form involve

- Conquering fear
- Using your body
- Using your voice

## CONQUERING FEAR

According to the *Book of Lists*, the number one fear is the fear of public speaking. This eclipses even the fear of death! Wait a minute—if the number one fear is public speaking and not death, it means you'd rather be in the coffin than give the eulogy!

Call it nervousness, call it stage fright, call it whatever you want. If you can't speak in front of a group, you won't get very far in the business world. I'm probably not the first to tell you that. Now, if you have no problem speaking in front of people, then skip this section. But, if you have some anxiety when it comes to presenting to groups, pay close attention. Some powerful techniques can help you deal with being scared speechless.

So what gives? Does your fear increase as the next person enters the room? Why does the anxiety level rise in proportion to the number of people in the audience? What really causes this fear? You might think it's a simple lack of confidence. That, however, is just a symptom of a disease for which we need a cure! The fear is actually rooted in your physical presence in the situation. Think about it! If you didn't have to be there, you wouldn't have any fear!

Suppose you split communication into three types: written, spoken, and face-to-face. Match those with the way you work. You create documents such as letters, faxes, and emails for the written word. You use telephones and voice mail for conversational correspondence. You have meetings and presentations for the face-to-face method of communicating. Only one of these (face-to-face) requires your complete presence. The other two physically hide you from the receiver of the information.

When you write, you have time to edit and restate your words until you are ready to send them out for response. When you speak on the phone, you have less time to edit, but you are free to sit comfortably, and it doesn't matter how you may be dressed or how you appear. In fact, the telephone demands very little effort, especially now that you can screen calls, invent interruptions and use the ever-handy hold button. Even voice mail gives you a chance to plan your response in advance. So these two methods of communicating are less stressful simply because we can't be seen for who we really are at the moment and we get more time to collect our thoughts. When we are less visible, we have less fear. It's that simple. This protection from people helps you get through the communication effort with ease.

So let's take a look at the major problems associated with your physical presence in a situation. You can conquer the fear of presenting in two ways:

- Attacking the causes
- Learning to relax

## ATTACKING THE CAUSES

Over the years I have found four main reasons why people fear public speaking. Looking foolish, being judged, appearing boring, and wasting the listener's time. Possibly hundreds of other reasons exist, but these four usually cover most people's fears.

When you examine these reasons, do you see what they have in common? Each is a result of being self-conscious. It becomes a question of "What will they think of me?" The focus of the problem is internal. It is self-directed.

So here is a good rule to remember: When the problem is internal, the solution is external. You need to concentrate on things outside of yourself in order to remove the doubt. This concentration always involves some type of action. Let's examine the four problems I mentioned earlier and see what solutions—or actions—can be used to combat the dreaded fear of presenting in public.

## FOOLS RUSH IN

“I’m afraid that people will think I’m stupid!” I hear this one a lot when people discuss their anxiety concerning public speaking. Well, first I ask, “Are you stupid?” And only the really stupid people take a moment to think about that one. Hey, everyone is stupid, at times. Look at me. I’m one of the stupidest people I know. There are hundreds of people who will testify to that. But, then again, I hang around with a lot of stupid people who can’t tell the difference. Then, when I’m with the really smart people, all ten of them, I use the skills in this section of the book to mask my ignorance!

Forrest Gump said that “Stupid is as stupid does”—whatever that means. Actually, it’s a brilliant statement about actions speaking louder than words. If you do something crazy, others might think you really are crazy!

For many people, the typical uneasiness of speaking in public comes from this fear of looking foolish. What would cause that? Are you poorly dressed? Have you prepared your information? Are you speaking from a script you honestly believe has merit? Looking foolish is a feeling you get when you don’t have control of the content as well as you hoped.

It’s no different from the feeling you had in school when the teacher called on you and you didn’t give the correct response. You were embarrassed. You didn’t have the answer and you looked stupid! But if you knew the content—and, hence, the answer—you felt exactly the opposite. So, your first action is to get control of content. If you do this, your fear will begin to disappear.

Although you might think that content is controlled through memorization, that is not the case at all. The best way to get control of content is to first conceptualize your information, then visualize the manner in which that information will be delivered.

➔ To learn about conceptualizing and visualizing information, see “Providing Do and Say Scripts,” p. 529

You need to script your message using concepts which link together to form the discussion or the argument. Normally, written scripts, or Say scripts, force you to simply read back the content without really knowing it. Conceptual scripts, or Do scripts, are those that segment the topic into main ideas, each of which has some associated action. The action helps you remember the concepts and allows you to present without any notes.

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### How Actors Learn Lines

I know you’ve heard the phrase “Places everyone!” Ever wonder how the actors know exactly where to be on any given line? In the theatre it’s called blocking. It’s the director’s job to make sure everyone who paid for a seat can see all the action. Line of sight is very important, especially to folks who shelled out 80 bucks to watch the show! Blocking also helps the actors learn lines.

Here’s the way it works. At the first rehearsal, the actors sit around a big table and read the script—once. At the second rehearsal, the actors are up on the stage with scripts in hand learning the blocking. The director might say to an actor, “Okay, now cross to the middle of the stage and pick up the letter from the second drawer in the desk.” The actor moves to center stage, with script in hand, and stops at the yet-to-be-built set piece (the desk) and says the line, “I have the proof right here!” (or whatever). The point is that the actor remembers the line because it is linked to an action, the act of finding the letter in the desk drawer.

Obviously not every line has physical movement attached to it. But the lines become associated very quickly with the surrounding action, making it easier to memorize the words. You can learn a lot from this theatrical process.

When you link action to your words, you visualize the concept for the audience. The typical responses are, “It looks like she really knows her stuff,” or “He appears to have a handle on that.” Once you have obvious control of content, you won’t be singing the “I’m feeling foolish” theme anymore.

### JUDGMENT DAY

Another reason you might dread public speaking is the belief that the audience is judging you in some horrible, vindictive way. Let’s look at that. What could possibly motivate a group of people to dislike you the moment you step in front of them? Why would such a group suddenly unite in the hopes of squashing you like a bug? What would they gain? Always remember that the audience is made up of people, people like you. The key to that statement can be found by changing the emphasis. People like you. They do. Ask Sally Field.

When you meet someone for the first time, don’t you hope the meeting is positive? You’re basically the same as everyone else in the world, and everyone wants to make a positive impression with each new person he or she meets. Before you open your mouth, the audience starts off by liking you.

Of course, some pre-existing situations can cause the audience to not like you. If the circumstances are hostile, negative, or life threatening, then the audience is preconditioned to feel a certain way before seeing you. But barring any pre-existing negative conditions, the audience is on your side. They want you to be effective.

#### Tip #265 from



Here’s a test you can use to see if the way you judge others has merit: Every time you make a subjective statement using the word “they” or “people,” simply substitute the word “I” and see if the statement is still true. Try it.

Say the phrase, “People just don’t understand this business.” Now substitute “I” for “People” and say it again. Notice a difference? Try the phrase, “They don’t care about anything,” then change “They” to “I.” Using “I” changes your perception and, hence, the acceptance of the statement as being true. You can’t separate yourself from the world. You are an integral part of it, just as I am.

Think of yourself as a mirror and you will get back what you project to others. In theatre, acting is reacting. The same is true in life. If you offer a positive, nonjudgmental attitude it truly does come back to you.

So, to reduce the fear that people are judging you, just believe in people as you do yourself. Approach an audience with the belief that they are just like you and that they just like you. This will begin to reduce the anxiety of feeling that you are being judged in a bad way.

Okay, time for a reality check. Unfortunately, it is very difficult to completely remove the fear of being judged by simply believing the audience likes you. This may work during the 15 minutes prior to your stepping onto the platform, but what happens when you look out into the room and see all of those expectant faces?

To overcome the inner feeling of being judged, you'll have to concentrate on something outside of yourself, some action or activity, to get your mind off the anxiety. To avoid being judged you need to become a judge. You can do this by focusing on the anchors in the audience.

Simply select a few people in the room to focus your attention on while speaking. These friendly faces, or anchors, are points of concentration that you must continually seek. This removes the feeling of being judged and puts the judgmental responsibility on you as you present. You are forced to judge whether those anchors are staying attentive, still interested, and still maintaining eye contact with you. In other words, your action is to judge others as to their attentiveness to the message. This will push you to make the effort to keep them awake! If you're doing the judging, then the fear of being judged is transferred to the audience.

### THE BORED-ROOM

"The stuff I have to talk about is so boring." I get this a lot, especially from accountants. Well, I used to be a public accountant. I found it to be the best training for a life of crime. That's a lie. Political science is the best training for a life of crime. Accounting is the best training for a life of full employment! But that's another story.

The fear is that the talk will be boring, because the topic is boring. Stop for a moment. That might be true depending on your topic. After all, not every topic needs to be delivered. However, the topic is usually not the problem when it comes to lulling the audience into a false sense of excitement. When you finish the talk, if the audience responds with a nice round of indifference, chances are you were the problem, not the content.

To combat a boring topic, you need to find significance. The action, for you, is to convey the importance of the topic. Look for the sense of urgency. The more you identify the critical components of your script, the more determined you get to discuss those components and get reactions from your audience. Reactions reduce boredom. Reactions give the audience something to do.

I'll use the accounting example. A budget report given monthly may seem a bit mundane. Yeah, it probably is. But let's say you linked some budget information to ways that money will be allocated to make some specific task easier for everyone. Maybe the budget for computer networking has been increased. No big deal, unless you make it a big deal. What if you pointed out that faster file transfers will reduce lag time and waiting time and give everyone more free time. In one sentence, you went from lowly accountant to giver of free time! You can't do this all the time, but if you can connect parts of your message to the needs or desires of the audience, boredom will not be your problem.



### TIME FLIES

“I think I’m just wasting everyone’s time when I’m up there!” This is another anxiety-producer.

The feeling of wasting time may come over you more often during the presentation rather than before it. Suddenly, you have this instant loss of confidence and you can’t find a compelling enough reason to ask a group of people to continue taking the time to watch you present.

Do you see the problem here? Wasting time can only happen if there is time to waste. Get it? It’s the opposite problem of being boring. People get bored by monotony and hearing too much of the same thing. Wasting time is when you don’t have enough relevant stuff to say!

Believe it or not, the structure of your script might cause you to try to fill up the time. Just because you have an extra 15 minutes doesn’t mean you must fill it with poor content. You have to make the best use of time in order to reduce the fear of having wasted it. In some cases, that may even mean letting people leave early. Perish the thought!

The easiest way to make the best use of time is to use a form of action known as interaction. You can manage your time better by involving the audience throughout the presentation. This requires you to plan ahead, think quickly on your feet, ask questions, stir discussion, and even create controversy. Naturally, this shifts the concentration from yourself to your audience because you have to monitor their involvement. Activities that help audiences experience new things are seen as positive and not perceived as wasted time.

Now, instead of just planning time for the audience to ask questions, plan the time for you to ask your audience questions. Be proactive. Come up with thought-provoking ideas to stimulate discussion. Not only do you involve people in the topic, you learn from the experience, too. This type of involvement helps reduce the fear that you are wasting the listener’s time.

If you can’t fill the time with enough information of your own, then maybe the audience can help you. Again, you need to redirect the fear inside of you by placing the problem outside of yourself. Hand the task of not wasting time over to the audience. Believe me, they’ll perk up.

### LEARNING TO RELAX

Some say the nervousness before a performance is both natural and necessary. I say it might be natural, but it is certainly not necessary. If you can reduce a case of the jitters before a presentation, you will be able to deliver your message more effectively. One way to do this is to learn to relax physically. Of course, a limber body is always more relaxed under any pressure. Stretching exercises and other aerobic activities will, among many other benefits, definitely help you relax when giving a presentation.

**How It All Falls Apart**

Fear affects you physically. Your body “talks” to you right before the big moment. It works something like this: Your heart starts pounding, pumping precious blood from your belly to your brain. Your stomach gets queasy as the knot tightens and the butterflies begin to bounce. Your nervous system sounds the alarm and chemistry gets the call.

Helloooo, Adrenaline! On the street they call it speed.

The slick little stimulant marinates your muscles, weakens your knees, and races to your extremities. The friction of its fury lights a fire under your flesh.

You call it nervous energy. On the street they call it sweat.

Your heart beats faster and you take deeper breaths to assault the adrenaline rush. Oh no! Too much oxygen! You picked the wrong time to fill those lungs, pal!

Wham! The aerated blood in your brain begins to pulse as the rich, red river rolls through your head, suddenly giving you the power to think quickly. Your thoughts are progressing faster than your mind can contain them. What’s coming out of your mouth is making no sense at all as you stand there slobbering in your shallow shell.

You’ve been reduced to a hyperventilating, babbling blob of Jell-O, shivering in your own skin, as you pathetically preach to the people who pay you!

You call it presenting. On the street they call it shame!

Kinda makes the point, doesn’t it?

As I mentioned, one way you can help yourself prepare for those opening moments is with some kind of physical exercise such as stretching or even something more strenuous beforehand. Another way to reduce the adrenaline rush and rapid heartbeat is create other activity (action) for yourself. For example, you can slowly take a few deep breaths before you begin. Yes, this increases the amount of oxygen in the system, but it reduces the heart rate before the adrenaline kicks in. More important, the taking of a few deep breaths gives you something to do (action), which takes the focus away from thinking about your presentation.

Once you start speaking, you may still experience some jitters. You can still create an external action—something to do to reduce the nerves—without the audience being aware of it. You might try wiggling your toes in your shoes. No one sees this and your concentration again becomes focused on some physical action. Maybe your mouth becomes dry. No you can’t take a drink of water, but you can slightly bite down on the outer edges of your tongue or on the insides of your cheeks to create saliva and keep your mouth moist.

Again, you simply need to do something physical to reduce the internal nervousness, anxiety, and fear by using external means. When the problem is inside, the solution is outside. The goal is to redirect your attention away from the internal workings of the mind onto things that are external to you.

The more you concentrate on actions, the less chance you have of being self-conscious, which ultimately creates nervousness. So take a few deep breaths, wiggle your toes, and start talking!

## USING YOUR BODY

Keep in mind that eliminating the fear doesn't mean you automatically will present well. That's the same as being unafraid to sing, but not knowing how to hit the right notes. (At that point, the fear is with the audience, who wonders if you will ever stop!)

Face it! You can't present well because you haven't learned the rules. You don't know how to play the game because no one taught you how. This is completely understandable. I was the same way. Then I learned to play the game.

The skills I want to share with you are based on the theatre. I was lucky enough to get exceptional acting training that very few others have ever experienced. I now apply those skills to presentations and guess what? They work! If I can make 1,500 people react to a playwright's intention, I can easily teach you a method that makes you a better communicator no matter what the topic, where the opportunity, or how big the audience. After reading this section, you'll be able to start using these skills tomorrow!

The only way to develop a method or systematic approach to any skill is to agree on the parameters that make that skill achievable. In this section, you learn to build a concrete foundation from which to work. With a core set of guidelines, you remain consistent from one presentation to the next, regardless of the content. I want you to concentrate on the basics—on things external to you. The things external to you always involve some type of action or activity and include

- Positioning and moving
- Making eye contact
- Using gestures
- Mastering the lectern
- Avoiding problems

## POSITIONING AND MOVING

The first thing you have to learn is your relationship to the room. The physical space you occupy must be subject to your control. Like the home-field advantage in sports, if you know the space and feel comfortable within it, you can achieve your goal and deliver a more effective message.

For presentations, understanding the layout of the room, especially the size, distance from the group, and placement of the screen (visuals) is very important. All that stuff will change from place to place, and you may have to make certain adjustments to get the room situated comfortably for you and your audience.

But you want to develop a consistent behavior, regardless of the physical attributes of the room. These universal concepts will help you in every presentation situation because you can control all of them, at any time.

### ESTABLISH AN ANCHOR

When presenting with visual support, you need to set an anchor for the audience to watch and read. Anchor your body to the same side as the starting point to read the language (that is, left-to-right or right-to-left).

For presentations in English (and many other languages), you must stand on the left side of the room; that is, the left side from the audience's point of view. In the English language, we read words from left to right. The eye is less distracted if it sees the presenter speaking from the left (in the anchored position), then glances slightly to the right to read the visual (left-to-right). The eye then naturally returns to view the speaker again as in the act of reading.

If you stand on the opposite side of the room (the audience's right), the audience has to look at your face, then navigate backward and across the visual just to find the reading anchor and then "read" just to get back to you again. This extra step is a distraction. It is a waste of time. Listening is delayed and effectiveness is reduced.

Now if you were in Israel, you could be on the other side; in Greece, stand in the middle; in China, on your head—I don't know. But in the United States, we read words from left to right, so stand on the audience's left when presenting. This is the way to establish an anchor for the audience, because it matches the reading pattern (anchor) they've grown accustomed to all their lives.

#### Note

If you have no visuals for the audience to view, it doesn't matter which side of the room you present from, as long as people can see and hear you. However, it is always better to choose a side and remain in that area.

Off-center is always a good choice because a centered presenter ends up having to work twice as hard by shifting and moving to both sides of the room. The one-sided approach sets a positioning anchor for the audience, which, if constant and unchanging, is less distracting.

You want to present from the side of the room that matches the reading pattern of the language. But, don't worry if you get stuck on the opposite side of the room. While you should try to avoid it, but you never know what you might be faced with when you haven't set things up yourself. If you have to present from the wrong side, just make fewer references to your visuals during the presentation to limit the distraction for the audience. Naturally you won't be the most effective you could be, but you won't necessarily walk away a failure, either.

### BUILD A TRIANGLE

You want to know the biggest problem for most presenters? Moving! That's right, moving. They have no idea where they are going! They never really think about it!

Can you imagine if the actors had no idea where to go? The actor playing Hamlet would say, "To be or not to be...whoops...oh...sorry, Dave...didn't see your foot!" as he pulled himself from the floor.

The only way to know how or when to move is to know where to move first. An easy way to learn this is to design an area in front of the audience in which you can move. It's called the *Presenter's Triangle*<sup>TM</sup>. It's imaginary because you must create it!

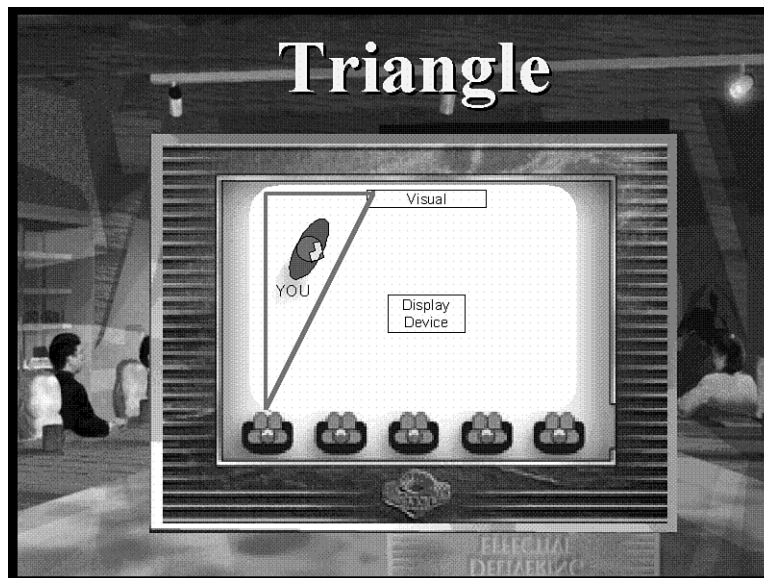
Figure 23.1 shows the triangle. Here's how you build it. While standing at a fixed distance from your display equipment, construct an imaginary line from the eyes of the person sitting on your far right, to the left edge of the screen. This line becomes the long end of the triangle, an angled wall. From each end of this angled wall, draw two lines meeting at a 90-degree angle to complete the shape behind you. Now you are standing inside an imaginary triangle.

The most important point to remember is that the angled wall is a boundary you cannot penetrate. If you step through the wall, people on your right will not be able to see the screen.

#### Note

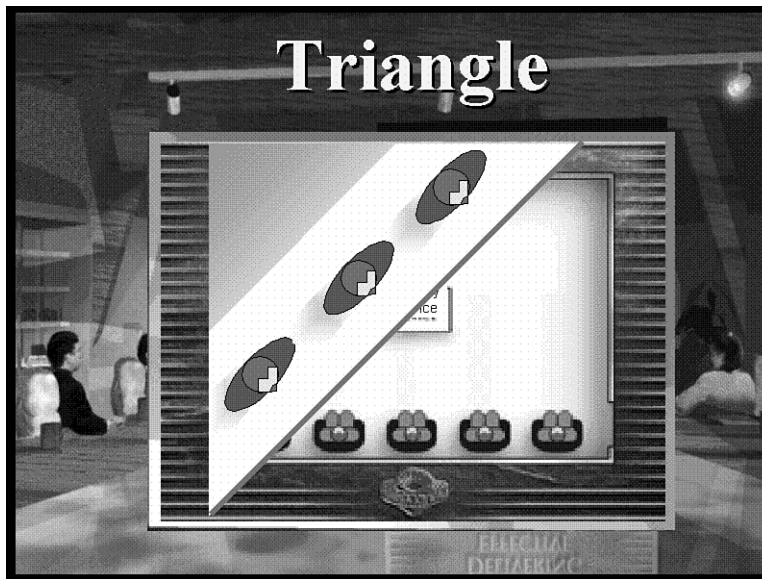
Naturally, the illustration suggests you position yourself at a fixed distance from any display equipment. If you are using transparencies or seated at a keyboard, the triangle option is limited to those times when you take a position that does not block the view of anyone. This is another reason why presenting with overheads is so difficult. The line of sight from the audience to the visual is broken for some people.

**Figure 23.1**  
A top-down view of the Presenter's Triangle. You create this imaginary space in which to present so that you don't block the view of anyone in the audience.



Okay, here's the good news. There are only three positions of the triangle that your body ever has to occupy. That's it —only three spots—the front, the middle, and the back!

Figure 23.2 shows a close-up view of the triangle with the three positions noted. The front is closer to the audience; the middle is where you should be most of the time; and the back is much closer to the screen. Now you will never use the full area of the triangle, unless you feel like hiding in the far corner (the shaded area) for some reason. Actually, you are really presenting inside a corridor within the triangle. You simply move along this little hallway, which follows the path of the angled wall.



**Figure 23.2**  
A close-up view of the triangle. You can use any of the three positions along the angled wall, but you want to avoid using the far corner (the shaded portion) when you move.

So why are there three positions? Because you have to move! You need to change the position of your body every so often or people won't watch you. If your body is not adding value for the audience, then they have less reason to watch you present the information. If you don't move, then it's talk radio. The audience will spend less time looking at you and more time updating their daily planners!

All forms of communication require some type of change to be effective. The change takes place in writing, in speaking, and in delivering. When you write, you skip lines and start new paragraphs. That's form in writing. When you speak, you pause between thoughts. That's rhythm in speech. When you're face-to-face, you create action in a defined space. That's movement in delivery.

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**Does Size Matter?**

You rushed to read this one! We know each other too well! It's the size of the triangle I'm referring to!

The dimension of your space is based on the distance from the screen to the first row of chairs. At times you may have a 25-foot area to move around in. Other times, you may have only a few feet between the first seat and the screen.

For example, in a conference room you may only have a few steps between both ends of your triangle. But there is always a triangle, even if the only way to change between positions is to shift your weight. Your body must make visible changes based on the available space in order for the audience to pay attention.

So size doesn't matter for the triangle to exist. However, the more area available to you, the longer it will take to get to different spots. This will have some effect on your delivery. You'll want to make your key points when standing still for more impact. Thus, a larger triangle will force you to create additional words or phrases between those key points to naturally fill the moments needed to move to a new position

From that perspective, when it comes to using different positions, size really does matter! Hmmm...where have I heard that before?

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All you have to do is treat the three positions of the triangle like peg holes or stopping points. You move to these points periodically, but with authority, remembering to stop and remain in a particular position for a while as you speak. You don't want to appear to be running back and forth, meandering aimlessly, drifting from place to place for no apparent reason. Just as you don't add paragraphs after every sentence or pauses after each word, you don't want to overdo and have constant movement while you present.

You might be wondering when to use the front, middle, and back of the triangle. Here's a guide. Choose the back of the triangle when the visual is complex. A busy visual forces the audience to keep looking at it. If your body is closer to the screen (the back of the triangle), then there is less distance for the audience to look between your visual and your voice. You don't want people moving their heads back and forth like they're at a tennis match!

Choose the middle of the triangle for the majority of the talk. Think of the middle as the launching pad to move in either direction. The middle is like the...well...it's the middle! It's the midpoint between two extremes.

Use the front of the triangle when your visuals are less busy and you want to be closer to the audience. A simple visual allows the audience to reference it fewer times. This means you can be a farther distance from the screen.

Here's one more point to consider about position. If you want to convince an audience with a key point, which do you think would be most effective—to be in the front, middle, or back of the triangle? Obviously, the front, where you're closer to people. Well now you have learned one of the most valuable lessons of all—choreography drives content! It's not the other way around. Decide where you want to be at certain points in the presentation and then look at the visual. Does it allow you to be in that spot based on its format? If not, then change the visual.

If you know you want to emphasize an important point when you move to the front of the triangle, your visual content needs to be simple enough to allow your body to navigate to

the front of the triangle. Or is the image so cluttered that half the audience is still reading while you're addressing the major issue? Change the visual to suit your movement.

Don't let content be your guide! Simply decide where you want to be on a given visual and adjust the complexity of the image according to your position in the triangle.

The triangle is important because it represents part of your physical plan of action. Without some definite planned movement, you end up wandering aimlessly, giving the audience no reason or logic for the direction. (Don't forget that the audience is processing your body language more than your visuals or your voice.)

### PLAY THE ANGLES

While there are only three places to move in the triangle, there are only two body positions you have to worry about! See? It's getting easier!

You're going to find that all the power in your presentation rests in your shoulders! The angles of your body enhance communication. Figure 23.3 shows the two body positions or angles used in presenting, rest and power. For most of your talk, you should be at a 45-degree angle to the room. To create the angle, point your shoulders to the opposite corner of the room. This is a rest position. It's a nonthreatening stance, which opens your body to both the audience and the screen when you need to gesture or move.

After you establish the rest position, you can use the power of your left shoulder. The shoulder farthest from the audience is always your power shoulder. Because you are on the left side of the room, the power comes from what you do with your left shoulder.

To get power, simply square your shoulders to the back wall of the room. Each time you turn your left shoulder toward the audience, you move into a power position. This signals that the information being communicated is of greater importance. But don't stay in that stance too long or the effectiveness of your words and actions will diminish. Constantly staying in the power position is the body's way of yelling. That's why the rest position is so important.

So, if you plan it right, you can choose the exact moments to add impact to the presentation by switching to the power position from any of the three places in the triangle.

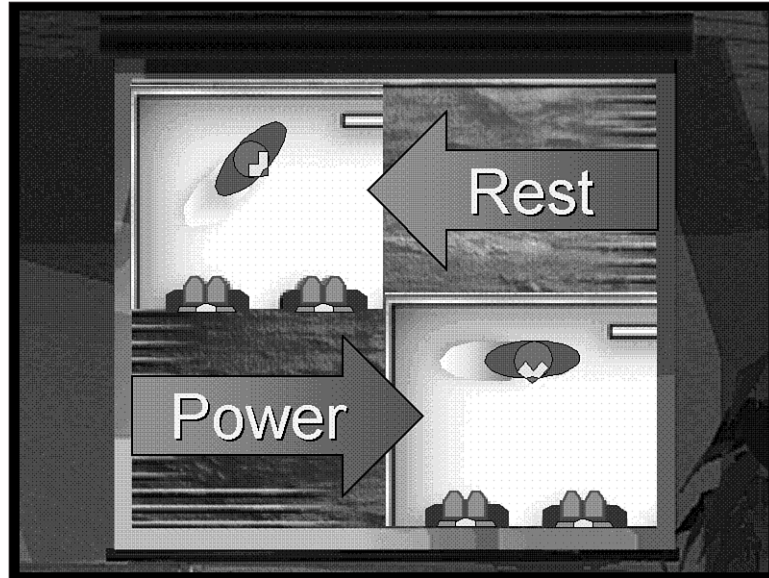
For example, let's say you have 20 minutes to present. You start off in the middle of the triangle in a rest position. On a particularly busy visual, you navigate to the back of the triangle, closer to the screen, but still in a rest position. From that same spot, you square off to a power position just long enough to make a key point, and then you revert back to the rest position as you continue. Maybe later in your presentation you navigate to the front of the triangle to get a little closer to the crowd. You're telling an experience related to the topic and at a high point in the story, you square off for impact.

Wait...relax...calm down...you don't have to plan a move for every spoken word! But, if you practice, just like an athlete, the "moves" of your body will develop automatically. If you can get used to being a visual presenter, using the positions of the triangle and angles of the body will add enormous value to your presentation.



**Figure 23.3**

You should only be concerned about two positions (angles) of the body: rest and power. The 45-degree angle is a rest position and the squared-off move puts you in a power position.



## MAKING EYE CONTACT

So how do you please the crowd? You look at them! Yes, you look at them. It is so easy to do. Effective presenters look at people and make eye contact. This is critical to the communication process, especially to a group of visual creatures—the audience. The less time you spend looking at people, the less effective you are going to be.

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### The Eyes Have It!

When you watch TV, you are constantly exposed to eye contact. Think about it. The newscasters are looking right at you, with the help of a TelePrompTer®, of course. I don't understand why they have to use a TelePrompTer®. Why can't they just memorize the news the day before?

Anyway, they make constant eye contact. Characters on TV shows (sitcoms, dramas, or whatever) don't look at you, but they look at each other. Here again you are watching eye contact, only not directed at you.

Let's face it. We all watch a lot of movies and TV and are used to the idea of continual eye contact. As a visual presenter, you must not fight the expectation that a group is mostly made up of eye-contact hounds.

So, throw 'em a bone and look at 'em!

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### DIRECT EYE CONTACT

Direct eye contact is easier in a smaller group, simply because you have less faces to find. In a conference room with 10 people, for example, it will be easy to look at every person in the room at one time or another during your presentation. In a large audience, say 50 or more people, you can make direct eye contact with several people, but probably not everyone.

Now suppose you're afraid to make direct eye contact. You just don't like looking right into someone's eyes. Here's a trick for you: You don't have to look directly into a person's eyes.

Instead, you can look between the eyes and, from a distance, it looks like you're making eye contact. Just look at the spot on a person where the bridge of the nose meets the eyebrows, and it will seem as if you are looking directly into that person's eyes. It works with everyone, every time—but it doesn't seem to work with a spouse...hmmmm.

### ANCHORED EYE CONTACT

Let me ask you: What's your limit? You know, the highest number of people you feel comfortable presenting to? Is it like 5? Or 15? Or 50? Maybe 100 or more? Usually there's a number. Suppose your number is 25. Then let's say that one more person walks in the room. Do you suddenly stop, throw your hands in the air, and shout, "Hey, hey you—out. Yeah, you, out! 25 is my limit, pal!" (I don't think so.)

The point is that although the limit is in your imagination, it still doesn't change the fact that a larger group may intimidate you. The reason your "crowd-alarm" goes off is because you haven't established anchors in the audience with whom to make eye contact.

Here's what can happen: During a presentation, your eyes occasionally leave the audience, perhaps for a quick glance to your visual. When your eyes look away and then return to the audience, you suddenly see thousands of eyes staring back at you and—zap!—you lose your trend of thought. You forget the next phrase because the group—not any individual, the group—temporarily distracted you.

But, if you have identified specific people in the crowd, say a few friendly faces in separate areas of the audience, then you have a better chance of staying focused. If you look away for a moment, on your return trip to look at the crowd, you will be able to seek out those individuals and make anchored eye contact with any one of those friendly faces.

The anchors you select in the audience should be far enough apart so that it looks as if you are speaking to whole sections, even though your eyes are fixed on one person within that section. So split the audience up into a few big areas, maybe two on one side, two on the other, one down the middle—and pick out a single face inside each area as your anchor. Then, when your head turns away, the next look back to the crowd will have you finding an anchor instead of having the entire group overwhelm you. (Think of it as presenting to a just few people who happen to have lots of other people sitting around them.) This way, you maintain your concentration and you don't feel intimidated.

After you have found your anchors, any direct eye contact with other selected individuals is even more effective. If you've been looking into sections of the audience, and then suddenly lock your eyes onto one particular person (not one of your anchors), it will be extremely powerful, especially for that person. It's as if you made personal contact with that individual; in other words, you singled out someone in the audience, making that person feel special.

You may have experienced this yourself if you've ever gone to a play or a concert and the performer, while entertaining the crowd, suddenly makes direct eye contact with you, it's something you never forget. So, the more eye contact you make with people, the more involved in the presentation they become.

## USING GESTURES

What do dance, ballet, mime, and most every sport have in common? With the exception of bobbing for apples, they all require the use of the hands. Presenting is no different because the hands control the eyes of the audience. What you do or don't do with your hands when you present makes a huge difference. Unfortunately, most presenters simply don't know what to do with those things at the ends of their wrists.

At times during your presentation, you'll have to guide the eyes of your audience toward your visual. Letting the audience look where they want is one thing—it's more effective if they look where you want.

Never hide your hands behind your back or inside your pockets. Avoid putting your hands together in front of you for more than three seconds. When your hands stay together for even those few moments of time, the audience tends to look at them and not at your face. Always remember, the eyes travel wherever the hands go. Keep your hands apart, yet always visible.

### Note

When you're nervous, your hands tend to join together or marry. In other words, they end up folded in front of you, doing nothing. Because you're a mammal, you have no skeleton in the center of your body, so you tend to protect that area by letting your hands rest together in front of you. You never see anyone with his hands on top of his shoulders saying, "Boy, am I nervous!" No way! Hands clasped in front or even locked behind your back, indicate nervousness and reduce your effectiveness.

If you aren't making any gestures, then return to a simple position with your hands at your sides. Or if your hands are up, waist high, then just avoid bringing them together.

If you are not elevated on a stage or standing on platforms (risers) when you speak, gestures are harder to see for everyone except the people in the front seats. For those viewing you from the waist up, keep your wrists higher than your elbows so that the gestures are visible. Always be aware of those sitting behind others and the view they might have of you while you speak. Gestures with your wrists lower than your elbows will generally go unnoticed and create little impact or meaning.

If used properly, the hands can orchestrate the eyes of the audience. Casual or emphatic gestures made to the screen or to the audience can create visual inflection. This helps the group recognize what is important. You can use a number of gestures with your hands and with your body that can help make your message more meaningful.

## REACHING OUT

The best gesture you can make as a presenter is reaching out. When the palm of your hand faces up as your arm extends out to the audience, it is a very friendly move and can be done with one or both hands. When you reach out to the audience, you appear as if you want the group involved in the event. The palm-up and the arm-out gesture is generally pleasing to the eye and indicates a warmth of expression for the presenter.

Think about your everyday actions in business. When you greet a person in business you shake hands by extending your arm out with your hand open (an exposed palm). You are reaching out to that person. You might shake hands as a greeting, a parting, or as a result of an agreement.

You can shake hands with the audience by reaching out to them. You reach out to the group as a way of greeting them, parting with them, or bringing them into agreement with you. Just because there's more than one person in the room doesn't mean your personal interactive skills suddenly disappear. When you reach out to the audience, you become more approachable and ultimately more effective.

The reaching out gesture also works best when you interact with the audience, especially in a question-answer situation. If someone asks a question, reach out to acknowledge that person. But don't stop there! You must keep your arm outstretched with your palm up until the person begins to speak, and then you can casually pull your arm back, almost as if catching the first syllable in your hand.

If you don't leave your arm extended until you get the beginning of a response, you end up with the opposite effect, a gesture that suggests insincerity or indifference. It's called the "Like I Care" gesture. You've seen it. The presenter flings a hand at a person while asking a question, as if to say, "Yeah right, like I care about your answer!" Don't start tossing your limbs at people and then expect interaction.

**Tip #266 from**

The reaching out technique works best for the first question asked. After you set the stage for a nice way of interacting, the audience will be more inclined to ask additional questions.

**THE LEFT HAND FOR GUIDANCE**

Your left hand does the majority of the guidance for the audience. If you recall, the screen is always to the presenter's left for languages that read left to right. So, if you want to guide the eye to the screen, simply lift your left arm and use your left hand to motion slowly in the general direction of the visual. This indicates that the image should be glanced at by the group, but they should remain more focused on you. However, if you raise your left arm and dart your left hand quickly toward the screen, the more emphatic movement tells the audience that the content has more importance.

In both examples the key is to make your movements with authority. Do not make half-hearted gestures or the impact diminishes. Would you have a few images appear which were not bright enough to be seen? Would you casually whisper a few phrases that few could hear? You wouldn't make less of an effort with your visuals or your words, so don't use half-hearted moves when delivering the story.

**Tip #267 from**

Use your head! If you gesture to the screen and keep looking at the audience, the group has a choice to either stay focused on the screen or return their focus to you. This is because you are facing them and, technically, so is your visual. But if you turn your head to look at the screen as you gesture toward it, you force the audience to focus more on the visual than on you. Even if they look back at you, they see you looking at the screen and realize that's where the concentration should be. Both of these methods should be used to help shift emphasis on and off you from time to time. This variation is important.

**THE LEFT HAND FOR MOVEMENT**

The left hand can help you move through the triangle. That's right! You can walk toward the audience with no gestures, but you can't walk backward without an excuse. The audience needs a reason for any movement away from them. If the body retreats, it is a sign of distrust; the body language indicates that you are not telling the truth or that you are unsure of your accuracy. You appear to be “backing away” from the issue.

So you might wonder, “How will I get from the front of the triangle to the middle or back if I can't retreat?” You can retreat—with a reason—by using your left hand. If you gesture to the visual while navigating backward through the triangle, the audience accepts the movement because you are gesturing. They allow your retreat using the logic or excuse that you had to back up because you had to gesture to the screen.

**Tip #268 from**

The only way to understand this is to try it. Stand in one spot. Start describing one of your best qualities while you move backward a few steps without making any gestures. How does it feel?

Okay, now pretend a screen is behind you. Stand in that spot again, use the same description and use your left hand to gesture back to the imaginary screen as you move backward. Notice the difference? It's as if some key support information exists to help make your point.

As you've just seen, only gestures can get you backward through the triangle, which is why it's so important to link your movements to your visual content. Make sure when you're directing attention to the screen (as you navigate away from the audience) that what you're saying relates to the visual to which you're gesturing. If it doesn't, you'll create even more confusion.

**Justifying Movement**

The audience needs a reason for your moving away from them. Your gesture to the screen is that reason. But only you need a reason to move toward the audience. Typically, this requires no gestures, just movement. Your reason is to get closer to them. In both cases you have justification for the movement in either direction.

But what if you had to move sideways? What if you had to break the triangle and cross to the other side of the room? The only reason to do this must be to get to a visible reference. Most likely that reference is a prop. You cross the room to get something you need to incorporate into the presentation at that exact moment.

Of course, if you don't require the item, you can gesture to it without crossing the room. However, if you know you are going to need a prop, you should place it closer to you before you begin your presentation so you don't have to cross the room to get it.

You may also want to move sideways and cross the room to interact with a person. This is not a valid reason to break the triangle; a reaching out gesture is the way to interact with anyone in the audience.

Use the rationale that a break from the triangle requires carrying something back with you from wherever you are tempted to go. You'll find few reasons, if any, to ever drift from the anchor of the triangle. But if you do, there better be a clear reason as to why.

### THE LEFT HAND FOR HELP

You can only look at each visual one time! That's it, one time until it changes or something on the visual changes. If you look at the same visual more than once, the audience thinks you don't know the information. They wonder why you have to keep looking back at the visual simply to make the next point.

You might think the easy way out of that problem is to use builds. Why not? The next bullet point pops up (a visual change) allowing you an opportunity to look at the image and quickly get the next thought. Nice try, but the audience will know you're using the visual for help when you don't speak until after you read a bullet point. They'll know you're reading the stuff—maybe for the first time!

Okay, so what can you do? Yep, you guessed it—use your left hand! You already know that you can look at your visual once without a gesture. To look at the same visual again, add a gesture to the screen. It's the old “give-them-a-reason” move. The audience forgives your extra glance to the screen, silently saying to themselves, “Well, of course you had to look at the screen again. You had to gesture and be sure of the spot you were referencing.”

Now suppose you have to look at the same visual a third time? With the first glance, you need no gesture. The second glance, you gesture—ahhh, but this time you leave your hand in the air. Don't drop your arm, keep it extended. Then, when you look at the visual for the third time, you only have to change the angle of your hand. Just a slight tilt of your wrist, up or down, moves your hand and creates another gesture or another excuse for the audience. You can even look for a fourth time as long as your hand changes position again. I know some presenters who haven't the slightest idea what's on each visual; but, by leaving an arm extended and glancing toward it a couple of times, the audience thinks, “What brilliance!”

#### Tip #269 from



Leaving your left hand in the air can help with the pacing of the presentation. How? When you gesture toward the visual and leave your arm extended, the next time you glance back at the image, you can turn your wrist slightly until the face of your watch is visible as you look over the top of your hand. Now you'll know what time it is, and you may have to adjust your pacing, depending on how much time is left in the presentation. Of course, your watch must be on your left arm for this to work. It's also best to wear an analog watch with a contrasting face and visible hands. Digital display watches may not be as easy to read, especially if the lighting in the room is dim.

### SHIFTING YOUR WEIGHT

When you are not making gestures, your hands should be at your sides and always visible. The eyes travel wherever the hands go so never hide your hands from the audience. Without gestures, your feet should be shoulder-width apart, your elbows and knees unlocked, and your weight evenly distributed. That's the position to use when you are not making gestures.

When your elbows and knees are unlocked, you have your best opportunity for movement. When you stand still, the tendency is to lock your knees and even your elbows. If your limbs are locked, you lose energy. If your limbs are unlocked, you unleash energy.

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#### Center of Gravity

Men and women are different. I mean, in terms of the way they stand. Men have a higher center of gravity than women, located in the middle of the chest. A man tends to stand with his feet wider than his shoulders, for balance. Invariably, for some strange reason during the presentation, his feet will get farther apart, little by little. When his feet are spread too far apart, he is less likely to move and ends up in the same spot for the entire presentation. So a man should stand with his feet at the same width as his shoulders in order to make movement more likely.

Women have a lower center of gravity, closer to the hips. A woman tends to stand with her feet closer together, sometimes with the heels touching, for balance and posture. Men—don't try this stance or you'll tip over like a bowling pin! However, during a presentation a woman will often establish this posture-position and lock into that one spot for the duration of the talk. If a woman keeps her feet shoulder-width apart, she is more likely to move at some point.

So, don't mess with gravity—it's the law!

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Movement is necessary and gestures are important. You know this by now. But, if you want to use your hands and make all your gestures look natural, you need to shift your weight.

You see, if your heels are both touching the floor, you can't make gestures that look natural. Instead, they appear stiff. Stand up and try it. Rest your weight evenly on each foot with both heels on the floor. Now lift your left arm to gesture. Stop! Take a look in the mirror—you look like a flagman on a highway or the person directing the plane into the gate! You look stiff. It's because your heels are touching the floor at the same time and your weight is evenly distributed on each foot.

Okay, so you have to learn to shift your weight. But first you must know the limits of your own body to do the weight-shift thing properly. Try this. Stand up and place your feet at the width of your shoulders. Both heels should be on the floor and your weight distributed evenly between both feet. Now take a half-step to your left, just far enough for the opposite heel to lift off the floor. Feel that weight shift to your left foot? Okay, now shift your weight back onto the right foot until your left heel lifts off the floor. Now you know the limits of your body to make gestures look natural. The weight must be on one foot or the other for the gesture to look smooth.

**Tip #270 from**

The easiest way to know if you are shifting your weight properly is to keep the base of your neck lined up with the same foot you're placing your weight on (you could also line your chin up with your knee). Now you can gesture and it will look natural.

If the nape of your neck is not lined up with one of your feet, then your weight is probably evenly distributed and you are most likely resting on both heels. If you gesture from this position, it will look unnatural.

**Leaning Can Have Meaning!**

Weight shifting combined with gestures can help make your message stand out. Depending on the direction you shift your weight, the effect can be quite dramatic.

For example, if you shift your weight to your left foot—toward the visual—while gesturing with your left hand, you are silently saying to the crowd, “Come with me and let’s inspect this information.” If you shift your weight to your right foot—away from the visual—while gesturing with your left hand, you are saying, “This information proves the point.” It’s like the magician who leans into the trick and then leans back to reveal the magic!

So, if you have a problem-solution script, you might want to lean toward a visual when identifying a specific problem and, later, lean away from the visual when the related solution is shown.

**MASTERING THE LECTERN**

A lectern is what you stand behind and a podium is what you stand on. However, people use both these terms to mean the same thing—a big box between you and the audience!

Imagine if you wore a lectern to work each day! But you don’t. It would make interpersonal communication so difficult—not to mention trying to squeeze past people in the hall!

The actors don’t have lecterns. How would you feel if they did? You would think they didn’t learn the lines! Why should they be forced to memorize the words of a writer? But politicians giving speeches and use lecterns. Aren’t they, too, actors using the words of a writer? Hmmmm. Where do you draw the line on this one?

The problem is that visual creatures—you know, the ones under 40—expect eye contact. They get a lot of information from body language, gestures, and movement.

That’s why the most difficult prop to overcome is the lectern. It covers 80% or more of your body and allows for little mobility. Although the lectern is a convenience to the speaker for reading a speech or for referring to notes, it allows for much less direct eye contact with an audience.

Lecterns are for losers! I despise lecterns! There should be a ban on them! There! I said how I really feel. I vented my anger and shouted my opinion for all the world to know! As far as I’m concerned, lecterns have no place in the life of a visual presenter.

Having said that, lecterns are still used quite a lot. So, how can you master the lectern if you get trapped behind one? You have a few options to help minimize your losses.



First, place the lectern at a 45-degree angle to the room if you can, matching the non-threatening rest position (discussed earlier in this chapter). From that angle, both your hands can rest on or touch the lectern and you'll still be in a rest position. You can easily switch to a power position with just a turn of your upper body, leaving only your left hand resting on or touching the lectern.

If the lectern can't be angled but remains fixed and facing directly to the back wall (like a pulpit), you can still use the rest and power positions. Assume the rest position (45-degree angle) while behind the lectern. Only your right hand touches or rests on the lectern until you switch to the power position (by squaring-off to the back wall), at which point both hands can rest on or touch the lectern.

Make sure the audience sees your hands as much as possible. If you hide your hands, the interpretation is that you're hiding something. Don't let your hands disappear for too long, even if it is just to turn a page.

Even though you are stuck behind the lectern, the three positions of the triangle still exist for you to use. The middle of the triangle is when your weight is on both feet. The movement to the front or to the back happens by shifting your weight to one foot or the other. These slight changes in body position may help to keep the audience looking at you from time to time. Naturally, the lack of mobility and the fact that you are probably reading your speech or your notes limits effective communication.

Typically, the reason you use a lectern to begin with is when you are giving a speech. The lectern supports the pages of the script while you deliver (read) the speech. When you read, you make less eye contact. The following is a guide for maintaining good eye contact.

Every 20 seconds (or about 50 words) you are allowed to look away from people, but only for about one second. That means, for every one minute of speaking (or about 150 words), you're allowed just three seconds to look down and read the next group of words. In effect, you should be spending 95% of the time looking at people and only 5% of the time checking the script.

Unless you are using a see-through teleprompter, as is done on TV, the more you read from the script, the less amount of eye contact you have with the audience. Concepts are the solution. Build a conceptual script around key phrases, and you'll spend more time delivering a personal version of the topic directly to people because you won't have a lot of words to read, just concepts. Doesn't this sound like a Do script? (See Chapter 21, "The Message—Scripting the Concept.")

Don't get caught behind a lectern just reading a bunch of statistics to the audience. Think eye contact—and avoid facing the facts!

## AVOIDING PROBLEMS

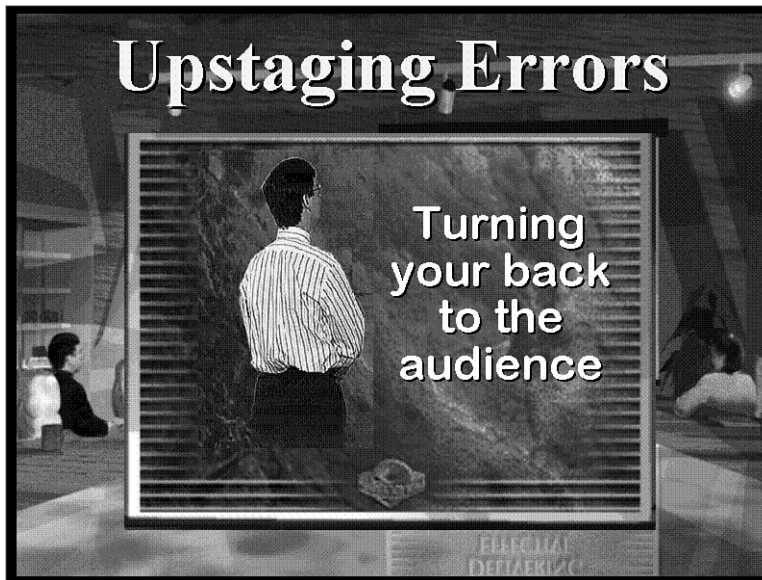
When the audience can't interpret your physical actions, they become preoccupied trying to figure out how the words link to the movements. The audience can't ignore these body

distractions and, therefore, they need to be eliminated. If you work on removing these distractions, your message is easier to convey.

### UPSTAGING

Sometimes the audience is prevented from hearing your words simply because they can't see your face or your expressions. When a part of the body passes between the speaker's face and the audience, the result is called upstaging.

Turning your back to the audience is the most obvious example of upstaging and is depicted in Figure 23.4. If you're facing the screen and the audience is facing the screen, then who's presenting? When you turn your back to the group, you can't see them and they can't see you. You lose valuable eye contact and the chance to use facial expressions. In addition, your voice is projected away from the audience and is therefore less audible, unless you have a microphone.



**Figure 23.4**

Don't turn your back to the audience. You lose all the face-to-face benefits of communication when no one can see your face!

If you have to turn your back to the audience, do it for as short a time as possible. At the same time, increase your volume so the group can still hear what you're saying. Avoid walking into the audience. This happens a lot when you have a U-shape seating arrangement. You might think that it's more personal to penetrate the "U" to get closer to the person you are interacting with at the moment. Not true. Your effort to get closer to one person puts your back toward everyone else you walk past as you penetrate the group. Don't alienate one person for the sake of another. You can still make eye contact and reach out to anyone in any part of the room while maintaining your position. The bottom line is that when your back is to the audience, you're least effective.

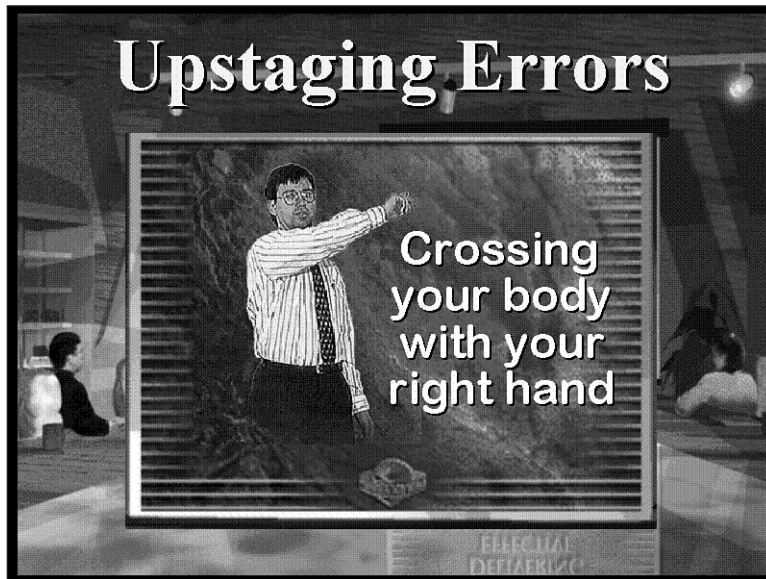
**Tip #271 from**

One easy way to keep from turning your back is to make sure the person seated to your far right can always see the front of your right shoulder. This technique keeps your body facing out to everyone in the crowd as you speak.

Crossing the upper body with your right hand is another example of upstaging, as shown in Figure 23.5. Whenever you gesture to the screen, use your left hand rather than your right. If your right hand goes across the front of your body, it causes a visual distraction that limits your effectiveness.

**Figure 23.5**

Don't cross your body with one of your arms. The gesture to the screen in this example should have been done with the left hand, not the right.

**Tip #272 from**

Use your left foot as a guide. To gesture to anything left of your left foot, use your left hand. Use your right hand to gesture to anything to the right of your left foot. This forces you into a more open stance when presenting and allows you to add impact to your delivery style with correct gestures and movements.

**THE GUNFIGHTER**

One stance to avoid is what I call the gunfighter position where your arms are locked at your sides as if your elbows were sewn to your rib cage! This limits the gestures you can make with your hands. So, don't press your elbows to your sides as you batter your arms about shouting "Danger, Will Robinson! Danger!"—it looks ridiculous. To avoid the gunfighter position when presenting, pretend that you must be able to touch your hands to the top of your head without bending down. This would be impossible with your elbows still attached to your sides.

### THE HEAD WAITER

Be careful about folding your arms in front of you. This head waiter position not only upstages you by putting your arms across your upper body, but it also indicates that you are hiding something from the group. With your hands locked under your arms, your gestures are completely limited.

### THE THIRD BASE COACH

Do not clasp your hands together behind your back. This position, the third base coach, forces you to use your shoulders and your chin to create gestures. You'll end up throwing your chin or shoulder forward to acknowledge a question and the reaction from the audience will be far from positive.

### THE HAND TALKER

Avoid conversationalizing your gestures. This happens when you move your hands in the rhythm of your speech. It ends up looking like you have a gesture for every syllable. The trick with gestures is to keep them still and not have them bounce around on each word. The audience takes more time to process gestures than it does to process words. Gestures should freeze to add impact to a phrase.

Try this exercise. Say the phrase, "This is very, very, very important," and move both your hands up and down on as many words as you can. Then, say the phrase again, but this time just let your hands come down once and lock them in mid-air as you finish the rest of the phrase. Did you feel a difference? When a gesture stops moving, it is more powerful.

### BLOCKING THE LIGHT

The image is meant for the screen! Sometimes you make the mistake of trying to point to something on your visual and you walk in front of the projector. Never block the light source with your hands or body unless you intend to make shadow puppets for the audience. When you block the light source, the audience finds it difficult to view the distorted image depicted on your clothes.

### PINKIE COUNTING

Who started this habit anyway? Pinkie counting is simply counting on your fingers in front of the audience. The action occurs when you hold out your left hand, palm up, and use your right index finger to count on the left pinkie, then ring finger, and so on. The obsession plagues almost everyone from time to time. The audience has no idea when you plan to stop, although five seems to be the limit.

The reason you pinkie count is to keep track of the order of things by giving yourself tactile feedback as you count through the items you relay to the audience. This distraction can be avoided by dropping one hand to your side and simply touching your index finger to the thumb of same hand to maintain the tactile feedback. You don't need to switch to different fingers. Just touch your index finger to your thumb to click softly by your side, and you can

keep track of many things. By inconspicuously using just one hand to count with, the audience is not distracted.

If, however, counting is really important to making your point, then raise your hand above your shoulder and count so that everyone can see. This will force you to limit those times that you count obsessively and it will add impact to those times that you need to count emphatically.

## USING YOUR VOICE

I've been at events where some rude, inconsiderate moron in the crowd stands up, holding a chocolate donut in one hand and a buttered roll in the other and shouts "Hey—I can't hear you!" Well, at least that's one way to know if you should speak up. But—you can't always rely on me being in the audience, unless you're serving donuts and rolls!

Although I am the first to say that actions speak louder than words, your vocal delivery plays the role of interpreter for the message. If the visual media is truly the content and the body is definitely the delivery, then the voice is a combination of both. Words carry information and action. In order to develop the action in your voice, you have to consider a few issues such as:

- Breathing properly
- Phrasing and pausing
- Avoiding problems

### BREATHING PROPERLY

Sometimes your choice of where to take the next breath can disrupt the flow of your words. By breathing between phrases, rather than during phrases, you get an opportunity to vocalize better. The key to this is having enough air in your lungs to sustain a longer phrase. For example, I have been known to deliver very long phrases with volume and emphasis. I believe that's from knowing how to breathe properly. Some say it's because I'm so full of hot air that the Gettysburg Address would be a cinch—but, I pay no attention to insults from family members!

When you don't have enough air, you may end up rushing through your words, and then they run together from speaking so quickly. Chances are that your emphasis and inflection will be lost. In any case, by having enough air, you can say longer phrases more slowly, which helps to make the message clear.

First, let's find out if you are breathing properly right now. Try this. Stand up and take a deep breath. Did your shoulders go up? Did your chest expand? Are you still holding the air in your lungs as you read this sentence while you turn blue? Okay, okay breathe again, please. Let the air out! Whew, that was close!

If your shoulders went up, you filled your chest with air. Unfortunately, that's not the way you naturally breathe. The air normally goes into the lower abdomen. Try this test. Lie down on the floor, face up, with a book on your stomach. No, not this book—I want you alive at the end of this exercise! Breathe normally and watch the book. Notice it moving up and down? That's your diaphragm at work. The muscles in your stomach, not your chest, control breathing. Now take a deep breath and force the book upward—it should be easy once you concentrate on the correct muscles to do the job.

Next, remove the book, stand up, and take the same deep breath, but don't expand your chest or raise your shoulders. Your stomach should expand. This is the proper way to breathe between your phrases when speaking.

**Tip #273 from**



Try breathing through your nose and it will be easier to expand your stomach (diaphragm). Of course, when speaking, the tendency is to also take in air through your mouth because it is already open. It's not where the air enters but where the air reaches that makes for better vocal control.

Again, the key is having enough breath to complete long phrases or sentences without running out of air. This is important for languages such as English, in which the major points are made at the end of phrases, not at the beginning. Without enough air, your voice might trail off and the audience will not hear the key part (the end) of the sentence. The beginning of the next phrase will be less connected to the important part of the prior one. The result is confusion for the audience.

The following is an exercise for breath control. You should be able to say this entire passage in one breath.

What a to-do, to die today, at a minute or two to two  
 A thing distinctly hard to say, yet harder still to do  
 For they'll beat a tattoo at twenty to two  
 A rah-tah-tah-tah-tah-tah-tah-tah-too  
 And the dragon will come at the sound of a drum  
 At a minute or two to two, today,  
 At a minute or two to two.

When you develop truly excellent breath control, you will be able to say the above passage two times with one breath.

If you can't remember the above phrase, here's another breathing exercise you can try. In one breath say, "One by one, they went away." Pretty easy, right? Okay, add another to the count, like this, "One by one and two by two, they went away." Try adding another to the count and in one breath say, "One by one and two by two and three by three, they went away." Don't forget that each of these segments have to be done in one breath. You should shoot for as high as "twelve by twelve," and, with practice, fifteen or higher is possible, as you get more control of your breathing.

## PHRASING AND PAUSING

Take natural pauses between your sentences. Say a phrase, pause, then say a phrase and pause, and so on. By using this technique, you can control the pacing of the presentation. Natural pauses give you a chance to make eye contact, to breathe, or even to think. You end up with smooth transitions and a more consistent delivery.

### FILLERS ARE KILLERS

The funny thing about getting up in front of people is you have an altered sense of time. You think you're going too slow and you begin to pick up the pace, not so much with your speech, but more with your thoughts. You begin to think more quickly and between one phrase and another phrase the audience hears “uhhhhhh,” “ummmmm,” “errrrr,” “ahhhhh,” and the like—you know—the fillers. The sounds you make in between the words you say. Fillers are not language. They are grunts and groans. The audience can't process fillers. In fact, if you have a lot of them in your presentation, the audience becomes preoccupied with the distraction and they end up concentrating on your fillers, not on your phrases!

Fillers can even be whole words, such as “okay,” “right,” “you know,” “again,” and “see,” to name a few. Fillers are evidence that you are thinking out loud. You're letting the audience hear you think. To counter this problem, use silence as filler and it appears that you are taking natural pauses when you speak.

### THE OPENING PAUSE

When I'm coaching a person, I always suggest the opening two-second pause. Right after the first phrase, such as “Good morning,” you should take a two-second pause. That's right! Complete silence for two seconds. It can seem like an eternity, but it gives you the chance to establish two important things: pacing and anchors.

From a pacing perspective, the opening pause sets up the audience. They get to know right away who is in charge of the momentum. People have to know that you are in control. That's the role of the presenter—to control the flow. The role of the audience is to be controlled. If you don't appear rushed, the audience settles into the presentation at the pace you have set.

Those two seconds of silence help you in another way. In our earlier discussion of anchors, we talked about identifying the friendly faces to focus on. Unfortunately, you can't establish anchors in the audience until you first take the stage because that's when almost everyone is seated. You can't look out in the audience 40 minutes before the presentation, see a few people, and shout, “Hey—you three—you, you, and you—don't switch seats on me—I need you to be my anchors later!” (I don't think so.) No, you'll have to find your anchors during the opening pause. Don't worry, though, it will only take you about two seconds to scan the crowd for those friendly faces. Typically, those sitting under the most light are the easiest to spot.

### WHEN IN DOUBT—PAUSE FIRST

Have you ever been asked a question during your presentation and you didn't know the answer? Well, don't blurt out the ignorance right away! Instead, pause for a moment. Here's what happens: Someone asks you a question and you don't know the answer. You stop, you pause, you look to the heavens for some revelation—you get none—you look back at the person and say, "I'll have to get back to you on that." The audience will be thinking, "Ohhhh mannn—you were sooooo close. If you only had the knowledge, you would have known!" That's a lot better than saying, "I don't know—blue?" Then the audience thinks, "Blue?—and you call yourself a doctor?" I've seen this happen plenty of times. You don't want to leap into the fire with a very quick, and likely incorrect, response. Remember that the audience is on your side. They want you to be right.

The pause maintains whatever level of credibility you had before the question was asked. By pausing for a moment, the audience actually believes that you could have answered the question, given enough time (yeah, like about a month). The point is that the group watches you search your mind for an answer, even though you never come up with one. It's politics at its best!

So, when in doubt, pause first. It buys you time and credibility. Of course, don't stop there. The words "I'll get back to you on that" indicate your intention to follow up at a later point with an answer. Make sure you do!

### TARGETING PHRASES

Once you have control over your voice, you can direct your phrases for more impact. You can target your words to entire sections of the audience or simply to one person.

It's a given that everyone in the room has to be able to hear you. Sometimes a microphone will be needed for the entire audience to hear every word you say. But, because you can't count on having a microphone in every situation, you'll have to learn to project your voice.

Although proper breathing is important to voice projection, you should also target your phrases toward the back of the room to be sure everyone hears what you say. One way to do this is to play to the back third of the audience. In the theatre, it's called "playing to the cheap seats." The farthest one-third of the audience is where most of your phrases should be targeted because if they can hear you, everyone can hear you.

You never have to worry about the people in the front. They took those seats. They'll give you their wallets! But the people in the back—the troublemakers! Pretend that they are never sold, never convinced, never in agreement with your message. This forces you to target your phrases to them. The good news is that this causes your chin to lift slightly higher in the air, opens your throat, and makes your voice clearer. In addition, you'll find yourself facing forward more often in order to project to the back of the room. The intensity of your phrases, no matter how calm or soft-spoken, become more audible and your facial expressions more visible!



Voice projection helps when fielding responses from the audience. Sometimes an audience member speaks so softly that only you and a few other people hear the person. Make sure you repeat the question or comment so that the entire group can hear it. If you fail to do this, then your response will make sense only to those who heard the original question or comment in the first place. Also, by repeating a question, you get more time to formulate your answer.

You can also target your phrases directly to a specific person. You can do it with just a look, but you get more impact if you know the person's name. People love to hear their name. Watch a TV commercial. If it has your name in it, you love it!

A name is so important! How you would feel if you raised your hand to ask a question and the presenter knew your name but chose to identify you by your seat number instead! Names add a personal touch to presentation.

When you reference a person by name, only the first name is needed. This makes it a little easier for you because last names can sometimes be difficult to remember or even pronounce. Of course, if you are speaking to an audience that you have never met before, it will be difficult to identify people by name. During interaction, you could ask that people identify themselves to the audience before they speak. Then, you'll know a person's name and be able to use it in your response.

Targeting your phrases to an entire section or to a specific person makes the audience more conscious of each other and more respectful of your caring to take the time to treat people as individuals when possible.

## TRANSITIONING

Transitioning is having something to say during changes in your presentation. Those changes can be as a result of movement or can be from the visuals themselves.

Movement in the triangle, from place to place, can be very obvious when your space is bigger. It may take several steps to get from the middle to the front, for example. You should not be moving on a key phrase. The words have more impact when you are still. Suppose you want to say the words "It saves money" in the front of the triangle. If you are in the middle of the triangle and a few steps away from the front, you have to add a transition or some extra words to allow you time to get to the front. Once there, and not moving, you can say the key phrase, "It saves money." Perhaps your entire phrase turns into: (said from the middle while walking to the front) "One of the most important advantages of this new product is that (now you stop at the front) it saves money." The transitional text allows you to move to the next space and deliver the key words while standing still.

Transitions are also useful whenever the visuals change, although this is less of a requirement when using slides or electronic images because they change more rapidly. But a more traditional medium, such as overheads, requires verbal transitions.

Here's what happens. The time it takes to remove one transparency from the overhead projector and replace it with the next can take several seconds. Don't let that time be filled with

silence. Have a transition—something to say as you approach the equipment, as you change the visual, as you set the next visual, and as you move away from the equipment. Even in the world of state-of-the-art electronics, a pause to press a remote control is just as obvious as changing an overhead if you leave too big a gap with nothing to say.

Don't confuse silence with timed pauses. A timed pause lasts about one to three seconds and is useful to get the audience to think or to ponder a question. Dead silence lasts longer and tells the audience you can't really think of anything to say at the moment.

### RULE OF THREES

People remember things in sets of threes. Our system of government is based on the number three, many religions are based on three, even the family—mother-father-child—is based around the number three. You can find this rhythm in many political or religious speeches. Key concepts or arguments are constructed around three references. For example, a politician might make the statement: “We’ll be more prosperous, we’ll pay less taxes, and our children will have a future.” Notice the use of three references in the phrasing to make a point. Many references include a triad of some sort, such as Julius Caesar’s “Veni, vidi, vici” (“I came, I saw, I conquered”) and the courtroom oath of “...the truth, the whole truth, and nothing but the truth....” Even the Olympic Games grant three medals, Gold, Silver, and Bronze.

Try to incorporate the rule of threes when presenting your next topic. It's easy, it's simple and it works like a charm!

## AVOIDING VOCAL PROBLEMS

Just as with the body, distractions can occur when using the voice. Most of the time, the vocal problems can be corrected, but sometimes our natural speech will sound different to diverse audiences. Accents are an example of natural speech to some, but unique speech to others.

If you have an accent, as most of us do, it means that you will sound different from what the audience may be used to hearing. My grandmother, who came from Italy, once said to me in broken English, “Don't laugh at people with accents. They speak one more language than you do!” Of course, accents from speaking a foreign language are no less noticeable than regional accents. When I delivered a seminar in Mississippi the person who introduced me ended the opening remark with “at least you'll like his New York accent.” Just as I began to speak, I looked at him and said “Wait a minute. I thought you had the accent.”

The point is that if you have a well-rehearsed presentation and you can be understood when you speak, your accent should not reduce your effectiveness.

Some believe in eliminating regional or foreign accents, but I think they constitute diversity in voice and help make the individual stand out for an audience. If you can be understood, then don't worry about an accent. However, some other vocal issues can become major problems if not corrected.

### THE MUMBLER

The mumbler is the person who does not enunciate clearly. The lips stay so close together that the audience can't even see the words forming. When the mouth stays very closed, volume decreases and the words are barely audible. Remember to loosen those lips and articulate!

#### Tip #274 from



Place a pencil across your mouth between your teeth. Push it as far back as you can, which stretches your lips. Bite down a little on the pencil and begin to talk. Say a couple of phrases for about 30 seconds up to a minute. Take the pencil away and notice how flexible your lips are and how much better you enunciate every syllable.

### THE GARBLER

Another person with an enunciation problem, the garbler is the person who speaks so quickly that the audience can't hear the end of one word before the next word arrives. To correct this problem, try saying a short phrase very slowly by stretching out each and every syllable in every word. This helps to reduce the speed of speech.

#### Tip #275 from



Find a newspaper article and read the first two sentences out loud. Read them again out loud and you'll probably go even faster. Okay, now read the words in the sentences backward, one word at a time. Hear how slowly you must read and try to match that speed when you speak. Although in practice that pace is definitely too slow, your habit of speaking too quickly will offset the slow speech and the result will be a closer-to-normal speed.

### THE DRONER

The droner has a constant, monotone, expressionless voice and is the closest known cure for insomnia! The problem is from little or no inflection. This is often prevalent among presenters who have limited interest in the topic or those who have been presenting the same information in the same way for too long. They are simply bored with the stuff they deliver. The voice reflects the boredom, gets lazy, and eventually becomes monotonous.

One solution to this problem is to practice placing stress on different words in a sentence. For example, the following list uses ALL CAPS to show the changing emphasis in the same phrase:

- And WE offer the best service.
- And we OFFER the best service.
- And we offer the BEST service.
- And we offer the best SERVICE.

Try saying these phrases out loud and note the difference in the stress of the capitalized words. Placing emphasis in this way forces the voice into a higher and lower pitch within a phrase by adding vocal variety to an otherwise droning tone.

## THE DROPPER

The dropper is the person who starts out with a lot of volume and then gradually drops off to the point where the audience is straining to hear the disappearing words. This problem is definitely related to improper breathing. The exercises mentioned earlier can help with sustaining longer phrases. But, sometimes, the words drop off because you are not completing one thought for yourself before introducing the next. Basically, you become anxious to get to the next part of the argument. The key to avoiding this problem is to maintain volume through the end of every phrase.

### Tip #276 from



In addition to breathing exercises, you can also try adding a question at the end of every sentence. Keep in mind that this is only for practice. Don't do this while presenting. For example, add the question, "Is that statement clear?" to every sentence. The question forces a slight raise in pitch and volume. Plus, the extra words make the sentence even longer, forcing you to plan for more air to get to the end. When presenting, you can still silently say the question to yourself if you feel you are dropping off in volume as you present.

When a vocal problem becomes a distraction, you need to take steps to eliminate it. When your voice becomes trained to the point where you can control it effectively, you gain another advantage in conveying the message you intend for the audience.

## TROUBLESHOOTING

*How do these external skills apply to small group meetings with just a few people sitting around a conference table?*

Actually the skills are the same. The room is just smaller. Good presentation skills work everywhere. This is the same as writing or speaking. Would you tolerate poor grammar or poor enunciation if the crowd were only eight people in a conference room? The key difference is in how you express yourself to fit the size of the group. You are not going to make wide, sweeping gestures, but you would certainly reach out to any size group. You would still use the three positions of the triangle, even though the space is smaller. You would still use the rest and power positions to add emphasis. The point is that your "body language" is expressed all the time, regardless of the number of people observing you.

If possible, stand up when presenting. This doesn't mean you can't control a meeting while sitting; rather, you get more power when your head is higher than people. That's why kings sit high on thrones, judges sit up high, even pharmacists fall into the pattern—they're up on those platforms—it's a power thing!

If you are sitting, you can still create rest and power positions with your body by simply turning in your chair and angling your shoulders to the group. Gestures should be done with your elbows above the edge of the table and your fingertips can still be used to reach out to include one or more people in the conversation. The actions of your body are always

available. All in all, small group meetings still require a physical plan in your delivery style just as large groups do.

*Is there a such thing as too much eye contact?*

Obviously, in large groups the chances for direct eye contact are not as great as with smaller groups. Fewer faces for you to look at means more time to look at each face. So it seems that when there are fewer people in the room, the eye contact with each one should be greater. Not exactly. Too much eye contact tends to backfire.

Let's use the smallest "group" scenario: one other person in the room with you. Let's call the other person Debbie. If you are talking with Debbie and you make constant eye contact with her as you speak, after a short time she will have to look away. She won't be able to stare into your eyes continually so the eye contact between you will be broken. That means another object is likely to catch her attention when she looks away. At that point she is no longer listening to you because her attention is diverted to something else.

However, if you break the eye contact from time to time, while you are speaking, Debbie will have no choice but to remain fixed on your eyes, even as you glance away. You will have greater control of her attention if she is busy fighting for your eyes instead of you fighting for her eyes when you speak. And you really don't look at anything specific when you break the eye contact because you are still talking and your eyes are only wandering on occasion in order to keep her more attentive.

When you are listening you should always maintain eye contact. But when you are speaking, especially to fewer people, you should break the eye contact from time to time to keep the attention of your listeners. In presentations you allow the audience to look away by giving them a chance to glance at the visual on your display screen. The object of their attention, the visual, is still part of your message. In smaller groups the visuals can be just as useful. But if the interaction is mostly one-to-one without much visual support, then allow for occasional breaks in your eye contact with your listeners when you are speaking.

# CHAPTER 24

## THE MECHANICS OF FUNCTION— DEVELOPING INTERNAL PRESENTATION SKILLS

### In this chapter

*by Tom Mucciolo*

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## PUTTING YOURSELF FIRST

Okay, now it's time for you to get real. Read this chapter only if you are interested in developing the best presentation skills possible. If not, then *avaunt, begone, cease to be!* This is where we separate the presenters from the pretenders!

Okay, now I'll get real. You're going to find that this is really a fun chapter because it takes you to another level of presenting—a level that gets the audience to react to how you think and feel about your message.

Teaching about the body and the voice is somewhat easier because they are tangible and very measurable parts of the delivery skill. Hey, if you're not moving or no one can hear you, it doesn't take a rocket scientist to figure out the problem. But if you're not focused or you don't have enthusiasm—well, people notice that something is not right, but they're not sure what it is they're really missing. The audience sees external distractions, but they only sense internal ones. The external problems make them not want to look at you at the moment. The internal distractions make the audience not want to watch you again. So, the mechanics of function are what keep them coming back for more!

Perhaps sometime you've gone to a movie or a play and you left with an empty feeling, maybe unsure as to why you felt that way. This happens because you might not have the expertise to analyze the problems in the performances, but you have the experience to know what good performances should be. Well, everyone in the audience has been to a presentation before and they have the experience of both good and bad events. This is what leads people to arrive at the presentation with an expectation.

The good news is that the average audience member at a business presentation expects boredom and talking heads. You can exceed that expectation with the well-planned *mechanics of form*, the external presentation skills using the body and the voice. People are always appreciative of your having given them more than anticipated. But, if you can take the time to prepare on the outside—you know, dress the part, plan the movements, and work the voice—then you need to make the effort to prepare the inside. The inner plan is your character, shaped by thoughts and feelings.

If you truly want your message remembered and linked directly to your personal delivery of that message, you'll have to use the *mechanics of function*, the internal presentation skills. The components of these skills include

- Using your mind
- Using your heart

## USING YOUR MIND

In acting, it takes someone with a lot of intelligence to play the part of ignorance. Take Carroll O'Connor and Jean Stapleton, brilliant people who played Archie and Edith Bunker on TV's *All in the Family*, a '70s sitcom. Each played ignorance in a special way. But to

know all the intricacies of ignorance, a high level of knowledge is required. How would one know what is stupid unless one were smart enough to understand the difference?

The point of this is that your mind is one of your most powerful assets. As a presenter, you can think on your feet, sway the audience with reason, and persuade people with your logic. In essence, you can use your mind effectively by

- Linking intention to content
- Working with detailed data
- Selecting focal points
- Using virtual space
- Handling distractions

## LINKING INTENTION TO CONTENT

This sounds more difficult than it is. The fun in this process is using your imagination to create connections between your actions and the supporting elements in your message. In other words, for every major section of information you are sharing with the audience, you need to identify the intention or sub-text that goes along with that information. The intention follows the same pattern as the objective. Based on action and described in the form of “to do” something, it isn’t a feeling, although a feeling will always arise out of action. It’s like a little objective.

For example, let’s say it’s your next presentation. The overall objective is to persuade the group to take action on a new budget item. So, at the beginning of the talk, you plan to bring up a comparison to a similar budget decision that was made in the prior year. Stop. What is your inner intention as you go through the comparison? You know you have to persuade, but use your imagination for a moment. How many ways are there to persuade? Probably a million. Pick one.

Let me pick one for you: You show the absurdity in bringing up what happened a year ago. You stress that this is like comparing apples to oranges, and the data from last year is meaningless to this issue.

Let me give you another one: You proclaim the validity of the comparison to last year. You stress the decision was made by the same management team evaluating the current project and their track record on these issues is impeccable.

Your intention is different in each case, yet the visual support looks the same. The angle of your approach is going to change depending on your inner intention.

In other words, you’ve got a whole bunch of little things to do inside the big thing you have to do. Just like a wedding when there are a million little details, each with an intensity, an action, an outcome. Then, you have to consider the scope of the entire event—the wedding. Details exist in so many things you do. Why would your presentation be any different? It’s attention to detail that will make it successful.



To do this, dissect your presentation into smaller segments and see what is going on in your mind as you cover each segment. If a few charts are displayed in one part of your talk, what is your subtext, what are you really thinking? Is your intention to distract the audience with the details? Is it to drive home the point? Is it to set the stage for the next section of the presentation?

Don't chop the presentation into such tiny segments that you try to find an intention for every moment. This will result in the analysis-into-paralysis problem! Typically, your intentions cover a group of visuals. Maybe you'll have about six to eight different intentions for a 20-minute talk. You might use an intention more than once for repetitive items such as humor or storytelling. For example, the intention in each of three different stories might be to teach a lesson.

If you just concentrate on the major sections and the related intentions, the tiny moments take care of themselves. How? They happen as a result of your natural thinking pattern to accomplish tasks. Trust yourself and give yourself more credit. You wouldn't even be reading this book if you didn't have the ability to express yourself and your intentions. You've been doing this all your life. You just have to apply the process to presenting. If you understand the big segments, then the little things under every single moment will become so natural, you won't have to think about them.

Your inner intentions are buried in your brain and you have to identify them so that you can be sure that the way you offer the information is the way you expect the audience to understand it. This is what I mean by linking intention to content.

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### **Playing the Stakes**

In theatre, the actor must "play the stakes" in each scene. The actor searches for the most important moments to make clear in each scene.

The same is true in presenting. Look at any piece of information in your script and decide on its priority to the whole story. The closer it is to being essential, the higher the stakes get if you don't present it well.

You might not convince your audience if you fail to deliver the key information. So if you fear your talk will be boring, find the importance in the information and allow the audience to discover the importance with you.

You can play the stakes in a section of the presentation or even on a single visual. If you have a visual that displays several bullet points, you need to decide which of those points is most important to the story at that moment.

Although you may cover all the points anyway, you may find yourself discussing one point in much more detail. This is probably the critical element in the visual, and you should focus more of your attention on delivering that point as clearly and directly as possible. This doesn't mean the rest of the material is unimportant; instead, it helps you use the surrounding information as support for the more important item.

By playing the stakes in each visual you will add the sense of urgency to the topic that otherwise may appear to you as too boring for others to experience. In addition, the physical actions you use to play the stakes will heighten the importance of the information.

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## **WORKING WITH DETAILED DATA**

Sometimes your visuals contain detailed information. Typically this happens with data-driven charts (bar, pie, line, area, and so on). Most presenters display these charts for the

audience and discuss the obvious items, usually the biggest slice, the tallest bar, the upward moving line—the easy stuff. Although nothing is wrong with this, it adds little value to the audience if they could have figured it out for themselves.

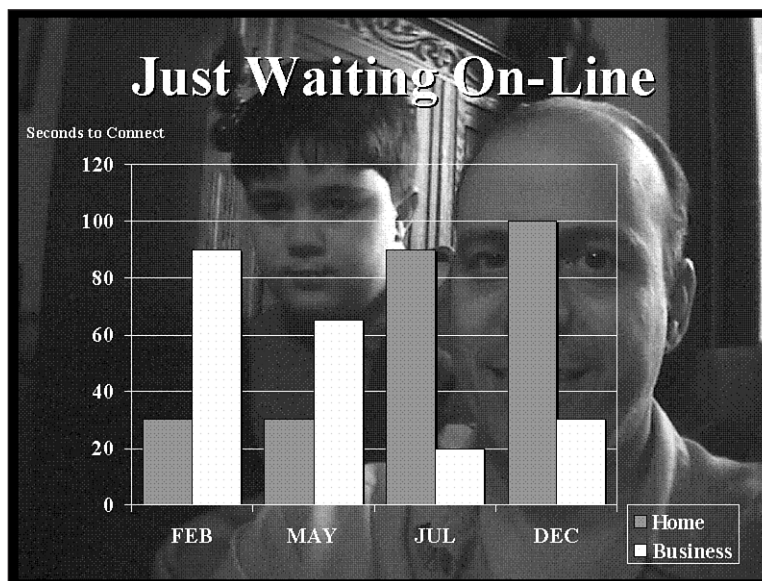
But a visual presenter (there's that term again!) reads between the lines and makes the detailed information come to life. It's a process of identifying the means inside the extremes.

Think of the means as internal causes for the extremes. The extremes are the external data elements that are different enough to force a comparison or a discussion.

For example, Figure 24.1 is a vertical bar chart. It contains four selected months of data showing the time (in seconds) it takes to connect to the Internet from home and from business. Wait—don't start calling your Internet service provider and complaining. I made these numbers up just for the example!

Okay, back to the example. Let's say you select one particular set of extremes related to the home group. You might point out that the connect time in February is so much faster than in December. You picked two data elements different enough to stimulate a discussion.

Now you have to stress the means of those extremes. You identify the causes of the difference. An obvious one would be a seasonal issue. The reason it takes longer to connect in December is because of the holiday season and the online calls to friends and family. Maybe you dig deeper into the means. You might bring up a recent article you read that mentioned how the home sales of digital cameras seem to peak in mid-November because people want to have holiday pictures in advance of the holiday season. The effect of more digital photos is their later transmission in December over the Internet. These photos are much larger files resulting in more traffic over the Net and, hence, slower connect times. None of this extra stuff appears on the chart—it's all in your head.



**Figure 24.1**  
A simple bar chart showing selected months of activity. You can choose to discuss from eight different items. Look to compare the extremes; that is, any items that are different enough to warrant an explanation.

Want to try another? Let's use the same example, but pick two other extremes. Compare home to business in the month of July. What are the means inside those extremes? You could point out that more employees take vacations during the month of July than any other time during the year. Not being at the desk in the office results in fewer connections to the Internet, hence less traffic from the business group. However, vacation doesn't always mean travel away from home, and you might mention that with kids home from school, an increase in Internet activity from home results in more traffic on the Net. Maybe you dig deeper into the means. You cite a statistic from the National Education Extension Outreach Foundation (whatever) that shows a sharp increase in the number of online college-level courses being taken during the summer months when classroom sessions are fewer. The students in these electronic programs are participating from home, which is another reason for the rise of Internet activity in July and the longer connect times from the home group. Once again, the audience gets none of this from the chart on the screen.

By identifying the means inside the extremes wherever possible, you create a lasting impression on the audience. You become the critical bond for the audience between data and description. Without you as that link, anyone could have presented the topic. And a visual presenter would never allow that!

## SELECTING FOCAL POINTS

We've talked about anchors a lot in the past few chapters. The audience needs anchors and so do you. Anchors don't really move during the presentation. That's why they're called anchors! The anchors are usually big—standing on the left side of the room, five friendly faces in the audience, geometric shapes to help guide the eye—these are all anchors.

But another type of anchor is called a *focal point*. It's more of a temporary anchor, but something you can use at various times during the presentation. Many of the focal points you'll use are less apparent, if at all, to the audience. But focal points are visible and fixed objects that help you target your attention as you speak.

Have you ever just stared off into space while you were thinking about something? Well, you probably weren't always looking at the night sky when you zoned out. You might have been at your desk or at home and you were looking at something, but you were not focused on the attributes of the object. You were busy thinking. The best example of this is talking on the telephone. Next time you see someone talking on the phone, watch how many places they look when talking, almost none of which are required for continuing the conversation. You do this a lot yourself. Your focal points change and vary depending on what your brain is doing.

As a presenter, you need to be aware of these temporary anchors and you need to use them to your advantage!

You can use two kinds of focal points: primary and secondary. Primary focal points include the screen, the display equipment, and the audience. Secondary focal points include the floor, the ceiling, the walls, the furniture, the fixtures, the exit sign, and any other decorative or noticeable objects you might glance at during the presentation.

Primary focal points are referenced a lot in the presentation and you'll find yourself gesturing to them and interacting with them constantly. The primary focal points help you concentrate your attention and they are very apparent to the audience.

Secondary focal points are less obvious to the audience. Yet, these focal points also help connect your thoughts to physical objects in order for your delivery of information to appear more natural.

You can't stare off into oblivion or space-out during the presentation, even though you do it in real life. But the very act of staring can be so effective for the audience because they can see you thinking, pondering, and struggling to make information important. Without an object to focus attention on, you can't show the audience that you're thinking. Ahhh, but focal points make thinking a reality!

For example—finally, an example! You're presenting in front of a group of 40 people. You're getting ready to start and you take note of several objects in the room that catch your attention. On the back wall is a painting of a snow-covered mountain. On the ceiling is a row of track lighting with spotlights facing the side-wall. On the other side-wall is a thermostat and, next to it, a wall telephone. All of these are usable secondary focal points.

Let's say that during the presentation you are telling of a work-related experience where you had to lead a team of people to accomplish a task. During the story you are reflecting about the experience, and your eyes glance to the painting on the back wall. It only takes a few seconds of your attention on that painting to give the impression to the audience that you are reflecting on the experience. They see you staring into space and believe you are explaining to them what you see in your mind's eye. Without an object to focus on, you might recount the story too quickly and lose some of the impact. The painting gives you a visible focal point that helps demonstrate your thoughts and makes the telling of the story look more natural.

So, you can't just look off into space; no, you need something to look at, like the painting. And, because you looked at it before (prior to the presentation), you are not distracted by the details in the painting. That's why you glance around the room before you begin the presentation. You have to know your focal points in advance. You don't want to be surprised by anything you glance at while speaking.

Sometimes the attributes of a focal point can help in your description. Okay, let's use the same example. It's later in the presentation. You're displaying a line chart and commenting on the rising costs of a current project. You glance at the thermostat briefly and you describe the skyrocketing costs as reaching the boiling point, ready to burst. The thermostat as a focal point created a heat-related image in your mind, helping you build a better description for the problem.

Of course, this means you can never present unless you're in a room with a painting and a thermostat!

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### Creating Distance

Focal points have a *near* or *far* nature, similar to a camera lens. If the focal point is closer to you, the background blurs; if the focal point is more distant, the foreground blurs.

You can try this by holding your index finger up in the air at arm's length, about the height of your eyes. Look at your finger and everything behind your finger is blurry. Look past your finger at some distant point and your finger (even your hand) is blurry. In fact, you can almost see through your finger by focusing on the background. Don't close one eye or you'll lose all depth perception and your finger will become a solid mass, blocking your view of the background. Okay, okay, try it, I'll wait. . . .

The near or far focus is helpful when describing people or things that are not visible to the audience but need to be more real for you. You might stretch your arm out and focus directly on your palm as you describe items from an invisible contract that you're holding. You could be relaying two parts of a conversation, and the face of the invisible other person is the picture frame on the far wall, making it appear that you are conversing with that person.

In both cases, creating distance requires a focal point or something to look at to help you make it appear real.

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Focal points are extremely useful, and the more you can selectively use these temporary anchors, the easier it is to show the audience what you're thinking!

## USING VIRTUAL SPACE

*Virtual space* (p. 690) is the most fun you can have in front of people with your clothes on! Okay, I just thought you needed a break from all this reading! But it doesn't take much to distract you, does it?

Just as focal points help you connect your thoughts to visible objects, virtual space helps you connect the audience to invisible objects. You use virtual space to show the audience how your mind is visualizing the concepts you're explaining.

At times during a presentation, you will mention several related concepts to the audience and not really know if the group is following along. You already see the concepts in your mind, but the audience has no idea how to distinguish among them.

For example, you mention to the group that three separate departments will be involved in a decision: marketing, sales, and finance. The instant you name the three groups, you have a visual image in your head of each of those departments. You can see where in the building the departments are, you see the faces of people who work in each area, and you are visualizing three distinctly unique departments.

Now you have to get the audience to see three different departments. You do this with virtual space. You physically place the departments in the air for the audience to reference. As you say "marketing," your right hand places the word in the air to your right. As you say "sales," your left hand places the word in the air to your left; as you say "finance," you place the word in the air in front of you, using both hands. In all three moves, your palms would open out to the audience without blocking your face.

The point is that the three departments are floating in virtual space and you can immediately reference any of the three by physically retrieving it from its floating position. If you

say, “The marketing department is going to...,” you can gesture to the space occupied by the word marketing, to your right, where you placed it. If instead you use the space to your left, the audience would say, “No, no—that’s the sales department over there!” The audience remembers where you placed the references because they have been given focal points to reference. The concepts are floating in virtual space for the audience to see.

Use virtual space to identify concepts as separate and distinct from one another. Don’t just use virtual space and then do nothing with the floating anchors you handed the audience. When you place the items in the air for the audience, immediately reference one of them to begin noting the distinction.

Other ways of using virtual space include showing timelines and distance. For example, if you are describing several events from 1990 through the present, you might use your right hand to place 1990 in the air as the beginning of the timeline. Then use your left hand to stretch an invisible thread from your right hand to a place in the air to your left to show the length of the timeline. For showing distance, you might gesture, with your left arm fully extended, to a point at the far corner of the room while you mention an office location in another state. The group would realize you are referencing a place in the distance and not somewhere nearby.

Keep in mind that the moment you change physical space, virtual space falls to the floor and disappears. For example, you’re in the front of the triangle and you use virtual space to distinguish three items. You reference one item, but then you navigate to the middle of the triangle. Because you moved to another physical space on the floor, the virtual references disappear. Those little anchors or focal points for the audience can’t float in space if your body is not around to support them! This means that whenever you move in the triangle, you get another opportunity to use virtual space.

## HANDLING DISTRACTIONS

When I talked about the mechanics of form in the last chapter, I mentioned some body and voice problems that the audience might find distracting. Sometimes it’s the other way around, and you can get distracted while presenting. In almost every distraction, the result is a loss of concentration. Your mind loses the focus on the objective in the presentation. You usually get sidetracked because you were not prepared for the diversion. The following are some of the external forces at work that may challenge your attention to the message.

### THE SLACKER

Activity in the audience is a very common distraction for a presenter, and this usually happens at the beginning of a presentation. It’s called tardiness. A latecomer can cause a break in the flow for you while you speak. This is more apparent as the tardy person takes a seat closer to the front because more people have to watch the person get settled.

I think the solution for lateness is a public beheading. Now, now—relax—stay with me on this. It seems a bit cruel to do this to the person who shows up late, but I suspect the laggards will be fewer once the heads begin to roll. Actually, beheading is not a popular

solution because you can't fit a guillotine in the overhead compartment of the plane, so you'll have to rent one. That just isn't cost-effective!

Okay, seriously, the best way to handle the distractions caused by someone who arrives late is by finding a way to repeat or recap as much of the story necessary for the person to catch up. What? Catch up? But the slacker was late. The actors don't recap what's happened after the play begins. True, but this is not like theatre where the ticket has already been purchased. The one who is late may be critical to your planned call to action. The tardy person may be the one making the final decision! You never know what role the latecomer plays. Don't chance alienation. Bring that lost sheep back into the fold.

In addition, the distraction of a latecomer usually messes up your current point anyway. Because you'll have to repeat what you just covered for everyone else's benefit, you can sneak in a quick sentence to recap for the slacker.

### THE ATTACKER

Sometimes a hostile audience member can distract you. Hostility in the audience usually relates to the content in some way. It's simple: You counter hostility with friendliness.

Sometimes political or market forces are at work causing frustration for some people and the reactions are negative. I've seen this hostility at employee meetings right after a downsizing takes place. It happens at shareholder meetings if profits take a hit.

If you are faced with hostility, agree with your adversary as quickly as you can. Then, look at the source of the conflict and ask yourself, "Can I fix this?" Be honest. If you can address the issue, do it. If you can't, then try turning it around. Ask the person, "Do you have a suggestion?" The key to this is that your attempt to solve or ask for help in solving a problem is viewed as a friendly way of working with your adversary.

You usually can't win if you fight back in a public forum. The reason is that the audience believes you know more than you reveal and fighting back suggests you don't have an answer nor will admit to being wrong. That's why agreement helps soften the blow. I realize this approach can't cover every hostile situation, but it works in most cases.

### THE KNOW-IT-ALL

Another distraction is caused by the ego of the know-it-all. Counter the conceit with fellowship. The know-it-all appears more in small group presentations because the chance to speak out is more readily available. Regardless of the venue, the know-it-all can cause you to lose your concentration.

Like the attacker, you need to side with the know-it-all right away (if possible). For example, you are discussing the tax benefits of a new copy machine for a client. In the meeting is a person from the client's accounting department. We'll call him "Zeno." Now Zeno pipes up very early in your talk and says, "Are you considering this a Section 1231 Asset for depreciation purposes?" The rest of the group rolls their eyes, having seen Zeno openly destroy others in the past! No one escapes his deadly wrath. But, for you to be discussing

tax benefits, you already understand enough accounting details to easily handle Zeno. You address his concerns and respond with enough information to satisfy his hunger. Yet, you also know this is only the beginning. Zeno lives for these moments!

This is when you form the Fellowship of Accountants where you and Zeno are the charter members. Minutes after responding to Zeno, at the very next accounting issue, you look right over to Zeno and say, “And as Zeno can tell each of you, the equipment....” In other words, you make an ally. Zeno becomes your constant resident expert to support nearly every financial point that even remotely sounds confusing.

By making that person your support for complex issues, you always have a very effective way to neutralize the smart-aleck. If you fight the know-it-all, you may gain some sympathy from the rest of the group, but you’ll be diverted from your topic and end up being less effective with your message.

### THE TALKER

This is the person who distracts by talking during your talk. Usually, talkers travel in pairs, unless they’re crazy. In that case, they are probably senior executives and we know there is no cure for them! So how do you handle people talking when you’re talking?

You do nothing. That’s right, nothing. Believe it or not, the audience handles them for you. Try this. Go to the movies with a friend. Start talking with your friend. It won’t take long before someone (usually someone big) whirls around, stares at you, and says, “Hey, shut up!” In a play, a ballet, or an opera—anywhere people paid money—fear not, they will quiet down the talkers.

Well, people pay “good money” to attend a meeting. It’s called their time. And time is good money. So trust the crowd to help you out on this one because the talkers not only disrupt the speaker, they distract the listener, too.

### THE BOSS

Of all the distractions in the world, this one can stop a presenter cold. “Oh, no. My boss is watching! I’m really in trouble now!” How do you deal with a superior in the crowd? You usually freak out. The reason is that your effort to impress becomes greater, and you simply try too hard. In the theatre it’s called overacting, and it usually happens when the actor knows a critic is in the audience.

You may find yourself making more eye contact and directing more of the information to your boss at the expense of the rest of the audience. This is a big mistake because you lose on two counts. First, the audience is slighted from your true attention, and second, your boss may feel singled out during every moment. This is frustrating. When a presenter pays a lot of attention to one person, that person feels obligated to listen even more attentively, almost out of courtesy. It’s like being at a family function and having to sit and listen to that one relative who won’t let you leave the table until the story is over. You know the type. Every family has at least one of these characters. I believe it’s the law of nature!



So the solution of presenting to a superior is to treat that person as equal to all the others in the room. Don't pay any more or any less attention than you would to anyone else in the room. A boss gets dressed, eats food, travels, works, and plays just like everyone else in the audience and should not be presented to in a special way. If you deliver the talk with sincerity and you follow the objective through to the call to action, the existence of your boss will have gone unnoticed by both you and your boss. The key here is to neutralize the superiority with equality.

All in all, the distractions you might face can break your concentration if you are not prepared to handle the diversion. Typically, you don't fight fire with fire in these cases. You usually play to counter or neutralize the offender. If you stay focused, you remain in control of the presentation, and you hold the attention of your audience as you deliver the message.

## USING YOUR HEART

You go to a play and the actor comes to the edge of the stage and he's crying. If you say, "Wow, look at that! Real tears!" you saw technique. But if he's crying and you're crying—you are in the moment. You are sharing the emotion, not watching it happen.

You can't limit your skill set to the physical or even the physical and mental. You have to use your heart. The reason for this is you. You're a whole person—body, voice, mind, and heart. You present with your whole being.

I once had a colleague who had the potential for complete mastery of this skill. She had so much going for her. She perfected the physical movement and developed excellent voice control; she used her head, linking intentions with content to effectively convey messages. But she failed to take the last step and use her emotions. This limited her use of humor, as well, and it restricted her growth as a consummate communicator. By not committing herself to her own feelings, a gap of emptiness will always be between her and her audiences.

The use of emotion is what separates presenting from performing. As a visual presenter you will have to create the emotional link between you and your audience. You can use your heart in your delivery by

- Understanding motivation
- Adding stories and personal opinions
- Using humor
- Developing your own style

## UNDERSTANDING MOTIVATION

Think of all the means at your disposal to express your feelings to an audience. Your eyes, facial expressions, voice, and gestures—your whole body emits feeling in order to make words have meaning. But without your personal commitment, your belief and your motivation, the audience doesn't react as well as expected. Motivation requires inner energy to deliver the information with conviction.

That energy starts with you. You're the catalyst. You have to give an emotion to get an emotion. You have to be motivated before you can expect the group to be motivated. This is one of the most obvious problems I find in working with presenters. They fail to "get into it," but they expect the audience to "get it." Come on, get with it! If you can't psyche yourself up for the moment, then why should the audience be expected to do so? You have to work on yourself to get your heart into it. But before you build the desire (the motivation) to tell the story, you have to believe in your message.

### SENSE OF TRUTH

The chance to stir the feelings of a group to truly believe what you believe is the essence of your skill. Your ultimate challenge is that they believe in your belief in the message. People can't have faith in the message without believing in the person representing the message. People believe in other people. The audience wants, above all, to believe what you are telling them. It is that simple. But that belief starts in your own heart because if you don't buy it, they don't buy it! You have to have a sense of truth about your message. This becomes your motivation to deliver that sense of truth with clarity and enthusiasm.

So, ask yourself, "What in the message do I really believe is true?" Everything, something, nothing? Remember that in life, truth is what you know. In presenting, truth doesn't exist until you demonstrate it. Using action, you must show your version of the truth to an audience. But if you can't justify your actions, then the truth is less obvious. Truth and belief are inseparable. So you must believe something to show its truth. It reminds me of the saying "Practice what you preach." So, in almost every coaching session I say, "Yeah...but do you believe it?"

The best way to develop a sense of truth in your message is to play the devil's advocate with the argument you constructed for the audience. Can you convincingly play both sides of the issue? Can you be the prosecution and the defense? Naturally, the side that wins has more of your sense of truth because it has more of your heart. Truth is in the heart, not the mind. So the more the message appeals to you, the more evidence you look for to support it. If you love what you do, you'll love doing it!

Your sense of truth in your topic is directly related to your belief in that topic. Whatever appeals to you most in that truth will be delivered with the most conviction.

### THINKING, FEELING, WANTING

Your sense of truth in the message justifies your presenting it. Motivation makes it happen. The motivation to speak is measured by your will, your desire, and your determination. Your feelings and your intellect are both supported by your will. They all work for one another and can hardly be separated. If you use your intellect (mind) to decide on some action, you must call upon your feelings (heart) and your desire (motivation) to make the action happen. You can't separate these. They all work together synergistically. Although action drives emotion, you have to "want" to create the action in the first place.

For example, let's say you must make a presentation to a group of people about a new product. You know how you will present the message because you've planned it. The planning

involved a thinking process. But, it doesn't stop there. How do you feel about the plan to present the product? How do you feel about the product itself? How about the people you'll be speaking to, and even the place you'll be presenting in? And, considering those feelings, what motivates you to deliver the information at all?

You might say, "My paycheck!" Believe it or not, money can motivate only in as much as what it gives you—security, luxury, power, and so on. The point is that if the motivation is only from a need to present (to get paid), then it is not being driven by desire. It becomes one of those presentations you have to do, but would skip if you could. This, unfortunately, is the case with over 95% of all presentations.

You've heard the excuses. "I just don't have it today," or "I'm not into it right now," or, "This doesn't interest me." You've used these expressions yourself, at times.

When the motivation—the desire—the will—is missing, the feelings disappear and the mind is left alone to direct the body and the voice. When this happens, the presenter appears to be "going through the motions," and the effect of the message is usually lost.

### PEOPLE MAKE A DIFFERENCE

Motivation is a key element to making presentations more effective. I have been giving the same basic skills seminar for a number of years. Often people come up to me who've seen my "show" more than once and say, "I keep getting more and more out of this seminar; what have you added?" I say, "I've changed nothing!" The response is typically, "But something is different."

True. There is one difference. Can you guess? I'll tell you in a minute.

I've had others ask, "How can you give the same seminar, over and over again, and not be totally bored with the topic?" I respond, "The same way in the theatre an actor can play the same role, six nights a week for two years, and deliver the same part with enthusiasm—because every night is different!" It's the same reason why my seminar appears "different" each time.

The answer is different people. When the people change, the event changes. That's because the event is by people, for people. It's a completely new presentation for each new audience. That's the secret behind the motivation. It's the desire and the will to share anew. Whether it's the same information for different people or even new information for the same people, the motivation is a result of change.

Never look to your content to stimulate your will. Look to the people who will be stimulated. It's not the joke that's funny; rather, it's the reaction. Your anticipation of the laughter motivates you to tell the joke! The inspiration you need to present the topic with conviction comes from the simple fact that people are willing to give you moments of their time. If that's not enough to get you excited about your delivery, then consider yourself one of the average communicators—one of the talking heads that people expect to see each time a presentation takes place.

Always visualize the effect of your words on the group and you will understand your motivation. Think of infecting rather than affecting the audience, and your desire to deliver the message will increase.

## ADDING STORIES AND PERSONAL OPINIONS

In a world of parity products, where everything looks the same, the one difference is you. That's what being a visual presenter is all about—you! That's how companies differentiate. Not with products, but with people. So, if people make the difference, then you can bet your bottom dollar that individual experience and personal opinion count for something. And guess what? Experience means you've "been there" and have probably formed some philosophy over the years. You've learned some lessons over the course of time. So, talk about them. About the lessons. You know, the stuff you learned and about the way you see it. Talk about the way it was and you'll convince people about the way it should be. Come on, tell a story!

The best presenters tell stories. I can't stress that enough. The advantage of good stories is that they are unique. No one can copy, duplicate, reiterate, reproduce, retransmit, or recount your stories. They are personal references that allow a group of people to know something about what you have been through. Stories and personal experience are ways to share your character with an audience.

### TIME, PLACE, AND CIRCUMSTANCE

The rules of storytelling are simple. The audience has to know when it happened, where it happened, and what conditions existed while it happened. If you don't establish time, place, and circumstance, you have less chance of keeping the audience attentive to your story.

For example, several years ago I was at a big conference and everything was hectic. That's the beginning of my story. But how involved are you at this point? I mean, what do you really know so far? More important, what do you visualize about the event compared to what I remember about it? Let's break it apart. "Several years ago"—whatever year you might be thinking of may not be the one I am referencing, so we are not together on that issue. I mentioned "a big conference"—but you are probably visualizing a completely different event in a much different place. Finally, I said, "everything was hectic"—to you, maybe hectic means chaotic, or confused, or frenzied, or simply wild. Adjectives are tough for everyone to agree on, you know.

Clearly my story doesn't put us on the same page so far. Our references are different. A story works best when we all share a common set of parameters. I need to establish time, place, and circumstance for you, very quickly, to pull you into my story.

...So here it was, August 12, 1996. I'm inside the San Diego Convention Center at the Republican National Convention, escaping the 100-degree heat. But, I'm with a few thousand people crammed into this one closet-of-a-room, and suddenly—no air conditioning. Oh man, everything was hectic!

Do you see what a big difference those details made? Sure, it takes about 20 more seconds to add the description, but you are definitely with me in the story. You know the time (August 1996); you know the place (San Diego, Republican Convention); you know the circumstance (no air conditioning). We both can agree on what hectic means now!

When you specify time, place, and circumstance, you help the listener see what you are recalling in your mind. When you detail with adjectives (crammed, closet-of-a-room, and hectic), you let the listener feel what you are recreating in your heart.

Storytelling is about attributes and attitudes. Keep that in mind every time you tell a story, and you will be more descriptive of both the facts and the feelings associated with the experience.

### PERSONAL OPINIONS MATTER

It's one thing to tell good stories, whether they happened to you or to someone else. It's also important to editorialize. You have to voice your opinion every so often so that people know you're involved in the message. The editorial is the slant on the topic that the audience expects to hear from you. It's the emotional hook that keeps them coming back for more. Just don't be afraid to say the word "I" when you speak.

For example, let's say you're giving a presentation, and you bring up a bullet chart with a list of services your company provides. You may find yourself reciting the list and maybe adding more explanation here and there. But how do you feel about any one of these services? The audience would love to know. So maybe you say, "What I really find helpful about..." or you state, "One of my favorite ways to use this..."—these are personal opinions. Your own views tell the audience so much more than your reviews. So don't be afraid to show them your take on life.

Hey, that's why we watch talk shows! We love reading those letters to the editor. We are addicted to the unsupported assertions of people we will never meet! If a schoolteacher in West Podunk, Ohio, calls in to "Larry King Live" and criticizes a comment from a state senator out of Texas, I'll sit there mesmerized while I dig deeper into my half-gallon of vanilla-fudge swirl. Why? I have no idea, other than I have to hear an opinion on anything by anybody, anywhere! Okay, so maybe you're not that bad. You have a half-gallon of Rocky Road, instead. The point is that we are fascinated by other people's opinions and stories. It's part of the intrigue of being human.

The bottom line is that you can be so much more effective when you break the pattern of the presentation with stories and personal opinions. It gives the audience an image of a real person who knows how to share real information in a really interesting way.

### USING HUMOR

A traveling salesman walks into a local bar and orders a beer. The bar is crowded, but it's pretty quiet.

Suddenly a voice shouts out, “72!” and everyone just bursts into laughter. The salesman looks puzzled.

The crowd settles, again another voice yells, “114!” and people are just doubling over in hysterics.

The salesman leans to the bartender and says, “What’s the deal with the numbers and the laughs?”

The bartender replies, “Oh, this bar has been here for years. Same crowd all the time. Well, they know all the jokes, got tired of telling them, so they numbered them all. When you want to tell a joke, you just yell the number. It’s pretty simple!”

The salesman whispers, “Hey, do you mind if I try?”

The bartender says, “Give it a shot.”

The salesman clears his throat, waits for a lull, and yells, “84!” Nothing! No response, not even a chuckle. He tries again, even louder, “84!” Dead silence. One more time he shouts, “84!” Blank stares. A funeral would be funnier.

Frustrated, he turns to the bartender and says, “What’s up? Why don’t they laugh? Is something wrong with number 84?”

The bartender shakes his head and says, “Hey, pal, face it. Some people just can’t tell a joke!”

I think you get the point. If you aren’t funny now, you probably won’t be funny when you present. This doesn’t mean you can’t learn things about timing and rhythm, but humor is exactness, it’s preciseness, it’s accuracy! You can miss with tragedy and have some people in tears while others sniffle, but comedy is different. They either laugh or they don’t. Smirks and chuckles don’t count.

I don’t want you to shy away from using humor; rather, I want you to realize how effective humor can be in a presentation. In a world of visual creatures, entertainment ranks high on the list of “what they want.” Humor is the best entertainment you can add to an event, because it relaxes people and makes them realize that the whole world isn’t coming to an end after all. The use of humor, at the right time with the right inflection, can be extremely effective.

### OPENING LINES

“I just flew in from New York. Boy, are my arms tired!” That’s fine if you are a stand-up comic. A comedian is expected to be funny. But are you expected to be funny? When someone says, “I want to start off with a joke,” I ask why? What makes you think the audience expects an opening joke? For that matter, why not sing? If they expect a joke, surely they expect a song, maybe even a dance! If they’ve seen you present before and they know you for your humor, then yes, tell the joke. But if they don’t know your style, the joke better be really funny. No, I mean really funny. If it’s not, it will probably bomb.

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**Bombs Away!**

One January, I was in Boston, coaching a group of sales executives during their annual sales conference. The CEO of the company wanted 30 minutes to work with me, early in the afternoon. He came into the room, holding a few index cards and he said, “I just want you to help me with some jokes. I was roasted at dinner last night by the senior management team and I want to get back at them. So I came up with my own jokes.” I looked at him and said, “So Dan, let me get this straight, you wrote the jokes, right?” He nodded and I asked him to begin.

He told the first joke and I didn’t react. I prompted him to continue and the second and third jokes were worse than the first. I helped him reword a few things. We worked a few minutes on rhythm and delivery. Still—nothing. I looked at him and said, “Forget it, Dan. These won’t work. You’re not funny.” He looked shocked and I continued, “You’re not a funny guy. You have no timing, no sense of rhythm, and the jokes stink! Other than that, you’re fine!”

He insisted on using the jokes and I said, “If you do, you will bomb, big time. I am telling you the truth. Don’t do it!” Sure enough, later that evening I saw him in the hotel lobby and he came right up to me, put his hand on my shoulder and said, “You were right. Not a single laugh. I stunk up the place.”

I looked at Dan, glanced at his hand resting on my shoulder, smiled a little and said, “Dan, keep the day job.” And we both laughed.

Dan wasn’t funny because he was never funny to those people in the first place. They had no expectation or frame of reference for his humor. Dan also wasn’t used to telling jokes, so his delivery style didn’t fit the situation. You have to develop a skill for humor, just as you would for any other form of entertainment.

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Don’t just tell an opening joke for the sake of the joke. Whatever opener you choose, make it relate to the topic, the industry, the specific business, or even to a general characteristic about the group, like the fact that they are all in sales or marketing.

I was the keynote speaker at an annual meeting for a global travel agency. My opener was a Henny Youngman joke: “So, I got to the airport, walked up to the ticket counter and said, ‘I have three bags here. I want one bag to go to Rome, one to Detroit, and the third one to Dallas.’ The attendant said, ‘We can’t do that!’ I said, ‘Why not? You did it last week!’” For this group, the joke fit the industry.

**STRETCHING THE RUBBER BAND**

When I prepare my own presentations, I structure the key issues around the jokes. This is very important because it uses a theatre principle called “stretching the rubber band.”

Think of the emotions of the audience as a simple rubber band. One side is serious; the other side, humorous. When the rubber band is stretched, the distance between the two sides is greater. If you let go of one side, the impact from the other side is bigger. An unstretched rubber band creates less impact. (I think I read that in a fortune cookie once.)

Applying this principle to presentations, the humor offsets the serious tone of the talk. The timing is the trick. When the humor is at its peak, when you are delivering the funniest line—that’s when the rubber band is stretched the most. Immediately following that moment is when you can get the greatest effect from being serious! That’s right. The seriousness of the message is greater when the audience least expects it. If they are relaxed

from a lighthearted comment, then they are vulnerable to the importance of an issue. The timing of your humor can effectively heighten the importance of your message.

### INDICATING AND APOLOGIZING

Don't indicate your humor. If you begin to laugh before the audience does, then the effect of the joke diminishes. This is because you indicated or telegraphed the result (laughter) before it could happen for the audience. If you laugh for the crowd, then they won't have to. One other way of indicating humor is by stating, "That reminds me of a joke..." or "Here's a really funny story..." When you say things like that, you raise the expectation of the group. In that case, it better be funny!

The best way to develop your delivery of humor is to practice telling jokes or funny stories to those closest to you. Family and friends will be the first to tell you if your jokes are funny. But make sure you find the jokes funny, as well, or you will not tell them with commitment.

Finally, if a joke falls flat, keep going. Never apologize and never comment on the failure of humor. It's done. Move on. Only a comedian has to worry about being funny all the time. If you bomb out, it only makes the audience relieved that you don't tell jokes for a living!

That reminds me of the two construction workers who...

## DEVELOPING YOUR OWN STYLE

Probably the most important issue in the whole skill of delivery is the development of your own style. Think of style not as fashion, but as character.

The audience evaluates your character in relation to the message, the media, and the mechanics. All of these elements are part of the event. If you have developed your own natural way to deliver consistent messages, your style will emerge. People will remember your kind of presentation. Your style will show each time you deliver, regardless of the content.

### LEVELS IN YOUR STYLE

One way of assuring your own style is to match three levels of objectives in this order: the objectives for your life, for your role within the organization, and for your current presentation.

The way this works: Start with your life. Let's say one of the objectives or goals you have in life is to attain great wealth. You want to be rich! Okay, fine. Then look at your role in your current company. Is there an objective in your job description that can possibly match your life goal of attaining great wealth? Well, maybe not great wealth, but possibly a raise or a promotion—the steps to greater wealth. Finally, is there anything in the presentation that has to do with the attaining of great wealth, even if not directly for you but for the company? Look for it.

For example, perhaps part of the presentation discusses company growth. More revenue for the corporation might just increase the budget for payroll. That could mean a nice fat raise



for you! The extra cash might be what you need for the mortgage payment on that piece of property you've been looking at recently. Since they're not making any more land, you know that property appreciates in value and it would be so nice to have the land as an investment for the future. The road to great wealth is paved with real estate tycoons!

The point is that during the presentation, the discussion of company growth is in direct line with your goal of attaining great wealth. Chances are you will cover this topic with more enthusiasm because it matches something that appeals to you—in your heart. That's important in the development of your own style.

Many things in your life appeal to you. If any of them exist in your work and through the presentations you give because of your work, all the better to identify them and use them! Link the little objectives of your talk through the larger objectives of your work and into the even bigger objectives of your life.

### THROUGH LINE OF ACTION

Paying attention to everything that comes before, during, and following your presentation develops your character or style. It is one continuous process, which is called a through line of action. This is important in the event because it lets you link all of the elements in the presentation with the reality of the way things are.

For example, you are giving a presentation on a Monday morning to a group of people. You begin at 9:00 a.m. and plan to finish at about 11:00 a.m. There will be one 15-minute break scheduled at 10:00 a.m. Okay, pretty simple. Let's make your through line of action for this example run from the time you woke up until after lunch.

Run through the details of those moments and you'll see a range of events from the very consistent to the very unique. The wake up routine is probably the same. Depending on where the presentation takes place, locally or out of town, the commute to the event may be more or less familiar. The arrival at the event will be as unique as however many times you've done this same presentation for the same people in the same space. The event itself will have some information you've mentioned many times and some new information you are presenting for the first time. You can see how just the examination of the continuous action will show you a combination of daily habits and one-of-a-kind activities.

The habits are already a part of your personal style. Don't worry about them at all. The one-of-a-kind moments are part of this through line of action, which eventually may add to your personal style, depending on how often they repeat. The more you can pinpoint and control the unique moments, the more likely they will recur the next time you present.

### DON'T EVEN THINK ABOUT IT!

The examination of your through line of action—that is, the connecting points along the way—is how you develop good habits. Although habits are hard to break, the good ones last forever. You don't even need to think about them after a while because they are part of your natural way of doing things.

**Tip #277 from**

Look back on all the segments in Chapters 21 through this chapter and put a check mark next to those sections you believe are already part of your style. Put a question mark next to the parts that you think you can achieve for yourself with some effort. Cross out any section that you feel is totally impossible for you to ever accomplish, regardless of how hard you try.

For the check-marked items, they're already yours and you need not think about them. The question marks represent the work you have to do to make them into check marks.

My guess is that you won't cross out anything because there is nothing you can't accomplish, if you try hard enough!

You know, there was a time in your life when, for a few weeks, all you did was spend every single waking moment of your day trying to accomplish a task that, today, you take for granted. It's called walking. At one time, it was a rare privilege; now, it's just part of the way you move.

When your presentation skills evolve from a rarity to a routine, your own style becomes second nature. This is the result of putting as much of yourself into the mechanics of function—the inner life of your delivery—so that no one else can copy, reproduce, or mimic your personal skill set in any way.

Your body, voice, mind, and heart combine to form the foundation of your skill as a visual presenter. Once developed, your own style will be evident in the message, the media, and the mechanics as you perform your presentation for an appreciative audience. Every move you make, every word you utter, every thought you express, and every feeling you have will be part of your natural style. You'll finally be able to trust your own skills whenever you are truly being yourself in the presentation.

So next time you present, relax, wiggle your toes and break a leg!

## TROUBLESHOOTING

*What's the best way to do a product demonstration for a group?*

Whenever you have to focus the attention of the audience on a prop (a tangible object), you should be concerned about physical perspective. If your physical perspective of the object—your viewing angle—is different from that of the audience, the communication is lost. Many product demonstrations fail because the presenter and the audience do not share the same perspective during the demonstration.

For example, let's say the product you need to demonstrate is small enough to rest on top of a table and light enough that you can hold it up to show people. If you are standing and the audience is sitting, any reference to the object as it rests on the table will be viewed from different angles. Your angle is from above and each person in the audience, by virtue of his or her seat, has a different viewing angle to the object. That should be your first indication that you need to change the perspective. You might decide to hold the object in the air so people farther back can see. But you still end up with a variety of viewing angles. What can be done to equalize the perspective?

One solution is to reproduce the demonstration for view on the screen. The display screen is the “great equalizer” of perspective. You can use a still photograph of the object or you can play a videotape of the object in use. You can even use a document camera connected to your projector to show the live demonstration on the big screen. There are many ways you can create a visual impression of the object so everyone has the same perspective. This is why movies are so entertaining. The camera is doing all the work for you.

*I go to presentations as part of a team. Sometimes two or three of us present different parts of the big picture. Do you have any advice for “team” presentations?*

Teams are very common in high level sales presentations, initial public offerings (IPOs), and other events where several experts are required to deliver a single message. Whatever the venue, the point is that more than one person is presenting and that fact alone changes the dynamics of the event.

The mechanics of function, as discussed in this chapter, play a very important role in the relationships established by the team for the audience. The better the team members know each other, the more cohesive the team appears. So I would first suggest you get to know the players on your team. Find out likes, dislikes, hobbies, interests, opinions, concerns, fears, aspirations, and anything else that will help you understand the characteristics of your team members.

Let’s put this into perspective using a husband/wife analogy. Even if you aren’t married, this can apply to any two partners who know each other very well. You and your partner are at a dinner with several friends. A suggestion is made to commit to doing something the following Saturday night. You look at your partner and you can sense, within seconds, his or her interest in the plan. This is because you understand how each of you thinks, feels, and behaves in similar situations. You share a personal history.

When I coach teams, I use exercises to build a personal history to be shared by all team members. I suggest you look for that history in your team members, as well. Have they been through this type of presentation before? Have they experienced a similar turn of events?

Another important element in team presenting is what I call “the exchange.” This is the transition between presenters—you know the awkward moment when one person finishes a section and introduces the next person to continue with the presentation. It is during that moment that an audience looks for a relationship between the two individuals. Do they like each other? Are they friends? Do they get along? Most presenters will simply leave this moment blank. There are no words spoken, no dialog planned, no exchange.

You should develop a small bit of business, or banter, so the audience gets an immediate impression that the two presenters have a good, healthy relationship. Maybe you plan a humorous story where one person comments on the driving habits of the other “on the way to the presentation.” Perhaps you mention a personal hobby or sport that the other person likes. The whole point is about letting the audience see that a relationship exists. If they think you work well together, they will feel more confident in the organization that supports you, as well.

Team presenting is about demonstrating relationships and relationships can only be built from sharing personal information that can be used to help the team function as a unit.

# WORKING WITH ACCESS DATABASES AND TABLES

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## DEFINING THE ELEMENTS OF ACCESS DATABASES

The traditional definition of a *database* is a collection of related data items stored in an organized manner. Access is unique among desktop database development applications because of its all-encompassing database file structure. A single Access .mdb file can contain data objects—tables, indexes, and queries—as well as application objects—forms, reports, macros, and Visual Basic for Applications (VBA) code modules. Thus, you can create a complete Access database application stored in a single .mdb file. Access’s all-in-one .mdb file structure makes creating and distributing database applications simpler.

Access databases can include the following elements in a single .mdb database file:



- *Tables* store data items in a row-column format similar to that used by spreadsheet applications. An Access database can include as many as 32,768 objects (the combination of tables, forms, reports, queries, and so on), and as many as 1,024 tables can be open at one time if you have sufficient resources available. You can import tables from other database applications (such as dBASE, FoxPro, and Paradox), client/server databases (such as Microsoft SQL Server and the new Microsoft Data Engine, MSDE, included with Access 2000), and spreadsheet applications (such as Microsoft Excel and Lotus 1-2-3). You can also link to Access databases other types of database tables, formatted files (Excel worksheet and ASCII text), and other Access databases. Chapter 7, “Linking, Importing, and Exporting Tables,” shows you how to use Access 2000 with other data sources.



- *Queries* display selected data contained in as many as 16 tables. With queries, you can specify how to present data by selecting the tables that compose the query and up to 255 specific fields (columns) of the selected tables. You determine the records (rows) to display by specifying the criteria that the data items in the query data must meet to be included in the display. Part II, “Getting the Most Out of Queries,” explains how to design Access queries.



- *Forms* display data contained in tables or queries and let you add new data and update or delete existing data. You can incorporate pictures and graphs in your forms, and, if you have a sound card, include narration, music, and even live video in your form. *Subforms* are forms contained within a main form. You learn how to design forms in Chapter 12, “Creating and Using Forms,” and Chapter 13, “Designing Custom Multitable Forms,” and you learn how to use graphics with forms in Chapter 19, “Adding Charts and Graphics to Forms and Reports.”

Access 2000 forms can also incorporate VBA code in class modules to provide event-handling subprocedures for forms and the controls that appear on forms.



- *Reports* print data from tables or queries in virtually any format you want. Access lets you add graphics to your reports so that you can print a complete, illustrated catalog of products from an Access database. Access’s report capabilities are much more flexible than those of most other relational database management applications, including those designed for mini-computers and mainframe computers. Like forms, you can include VBA event-handling subprocedures in Access 2000 reports. Chapter 14, “Printing Basic

Reports and Mailing Labels,” and Chapter 15, “Preparing Advanced Reports,” cover creating reports. Chapter 28, “Responding to Events with VBA 6.0,” describes the specifics of writing event-handling VBA code stored behind forms and reports.



- *Macros* automate Access operations. In previous versions of Access, macros took the place of the programming code required by other database applications, such as xBase, to perform specific actions in response to user-initiated events, such as clicking a command button. Macros now are obsolete; Access 2000 supports macros for compatibility with database applications created with earlier versions of Access. Microsoft recommends that you use VBA program code for event handling in Access 2000 databases; future versions of Access are likely to phase out macro support in favor of VBA-only programming.



- *Modules* contain VBA code that you write to create customized functions for use in forms, reports, and queries, and to supply common subprocedures that all your class modules can use. By adding VBA code to your database, you can create complete database applications with customized menus, toolbars, and other features.

➔ See Chapter 26, “Writing Visual Basic for Applications Code,” for a description of how to write VBA code in general.



- *Relationships* define how tables within a database are related to one another. Relationships don’t appear in the Database window’s Object bar; you choose Tools, Relationships to open the Relationships window for the current database.



- *Pages* are Data Access Pages (DAP) that let you display and edit Access data in Web pages delivered by an intranet server. Chapter 18, “Designing Data Access Pages,” has detailed information on DAP.

➔ See “Deploying Data Access Pages with Office Web Components,” p. 21 for a brief introduction to DAP.

#### Note



**NEW  
2000**

Access Data Projects (ADP) introduce three new object classes—Views (similar to Queries), Stored Procedures (also related to Queries), and Database Diagrams (similar to Relationships). ADP connect only to MSDE or SQL Server 6.5+ databases using OLE DB and ActiveX Data Objects (ADO), both of which are new with Access 2000. The details are in Chapter 25, “Creating Access Data Projects.” Chapter 27, “Understanding Universal Data Access, OLE DB, and ADO,” introduces you to these new Access 2000 features.

➔ See “Creating Access Data Projects for the Microsoft Data Engine” p. 26 for an introduction to ADP.

A better definition of an Access *database* is a collection of related data items and, optionally, the methods necessary to select, display, update, and report the data. This definition emphasizes an important distinction between Access and other database management applications. Even client/server database systems such as Microsoft SQL Server, which include all related tables within a single database, don’t include the equivalent of forms and reports within the database. You must use another application, called a *front end*, to display, edit, and report data stored in client/server databases. You can use Access to create front ends for

client/server databases by linking tables from the client/server database to your Access database. Creating front ends for client/server databases is one of the major applications for Access in medium to large firms.

**Tip #28 from***RJ*

It's good database application development practice to maintain tables that store your application's data in one Access database (.mdb) file and the remainder of your application's objects, such as forms and reports, in a separate .mdb file. For simplicity, this chapter uses the Northwind Traders sample database, which is a self-contained application with a single .mdb file. Chapters 7 and 24, "Securing Multiuser Network Applications," describe how to use or create separate .mdb files to store data and application objects.

This chapter introduces you to Access databases and tables—the fundamental elements of an Access application. There are many references in this book to the term *Access application*, which is an Access database with the following characteristics:

- It contains the queries, forms, reports, and macros necessary to display the data in a meaningful way and to update the data as necessary. This book calls these elements *application objects*.
- It doesn't require the database's users to know how to design any of its elements. All elements of the database are fully predefined during the application's design stage. In most cases, you want to restrict other users from intentionally or unintentionally changing the application's design.
- It's automated by VBA code so that users make choices from command buttons or custom-designed menus rather than from the lists in the Database window.

The easiest way to learn how to create Access applications is to modify the Northwind Traders sample database that's provided with Access. In the following chapters, you add new features to the Personnel Actions application until you have a complete, automated method of adding and editing Personnel Actions data. Therefore, you should read this book sequentially, at least to Chapter 15. Because succeeding examples build on your previous work, perform the sample exercises for the Personnel Actions application each time you encounter them.

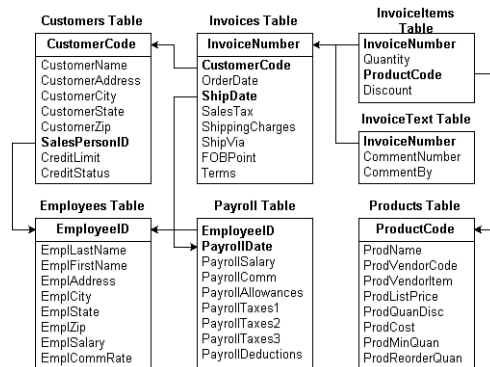
## UNDERSTANDING RELATIONAL DATABASES

All desktop database managers enable you to enter, edit, view, and print information contained in one or more tables divided into rows and columns. At this point, the definition of a database manager doesn't vary from that of a spreadsheet application—most spreadsheets can emulate simple database functions. Three principal characteristics distinguish relational database management systems (RDBMSs) from spreadsheet applications:

- All RDBMSs are designed to deal efficiently with very large amounts of data—much more than spreadsheets can handle conveniently.

- RDBMSs easily link two or more tables so that they appear to users as though they are one table. This process is difficult or impossible to accomplish with spreadsheets.
- RDBMSs minimize information duplication by requiring repetition of only those data items, such as product or customer codes, by which multiple tables are linked.

Figure 4.1 shows a typical relational database that a manufacturing or distributing firm might use. This database structure is similar to that of the Northwind Traders sample database provided with Access.



**Figure 4.1**  
A part of a typical database for a manufacturing or distributing firm.

- ➔ For an introduction to relational database principles, see “The Process of Database Design,” p. 815.

If your job is to create an invoice-entry database, you don’t need to enter a customer’s name and address more than once. Just assign each customer a unique number or code and add to the Customers table a record containing this information. Similarly, you don’t need to enter the names and prices of the standard products for each invoice. You assign unique codes to products, and then add records for them to the Products table. When you want to create a new invoice for an existing customer, you enter the customer code and type the codes and quantities for the products ordered. This process adds one record (identified by an automatically assigned sequential numeric code) to the Invoices table and one record for each different item purchased to the InvoiceItems table.

- ➔ To learn how to connect related tables, see the section “Joining Tables to Create Multitable Queries,” p. 355.

Each table is related to the other by the customer, invoice, and product codes and numbers, shown by the connecting lines between the tables in Figure 4.1. The codes and numbers shown in boxes are unique; only one customer corresponds to a particular code, and one invoice or product corresponds to a given number. When you display or print an invoice, the Invoices table is linked (called a *join*) with the Customers and InvoiceItems tables by their codes. In turn, the InvoiceItems table is joined with the Products table by the common value of a ProductCode in the InvoiceItems table and a ProductNumber in the Products table. The links or joins are called *relationships* between tables. Your query (view)



of the desired sales orders displays the appropriate customer, invoice, items, and product information from the linked records. (The following section explains queries.) You can calculate quantity-price extensions, including discounts, by multiplying the appropriate values stored in the tables. You can add the extended items, sales taxes, and freight charges; you can also calculate the total invoice amount. These calculated values need not be included (and in a properly designed database never are included) in the database tables.

## USING ACCESS DATABASE FILES AND TABLES

Access has its own database file structure, similar to that used by client/server RDBMSs, and uses the .mdb extension. As discussed in this chapter's introduction, Access varies from traditional PC databases in that a single file contains all the related tables, indexes, forms, and report definitions. The .mdb file even includes the programming code that you write in VBA. You don't need to be concerned with .mdb file structure because Access handles all the details of file management for you.

Records commonly are called *rows*, and fields often are called *columns*. This book uses the terms *records* and *fields* when referring to database tables, and *rows* and *columns* for sets of records returned by queries.

### THE ACCESS SYSTEM DATABASE

In addition to including database files with the .mdb extension, Access includes a master database file, called a *workgroup file*, named System.mdw. This file contains information about the following:

- Names of users and groups of users who can open Access
- User passwords and a unique binary code, called a System ID (SID), that identifies the current user to Access
- Operating preferences that you establish by choosing **T**ools, **O**ptions from the menu
- Definitions of customized Access 2000 toolbars that each user creates

➔ For more information on user preferences, see "Setting Default Options," p. 98.

Chapter 24 covers sharing database files and granting permission for others to use the files.

### ACCESS LIBRARY DATABASES

Another category of Access database files is *add-ins*, also called *libraries*. Add-ins are Access library databases, usually with an .mde or .mda extension to distinguish them from user databases, that you can link to Access by choosing **R**eferences from the Module window's **T**ools menu, or through the Add-In Manager (which you can access by choosing **T**ools, **A**dd-**I**ns).

When you link an Access library, all the elements of the library database are available to you after you open Access. The Access 2000 wizards—which you use to create forms, reports, and graphs—are stored in a series of Access library database files: Acwzlib.mde, Acwztool.mde, and Acwzmain.mde. Another wizard lets you create data dictionaries for Access databases. A *data dictionary* is a detailed written description of each of a database's elements. Add-in library databases are an important and unique feature of Access. Microsoft and other third-party firms provide a wide range of Access libraries to add new features and capabilities to Access.

## CREATING A NEW DATABASE

If you have experience with relational database management systems, you might want to start building your own database as you progress through this book. In this case, you need to create a new database file at this point. If database management systems are new to you, however, you should instead explore the sample databases supplied with Access as you progress through the chapters of this book and design your first database by using the principles outlined in Chapter 22, “Exploring Relational Database Design and Implementation.” Then return to this section and create your new database file.

To create a new database, follow these steps:



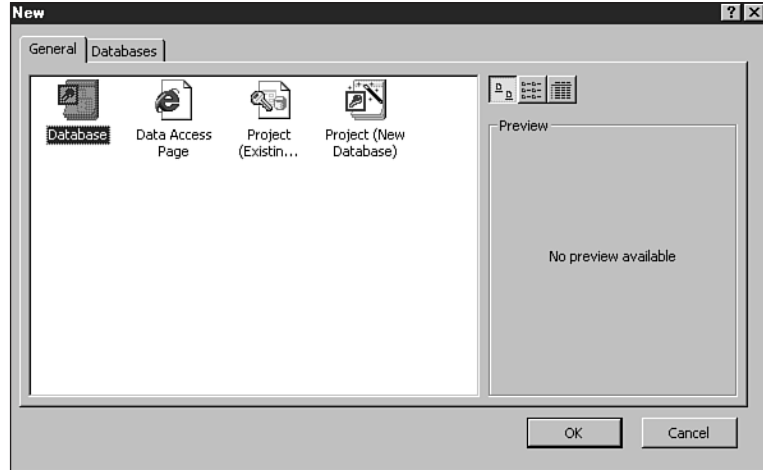
1. If you aren't already running Access, launch it and skip to step 3.
2. If Access is running and the Database window is visible, click its title bar to make it active. If the Database window isn't visible, click the Show Database Window button of the toolbar, choose **W**indow, **1** Database from the menu, or press the F11 key.
3. Click the New Database button of the toolbar, or choose **F**ile, **N**ew Database from the menu. For the Database toolbar to be visible and the New Database and other database file options to be present when you open the **F**ile menu, the Access application window must be empty or the Database window must be active. The New dialog appears as shown in Figure 4.2.

The General page of the New dialog lets you create a blank database, and the Database page lets you use any one of 10 database templates. Access 2000 comes with database templates for asset tracking, contact and event management, and several other typical business database uses. You pick a template that most closely suits the purpose of your new database.

4. For this example, click the General tab, select Database, and then click OK to display the File New Database dialog shown in Figure 4.3.

Access supplies the default file name, db1.mdb, for new databases. (If you've previously saved a database file as db1.mdb in the current folder, Access proposes db2.mdb as the default.)

**Figure 4.2**  
The New dialog, in which you select the type of database to create.



**Figure 4.3**  
The File New Database dialog, in which you enter the new database's name.

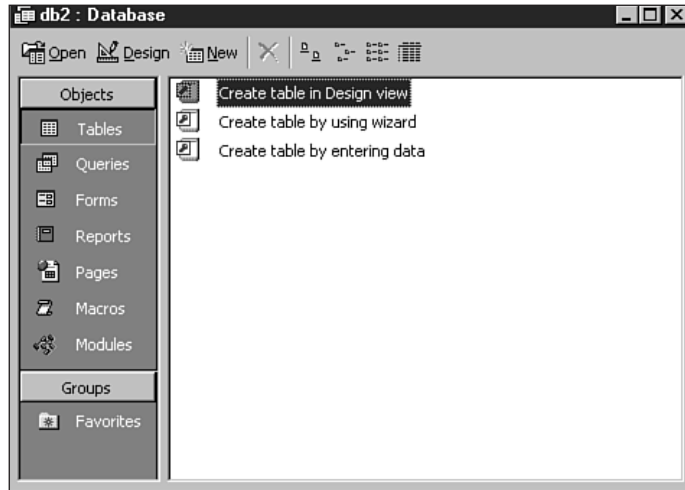


5. In the File Name text box, type a file name for the new database. Use conventional Windows 9x file-naming rules; you can use spaces and punctuation in the name. Don't include an extension in the file name; Access automatically supplies the .mdb extension.
6. Click Create or press Enter to create the new database.

If a database was open when you created the new database, Access closes any windows associated with the database and the Database window. During the process of creating the database, the following message appears in the status bar:

Verifying system objects

Whenever you open a new or existing database, Access checks whether all the database's elements are intact. Access's main window and the Database window for the new database (named db2.mdb for this example) appear as shown in Figure 4.4.



**Figure 4.4**  
The Database window for a newly created database.

Each new Access 2000 database occupies approximately 96KB of disk space when you create it. Most of the 96KB is space consumed by hidden system tables for adding the information necessary to specify the names and locations of other database elements that the database file contains.

## UNDERSTANDING THE PROPERTIES OF TABLES AND FIELDS

Before you add a table to a database that you have created or to one of the sample databases supplied with Access, you need to know the terms and conventions that Access uses to describe the structure of a table and the fields that contain the table's data items. With Access, you specify properties of tables and fields.



Properties of Access tables apply to the table as a whole. Entering table properties is optional. You enter properties of tables in text boxes of the Table Properties window (see Figure 4.5), which you display by clicking the toolbar's Properties button in Table Design view. Brief descriptions of the ten basic properties of Access tables, all of which are optional, follow:

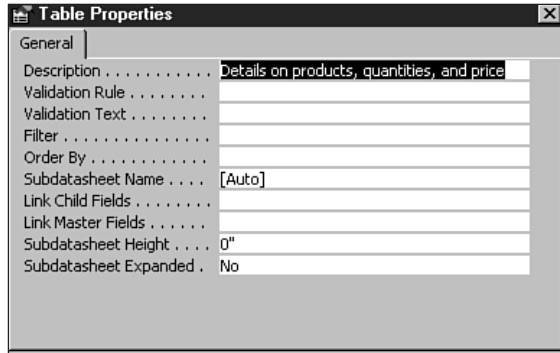
- *Description.* An optional text explanation of the table's purpose. If you choose View, Details from the menu, the Database window displays this description. This description also is useful with a data dictionary, which you use to document databases and database applications.

- *Validation Rule.* An optional expression (formula) used to establish domain integrity rules for more than one field of the table. The Validation Rule that you enter here applies to the table as a whole, instead of to a single field. Validation Rules and domain integrity are two of the subjects of Chapter 5, “Entering, Editing, and Validating Data in Tables.”
- *Validation Text.* An optional property that specifies the text of the message box that opens if you violate a table’s Validation Rule expression.
- *Filter.* An optional property value that specifies a constraint to apply to the table whenever it is opened. Filters restrict the number of records that appear, based on selection criteria you supply. Chapter 6, “Sorting, Finding, and Filtering Data in Tables,” discusses filters.
- *Order By.* An optional property value that specifies a sort(ing) order to apply to the table whenever it’s opened. Chapter 6 also explains sort orders. If you don’t specify a sort order, records are displayed in the order of the primary key, if a primary key exists. The “Working with Relations, Key Fields, and Indexes” section, later in the chapter, discusses primary key fields.



*Subdatasheets* are a new feature of Access 2000 and are briefly described in Chapter 1’s “Viewing and Editing Related Records in Subdatasheets” section. Subdatasheets display sets of records of related tables in nested datasheets. You can use subdatasheets in the Datasheet view of tables and queries, and also in subforms. The following table properties apply to subdatasheets:

- *Subdatasheet Name.* An optional value that determines whether and how subdatasheets display data in related records. The default value is [Auto], which automatically adds subdatasheets for records linked from related tables. A value of [None] turns off subdatasheets.
- *Link Child Fields.* If a Subdatasheet Name value is supplied, Link Child Fields specifies the name of the linked field of the related (subordinate) table whose records appear in the subdatasheet. You don’t need to specify a value if the Subdatasheet Name property value is [Auto].
- *Link Master Fields.* If a Subdatasheet Name value is supplied, Link Master Fields specifies the name of linking field of the table for the superior datasheet or subdatasheet.
- *Subdatasheet Height.* If a Subdatasheet Name value is supplied, Subdatasheet Height specifies the maximum height of the subdatasheet. A value of 0 (the default) allows the subdatasheet to display all related records, limited only by the size of the superior datasheet or subdatasheet.
- *Subdatasheet Expanded.* If a Subdatasheet Name value is supplied, Subdatasheet Expanded controls the initial display of the subdatasheet. Setting the value to Yes causes the datasheet to open with all subdatasheets expanded (open).

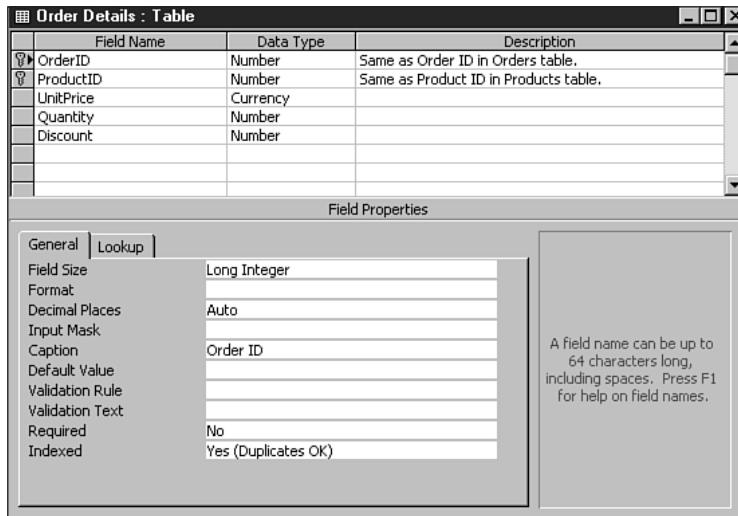


**Figure 4.5**  
The Table Properties window for the Northwind Traders sample database’s Order Details table.

Access 2000 provides an Indexes window to specify the primary key and all table indexes. Later in this chapter, the section “Adding Indexes to Tables” describes how to use the Indexes window.



You assign each field of an Access table a set of properties. The first three field properties are assigned within the Table Design grid, the upper pane of the Table Design window shown in Figure 4.6. To assign the Primary Key property, select the field and click the Primary Key button on the toolbar (the Order Details table shown in Figure 4.6 has a primary key on two fields, called a *composite primary key*). You set the remaining property values in the Table Design window’s lower pane, Field Properties.



**Figure 4.6**  
The Table Design window for the Northwind Traders sample database’s Order Details table.

The following list summarizes the properties you set in the Table Design grid:

- *Field Name.* You type the name of the field in the Table Design grid's first column. Field names can be as long as 64 characters and can include embedded (but not leading) spaces and punctuation—except periods (.), exclamation marks (!), and square brackets ([]). Field names are mandatory, and you cannot assign the same field name to more than one field. It's good database programming practice not to include spaces in field names. (Substitute an underscore (\_) for spaces or use uppercase and lowercase letters to improve the readability of field names.) Minimizing the length of field names conserves resources.
- *Data Type.* You select data types from a drop-down list in the Table Design grid's second column. Data types include Text, Memo, Number, Date/Time, Currency, AutoNumber, Yes/No, OLE Object, Hyperlink, and Lookup Wizard. Choosing a data type is the subject of the next section.
- *Description.* You can enter an optional description of the field in the text box in the Table Design grid's third column. If you add a description, it appears in the status bar at the lower left of Access's window when you select the field for data entry or editing.
- *Primary Key.* To choose a field as the primary-key field, select the field by clicking the field-selection button to the left of the Field Name column, and then click the Primary Key button on the toolbar. The Order Details table has a composite primary key consisting of the OrderID and ProductID fields. (See "Selecting a Primary Key" later in this chapter for instructions on how to create a composite primary key.)



Depending on the specific data type that you choose for a field, you can set additional properties for a table field. You set these additional properties on the General page of the Table Design window's Field Properties pane by selecting from drop-down or combo lists or by typing values in text boxes. (You use the Field Properties pane's Lookup page to set the control type for lookup fields on forms—list box, combo list, and so on. Chapter 13, "Designing Custom Multitable Forms," describes how to use lookup fields.) The following list summarizes the General field properties:

- *Field Size.* You enter the field size for the Text data type in this text box. (See the "Fixed-Width Text Fields" section later in this chapter to learn how to select a text field size.) For most Numeric data types, you determine the field size by selecting from a drop-down list. The new Decimal data type requires that you type values for Precision and Scale. Field size doesn't apply to the Date/Time, Yes/No, Currency, Memo, Hyperlink, or OLE Object data type.
- *Format.* You can select a standard, predefined format in which to display the values in the field from the drop-down combo list that's applicable to the data type that you selected (except Text). Alternatively, you can enter a custom format in the text box (see "Custom Display Formats" later in this chapter). The Format property does not affect the data values; it affects only how these values are displayed. The Format property doesn't apply to OLE Object fields.



- *Precision.* This property appears only when you select the Decimal data type. Precision defines the total number of digits to represent a numeric value. The default is 18, and the maximum value is 28 for Jet .mdb files and 38 for MSDE databases.



- *Scale.* Like Precision, this property appears only for the Decimal data type. Scale determines the number of decimal digits to the right of the decimal point. The value of Scale must be less than or equal to the Precision value.
- *Decimal Places.* You can select Auto or a specific number of decimal places from the drop-down combo list, or you can enter a number in the text box. The Decimal Places property applies only to Number and Currency fields. Like the Format property, the Decimal Places property affects only the display, not the data values, of the field.
- *Input Mask.* Input masks are character strings, similar to the character strings used for the Format property, that determine how to display data during data entry and editing. If you click the builder ... button for a field of the Text, Currency, Number, or Date/Time field data type, Access starts the Input Mask Wizard to provide you with a predetermined selection of standard input masks, such as telephone numbers with optional area codes.
- *Caption.* If you want a name (other than the field name) to appear in the field name header button in Table Datasheet view, you can enter in the Caption list box an alias for the field name. The restrictions on punctuation symbols do not apply to the Caption property. (You can use periods, exclamation points, and square brackets.)
- *Default Value.* By entering a value in the Default Value text box, you specify a default value that Access automatically enters in the field when a new record is added to the table. The current date is a common default value for a Date/Time field. (See “Setting Default Values of Fields” later in this chapter for more information.) Default values don’t apply to fields with AutoNumber or OLE Object field data types.
- *Validation Rule.* Validation rules test the value entered in a field against criteria that you supply in the form of an Access expression. Chapter 9, “Understanding Query Operators and Expressions,” explains expressions. The Validation Rule property is not available for fields with AutoNumber, Memo, or OLE Object field data types. Adding validation rules to table fields is one of the subjects in Chapter 5.
- *Validation Text.* You enter the text that is to appear in the status bar if the value entered does not meet the Validation Rule criteria.
- *Required.* If you set the value of the Required property to Yes, you must enter a value in the field. Setting the Required property to Yes is the equivalent of typing `Is Not Null` as a field validation rule. (You do not need to set the value of the Required property to Yes for fields included in the primary key because Access does not permit **Null** values in primary-key fields.)
- *Allow Zero Length.* If you set the value of the Allow Zero Length property to Yes and the Required property is also Yes, the field must contain at least one character. The Allow Zero Length property applies to the Text, Memo, and Hyperlink field data types only. A zero-length string (“”) and the **Null** value are not the same.




- *Indexed.* From the drop-down list, you can select between an index that allows duplicate values or one that requires each value of the field to be unique. You remove an existing index (except from a field that is a single primary-key field) by selecting No. The Indexed property is not available for Memo, OLE Object, or Hyperlink fields. (See “Adding Indexes to Tables” later in this chapter for more information on indexes.)
- *New Values.* This property applies only to AutoNumber fields. You select either Increment or Random from a drop-down list. If you set the New Values property to Increment, Access generates new values for the AutoNumber field by adding 1 to the highest existing AutoNumber field value. If you set the property to Random, Access generates new values for the AutoNumber field by producing a pseudo-random long integer. The “Gaps in AutoNumber Field Values” element of the “Troubleshooting” section near the end of the chapter discusses issues when you delete records from a table with an AutoNumber field.

To add your first table, Personnel Actions, to the Northwind Traders database, you must choose appropriate data types, sizes, and formats for your table’s fields.

## CHOOSING FIELD DATA TYPES, SIZES, AND FORMATS

You must assign a field data type to each field of a table, unless you want to use the Text data type that Access assigns by default. One principle of relational database design is that all the data in a single field consists of one data type. Access provides a much wider variety of data types and formats from which to choose than most PC database managers. In addition to setting the data type, you can set other field properties that determine the format, size, and other characteristics of the data that affect its appearance and the accuracy with which numerical values are stored. Table 4.1 lists the field data types that you can select for data contained in Access tables.

**TABLE 4.1** FIELD DATA TYPES AVAILABLE IN ACCESS

Information	Data Type	Description of Data Type
Characters	Text	Text fields are most common, so Access assigns Text as the default data type. A Text field can contain as many as 255 characters, and you can designate a maximum length less than or equal to 255. Access assigns a default length of 50 characters.
<b>NEW 2000</b> 	Memo	Memo fields ordinarily can contain as many as 65,535 characters. You use them to provide descriptive comments. Access displays the contents of Memo fields in Datasheet view. A Memo field cannot be a key field.
Numeric Values	Number	Various numeric data subtypes are available. You choose the appropriate data subtype by selecting one of the Field Size property settings listed in Table 4.2. You specify how to display the number by setting its Format property to one of the formats listed in Table 4.3.

Information	Data Type	Description of Data Type
	AutoNumber	An AutoNumber field is a numeric (Long Integer) value that Access automatically fills in for each new record you add to a table. Access can increment the AutoNumber field by 1 for each new record, or fill in the field with a randomly generated number, depending on the New Values property setting that you choose. The maximum number of records in a table that can use the AutoNumber field is slightly more than 2 billion.
	Yes/No	Logical (Boolean) fields in Access use (Logicalnumeric values: -1 for Yes (True) and fields) 0 for No (False). You use the Format property to display Yes/No fields as Yes or No, True or False, On or Off, or -1 or 0. (You can also use any non-zero number to represent True.) Logical fields cannot be key fields but can be indexed.
	Currency	Currency is a special fixed format with four decimal places designed to prevent rounding errors that would affect accounting operations where the value must match to the penny.
Dates and Times	Date/Time	Dates and times are stored in a special fixed format. The date is represented by the whole number portion of the Date/Time value, and the time is represented by its decimal fraction. You control how Access displays dates by selecting one of the Date/Time Format properties listed in Table 4.3.
Large Objects	OLE Object	Includes bitmapped graphics, vector-type (BLOBs, drawings, waveform audio files, and other binary data types that can be created by an large ActiveX component application objects). You cannot assign an OLE Object as a key field, nor can you include an OLE Object field in an index.
Web and other	Hyperlink	Hyperlink fields store Web page HTML document addresses. A Web address stored in addresses the Hyperlink field may refer to a Web page on the Internet or one stored locally on your computer or network. Clicking a Hyperlink field causes Access to start your Web browser and display the referenced Web page; choose Insert, Hyperlink to add a new hyperlink address.

Regardless of the length you set for Text fields in Access, the database file stores them in variable-length records. All trailing spaces are removed. Fixed-length character fields in conventional PC RDBMSs waste the bytes used to pad short text entries in long fields.

## CHOOSING FIELD SIZES FOR NUMERIC AND TEXT DATA

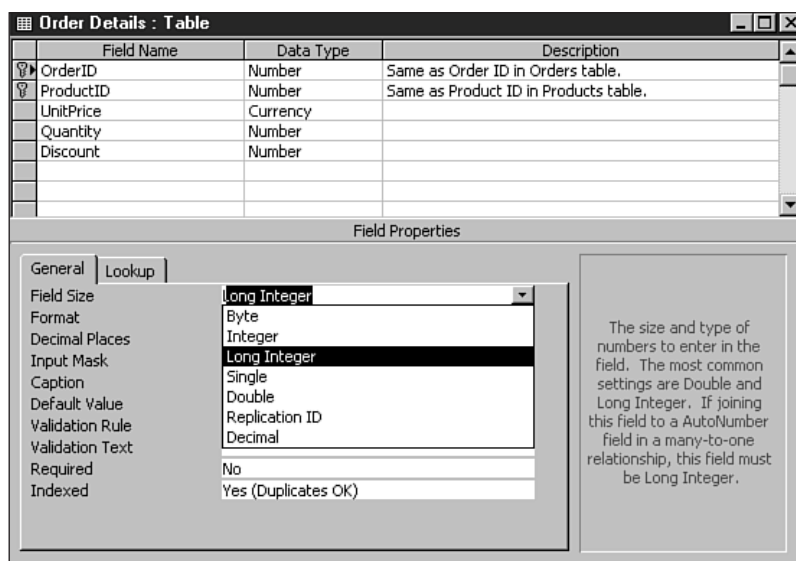
The Field Size property of a field determines which data type a Number field uses or how many characters fixed-length text fields can accept. Field Size properties are called *subtypes* to distinguish them from the *data types* listed in Table 4.1. For numbers, you select a Field Size property value from the Field Size drop-down list in the Table Design window's Field Properties pane (see Figure 4.7).

## SUBTYPES FOR NUMERIC DATA

The Number data type of Table 4.1 isn't a fully specified data type. You must select one of the subtypes from those listed in Table 4.2 for the Field Size property to define the numeric data type properly. To select a data subtype for a Number field, follow these steps:

1. Select the Data Type cell of the Number field for which you want to select the subtype.
2. Click the Field Size text box in the Field Properties window. You also can press F6 to switch windows, and then use the arrow keys to position the caret within the Field Size text box.
3. Click the drop-down arrow to open the list of choices shown in Figure 4.7. You can also press the F4 key to open the list.

**Figure 4.7**  
Selecting a subtype for the Number data type from the Field Size list.




4. Select the data subtype. Table 4.2 describes data subtypes. When you make a selection, the list closes.

After you select a Field Size property, you select a Format property from those listed in Table 4.3 to determine how to display the data. Table 4.2 includes the Currency data type because it also can be considered a subtype of the Number data type.

Regardless of how you format your data for display, the number of decimal digits, the range, and the storage requirement remains that specified by the Field Size property. These data types are available in Visual Basic for Applications 6.0. VBA includes all the data types listed in Table 4.2 as reserved words. You can't use a reserved data type word for any purpose in VBA functions and procedures other than to specify a data type.

**TABLE 4.2** SUBTYPES OF THE NUMBER DATA TYPE DETERMINED BY THE FIELD SIZE PROPERTY

Field Size	Decimals	Range of Values	Bytes
 Decimal	28 places	$-10^{-28}$ to $10^{28} - 1$	14
Double	15 places	$-1.797 * 10^{308}$ to $+1.797 * 10^{308}$	8
Single	7 places	$-3.4 * 10^{38}$ to $+3.4 * 10^{38}$	4
Long Integer	None	-2,147,483,648 to +2,147,483,647	4
Integer	None	-32,768 to 32,767	2
Byte	None	0 to 255	1
Currency (a data type, not a subtype)	4 places	-922337203685477.5808 to +922337203685477.5808	8

As a rule, you select the Field Size property that results in the smallest number of bytes that encompasses the range of values you expect and that expresses the value in sufficient precision for your needs. Mathematical operations with Integer and Long Integer proceed more quickly than those with Single and Double data types (called *floating-point* numbers) or the Currency and Date/Time data types (*fixed-point* numbers). Microsoft added the Decimal data subtype for conformance with the SQL Server 7.0/MSDE decimal data type.

### FIXED-WIDTH TEXT FIELDS

You can create a fixed-width Text field by setting the value of the Field Size property. By default, Access creates a 50-character-wide Text field. Enter the number, from 1 to 255, in the Field Size cell corresponding to the fixed length that you want. If the data you import to the field is longer than the selected field size, Access truncates the data; thus, you lose the far right characters that exceed your specified limit. You therefore enter a field length value that accommodates the maximum number of characters that you expect to enter in the field.

#### Tip #29 from

RJ

The terms *fixed-width* and *fixed-length* have two different meanings in Access. Even if you specify a fixed-width for a field of the Text field data type, Access stores the data in the field in variable-length format.



**NEW 2000** Access 2000 Text, Hyperlink, and Memo fields store characters in the *Unicode* format introduced by Windows NT 4.0. As mentioned briefly in Chapter 1, Unicode uses two bytes to store each character; this makes Unicode compatible with Asian languages that formerly required double-byte character sets (DBCS) to provide for the larger number of pictographic characters. Unicode storage ordinarily doubles the size of conventional (ANSI) text and memo fields. Access 2000 provides a new feature called *Unicode compression*, which stores characters whose value begins with 0—the entire Latin alphabet—as a single byte. When you retrieve character data, Access expands each character value to two bytes.

**Note**

Despite Unicode compression, Jet databases containing tables with large amounts of text are substantially larger than their non-Unicode predecessors. When updating a large Jet database, make sure to reserve disk space for at least a 50 percent increase in size.

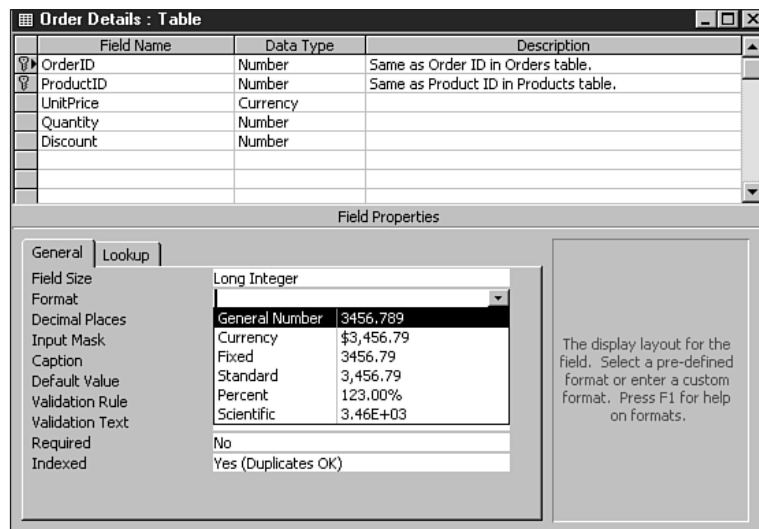
**SUBTYPES FOR THE OLE OBJECT DATA TYPE**

Fields that have data types other than characters and numbers must use the OLE (object linking and embedding) Object data type. Chapter 19 explains the OLE Object field data type. The data subtype is determined by the OLE server used to create the data, instead of by an entry in a text box or a selection from a list box.

**SELECTING A DISPLAY FORMAT**

You establish the Format property for the data types that you select so that Access displays them appropriately for your application. You select a format by selecting the field and then clicking the Format text box in the Field Properties window. Figure 4.8 shows the choices that Access offers for formatting the Long Integer data type. You format Number, Date/Time, and Yes/No data types by selecting a standard format or creating your own custom format. The following sections describe these two methods.

**Figure 4.8**  
Assigning a standard  
format to a Long  
Integer field.

**STANDARD FORMATS FOR NUMBER, DATE/TIME, AND YES/NO DATA TYPES**

Access provides 17 standard formats that apply to the numeric values in fields of the Number, Date/Time, and Yes/No data types. The standard formats shown in Table 4.3 should meet most of your needs.

**TABLE 4.3** STANDARD DISPLAY FORMATS FOR ACCESS'S NUMBER, DATE/TIME, AND YES/NO DATA TYPES

Data Type	Format	Appearance
Number	General Number	1234.5
	Currency	\$1,234.50
	Fixed	12345
	Standard	1,234.50
	Percent	0.1234 = 12.34%
	Scientific	1.23E+03
Date/Time	General Date	3/1/99 4:00:00 PM
	Long Date	Thursday, March 1, 1999
	Medium Date	1-Mar-1999
	Short Date	3/1/1999
	Long Time	4:00:00 PM
	Medium Time	04:00 PM
	Short Time	16:00
Yes/No	Yes/No	Yes or No
	True/False	True or False
	On/Off	On or Off
	None	-1 or 0



Microsoft's Year 2000 (Y2K) compliance features include a new addition to the General Page for Access 2000's Options dialog. The Use Four-Digit Year Formatting frame has two check boxes—This Database and All Databases. Marking either check box changes Date/Time field formatting as shown in table 4.4. Long Date and Time formats don't change; the formatting shown in the Access 2000 Default column is based on the standard Windows Short Date format, m/d/yy.

**TABLE 4.4** A COMPARISON OF ACCESS 2000 DEFAULT AND FOUR-DIGIT YEAR FORMATTING

Date/Time Format	Access 2000 Default	With Four-Digit Year
General Date (default)	1/15/99 10:10 AM	1/15/1999 10:10 AM
Short Date	1/15/99	1/15/1999
Long Date	Friday January 15, 1999	Friday January 15, 1999
Medium Date	15-Jan-99	15-Jan-1999
Medium Time	10:10 AM	10:10 AM
mm/dd/yy	01/15/99	01/15/1999

Marking the This Database check box sets a flag in the current database, so the formatting changes apply only to the current database. Marking the All Databases check box adds a Registry entry to your PC, so opening any database forces four-digit year formatting.

**Tip #30 from**

RJ

Access's Short Date (m/d/yy and mm/dd/yy) formats for the English (United States) locale default to two-digit years unless you change the default date format of Windows or set the Four-Digit Year Formatting option(s). Two-digit year presentation isn't Y2K compliant. To make the Windows short date format Y2K compliant for most applications, open Control Panel's Regional Settings tool, click the Date tab, and change the Short Date style from M/d/yy to M/d/yyyy. The new version of the Northwind sample database has fixed-format (dd-mmm-yyyy) dates in all Date/Time fields. Prior versions of Northwind.mdb use the default Medium Date format (dd-mmm-yy) for Date/Time fields.

**Note**

The new version of the Northwind sample database has fixed-format (dd-mmm-yyyy) dates in all Date/Time fields. Previous versions of Northwind.mdb use the Medium Date format for Date/Time fields.

**THE NULL VALUE IN ACCESS TABLES**

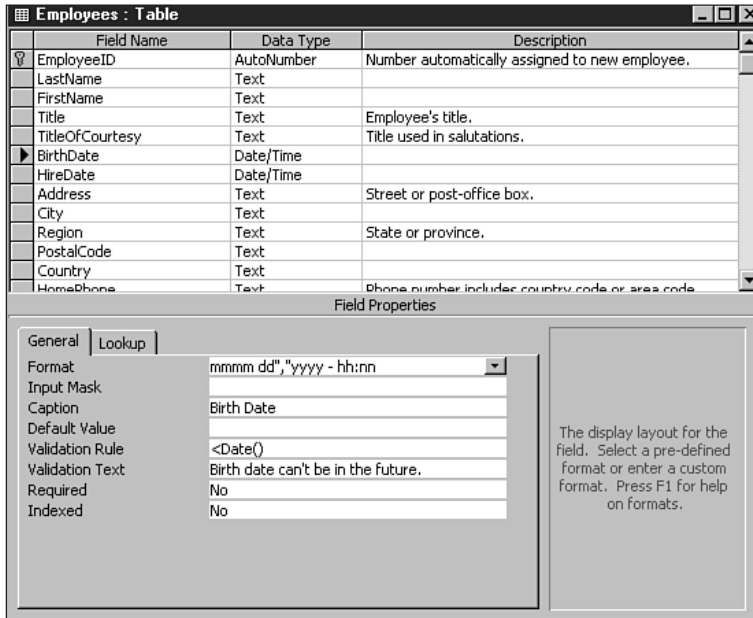
Fields in Access tables can have a special value, **Null**, which is a new term for most users of PC-based database management systems. The **Null** value indicates that the field contains no data at all. **Null** isn't the same as a numeric value of zero, nor is it equivalent to blank text that consists of one or more spaces. **Null** is similar but not equivalent to an empty string (a string of zero length, often called a *null string*). For now, the best synonym for **Null** is *no entry*. (**Null** is set in monospace boldface type because it is a reserved word in VBA.)

The **Null** value is useful for determining whether a value has been entered in a field, especially a numeric field in which zero values are valid. Until the advent of Access, the capability to use **Null** values in database managers running on PCs was limited to fields in the tables of client/server database systems, such as Microsoft SQL Server. Later, the sections "Custom Display Formats" and "Setting Default Values of Fields" use the **Null** value.

**CUSTOM DISPLAY FORMATS**

To display a format that's not a standard format in Access, you must create a custom format. You can set a custom display format for any field type, except OLE Object, by creating an image of the format with combinations of a special set of characters called *placeholders* (see Table 4.5). Figure 4.9 shows an example of a custom format for date and time. If you type **mmmm dd**", "yyyy - hh:nn as the format, the date 03/01/99 displays as March 1, 1999 - 00:00.

Except as noted, the sample numeric value that Table 4.4 uses is 1234.5. *Italic* type distinguishes the placeholders that you type from the surrounding text. The resulting display is shown in monospace type.

**Figure 4.9**

A custom date and time format entry in the Format text box.

**TABLE 4.5** PLACEHOLDERS FOR CREATING CUSTOM DISPLAY FORMATS

Placeholder	Function
Empty string	Displays the number with no formatting. Enter an empty string by deleting the value in the Format field of the Field Properties pane.
0	Displays a digit if one exists in the position, or a zero if not. You can use the 0 placeholder to display leading zeros for whole numbers and trailing zeros in decimal fractions. 00000.000 displays 01234.500.
#	Displays a digit, if one exists in the position; otherwise, displays zeros. The # placeholder is similar to 0, except that leading and trailing zeros aren't displayed. #####.### displays 1234.5.
\$	Displays a dollar sign in the position. \$###,###.00 displays \$1,234.50.
.	Displays a decimal point at the indicated position in a string of 0 and # placeholders. ##.## displays 1234.5.
%	Multiplies the value by 100 and adds a percent sign in the position shown with 0 and # placeholders. #0.00% displays 0.12345 as 12.35% (12.345 is rounded to 12.35).
,	Adds commas as thousands separators in strings of 0 and # placeholders. ###,###,###.00 displays 1,234,500.
E- e-	Displays values in scientific format with the sign of exponent for negative values only. #####E-00 displays 1.2345E-03. 0.12345 is displayed as 1.2345E-01.

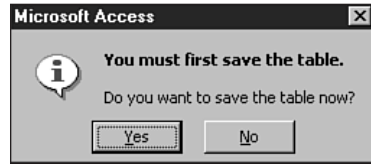


TABLE 4.5 CONTINUED

Placeholder	Function
E+ e+	Displays values in scientific format with the sign of exponent for positive and negative values. <code>#####E+00</code> displays <code>1.2345E+03</code> .
/	Separates the day, month, and year to format date values. Typing <code>mm/dd/yyyy</code> displays <code>03/06/1999</code> . (You can substitute hyphens to display <code>06-06-1999</code> .)
m	Specifies how to display months for dates. <code>m</code> displays <code>1</code> , <code>mm</code> displays <code>01</code> , <code>mmm</code> displays <code>Jan</code> , and <code>mmm</code> displays <code>January</code> .
d	Specifies how to display days for dates. <code>d</code> displays <code>1</code> , <code>dd</code> displays <code>01</code> , <code>ddd</code> displays <code>Mon</code> , and <code>dddd</code> displays <code>Monday</code> .
y	Specifies how to display years for dates. <code>yy</code> displays <code>99</code> ; <code>yyyy</code> displays <code>1999</code> .
:	Separates hours, minutes, and seconds in format time values. <code>hh:mm:ss</code> displays <code>02:02:02</code> .
h	Specifies how to display hours for time. <code>b</code> displays <code>2</code> ; <code>bb</code> displays <code>02</code> . If you use an AM/PM placeholder, <code>b</code> or <code>bb</code> displays <code>4 PM</code> for <code>16:00</code> hours.
n	Minutes placeholder for time. <code>n</code> displays <code>1</code> ; <code>nn</code> displays <code>01</code> . <code>hhnn</code> "hours" displays <code>1600</code> hours.
s	Seconds placeholder for time. <code>s</code> displays <code>1</code> ; <code>ss</code> displays <code>01</code> .
AM/PM	Displays time in 12-hour time with AM or PM appended. <code>h:mm AM/PM</code> displays <code>4:00 PM</code> . Alternative formats include <code>am/pm</code> , <code>A/P</code> , and <code>a/p</code> .
@	Indicates that a character is required in the position in a Text or Memo field. You can use @ to format telephone numbers in a Text field, as in <code>@@@-@@@-@@@@</code> or <code>(@@@) @@@-@@@@</code> .
&	Indicates that a character in a Text or Memo field is optional.
>	Changes all text characters in the field to uppercase.
<	Changes all text characters in the field to lowercase.
*	Displays the character following the asterisk as a fill character for empty spaces in a field. <code>"ABCD"*x</code> in an eight-character field appears as <code>ABCDxxxx</code> .

The Format property is one of the few examples in Access where you can select from a list of options or type your own entry. Format uses a true drop-down combo list; lists that enable you to select only from the listed options are *drop-down lists*. You don't need to enter the quotation marks shown in Figure 4.9 surrounding the comma and space in the Format text box (`mmmm dd`", "`yyyy - hh:nn`") because Access does this for you. The comma is a non-standard formatting symbol for dates (but is standard for number fields). When you create non-standard formatting characters in the Field Properties window, Access automatically encloses them in double quotation marks.

When you change Format or any other property field, and then change to Datasheet view in run mode to view the result of your work, you must first save the updated table design. The confirmation dialog shown in Figure 4.10 asks you to confirm any design changes.



**Figure 4.10**  
The confirmation dialog for changes to a field's format.

If you apply the custom format string *mmmm dd*", "yyy - hh:mm (refer to Figure 4.9) to the Birth Date field of the Employees table, the Birth Date field entries appear as shown in Figure 4.11. For example, Nancy Davolio's birth date appears as December 08, 1948 - 00:00. The original format of the Birth Date field was Medium Date, the format also used for the Hire Date field.

You need to expand the width of the Birth Date field to accommodate the additional characters in the Long Date format. You increase the field's width by dragging the field name header's right vertical bar to the right to display the entire field. Access displays the time of birth as 00:00 because the decimal fraction that determines time is 0 for all entries in the Birth Date field.

Employees : Table				
	Last Name	First Name	Title	Birth Date
▶	± Davolio	Nancy	Sales Representative	December 08, 1968 - 0:00
	± Fuller	Andrew	Vice President, Sales	February 19, 1952 - 0:00
	± Leverling	Janet	Sales Representative	August 30, 1963 - 0:00
	± Peacock	Margaret	Sales Representative	September 19, 1958 - 0:00
	± Buchanan	Steven	Sales Manager	March 04, 1955 - 0:00
	± Suyama	Michael	Sales Representative	July 02, 1963 - 0:00
	± King	Robert	Sales Representative	May 29, 1960 - 0:00
	± Callahan	Laura	Inside Sales Coordinator	January 09, 1958 - 0:00
	± Dodsworth	Anne	Sales Representative	July 02, 1969 - 0:00
	*			

Record: 1 of 9

**Figure 4.11**  
Comparing date formats.

The following is an example that formats negative numbers enclosed in parentheses and replaces a Null entry with text:

```
$###,###,##0.00;$(###,###,##0.00);0.00;"No Entry Here"
```

The entries 1234567.89, -1234567.89, 0, and a Null default value appear as follows:

```
$1,234,567.89
$(1,234,567.89)
0.00
No Entry Here
```

## USING INPUT MASKS

Access 2000 lets you restrict entries in Text fields to numbers or to otherwise control the formatting of entered data. Access 2000's Input Mask property is used to format telephone numbers, Social Security numbers, ZIP codes, and similar data. Table 4.6 lists the placeholders that you can use in character strings for input masks in fields of the Text field data type.

**TABLE 4.6 PLACEHOLDERS FOR CREATING INPUT MASKS**

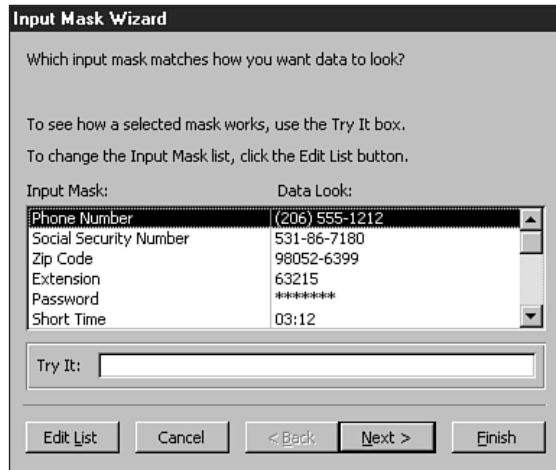
Placeholder	Function
Empty string	No input mask.
0	Number (0–9) or sign (+/–) required.
9	Number (0–9) optional (a space if nothing is entered).
#	Number (0–9) or space optional (a space if nothing is entered).
L	Letter (A–z) required.
?	Letter (A–z) not required (a space if nothing is entered).
A	Letter (A–z) or number (0–9) required.
a	Letter (A–z) or number (0–9) optional.
&	Any character or a space required.
C	Any character or a space optional.
. , ; / ( )	Literal decimal, thousands, date, time, and special separators.
>	All characters to the right are converted to uppercase.
<	All characters to the right are converted to lowercase.
!	Fills the mask from right to left.
\	Precedes the other placeholders to include the literal character in a format string.

For example, typing `\(000)"000\-0000` as the value of the Input Mask property results in the appearance of (\_\_\_\_) \_\_\_\_-\_\_\_\_ for a blank telephone number cell of a table. Typing `000\00\0000` creates a mask for Social Security numbers, \_\_\_\_-\_\_-\_\_\_\_. When you type the telephone number or Social Security number, the digits that you type replace the underscores.

### Note

The `\` characters (often called *escape characters*) that precede parentheses and hyphens specify that the character that follows is a literal, not a formatting character. If the format includes spaces, enclose the spaces and adjacent literal characters in double quotation marks.

Access 2000 includes an Input Mask Wizard that opens when you move to the Input Mask field for the Text or Date/Time field data type and click the builder (...) button at the extreme right of the text box. Figure 4.12 shows the opening dialog of the Input Mask Wizard, which provides 10 common input mask formats from which you can pick.



**Figure 4.12**  
The Input Mask Wizard for Text and Date/Time field data types.

## USING THE NORTHWIND TRADERS SAMPLE DATABASE

One fundamental problem with books about database management applications is the usual method of demonstrating how to create a “typical” database. You are asked to type fictitious names, addresses, and telephone numbers into a Customers table. Next, you must create additional tables that relate these fictitious customers to their purchases of various widgets in assorted sizes and quantities. This process is unrewarding for readers and authors, and few readers ever complete the exercises.

Therefore, this book takes a different track. Access includes a comprehensive and interesting sample database, Northwind Traders. Rather than create a new database at this point, you create a new table as an addition to the Northwind Traders database. Adding a new table minimizes the amount of typing required and requires just a few entries to make the table functional. The new Personnel Actions table demonstrates many elements of relational database design. Before you proceed to create the Personnel Actions table, try the quick example of adding a new table to the Northwind Traders sample database in the following section.

### USING THE TABLE WIZARD TO CREATE NEW TABLES

Access includes various wizards that simplify the creation of new database objects. (*Wizards* lead you through a predetermined set of steps that determine the characteristics of the object you want to create). Access 2000 includes a Table Wizard that you can use to create

new tables based on prefabricated designs for 25 business-oriented and 20 personal-type tables. Many of the business-oriented table designs are based on tables contained in Northwind.mdb.

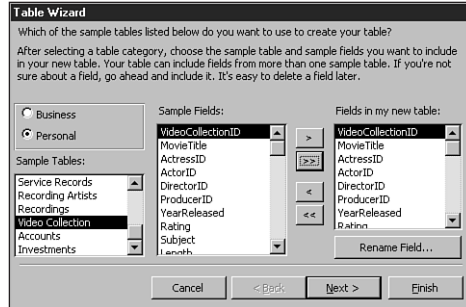
The Table Wizard serves as an excellent introduction to the use of Access wizards in general. Follow these steps to create a new Access table that catalogs a video collection:

1. If the Employees table is open, close it by clicking the Close Window button to make the Database window active. Alternatively, click the Database Window button of the toolbar.
2. Click the Table button of the Database window, if it isn't selected, and then click the New button to display the New Table dialog shown in Figure 4.13.

**Figure 4.13**  
The New Table dialog.

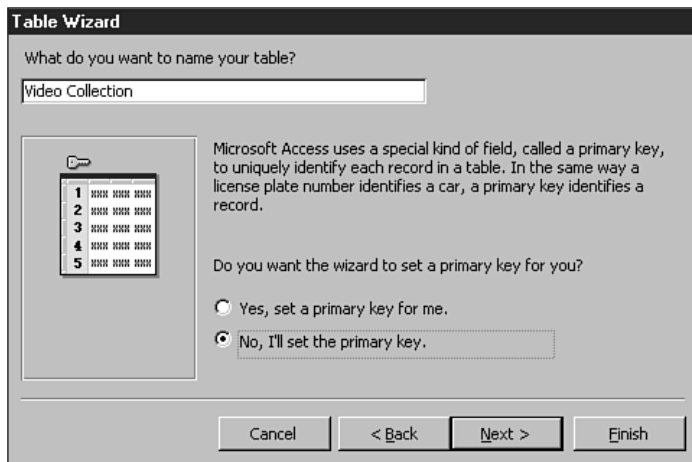


3. Select Table Wizard in the list, and click OK to display the opening dialog of the Table Wizard. (If you select Datasheet view, Access creates a blank table with default fields; Design view creates a blank table and displays it in design mode, ready for you to add fields. The Import Table and Link Table wizards import databases and link external tables to a database, respectively.)
4. Click the Personal option to display a list of tables for personal use in the Sample Tables list, and then use the vertical scroll bar to display the Video Collection entry in the list.
5. In the Sample Tables list, click the Video Collection entry to display the predetermined set of field names for the new table in the Sample Fields list.
6. Click the >> button to add all the fields from the Sample Fields list to the Fields in My New Table list. (The > button adds a single selected field from the Sample Fields list, the < button removes a single selected field from the My New Table list, and the << button deletes all the fields in the My New Table list.) The Table Wizard's dialog now appears as shown in Figure 4.14.



**Figure 4.14**  
Adding fields to the new Video Collection table.

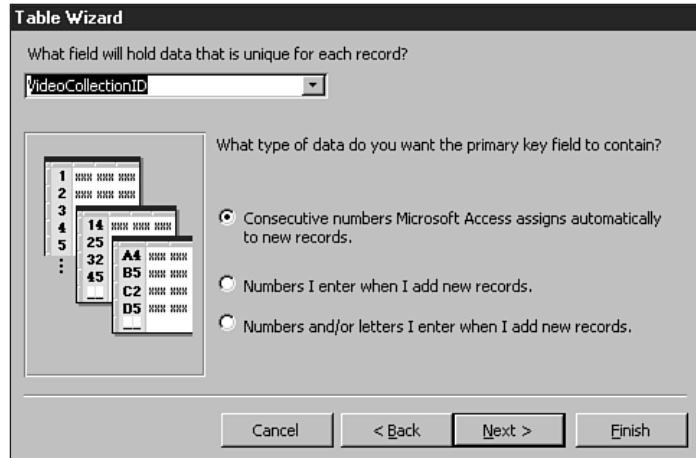
- Click Next to display the second Table Wizard dialog in which you select the name for your new table, and select how to determine the table’s primary-key field. Accept the default table name or enter a name of your choice, and then select the “No, I’ll Set the Primary Key” option. The Table Wizard’s second dialog appears as shown in Figure 4.15.



**Figure 4.15**  
Selecting a table name and determining the table’s primary key.

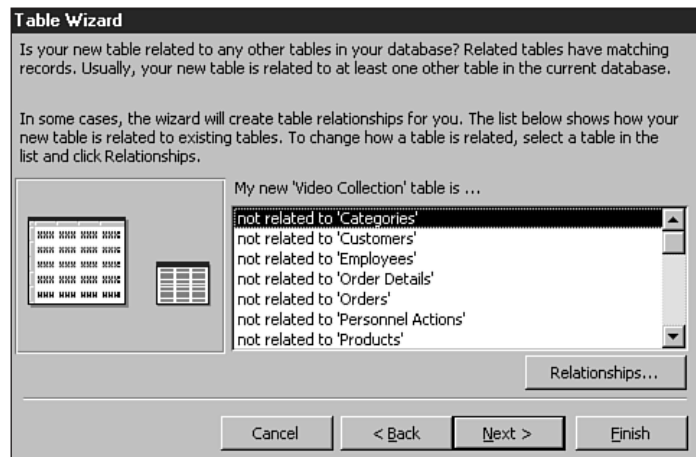
- Click Next to display the dialog shown in Figure 4.16, in which you select the primary-key field and its data type. The VideoCollectionID field is the logical choice for a primary key, and the AutoNumber field data type, which automatically creates a sequential number for the VideoCollectionID, is appropriate in this case. (The Table Wizard’s Consecutive Numbers Microsoft Access Assigns Automatically to New Records option creates an AutoNumber type field.) Thus, you can accept the default values determined by the Table Wizard.

**Figure 4.16**  
The Table Wizard's  
primary-key dialog.

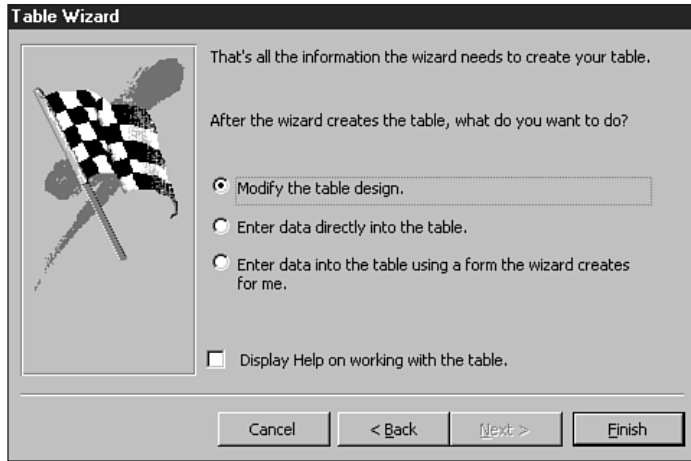


9. Click Next to continue with the next stage of the table design definition process. The Table Wizard's relationships dialog (see Figure 4.17) opens only if other tables already exist in the database in which you're creating the new table. Because almost every database consists of two or more related tables, the Table Wizard gives you an opportunity to define the relationships between tables. By default, the new table has no relationships to other tables in the database. In this exercise, you don't add any table relationships to the new Video Collection table.

**Figure 4.17**  
Specifying relation-  
ships between fields  
in the new table and  
other tables.

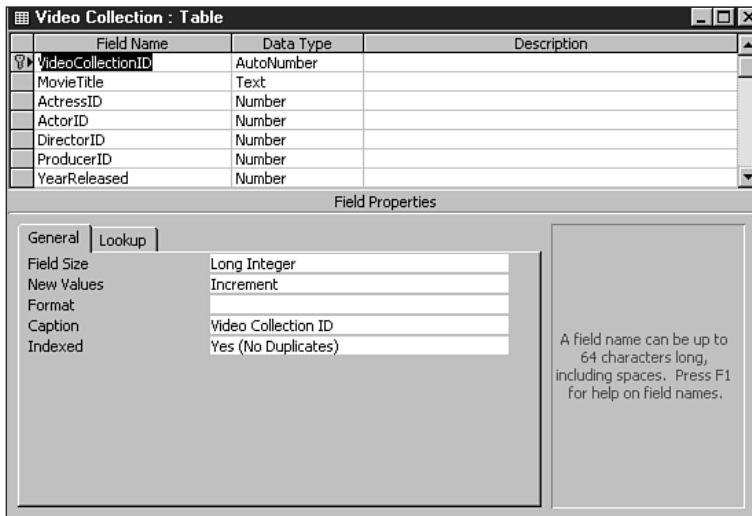


- Click Next to finish designing the table. Access displays the final step of the Table Wizard (see Figure 4.18).



**Figure 4.18**  
The final Table Wizard dialog.

- Select the Modify the Table Design option, and then click the Finish button to display your new table in design mode (see Figure 4.19).
- After you finish reviewing the design of your new table, click the Close Window button to close the table.



**Figure 4.19**  
The new Video Collection table in design mode.



**Tip #31 from***RJ*

In any wizard, you can always redo a step by clicking the Back button until you return to the step that you want to redo.



If you want to delete the Video Collection table from Northwind.mdb, click the Database Window button of the toolbar, click the Table button if the Tables list is not open, and then click the Video Collection entry in the Table list to select (highlight) it. Press Delete, and then click OK when the message box asks you to confirm the deletion. (You must close a table before you can delete it.)

**Tip #32 from***RJ*

Creating tables based on the sample tables provided by the Table Wizard has limited usefulness in real-life business applications. In most cases, you import data from another database or spreadsheet application to create your Access tables. If you can't import the data, you probably need to define the tables' fields to suit particular business needs. Thus, in the remainder of this chapter, you design a new database table by using the traditional method of manually adding fields to a blank table design and then specifying the properties of each field.

## ADDING A NEW TABLE TO AN EXISTING DATABASE

The Northwind Traders database includes an Employees table that provides most of the information about the firm's employees that is typical of personnel tables. The following sections explain how to add a table called Personnel Actions to the database. The Personnel Actions table is a record of hire date, salary, commission rate, bonuses, performance reviews, and other compensation-related events for employees. Because Personnel Actions is based on information in the Employees table, the first step is to review the Employees table's structure to see how you can use it with your new table. Table structure is displayed in design mode. In the next chapter, "Entering, Editing, and Validating Data in Tables," you add validation rules to the Personnel Actions table and enter records in the table.

To open the Employees table in design mode, follow these steps:



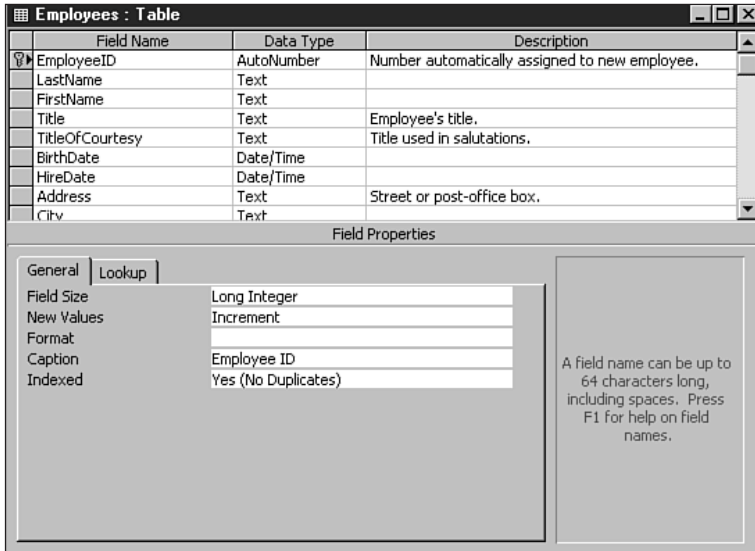
1. Close any Access document windows that you have open, and then click the Table shortcut in the Database window to display the list of tables in the Northwind.mdb database.



2. Click Employees in the Database window, and then click the Design button. You also can open the Employees table by double-clicking the Database window entry and then clicking the Tables toolbar's Design View button.
3. The Design grid for the Employees table opens. Maximize the document window to the size of your Access window.
4. Close the Properties window, if it opens. Alternatively, you can choose View, Properties.

The menu command toggles the visibility of the Table Properties window. The Properties icon to the left of the Properties command has a sunken appearance to indicate that the Properties window is always visible in Table Design view.

At this point, your display resembles that shown in Figure 4.20.



**Figure 4.20**  
The Table Design view of the Employees table.

The Table Design window displays the field names and data types and provides a third column for an optional description of each field in the table. This display is called a *grid* rather than a *datasheet* because the display doesn't contain data from a table. A scroll bar is provided, whether or not more fields exist in the table than the window can display. The Field Properties pane lets you set additional properties of individual fields and briefly describes the purpose of each grid column and of the Field Properties entries as you select them. You cannot resize this pane.

One field is conspicuous by its absence: the Social Security number that most firms use in databases to identify their personnel. The EmployeeID field is an adequate substitute for the Social Security number for a sample table because a unique sequential number (the AutoNumber field data type) is assigned to each employee. Click the Datasheet View button to display the data in the EmployeeID field, and then return to design mode by clicking the Design View button.

## DESIGNING THE PERSONNEL ACTIONS TABLE

Rather than add fields for entries (such as salary, commission rate, and bonuses) to the Employees table, you should place employee remuneration data in a table of its own, for the following reasons:

- Multiple personnel actions are taken for individual employees over time. If you add these actions to records in the Employees table, you have to create many additional fields to hold an arbitrary number of personnel actions. If, for example, quarterly performance reviews are entered, you have to add a new field for every quarter to hold the review information. In this situation, flat-file managers encounter difficulties.
- You can categorize personnel actions by type so that any action taken can use a common set of field names and field data types. This feature makes the design of the Personnel Actions table simple.
- You can identify employees uniquely by their EmployeeID numbers. Therefore, records for entries of personnel actions can be related to the Employees table by an EmployeeID field. This feature eliminates the necessity of adding employee names and other information to the records in the Personnel Action table. You link the Employees table to the Personnel table by the EmployeeID field, and the two tables are joined; they act as though they are a single table. Minimizing information duplication to only what is required to link the tables is your reward for choosing a relational, rather than a flat-file, database management system. (In an actual business's employee database, you would probably use the employee's Social Security number as the unique identifier for each employee and as the link to the Personnel Actions table.)
- Personnel actions usually are considered confidential information and are made accessible only to a limited number of people. Although Access lets you grant permission for others to view specific fields, restricting permission to view an entire table is simpler.

The next step is to design the Personnel Actions table. Chapter 22 discusses the theory of database design and the tables that make up databases. Because the Personnel Actions table has an easily discernible relationship to the Employees table, the theoretical background isn't necessary for this example.

### DETERMINING WHAT INFORMATION THE TABLE SHOULD INCLUDE

Designing a table requires that you identify the type of information the table should contain. Information associated with typical personnel actions might consist of the following items:

- *Important dates.* The date of hire and termination, if applicable, are important dates, but so are the dates when the employer adjusts salaries, changes commission rates, and grants bonuses. You should accompany each action with the date when it was scheduled to occur and the date when it actually occurred.

- *Types of actions.* Less typing is required if personnel actions are identified by a code character rather than a full-text description of the action. This feature saves valuable disk space, too. First-letter abbreviations used as codes, such as H for *hired*, T for *terminated*, and Q for *quarterly review*, are easy to remember.
- *Initiation and approval of actions.* As a rule, the employee’s supervisor initiates a personnel action, and the supervisor’s manager approves it. Therefore, the table should include the supervisor’s and manager’s EmployeeID number.
- *Amounts involved.* Salaries are assumed to be paid bimonthly based on a monthly amount, bonuses are paid quarterly with quarterly performance reviews, and commissions are paid on a percentage of sales made by the employee.
- *Performance rating.* Rating employee performance by a numerical value is a universal, but somewhat arbitrary, practice. Scales of 1 to 9 are common, with exceptional performance ranked as 9 and candidacy for termination as 1.
- *Summaries and comments.* The table should provide for a summary of performance, an explanation of exceptionally high or low ratings, and reasons for adjusting salaries or bonuses.

If you are involved in personnel management, you probably can think of additional information that the table might include, such as accruable sick leave and vacation hours per pay period. The Personnel Actions table is just an example; it isn’t meant to add full-scale human resources development capabilities to the database. The limited amount of data described serves to demonstrate several uses of the new table in this and subsequent chapters.

### ASSIGNING INFORMATION TO FIELDS

After you determine the types of information—called *data entities* or just *entities*—to include in the table, you must assign each data entity to a field of the table. This process involves picking a field name that must be unique within the table. Table 4.7 lists the candidate fields for the Personnel Actions table. *Candidate fields* are written descriptions of the fields proposed for the table. Data types have been assigned from those listed in Table 4.8 in the following section.

**Tip #33 from**

*RJ*

Although the table name contains a space, the field names of the Personnel Actions table don’t contain spaces (as shown in Table 4.8). As mentioned earlier in this book, including spaces in table names or field names is not good database design practice. In this case, the table names include a space to demonstrate the special rule (enclosing the name within square brackets) that you must observe when referring to object names that include spaces. The Northwind Traders sample database includes spaces in many of its table names, so the use of spaces here is consistent with the other tables in the database.

**TABLE 4.7** CANDIDATE FIELDS FOR THE PERSONNEL ACTIONS TABLE

Field Name	Data Type	Description
paID	Number	The employee to whom the action applies. paID numbers are assigned based on the EmployeeID field of the Employee table (to which the Personnel Actions table is linked).
paType	Text	Code for the type of action taken: H is for hired; C, commission rate adjustment; Q, quarterly review; Y, yearly review; S, salary adjustment; B, bonus adjustment; and T, terminated.
paInitiatedBy	Number	The EmployeeID number of the supervisor who initiates or is responsible for recommending the action.
paScheduledDate	Date/Time	The date when the action is scheduled to occur.
paApprovedBy	Number	The EmployeeID number of the manager who approves the action proposed by the supervisor.
paEffectiveDate	Date/Time	The date when the action occurred. The effective date remains blank if the action has not occurred.
paRating	Number	Performance on a scale of 1–9, with higher numbers indicating better performance. A blank indicates no rating; 0 is reserved for terminated employees.
paAmount	Currency	The salary per month, the bonus per quarter, or commission rate as a percent of the amount of the order, expressed as a decimal fraction.
paComments	Memo	Abstracts of performance reviews and comments on actions proposed or taken. The comments can be of unlimited length. The supervisor and manager can contribute to the comments.

**Tip #34 from***RJ*

Use distinctive names for each field. This example precedes each field name with the abbreviation *pa* to identify the field with the Personnel Actions table. A common practice is to use similar names for fields that contain identical data but are located in different tables. Because of the way that Access uses field names in expressions for validating data entry and calculating field values (discussed later in this chapter and in Chapter 9), the best practice is to assign related, but distinctive, names to such fields.

**CREATING THE PERSONNEL ACTIONS TABLE**

Now you can put to work what you have learned about field names, data types, and formats by adding the Personnel Actions table to the Northwind Traders database. Table 4.8 shows the field names, taken from Table 4.7, and the set of properties that you assign to the fields. The text in the Caption column substitutes for the Field Name property that is otherwise displayed in the field header buttons.

**TABLE 4.8** FIELD PROPERTIES FOR THE PERSONNEL ACTIONS TABLE

Field Name	Caption	Data Type	Field Size	Format
paID	ID	Number	Long Integer	General Number
paType	Type	Text	1	>@ (all uppercase)
paInitiatedBy	Initiated By	Number	Long Integer	General Number
paScheduledDate	Scheduled	Date/Time	N/A	Short Date
paApprovedBy	Approved By	Number	Long Integer	General Number
paEffectiveDate	Effective	Date/Time	N/A	Short Date
paRating	Rating	Number	Integer	General Number
paAmount	Amount	Currency	N/A	#,##0.00#
paComments	Comments	Memo	N/A	(None)

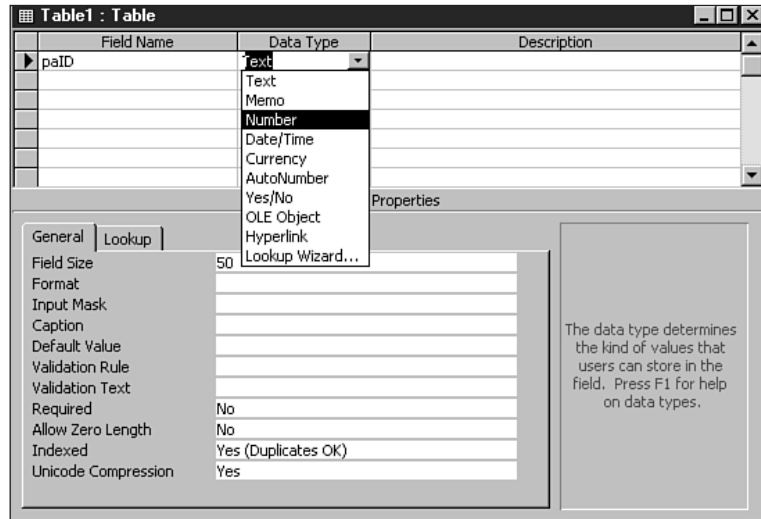
You must set the paID field’s Field Size property to the Long Integer data type, although you might not expect Northwind Traders to have more than the 32,767 employees that an integer allows. You must use the Long Integer data type because the AutoNumber field data type of the Employees table’s EmployeeID field is a Long Integer. Later in this chapter, the section “Enforcing Referential Integrity” explains why paID’s data type must match that of the Employees table’s EmployeeID number field.

To add the new Personnel Actions table to the Northwind Traders database, complete the following steps:

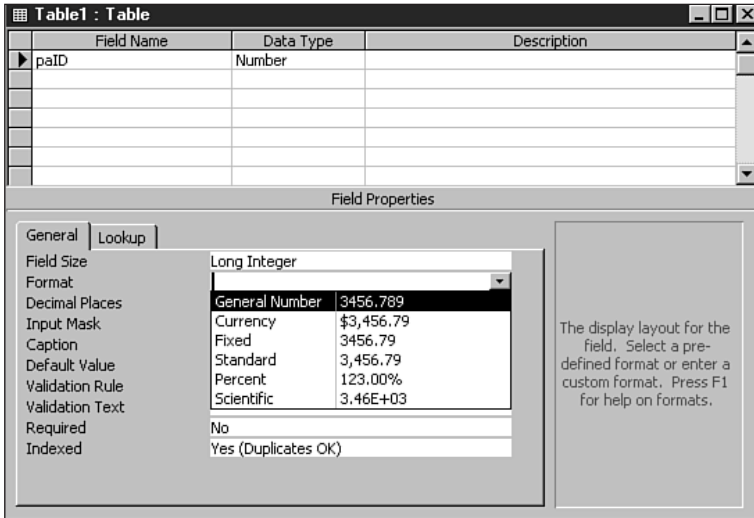
1. Close the Employees table, if it is open, by clicking the Close Window button to make the Database window active.
2. Click the Tables shortcut of the Database window, if it isn’t selected, and then click the New button. Select Design View in the New Table dialog and click OK. Access enters design mode and opens a blank grid where you enter field names, data types, and optional comments. By default, Access selects the grid’s first cell.
3. Type **paID** as the first field name. Press Enter to accept the field name; Access adds the default field type, Text.
4. Press F4 to open the Data Type list. (You use the function keys rather than the mouse because your entries are from the keyboard.)
5. Use the arrow keys to select the Number data type and press Enter to accept your selection (see Figure 4.21).



**Figure 4.21**  
Entering the paID  
field's data type.



6. Press F6 to move to the Field Properties window's Field Size text box. Access has already entered Long Integer as the value of the default Field Size property. To learn more about the Field Size property, press F1 for help.  
Whenever you create a new Number type field, Access enters Long Integer in the Field Size property as the default. Because the paID field should be a Long Integer, you don't need to set the Field Size property for this field and can skip to step 8; continue with step 7 when you enter the other fields from Table 4.8.
7. For Number data types, press F4 to open the Field Size list. Select from the list the appropriate field size value for the field, and press Enter.
8. Press the down arrow to select the Format text box. You can press F1 for context-sensitive help on the Format property.
9. Press F4 to open the Format list, select General Number from the list, and press Enter (see Figure 4.22).
10. Press the down-arrow key three times, bypassing the Decimal Places and Input Mask properties, and select the Caption text box. You skip the Decimal Places property; Long Integers cannot have decimal fractions, so Decimal Places can remain set to Auto. You skip the Input Mask property because this field doesn't need an input mask.
11. Type **ID** as the caption and press Enter. ID is used as the Caption property to minimize the column width necessary to display the paID number.



**Figure 4.22**  
Assigning the General Number format to the paID field.

- Press F6 to return to the Table Design grid. You complete the remaining properties for each field after entering the basic properties shown in Table 4.8.

**Tip #35 from**

*RJ*

You use descriptions to create prompts that appear in the status bar when you are adding or editing records in run mode's Datasheet view. Although descriptions are optional, it's good database design practice to enter the field's purpose if its use isn't obvious from its Field Name or Caption property. You can skip the Caption property entries for now. After completing the basic steps described here, refer to Table 4.8 and enter the captions as a group.

- Press Enter to move the caret to the first cell of the next row of the grid.
- Repeat steps 3 through 12, entering the values shown in Table 4.8 for each of the eight remaining fields of the Personnel Action table. N/A (not applicable) means that the entry in Table 4.8 doesn't apply to the field's data type.

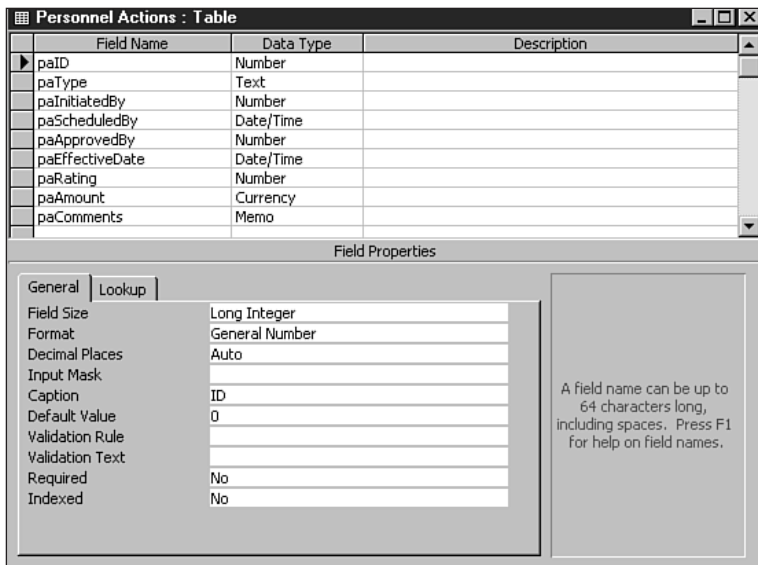
Your Table Design grid should now look similar to the one shown in Figure 4.23. You can double-check your properties entries by selecting each field name with the arrow keys and reading the values shown in the property text boxes of the Field Properties window.



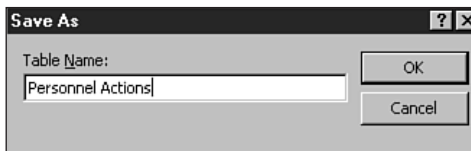
Click the Datasheet toolbar button to return to Datasheet view in Run mode to view the results of your work. You see the "Do you want to save the table now?" message. Click OK; a Save As dialog opens, requesting that you give your table a name and suggesting the default table name, Table1. Type **Personnel Actions**, as shown in Figure 4.24, and press Enter or click OK.



**Figure 4.23**  
The initial design of  
the Personnel Actions  
table.



**Figure 4.24**  
The Save As dialog  
for naming the  
Personnel Actions  
table.

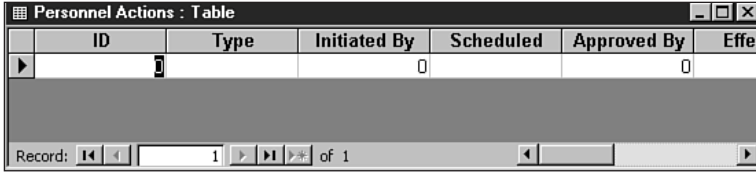


At this point, Access displays a dialog informing you that the new table does not have a primary key. You add primary keys to the Personnel Actions table later in this chapter, so click No in this dialog.

Your table opens in Datasheet view, with its first default record. To view all the fields of your new table, narrow the field name header buttons by dragging to the left the right vertical bar that separates each header. When you finish adjusting your fields' display widths, the Personnel Actions table appears in Datasheet view (see Figure 4.25). Only the empty tentative append record (a new record that Access adds to your table if you enter values in the cells) is present. You have more property values to add to your Personnel Actions table, so don't enter data in the tentative append record at this point.

## CREATING A TABLE DIRECTLY IN DATASHEET VIEW

If you're a complete database novice and under pressure to create database tables immediately, Access lets you create tables directly in Datasheet view. When you create a table in Datasheet view, Access displays an empty table with a default structure of 20 fields and 30 empty records. You then enter data directly into the table. When you save the table, Access analyzes the data you have entered and selects a field type for each field that best matches the data you have entered.



**Figure 4.25**  
The tentative append record of the Personnel Actions table.

## SETTING DEFAULT VALUES OF FIELDS

Access 2000 assigns Number and Currency fields a default value of 0; all other field types are empty by default. (Notice that the tentative append record in Figure 4.25 has zeros entered in all the Number and Currency fields.) In all versions of Access, Text, Memo, and Date fields are empty by default. You can save data-entry time by establishing your own default values for fields; in some cases, Access 2000's default values for Number and Currency fields may be inappropriate, and you'll need to change them. Table 4.9 lists the default values for the Personnel Actions table's fields.

**TABLE 4.9** DEFAULT FIELD VALUES FOR THE PERSONNEL ACTIONS TABLE

Field Name	Default Value	Comments
paID	No entry	0 is not a valid Employee ID number, so you should remove Access's default.
paType	Q	Quarterly performance reviews are the most common personnel action.
paInitiatedBy	No entry	0 is not a valid Employee ID number.
paScheduledDate	=Date ()	This expression enters today's date from the computer system's clock.
paApprovedBy	No entry	0 is not a valid Employee ID.
paEffectiveDate	=Date ()+28	This expression enters today's date plus 28 days.
paRating	No entry	In many cases, a rating does not apply. A 0 rating is reserved for terminated employees.
paAmount	No entry	If a salary, bonus, or commission has no change, no entry should appear. 0 would indicate no salary, for example.
paComments	No change	For now, Access's default is adequate.

If you don't enter anything in the Default Value text box, you create a **Null** default value. You can use **Null** values for testing whether a value has been entered into a field. Such a test can ensure that users have entered required data. The `Date ()+28` default is an *expression* that returns the date (according to your computer's clock) plus four weeks. You use expressions

to enter values in fields, make calculations, and perform other useful duties, such as validating data entries. Expressions are discussed briefly in the next section and in greater detail in Chapter 9. Expressions that establish default values are always preceded by an equal sign.

To assign the new default values from those of Table 4.9 to the fields of the Personnel Actions table, complete these steps:

1. Change to design mode by choosing **V**iew, **D**esign View. Select the paID field.
2. Press F6 to switch to the Field Properties window, and then move the caret to the Default Value text box. Press Delete to clear the text box.
3. Press F6 to switch back to the Table Design grid. Move to the next field and press F6 again.
4. Press Create the default values for the eight remaining fields from the entries shown in Table 4.9, repeating steps 1 through 3. For example, after selecting the Default Value text box for the paType field, type **Q** to set the default value; Access automatically surrounds Q with double quotes. Enter **=Date()** for the paScheduledDate field and then **=Date()+28** for the paEffectiveDate Date field. Delete any default values that might appear in the other fields that call for no entry in Table 4.9.
5. After completing your default entries, choose **V**iew, **D**atasheet View to return to Run mode. A dialog opens, requesting that you confirm your changes. Click OK. The Personnel Actions table now appears in Datasheet view with the new default entries you have assigned (see Figure 4.26).

**Figure 4.26**  
The first record of the Personnel Actions table with the new default values.

ID	Type	Initiated By	Scheduled	Approved By	Effective
1	Q	0	1/24/1999	0	2/21/1999

## WORKING WITH RELATIONS, KEY FIELDS, AND INDEXES

Your final tasks before adding records to the Personnel Actions table are to determine the relationship between Personnel Actions and an existing table in the database, assign a primary-key field, and add indexes to your table.

### ESTABLISHING RELATIONSHIPS BETWEEN TABLES

Relationships between existing tables and your new table determine the field used as the new table's primary key.

The following four possibilities exist for relationships between tables:

- *One-to-one* relationships require that the key field's value in only one record in your new table matches a single corresponding value of the related field in the existing table.

- *Many-to-one* relationships allow your new table to have more than one value in the key field corresponding to a single value in the related field of the existing table.
- *One-to-many* relationships require that your new table's primary-key field be unique, but the values in the foreign-key field of the new table can match many entries in the related field of the existing database. In this type, the related field of the existing database has a many-to-one relationship with the primary-key field of the new database.
- *Many-to-many* relationships are free-for-alls in which no unique relationship exists between the key fields in the existing table or the new table, and both of the tables' foreign-key fields contain duplicate values.

Keep in mind that the many-to-one relationship and one-to-many relationship are the same thing depending on the table's vantage point. When viewed from the existing table's standpoint, the relationship to your new table is one-to-many. Chapter 22 explains the four types of relationships more comprehensively

➔ For the list of these four types, see the section "Types of Relationships," p. 831.

Many entries in the Personnel Actions table may apply to a single employee whose record appears in the Employees table. A record is created in Personnel Actions when the employee is hired, and a record is created for each quarterly and yearly performance review. Also, any changes made to bonuses or commissions other than as the result of a performance review are entered, and employees may be terminated. Over time, the number of records in the Personnel Actions table is likely to be greater by a factor of 10 or more than the number of records in the Employees table. Thus, the records in the new Personnel table have a many-to-one relationship with the records in the Employees table. Establishing the relationships between the new and existing tables when you create the new table enables Access to re-establish the relationship automatically when you use the tables in queries, forms, and reports.

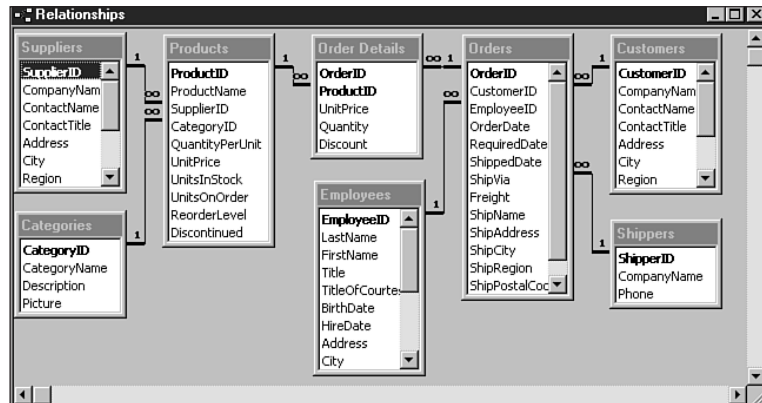
Access requires that the two fields participating in the relationship have exactly the same data type. In the case of the Number field data type, the Field Size property of the two fields must be identical. You cannot, for example, create a relationship between an AutoNumber type field (which uses a Long Integer data type) and a field containing Byte, Integer, Single, Double, or Currency data. On the other hand, Access lets you relate two tables by text fields of different lengths. Such a relationship, if created, can lead to strange behavior when you create queries, which is the subject of Part II, "Getting the Most Out of Queries." As a rule, the relationships between text fields should use fields of the same length.

Access 2000 uses a graphical Relationships window to display and create the relationships among tables in a database. To establish the relationships between two tables with Access's Relationships window, follow these steps:

1. Close the Personnel Actions table by clicking the Close Window button. If the Employees table is open, close it. You cannot create or modify relationships between open tables.

2. Before you can establish relationships, the Database window must be active. If it isn't, click it, and then click the Show Database Window toolbar button or choose **Window**, **N**orthwind : Database. As many as nine of the windows for database objects that you have opened appear as numbered choices in the **Window** menu. (The Database window is always number 1.)
3. Click the Relationships button of the toolbar or choose **Tools**, **R**elationships. The Relationships window for the Northwind Traders database opens (see Figure 4.27).
4. Click the Show Table button of the toolbar or choose **Relationships**, **S**how Table. The Show Table dialog opens (see Figure 4.28).

**Figure 4.27**  
The Relationships window.

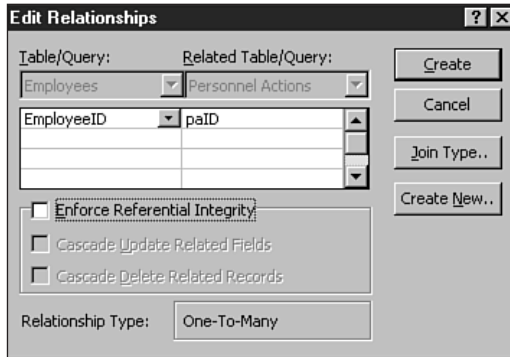


**Figure 4.28**  
The Show Table dialog, used to add tables to the Relationships window.



5. Add the Personnel Actions table to the Relationships window by double-clicking the Personnel Actions entry in the Tables list, or by clicking the entry to select it and then clicking the Add button. Click the Close button to close the Show Table dialog.

- The relationship of the Personnel Actions table to the Employees table is based on the Personnel Actions table's paID field and the Employees table's EmployeeID field. Click the Employees table's EmployeeID field and, holding the left mouse button down, drag it to the Personnel Actions table's paID field. Release the mouse button to drop the field symbol on the paID field. The Edit Relationships dialog opens (see Figure 4.29).



**Figure 4.29**  
Defining a relationship with the Edit Relationships dialog.

#### Note

The sequence of the drag-and-drop operation to create a new relationship is important. Drag the field from the *one* side of a one-to-many relationship and drop it on the *many* side. This sequence ensures that the primary (or base) table for the *one* side of the relationship appears in the Table/Query list and that the table for the *many* side appears in the Related Table/Query list. If you reverse the relationships (creating a many-to-one relationship) and attempt to enforce referential integrity, you receive an error message in the final step of the process when you attempt to create the relationship.

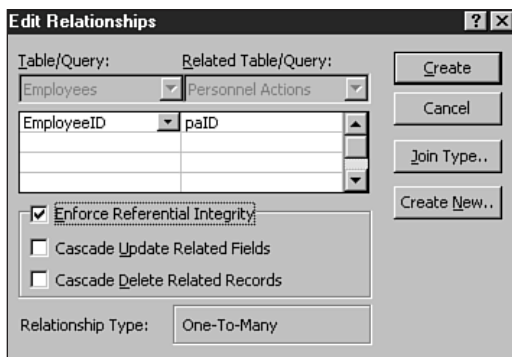
- Click the Join Type button to display the Join Properties dialog shown in Figure 4.30. You want to create a one-to-many join between the Employees table's EmployeeID field (the *one* side) and the Personnel Actions table's paID field (the *many* side). You want to display all Employee records, even if one or more records doesn't have corresponding record(s) in Personnel Actions. To do so, select option 2 in the Join Properties dialog. Click OK to close the dialog and return to the Relationships dialog.



**Figure 4.30**  
Choosing the type of join for the Personnel Actions and Employees tables.

8. The Relationships dialog offers the Enforce Referential Integrity check box so that you can specify that Access perform validation testing and accept entries in the paID field that correspond to values for the Employees table's EmployeeID field. This process is called *enforcing* (or maintaining) referential integrity. The following section discusses referential integrity. The relationship between these two tables requires enforced referential integrity, so make sure you select this check box. The Relationships dialog now looks like the one shown in Figure 4.31.

**Figure 4.31**  
The Relationships dialog entries for a one-to-many relationship with referential integrity enforced.



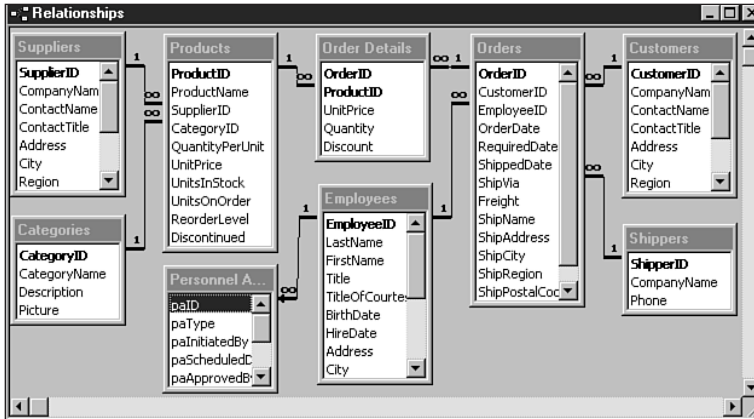
#### Note

Access 2000 automatically maintains referential integrity of tables by providing check boxes you can mark to cause cascading updates to, and cascade deletions of, related records when the primary table changes. The following section discusses cascading updates and deletions. Access enables the cascade check boxes only if you elect to enforce referential integrity.

9. Click the Create button to accept the new relationship and display it in the Relationships window (see Figure 4.32).
10. Click the Close Window button to close the Relationships window and return to the Database window. Click Yes when asked to confirm that you want to save the layout changes to the Relationships diagram.



Access uses the relationship that you have created when you create queries and design forms and reports that require data in the Personnel Actions table. Access does not require that the related table be indexed. New in Access 2000 is the Print Relationships menu command, which gives you a convenient means of printing the relationships. In Access 97, the Print Relationships command was provided as an add-in.



**Figure 4.32**  
The Relationships window with the new Personnel Actions relationship added.

## ENFORCING REFERENTIAL INTEGRITY

The capability to enforce referential integrity automatically is an important feature of Access; few other PC relational database managers include this feature. Referential integrity prevents the creation of *orphan records* with no connection to a primary table. An example of an orphan record is a record for a personnel action for paID 10 when you have records in the Employees file for employees numbered only 1 through 9. You could not know who employee 10 is until you enter the next employee hired. Then the orphan record, intended for some other employee, is linked, improperly, to the new employee's record.

### UNDERSTANDING HOW REFERENTIAL INTEGRITY IS ENFORCED

Referential integrity enforcement prevents you from deleting or modifying values of a primary table's record on which related records depend. If you terminate an employee and then try to delete the employee's record from the Employees table, Access prevents you from doing so. Access displays a message box informing you that you must delete all records related to the primary table's record before you can delete the primary record. You can't change a value in the Employees table's EmployeeID field because the field data type is AutoNumber. If the data types are such that you can change the value of an EmployeeID on which related records depend, however, Access also displays a warning message.

Similarly, if you attempt to change an employee ID value in the paID field of the Personnel Actions table to a value that does not exist in the Employees table's EmployeeID field, you incur an error message again. Thus, enforcing referential integrity eliminates the need to validate entries in the paID field with the Validation Rule property. With referential integrity enforced, Access automatically ensures that the value you enter corresponds to a valid EmployeeID value when you save the new or edited record.



### CASCADING UPDATES AND DELETIONS

Access 2000's cascading deletion and cascading update options for tables with enforced referential integrity makes maintaining referential integrity easy: Just mark the Cascade Update Related Fields and Cascade Delete Related Records check boxes. Access 2000 does all the work for you.

#### Note

Automatically enforcing referential integrity is usually, but not always, good database design practice. An example of where you would *not* want to employ cascade deletions is between the EmployeeID fields of the Orders and Employee tables. If you terminate an employee and then attempt to delete the employee's record, you might accidentally choose to delete the dependent records in the Orders table. Deleting records in the Orders table could have serious consequences from a marketing and accounting standpoint. (In practice, however, you probably would not delete a terminated employee's record.)

### SELECTING A PRIMARY KEY

You do not need to designate a primary-key field for a table that is never used as a primary table. A *primary table* contains information representing an object, such as a person or an invoice, and only one record uniquely associated with that object. The Personnel Actions table can qualify as a primary table because it identifies an object—in this case, the equivalent of a paper form representing the outcome of two actions: initiation and approval. Personnel Actions, however, probably would not be used as a primary table in a relationship with another table.

Using a key field is a simple method of preventing the duplication of records in a table. Access requires that you specify a primary key if you want to create a one-to-one relationship or to update two or more tables at the same time. Chapter 10 covers this subject.

The primary table participating in relations that you set with the Relationships window must have a primary key. Access considers a table without a primary-key field to be an oddity; therefore, when you make changes to the table and return to Design view, you might see a message stating that you haven't created a key field. (Access 2000 asks only once whether you want to add a primary-key field.) Related tables can have primary-key fields and often do. A primary-key field is useful for preventing the accidental addition of duplicate records.

You can create primary keys on more than one field. In the case of the Personnel Actions table, a primary key that prevents duplicate records must consist of more than one field because more than one personnel action for an employee can be scheduled or approved on the same date. If you establish the rule that no more than one type of personnel action for an employee can be scheduled for the same date, you can create a primary key that consists of the paID, paType, and paScheduledDate fields. When you create a primary key, Access creates an index based on the primary key. The next section and Chapter 22 discuss indexes in detail.

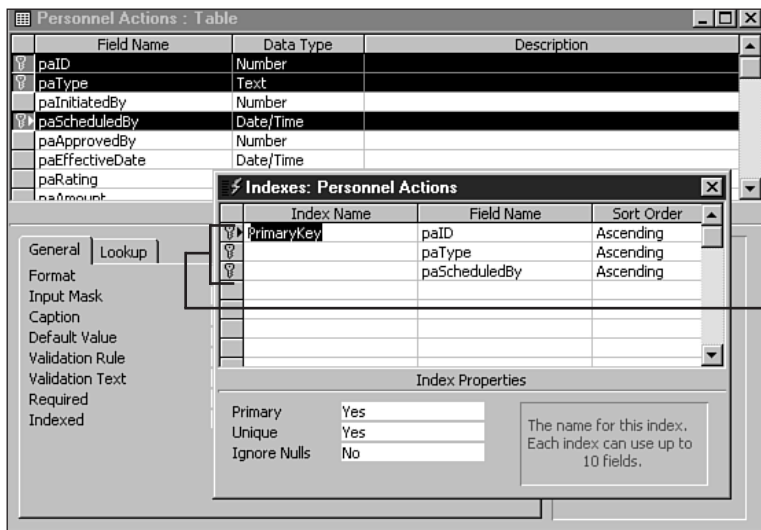
To create a multiple-field primary key and index for the Personnel Actions table, follow these steps:

1. Open the Personnel Actions table from the Database window in Design view.
2. Click the selection button for the paID field.
3. Ctrl+click the selection button for the paType field. In most instances, when you Ctrl+click a selection button, you can make multiple selections.
4. Ctrl+click the selection button for the paScheduledDate field.

If you accidentally select one of the other fields, click the field's selection button again to deselect it.



5. Click the Primary Key toolbar button. Symbols of keys appear in each selected field, indicating their inclusion in the primary key (see Figure 4.33).



**Figure 4.33**  
Setting a multiple-field primary key for the Personnel Actions table.



6. To determine the sequence of the fields in the primary key, click the toolbar's Index button to display the Indexes window as shown in Figure 4.33.

In Access, you can create multiple-field primary keys and indexes with fields of different data types. The capability to concatenate different data types to form an index instruction or a string is the result of Access's Variant data type.

- ➔ For information on the Variant data type and concatenating strings, see “The Variant Data Type in Access and VBA,” p. 331.
- ➔ See “Data Types and Database Objects in VBA,” p. 1000, for details on using the Variant data type with objects.

You now have a multiple-field primary key and a corresponding index to the Personnel Actions table that precludes the addition of records that duplicate records with the same primary key.

## ADDING INDEXES TO TABLES

Although Access creates an index on the primary key, you might want to create an index on some other field or fields in the table. Indexes speed searches for records that contain specific types of data. You might want to find all personnel actions that occurred in a given period and all quarterly reviews for all employees in paScheduledDate sequence, for example. If you have many records in the table, an index speeds up the searching process. A disadvantage of multiple indexes is that data-entry operations are slowed by the time it takes to update the additional indexes. You can create as many as 32 indexes for each Access table, and five of those can be of the multiple-field type. Each multiple-field index can include as many as 10 fields.

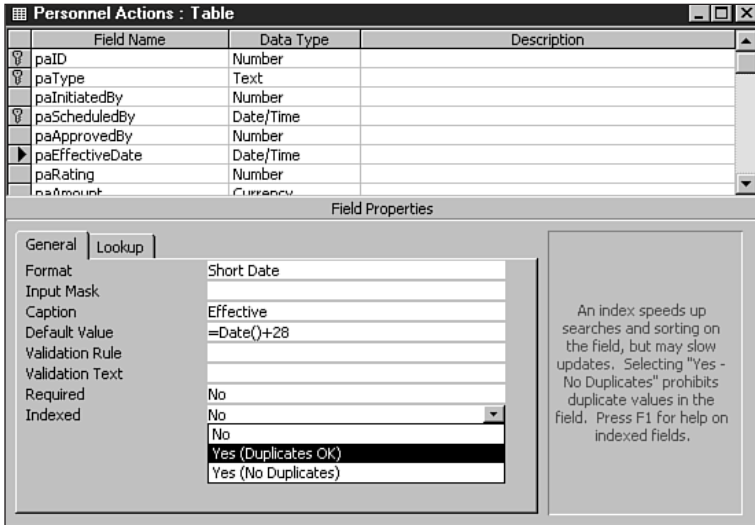
### Tip #36 from

*RJ*

Add only indexes you need to improve search performance. Each index you add slows addition of new records, because adding a new record requires an addition to each index. Similarly, editing indexed fields is slower, because the edit updates the record and the index. When you create relationships between tables, Access automatically creates a hidden index on the related fields, if the index doesn't already exist. Hidden indexes count against the 32-index limit of each table. If an extra index appears in the Indexes dialog, see the “Extra Indexes Added by Access” item in the “Troubleshooting” section near the end of this chapter.

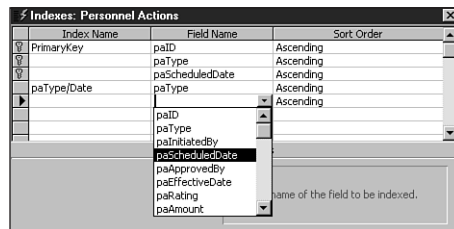
To create a single-field index for the Personnel Actions table based on the paEffectiveDate field, and a multiple-field index based on the paType and the paScheduledDate fields, follow these steps:

1. Select the paEffectiveDate field by clicking its selection button.
2. Select the Indexed text box in the Field Properties window.
3. Open the Indexed drop-down list by clicking the arrow button or pressing F4. The list appears, as shown in Figure 4.34.



**Figure 4.34**  
Creating a single-field index on the paEffectiveDate field.

- In this case, duplicate entries are acceptable, so click Yes (Duplicates OK) and close the list. You can create only a single-field index with this method.
- Click the Indexes button if the Indexes window is not open. The Primary Key and paEffectiveDate indexes already created appear in the list boxes. Enter **paType/Date** as the name of the composite index, and then select paType in the Field Name drop-down list; move the caret to the next row of the Field Name column and select paScheduledDate to create a multiple-field index on these two fields (see Figure 4.35).



**Figure 4.35**  
Creating a multiple-field index.

- Click the Datasheet View button to return to Run mode. Click OK when the message box asks whether you want to save your design changes. A message in the status bar indicates that Access is creating the new indexes as you leave design mode.

You now have three indexes for the Primary Key table: the index automatically created for the primary key, the single-key index on paEffectiveDate, and the multiple-key index on paType and paScheduledDate.

## ALTERING FIELDS AND RELATIONSHIPS

When you are designing your own database, you often discover that you must alter the original choices you made for the sequence of fields in a table, data types, or relationships between tables. One reason for adding substantial numbers of records to tables during the testing process is to discover any necessary changes before putting the database into daily use.

You can change formats, validation rules and text, lengths of Text fields, and other minor items in the table by changing to design mode, selecting the field to modify, and making the changes in the property boxes. Changing data types can cause a loss of data, however, so be sure to read the later section “Changing Field Data Types and Sizes” before you attempt to make such changes. Changing relationships between tables is considered a drastic action if you have entered a substantial amount of data, so this subject is also covered later in “Changing Relationships Between Tables.”

### Note

Name AutoCorrect is a new Access 2000 feature. Renaming a database object in previous versions required you to search manually through all objects of your database and change all references to the renamed objects. The Name AutoCorrect feature handles the corrections for you; when you open a database object, Access scans and fixes discrepancies. New databases you create in Access 2000 have this feature turned on by default. Databases you convert from previous versions require you to turn on Name AutoCorrect by choosing **Tools, Options**, and then marking the **Track Name AutoCorrect Info** and **Perform Name AutoCorrect** check boxes of the Options dialog’s General page.

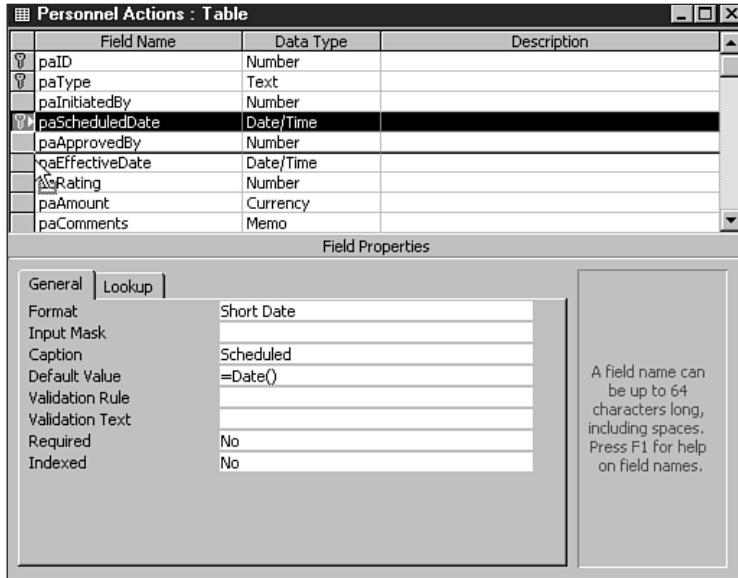
### REARRANGING THE SEQUENCE OF FIELDS IN A TABLE

If you’re typing historical data in Datasheet view, you might find that the sequence of entries isn’t optimum. You might, for example, be entering data from a printed form with a top-to-bottom, left-to-right sequence that doesn’t correspond to the left-to-right sequence of the corresponding fields in your table. Access makes rearranging the order of fields in tables a matter of dragging and dropping fields where you want them. You can decide whether to make the revised layout temporary or permanent when you close the table.

To rearrange the fields of the Personnel Actions table, follow these steps:



1. Click the Datasheet View button. Rearranging the sequence of fields is the only table design change you can implement in Access’s Datasheet view.
2. Click the field name button of the field you want to move. This action selects the field name button and all the field’s data cells.
3. Hold down the left mouse button while over the field name button. The mouse pointer turns into the drag-and-drop symbol, and a heavy vertical bar marks the field’s far-left position. Figure 4.36 shows the paScheduledDate field being moved to a position immediately to the left of the paEffectiveDate field.



**Figure 4.36**  
Dragging a field to a new position in Datasheet view.

4. Move the vertical bar to the new position for the selected field and release the mouse button. The field assumes the new position shown in Figure 4.37.
5. When you close the Personnel Actions table, you see the familiar Save Changes message box. To make the modification permanent, click OK; otherwise, click No.

ID	Type	Initiated By	Approved By	Scheduled	Effective	Rating	Am
1	H	1		5/1/1992	5/1/1992		2
2	H	1		8/14/1992	8/14/1992		3
3	H	1		4/1/1992	4/1/1992		2
4	H	2	2	5/3/1993	5/3/1993		2
5	H	2	2	10/17/1993	10/17/1993		2
5	Q	2	2	1/1/1997	2/11/1997	8	2
5	Q	2	2	3/31/1997	5/12/1997	7	3
5	Q	2	2	6/30/1997	8/11/1997	8	3
5	Q	2	2	9/30/1997	11/11/1997	8	4
5	Y	7	7	1/1/1998	2/11/1998	9	4
6	H	5	2	10/17/1993	10/17/1993	8	4
7	H	5	2	1/2/1994	1/2/1994		3
8	H	2	2	3/5/1994	3/5/1994		2
9	H	5	2	11/15/1994	11/15/1994		3
*	Q			1/24/1999	2/21/1999		

**Figure 4.37**  
The paScheduledDate field dropped into a new position.

To reposition fields in Design view, click the select button of the row of the field you want to move and then drag the row vertically to a new location. Changing the position of a table's field doesn't change any of the field's other properties.

## CHANGING FIELD DATA TYPES AND SIZES

You might have to change a field data type as the design of your database develops or if you import tables from another database, a spreadsheet, or a text file. If you import tables, the data type automatically chosen by Access during the importation process probably won't be what you want, especially with Number fields. Chapter 7 discusses importing and exporting tables and data from other applications. Another example of altering field properties is changing the number of characters in fixed-length Text fields to accommodate entries that are longer than expected, or converting variable-length Text fields to fixed-length fields.

### Caution

Before making changes to the field data types of a table that contains substantial amounts of data, back up the table by copying or exporting it to a backup Access database. If you accidentally lose parts of the data contained in the table (such as decimal fractions) while changing the field data type, you can import the backup table to your current database. Chapter 7 covers the simple and quick process of exporting Access tables. After creating a backup database file, you can copy a table to Windows Clipboard and then paste the table to the backup database. The later section "Copying and Pasting Tables" discusses copying and pasting tables to and from the Clipboard.

## NUMERIC FIELDS

Changing a data type to one that requires more bytes of storage is, in almost all circumstances, safe. You do not sacrifice your data's accuracy. Changing a numeric data type from Byte to Integer to Long Integer to Single and, finally, to Double does not affect your data's value because each change, except for Long Integer to Single, requires more bytes of storage for a data value. Changing from Long Integer to Single and Single to Currency involves the same number of bytes and decreases the accuracy of the data only in exceptional circumstances. The exceptions can occur when you are using very high numbers or extremely small decimal fractions, such as in some scientific and engineering calculations.

On the other hand, if you change to a data type with fewer data bytes required to store it, Access might truncate your data. If you change from a fixed-point format (Currency) or floating-point format (Single or Double) to Byte, Integer, or Long Integer, any decimal fractions in your data are truncated. *Truncation* means reducing the number of digits in a number to fit the new Field Size property that you choose. If you change a numeric data type from Single to Currency, for example, you might lose your Single data in the fifth, sixth, and seventh decimal places (if any exists) because Single provides as many as seven decimal places and Currency provides only four.

You can't convert any field type to an AutoNumber-type field. You can use the AutoNumber field only as a record counter; the only way you can enter a new value in an AutoNumber field is by appending new records. You can't edit an AutoNumber field. When you delete a record in Access, the AutoNumber values of the higher-numbered records are *not* reduced by 1. Sequential Access AutoNumber field values are assigned to records in the order in which the records were entered, not in the order of the primary key.

## TEXT FIELDS

You can convert Text fields to Memo fields without Access truncating your text. Converting a Memo field to a Text field, however, truncates characters beyond the 255-character limit of Text fields. Similarly, if you convert a variable-length Text field to a fixed-length field, and some records contain character strings that exceed the length you chose, Access truncates these strings.



## CONVERSION BETWEEN NUMBER, DATE, AND TEXT FIELD DATA TYPES

Access makes many conversions between Number, Date, and Text field data types for you. Conversion from Number or Date to Text field data types does not follow the Format property that you assigned to the original data type. Numbers are converted with the General Number format, and dates use the Short Date format. Access is quite intelligent in the methods it uses to convert suitable Text fields to Number data types. For example, it accepts dollar signs, commas, and decimals during the conversion, but ignores trailing spaces. Access converts dates and times in the following Text formats to internal Date/Time values that you then can format the way you want:

```
1/4/1999 10:00 AM
04-Jan-99
January 4
10:00
10:00:00
```

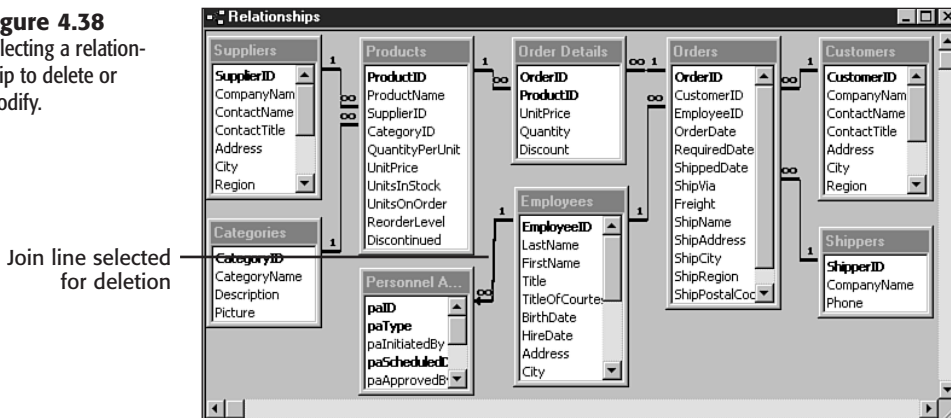
## CHANGING RELATIONSHIPS BETWEEN TABLES

Adding new relationships between tables is a straightforward process, but changing relationships might require you to change data types so that the related fields have the same data type. To change a relationship between two tables, complete the following steps:

1. Close the tables involved in the relationship.
-  2. If the Database window is not active, click the Show Database Window button, or choose Window, 1 Database.
-  3. Display the Relationships window by clicking the Relationships button of the toolbar or by choosing Tools, Relationships.
4. Click the join line that connects to the field whose data type you want to change. When you select the join line, the line becomes darker (wider), as shown in Figure 4.38.



**Figure 4.38**  
Selecting a relationship to delete or modify.



5. Press Delete to clear the existing relationship. Click Yes when the message box asks you to confirm your deletion.
6. If you are changing the data type of a field that constitutes or is a member field of the primary table's primary key, delete all other relationships that exist between the primary table and every other table to which it is related.
7. Change the data types of the fields in the tables so that the data types match in the new relationships.
8. Re-create the relationships by using the procedure described earlier in the section "Establishing Relationships Between Tables."

## COPYING AND PASTING TABLES

To copy a complete table or records of a table to the Windows Clipboard, use the same methods that apply to most other Windows applications. (Using the Clipboard to paste individual records or sets of records into a table is one of the subjects of the next chapter.) You can copy tables into other databases, such as a general-purpose backup database, by using the Clipboard; however, exporting a table to a temporary database file, described in Chapter 7 is a more expeditious method.

To copy a table to another Access database, a destination database must exist. To create a backup database and copy the contents of the Personnel Actions table to the database, follow these steps:

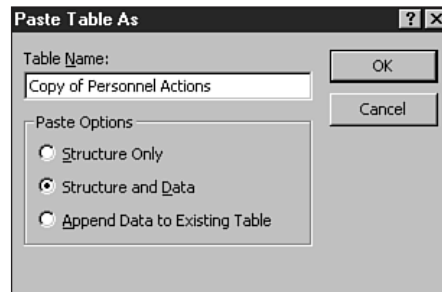


1. Make the Database window active by clicking it, if it is accessible, or by choosing **Window, 1 Database**.



2. Click the Tables tab, if necessary, to display the list of tables.
3. Select the table that you want to copy to the new database.

- Click the Copy button on the toolbar, press Ctrl+C, or choose Edit, Copy.  
If you plan to copy the table to your current database, skip to step 7.
- If you've created a destination backup database, choose File, Open Database to open the database; then skip to step 7.
- To create a backup database, choose File, New Database; then choose a blank database and name it backup.mdb or another appropriate file name. Access creates your Backup.mdb database, which occupies approximately 96KB without any tables (this is called *overhead*). Your new database is now active.
- Click the Paste button on the toolbar, press Ctrl+V, or choose Edit, Paste. The Paste Table As dialog appears (see Figure 4.39).



**Figure 4.39**  
The Paste Table As dialog.

- You have three options for pasting the backup table to the destination database. The most common choice is Structure and Data, with which you can create a new table or replace the data in a table with the name you enter in the Table Name text box. You can also paste only the structure and then append data to the table later by selecting Structure Only, or append the records to an existing table of the name that you enter. For this example, accept the default: Structure and Data.
- Your current or backup database now has a copy of the table that you selected, and the name you entered appears in the backup's Database window. You can save multiple copies of the same table under different names if you are making a series of changes to the table that might affect the integrity of the data that it contains.

To delete a table from a database, select the table name in the Database window and then press Delete. A confirmation message box appears. Click Yes to delete the table forever. You can't choose Edit, Undo after deleting a table.

## TROUBLESHOOTING

### GAPS IN AUTO NUMBER FIELD VALUES

*When I accidentally add a new record to a table with an AutoNumber field and then delete it, the next record I add has the wrong AutoNumber value—increment of 2 instead of 1.*

That's the major drawback of AutoNumber fields, especially when the AutoNumber field value corresponds to a physical record, such as an invoice or check number. The AutoNumber feature offers no simple method of replacing an incorrect record that you delete from the table. The best approach, which insures that your table is auditable, is to never delete a record from a table with an AutoNumber field. Instead, type **VOID** in an appropriate field, and add an explanation (if there's a field available to do so).

### EXTRA INDEXES ADDED BY ACCESS

*After you specify a primary key on a field containing the characters "ID", an additional index appears for the field.*

In many cases, Access automatically specifies a primary key and index on fields whose names contain the characters "ID", "key", "code", and "num" when you create or import tables. This behavior is controlled by the contents of the AutoIndex on Import/Create text box of the Tables/Queries page of the Options dialog. When you change the primary key field(s), the old index remains. You can safely delete the automatically added index.

## IN THE REAL WORLD—DATABASE STRATEGY AND TABLE TACTICS

In warfare, strategy defines the objective; tactics specify the battlefield methods to achieve the strategic objective. Carl von Clausewitz' *On War* is the seminal 19th century study of strategy and tactics of modern warfare. Niccolo Machiavelli's *The Art of War* and Che Guevara's *On Guerilla Warfare* provide earlier and later takes, respectively, on the subject. Designing strategic databases and laying out the tables that comprise the database shouldn't—but often does—involve open or guerilla hostilities between the participants. As a database and table designer, try to remain on the side of your product's consumers; you might win a battle or two, but the consumers (users) ultimately will win the war. This is especially true when the consumers control your database implementation budget.

### WHY TABLE DESIGN COMES BEFORE DATABASE DESIGN IN THIS BOOK

Production database design requires strategic planning, including business process analysis, determination of workflow paths, identifying physical and temporal relationships between data entities, and other considerations that are well beyond the scope of this introductory chapter on Access table design. Designing tables constitutes the tactics of database implementation. In warfare and database design, it's essential to possess a well-defined strategy

before you decide on the tactics. Failure to do so creates situations analogous to the early-1999 confrontations between NATO and the Serbs over the fate of Kosovo and the ethnic Albanians living in political subdivisions of former Yugoslavia.

Adding new tables to a database on an *ad hoc* basis is a necessary element of the Access learning curve. Conversance with table terminology is necessary to comprehend relational database design. You must understand table properties—field names, data types, primary keys, indexes, relationships, default values, validation rules, and the like—just to proceed to the next major topic of this book, the design of Access queries. Starting this book with a chapter on the theory of relational database design would be the equivalent of beginning flight training in a Boeing 757 instead of a Cessna 150 or 172.

Another reason for putting the cart (tables) before the horse (database design) is that the majority of new Access users have existing tabular data sources to import or link to a new Access database. If someone's already entered the data you need into another desktop database manager or a spreadsheet, don't go through the agony of retyping data into a table. Chapter 7 shows you how to get external data into an Access table. Once you have the data in a Jet table, you can change field names and sequence, assign primary keys, add default values and validation rules, and specify relationships with other tables.

## NAMING CONVENTIONS FOR TABLES AND FIELDS

There are several schools of thought on naming tables and fields, but most Access developers agree on one rule: Don't add spaces to table or field names. The Personnel Actions table violates this rule to demonstrate in later chapters issues that arise with spaces in Access object names, especially when upsizing to MSDE/SQL Server tables. Northwind.mdb contains only one table, Order Details, with a space in its name, and none of the current Northwind.mdb tables have spaces in field names.

Many developers use “tbl” as a table name prefix for consistency with other Access object type identification prefixes, such as “frm” for forms and “rpt” for reports. Using a table object identifier prefix is uncommon in real-world production databases, but using table names that identify the source document or object of the table, such as “Orders”, “Invoices”, “Products”, and the like is a good database design practice. Use plural nouns when naming tables, because tables contain multiple representative instances of objects.

Many database administrators (DBAs) require a short prefix to field names that identify the table that contains the fields. A field name prefix indicates to developers the source of the field without the necessity of having to refer to a database diagram or a table field list. Another benefit of adding a prefix based on a table name is avoidance of duplicate names in primary-key and foreign-key pairs. The field names of Personnel Actions begin with “pa”; this distinguishes the paID field (foreign key) from the EmployeeID (primary key) field of the Employees table when you create a relationship between the tables, and when you join the Personnel Actions and Employees tables to create multitable queries, the subject of Chapter 10.

Some developers add to field names a prefix—such as “dat” (for Date/Time) or “txt” (for Text)—that specifies the Jet data type, following the generally-accepted convention for adding a data type prefix to VBA variable and constant names. This practice is becoming less common as more developers work interchangeably with Jet and MSDE/SQL Server databases. Some corresponding Jet and SQL Server data type names aren’t the same; conflicts between Jet-based and SQL Server prefixes can cause confusion when upsizing Jet databases to MSDE or SQL Server 7.0.

--rj

# SORTING, FINDING, AND FILTERING DATA IN TABLES

## In this chapter

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## UNDERSTANDING THE ROLE OF SORTING AND FILTERING

Microsoft Access provides a variety of sorting and filtering features that make customizing the display data in Table Datasheet view a quick and simple process. Sorting and filtering records in tables is quite useful when you use data in a table to create a mailing list or print a particular set of records.

Access also includes versatile search and replace facilities that let you locate every record that matches a value you specify and then, optionally, change that value. Using the Search features, you can quickly locate values even in large tables. Search and replace often is needed when you import data from another database or a worksheet, which is the subject of the next chapter.

Access's sorting, filtering, searching, and replacing features actually are implemented by behind-the-scenes queries that Access creates for you. When you reach Part II, "Getting the Most out of Queries," of this book, which deals exclusively with queries, you'll probably choose to implement these features in Access's graphical Query Design window. Learning the fundamentals of these operations with tables, however, makes queries easier to understand. You also can apply filters to query result sets, use the find feature with queries in Datasheet view, and use search and replace on the result sets of updatable queries.

## SORTING TABLE DATA

A fundamental requirement of a database development environment is the capability to sort records quickly so that they appear in the desired sequence. Early desktop database managers required you to create a new copy of a table if you physically wanted to sort the table's records in a new order. Creating and specifying an index on a field let you display or print the table in the desired order. If you wanted to sort the data by two or more fields, however, you had to create a composite index on the fields, or presort the data in the order of one or more fields and then apply the single-field index.

Modern desktop database development systems, such as Access, never require you to physically sort the table. Instead, the physical location of the records in the file is the order in which the records were entered. By default, Access displays records in the order of the primary key. If your table doesn't have a primary key, the records display in the order in which you enter them. Unlike dBASE and its clones, you cannot choose a specific Access index to alter the order in which the records display in Table Datasheet view of the user interface (UI). You can, however, specify an index to speed retrieval of records of tables you manipulate with VBA code. Access uses sorting methods to display records in the desired order. If an index exists on the field in which you sort the records, the sorting process is much quicker. Access automatically uses indexes, if indexes exist, to speed the sort in a process called *query optimization*. Access's indexes and query optimization methods are discussed in Chapter 22, "Exploring Relational Database Design and Implementation."


The following sections show how to use Access's sorting methods to display records in the sequence you want. The Customers table of Northwind.mdb is used for most examples in this chapter because it's typical of a table whose data you can use for various purposes.

## FREEZING DISPLAY OF A TABLE FIELD

If the table you're sorting contains more fields than you can display in Access's Table Datasheet view, you can freeze one or more fields to make viewing the sorted data easier. *Freezing* a field makes the field visible at all times, regardless of which other fields you display by manipulating the horizontal scroll bar. To freeze the Customer ID and Company Name fields of the Customers table, follow these steps:

1. Open the Customers table in Datasheet view.
2. Click the field header button of the Customer ID field to select the first field.
3. Shift+click the Company Name field header button. Alternatively, you can drag the mouse from the Customer ID field to the Company Name field to select the first and second fields.
4. From the **Format** menu, choose **Freeze Columns**.

When you scroll to fields to the right of the frozen columns, your Datasheet view of the Customers table appears as shown in Figure 6.1. A solid vertical line replaces the half-tone gridline between the frozen and *thawed* (selectable) field columns.



Customer ID	Company Name	Region	Postal Code	Country
ALFKI	Alfreds Futterkiste		12209	Germany
ANATR	Ana Trujillo Emparedados y helado		05021	Mexico
ANTON	Antonio Moreno Taquería		05023	Mexico
AROUT	Around the Horn		WA1 1DP	UK
BERGS	Berglunds snabbköp		S-958 22	Sweden
BLAUS	Blauer See Delikatessen		68306	Germany
BLONP	Blondel père et fils		67000	France
BOLID	Bólido Comidas preparadas		28023	Spain
BONAP	Bon app'		13008	France
BOTTM	Bottom-Dollar Markets	BC	T2F 8M4	Canada
BSBEV	B's Beverages		EC2 5NT	UK
CACTU	Cactus Comidas para llevar		1010	Argentina
CENTC	Centro comercial Moctezuma		05022	Mexico
CHOPS	Chop-suey Chinese		3012	Switzerland
COMMI	Comércio Mineiro	SP	05432-043	Brazil

**Figure 6.1**  
The Northwind.mdb Customers table with the CustomerID and CompanyName columns frozen.

### Tip #42 from

RJ

If you frequently freeze columns, you can add the Freeze Columns button from the Datasheet collection to your Datasheet toolbar.

➔ See "Customizable Toolbars," p. 484, to learn how to customize your toolbars.



## SORTING DATA ON A SINGLE FIELD



Access provides an easy way to sort data in the Datasheet view, called a Quick Sort. Simply click the top of the field you want to use to sort the table's data and click either the sort ascending or the sort descending icon on the toolbar. In mailing lists, a standard practice in the United States is to sort the records in ascending zip code order. This practice often is also observed in other countries that use postal codes. To Quick Sort the Customers table in the order of the Postal Code field, follow these steps:



1. Select the Postal Code field by clicking its field header button.
2. Click the Sort Ascending (A-Z) button of the toolbar or choose Sort and then Ascending from the Records menu.



Your Customers table quickly is sorted into the order shown in Figure 6.2.

**Figure 6.2**  
Applying an ascending sort order to the Postal Code field.

Customer ID	Company Name	Region	Postal Code	Country
HUNGO	Hungry Owl All-Night Grocers	Co. Cork		Ireland
WOLZA	Wolski Zajazd		01-012	Poland
QUICK	QUICK-Stop		01307	Germany
QUEDE	Que Delicia	RJ	02389-673	Brazil
RICAR	Ricardo Adocicados	RJ	02389-890	Brazil
MORGK	Morgenstern Gesundkost		04179	Germany
GOURL	Gourmet Lanchonetes	SP	04876-786	Brazil
ANATR	Ana Trujillo Emparedados y helado		05021	Mexico
CENTC	Centro comercial Moctezuma		05022	Mexico
ANTON	Antonio Moreno Taquería		05023	Mexico
PERIC	Pericles Comidas clásicas		05033	Mexico
TORTU	Tortuga Restaurante		05033	Mexico
COMMI	Comércio Mineiro	SP	05432-043	Brazil
FAMIA	Familia Arquibaldo	SP	05442-030	Brazil
HANAR	Hanari Carnes	RJ	05454-876	Brazil

## SORTING DATA ON MULTIPLE FIELDS

Although the sort operation in the preceding section accomplishes exactly what you specify, the result is less than useful because of the variants of postal-code formats used in different countries. What's needed here is a multiple-field sort: first on the Country field and then on the Postal Code field. Thus you might select the Country and the Postal Code fields to perform the multicolumn sort. The Quick Sort technique, however, automatically applies the sorting priority to the leftmost field you select, Postal Code. Access offers two methods of handling this problem: reorder the field display or specify the sort order in a Filter window. Filters are discussed later in the “Filtering Table Data” section, so follow these steps to use the reordering process:

1. Select the Country field by clicking its field header button.
2. Hold down the left mouse button and drag the Country field to the left of the Postal Code field. Release the left mouse button to drop the field in its new location.
3. Shift+click the header button of the Postal Code field to select the Country and Postal Code columns.



- Click the Sort Ascending button of the toolbar or choose Sort and then Ascending from the Records menu.

The sorted table, shown in Figure 6.3, now makes much more sense. A multiple-field sort on a table sometimes is called a *composite sort*.

Customer ID	Company Name	Region	Country	Postal Code
RANCH	Rancho grande		Argentina	1010
OCEAN	Océano Atlántico Ltda.		Argentina	1010
CACTU	Cactus Comidas para llevar		Argentina	1010
PICCO	Piccolo und mehr		Austria	5020
ERNSH	Ernst Handel		Austria	8010
MAISD	Maison Dewey		Belgium	B-1180
SUPRD	Suprêmes délices		Belgium	B-6000
QUEDE	Que Delícia	RJ	Brazil	02389-673
RICAR	Ricardo Adocicados	RJ	Brazil	02389-890
GOURL	Gourmet Lanchonetes	SP	Brazil	04876-786
COMMI	Comércio Mineiro	SP	Brazil	05432-043
FAMIA	Familia Arquibaldo	SP	Brazil	05442-030
HANAR	Hanari Carnes	RJ	Brazil	05454-876
QUEEN	Queen Cozinha	SP	Brazil	05487-020
TRADH	Tradição Hipermercados	SP	Brazil	05634-030

**Figure 6.3**  
The effect of a multiple-field sort on the Country and Postal Code fields of the Customers table.

## REMOVING A TABLE SORT ORDER AND THAWING COLUMNS

After you freeze columns and apply sort orders to a table, you might want to return the table to its original condition. To do so, Access offers you the following choices:

- To return the Datasheet view of an Access table with a primary key to its original sort order, select the field(s) that comprise the primary key (in the order of the primary key fields).
- To return to the original order when the table has no primary key field, close the table *without* saving the changes and then reopen the table.
- To thaw your frozen columns, choose Unfreeze All Columns from the Format menu.
- To return the sequence of fields to its original state, drag the fields you moved back to their prior position or close the table *without* saving your changes.

If you make substantial changes to the layout of the table and apply a sort order, it is usually quicker to close and reopen the table. (*Don't* save your changes to the table layout.)

## FINDING MATCHING RECORDS IN A TABLE

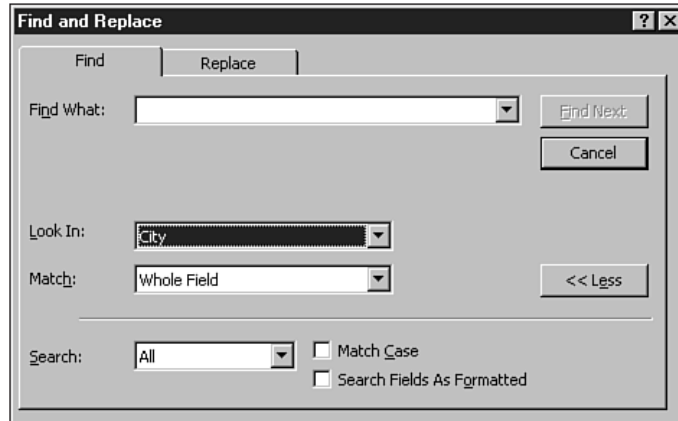
To search for and select records with field values that match (or partially match) a particular value, use Access's Find feature. To find Lulå (a relatively large city in northern Sweden close to the Arctic Circle) in the City field, follow these steps:

1. In the Customers table, select the field (City) you want to search by clicking its header button or by placing the caret in the field.



2. Click the toolbar's Find button or choose Find from the Edit menu to display the Find and Replace dialog (see Figure 6.4). You can also display this dialog by pressing Ctrl+F. The dialog opens with the Find page active by default.

**Figure 6.4**  
The opened Find in Field dialog with the City field selected.

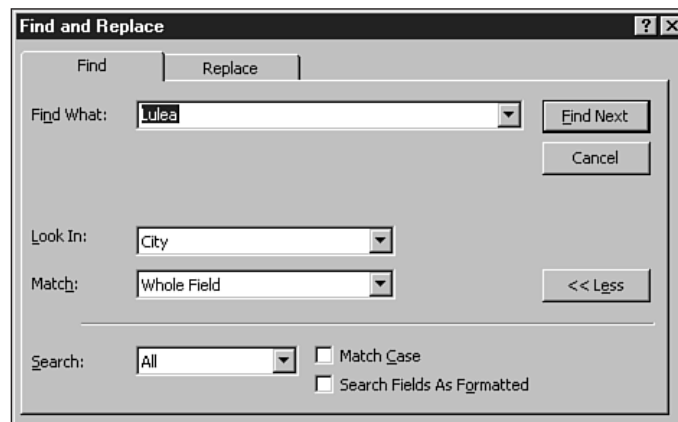


3. Type the name of the city (**Lulea**) in the Find What text box (see Figure 6.5). Making an entry in the Find What text box enables the Find Next command button.
4. Select Whole Field from the Match drop-down list. (The other choices, Start of Field and Any Part of Field, are just as effective in this case.)

The default value of the Search option button is satisfactory, and matching case or format is not important here.

5. Click the Find Next button. If you don't have a Scandinavian keyboard, Access displays the message box shown in Figure 6.6.

**Figure 6.5**  
Attempting to find Lulå in the City field.





**Figure 6.6**  
The message box that appears when Access can't find a match to the content of the Find What text box.

The “finished searching” message indicates that the Find feature didn't locate a match between the present position of the record pointer and the last record of the table. Access missed your entry because the Scandinavian diacritical ° is missing over the *a* in *Luleå*. In the ANSI character set, *a* has a value of 97, and *å* has a value of 229.

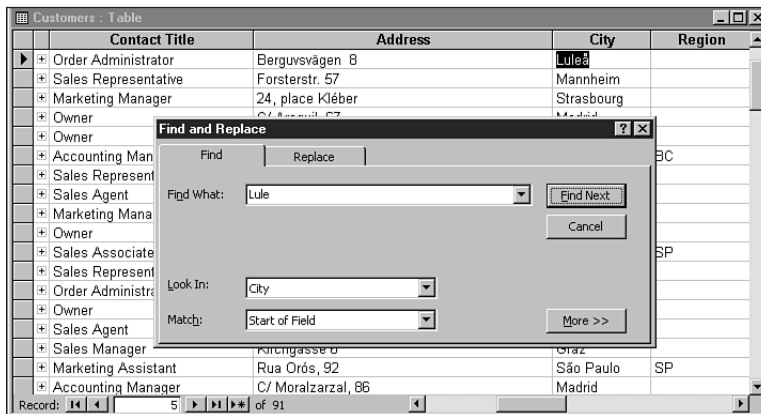
**Tip #43 from**

*RJ*

To enter international (extended) characters in the Find What text box, type the English letters and then use the Windows 9x or Windows NT 4.0+ Character Map (Charmap.exe) applet to find and copy the extended character to the Clipboard. (Don't worry about choosing the correct font.) Paste the character into the Find What text box at the appropriate location.

If the letters preceding an extended character are sufficient to define your search parameter, follow these steps to find Luleå:

1. Type **Lule**, omitting the *å*, in the Find What text box.
2. Select Start of Field from the Match drop-down list.
3. Click the Find Next button. Access finds and highlights Luleå in the City field (see Figure 6.7).



**Figure 6.7**  
Finding a record that contains a special character.

You also can find entries in any part of the field. If you type **lule** in the Find What text box and choose Any Part of Field from the Match drop-down list, you get a match on Luleå. However, you could also match Thule, the location of the Bluie West One airfield (also

known as Thule Air Force Base) in Greenland. (There's no actual entry for Thule in the Customers table.)

#### Note

Searching all fields for an entry is usually much slower than searching a single field, especially if you have an index on the field being searched. Unless you specify the Any Part of Field Match option, Access uses the index to speed the searching operation.

Following is a list of the options available in the Find dialog when you expand it by clicking the More button:

- To specify a case-sensitive search, mark the Match Case check box.
- To search by using the field's format, mark the Search Fields as Formatted check box. This way you can enter a search term that matches the formatted appearance of the field, rather than the native (unformatted) value, if you applied a Format property value to the field. Using the Search Fields as Formatted option slows the search operation; indexes are not used.
- To find additional matches, if any, click the Find Next button. If the Search option is set to Down, clicking the Find Next button starts the search at the current position of the record pointer and searches to the end of the table.
- To start the search at the last record of the table, select Up in the Search drop-down list.

## REPLACING MATCHED FIELD VALUES AUTOMATICALLY

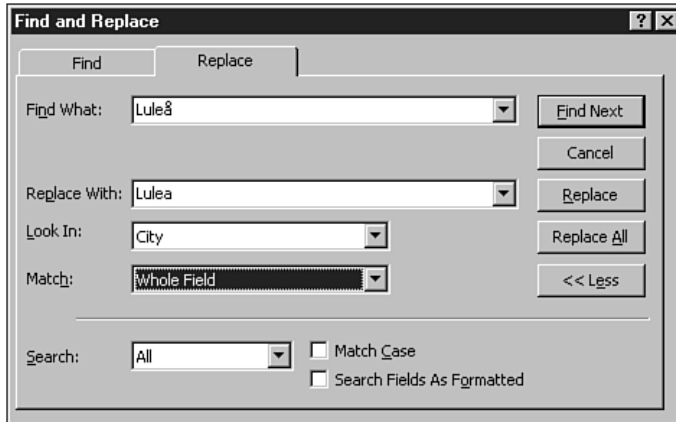
The Find and Replace dialog's Replace page lets you replace values selectively in fields that match the entry in the Find What text box. To open the dialog with the Replace page active, choose Edit, Replace or press Ctrl+H. The derivation of the shortcut key combination for the Edit menu's Replace command—Ctrl+H—is a mystery.

The entries to search for *Lulå* and replace with *Lulea* appear in Figure 6.8. To replace entries selectively, click the Find Next button and then click the Replace button for those records in which you want to replace the value. You can do a bulk replace in all matching records by clicking the Replace All button.

➔ See “Updating Values of Multiple Records in a Table,” p. 421.

## FILTERING TABLE DATA

Access lets you apply a filter to specify the records that appear in the Datasheet view of a table or a query result set. For example, if you want to view only those customers located in Germany, you use a filter to limit the displayed records to only those whose Country field contains the text *Germany*. Access gives you three different ways to apply filters to the data in a table:



**Figure 6.8**  
The Replace dialog.

- *Filter by selection* is the fastest and simplest way to apply a filter. You establish the filter criteria by selecting all or part of the data in one of the table's fields; Access displays only records that match the selected sample. With a filter by selection, you can filter records based only on criteria in a single field of the table.
- *Filter by form* is the second fastest way to apply a filter. You enter the filter criteria into a blank datasheet form of the table; Access displays records that match the combined criteria in each field. Use a filter by form to quickly filter records based on criteria in more than one field.
- *Advanced filter/sort* is the most powerful type of filter to use. With an advanced filter/sort, you can make an Access filter do double duty because you also can add a sort order on one or more fields.

## FILTERING BY SELECTION

Creating a filter by selection is as easy as selecting text in a field. When you apply the filter, Access uses the selected text to determine which records to display. Table 6.1 summarizes which records are displayed, depending on how you select text in the field. In all cases, Access applies the filter criteria only to the field in which you have selected text. Filter by selection allows you to establish filter criteria for only a single field at one time.

**TABLE 6.1 HOW SELECTED TEXT AFFECTS FILTER BY SELECTION**

Selected Text	Filter Effect
Entire field	Displays only records whose fields contain exactly matching values
Beginning of field	Displays records where the text at the beginning of the field matches the selected text
End of field	Displays records where the text at the end of the field matches the selected text
Characters anywhere	Displays records in which any part of the field in field, except matches anywhere in the selected text beginning or end

To create a Filter by Selection on the Customers table (displaying only those customers located in Germany), follow these steps:

1. If necessary, open the Customers table in Datasheet view and use the scroll bars to make the Country field visible in the Table window.
  2. Click the First Record button to make the first record in the table the active record.
  3. Select all the text in the Country field of the first record in the Customers table. (This entry should be Germany.)
  4. Click the Filter by Selection toolbar button or from the **Records** menu choose **F**ilter, **F**ilter by **S**election. Access applies the filter as shown in Figure 6.9.
- Notice that the Apply Filter toolbar button is now displayed in a “down” position, indicating that a filter is being applied to the table, and the ToolTip changes to *Remove Filter*. The legend (Filtered) is also added to the record selection and status bar at the bottom of the Table window.

**Figure 6.9**  
A filter by selection applied to the Customers Table to display only those customers in Germany.



The screenshot shows a table window titled "Customers : Table" with the following data:

Customer ID	Company Name	Region	Country	Postal Code	Phone
QUICK	QUICK-Stop		Germany	01307	0372-035188
MORGK	Morgenstern Gesundkost		Germany	04179	0342-023176
ALFKI	Alfreds Futterkiste		Germany	12209	030-0074321
KOENE	Königlich Essen		Germany	14776	0555-09876
TOMSP	Toms Spezialitäten		Germany	44087	0251-031259
OTTIK	Ottilies Käseladen		Germany	50739	0221-0644327
DRACD	Drachenblut Delikatessen		Germany	52066	0241-039123
LEHMS	Lehmanns Marktstand		Germany	60528	069-0245984
BLAUS	Blauer See Delikatessen		Germany	68306	0621-08460
WANDK	Die Wandernde Kuh		Germany	70563	0711-020361
FRANK	Frankenversand		Germany	80805	089-0877310

The status bar at the bottom indicates "Record: 1 of 11 (Filtered)".

**Tip #44 from**

RJ



Use the Find and Replace dialog to quickly locate the first record of a group you're interested in filtering and then apply a filter by selection.

As mentioned previously, you can also apply a filter by selection based on partially selected text in a field. Figure 6.10 shows the Customers table with a different filter by selection applied—this time, only the letters *er* in the Country field were selected.

**Tip #45 from**

RJ

You can apply a filter by selection to more than one field at a time. For example, after applying a filter by selection to display only those customers in Germany, you could then move to the City field and apply a second filter by selection for Berlin. The resulting table display will then include only those customers in Berlin, Germany. An easier way to apply filters based on more than one field value is to use a filter by form, described in the next section.

Customer ID	Company Name	Region	Country	Postal Code	Phone
WANDK	Die Wandernde Kuh		Germany	70563	0711-020361
TOMSP	Toms Spezialitäten		Germany	44087	0251-031259
RICSU	Richter Supermarkt		Switzerland	1203	0897-034214
QUICK	QUICK-Stop		Germany	01307	0372-035188
OTTIK	Ottilies Käseladen		Germany	50739	0221-0644327
MORGK	Morgenstern Gesundheitskost		Germany	04179	0342-023176
LEHMS	Lehmans Marktstand		Germany	60528	069-0245984
KOENE	Königlich Essen		Germany	14776	0555-09876
FRANK	Frankenversand		Germany	80805	089-0877310
DRACD	Drachenblut Delikatessen		Germany	52066	0241-039123
CHOPS	Chop-suey Chinese		Switzerland	3012	0452-076545
BLAUS	Blauer See Delikatessen		Germany	68306	0621-08460
ALFKI	Alfreds Futterkiste		Germany	12209	030-0074321

**Figure 6.10**  
The Customers table, this time filtered by selecting the letters *er* in the Country field.

### Note



To remove a filter, click the Remove Filter toolbar button. This button is really the same as the Apply Filter button—the button is “down” whenever a filter is in effect and “up” otherwise.

## FILTERING BY FORM

Filtering by form is slightly more complex than filtering by selection but allows you to filter records based on criteria in more than one field at a time. For example, you saw in the preceding section how to use a filter by selection to view only those customers in Germany. To further limit the displayed records to those customers located in Berlin, Germany, use a filter by form.

In a filter by form, Access displays a blank form for the table (see Figure 6.11). This window is called a *form* to distinguish it from the Table Datasheet window, although it’s not the same as the data-entry forms discussed later in this book. You can combine criteria in a filter by form with a logical **Or** condition or a logical **And** condition. For example, you can filter the Customers table to display only those customers in the United States or Canada. As another example, you could filter the Customers table to display only those customers in the United States and in zip codes beginning with the digit 9 (such as 94609 or 90807).

- ➔ To learn more about using query expressions in the fields of the Filter by Form window, see “Understanding the Elements in Expressions,” p. 321.
- ➔ See “Creating Access Expressions,” p. 340.
- ➔ See “Expressions for Query Criteria,” p. 341.

To create a filter by form on the Customers table (displaying only those customers in the United States or Canada), follow these steps:

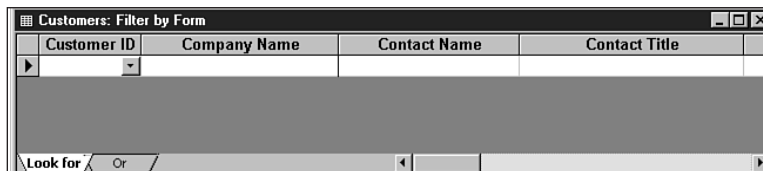
1. If necessary, open the Customers table in Datasheet view and make the Country field column visible in the Table window.



2. Click the Filter by Form toolbar button or from the Records menu choose **F**ilter, **F**ilter by Form to display the Filter by Form window (see Figure 6.11).

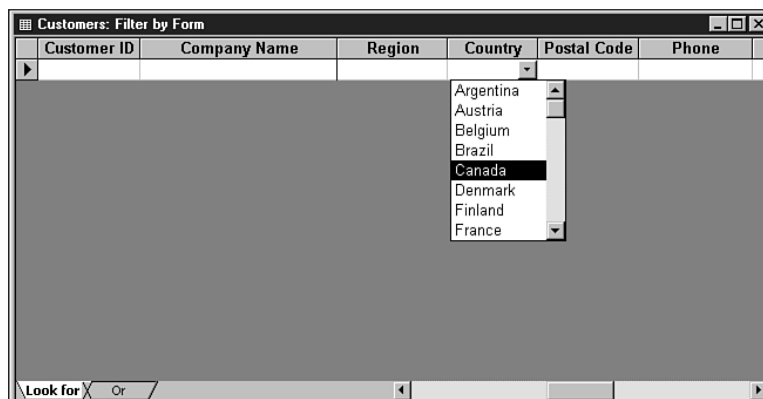


**Figure 6.11**  
An empty Filter by Form window for the Customers table.



3. Make the Country field visible in the Filter by Form window if necessary. (The Customer ID and Company Name columns in the figures have been frozen, as described previously in this chapter.)
4. Click inside the Country field and open the Country list box, or press F4. The drop-down list contains a list of all the unique values in the Country field (see Figure 6.12).

**Figure 6.12**  
Selecting the first country to filter for in the Customers table.



5. Select Canada in the list box, as shown in Figure 6.12. Access automatically adds the quotation marks around the value you select and enters it into the Country field form box.
6. Click the Or tab at the bottom of the Filter by Form window. Access combines criteria that you enter on separate tabs in the Filter by Form window with a logical **Or** condition. When you add an **Or** condition, a tab for another **Or** condition appears.
7. Click the arrow to open the Country list box or press F4. Select USA from the drop-down list (see Figure 6.13).
8. Click the Apply Filter button. Access applies the new filter to the table, displaying the records shown in Figure 6.14.



You can also combine filter criteria in a logical **And** condition by entering criteria in more than one field on the same tab of the Form window. For example, you want to filter the Orders table to find all orders handled by Nancy Davolio and shipped to France. You easily can use a Filter by Form to do so, as the following example shows:



**Figure 6.13**  
Selecting the **or** condition for the Filter by Form in the Customers table.

Customer ID	Company Name	Region	Country	Postal Code	Phone
BOTTM	Bottom-Dollar Markets	BC	Canada	T2F 8M4	(604) 555-472
GREAL	Great Lakes Food Market	OR	USA	97403	(503) 555-755
HUNGC	Hungry Coyote Import Store	OR	USA	97827	(503) 555-687
LAUGB	Laughing Bacchus Wine Cel	BC	Canada	V3F 2K1	(604) 555-335
LAZYK	Lazy K Kountry Store	WA	USA	99362	(509) 555-796
LETSS	Let's Stop N Shop	CA	USA	94117	(415) 555-593
LONEP	Lonesome Pine Restaurant	OR	USA	97219	(503) 555-957
MEREP	Mère Paillard	Québec	Canada	H1J 1C3	(514) 555-805
OLDWO	Old World Delicatessen	AK	USA	99508	(907) 555-756
RATTC	Rattlesnake Canyon Grocers	NM	USA	87110	(505) 555-593
SAVEA	Save-a-lot Markets	ID	USA	83720	(208) 555-805
SPLIR	Split Rail Beer & Ale	WY	USA	82520	(307) 555-466
THEBI	The Big Cheese	OR	USA	97201	(503) 555-361
THECR	The Cracker Box	MT	USA	59801	(406) 555-583
TRAIH	Trail's Head Gourmet Provisi	WA	USA	98034	(206) 555-825

**Figure 6.14**  
The result of the Filter by Form displaying only those records for customers in Canada or the USA.

1. Open the Orders table, if necessary, and freeze the Order ID, Customer, and Employee columns. Then position the Ship Country column so that it's visible (see Figure 6.15). Freezing the columns isn't an essential step, but it makes setting up the filter and viewing the filtered data easier.



2. Click the Filter by Form toolbar button to display the Filter by Form window.



3. Click the Clear Grid toolbar button or choose **Clear Filter** from the **Edit** menu to clear any previous filter criteria from the Filter by Form grid.

4. Use the drop-down list in the Employee field to select Davolio, Nancy, and then use the drop-down list in the Ship Country column to select France. You must add quotes around text criterion that includes a comma (see Figure 6.16).



5. Click the Apply Filter button. Access applies the new filter to the table, displaying the records shown in Figure 6.17. This filter shows only those records for orders that were handled by Nancy Davolio *and* shipped to France.

**Figure 6.15**

The Orders table with the Order ID, Customer, and Employee columns frozen, and the Ship Country column scrolled to be visible.

Order ID	Customer	Employee	Ship Country
10248	Vins et alcools Chevalier	Buchanan, Steven	France
10249	Toms Spezialitäten	Suyama, Michael	Germany
10250	Hanari Carnes	Peacock, Margaret	Brazil
10251	Victuailles en stock	Leverling, Janet	France
10252	Suprêmes délices	Peacock, Margaret	Belgium
10253	Hanari Carnes	Leverling, Janet	Brazil
10254	Chop-suey Chinese	Buchanan, Steven	Switzerland
10255	Richter Supermarkt	Dodsworth, Anne	Switzerland
10256	Wellington Importadora	Leverling, Janet	Brazil
10257	HILARIÓN-Abastos	Peacock, Margaret	Venezuela
10258	Ernst Handel	Davolio, Nancy	Austria
10259	Centro comercial Moctezuma	Peacock, Margaret	Mexico
10260	Ottilies Käseladen	Peacock, Margaret	Germany
10261	Que Delicia	Peacock, Margaret	Brazil
10262	Rattlesnake Canyon Grocery	Callahan, Laura	USA
10263	Ernst Handel	Dodsworth, Anne	Austria
10264	Folk och få HB	Suyama, Michael	Sweden

**Figure 6.16**

Combining criteria in two fields in a logical *And* condition.

Order ID	Customer	Employee	Ship Postal Code	Ship Country
		"Davolio, Nancy"		"France"

**Figure 6.17**

The Orders table records displayed by the filter by form shown in Figure 6.16.

Order ID	Customer	Employee	Ship Country
10311	Du monde entier	Davolio, Nancy	France
10340	Bon app'	Davolio, Nancy	France
10371	La maison d'Asie	Davolio, Nancy	France
10525	Bon app'	Davolio, Nancy	France
10546	Victuailles en stock	Davolio, Nancy	France
10671	France restauration	Davolio, Nancy	France
10769	Folies gourmandes	Davolio, Nancy	France
10827	Bon app'	Davolio, Nancy	France
10850	Victuailles en stock	Davolio, Nancy	France



*If Access doesn't return the records you expected, try the solution in the "Troubleshooting" section at the end of the chapter.*

## ADVANCED FILTERS AND SORTS

Filters in Access, as mentioned previously, are queries in disguise, and provide a useful introduction to Access queries, the subject of Part II of this book, "Getting the Most Out of Queries." Creating an advanced filter/sort is very much like creating a query, with some basic differences, as follows:

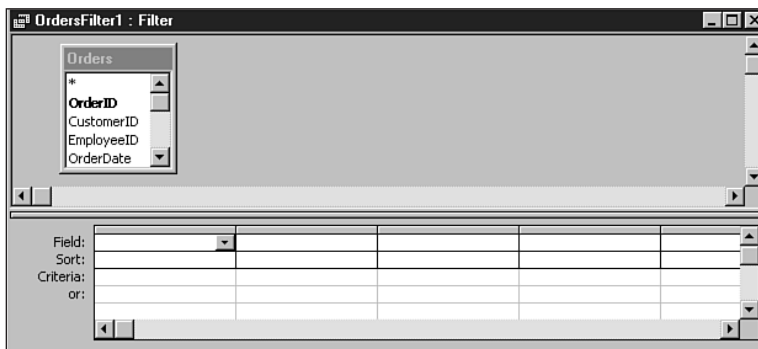
- The Show Table dialog doesn't appear.
- The SQL button is missing from the toolbar, so you can't display the underlying SQL statement.
- The Show row is missing from the Filter Design grid.

Filters are limited to using one table or query that Access automatically specifies when you enter filter design mode. You can save a filter you create as a query or load a filter from a query, but Access has no provision for saving a filter as a filter. The following sections describe how to add criteria to filter records and to add a sort order in the Filter Design window.

## ADDING A MULTIFIELD SORT AND COMPOUND FILTER CRITERIA

In its default configuration, the Datasheet toolbar doesn't have an Advanced Filter/Sort button. Instead, you start the advanced filter/sort operation from the **Records** menu by choosing **F**ilter, **A**dvanced Filter/Sort. To create a filter on the Orders table (which provides more records to filter than the Customers table), follow these steps:

1. Close and reopen the Orders table in Datasheet view to clear filter or sort criteria you applied previously.
2. From the **Records** menu, choose **F**ilter, **A**dvanced Filter/Sort to display the Filter window (see Figure 6.18). The default filter name, Filter1, is concatenated with the table name to create the default name of the first filter, OrdersFilter1. The Field List window for the Orders table appears in the upper pane of the Filter window.



**Figure 6.18**  
The Filter Design window opened by choosing **F**ilter, **A**dvanced Filter/Sort from the **Records** menu.

Tip #46 from

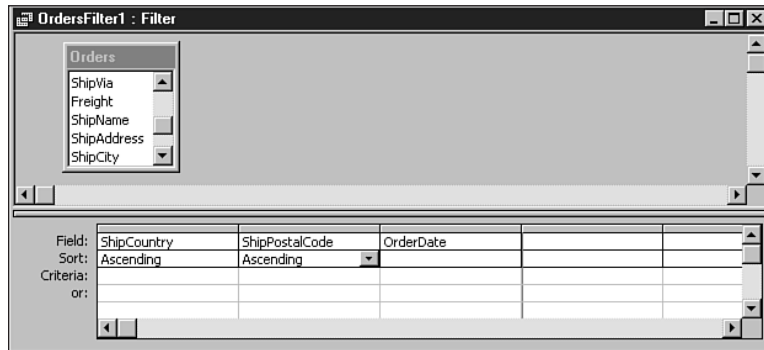
*RJ*



Although the Datasheet toolbar doesn't have an Advanced Filter/Sort command button in its default configuration, you can customize the Datasheet toolbar to add an Advanced Filter/Sort button.

- One field that you might want to use to sort or limit displayed records is OrderID. Click it in the field list in the upper pane and drag it to the first column of the Field row of the Filter Design grid in the lower pane. (When your mouse pointer reaches the lower pane, the pointer turns into a field symbol.)
- Repeat step 3 for other fields on which you want to sort or establish criteria. Candidates are CustomerID, ShipName, ShipCountry, ShipPostalCode, OrderDate, and ShippedDate.
- Add an ascending sort to the ShipCountry and ShipPostalCode fields to check the sort-order capabilities of your first advanced filter. Your Filter Design window appears as shown in Figure 6.19.

**Figure 6.19**  
Adding fields and sort orders to the Filter Design window.



- Click the Apply Filter toolbar button or choose Apply Filter/Sort from the Filter menu.
- Use the horizontal scroll bar of the datasheet to reveal the ShipCountry and ShipPostalCode fields. Your sorted table appears as shown in Figure 6.20.

**Figure 6.20**  
The Orders table, ordered by the ShipCountry and ShipPostalCode fields.

Order ID	Customer	Employee	Ship Postal Code	Ship Country
10898	Océano Atlántico Ltda.	Peacock, Margaret	1010	Argentina
11019	Rancho grande	Suyama, Michael	1010	Argentina
10986	Océano Atlántico Ltda.	Callahan, Laura	1010	Argentina
10958	Océano Atlántico Ltda.	King, Robert	1010	Argentina
10937	Cactus Comidas para llevar	King, Robert	1010	Argentina
10716	Rancho grande	Peacock, Margaret	1010	Argentina
10409	Océano Atlántico Ltda.	Leverling, Janet	1010	Argentina
10916	Rancho grande	Davolio, Nancy	1010	Argentina
11054	Cactus Comidas para llevar	Callahan, Laura	1010	Argentina
10881	Cactus Comidas para llevar	Peacock, Margaret	1010	Argentina
10448	Rancho grande	Peacock, Margaret	1010	Argentina
10828	Rancho grande	Dodsworth, Anne	1010	Argentina
10782	Cactus Comidas para llevar	Dodsworth, Anne	1010	Argentina
10819	Cactus Comidas para llevar	Fuller, Andrew	1010	Argentina
10521	Cactus Comidas para llevar	Callahan, Laura	1010	Argentina
10531	Océano Atlántico Ltda.	King, Robert	1010	Argentina
10686	Piccolo und mehr	Fuller, Andrew	5020	Austria

Record: 11 of 830

8. From the **Records** menu, choose **Filter**, **Advanced Filter/Sort** to display the Filter Design window so that you can edit the filter criteria. Access displays the Filter Design window with all the criteria from the preceding filter already entered.
9. Type **USA** in the Criteria row of the Ship Country column to limit records to those orders shipped to an address in the United States. Access automatically adds double quotes (") around "USA", indicating that the entry is text, not a number.
10. Click the Apply Filter button of the toolbar or choose **Apply Filter/Sort** from the Filter menu and scroll to display the sorted fields. Only records with destinations in the United States appear, as shown in Figure 6.21. (The first three columns of the table have been frozen, and the Ship Country and Ship Postal Code columns have been scrolled into visibility to achieve the table appearance in Figure 6.21.)

Order ID	Customer	Employee	Ship Postal Code	Ship Country
10624	The Cracker Box	Peacock, Margaret	59801	USA
10775	The Cracker Box	King, Robert	59801	USA
11003	The Cracker Box	Leverling, Janet	59801	USA
10271	Split Rail Beer & Ale	Suyama, Michael	82520	USA
10385	Split Rail Beer & Ale	Davolio, Nancy	82520	USA
10369	Split Rail Beer & Ale	Callahan, Laura	82520	USA
10349	Split Rail Beer & Ale	King, Robert	82520	USA
10821	Split Rail Beer & Ale	Davolio, Nancy	82520	USA
10432	Split Rail Beer & Ale	Leverling, Janet	82520	USA
10974	Split Rail Beer & Ale	Leverling, Janet	82520	USA
10329	Split Rail Beer & Ale	Peacock, Margaret	82520	USA
10756	Split Rail Beer & Ale	Callahan, Laura	82520	USA
10678	Save-a-lot Markets	King, Robert	83720	USA
10748	Save-a-lot Markets	Leverling, Janet	83720	USA
10757	Save-a-lot Markets	Suyama, Michael	83720	USA
10815	Save-a-lot Markets	Fuller, Andrew	83720	USA
10607	Save-a-lot Markets	Buchanan, Steven	83720	USA

**Figure 6.21**  
The result of applying a "USA" criterion to the Ship Country column.

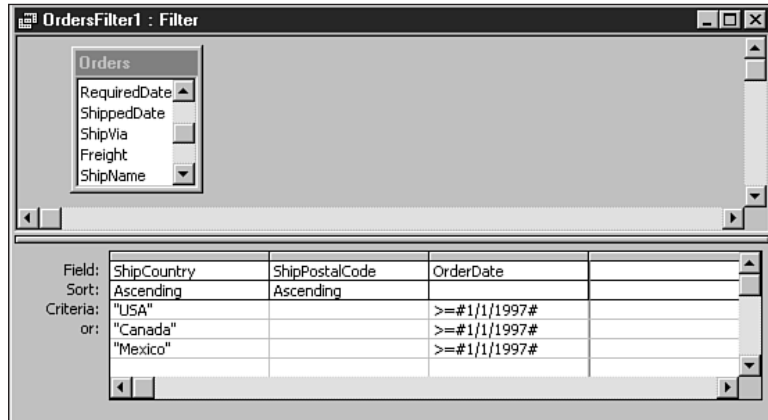
## USING COMPOSITE CRITERIA

You can apply composite criteria to expand or further limit the records that Access displays. Composite criteria are applied to more than one field. To display all orders received on or after 1/1/1997 with destinations in North America, try the following:

1. From the **Records** menu, choose **Filter**, **Advanced Filter/Sort** to display the Filter Design window.
2. Type **Canada** in the second criteria row of the ShipCountry column and **Mexico** in the third row; then move the caret to a different cell. When you add criteria under one another, the effect is to make the criteria alternative—that is, combined in a logical **Or** condition.
3. Type **>=#1/1/1997#** in the first criteria line of the OrderDate field. When you add criteria on the same line as another criterion, the criteria is additive (a logical **And** condition)—that is, orders for placed on or after 1/1/1997. The # symbols indicate to Access that the enclosed value is of the Date/Time data type.

4. Press F2 to select the date entry you made in step 3 and then press Ctrl+C to copy the expression to the Clipboard. Position the caret in the second row of the Order Date column and press Ctrl+V to add the same expression for Canada. Repeat this process to add the date criterion for Mexican orders. Your Filter Design grid now appears as shown in Figure 6.22. You must repeat the date criterion for each country criterion because of a limitation in constructing SQL statements from Access query grids, which is discussed shortly.
5. Click the Apply Filter button to display your newly filtered datasheet (see Figure 6.23, which is scrolled to show the three countries).

**Figure 6.22**  
The Filter grid with composite criteria added.



**Figure 6.23**  
The result of the filter of Figure 6.22 applied to the Orders datasheet.


Order ID	Customer	Employee	Ship Postal Code	Ship Country
10495	Laughing Bacchus Wine Cellars	Leverling, Janet	V3F 2K1	Canada
10620	Laughing Bacchus Wine Cellars	Fuller, Andrew	V3F 2K1	Canada
10759	Ana Trujillo Emparedados y hel...	Leverling, Janet	05021	Mexico
10926	Ana Trujillo Emparedados y hel...	Peacock, Margaret	05021	Mexico
10625	Ana Trujillo Emparedados y hel...	Leverling, Janet	05021	Mexico
10573	Antonio Moreno Taquería	King, Robert	05023	Mexico
10535	Antonio Moreno Taquería	Peacock, Margaret	05023	Mexico
10507	Antonio Moreno Taquería	King, Robert	05023	Mexico
10856	Antonio Moreno Taquería	Leverling, Janet	05023	Mexico
10682	Antonio Moreno Taquería	Leverling, Janet	05023	Mexico
10677	Antonio Moreno Taquería	Davolio, Nancy	05023	Mexico
11069	Tortuga Restaurante	Davolio, Nancy	05033	Mexico
11073	Pericles Comidas clásicas	Fuller, Andrew	05033	Mexico
10502	Pericles Comidas clásicas	Fuller, Andrew	05033	Mexico
10995	Pericles Comidas clásicas	Davolio, Nancy	05033	Mexico
10915	Tortuga Restaurante	Fuller, Andrew	05033	Mexico
10676	Tortuga Restaurante	Fuller, Andrew	05033	Mexico
10576	Tortuga Restaurante	Leverling, Janet	05033	Mexico
10842	Tortuga Restaurante	Davolio, Nancy	05033	Mexico
10518	Tortuga Restaurante	Peacock, Margaret	05033	Mexico
10474	Pericles Comidas clásicas	Buchanan, Steven	05033	Mexico
10624	The Cracker Box	Peacock, Margaret	59801	USA
11003	The Cracker Box	Leverling, Janet	59801	USA

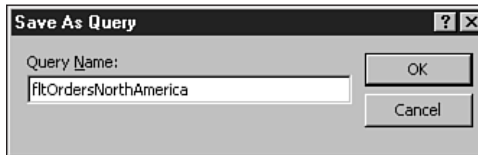
- ➔ To become more familiar with the power of selecting data with criteria, see “Using the Query Design Window,” p. 298.

## SAVING YOUR FILTER AS A QUERY AND LOADING A FILTER


Access doesn't have a persistent Filter object. A *persistent* database object is one you create that's stored as a component of your database's .mdb file. All persistent database objects appear as items in one of the list boxes of the Database window. A filter is equivalent to a single-table query, so Access lets you save your filter as a QueryDef object. Access saves the names of the filters associated with each table in the system tables of your database when you save a filter as a query. This feature is the principal advantage of using a filter rather than a query when only a single table is involved.

To save your filter and remove the filter from the Orders table, follow these steps:



1. From the Records menu, choose Filter, Advanced Filter/Sort to display the Filter Design window if it isn't already displayed.
-  2. From the File menu, choose Save As Query to display the Save as Query dialog or click the Save as Query toolbar button.
3. Enter a descriptive name—such as **fltOrdersNorthAmerica**—for your filter in the Query Name text box. Using the **flt** prefix distinguishes the filters you save from conventional queries (see Figure 6.24).



**Figure 6.24**  
Naming the QueryDef object that contains a filter.

4. Click OK to save the filter and close the Filter window.
-  5. Click the Remove Filter toolbar button to remove the filter from the Orders datasheet.
6. A filter remains in memory while the table to which it applies is open. To close the filter, close the Orders table.

Re-creating a filter from the filter you saved as a query requires the following steps:

-  1. Reopen the Orders table in Datasheet view.
2. From the Records menu, choose Filter, Advanced Filter/Sort to open the Filters window with an empty filter.
-  3. Click the Load from Query toolbar button or choose Load from Query from the File menu to display the Applicable Filter dialog (see Figure 6.25).
4. Double-click the **fltOrdersNorthAmerica** filter to load the saved query into the Filter window.



**Figure 6.25**  
A saved filter listed in the  
Applicable Filter dialog.

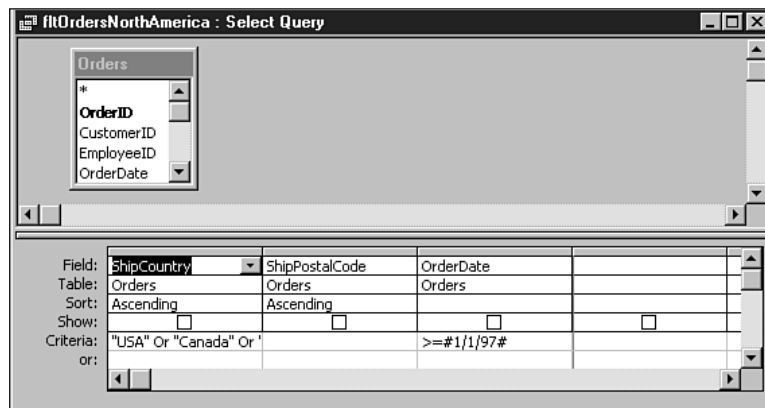


5. Click the Apply Filter toolbar button to display the resulting filter set in the Orders datasheet.

You can save the preceding steps by simply executing the saved query. You execute a query the same way you open a table:

1. Close the Orders table.
2. Click the Database window's Queries shortcut to list the saved queries.
3. Double-click the fltOrdersNorthAmerica item. The datasheet of the fltOrdersNorthAmerica: Select Query window that appears is identical to the datasheet you created in step 5 of the preceding operation.
4. Click the Design View toolbar button to display the query design (see Figure 6.26). If you added more than the three columns to the filter, columns in which no selection criteria or sort order were entered don't appear in the query's grid.

**Figure 6.26**  
The Query Design view of  
a saved filter.

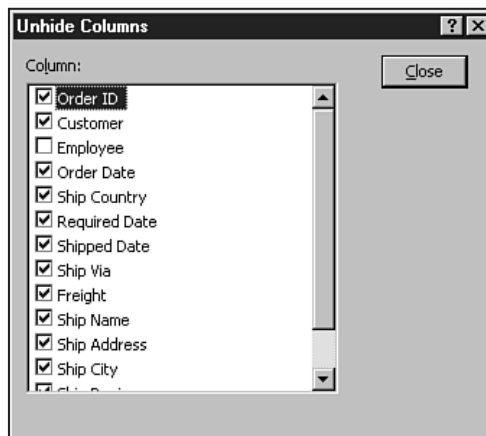


Access adds a multitude of parentheses, as well as table name qualifiers, to the field names of the statements created from QBE grids. Most of the parentheses are superfluous; they're present to help the Jet database engine's query parser execute queries that are more complex. Table name qualifiers aren't necessary in an SQL statement when only one table is included in the FROM clause.

## CUSTOMIZING DATASHEET VIEW

To customize the appearance of the Datasheet view, you can hide the fields you don't want to appear in your datasheet, change the height of the record rows, eliminate the gridlines, and select a different font for your display. The following list describes each option for customizing Table and Query Datasheet views:

- To hide a field, select it by clicking its header or placing the caret in the column for the field. Then choose **H**ide Columns from the **F**ormat menu.
- To show a hidden field, choose **U**nhide Columns from the **F**ormat menu to display the Unhide Columns dialog (see Figure 6.27). A mark next to the field name in the Column list indicates columns appearing in Datasheet view. Click the box to the left of the field name to toggle between hiding and showing the column.

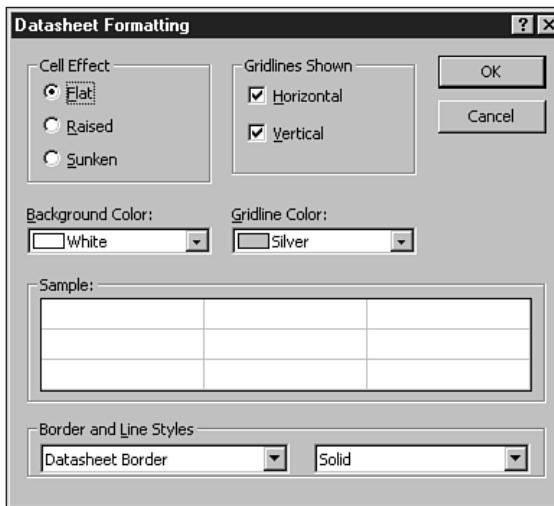


**Figure 6.27**  
The Unhide Columns dialog, which allows you to show and hide datasheet fields.

- To change the font used to display and print the datasheet, use the Font drop-down list on the Formatting toolbar (if it's displayed) or choose **F**ont from the **F**ormat menu to display the Font dialog. (The Font dialog is one of the common dialogs of Windows 95 and Windows NT 4.0. Other common dialogs include the Open and Save dialogs.)
- To remove gridlines from the display and printed versions of the datasheet, use the Gridlines Shown drop-down list on the Formatting toolbar or choose **D**atasheet from the **F**ormat menu. If you use the Gridlines Shown drop-down list, Access displays a palette of four gridline display choices: Both, Horizontal, Vertical, and None; click the button corresponding to the gridline display you want. If you use the **F**ormat menu, Access displays the Datasheet Formatting dialog, shown in Fig 6.28, which contains check boxes for the horizontal and vertical gridlines. Select or clear the check boxes for the desired gridline display.



**Figure 6.28**  
Formatting the datasheet.



- To change the height of the rows as displayed and printed, position the mouse pointer at the bottom edge of one of the record selector buttons. The pointer turns into a double-headed arrow (see Figure 6.29). Drag the bottom edge of the button to adjust the height of all the rows. Alternatively, choose **R**ow Height from the **F**ormat menu and set the height in points in the Row Height dialog. (Multiply the size of your font by about 1.25 to obtain normal row spacing; printers call 10-point type with 12-point spacing 10 on 12.)
- To change the width of the columns to accommodate a larger font, choose **C**olumn Width from the **F**ormat menu and then click the Best Fit button to let Access determine the size of your columns. Double-clicking the divider You might need to adjust individual column widths by dragging the right edge of the field header with the mouse.

Figure 6.29 shows the Orders datasheet with several columns hidden, gridlines off, 9-point Garamond TrueType font, and the height of the rows adjusted to accommodate the smaller font.

**Tip #47 from**

*RJ*

For the greatest printing speed, choose a typeface family native to your printer, such as Helvetica for PostScript or Swiss for LaserJet printers. (Native fonts are indicated by a printer and page symbol next to the typeface family name in the Font list.) Alternatively, choose a TrueType face, such as the default Arial, for display and printing.

Order ID	Customer	Employee	Order Date	Required Date
10248	Vins et alcools Chevalier	Buchanan, Steven	04-Jul-1996	01-Aug-1996
10249	Toms Spezialitäten	Suyama, Michael	05-Jul-1996	16-Aug-1996
10250	Hanari Carnes	Peacock, Margaret	08-Jul-1996	05-Aug-1996
10251	Victuailles en stock	Levensing, Janet	08-Jul-1996	05-Aug-1996
10252	Suprêmes délicates	Peacock, Margaret	08-Jul-1996	06-Aug-1996
10253	Hanari Carnes	Levensing, Janet	10-Jul-1996	24-Jul-1996
10254	Chop-suey Chinese	Buchanan, Steven	11-Jul-1996	08-Aug-1996
10255	Richter Supermarkt	Dodsworth, Anne	12-Jul-1996	09-Aug-1996
10256	Wellington Importadora	Levensing, Janet	15-Jul-1996	12-Aug-1996
10257	HILARION-Abastos	Peacock, Margaret	16-Jul-1996	13-Aug-1996
10258	Ernst Handel	Davolio, Nancy	17-Jul-1996	14-Aug-1996
10259	Centro comercial Moctezuma	Peacock, Margaret	18-Jul-1996	15-Aug-1996
10260	Ottlieb's Käseladen	Peacock, Margaret	19-Jul-1996	16-Aug-1996
10261	Que Delicia	Peacock, Margaret	19-Jul-1996	16-Aug-1996
10262	Rattlesnake Canyon Grocery	Callahan, Laura	22-Jul-1996	19-Aug-1996
10263	Ernst Handel	Dodsworth, Anne	23-Jul-1996	20-Aug-1996
10264	Folk och fi HB	Suyama, Michael	24-Jul-1996	21-Aug-1996
10265	Blondel père et fils	Fuller, Andrew	25-Jul-1996	22-Aug-1996
10266	Wartian Herkku	Levensing, Janet	26-Jul-1996	06-Sep-1996
10267	Frankenversand	Peacock, Margaret	29-Jul-1996	26-Aug-1996
10268	GROSELLA-Restaurants	Callahan, Laura	30-Jul-1996	27-Aug-1996
10269	White Clover Markets	Buchanan, Steven	31-Jul-1996	14-Aug-1996

**Figure 6.29**  
The Orders datasheet in a customized view.

## COPYING, EXPORTING, AND MAILING SORTED AND FILTERED DATA

A primary use for filters and customized datasheets is for exporting the filtered records to another application, such as Microsoft Excel or Word. Various methods for exporting filtered and custom-formatted records are available:

➔ For more information on exporting sets of records for use by other applications, see “Exporting Data from Access Tables,” p. 283.



- Copy the entire datasheet to the Clipboard and then paste the datasheet into the other application. Hidden columns don't appear, but formatting (font, font attributes, and row height) is preserved.
- Use the Save As/Export feature to export the datasheet to an Excel worksheet (.xls) or a Rich Text Format (.rtf) file for Word or other Windows word processing applications. (From the File menu, choose Save As/Export, select To an External File or Database in the Save As dialog, and then select the file type you want in the Save as Type drop-down list of the Save Table In dialog.) Save As/Export preserves the attributes you use to customize the filtered and sorted data when you choose Excel format. Hidden columns, however, appear when you open the resulting file in any version of Excel.



- Choose Tool, Office Links, Analyze It with MS Excel to save the filtered or sorted data in an Excel worksheet; choose Tool, Office Links, Publish It with MS Word to save the data as an RTF document. Whether you choose to Analyze It or Publish It, Access starts Excel or Word with the exported document displayed.

- Choose **T**ool, Office **L**inks, **M**erge It with MS Word to create form letters with Microsoft Word. Using Mail Merge with Microsoft Word is discussed in Chapter 21, “Using Access with Microsoft Word and Mail Merge.”
- Send the file as an attachment to a Microsoft Mail or Exchange message. Hidden columns don’t appear, but formatting isn’t preserved in Microsoft Mail messages. (The attached file is in Excel BIFF format.)

If you make the Database window the active window and choose **F**ile, **S**ave **A**s/Export, the entire content of the table is exported regardless of the filter you added.

## TROUBLESHOOTING

### FILTER BY FORM DOESN’T FIND THE EXPECTED RECORDS

*Either too few records or records extraneous to the filter appear when using Filter by Form.*

Access keeps your last filter settings for a table until you close the table. If you’ve applied a different filter—whether through filter by selection or filter by form earlier in your current work session—Access may be applying additional filter criteria that you’re not expecting. Choose **R**emove Filter/Sort from the **R**ecords menu to clear all previous filter criteria and ensure that the new filter criteria you enter are the only ones in effect.

## IN THE REAL WORLD—COMPUTER-BASED SORTING AND SEARCHING

Donald E. Knuth’s *Sorting and Searching*, volume 3 of his *The Art of Computer Programming* series, is the seminal work on computer algorithms (programs) to perform sorts and searches. Dr. Knuth is Professor Emeritus of The Art of Computer Programming at Stanford University, and is equally well known in the computer-based publishing industry for his TeX and METAFONT type design and typesetting programs. Addison-Wesley published the first edition of *Sorting and Searching* in 1973. There’s a good probability that every student who was granted a computer science degree during and after the mid-1970s has a well worn copy of Knuth’s classic text. Knuth updated *Sorting and Searching* with a second edition in mid-1998; the book remains required reading for assembly-language programmers, but you need a good foundation in combinatorial mathematics and set theory to fully understand the contents.

### THE INFLUENCE OF COMPUTER POWER ON KNUTH’S APPROACH

As Knuth points out in the first page of the chapter on sorting, a better term to describe the process is “ordering.” (The 724-page book has only two chapters—Chapter 6, “Sorting,” and Chapter 7, “Searching”). Structured Query Language (SQL) takes Knuth’s advice and uses **ORDER BY** clauses to define sort sequences. One of the dictionary definitions of the verb

“to sort” is “to arrange according to characteristics,” and the definition of “order” includes “arrange” as a synonym. Both sort and order infer that the process physically moves records; this was the case in the 1970s, a period when punched cards were the dominant means of computer data entry and storage. The advent of magnetic tape drives eliminated the need for punched card sorting and collating machines, but sorting still required individual records be rewritten to tape in the chosen order. Decks of punched cards and magnetic tape use sequential access, so sorting by merging expedites searching—assuming that records matching your search criteria appear early in the deck or tape. Thus the “Sorting” chapter precedes “Searching.”

Today’s PCs are far more powerful than the largest mainframe computers of the 1970s. Multi-gigabyte fixed disk drives in PC clients dwarf the storage capabilities of tape and multi-spindle disk drives of the 1970s and early 1980s. When you apply a sort order to a Jet table or query, records don’t change position; Access simply displays the table records in the desired sequence. If you have plenty of RAM, all the record resequencing occurs in memory because Jet picks those records needed to populate the visible rows of the datasheet, plus some additional records to make page down operations go faster. When Jet runs out of RAM, temporary disk files store the overflow. It’s no longer necessary to optimize searching by prior sorting; the brute force approach (searching a random-order file) usually is fast enough for files of moderate (10,000 records) to even large size (100,000+ records).

## KNUTH AND INDEXES

One of Knuth’s other contributions to computer science is his analysis of binary tree searching on ordered tables. An ordered table is one in which the records are physically or logically organized in alphabetic or numeric order by the key field being searched. Binary tree searches optimize the searching process by minimizing the number of comparisons required to zero-in on the record(s) with the desired value. Knuth went into great detail on “hashing” algorithms that create a set of unique values to identify each record. Hashing greatly speeds searching on the key field of tables when the key field comprises more than a few characters. The “hash tables” of early databases are called indexes today. Access 2000’s Microsoft Data Engine (MSDE) and SQL Server 7.0 still generate temporary hash tables when needed to speed query processing.

Two Russian mathematicians, G. M. Adelson-Velski and E. M. Landis, proposed a balanced binary tree indexing structure in 1963. In a balanced binary tree structure, the length of the search path to any ordered record is never more than 45 percent longer than the optimum. Jet, like most other desktop RDBMSs, has a balanced binary tree (B-tree) structure; a Jet primary key index orders the records.

When you search on a field that isn’t ordered, called a secondary key, search efficiency drops rapidly. The early 1970s approaches, including a process called *combinatorial hashing*, have given way to secondary indexes on unordered keys, such as postal codes in a table where the primary key is a customer name or code. Each secondary key you add decreases the speed at which you can insert new records because of the need to rebalance the trees of

the indexes. Despite the performance of today's PC clients and servers, it's still a good idea to minimize the number of secondary indexes on tables used for online transaction processing (OLTP).

It isn't necessary to understand the underlying details of hashing and balanced B-tree indexes to take full advantage of Access's searching and sorting features. Familiarity with the surprisingly efficient methodology employed in the early days of computing, however, offers a useful perspective on the dramatic improvements in database design and implementation that's occurred in the 27 years since Knuth published the first edition *Searching and Sorting*.

--rj

# CHAPTER 12



## CREATING AND USING FORMS

### In this chapter

- Understanding the Role of Access Forms and Controls 434
- Creating a Transaction-Processing Form with the Form Wizard 435
- Using the Form Design Window 442
- Selecting, Editing, and Moving Form Elements and Controls 457
- Rearranging the Personnel Actions Form 464
- Using Transaction-Processing Forms 468
- Modifying the Properties of a Form or Control After Testing 473
- In the Real World—The Art of Form Design 474



## UNDERSTANDING THE ROLE OF ACCESS FORMS AND CONTROLS

Access *forms* create the user interface to your tables. Although you can use Table view and Query view to perform many of the same functions as forms, forms offer the advantage of presenting data in an organized and attractive manner. You can arrange the location of fields on a form so that data entry or editing operations for a single record follow a left-to-right, top-to-bottom sequence. Forms let you create multiple-choice selections for fields that use shorthand codes to represent a set of allowable values. A properly designed form speeds data entry and minimizes operator keying errors.

Forms are constructed from a collection of individual design elements called *controls* or *control objects*. Controls are the components you see in the windows and dialogs of Access and other Windows applications. You use *text boxes* to enter and edit data, *labels* to hold field names, and *object frames* to display graphics. A form consists of a window in which you place two types of controls: dynamic controls that display the data from your tables and static controls for labels or logos.

This chapter concentrates on creating forms that use dynamic text-based controls and *subforms*. A subform is a datasheet or form contained within a form. Part V, “Integrating Access with Other Office 2000 Applications,” shows you how to use Microsoft ActiveX technology to incorporate graphs and other graphical elements in forms and reports.

**NEW 2000** Following are the new form-related features of Access 2000:



- *Subdatasheets in subforms* let you display lower levels of one-to-many relationships in datasheet-style subforms.
- *In-situ subform* editing enables simultaneous Design mode editing of forms and subforms. The Design view of the subform appears within the region you assign to the Subform view in Run mode.
- *Name AutoCorrect* automatically updates your forms and underlying queries for changes to object names, such as altering the name of a field in a table. To take advantage of Name Autocorrect, you must mark the Track Name Autocorrect Info check box on the General page of the Options dialog before making changes.
- *Control grouping* lets you define groups of controls that you can relocate as a single element.
- *Form view editing* lets you change many properties of controls without changing to Design mode.
- *Justified and Vertical Alignment options* for labels improve the appearance of forms and reports.
- *Movie tool* lets you add the Windows Media Player to forms and play .asf (ActiveX Streaming Format) and .avi (Audio-Video Interleaved) files to entertain users of your applications. Apparently, Microsoft's idea is to provide easy access to training videos for Access applications.
- *Added graphics formats* accept Web-standard .gif and .jpg files, plus additional graphics file formats, as background images for forms.



## CREATING A TRANSACTION-PROCESSING FORM WITH THE FORM WIZARD

The content and appearance of your form depend on its use in your database application. Database applications fall into two basic categories:

- *Transaction processing* applications add new records to tables or edit existing records. Transaction-processing applications require write access to (permissions for) the tables that are linked to the form.
- *Decision-support* applications supply information as graphs, tables, or individual data elements but don't allow the user to add or edit data. Decision-support applications require only read access to the tables that are linked to the form.

The form that you create in this example is typical of transaction-processing forms used to add new *records* to the *many* side of a *one-to-many relationship*. Adding line items to an invoice is an example of when a form of this kind—called a *one-to-many form*—is necessary. The object of the Personnel Actions form is to add new records to the Personnel Actions *table* or to let you edit the existing records.

### Note

If you didn't add the Personnel Actions table shown in Figure 12.3 to the Northwind Traders database in Chapter 4, "Working with Access Databases and Tables," or Chapter 5, "Entering, Editing, and Validating Data in Tables," do so before proceeding with this example.



If you didn't add records to the Personnel Actions table when you created it in Chapter 4, "Working with Access Databases and Tables," you can add them with the Personnel Actions form you're going to create now with the assistance of Access's Form Wizard. Alternatively, you can import the personnel actions table from the Persacts.mdb database in the \Chaptr12 folder of the accompanying CD-ROM.

### Note

If you import the Personnel Actions table from Persacts.mdb, make sure to establish a one-to-many relationship between the Employees and Personnel Actions table, as described in Chapter 4.

➔ If you need information on creating or altering relationships, see "Establishing Relationships between Tables," p. 166.

## CHOOSING DATA SOURCES FOR THE FORM

The Personnel Actions form that you create in this exercise lets you add new entries to the Personnel Actions table. The form also has a subform that displays all previous personnel actions for a given employee. The majority of forms found in common database applications are one-to-many forms, and most one-to-many forms require a subform to display data from the many side of the relationship.

The Personnel Actions form is intended as both a transaction-processing form and a decision-support form. The Employees table is the source of the data for the main form, and you use a subform to display, add, and edit records to the Personnel Actions table. This method lets you add new employees to the Employees table as well as add new Personnel Actions records for any employee.

## CREATING THE BASIC FORM WITH THE FORM WIZARD

The easiest way to create a form and subform is with the Access Form Wizard. The Form Wizard lets you create forms (with or without subforms) that contain fields from one or more tables or queries. The Form Wizard creates the basic design of the form and adds text box controls to display and edit the values of data items.

To create in Northwind.mdb the Personnel Actions form with the Form Wizard, follow these steps:

1. Click the Forms shortcut of the Database window and then click the New button to open the New Form dialog.
2. Select Form Wizard from the list in the New Form dialog. Access 2000's Form Wizard lets you create forms with or without a subform. The Design View choice opens a blank form in Design mode.

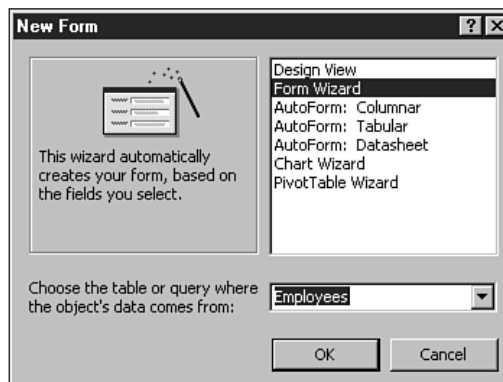
### Note

The various AutoForm choices automatically create forms with the specified layouts: Columnar, Tabular, and Datasheet. The Chart Wizard choice invokes the Chart Wizard to add a graph or chart to your form, and the PivotTable Wizard choice helps you create a form based on Excel pivot tables.

➔ For examples of use of the Chart Wizard and PivotTable Wizard, see "Using the Chart Wizard to Create an Unlinked Graph," p. 712 and "Generating a PivotTable Form with the Wizard," p. 747, respectively.

3. The drop-down list at the bottom of the New Form dialog lists the existing tables and queries that can serve as a source of data for a form. Select the Employees table (see Figure 12.1).

**Figure 12.1**  
The New Form dialog with initial selections for the Personnel Actions form.



4. Click OK, and Access displays the first dialog of the Form Wizard.
5. Click to select the EmployeeID field in the Available Fields list, then click the > button to move the EmployeeID field from the Available Fields list to the Selected Fields list. Alternatively, you can double-click the field name to move it.

Repeat this step for the LastName, FirstName, and Title fields of the Employees table so that you can edit data in these fields (see Figure 12.2).

**Figure 12.2**  
Selecting the  
Employees fields to  
display in your form.

6. Open the Tables/Queries drop-down list and select the Personnel Actions table. The Available Fields list changes to show the available fields in the Personnel Actions table.
7. Click the >> button to copy all of the fields from the Available Fields list to the Selected Fields list.

#### Note

If you haven't established a one-to-many relationship between the Employees and Personnel Actions table, you receive an error message at this point. When you acknowledge the error message, the Relationships window opens. Add the relationship between EmployeeID and paID and close the Relationships window. You must then start over from step 1.

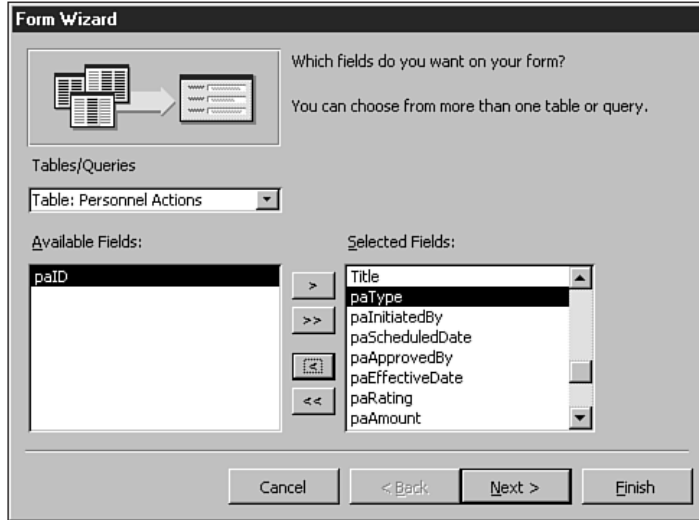
#### Tip #96 from

*RJ*

It's easy to change the sequence of location of form fields from the default—the order of fields in the table—proposed by the Wizard. Select the first field and click > to position it at the upper left corner of the form. Select and click > to add the remaining fields in the sequence you want. If you've added many fields to a form, but later decide to change your layout, it's usually faster to delete the newly created form, and then start over with the Wizard.

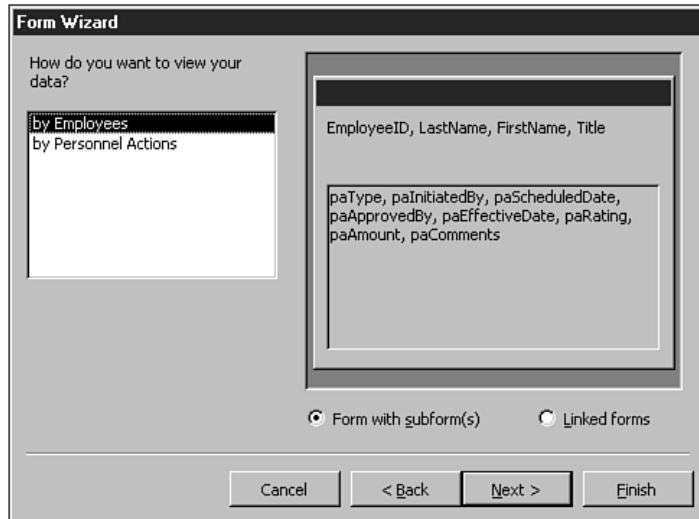
- The EmployeeID field from the Employees table is included in the Selected Fields list, so you don't need to include the paID field from the Personnel Actions table on the form. Select the paID field in the list of Selected Fields and then click the < button to move this field out of the Selected Fields list and back to the Available Fields list (see Figure 12.3).

**Figure 12.3**  
Selecting all but one of the Personnel Actions fields.



- Click the Next button to display the Form Wizard's second dialog, shown in Figure 12.4.

**Figure 12.4**  
The Form Wizard's default values for a form-subform relationship.



**Note**

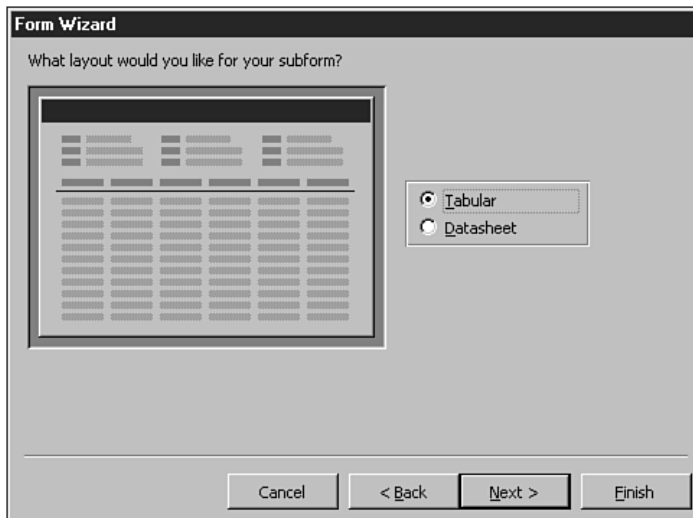
If you realize that you made an error—or if you change your mind about something—and you're on a later step of the Form Wizard, you can click the Back button to return to and modify your previous choices. You can also click Cancel at any time to abort the form creation and get back to the Database window.

- The fields you've selected to appear on the form come from two different tables, so the Form Wizard asks how you want to view the data. Because you want to view the data by employee, with the employee's personnel action data in a subform, accept By Employees (the default) and make sure that the Form with Subform(s) option is selected (see Figure 12.4). The picture in the upper-right area of the Form Wizard dialog shows the fields of the master form (from the Employees table), with a sunken frame containing the fields of the subform (from the Personnel Actions table).

**Note**

In one-to-many forms, the subform needs to be linked to the main form so that all records displayed in the subform are related to the current record displayed in the main form. The Access 2000 Form Wizard obtains the information it needs to link the main form and subform from a join in the Relationships window (in this case, between the Employees table and the Personnel Actions table).

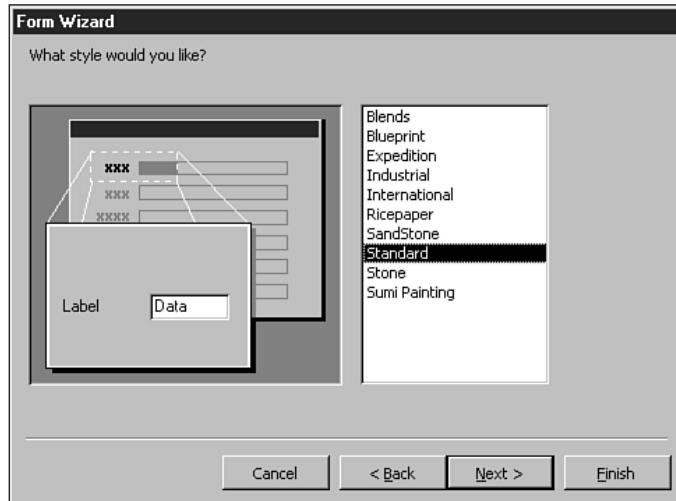
- Click Next to open the third Wizard dialog, which asks you to select the layout style for the subform. Select the Tabular option (see Figure 12.5). This option creates a subform that displays the data from the Personnel Actions table in a tabular format that is similar to Datasheet view but has a structure in which you can change the formatting (colors, column headings, and so on).



**Figure 12.5**  
Selecting a tabular layout for the Personnel Actions subform.

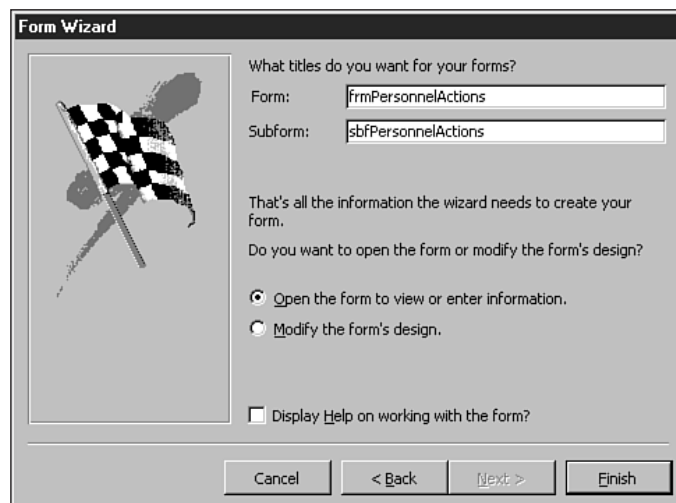
- Click Next to move to the fourth Wizard dialog, which asks you to select a style for the new form. The Access Form Wizard has several predefined styles. Because the sample form you're creating is for use by a data-entry operator and doesn't require special effects to highlight or decorate any fields, accept the Standard default (see Figure 12.6).

**Figure 12.6**  
Selecting a predefined form style in the Form Wizard.



- Click Next to open the last Form Wizard dialog, which asks you to type a name for the master form and subform. Type **frmPersonnelActions** in the Form text box and **sbfrmPersonnelActions** in the Subform text box (see Figure 12.7). Accept the default Open the Form to View or Enter Information option and then click Finish to complete your form. (If you want Access to display help for working with your completed form, select the Display Help on Working with the Form check box before you click Finish.)

**Figure 12.7**  
Typing a name for the main form and its subform.



**Tip #97 from***RJ*

Access suggests default names for the form and any subforms; but the default names seldom are appropriate to production databases. When naming forms, make sure to specify names that are indicative of what the form really does. Also, make sure that you include the name of the main form (or an abbreviation) in the name of your subform so that the relationship between the form and subform is evident. Using standard Access naming conventions—frm and sbf prefixes for forms and subforms, respectively—is the approach used by most Access developers. You later can set the Caption property value of the form to a name meaningful to users.

The Form Wizard creates and automatically saves the form and subform. After creating the form, the Wizard displays the form with the Text Box: Employee ID properties sheet superimposed. Close the properties sheet to view the entire form (see Figure 12.8).

Type	Initiated By	Scheduled	Approved By	Effective	Rating	Amount
H	1	5/1/92		5/1/92		2,000.00

**Figure 12.8**

The basic Personnel Action form created by the Form Wizard.

On the main form, the Form Wizard creates a single column of text boxes—each with an associated label—for entering or editing data values in each field from the Employees table that you placed on this form. The subform contains all the fields from the Personnel Actions table (except the paID field) arranged in a tabular layout. Access uses the field names as default text box labels and also as column headings for the tabular subform. Access uses the name that you entered for the subform as the label for the subform area.

In Figure 12.8, notice that the paAmount and paComments fields are partially or completely obscured, and scrollbars appear in the subform area. The subform is larger than the area created for it in the main form, so Access automatically adds scrollbars to let you access all data displayed in the subform. The subform's record navigation buttons let you scroll all records related to the current record of the main form.

The basic form as created by the Form Wizard is immediately usable, but could benefit from cosmetic adjustments to the layout of both the main form and subform. The remaining discussions and exercises in this chapter show you how to modify forms created with the Form Wizard; you can apply these form-editing skills when you create your own forms from scratch, as described in the next chapter.



**Tip #98 from**

RJ

No matter how expert you become at designing Access forms, using the Form Wizard to create the basic form design saves you time.

## USING THE FORM DESIGN WINDOW



To modify the design of your new form, click the Design View button on the toolbar to open the Form Design window (see Figure 12.9, where the Design window has been maximized and the height of the form has been increased).



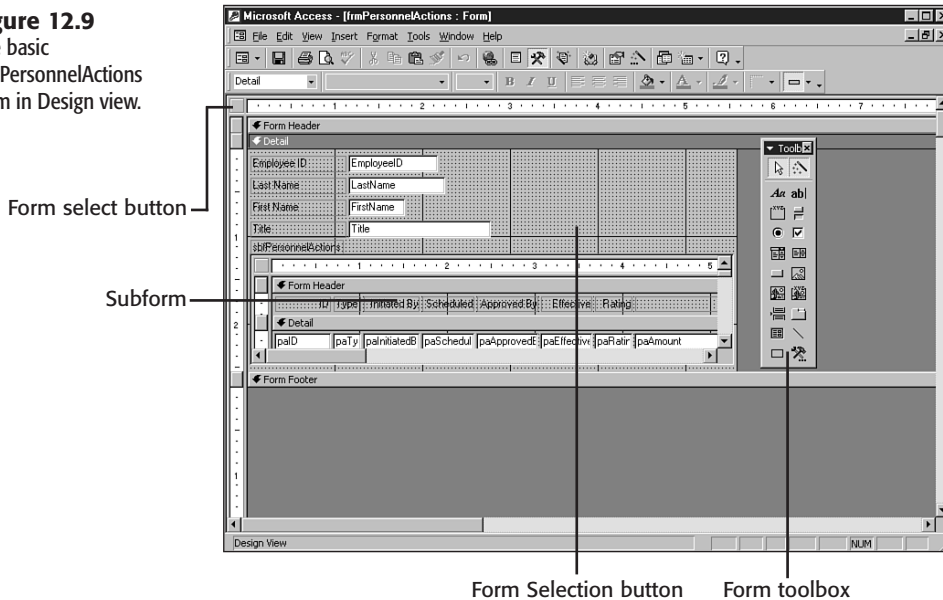
The floating window that appears in Form Design mode contains an undocked toolbar, called the *toolbox*, that lets you place new control elements on a form. Using the toolbox to add new control elements to the form is covered in the next chapter. For this exercise, hide the toolbox by clicking the Toolbox button on the Forms toolbar or by clicking the Close Window button in the upper-right corner of the toolbox.

**Note**

Access usually shows the toolbox automatically whenever you enter Form Design mode. If you've manually closed the toolbox, Access does not automatically display it the next time you open the Form Design window. To display the toolbox, click the Toolbox button on the Forms toolbar, or choose **V**iew, **T**oolbox.

The Personnel Action Entry (frmPersonnelActions) form lets you experiment with methods of modifying forms and their contents, which are described in the following sections.

**Figure 12.9**  
The basic  
frmPersonnelActions  
form in Design view.



**Tip #99 from***RJ*

Use the Form Selector button to select the entire form when a section or control is the currently-selected object. Clicking the Form Selector button is much faster than choosing **Edit, Select Form**. It's even faster, however, to press **Ctrl+R**.

**Caution**

Don't save the form with the changes you make when following the instructions in this section. These changes are for demonstration only. Saving these changes would permanently modify the form you created in the preceding section. If you really want to experiment, you can make a copy of the `frmPersonnelActions` main form and `sbPersonnelActions` subform and then work with the form copies. (Make a backup copy of a form the same way you make a backup copy of a table: choose **Edit, Copy** to copy the selected form and then choose **Edit, Paste** to paste a copy of the form.)

## ELEMENTS OF THE FORM DESIGN WINDOW

Forms can be divided into five sections: Form Header, Page Header, Detail, Page Footer, and Form Footer. Headers and footers are optional. The Form Design window includes the following basic elements:

- The Form Design toolbar contains buttons that are shortcuts for menu selections in Form Design mode. The functions of the buttons and their equivalent menu choices are listed in tables in the next section, “Form Design Toolbar Buttons and Menu Choices.”
- The Formatting toolbar contains buttons that are shortcuts for color, text, border, and various other formatting options. The functions of the formatting buttons and their equivalent menu choices are listed in tables in the next section.
- Vertical and horizontal rulers help you determine the size and placement of objects on the form.

**Tip #100 from***RJ*

The rulers are calibrated in inches for the United States version of Access and in centimeters for versions of Access that are supplied to countries where the metric system is used.

- A vertical line (shown to the left of the toolbox in Figure 12.9) indicates the position of the right margin of the form. You can move this margin indicator line by clicking and dragging it to the desired location.
- The top of the Form Footer bar represents the bottom margin of the form. You can click and drag this bar to a new location. Margins are important when you are designing a subform to fit within a rectangle of a predetermined size on the main form.
- Vertical and horizontal scroll bars let you view portions of the form outside the boundaries of the form window.

- A Form Header bar defines the height of the form's header section. The bar appears only if you choose to add a header and footer to your form or create the form with the Form Wizard. The Form Header section contains static text, graphic images, and other controls that appear at the top of form. The Form Header appears only on the first page of a multipage form; subsequent printed pages of forms display an optional Page Header. (Page Headers and Footers don't appear on your monitor in Form view.) You add Form and Page Headers by choosing **V**iew, **F**orm **H**eder/**F**ooter and **V**iew, **P**age Header/**F**ooter, respectively.
- A Form Detail bar divides the Form Header from the rest of the form. Form controls that display data from your tables and queries, plus static data elements such as labels and logos, are on the Form Detail bar.
- A Form Footer bar defines the height of the form's footer section. The Form Footer section is similar in function to the Form Header section. If you print a multipage form, the Form Footer appears only at the bottom of the last page; optional Page Footers appear at the bottom of preceding printed pages.

**Note**

Although the form shown in Figure 12.9 has both Form Header and Form Footer sections, neither section takes up any space on the form—that's why the Form Header bar touches the Detail bar, and the Form Footer bar touches the bottom margin of the form. Even though no text or other information is in the header and footer areas, the Form Wizard adds these two elements to the form automatically. When you create a new, blank form without using the Form Wizard, header and footer sections aren't added automatically.

You delete Form Header and Form Footer sections by choosing **V**iew, **F**orm **H**eder/**F**ooter to clear the menu check mark. Similarly, you delete Page Headers for printed forms, by choosing **V**iew, **P**age Header/**F**ooter.

**Note**

If a header or footer section contains any text or other form controls when you try to delete it, Access displays a dialog warning that you are about to lose the contents of the header and footer.

## FORM DESIGN TOOLBAR BUTTONS AND MENU CHOICES

The Form Design toolbar of Access 2000 contains several buttons that apply only to the design of forms. You select color and font options from the Format toolbar. Table 12.1 lists the function and equivalent menu choice for each of the Form Design toolbar buttons that are specific to Access 2000. The buttons that relate to text and color formatting are described in the following section, "The Formatting Toolbar."

TABLE 12.1 STANDARD TOOLBAR BUTTONS IN FORM DESIGN MODE

















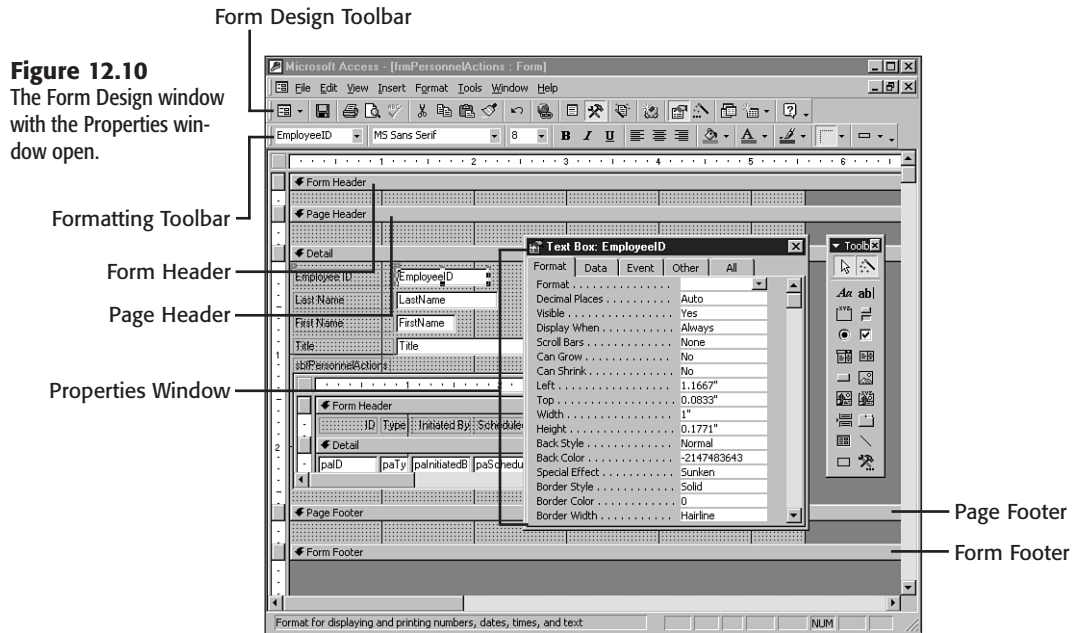
Button	Function	Menu Choice
	Displays the form in Run mode (clicking the arrow at the right of this button displays a drop-down list that lets you select Datasheet view).	View, Form View
	Saves the current form.	File, Save
	Prints all records in the table using the on-screen form to format the printed data and using the current printer settings.	n/a
	Selects Print Preview to display how your form appears if printed. You can print the form from the Print Preview window.	File, Print Preview
	Starts the spelling checker to check the spelling of data (disabled in Form view).	Tools, Spelling
	Copies formatting from selected objects to another object of similar type.	n/a
	Undoes the last change you made to the form.	Edit, Undo
	Inserts a new Hyperlink control or allows you to edit an existing Hyperlink control.	Insert, Hyperlink
	Displays a list of the fields in the query or table that is the data source for the main form.	View, Field List
	Displays or closes the toolbox.	View, Toolbox
	Applies your choice of several predefined form formats, including formatting for the background bitmap of a form, text fonts, and color settings.	Format, AutoFormat
	Opens the VBA Editor for the code behind the active form.	View, Code
	Displays the Properties window for one of the two sections of the form when you click the section bars or displays the properties of a control when you select it.	View, Properties
	Displays the Build Wizard for the selected object or property in the form. This is enabled only if Access has a builder for the selected item.	n/a
	Displays the Database window.	Window, 1 Database
	Creates a new object. Click the arrow at the right of this button to see a drop-down list of the objects you can create. You can't add an AutoForm or AutoReport in Form Design view.	n/a

Figure 12.10 shows the Form Design window after adding Page Headers and Footers to the form and clicking the Properties button with the EmployeeID text box selected.












## THE FORMATTING TOOLBAR

Access 2000 displays in Form and Report Design view shortcut buttons and drop-down lists for all text formatting, line, color, and cell effects options on a separate toolbar: the Formatting toolbar. The Object list at the extreme left of the Formatting toolbar displays the name of the currently selected object on the form and lets you rapidly select another object on the form by selecting its name in the list. In Figure 12.10, the EmployeeID text box is the currently selected object.

Table 12.2 lists the function of each text-formatting button and its equivalent property setting.

**TABLE 12.2** TOOLBAR BUTTONS FOR TEXT CONTROLS IN FORM DESIGN MODE

Button	Function	Property and Value
<b>B</b>	Sets text style to bold (the default for titles and labels).	Font Weight = Bold
<b>I</b>	Sets italic text style.	Font Italic = Yes

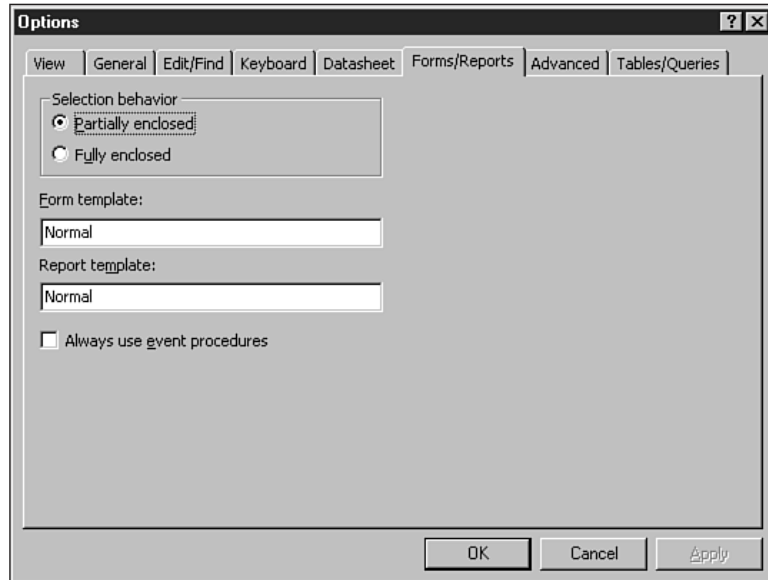
Button	Function	Property and Value
	Sets underline text style.	Font Underline = Yes
	Left-justifies text within border.	Text Align = Left
	Centers text horizontally within border.	Text Align = Center
	Right justifies text within border.	Text Align = Right
	Displays a color palette from which you choose the background color for the selected object.	Back Color = <i>number</i>
	Displays a color palette from which you choose the color of the text in the selected object.	Fore Color = <i>number</i>
	Displays a color palette from which you choose the color for the border of the selected object.	Border Color = <i>number</i>
	Displays a drop-down list from which you choose the width of the selected object's borders. You may select a hairline width or widths ranging from 1 to 6 points.	Border Width = <i>width</i>
	Displays a drop-down list from which you choose a special effect for how the selected object is displayed. You may choose Flat, Raised, Sunken, Etched, Shadowed, or Chiseled.	Special Effect = <i>name</i>

## DEFAULT VALUES FOR FORMS

You can change some of the default values used in the creation of all forms by choosing **T**ools, **O**ptions and clicking the Forms/Reports tab (see Figure 12.11). You can create a form to use as a template and replace the standard template, and you can determine how objects are displayed when chosen. The effects of these options are described in the sections that follow. The options that you or other Access users choose in the Options dialog are saved for each user ID in the MSysOptions table of the current System.mdw workgroup system file. Workgroup files are one of the primary subjects of Chapter 24, “Securing Multiuser Network Applications.” Access Data Projects (ADP) store option values in the .adp file.

You can change the default values for the current form, section, or controls by choosing the object and then changing the default values displayed in the Properties window for that object. You can also use the AutoFormat feature to quickly apply a predefined format to all controls in the form. The next section describes using AutoFormat to change a form's appearance, and subsequent sections describe ways to change the format of text or controls manually on a form.

**Figure 12.11**  
The Forms/Reports page  
of the Options dialog.



**Tip #101 from**

*RJ*

Check the title bar of the Properties window before you change property values to make sure the selected object is the one whose properties you want to change. It's a common practice to leave the Properties window open as you alter the form design, and the selected object might not be the object you intend.

## USING AUTOFORMAT

AutoFormat lets you apply a predefined format to an entire form with only a few mouse clicks. Access 2000 comes with several predefined formats, and you also can create your own formats for use with AutoFormat. The AutoFormat dialog is similar to the third Form Wizard (form layout) dialog described earlier in the chapter.

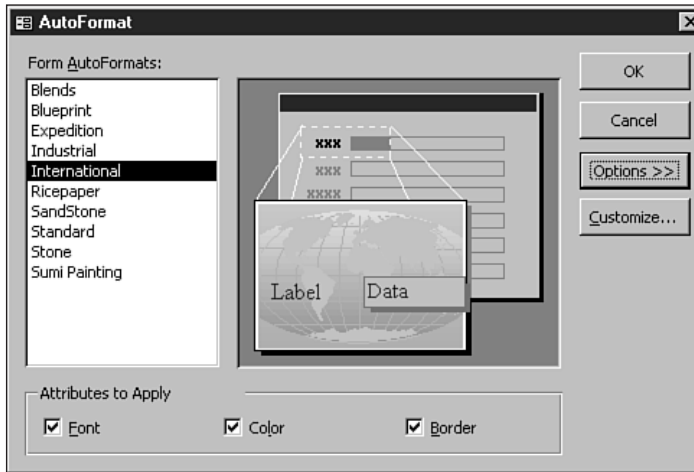
### APPLYING AN AUTOFORMAT

To apply a format to a form with AutoFormat, follow these steps:

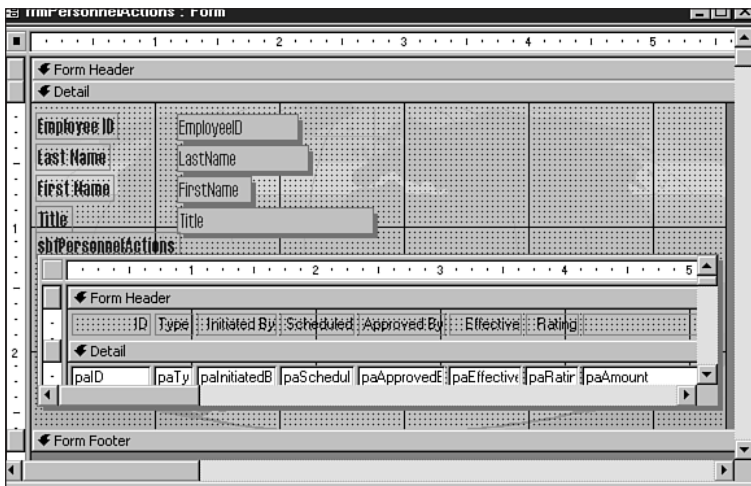
1. Press Ctrl+R to apply your AutoFormat selection to the entire form. If you select a control or other object, AutoFormat is applied only to the selected object.
2. Click the AutoFormat button on the toolbar to open the AutoFormat dialog shown in Figure 12.12.
3. Click to select the format you want to use in the Form AutoFormats list; a preview of the format you select appears in the window in the center of the dialog.



- Click OK to apply the format to the form. Figure 12.13 shows the frmPersonnelActions form after the International format has been applied.



**Figure 12.12**  
Using AutoFormat to apply a predefined format to an entire form.



**Figure 12.13**  
The frmPersonnelActions form after applying the International format.


The AutoFormat dialog, expanded by clicking the Options button, lets you omit the application of font, color, or border style information to your form when you apply the AutoFormat. Deselect the check box for the elements of the AutoFormat that you don't want AutoFormat to apply to your form.

### CREATING, CUSTOMIZING, AND DELETING AUTOFORMATS

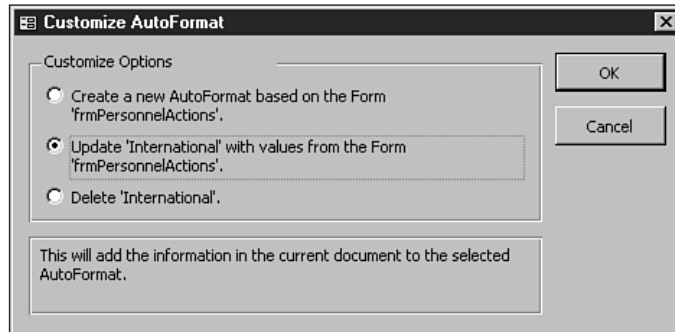
The predefined AutoFormat styles might not suit your tastes, or you might want to create AutoFormat styles specific to your company or application.



To create a new AutoFormat or customize an existing one, follow these steps:



1. Create a form and alter its appearance (using the techniques described in the next five sections of this chapter) so that the form has the font, border, background picture, and other options adjusted exactly the way you want them for your new or customized AutoFormat.
-  2. Click the AutoFormat button to display the AutoFormat dialog. If you want to modify an existing AutoFormat, select it in the Form AutoFormats list now.
3. Click the Customize button to display the Customize AutoFormat dialog shown in Figure 12.14.

**Figure 12.14**  
The Customize AutoFormat dialog used to create, modify, or delete an AutoFormat.



4. Select the Create a new AutoFormat based on the Form *formname* option, or the Update *formatname* with values from the Form *formname* option to create or modify an AutoFormat, respectively. (Deleting AutoFormats is covered later in this section.)
5. Click OK. If you're creating a new AutoFormat, the New Style Name dialog appears. Type an appropriate name for your new AutoFormat and click OK. Access now creates or updates the AutoFormat and returns you to the AutoFormat dialog.
6. Click Close to close the AutoFormat dialog.

If you've created your own AutoFormats, you might want to delete an AutoFormat that you no longer use. To delete an AutoFormat, follow these steps:

-  1. Open any form in Design view.
2. Click the AutoFormat button to display the AutoFormat dialog.
-  3. Click to select the AutoFormat you want to delete in the Form AutoFormats list and then click the Customize button. Access displays the Customize AutoFormat dialog.
4. Select the Delete *formname* option and click OK. Access deletes that AutoFormat from the list.

**Caution**

Access doesn't ask for confirmation when you delete an AutoFormat; make sure to select the correct AutoFormat for deletion before you click OK.

5. Click Close to close the AutoFormat dialog.

Applying formatting to a form through an AutoFormat style is by far the easiest way to create standardized forms for your database application—especially because the Form Wizard uses the same format style list as the AutoFormat feature. In other words, any AutoFormats you create become available in the Form Wizard dialog, also.

The next few sections of this chapter describe how you can customize the appearance of various objects on a form.

## CHANGING AN OBJECT'S COLORS

You select object colors through the buttons on the Formatting toolbar, as well as through property settings that are accessible through the Properties window of the form and individual objects on the form. The following sections describe how to use the Formatting toolbar controls and the Property dialog to change background and foreground colors of form sections and control objects, as well as border properties of control objects.

### BACKGROUND COLORS


The background color (Back Color property) of a form section (Header, Detail, or Footer) applies to all areas of that section except those occupied by control objects. The default background color of all sections of forms created by the Form Wizard depends on the specific form style you choose when you create the form; the Standard format scheme used to create the frmPersonnelActions form, for example, is the Windows system color for 3D Objects (the default is light gray).

The default color choices on the palette displayed by the Fill/Back Color toolbar button are 16 of the standard system colors of Windows 9x and Windows NT. If you're creating a form that you intend to print, a dark or deeply textured background will not only be distracting but will also consume substantial amounts of printer toner. Data-entry operators often prefer a white background rather than a gray, colored, or textured background. Colored backgrounds limit text visibility.

**Note**

If you've selected a picture as the background for a form—or used an AutoFormat style that includes a background picture, such as the International style pictured in Figure 12.15—then any changes you make in the background color of the form are hidden by the overlying picture.

To change the background color of a section of a form, follow these steps:

1. Click an empty area within the section of the form (Header, Detail, or Footer) whose background color you want to change. This step selects the appropriate section.
-  2. Click the Fill/Back Color button on the toolbar to display the color palette.
3. Click the box that contains the color you want to use.

Because the background color of each form section is independent, you must repeat the process if you want to change the color for other sections of your form. The Transparent button of the Fill/Back Color palette is disabled when a form section is chosen because a transparent background color isn't applicable to forms.

You choose the background color for a control object, such as a label, just as you do for a form. In most cases, the chosen background color of labels is the same as that of the form, so click the Transparent button to allow the background color to appear. The default value of the Back Color property of text boxes is white so that text boxes (and the data they contain) contrast with the form's background color.

### CHANGING THE BACKGROUND BITMAP





You can use a bitmap picture as the background for a form. Unlike background colors, of which you can have several, you select a single bitmap picture for the entire form. Access 2000 comes with a few bitmap pictures that it uses in the AutoFormat formats—International, for example, uses the Globe.wmf graphics file (stored in the Program Files\Microsoft Office\Access\Bitmaps\Styles folder) as the background for the form. You can use any.bmp, .dib, .emf, .gif, .ico, .jpg, .pcx, .png, or .wmf graphics file as a background for a form. The ability to use compressed .gif, .jpg, .pcx, and .png files is new with Access 2000.

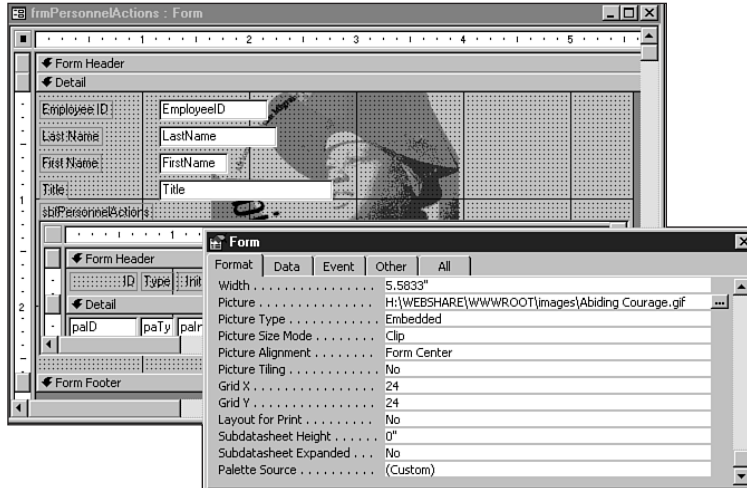
#### Tip #102 from

RJ

Forms with bitmap graphics as a background can look dramatic and, therefore, are best suited for public-access information terminals or decision-support forms. These forms, however, tend to be more visually complex than Standard-formatted forms, which might make it difficult for users to read text labels or identify specific fields on the form. For accurate, high-speed data entry, you should keep your transaction-processing forms visually simple so that users can easily distinguish data fields on the form and easily read text labels.

You set or remove a form's background bitmap through the Properties window of the form; you can also specify several viewing and formatting properties for the background picture. Follow these steps to set the background picture properties of a form:

-  1. Open the form in Design view if necessary.
2. Click the square at the upper-left corner of the Form Design window (where the horizontal and vertical rulers meet) to select the form as a whole. A black square appears when the form is selected (see Figure 12.19).
-  3. If the Properties window isn't already open, click the Properties button on the toolbar to display this window.



**Figure 12.15**  
Setting the filename and formatting properties for a scanned image of a book front cover used as a form's background picture.

4. Click the Format tab in the Properties window and scroll down to the end of the Format properties list to view the various Picture properties: Picture, Picture Type, Picture Size Mode, Picture Alignment, and Picture Tiling. These properties and their effects are described in the list following these numbered steps.
5. Set the various Picture properties until you are satisfied with the appearance of the form. As you change each property, results of the change become immediately visible on the form.
6. Click the Close window button in the Properties window to close this window.

The following list summarizes form properties related to the background picture, available choices for each property, and the effects of each choice.

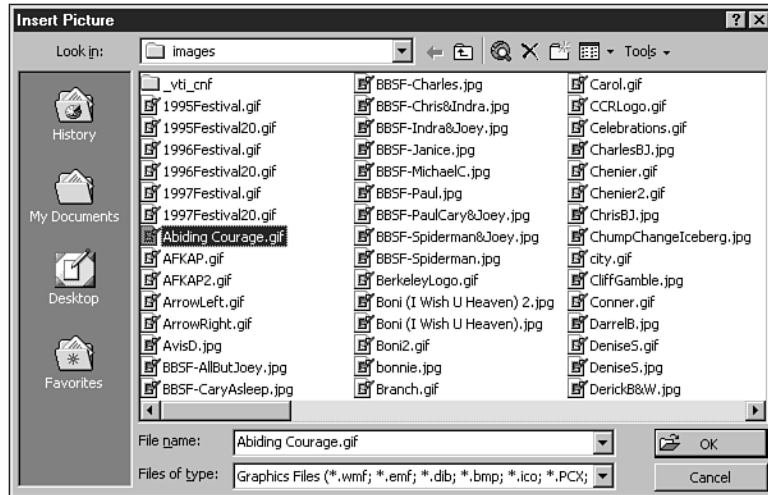
- The Picture property contains the folder path and filename of the graphics file that Access uses as the form's background. You may either type the folder path and filename directly in the Picture property text box, or you may use the builder to help you select the background graphics file. To use the builder, click the Picture property field to select that field and then click the Build button that appears next to the text box. Access displays the Insert Picture dialog shown in Figure 12.16. The Insert Picture dialog is a standard Office 2000 dialog for opening files. Click the Preview button (second button from the right), if necessary, to display the background image. When you locate the graphics file you want, click to select its name and then click OK to have Access fill in the Picture property.

**Tip #103 from**

*RJ*

To remove a background picture, simply delete the entry in the Picture text box and click Yes when asked if you want to remove the picture from the form.

**Figure 12.16**  
The Insert Picture dialog used to select a picture as a form's background.



- The Picture Type property specifies the OLE or ActiveX method that Access uses to attach the background picture to the form. You can select either Embedded or Linked as the picture type. You usually should use the Embedded picture type, especially if you intend to distribute your database application—the resulting form is self-contained and doesn't rely on the presence of external files that might be moved or deleted. If you have many forms that use the same background bitmap graphic, however, linking the background picture can save some disk space.
- The Picture Size Mode property controls how Access sizes the background picture. The available choices are Clip, Stretch, and Zoom. Clip causes Access to display the picture at its full size behind the form; if the picture is larger than the form, the picture is clipped to fit the form. If the picture is smaller than the form, the form's own background color shows in any part of the form background not covered by the picture. Stretch causes Access to stretch the picture vertically and horizontally to match the size of the form; the Stretch option permits distortions in the picture. Zoom causes Access to magnify the picture, without distortion, to fit the size of the form.
- The Picture Alignment property controls where Access positions the background picture. The available choices are Top-left (aligns the upper-left corner of the picture with the upper-left corner of the form window), Top-right (aligns the upper-right corner of the picture with the upper-right corner of the form window), Center (places the picture in the center of the form window), Bottom-left (aligns the lower-left corner of the picture with the lower-left corner of the form), Bottom-right (aligns the lower-right corner of the picture with the lower-right corner of the form), and Form Center (centers the picture on the form).

**Tip #104 from**

*RJ*

To ensure that a background picture is displayed relative to the form, rather than the form's window, select Form Center as the value for the Picture Alignment property.

- The Picture Tiling property has two permissible values: Yes or No. *Tiling* means that the picture is repeatedly displayed to fill the entire form or form window (if the Picture Alignment property is set to Form Center, the tiling fills just the form).

Now that you know how to adjust the background picture and colors of a form, the next section describes how to adjust the foreground colors and border properties of the form and objects on the form.

### FOREGROUND COLOR, BORDER COLOR, AND BORDER STYLE

You may set the foreground color, border color, and border width through buttons on the Formatting toolbar or directly in the Properties window for a selected control. To set a border style (solid style or a variety of dashed-line styles), you must set the property directly in the Properties window.



Foreground color (the Fore Color property) is applicable only to control objects. (The Font/Fore Color button on the toolbar is disabled when you select a form section.)



Foreground color specifies the color for the text in labels and text boxes. The default value of the Fore Color property is black. You choose border colors for control objects that have borders by using the Line/Border Color toolbar button.



The Special Effects button of the Formatting toolbar allows you to simulate special effects for control objects, such as a raised or sunken appearance. The Line/Border Width button



allows you to control the width of the border of controls. The Formatting toolbar buttons were listed earlier in this chapter in Table 12.2. Table 12.3 lists the property name for each border property and the specific values that each may have.

To set a control's foreground color, border width, or border color by using the Formatting toolbar buttons, first click the control whose properties you want to change and then click the arrow to the right of the toolbar button for the property you want to change. Click the color or line width you want for the control.



To set a control's foreground color, border width, border color, or border style in the Properties window, first select the control whose properties you want to change by clicking it. If necessary, open the Properties window by clicking the Properties button on the toolbar. Click the Format tab in the Properties window and then scroll to the text box for the property you want to change. Most of the border properties are selected from drop-down lists; color properties require you to type a number that represents the desired color in Windows 9x or Windows NT color notation. (Windows color notation is too complex to explain here; the easiest way to enter color values is with the toolbar buttons or by using the color builder described in the following section, "Creating Custom Colors with the Color Builder.")

**TABLE 12.3 BORDER STYLE PROPERTIES AND VALUES**

<b>Property Name</b>	<b>Function</b>	<b>Values</b>
Border Style	Determines the line style of the border.	Transparent, Solid, Dashes, Short Dashes, Dots, Sparse Dots, Dash Dot, Dash Dot Dot
Border Color	Sets the color of the border.	Depends on the color
Border Width	Determines the width of the border.	Hairline, or any whole point size from 1 to 6

### CREATING CUSTOM COLORS WITH THE COLOR BUILDER

If you aren't satisfied with one of the 16 Windows system colors for your form sections or control objects, you can specify your own custom colors by following these steps:

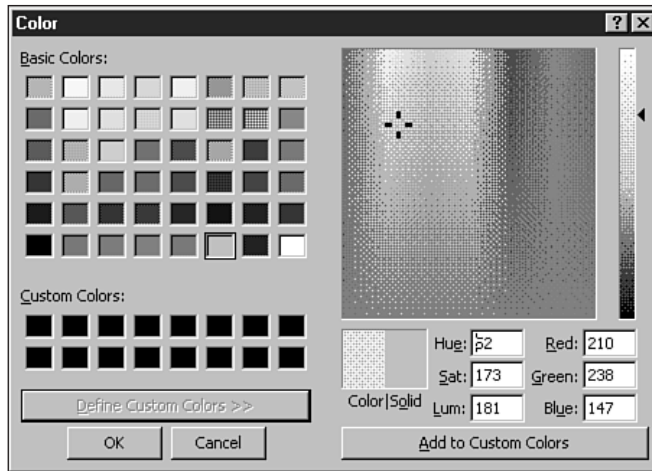
1. Place the caret in the Back Color, Fore Color, or Border Color text box of the Properties window for a control.
2. Click the ellipsis button to display the Color dialog. The basic form of this dialog enables you to choose from a set of 48 colors. If one of these colors suits your taste, click the color square and then click OK to assign that color as the value of the property, and close the dialog. If you want a custom color, proceed to step 3.
3. Click the Define Custom Colors button to expand the Color dialog to include the Hue/Saturation and Luminance windows, as shown in Figure 12.17.
4. Click and drag the cursor within the square Hue/Saturation area to choose the color you want.
5. Click and drag the arrow at the right of the rectangular luminance area while observing the Color block; release the mouse button when the Color block has the luminance (brightness) value you want.
6. Click Add to Custom Colors to add your new color to the first of the 16 custom color blocks.
7. Click the new custom color block to select it. Click OK to add this color value to the property, and close the Color dialog.

Many PCs used for data entry and editing applications run in 256-color VGA or SVGA mode because this mode is slightly faster than the standard 24-bit or 32-bit true-color mode used by most of today's PCs. In 256-color VGA mode, any colors you choose or create, other than the standard Windows 256-color palette, are simulated by a dithering process. *Dithering* alternates pixels of differing colors to create the usually imperfect illusion of a solid color.

**Tip #105 from**

RJ

It's a good programming practice to stick with the 16 system colors of Windows because added color depth slightly decreases the speed of opening forms.



**Figure 12.17**  
Defining a custom  
color in the expanded  
Color dialog.

## SELECTING, EDITING, AND MOVING FORM ELEMENTS AND CONTROLS

The properties that apply to the entire form, to the five sections of the form, and to each control object on the form are determined by the values shown in the Properties window. To view the Properties window for a control, select the control by clicking anywhere on its surface; then click the Properties button on the toolbar. Alternatively, right-click the control and choose Properties from the popup menu.

The following list describes how to select and display the properties of form sections and control objects:

- *Header section only.* To select the Form Header, click the Form Header or Page Header bar. The set of properties you work with applies only to the Form Header or Page Header section. A Form Header and Footer appear when you choose View, Form Header/Footer. A Page Header and Footer appear when you choose View, Page Header/Footer. Page Headers and Footers primarily are used in conjunction with printing forms. You delete headers and footers by choosing View, Form Header/Footer or View, Page Header/Footer a second time.
- *Detail section only.* To select the Detail section, click the Detail bar. You get a set of properties similar to those of the Form Header section, but all of these apply to the Detail section.



- *Footer section only.* To select the Footer section, click the Form Footer or Page Footer bar. A set of properties identical to the header properties is available for the footer sections. A Form Footer appears only if a Form Header has been added. The same applies to Page Headers and Footers.
- *Control object* (or both elements of a control with an associated label). Click the surface of the control to select the control. Each type of control has its own set of properties. Displaying the properties of multiple-control objects is the subject of the section “Selecting, Moving, and Sizing a Single Control” later in this chapter.

## CHANGING THE SIZE OF THE FORM HEADER AND FORM FOOTER

You can change the height of a form section by dragging the Form Header, Page Header, Detail, Page Footer, or Form Footer bar vertically with the mouse. When you position the mouse pointer at the top edge of a section divider bar, it turns into a line with two vertical arrows. You drag the pointer with the mouse to adjust the size of the section above the mouse pointer.

The height of the Detail section is determined by the vertical dimension of the window in which the form is displayed, less the combined heights of all the header and footer sections that are fixed in position. When you adjust the vertical scroll bar, only the Detail section scrolls.

## SELECTING, MOVING, AND SIZING A SINGLE CONTROL

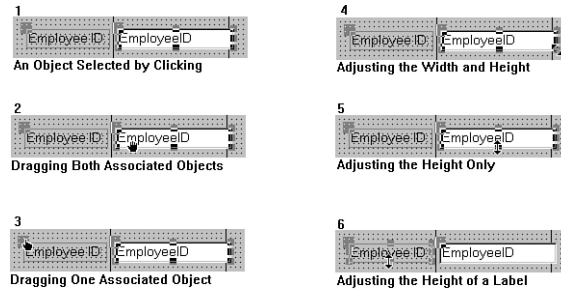
When you select a control object by clicking its surface, the object is enclosed by a shadow line with an anchor rectangle at its upper-left corner and five smaller, rectangular sizing handles (see Figure 12.18).

### Note

Text boxes, combo boxes, check boxes, and option buttons have associated (attached) labels. When you select one of these objects, the label and object are selected as a unit.

The following choices are available for moving or changing the size of a control object (the numbers correspond to the numbers in Figure 12.18):

- *To select a control (and its associated label, if any),* click anywhere on its surface.
- *To move the control (and its associated label, if any) to a new position,* move the mouse pointer within the outline of the object at any point other than the small resizing handles or the confines of a text box (where the cursor can become an editing caret). The mouse pointer becomes a hand symbol when it's on an area that you can use to move the entire control. Press and hold down the left mouse button while dragging the hand symbol to the new location for the control. An outline of the control indicates its position as you move the mouse. When the control is where you want it to be, release the mouse button to drop the control in its new position.



**Figure 12.18**  
The appearance of a control object selected for relocation and resizing.

### Tip #106 from

RJ

If the control doesn't have an associated label, you can drag the control's anchor handle at the upper-left corner to move the control.

- To separately move the elements of a control that has an associated label, position the mouse pointer on the anchor handle in the upper-left corner of the control that you want to move. The mouse pointer becomes a hand with an extended finger. Click and drag the individual element to its new position and then release the mouse button.
- To simultaneously adjust the width and height of a control, click the small sizing handle at any of the three corners of the outline of the control. The mouse pointer becomes a diagonal two-headed arrow. Click and drag this arrow to a new position and then release the mouse button.
- To adjust only the height of the control, click the sizing handle on one of the horizontal surfaces of the outline. The mouse pointer becomes a vertical, two-headed arrow. Click and drag this arrow to a new position and then release the mouse button.

Selecting and deselecting controls is a *tooggling* process. Toggling means repeating an action with the effect of alternating between On and Off conditions. The Properties, Field List, and Toolbox buttons on the toolbar—as well as their corresponding menu choices—are toggles. The Properties window, for example, appears and disappears if you repeatedly click the Properties button.

## ALIGNING CONTROLS TO THE GRID

The Form Design window includes a grid that consists of one-pixel dots with a default spacing of 24 to the inch horizontally and 24 to the inch vertically. When the grid is visible, you can use the grid dots to assist in maintaining the horizontal and vertical alignment of rows and columns of controls. Even if the grid isn't visible, you can cause controls to “snap to the grid” by choosing **F**ormat, **S**nap to Grid. This menu command is a toggle, and when Snap to Grid is active, the menu choice is checked. Whenever you move a control while Snap to Grid is active, the upper-left corner of the object jumps to the closest grid dot.

You can cause the size of control objects to conform to grid spacing by choosing **F**ormat, **S**ize, **T**o **G**rid. You also can make the size of the control fit its content by choosing **F**ormat, **S**ize, **T**o **F**it.

**Tip #107 from**

RJ

If Snap to Grid is on and you want to locate or size a control without reference to the grid, press and hold the Ctrl key while you move or resize the control.

Toggling the View, Grid menu command controls the visibility of the grid; by default, the grid is visible for all new forms. If the grid spacing is set to more than 24 per inch or 10 per centimeter, the dots aren't visible. For "non-metrified" users, better values are 10 per inch for Grid X and 12 per inch for Grid Y. This grid dot spacing is optimum for text controls that use the default 8-point MS Sans Serif font. To change the grid spacing for a form, follow these steps:



1. Choose Edit, Select Form.
2. Click the Properties button on the toolbar to make the form properties appear.
3. Click the Format tab in the Properties window to display the formatting properties and then scroll through the list until the Grid X and Grid Y properties are visible.
4. Change the value of Grid X to **10** dots per inch (dpi) and Grid Y to **12** dpi, or change both values to **16** (if you want controls to align with inch ruler ticks). Metrified users are likely to prefer a value of 10 for both Grid X and Grid Y.

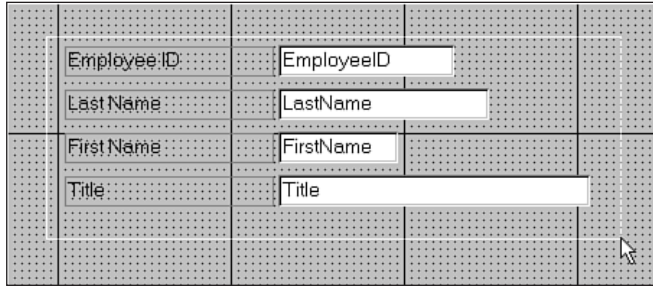
## SELECTING AND MOVING MULTIPLE CONTROL

You can select and move several objects at a time by using one of the following methods:

- *Enclose the objects with a rectangle.* Begin by clicking the surface of the form outside the outline of a control object. Press and hold down the mouse button while dragging the mouse pointer to create an enclosing rectangle that includes each of the objects you want to select (see Figure 12.19). Release the mouse button. You may now move the group of objects by clicking and dragging the anchor handle of any one of them.
- *Click to select one object; then hold down the Shift key while you click to select the next object.* You can repeat this step as many times as necessary to select all the objects you want.
- *To remove a selected object from a group,* hold down the Shift key and click the object with the mouse to deselect it. To deselect an entire group, click any inactive area of the form. An inactive area is an area outside the outline of a control.
- *To create a group of the multiselect objects,* choose Format, Group. The selection rectangle permanently encloses the objects, which lose their individual selection rectangles. Choose Format, Ungroup to remove the group attribute from the enclosed objects.



If you select or deselect a control with an associated label, the label is selected or deselected along with the control.



**Figure 12.19**  
Selecting a group of objects by dragging a selection rectangle.

### Note

The selection rectangle selects a control if any part of the control is included within the rectangle. This behavior is unlike many drawing applications in which the entire object must be enclosed to be selected. You can change the behavior of Access's selection rectangle to require full enclosure of the object by choosing **Tools, Options**; selecting the **Forms/Reports** tab (refer back to Figure 12.11); and changing the value of the **Selection Behavior** option from **Partially Enclosed** to **Fully Enclosed**.

## ALIGNING A GROUP OF CONTROLS

You can align selected individual controls, or groups of controls, to the grid or each other by choosing **Format, Align** and completing the following actions:

- To fine-adjust the position of a control by the width of a single pixel, select the control and press **Ctrl+Arrow**.
- To align a selected control (or group of controls) to the grid, choose **To Grid** from the submenu.
- To adjust the positions of controls within a selected columnar group so that their left edges fall into vertical alignment with the far-left control, choose **Left** from the submenu.
- To adjust the positions of controls within a selected columnar group so that their right edges fall into vertical alignment with the right edge of the far-right control, choose **Right** from the submenu.
- To align rows of controls at their top edges, choose **Top** from the submenu.
- To align rows of controls at their bottom edges, choose **Bottom** from the submenu.

Your forms have a more professional appearance if you take the time to align groups of controls vertically and horizontally.

### Tip #108 from

*RJ*

To quickly select a group of controls in a column or row, click the within the horizontal or vertical ruler, respectively. This shortcut selects all controls intersected by the vertical or horizontal projection of the arrow that appears when you move the mouse within the ruler.

## USING THE WINDOWS CLIPBOARD AND DELETING CONTROLS

All conventional Windows Clipboard commands apply to control objects. You can cut or copy a selected control or group of controls to the Clipboard. After that, you can paste the control or group to the form using **E**dit menu commands and then relocate the pasted control or group as desired. Access uses the Windows keyboard shortcut keys: Ctrl+X to cut, Ctrl+C to copy selected controls to the Clipboard, and Ctrl+V to paste the Clipboard contents. The traditional Shift+Delete, Ctrl+Insert, and Shift+Insert commands perform the same operations.





You can delete a control by selecting it and then pressing Delete. If you accidentally delete a label associated with a control, do the following: select another label, copy it to the Clipboard, select the control with which the label needs to be associated, and paste the label to the control.

## CHANGING THE COLOR AND BORDER STYLE OF A CONTROL

As mentioned earlier in this chapter, the default color for the text and borders of controls is black. Borders are one pixel wide (called *hairline* width). Some objects, such as text boxes, have default borders. Labels have a gray background color by default, but a better choice for the default label color would have been transparent. *Transparent* means that the background color of the object under the control (the form section, in this case) appears within the control except in areas of the control that are occupied by text or pictures.

You control the color and border widths of a control from the Line/Border Color and Line/Border Width buttons on the Formatting toolbar. You must select a border style directly in the Properties window.

To change the color or border width of a selected control or group of controls, follow these steps:

1. Select the control(s) whose color or border width you want to change.
2.  Click the arrow of the Fill/Back Color toolbar button to open the color palette popup window. Click the color square you want or click the Transparent button to make the background transparent.
3.  Click the arrow of the Line/Border Color toolbar button to open the color palette popup window, where you change the border color for any selected control with borders.
4.  Click the arrow of the Line/Border Width toolbar button to open the border width popup window, where you change the thickness of the border for any selected control whose borders are enabled.
5.  Click the arrow of the Font/Fore Color toolbar button to open the color palette popup window, where you change the color of the text of selected controls.

**Note**

The general practice for Windows database entry forms is to indicate editable elements with borders and clear backgrounds. Still, some popular software uses reverse video as the default to indicate editable text. You can create the effect of reverse video by choosing black or another dark color for the fill of a text box control and a light color for its text. If you decide to implement reverse text, remember that reverse text is more difficult to read than normal text, so consider using a larger font and adding the bold attribute to ensure legibility.

To set the border style, you must select the Border Style property directly in the Properties window, as explained earlier in this chapter.

## CHANGING THE CONTENT OF TEXT CONTROLS

You can edit the content of text controls by using conventional Windows text-editing techniques. When you place the mouse pointer within the confines of a text control and click the mouse button, the mouse pointer becomes the Windows text-editing caret that you use to insert or delete text. You can select text by dragging the mouse over it or by holding down Shift and moving the caret with the arrow keys. All Windows Clipboard operations are applicable to text within controls. Keyboard text selection and editing techniques using the arrow keys in combination with Shift are available, also.

If you change the name of a field in a text box and make an error naming the field, you receive a “#Name?” error message in the offending text box when you select Run mode. Following is a better method of changing a text box with an associated label:

1. Delete the existing field control by clicking to select it and then pressing Delete.
2. Click the Field List button in the Properties bar to display the Field List dialog.
3. Scroll through the entries in the list until you find the field name you want.
4. Click the field name to select it; then drag the field name to the location of the deleted control. Release the mouse button to drop the new name.
5. Close the Field List dialog when you're finished.

You can relocate and resize the new field caption and text box (or edit the caption) as necessary.

## USING THE FORMAT PAINTER

The Format Painter lets you quickly copy the format of any control on the form to any other control on the form. The Format Painter copies only those formatting properties that are relevant to the control on which you apply the Format Painter. To use the Format Painter, follow these steps:

1. Select the control with the formatting you want to copy.
2. Click or double-click the Format Painter button on the toolbar; the mouse cursor changes to a pointing arrow with a paintbrush icon attached to it. (Double-clicking

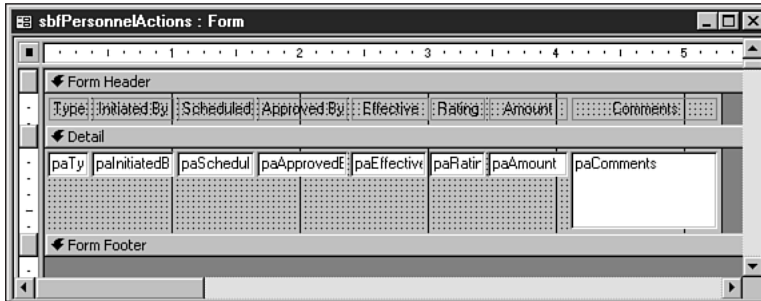
- “locks” the Format Painter on. Double-click the Format Painter button only if you want to copy the formatting to more than one control.)
3. Click any control that you want to copy the formatting to; the Format Painter copies all relevant formatting properties to this control. If you didn't double-click the Format Painter button, the Format Painter turns itself off after copying the formatting properties to one control.
  4. If you locked the Format Painter on by double-clicking its button, you can repeat step 3 as many times as you want. Click the Format Painter button again to turn off the Format Painter.

Typically, you use the Format Painter to quickly set the formatting properties for field text labels, or in any situation where selecting several controls by dragging a selection rectangle seems undesirable. By locking the Format Painter, it's easy to format several controls one after another.

## REARRANGING THE PERSONNEL ACTIONS FORM

The objective of the following procedure is to rearrange the controls on the frmPersonnelActions form so that all of the elements on the form (and its subform) are completely visible in the form window. Another objective is to optimize the position of the fields for data entry. After you complete the following steps, your main form with its embedded subform appears as shown in Figure 12.20, and your subform appears as shown in Figure 12.21.

**Figure 12.20**  
The frmPersonnelActions form after relocating and resizing its control objects.

**Figure 12.21**

The sbPersonnelActions subform after modifying its appearance.





## SETTING PROPERTIES OF THE MAIN FORM

To change the color of form objects and rearrange the controls of the frmPersonnelActions form to correspond with the positions shown in Figure 12.21, follow these steps:

1. Close the frmPersonnelActions form by clicking the Close window button. Don't save any changes you made in the preceding section.
2. Select frmPersonnelActions from the Forms list in the Database window and click the Design button.
3. Click the Maximize window button to maximize the Form Design window if it isn't already maximized.
4. Choose Edit, Select Form, and then click the Properties button on the toolbar.
5. Click the Format tab of the Properties window and then scroll through the properties list until you see Grid X and Grid Y. Change the Grid X property to **10** and the Grid Y property value to **12**. (Metric users may prefer a 5-by-5 grid, providing 2 mm resolution.)
6. Close the Properties window by clicking the Properties button on the toolbar again.
7. Drag the right margin of the form from its present position (5.5 inches) to 6 inches.
8. Click the Title field text box to select the text box and its label.
9. Move the mouse pointer onto the selected Title field until the pointer changes to the shape of a hand. Click and drag the Title field to the right of the EmployeeID text box.
10. Delete the FirstName label (click the label and then press Delete). Next use the technique described in steps 8 and 9 to select the FirstName field and drag it to a position to the right of the LastName field (refer to Figure 12.20).
11. Edit the LastName label to read **Name:**, the EmployeeID label to read **ID:**, and the Title label to read **Title:**.
12. Delete the sbPersonnelActions field label (the size and content of the subform is sufficient to identify it) and drag the subform control to a position below the FirstName and LastName fields (refer to Figure 12.20).
13. Click and drag the Form Footer bar to approximately 2.75 inches. (Alternatively, you can type the detail section's height directly in the Height property on the Format sheet of the Properties window.) At present, the dimensions of your form are 6x2.7 inches.





14. Resize the sbfPersonnelActions subform control on the form so that its left, right, and bottom edges are one grid mark inside the edges of the form (this makes the sbfPersonnelActions subform control about 5.8×1 7/8 inches).
-  15. Click the text label of the EmployeeID field to select it and then click the Bold and Align Right buttons on the Formatting toolbar to make the text label bold and right justified.
-  16. Double-click the Format Painter button on the toolbar (remember that this step locks the Format Painter).
-  17. In turn, click the text labels for all of the remaining controls on the form to apply the formatting with the Format Painter.
18. Click the Format Painter button on the toolbar again to turn off the Format Painter.
19. Adjust the widths of the labels and text boxes to suit their content (refer to Figure 12.20).
-  20. Select the form, click the Properties button, and set the Allow Additions and Allow Deletions properties to No. Setting these property values to No prevents you from adding or deleting employee records in this form.
21. Click the Save button on the toolbar (or choose File, Save) to save your changes to the frmPersonnelActions form.

You may need to adjust the sizes of some controls individually to make their appearance consistent with other controls. When you complete your rearrangement, click the Form View button to review your work.

## SETTING THE PROPERTIES OF A SUBFORM

You can learn about modifying the properties of a subform by working with the subform used to create the history of prior Personnel Actions for an employee. In this example, editing or deleting entries using the subform is not allowed, but you can add new entries. The subform needs to be modified so that all of its columns are readable without horizontal scrolling.

### Tip #109 from

*RJ*

Although you can use Access 2000's new in-situ subform editing feature to alter the design of a subform, in most cases it's easier to use the traditional method of subform design modification. In-situ editing is better suited for changing subform property values than for altering subform dimensions.

To change the properties of the Personnel Actions subform, follow these steps:

1. Close the frmPersonnelActions form. You can't modify the design of a subform while the main form is open.
2. Open the sbfPersonnelActions subform from the Database window in Design view.



3. Select the form and use the Properties window to make sure that the Grid X and Grid Y properties are both set to 24. The finer grid lets you make more precise changes to the size of subform controls. Close the Properties window.
4. Using the same techniques you used when working with the main form, resize the label boxes in the Form Header section of the form so that they match what you saw in Figure 12.21. Use the Format Painter to center the text in every text label in the Form Header section.
5. Adjust the field text boxes in the Detail section of the form, if necessary, to line up with the headings in the Form Header section (refer to Figure 12.21).
6. Drag the right edge of the form to the left until the form is 5 3/8 inches in width and then drag the Form Footer upward so that the Detail section is about 5/8 inches high.



7. Choose **E**dit, **S**elect **F**orm to select the form; then click the Properties button on the toolbar to display the Properties window for the subform.
8. Click the Data tab in the Properties window so that the Allow Edits, Allow Deletions, and Allow Additions properties are visible.
9. Set the Allow Edits and Allow Deletions property value to **No**; this setting prevents the user from editing or deleting Personnel Action records displayed in this subform.
10. Close the sbfPersonnelActions subform and save your changes.

To see how the new form and subform look, open the frmPersonnelActions form; the adjusted form and subform should appear similar to Figure 12.22. Notice that there's no horizontal scroll bar and that the appearance and visibility of fields and column headings in the subform have improved. By changing the size of the subform control in the main form and resizing the subform to fit completely within the subform control (allowing room for the vertical scrollbar), the subform now fits completely in the main form. Notice also the tentative append record that is visible as the second record in the subform.

Type	Initiated By	Scheduled	Approved By	Effective	Rating	Amount	Comments
H	Davolio	5/1/92	Nancy	5/1/92		2,000.00	Hired
*							

**Figure 12.22**

The completed frmPersonnelActions and sbfPersonnelActions forms in Form view.

**Note**

You can set the Data Entry property to Yes to achieve a result that is similar to setting the Allow Edits and Allow Deletions property to No and the Allow Additions property to Yes. When you set the Data Entry property to Yes, however, only the tentative new record appears—no prior entries appear in the subform.











## USING TRANSACTION-PROCESSING FORMS










As noted near the beginning of this chapter, the purpose of transaction-processing forms is to add new records to, delete records from, or edit data in one or more tables that underlie the form. This section describes how to add new records to the Personnel Actions table with the frmPersonnelActions form.

### TOOLBAR BUTTONS IN FORM VIEW

When you display your form in Run mode (Form view), the toolbar contains the command buttons listed in Table 12.4. This table lists all the buttons that appear on the toolbar, along with each button's function and the equivalent menu choice.

**TABLE 12.4** STANDARD TOOLBAR BUTTONS IN FORM RUN MODE

Button	Function	Menu Choice
	Selects Form Design mode.	View, Design View
	Saves the form layout.	File, Save
	Prints the form.	File, Print
	Selects Print Preview to display how your form will appear if printed. You can print the form directly from the Print Preview window.	File, Print Preview
	Starts the spelling checker to check the spelling of the current selection or field.	Tools, Spelling
	Format Painter. This button is always disabled in Form view.	n/a
	Undoes the most recent change to a record.	Edit, Undo
	Inserts a new Hyperlink or allows you to edit an existing Hyperlink.	Insert, Hyperlink
	Sorts records in ascending order based on the current field.	Records, Sort, Ascending
	Sorts records in descending order based on the current field.	Records, Sort, Descending

Button	Function	Menu Choice
	Filters records based on selected text in a field.	Records, Filter, Filter by Selection
	Filters records based on criteria you enter in a form's fields.	Records, Filter, Filter by Form
	Applies a filter. Click this button a second time to show all records.	Records, Apply Filter/Sort or Records, Remove Filter/Sort
	Searches for a value in the selected field or in all fields. Displays the Find dialog.	Edit, Find
	Goes to the tentative append record.	Edit, Go To, New Record
	Deletes the current record.	Edit, Delete Record
	Displays the Properties window for the form and its objects in Form view.	View, Properties
	Gives the Database window the focus.	Window 1 Database
	Displays a drop-down list of new database objects.	n/a

**NEW  
2000**

The Find button serves the same purpose for forms in Run mode as it does for tables and queries. You type characters in the Find dialog using wild cards if needed. When you execute the search, Access displays the first record that matches your entry if a match is found.

The Sort Ascending, Sort Descending, Filter by Selection, and Filter by Form buttons work the same way in Form view as they do in Datasheet view. Using these filter buttons is described in Chapter 6, “Sorting, Finding, and Filtering Data in Tables.” Sorting specified in the form overrides the sort criteria of the primary query used as the source of the data (if your form is based on a query, rather than directly on one or more tables). The filter or sort criteria you specify don’t take effect until you click the Apply Filter/Sort button or make the equivalent Records, Apply Filter/Sort menu choice.

**Note**

Some toolbar buttons are disabled as a result of your form design or its property values. For example, the Delete Record button is disabled when the Personnel Actions form is open because you’ve set the Allow Deletions property value to No for the both form and subform.

**USING THE PERSONNEL ACTIONS FORM**

Forms you create with the Form Wizard use the standard record-navigation buttons located at the bottom of the form. The record-navigation buttons perform the same functions with

forms as they do with tables and queries. You can select the first or last records in the table or query that is the source of data for your main form, or you can select the next or previous record. Subforms always include their own set of record-selection buttons that operate independently of the set for the main form.

Navigation between the text boxes used for entering or editing data in the form is similar to navigation in queries and tables in Datasheet view except that the up-arrow and down-arrow keys cause the caret to move between fields rather than between records. Accept the values you've entered by pressing Enter or Tab.

## APPENDING NEW RECORDS TO THE PERSONNEL ACTIONS TABLE

In the Datasheet view of a table or query, the last record in the datasheet is provided as a *tentative append record* (indicated by an asterisk on the record-selection button). If you enter data in this record, the data automatically is appended to the table and Access starts a new tentative append record. Forms also provide a tentative append record, unless you set the Allow Additions property for the form to No.

To append a new record to the Personnel Actions table and enter the required data, follow these steps:



1. Open the frmPersonnelActions form if it isn't already open or click the Form View button if you're in Design view. Data for the first record of the Employees table—with the matching data from the corresponding record(s) in the Personnel Actions table—appears in the text-box controls of your form.

Because data from the Employees table is included in the main form, the ID number, name, and title of the employee appear in the text boxes on the main form. Your form design lets you edit the LastName, FirstName, and Title data, although these fields are incorporated in the table (Employees) on the one side of a one-to-many relationship. The editing capability of a form is the same as that for the underlying table or query that serves as its source unless you change the form's editing capabilities by setting the form's Allow Editing property and other related properties.

If you added an entry for the chosen employee ID when you created the Personnel Actions table in Chapter 4, the entry appears in the subform's fields. The subform's data display is linked to the data in the main form through the one-to-many relationship between the Employees table and the Personnel Actions table. The subform only displays records from the Personnel Actions table whose paID fields match the value of the EmployeeID field of the record currently displayed by the main form.



2. Access places the caret in the first text box of the main form, the ID text box. The first example uses Steven Buchanan, whose employee ID is 5, so you should do the following: Click the Find button on the toolbar to open the Find dialog, type 5 in the Find What text box, make sure that the Search Only Current Field option is selected, and click Find First. Access displays the Employees table data for Steven Buchanan in the main form and his Personnel Actions records in the subform. Click Close to close the Find dialog.



3. Click in the Type field of the tentative append record in the subform. If the tentative append record in the subform isn't visible, click in any field in the subform and then click the New Record button on the toolbar to move to the tentative append record at the end of the existing Personnel Actions table entries for Steven Buchanan.



4. Type a valid Personnel Action type (H, S, Q, Y, B, or C, because of the field's validation rule) in the Type text box. Default date values appear in the Scheduled and Effective fields. In this example, you bring Steven Buchanan's Personnel Actions records up-to-date by adding quarterly performance review information. Press Tab or Enter to accept the Type and move the caret to the next data-entry text box, Initiated By.

**Note**

The short date values in this version of the subform aren't Year 2000 (Y2K) compliant. Altering display formats for Y2K compliance is one of the subjects of the next chapter.

5. Mr. Buchanan reports to the vice president of sales, Andrew Fuller, whose employee ID is 2. Type **2** in the Initiated By text box and press Enter.

The pencil symbol, which indicates that you're editing a record, replaces the triangle at the top of the Record Selector bar to the left of the record that you are entering. The Description property you entered for the field in the table underlying this query appears in the status bar and changes as you move the caret to the next field. (To change a previous entry, press Shift+Tab, or use the up- and down-arrow keys to maneuver to whichever text box contains a value you want to change.)

6. Mr. Buchanan was hired on 10/17/93, so his quarterly performance reviews should be about three months apart. Northwind Traders had no human resources (HR) department to maintain HR data until mid-1998, so accept the default scheduled date (today).

7. Because Mr. Fuller is a vice president, he has the authority to approve salary increases. Type Mr. Fuller's employee ID, **2**, in the Approved By text box and then press Enter to move the caret to the next field.

8. The effective date for salary adjustments for Northwind Traders is the 1st or 15th day of the month in which the performance review is scheduled. Type the appropriate date in the Effective text box.

9. You can type any number from **0** (terminated) to **9** (excellent) in the Rating text box, which reflects the employee's performance.

10. You can be as generous as you want with the salary increase that you enter in the New Amount text box. The value of the New Amount is a new monthly salary (or a new commission percentage), not an incremental value.

11. In the Comments multiline text box to the right of the New Amount field, add any comments you care to make concerning how generous or stingy you were with this salary increase. The multiline text box includes a scroll bar that appears when the caret is within the text box.

12. When you complete your entries, Access stores them in a memory buffer but does not add the new record to the Personnel Actions table. You can add the record to the table by doing any of the following: pressing Shift+Enter; choosing **R**ecords, **S**ave **R**ecord; clicking the New Record button; or changing the position of the record pointer with the Prior or Next record selector button. If you want to cancel the addition of a record, press Esc.
13. Repeat steps 3 through 12 to add a few additional records.

**Tip #110 from***RJ*

If you click the New Record button on the toolbar (or the Next record selector button) and then decide that you don't want to add any more data, simply click the Prior button to make sure this new record is not added to the table. If the table has required fields without default values, however, you must enter a value for each required field, then delete the added record.

When adding a record, your form appears like the one shown in Figure 12.23. Each record for an employee appears in the subform datasheet in the order of the primary key fields of the Personnel Actions table.

**Figure 12.23**  
The Personnel Actions form after appending subform records for a single employee.

The screenshot shows a Microsoft Access form titled 'frmPersonnelActions'. At the top, there are fields for 'ID:' (value: 5), 'Name:' (Buchanan, Steven), and 'Title:' (Sales Manager). Below these is a subform containing a table with the following columns: Type, Initiated By, Scheduled, Approved By, Effective, Rating, Amount, and Comments. The table contains two records:

Type	Initiated By	Scheduled	Approved By	Effective	Rating	Amount	Comments
Q	2	1/2/94	2	1/15/94	9	4,500.00	Steve's performance is excellent. He exceeded his
Q	2	10/20/98	2	11/1/98	8	8,000.00	Steve hasn't had a raise in 4.5 years because HR forgot him.

At the bottom of the subform, there is a 'Record:' indicator showing '3 of 3'. Below the subform, the main form's 'Record:' indicator shows '5 of 9'.

**EDITING EXISTING DATA**

You can edit existing records the same way you add new records. Use the Next button to find the record you want to edit and then make your changes. You can use the toolbar's Find button to locate records by employee ID, by one of the dates in the record, or by a word or phrase contained in the paComments field. If you prefer to order the records by paEffective date to find all records for which an effective date hasn't been entered, use the Filter by



Form button and specify an Ascending Sort on the paEffective field. Click the Apply Filter



button to apply the sort to the records.

## COMMITTING AND ROLLING BACK CHANGES TO TABLES

As with tentative append records, Access doesn't apply record edits to the underlying table until you move the record pointer with the record-selection buttons (or choose **Records, Save Record**). Either action is the equivalent of the `CommitTrans` instruction in transaction-processing terminology.



`Rollback` reverses a `CommitTrans` instruction. You can do the equivalent of rolling back a single transaction by clicking the Undo button on the toolbar immediately after you save the record to the table (or by choosing **Edit, Undo Saved Record** if that choice is available).

## MODIFYING THE PROPERTIES OF A FORM OR CONTROL AFTER TESTING

The entries you added and edited gave you an opportunity to test your form. Testing a form to ensure that it accomplishes the objectives you have in mind usually takes much longer than creating the form and the query that underlies it. During the testing process, you might notice that the order of the fields isn't what you want or that records in the subform aren't displayed in an appropriate sequence. The following two sections deal with modifying the properties of the form and subform control.

### CHANGING THE ORDER OF FIELDS FOR DATA ENTRY

The order in which the editing caret moves from one field to the next is determined by the Tab Order property of each control. The Form Wizard established the tab order of the controls when you first created the form. The default Tab Order property of each field is assigned, beginning with the value 0, in the sequence in which you add the fields. Because the Form Wizard created a single-column form, the order of the controls in Personnel Actions is top to bottom. The tab order originally assigned doesn't change when you relocate a control.

To change the sequence of entries—for example, to match the pattern of entries on a paper form—follow these steps:



1. Click the Design View button on the toolbar.
2. Choose **V**iew, **T**ab **O**rder to display the Tab Order dialog shown in Figure 12.24. The order of entry is shown by the sequence of field names in the Custom Order list. (In this example, changing the sequence of the entries is unnecessary because the sequence is logical, even after moving the controls to their present locations on the Personnel Actions form.)
3. Click the Auto Order button if you want to reorder the entry sequence going left to right across each row of fields, then top to bottom.
4. Drag any control to a new location by clicking the button at the left of its name and dropping it wherever you want it to be in the sequence.

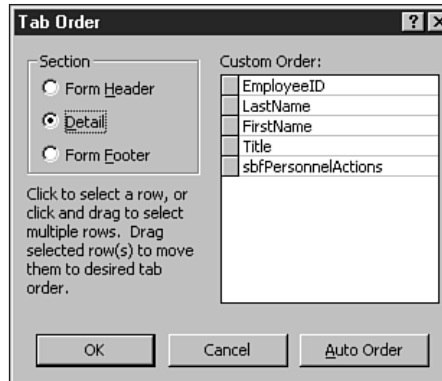


- Click OK to implement the changes you made; click Cancel to retain the original entry sequence.

**Note**

Using the Auto Order button to change the tab order of fields on a form also changes the left-to-right order of the table fields in Datasheet view to correspond to the Auto Order field sequence.

**Figure 12.24**  
Changing the sequence  
of data-entry fields in the  
Tab Order dialog.



## REMOVING FIELDS FROM THE TAB ORDER

Access 2000 lets you set the value of the Tab Stop property to No in order to prevent controls from receiving the focus in the tab order. To remove a control from the tab order, select the control, open the Properties window, select Other Properties, and change the value of Tab Stop property to **No**. You can't edit the EmployeeID field, so set the Tab Stop property to No for this control.

### Tip #111 from

*RJ*

Setting the Tab Stop property's value to No doesn't disable a given control, but it removes the control from the tab sequence. As a result, the control can't be selected by pressing the Tab key, but can still be selected by clicking it with the mouse.

## IN THE REAL WORLD—THE ART OF FORM DESIGN

Creating an effective form design for data entry requires a unique combination of graphic design and programming skills. Whether your goal is to develop conventional Access front-ends for Jet or SQL Server databases, or to design Data Access Pages (DAP) that run over an intranet, the basic methodology of form design is the same. Large database development projects usually begin with a detailed specification for the database, plus a set of descriptions of each data display and entry form. Small- to medium-sized organizations, however, seldom have the resources to develop an all-encompassing specification before embarking

on a project. If your objective is to develop from scratch Access forms for decision-support or online transaction processing (OLTP) applications, keep in mind the guidelines of this and the following chapter's "Real World" sections.

## UNDERSTAND THE AUDIENCE

Your first task is to determine how your Access application fits into the organization's business processes. If the application is for decision support, determine its audience. Most executives want a broad-brush, organization-wide view of the data, which usually entails graphical presentation of the information. Generating graphs is the primary topic of Chapter 19, "Adding Charts and Graphics to Forms and Reports." Managers commonly request graphs or charts for trend analysis, together with tabular summary information for their area of responsibility. PivotTables, described in Chapter 20, "Using Access with Microsoft Excel," let managers "slice and dice" the data to present multiple views of the data. Supervisors need very detailed information to handle day-to-day employee performance and productivity issues. Thus your decision-support application is likely to require several forms, each tailored to the information needs of users at different levels in the organization's hierarchy.

OLTP front-ends differ dramatically from decision-support applications. A single-purpose OLTP form for online order entry differs dramatically from the interrelated multiple forms of a complex accounting system. For heads-down OLTP—typified by telephone order or reservation applications—keyboard-only data entry is the rule. One of the primary objectives of OLTP form design is minimizing operator fatigue; tired operators tend to enter inaccurate data. OLTP forms need to be simple, fast, and easily readable. Easy reading implies larger-than-standard fonts—at least 10 points—and subdued form colors.

## DESIGN IN CLIENT MONITOR RESOLUTION

You might have a 1,280×960 monitor and a 3-D graphics accelerator with 32-bit color depth, but it's not very likely that all of the users of your application are so fortunate. In the Access 2.0 era, designing for 640×480 resolution was the rule; in those days, most laptop and many desktop PCs had standard 256-color VGA displays. Today, most mobile and desktop PCs support at least 800×600 (SVGA) resolution. When designing your forms for SVGA resolution, switch to 800×600 display mode, even if you have a 21-inch monitor. Make sure to test your form designs with the 14- or 15-inch monitors that commonly are assigned to data-entry operators. If your application must support mobile users having a variety of laptop and notebook hardware, make sure to check for adequate contrast and text readability on laptop and notebook PCs with 10-inch or smaller passive- and active-matrix LCD displays. The low contrast of passive-matrix LCDs, especially in a well-lighted environment, presents the greatest challenge to form designers.

## STRIVE FOR CONSISTENCY AND SIMPLICITY

Microsoft's goal for the Office suite is visual and operational consistency between members. Design your Access decision support-forms to emulate the "look and feel" of other Office

2000 members, especially Microsoft Excel. It's a likely bet that most decision-support users are familiar with Excel.

Simplicity is the watchword when designing OLTP forms. Provide only the elements—forms and controls—required for data-entry operators to get their work done. Above all, attempt to design a single form that handles all aspects of the OLTP process. Opening a new form for each step in the data entry process causes visual discontinuities that lead to operator fatigue. Substitute visually simple list boxes for read-only datasheets; show and hide the list boxes with VBA code to minimize screen clutter.

Figure 12.25 shows the single form of an Access demonstration OLTP application, A2koltp.mdb, in order lookup mode. A2KOLTP.mdb originated as a Microsoft Tech\*Ed presentation for designers of Access 2.0 client/server OLTP front-ends. Typing the first letter or two of a customer name in the Bill To text box and pressing Return opens a list box of customer matches. Selecting the customer in the left list box with the down-arrow key and pressing return opens the right text box from which you select with the down-arrow key an existing order to review. Pressing return again fills the Ship To information text boxes and shows a list box of order line items (see Figure 12.26). Each command button and data field group has a shortcut key to eliminate the need for mouse operations. Many of the “Real World” sections of the remaining chapters of this book use A2koltp.mdb as an example of Access form and application design for production front-ends.

**Figure 12.25**  
Selecting a customer and an open order in the single form of the A2koltp.mdb application.

**Northwind Traders Client/Server Order Entry System**

Find Customer   New Order   Find Orders   Show Detail   New Customer   Passthrough

**Bill To:** Queen Cozinha   **ID:** QUEEN  
**Address:** Alameda dos Canários, 891  
**City, State, ZIP:** São Paulo   SP   05487-020  
**Country:** Brazil  
**Telephone:** (11) 555-1189   **Fax:**

**Our Order #:**  
**Buyer:** Lúcia Carvalho  
**Title:** Marketing Assistant  
**Order Date:**  
**Required Date:**  
**Shipped Date:**  
**Shipper:**  
**Freight:**

**Ship To:**  
**Address:**  
**City, State, ZIP:**  
**Country:**

**Employee:**

Double-click to select the customer.  

Company Name	City
Que Delícia	Rio de Janeiro
Queen Cozinha	São Paulo
QUICK-Stop	Cunewalde

Double-click to select the Order.  

Ord. ID	Date	Required	Shipped
11080	08/27/97	08/29/97	
11079	08/27/97	08/29/97	
11068	03/27/97	04/24/97	
10961	02/09/97	03/09/97	02/20/97
10914	01/20/97	02/17/97	01/23/97
10913	01/19/97	02/16/97	01/25/97

**Find Customer(s):** 0.11 seconds   **Find Order(s):** 0.11 seconds

Northwind Traders Client/Server Order Entry System

Passthrough

**Bill To:** Queen Cozinha **ID:** QUEEN  
**Address:** Alameda dos Canários, 891  
**City, State, ZIP:** São Paulo SP 05487-020  
**Country:** Brazil  
**Telephone:** (11) 555-1189 **Fax:**

**Ship To:** Queen Cozinha  
**Address:** Alameda dos Canários, 891  
**City, State, ZIP:** São Paulo SP 05487-020  
**Country:** Brazil

**Our Order #:** 11068  
**Buyer:** Lúcia Carvalho  
**Title:** Marketing Assistant  
**Order Date:** 3/27/97  
**Required Date:** 4/24/97  
**Shipped Date:**  
**Shipper:** United Package  
**Freight:** \$81.75  
**Employee:** Callahan

Order contains the following line items:

Quan	Packaging	ID	Product Name	Unit	Disc	Extended
8	25 - 825 g cans	28	Rössle Sauerkraut	\$45.60	15.0%	\$310.08
36	16 - 500 g tins	43	Ipoh Coffee	\$46.00	15.0%	\$1,407.60
28	12 boxes	77	Original Frankfurter grüne	\$13.00	15.0%	\$309.40

Get Details: 0.27 seconds

**Figure 12.26**  
Shipping and line item information for the order selected in Figure 12.25.

--rj



# GENERATING WEB PAGES FROM TABLES AND QUERIES

## In this chapter

- Easing the Way to Web-Based Decision Support 628
- Exporting Table and Query Datasheets to HTML 628
- Using HTML Templates 637
- Exporting Reports to HTML 639
- Importing Data from HTML Tables 643
- Creating Dynamic Web Pages 648
- Troubleshooting 654
- In the Real World—ASP versus DAP 654

## EASING THE WAY TO WEB-BASED DECISION SUPPORT

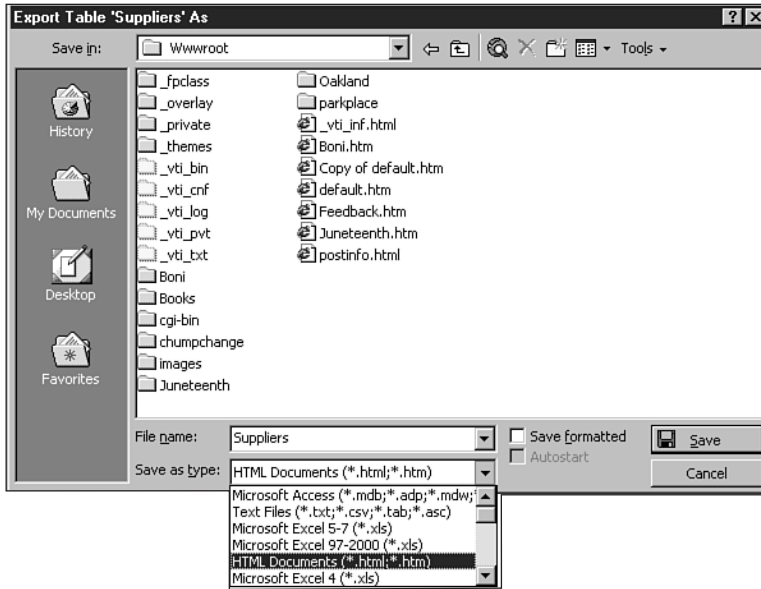
The easiest approach to creating Web pages is to export existing content from applications with which you're familiar. Each member of Office 2000 is capable of exporting documents to formatted HTML files with a File menu choice or a wizard. Access 2000 gives you several options for creating static and dynamic Web pages from data contained in Jet tables. This chapter covers methods for generating Internet-compliant static and dynamic Web pages. *Internet-compliant* content, defined in the "Putting Microsoft's Internet Program in Perspective" section of the preceding chapter, works with any browser on any operating system. *Static* Web pages require you to replace a page when the underlying data changes; *dynamic* pages update automatically when the data changes and let users execute queries against databases. The next chapter, "Designing Data Access Pages," describes how to create intranet-only pages that take advantage of Dynamic HTML (DHTML) data binding.

You don't need to be an HTML expert to export data from Access 2000 objects to static Web pages and to semi-dynamic Web pages that deliver current data but don't offer query capability. In fact, you don't need to have any knowledge of HTML and its formatting tags to do the examples in this chapter. An elementary understanding of using basic HTML tags, however, lets you alter the predetermined format of exported data to improve the appearance or utility of your Web pages. Thus, the HTML source for some of the examples in this chapter is included in the form of code listings or examples in the text.

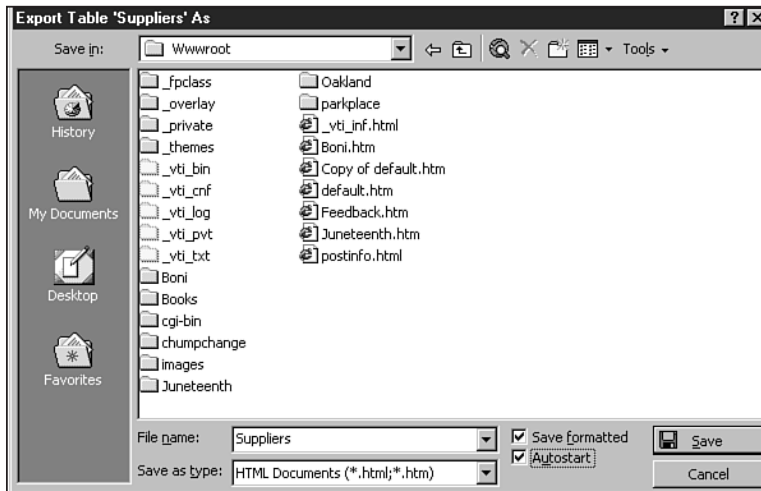
## EXPORTING TABLE AND QUERY DATASHEETS TO HTML

Northwind.mdb's Suppliers table is a good choice for exporting to a Web page because it contains relatively few fields and records. The Suppliers table also includes four hyperlinks, two of which link to sample home pages in your ... \Office \Samples folder. To create a formatted Web page from the Suppliers table, follow these steps:

1. Open Northwind.mdb, if necessary, and select the Suppliers table in the Database window.
2. Choose File, Export to open the Export Table 'Suppliers' As dialog.
3. Navigate in the Save In dropdown list to the ... \Office \Sample folder or in a folder of your Web server, such as ... \Wwwroot.
4. In the Save as Type dropdown list, select HTML Documents (\*.html, \*.htm), as shown in Figure 17.1. The table name is the default file name. UNIX servers commonly use the .html extension, while .htm is more common for Windows NT 4+ servers. Internet Explorer (IE) 5.0 handles .html (the default) and .htm extensions equally well.
5. Selecting HTML Documents enables the Save Formatted check box, which you must mark to include Access 2000's automatic HTML formatting. When you mark the Save Formatted check box, the Autostart check box is enabled. Mark the Autostart check box to have IE 5.0 or another default browser display the page when exporting finishes (see Figure 17.2).



**Figure 17.1**  
Selecting HTML Documents as the format for exporting the content of an Access 2000 table.



**Figure 17.2**  
Specifying HTML formatting with the Save Formatted option and opening the exported .html file in your default browser with the Autostart option.

6. Click the Save button to close the Export Table 'Suppliers' As dialog and begin the export process. Click OK to close the HTML Output Options dialog, leaving the HTML Template text box empty (see Figure 17.3). The section "Using HTML Templates" later in the chapter describes how to base the design of your Web page on an HTML template.
7. When the formatted Suppliers.html Web page automatically appears in your browser (see Figure 17.4), scroll to the right to display the Home Page table column. If you

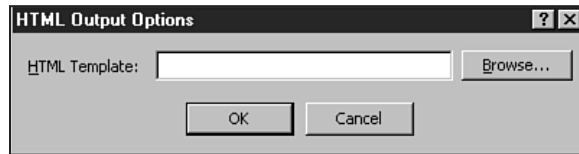


saved the HTML file to ...\\Office\\Samples, click one of the local hyperlinks (CAJUN.HTM or FORMAGGI.HTM) to test the links to the sample Web pages in your ...\\Office\\Samples folder.

HTML formats hyperlinks with `<A HREF=location>` tags that include the location of the linked document. If you saved the HTML file in folder other than ...\\Office\\Samples, the CAJUN.HTM and FORMAGGI.HTM links don't work, because these relative links don't include a path prefix.

**Figure 17.3**

You can initiate a find in a Approach through variety of ways.



**Figure 17.4**

IE 5.0 displaying the formatted Web page created from the Suppliers table.

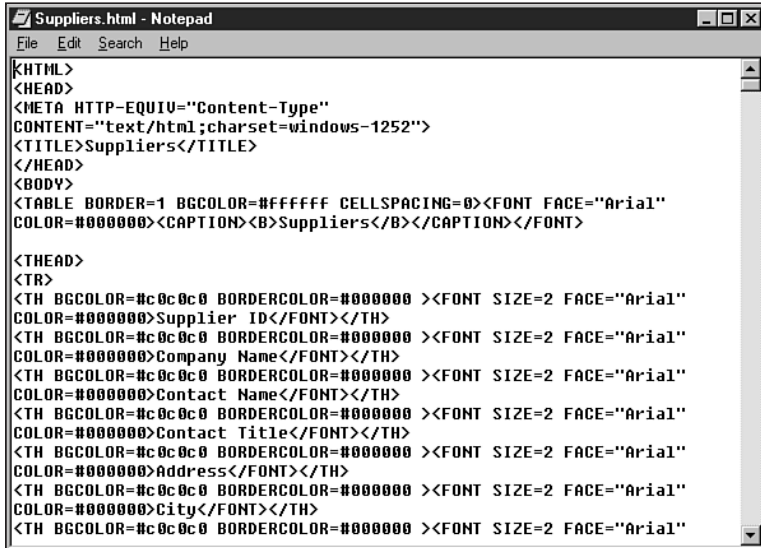
Supplier ID	Company Name	Contact Name	Contact Title	Address	City	Region	Postal Code	Country	Phone
1	Exotic Liquids	Charlotte Cooper	Purchasing Manager	49 Gilbert St.	London		EC1 4SD	UK	(171) 555-2222
2	New Orleans Cajun Delights	Shelley Burke	Order Administrator	P.O. Box 78934	New Orleans	LA	70117	USA	(100) 555-4822
3	Grandma Kelly's Homestead	Regina Murphy	Sales Representative	707 Oxford Rd.	Ann Arbor	MI	48104	USA	(313) 555-5735
4	Tokyo Traders	Yoshi Nagase	Marketing Manager	9-8 Sekimai Musashino-shi	Tokyo		100	Japan	(03) 3555-5011
5	Cooperativa de Quesos 'Las Cabras'	Antonio del Valle Saavedra	Export Administrator	Calle del Rosal 4	Oviedo	Asturias	33007	Spain	(98) 598 754
6	Mayumi's	Mayumi Ohno	Marketing Representative	92 Setsuko Chuo-ku	Osaka		545	Japan	(06) 431-7877
7	Pavlova, Ltd.	Ian Deving	Marketing Manager	74 Rose St. Moonie Ponds	Melbourne	Victoria	3058	Australia	(03) 444-2343
8	Specialty Biscuits, Ltd.	Peter Wilson	Sales Representative	29 King's Way	Manchester		M14 6SD	UK	(161) 555-4448
9	PB Knäckebröd AB	Lars Peterson	Sales Agent	Kaloadagatan 13	Göteborg		S-345 67	Sweden	031-987 643
10	Refrescos Americanas	Carlos	Marketing	Av. das	São Paulo		5442	Brazil	(11) 555

**Note**

HTML uses *tags* to identify the beginning and end of HTML documents (`<HTML>` and `</HTML>`), titles (`<TITLE>` and `</TITLE>`), and other elements of the page. HTML 4.0, the current version of HTML when Microsoft released Access 2000, has hundreds of tags for formatting, creating control objects on pages, and other uses.

- ➔ Look for *Special Edition Using HTML 4, Fifth Edition* by Molly Holzschlag from Que Publishing, ISBN 0-7897-1851-0 for more information on using these and other tags to create Web pages.

- Choose **View, Source** from IE 5.0's menu to display the HTML source for the Suppliers.html file in Windows Notepad (see Figure 17.5). If the size of the file is larger than about 50KB, you get a message that the file is too large for Notepad and are given the option to open the file in WordPad.



```

<HTML>
<HEAD>
<META HTTP-EQUIV="Content-Type"
CONTENT="text/html; charset=windows-1252">
<TITLE>Suppliers</TITLE>
</HEAD>
<BODY>
<TABLE BORDER=1 BGCOLOR=#FFFFFF CELLSPACING=0><FONT FACE="Arial"
COLOR=#000000><CAPTION><B>Suppliers</B></CAPTION></FONT>

<THEAD>
<TR>
<TH BGCOLOR=#c0c0c0 BORDERCOLOR=#000000 ><FONT SIZE=2 FACE="Arial"
COLOR=#000000>Supplier ID</FONT></TH>
<TH BGCOLOR=#c0c0c0 BORDERCOLOR=#000000 ><FONT SIZE=2 FACE="Arial"
COLOR=#000000>Company Name</FONT></TH>
<TH BGCOLOR=#c0c0c0 BORDERCOLOR=#000000 ><FONT SIZE=2 FACE="Arial"
COLOR=#000000>Contact Name</FONT></TH>
<TH BGCOLOR=#c0c0c0 BORDERCOLOR=#000000 ><FONT SIZE=2 FACE="Arial"
COLOR=#000000>Contact Title</FONT></TH>
<TH BGCOLOR=#c0c0c0 BORDERCOLOR=#000000 ><FONT SIZE=2 FACE="Arial"
COLOR=#000000>Address</FONT></TH>
<TH BGCOLOR=#c0c0c0 BORDERCOLOR=#000000 ><FONT SIZE=2 FACE="Arial"
COLOR=#000000>City</FONT></TH>
<TH BGCOLOR=#c0c0c0 BORDERCOLOR=#000000 ><FONT SIZE=2 FACE="Arial"

```

**Figure 17.5**  
The first few lines of the HTML source for the Suppliers.html file.

- Close Notepad and your browser, and then return to Access.

#### Note



Access 2000 doesn't have Access 97's **File, Save As HTML** menu choice, nor does it offer the prior version's **Publish to the Web Wizard**. Thus, exporting data in HTML format is a manual process in Access 2000, undoubtedly as a result of Microsoft's preference for Data Access Pages. Data Access Pages rely on users having Microsoft Internet Explorer 4+, and adding Office Web Components to Data Access Pages requires all users to have an Office 2000 license. Thus, Data Access Pages aren't Internet-compliant, but are suited for intranet deployment where all its users have Office 2000 licenses. The examples in this chapter create "vanilla" HTML pages that run in any browser on any operating system.

## CREATING AN UNFORMATTED WEB PAGE

The vast majority of the content of the Suppliers.html file is HTML formatting instructions for colors and text fonts. The color and font formatting instructions obscure the HTML text that creates the tabular structure of the Web page. Much of the formatting content is duplicated throughout the source code; duplicate formatting is typical when you use tools that automatically create Web pages for you.

To create a Web page with a simple HTML table that doesn't include extra formatting instructions, modify the process described in the preceding example as follows:

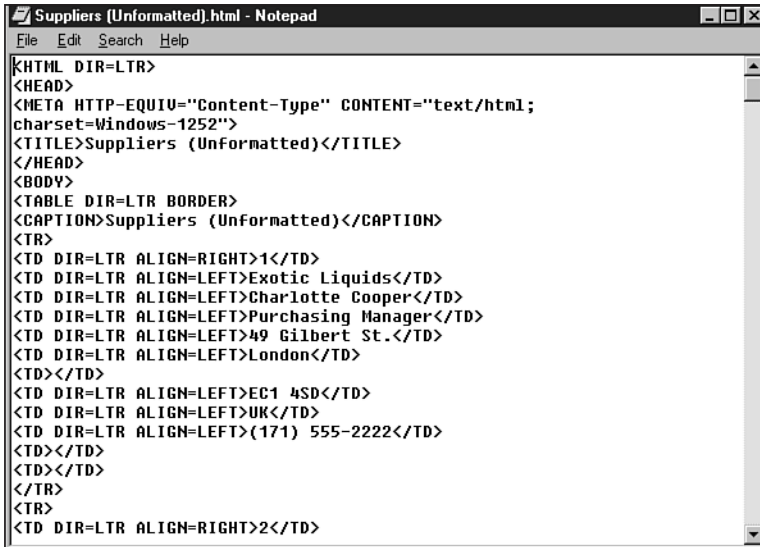
1. Repeat steps 2, 3, and 4 of the preceding example. In step 4, change the name of the file to **Suppliers (Unformatted)**.
2. With the Save Formatted check box cleared, click the Export button to create the unformatted Web page. In this case, the HTML Output Options dialog doesn't appear.
3. Open Explorer, navigate to the folder in which you stored the exported file, and double-click the Suppliers (Unformatted).html item to launch your browser and display the unformatted Web page in IE 5.0 (see Figure 17.6).

**Figure 17.6**  
The Suppliers  
(Unformatted).html file  
displayed in IE 5.0.

1	Exotic Liquids	Charlotte Cooper	Purchasing Manager	49 Gilbert St.	London		EC1 4SD	UK	(171) 5222
2	New Orleans Cajun Delights	Shelley Burke	Order Administrator	P.O. Box 78934	New Orleans	LA	70117	USA	(100) 54822
3	Grandma Kelly's Homestead	Regina Murphy	Sales Representative	707 Oxford Rd.	Ann Arbor	MI	48104	USA	(313) 55735
4	Tokyo Traders	Yoshi Nagase	Marketing Manager	9-8 Sekimai Musashino-shi	Tokyo		100	Japan	(03) 355011
5	Cooperativa de Quesos 'Las Cabras'	Antonio del Valle Saavedra	Export Administrator	Calle del Rosal 4	Oviedo	Asturias	33007	Spain	(98) 59454
6	Mayumi's	Mayumi Ohno	Marketing Representative	92 Setsuko Chuo-ku	Osaka		545	Japan	(06) 437877
7	Pavlova, Ltd.	Ian Devling	Marketing Manager	74 Rose St. Moonie Ponds	Melbourne	Victoria	3058	Australia	(03) 442343
8	Specialty Biscuits, Ltd.	Peter Wilson	Sales Representative	29 King's Way	Manchester		M14 GSD	UK	(161) 54448
9	PB Knäckebröd AB	Lars Peterson	Sales Agent	Kaloadagatan 13	Göteborg		S-345 67	Sweden	031-9843
	Refrescos Americanos	Carlos	Marketing	Av. das					(11) 555

4. Choose **View**, **Source** from IE 5.0's menu to display in Notepad the simplified HTML source for the page (see Figure 17.7). All the font and color formatting is removed, and the source only includes the most basic HTML tags to create a title for the browser's title bar, caption, and the table containing the data. The unformatted table doesn't include a header for field names and uses the default HTML table borders.
5. After you've reviewed the HTML source code, close Notepad and your browser to return to Access.

Listing 17.1 shows the HTML source for the unformatted page, with only the first two and the last rows of data. (An ellipsis (...) replaces missing table data rows.) `<TR>...</TR>` tags define the beginning and end of a table row. Individual data cells of the table are defined by `<TD>...</TD>` pairs. Unless the `ALIGN=RIGHT` attribute for numeric values is applied to a cell, the default left alignment for text prevails.



```

Suppliers (Unformatted).html - Notepad
File Edit Search Help
<HTML DIR=LTR>
<HEAD>
<META HTTP-EQUIV="Content-Type" CONTENT="text/html;
charset=Windows-1252">
<TITLE>Suppliers (Unformatted)</TITLE>
</HEAD>
<BODY>
<TABLE DIR=LTR BORDER>
<CAPTION>Suppliers (Unformatted)</CAPTION>
<TR>
<TD DIR=LTR ALIGN=RIGHT>1</TD>
<TD DIR=LTR ALIGN=LEFT>Exotic Liquids</TD>
<TD DIR=LTR ALIGN=LEFT>Charlotte Cooper</TD>
<TD DIR=LTR ALIGN=LEFT>Purchasing Manager</TD>
<TD DIR=LTR ALIGN=LEFT>49 Gilbert St.</TD>
<TD DIR=LTR ALIGN=LEFT>London</TD>
<TD></TD>
<TD DIR=LTR ALIGN=LEFT>EC1 4SD</TD>
<TD DIR=LTR ALIGN=LEFT>UK</TD>
<TD DIR=LTR ALIGN=LEFT>(171) 555-2222</TD>
<TD></TD>
<TD></TD>
</TR>
<TR>
<TD DIR=LTR ALIGN=RIGHT>2</TD>

```

**Figure 17.7**  
Simplified HTML  
source for the unfor-  
matted version of the  
page created from the  
Suppliers table.

#### LISTING 17.1 HTML SOURCE FOR THE SUPPLIERS (UNFORMATTED).HTML FILE WITH SOURCE ONLY FOR THE FIRST TWO AND LAST RECORDS

```

<HTML DIR=LTR>
<HEAD>
<META HTTP-EQUIV="Content-Type" CONTENT="text/html; charset=Windows-1252">
<TITLE>Suppliers (Unformatted)</TITLE>
</HEAD>
<BODY>
<TABLE DIR=LTR BORDER>
<CAPTION>Suppliers (Unformatted)</CAPTION>
<TR>
<TD DIR=LTR ALIGN=RIGHT>1</TD>
<TD DIR=LTR ALIGN=LEFT>Exotic Liquids</TD>
<TD DIR=LTR ALIGN=LEFT>Charlotte Cooper</TD>
<TD DIR=LTR ALIGN=LEFT>Purchasing Manager</TD>
<TD DIR=LTR ALIGN=LEFT>49 Gilbert St.</TD>
<TD DIR=LTR ALIGN=LEFT>London</TD>
<TD></TD>
<TD DIR=LTR ALIGN=LEFT>EC1 4SD</TD>
<TD DIR=LTR ALIGN=LEFT>UK</TD>
<TD DIR=LTR ALIGN=LEFT>(171) 555-2222</TD>
<TD></TD>
<TD></TD>
</TR>
...
<TR>
<TD DIR=LTR ALIGN=RIGHT>24</TD>
<TD DIR=LTR ALIGN=LEFT>G'day, Mate</TD>
<TD DIR=LTR ALIGN=LEFT>Wendy Mackenzie</TD>
<TD DIR=LTR ALIGN=LEFT>Sales Representative</TD>

```

*continues*

## LISTING 17.1 CONTINUED

```

<TD DIR=LTR ALIGN=LEFT>170 Prince Edward Parade&#13;&#10;<BR>Hunter's Hill</TD>
<TD DIR=LTR ALIGN=LEFT>Sydney</TD>
<TD DIR=LTR ALIGN=LEFT>NSW</TD>
<TD DIR=LTR ALIGN=LEFT>2042</TD>
<TD DIR=LTR ALIGN=LEFT>Australia</TD>
<TD DIR=LTR ALIGN=LEFT>(02) 555-5914</TD>
<TD DIR=LTR ALIGN=LEFT>(02) 555-4873</TD>
<TD DIR=LTR ALIGN=LEFT>
<A HREF="http://www.microsoft.com/accessdev/sampleapps/gdaymate.htm">G'day Mate
(on the World Wide Web)</A></TD>
</TR>
...
<TR>
<TD DIR=LTR ALIGN=RIGHT>29</TD>
<TD DIR=LTR ALIGN=LEFT>Forêts d'érables</TD>
<TD DIR=LTR ALIGN=LEFT>Chantal Goulet</TD>
<TD DIR=LTR ALIGN=LEFT>Accounting Manager</TD>
<TD DIR=LTR ALIGN=LEFT>148 rue Chasseur</TD>
<TD DIR=LTR ALIGN=LEFT>Ste-Hyacinthe</TD>
<TD DIR=LTR ALIGN=LEFT>Québec</TD>
<TD DIR=LTR ALIGN=LEFT>J2S 7S8</TD>
<TD DIR=LTR ALIGN=LEFT>Canada</TD>
<TD DIR=LTR ALIGN=LEFT>(514) 555-2955</TD>
<TD DIR=LTR ALIGN=LEFT>(514) 555-2921</TD>
<TD></TD>
</TR>
</TABLE>
</BODY>
</HTML>

```

HTML uses the `&charname;` format to specify special characters. For example, `&ecirc;` inserts the letter *e* with a circumflex (ê) for Forêts, and `&acute;` inserts the letter *e* with an acute (é) in both d'érables and Québec in the last row of the table in Listing 17.1. `</TABLE>`, `</BODY>`, and `</HTML>` denote the end of the table, body part, and document.

## Tip #147 from



Files containing conventional (unformatted) HTML tables are much smaller than Access 2000's formatted files. As an example, Suppliers.html (34K) is more than twice the size of Suppliers (Unformatted).html (14K). It's uncommon to export tables with large numbers of records to single Web pages because they are slow to load in the user's browser and make finding the desired row a chore. If you must create a static Web page from a table or query with a large number of rows, choose the unformatted version to reduce file size and speed display in the browser.

## CREATING A WEB PAGE FROM A QUERY

Tables in Web pages exported from entire Access tables often contain much more than users want to know, so most static Web pages include only a subset of the records and columns of large tables. The objective of reducing the number of columns is to eliminate the need for horizontal scrolling to review the information presented. Queries let you

specify the columns that appear in the page. Multiple queries with different criteria let you create a series of Web pages opened by hyperlinks on a home page.

**Tip #148 from**

*RJ*

If you use a parameterized query, you're prompted to enter the parameter value before Access creates the HTML file. If you use parameterized queries to create multiple pages, remember to save the resulting file with an appropriate file name to prevent overwriting files created with other parameter values. All the Web pages you create from a single parameterized query have the same title and caption, which limits the utility of parameterized queries for creating static Web pages.

The following example uses a query to display only the North American customers of Northwind Traders in a format that doesn't require horizontal scrolling. The resulting Web page almost fills the width of the display area of a browser on PCs using either 640×480 or 800×600 video resolution. Although 800×600 is the most common resolution for today's desktop PCs with 15-inch and larger monitors, you should also make sure your Web page design is suitable for the 640×480 resolution used by the installed base of older laptop computers and hand-held devices running Windows CE.

Follow these steps to create the sample query and Web page:

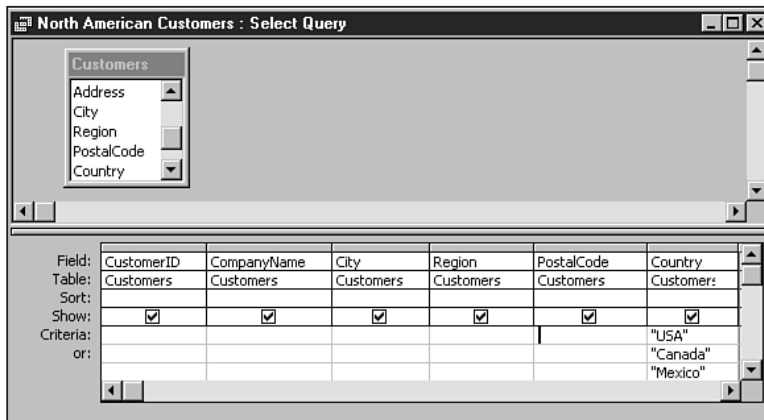


1. Create a new query and add only the Customers table.
2. Add the CustomerID, CompanyName, City, Region, PostalCode, Phone, and Country fields to the query design grid.
3. Add **USA**, **Canada**, and **Mexico** in three Criteria cells of the Country field and save your query with the name **North American Customers** (see Figure 17.8).

**Tip #149 from**

*RJ*

The export process uses the query object name for the title and caption of the Web page. Thus, using the qry prefix for query names isn't recommended when you design queries for export to Web pages.



**Figure 17.8**

Designing a query to display selected records in a Web page without a horizontal scroll bar.



- Run your query to change to Datasheet view and test the design (see Figure 17.9).

**Figure 17.9**  
The query result set of the query design of Figure 17.8.

Customer ID	Company Name	City	Region	Postal Code	Country
ANATR	Ana Trujillo Emparedados y helados	México D.F.		05021	Mexico
ANTON	Antonio Moreno Taquería	México D.F.		05023	Mexico
BOTTM	Bottom-Dollar Markets	Tsawassen	BC	T2F 8M4	Canada
CENTC	Centro comercial Moctezuma	México D.F.		05022	Mexico
GREAL	Great Lakes Food Market	Eugene	OR	97403	USA
HUNGC	Hungry Coyote Import Store	Elgin	OR	97827	USA
LAUGB	Laughing Bacchus Wine Cellars	Vancouver	BC	V3F 2K1	Canada
LAZYK	Lazy K Kountry Store	Walla Walla	WA	99362	USA
LETSS	Let's Stop N Shop	San Francisco	CA	94117	USA
LONEP	Lonesome Pine Restaurant	Portland	OR	97219	USA
MEREP	Mère Paillard	Montréal	Québec	H1J 1C3	Canada
OLDWO	Old World Delicatessen	Anchorage	AK	99508	USA
PERIC	Pericles Comidas clásicas	México D.F.		05033	Mexico
RATTC	Rattlesnake Canyon Grocery	Albuquerque	NM	87110	USA

- Choose **File**, **Export**, to open the Export Query dialog, and choose the location for your file. Select **HTML Documents (\*.html, \*.htm)** in the Files of Type dropdown list and mark the **Save Formatted** and **Autostart** check boxes.
- Click **Save All**, and then click **OK** when the HTML Options dialog appears. After a few seconds, your query result set appears in your default Web browser. Figure 17.10 shows the formatted page in IE 5.0 at 800×600 resolution. The appearance of the table is identical in 640×480 resolution.

**Figure 17.10**  
The Web page created from the query datasheet of Figure 17.9.

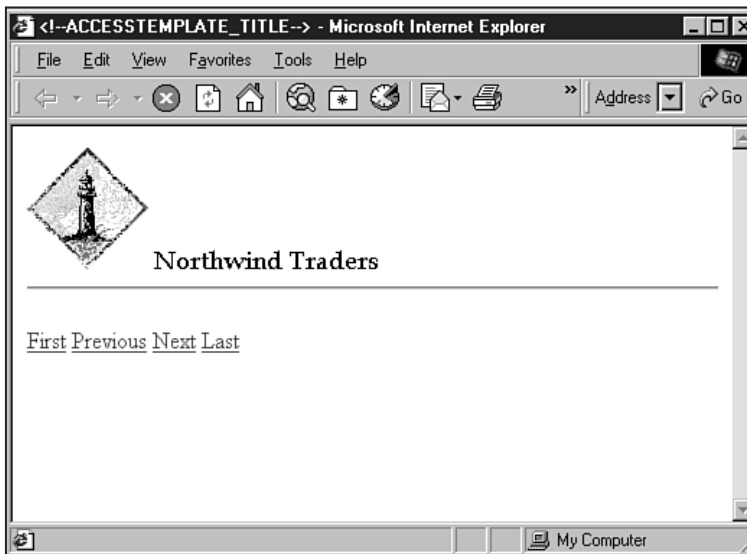
Customer ID	Company Name	City	Region	Postal Code	Country
ANATR	Ana Trujillo Emparedados y helados	México D.F.		05021	Mexico
ANTON	Antonio Moreno Taquería	México D.F.		05023	Mexico
BOTTM	Bottom-Dollar Markets	Tsawassen	BC	T2F 8M4	Canada
CENTC	Centro comercial Moctezuma	México D.F.		05022	Mexico
GREAL	Great Lakes Food Market	Eugene	OR	97403	USA
HUNGC	Hungry Coyote Import Store	Elgin	OR	97827	USA
LAUGB	Laughing Bacchus Wine Cellars	Vancouver	BC	V3F 2K1	Canada
LAZYK	Lazy K Kountry Store	Walla Walla	WA	99362	USA
LETSS	Let's Stop N Shop	San Francisco	CA	94117	USA
LONEP	Lonesome Pine Restaurant	Portland	OR	97219	USA
MEREP	Mère Paillard	Montréal	Québec	H1J 1C3	Canada
OLDWO	Old World Delicatessen	Anchorage	AK	99508	USA
PERIC	Pericles Comidas clásicas	México D.F.		05033	Mexico
RATTC	Rattlesnake Canyon Grocery	Albuquerque	NM	87110	USA
SAVEA	Save-a-lot Markets	Boise	ID	83720	USA
SPLUR	Split Rail Beer & Ale	Lander	WY	82520	USA
THEBI	The Big Cheese	Portland	OR	97201	USA
THECR	The Cracker Box	Butte	MT	59801	USA
TORTU	Tortuga Restaurante	México D.F.		05033	Mexico
TRAIH	Trail's Head Gourmet Provisioners	Kirkland	WA	98034	USA
WHITC	White Clover Markets	Seattle	WA	98128	USA

## USING HTML TEMPLATES

Most commercial Web sites use HTML templates to provide a consistent corporate or organizational image and to add visual interest to Web pages without writing a lot of HTML source for each page. The majority of Web page authoring applications, such as Microsoft FrontPage 2000, include a variety of templates from which you quickly can create Web pages with a standardized appearance.

## USING THE ACCESS HTML TEMPLATES INCLUDED WITH OFFICE 2000

Microsoft included with Access 97 a variety of HTML templates (.htm files) in the \Program Files\Microsoft Office\Templates\Access folder. These templates included a “Created with Microsoft Access” logo and a different background color and pattern. Access 2000 includes only one Access template file, Nwindtem.htm in the ... \Office\Samples folder. Figure 17.11 shows the Nwindtem.htm template displayed in IE 5.0.



**Figure 17.11**  
The Nwindtem.htm  
template file displayed  
in IE 5.0.

When you choose **V**iew, **S**ource from IE 5.0’s menu to display the HTML source of an Access HTML template file, the content appears similar to that shown for Nwindtem.htm in Figure 17.12. The `<! text >` tag normally is used to add invisible comments to a Web page. The Access 2000 export feature interprets comment text in the format `<! - - AccessTemplate_Element - - >` to mean “replace this line with the specified *Element*.” Microsoft calls these comment lines *Access HTML Template Tags*. Table 17.1 lists the Access HTML Template Tags recognized by Access 2000. The ...Page anchor tags listed in Table 17.1 are used with multiple-page exports from Access reports, the subject of the section “Exporting Reports to HTML” later in this chapter.



**Figure 17.12**  
The HTML source for  
the Nwindtem.htm  
template file.

```

nwindtem.htm - Notepad
File Edit Search Help
<HTML>
<HEAD>
<META HTTP-EQUIV="Content-Type" CONTENT="text/html;
charset=windows-1252">
<META NAME="Version" CONTENT="2317">
<META NAME="Language Code" CONTENT="1033">
<TITLE><!--ACCESSTEMPLATE_TITLE--></TITLE>

<META NAME="DocumentEn" CONTENT="windows-1252">

</HEAD>
<BODY LINK="#0000FF" VLINK="#800080">
<IMG SRC="NWLogo.GIF"> <FONT SIZE=4 FACE="Book Antiqua">Northwind
Traders</FONT>
<HR>

<!--ACCESSTEMPLATE_BODY--> <BR>
<A HREF="#<!--AccessTemplate_FirstPage-->">First</A>
<A HREF="#<!--AccessTemplate_PreviousPage-->">Previous</A>
<A HREF="#<!--AccessTemplate_NextPage-->">Next</A>
<A HREF="#<!--AccessTemplate_LastPage-->">Last</A>
</BODY>
</HTML>

```

**TABLE 17.1 REPLACEABLE ACCESS HTML TEMPLATE TAGS RECOGNIZED BY ACCESS 2000**

Access HTML Template Tag	Purpose
<!--AccessTemplate_Title-->	The object name that appears in the browser's title bar.
<!--AccessTemplate_Body-->	The table created from the object's output.
<!--AccessTemplate_FirstPage-->	Anchor tag to first page.
<!--AccessTemplate_PreviousPage-->	Anchor tag to previous page.
<!--AccessTemplate_NextPage-->	Anchor tag to next page.
<!--AccessTemplate_LastPage-->	Anchor tag to last page.
<!--AccessTemplate_PageNumber-->	Displays the current page number.

## EXPORTING A QUERY DATASHEET WITH A TEMPLATE

To add a template to a Web page created from a query datasheet, follow these steps:

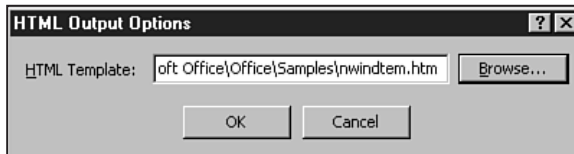
1. Create the query design, save the query with an appropriate name for the title and caption, and execute the query to open it in Datasheet view. This example uses a modified version (US Customers) of the North American Customers query that displays only customers in the U.S.
2. Copy the graphics files required by the template to the folder in which you intend to save your exported Web page. For the Nwindtem.htm template, copy the Nwlogo.gif file to ... \Wwwroot, assuming you're using this folder to store your .html files.

**Tip #150 from**

RJ

It's a better Web design practice to place all graphics files in an ... \Images folder, rather than in the same folder as the page(s) that display them. Using an ... \Images folder lets you reuse standard .gif or .jpg files in multiple pages and provides a central storage point for easier graphics file management.

3. Choose **F**ile, **E**xport to open the Export Query '*Query Name*' In dialog and select the folder in which to save the file. Select HTML Documents (\*.html, \*.htm) in the Save as Type dropdown list and mark the Save Formatted and Autostart check boxes. Change the name of the file in the File Name combo box, if you want to use a non-default file name. Click Save to continue.
4. When the HTML Options dialog appears, click the Browse button to select your template in the HTML Template To Use dialog—... \Office\Samples\Nwindtem.htm for this example (see Figure 17.13).



**Figure 17.13**  
Specifying the Access HTML template for an exported Web page.

**Tip #151 from**

RJ

When you specify a template in the HTML Options dialog, the template becomes the default template for the succeeding Web pages you export.

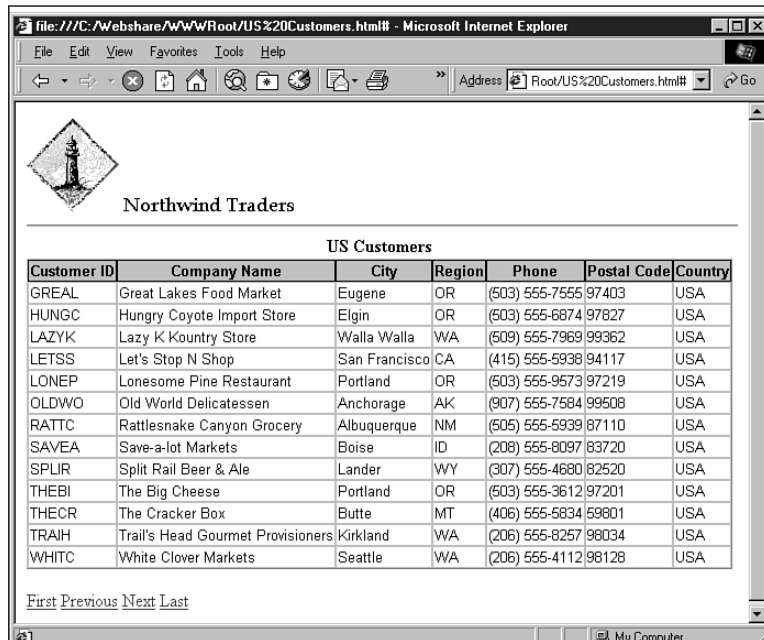
5. Click OK to export the query datasheet and open the Web page in your browser. The logo appears at the top of the page, and the template adds the First, Previous, Next, and Last hyperlinks below the formatted table (see Figure 17.14).
6. Choose **V**iew, **S**ource from IE 5.0's menu to view in Notepad the HTML lines added by the Nwindtem.htm template. Figure 17.15 shows the <IMG SRC = "NWlogo.gif"> tag for the logo.

**EXPORTING REPORTS TO HTML****NEW  
2000**

You can export an Access report to HTML in a manner similar to that for table or query datasheets. Unlike static datasheets, exporting a multipage report creates multiple Web pages, one for each page of the report. Unlike Access 97, you don't need to specify a template (Nwindtem.htm) for multipage reports.

**Figure 17.14**

The Web page created with the Nwindtem.htm template that adds a logo at the top and non-functioning hyperlinks at the bottom.

**Figure 17.15**

The first few lines of the HTML source for a Web page created with the Nwlogo.htm template.

```

US Customers.html - Notepad
File Edit Search Help
<HTML>
<HEAD>
<META HTTP-EQUIV="Content-Type" CONTENT="text/html;
charset=windows-1252">
<META NAME="Version" CONTENT="2317">
<META NAME="Language Code" CONTENT="1033">
<TITLE>US Customers</TITLE>

<META NAME="DocumentEn" CONTENT="windows-1252">

</HEAD>
<BODY LINK="#0000FF" VLINK="#800080">
<IMG SRC="NWLogo.GIF"> <FONT SIZE=4 FACE="Book Antiqua">Northwind
Traders</FONT>
<HR>

<TABLE BORDER=1 BGCOLOR=#FFFFFF CELLSPACING=0><FONT FACE="Arial"
COLOR=#000000><CAPTION><B>US Customers</B></CAPTION></FONT>

<THEAD>
<TR>
<TH BGCOLOR=#c0c0c0 BORDERCOLOR=#000000 ><FONT SIZE=2 FACE="Arial"
COLOR=#000000>Customer ID</FONT></TH>

```

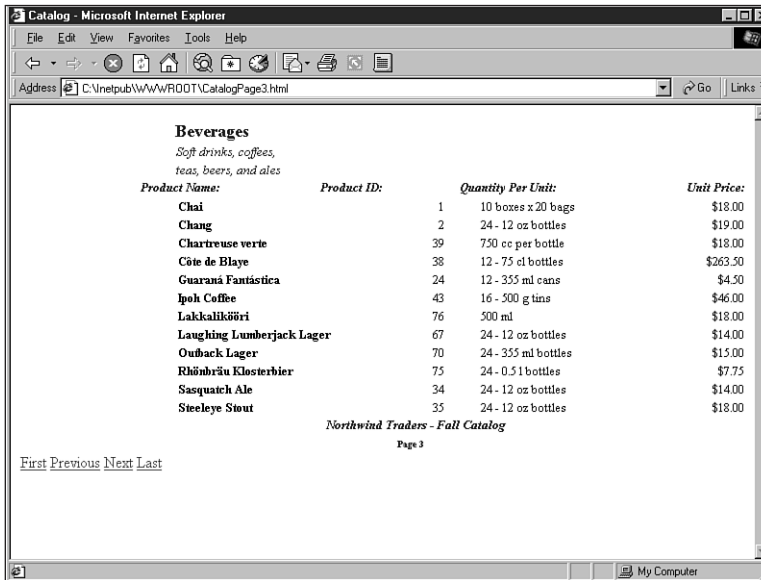
**Note**

You can export Access Reports to static Web pages only. This limitation is logical because a Web page is the equivalent of a printed report, which must be physically replaced when updated. Unlike Word 2000's File, Save As Web Page menu choice, the exporting process for Access 2000 reports doesn't process graphic images. If you want to add graphics to a

report beyond the image(s) added by the template, you must create a .gif, .jpg, or .png file from each graphic image of the report, and then manually add a <IMG SRC="filename.ext"> tag in the appropriate location of each report page. The graphics files must be located in the same folder as the associated .html file, unless you add a well-formed path to the filename.ext element of the tag.

To export the Catalog report of Northwind.mdb to a series of Web pages having hyperlink navigation features, follow these steps:

1. Select the Catalog report in the Database window.
2. Choose **File**, **Export** to open the Export Report 'Catalog' As dialog, and select the destination folder in the Save In drop-down list. Select HTML Documents (\*.html, \*.htm) in the Save As Type drop-down list and mark the Autostart check box. (The Save Formatted check box is marked and disabled; you can't export an unformatted report.) Click Save to continue.
3. When the HTML Options dialog appears, clear the text box entry, if it specifies a template file, and click OK. open the first page of the Catalog report in your browser. As expected, the large Northwind Traders graphic is missing from the first page, Catalog.html.
4. Click the Next hyperlink to proceed to the second page of the Catalog, and then scroll to the bottom of the page and click the Next button to display the third page (see Figure 17.16). When you export a report, the Access export feature appends Page# to the file name of the report for pages 2 and higher.



**Figure 17.16**  
The third Web page  
(CatalogPage3.html)  
of the Catalog report.

5. Choose **V**iew, **S**ource in IE 5.0 to display the HTML source for CatalogPage3.html in Notepad, and then scroll to the bottom of the file (see Figure 17.17). Each page of a report has a different set of HTML Previous and Next anchor lines for navigation. For page 3 of the catalog, the Previous and Next anchor lines are  
 <A HREF="CatalogPage2.html">Previous</A> and  
 <A HREF="CatalogPage4.html">Next</A>, respectively. The First  
 (<A HREF="Catalog.html">First</A>) and Last (<A  
 HREF="CatalogPage9.html">Last</A>) anchors are the same for all pages of the report.

**Figure 17.17**  
 The anchor tags of  
 the third page  
 (CatalogPage3.html)  
 of the Catalog report.

```

CatalogPage3.html - Notepad
File Edit Search Help
<TD WIDTH=38 > <BR></TD><TD WIDTH=187 ><FONT SIZE=2 FACE="Times New
Roman" COLOR=#000000>24 - 12 oz bottles</FONT></TD>
<TD WIDTH=87 ALIGN=RIGHT ><FONT SIZE=2 FACE="Times New Roman"
COLOR=#000000>$18.00</FONT></TD>
</TR>
</TABLE>
<TABLE BORDER=0 CELSPACING=0 CELLPADDING=0 >
<TR HEIGHT=18 >
<TD WIDTH=308 > <BR></TD><TD WIDTH=208 ALIGN=CENTER ><B><I><FONT
SIZE=2 FACE="Times New Roman" COLOR=#000080>Northwind Traders - Fall
Catalog</FONT></B></I></TD>
</TR>
</TABLE>
<TABLE BORDER=0 CELSPACING=0 CELLPADDING=0 >
<TR HEIGHT=16 >
<TD WIDTH=317 > <BR></TD><TD WIDTH=178 ALIGN=CENTER ><B><FONT SIZE=1
FACE="Times New Roman" COLOR=#000080>Page 3</FONT></B></TD>
</TR>
</TABLE>

<A HREF="Catalog.html">First</A> <A
HREF="CatalogPage2.html">Previous</A> <A
HREF="CatalogPage4.html">Next</A> <A
HREF="CatalogPage9.html">Last</A></BODY>
</HTML>

```

Reports are formatted as HTML tables without borders (<TABLE BORDER=0>), which emulates on a Web page the appearance of Access 2000's reports in Preview mode and when printed. As a general rule, Access reports are the best choice for exporting large amounts of data to Web pages. You have much more control over the appearance of the Web page with exported reports than when you export a datasheet with the same content. To optimize the appearance of Web pages created from reports, you must design the report specifically for export to HTML.

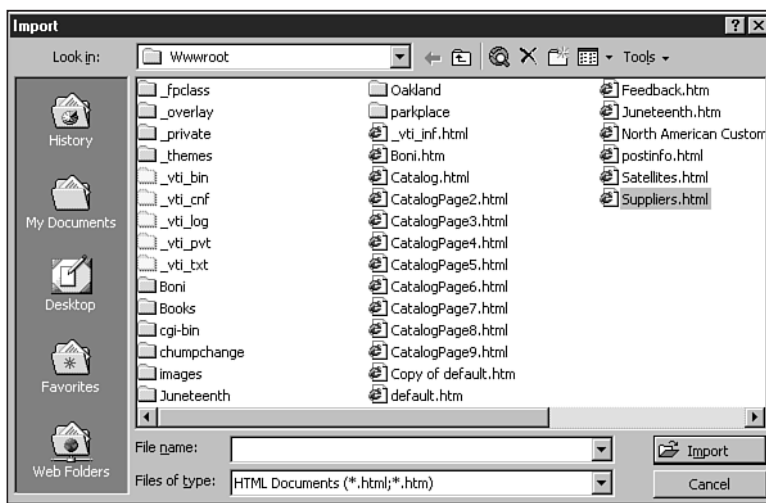
**Note**

Report formatting fails for complex reports that contain a combination of graphic elements and text. As an example, compare the last Web page (CatalogPage9.html) of the Catalog series with the last page of the Catalog report in Access' report Preview mode. All the graphic elements in the order form are missing from the last Web page.

## IMPORTING DATA FROM HTML TABLES

Access 2000 includes the capability to import or link data from an HTML table to a Jet 4.0 table. This feature appears to have been included in Access 2000 for HTML symmetry; apparently, the theory is that if you can export to HTML, you should also be able to import from HTML. Few Access users are likely to make use of this feature because relatively little useful, public domain (not copyrighted) tabular data is available on the Internet. For completeness, however, following is an example of importing data from an HTML page created in the section “Exporting Table and Query Datasheets to HTML” earlier in this chapter:

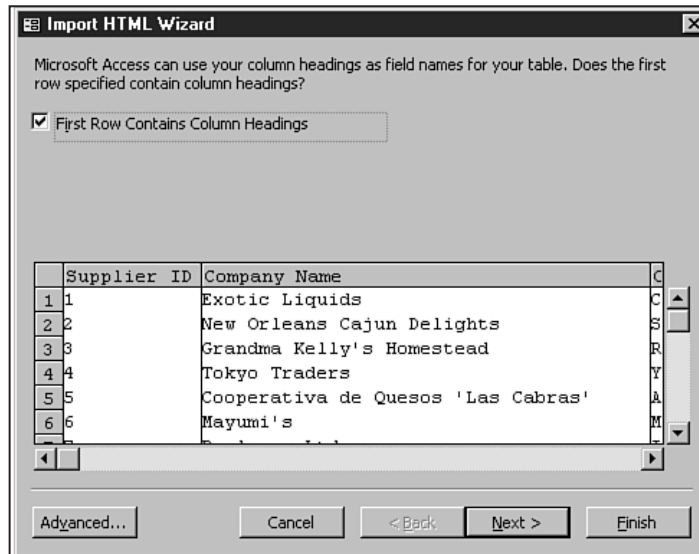
1. Choose **File**, **Get External Data**, **Import** to open the Import dialog. Navigate to the folder in which you stored Suppliers.html and select HTML Documents (\*.html, \*.htm) in the Files of Type dropdown list (see Figure 17.18).



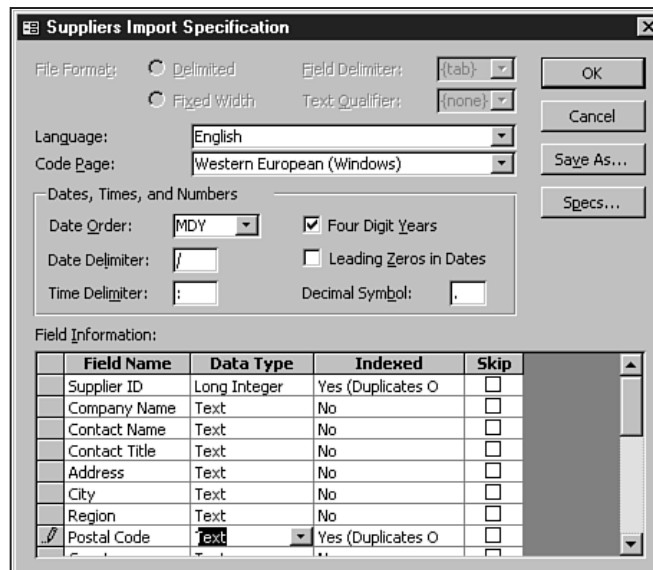
**Figure 17.18**  
Displaying .html and  
.htm files in the  
Import dialog.

2. Select the Suppliers.html file you created in the “Exporting Table and Query Datasheets to HTML” section at the beginning of this chapter and click the Import button to close the Import dialog and open the first Import HTML Wizard dialog.
3. The Wizard imports the table header data, if present, together with the table data. The formatted version of Suppliers.html includes headers, so check the First Row Contains Column Headings check box (see Figure 17.19).
4. Click the Advanced button to open the Suppliers Import Specification dialog. This dialog lets you customize import operations on date and time fields and select the decimal symbol. You can change the field names, data types, and indexing for each of the fields, as well as skip the import of specific fields. Change the Data Type of the PostalCode column from Long Integer to Text. The Supplier ID field is the primary key, so specify a No Duplicates index on the field (see Figure 17.20). Data types and indexes for the remaining fields are satisfactory.

**Figure 17.19**  
Specifying column headers in the Import HTML Wizard's first dialog.



**Figure 17.20**  
Specifying field data types and indexes in the Suppliers Import Specification dialog.



**Tip #152 from**

*RJ*

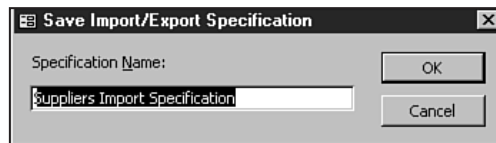
Always set the data type of postal code fields to text. If the first few rows contain U.S. (5-digit numeric) ZIP codes, the Wizard assumes that all postal codes are numeric and assigns the Long Integer data type. You receive Import Errors messages when the Wizard encounters an alphanumeric postal code, such as those used in Canada and the U.K. Other countries sometimes prefix a alphabetic country-code abbreviation, such as S-15151 (Sweden).

**Note**

Alternatively, you can specify field data types and indexing in the third Wizard dialog. The Wizard proposes to add Duplicates OK indexes on any field that contains ID or Code in the column name.

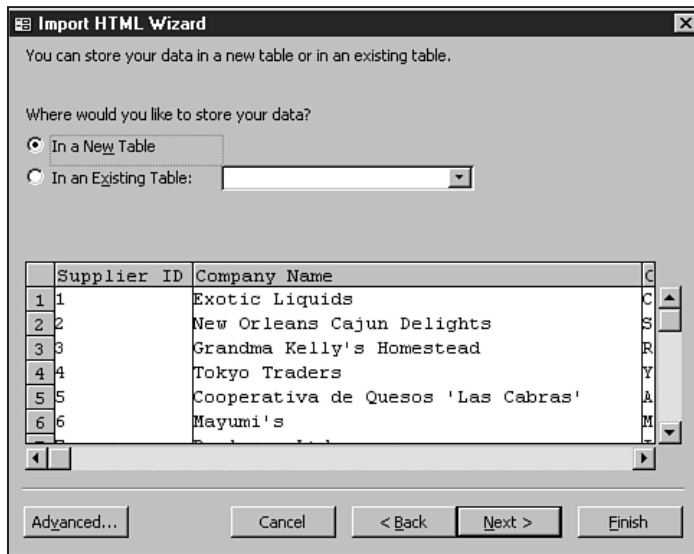
If you encounter unexpected import errors see the “HTML Table Import Errors” topic of the “Troubleshooting” section near the end of the chapter.

- Click the Save As button to save the Import Specification. Edit or type a new name for the specification in the Specification Name text box of the Save Import/Export Specification dialog (see Figure 17.21). Click OK to close the dialog, and then click OK to close the Suppliers Import Specification dialog.



**Figure 17.21**  
Editing the default name for the saved Suppliers Import Specification.

- Click Next to display the second Import HTML Wizard dialog. Select the In a New Table option to store the data in a new table whose name you specify at the end of the import process (see Figure 17.22). Click Next.



**Figure 17.22**  
Specifying import of the tabular HTML data to a new table.

**Note**

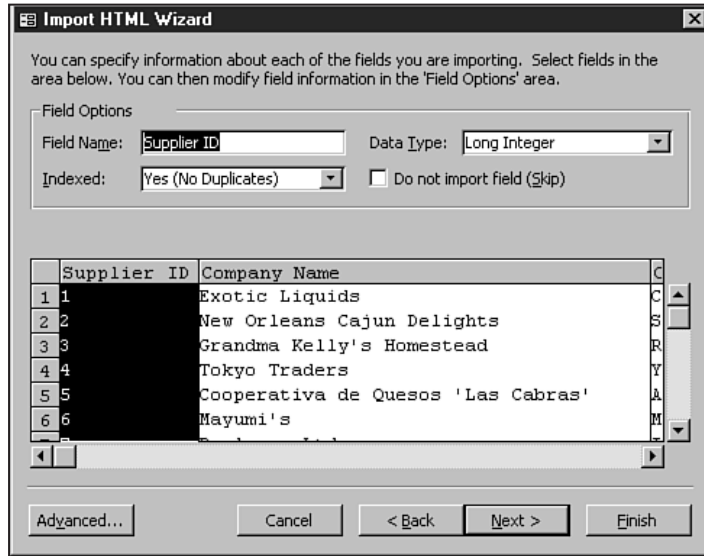
If your HTML table includes date fields, added combo and text boxes let you specify date formats. You can select a period or comma as the decimal symbol if the table includes real numbers.



- You can make last-minute changes to field names, data types, and indexes in the third Wizard dialog (see Figure 17.23). If you made the required changes to the Suppliers Import Specification dialog in step 4, click Next.

**Figure 17.23**

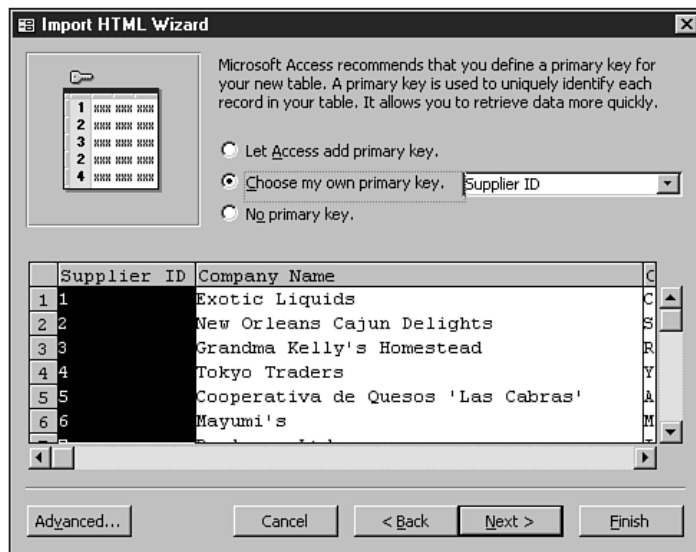
A second chance to change field names, data types, and indexes offered by the third Wizard dialog.



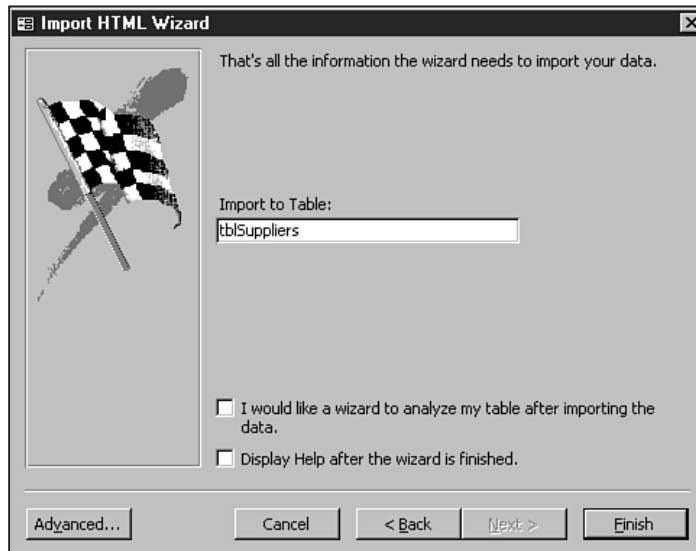
- By default, the Wizard proposes adding a numeric primary key field to the table. The Supplier ID field qualifies as a primary key, so select the Choose My Own Primary Key option and pick the Supplier ID field in the dropdown list (see Figure 17.24). Click Next.

**Figure 17.24**

Selecting the Supplier ID field as the primary key for the imported table.



9. There is a Suppliers table in Northwind.mdb, so edit the proposed table name to tblSuppliers (see Figure 17.25). You don't need to analyze the Suppliers table, so don't mark the I Would Like a Wizard to Analyze check box. Click Finish to export the HTML table to tblSuppliers and terminate the Wizard.

**Figure 17.25**

Editing the name of the new table in the final Wizard dialog.

**Note**

If data in your source HTML table violates primary key integrity or has rows with data type conflicts, the Wizard generates an import errors table. If an import errors table is present, check its contents to determine the source of the problem(s).

10. Open the tblSuppliers table to verify the import wizardry. The table is essentially identical to the original Suppliers table from which the Web page was created (see Figure 17.26). The most significant differences are the field data type of the Supplier ID column (Long Integer, not AutoNumber) and the field names (derived from the Caption property of the original table).

**Note**

Most of the information available on the Internet is subject to copyright, either explicitly (by a copyright notice on the Web site's home page) or implicitly (by statute). Importing and using copyrighted content from the Internet for most purposes is prohibited by federal copyright statutes, unless you have express permission of the copyright owner to use the content. If you intend to import and use information created by others and published on the Internet, consult an attorney before using the information.

**Figure 17.26**  
The exported  
tblSuppliers table in  
Datasheet view.

Supplier ID	Company Name	Contact Name	Contact Title	Address	City
1	Exotic Liquids	Charlotte Coope	Purchasing Mar	49 Gilbert St.	London
2	New Orleans C	Shelley Burke	Order Administr	P.O. Box 78934	New Orleans
3	Grandma Kelly's	Regina Murphy	Sales Represen	707 Oxford Rd.	Ann Arbor
4	Tokyo Traders	Yoshi Nagase	Marketing Mana	9-8 Sekimai	Tokyo
5	Cooperativa de	Antonio del Vall	Export Administr	Calle del Rosal	Oviedo
6	Mayumi's	Mayumi Ohno	Marketing Repre	92 Setsuko	Osaka
7	Pavlova, Ltd.	Ian Devling	Marketing Mana	74 Rose St.	Melbourne
8	Specialty Biscu	Peter Wilson	Sales Represen	29 King's Way	Manchester
9	PB Knäckebröd	Lars Peterson	Sales Agent	Kaloadagatan 1:	Göteborg
10	Refrescos Amer	Carlos Diaz	Marketing Mana	Av. das Americ	São Paulo
11	Heli Süßwaren	Petra Winkler	Sales Manager	Tiergartenstraße	Berlin
12	Plutzer Lebensr	Martin Bein	International Ma	Bogenallee 51	Frankfurt
13	Nord-Ost-Fisch	Sven Petersen	Coordinator For	Frahredder 11	Cuxhaven
14	Formaggi Fortin	Elio Rossi	Sales Represen	Viale Dante, 75	Ravenna
15	Norske Meierier	Beate Vileid	Marketing Mana	Hatlevegen 5	Sandvika
16	Bigfoot Brewerie	Cheryl Saylor	Regional Accou	3400 - 8th Aven	Bend
17	Svensk Sjöföda	Michael Björn	Sales Represent	Frejluåsgatan 7	Stockholm

## CREATING DYNAMIC WEB PAGES

Dynamic Web pages let users create their own select queries to return custom data sets in tabular format or display forms that users can edit or to which they can add data. If you have Office 2000 Premium, it's easier to create and deploy data-enabled, Internet-compliant Web pages with FrontPage 2000 than with Access 2000. If you need the ability to delete or edit data from a browser-independent Web page, Visual InterDev 6.0 is the better choice.

### Tip #153 from

RJ

To learn how to import or link your Access 2000 database to a FrontPage Web, launch FrontPage, open your Web, type **Access database** in the Answer Wizard's What Would You Like To Do? text box, and select the "Use an Access database in a Web topic." FrontPage includes a Database Results Wizard to automate authoring data display pages. You can also generate a new Jet database and table from your FrontPage 2000 form design.

Access 2000 offers the following three methods for creating dynamic, data-enabled Web pages:

- *Internet Database Connector (IDC)* merges an .htx (template) file with an HTML page for data display and uses an .idc file to define the data source and SQL query to execute. IDC uses ODBC and an Internet Information Server (IIS) helper file (Httpodbc.dll) to connect to your Access database. You can execute the equivalent of an Access parameterized query, specify the sort sequence, and design other query custom features. You can export Access tables and queries to .idc/.htx files, but customizing the display of query result sets requires HTML authoring expertise. IDC was Microsoft's first and simplest approach to generating data-enabled Web pages; most Web sites running IIS have abandoned IDC in favor of Active Server Pages.

- *Active Server Pages (ASP)* is Microsoft's mainstream technology for designing interactive, Internet-compliant Web pages. ASP use ActiveX Data Objects (ADO) for database connectivity. ADO is one of the subjects of Chapter 27, "Understanding Universal Data Access, OLE DB, and ADO." The majority of the content of Microsoft's Web site (<http://www.microsoft.com>) uses ASP. You can export Access tables, queries, and forms to ASP, but many of the features of Access 97's File, Save as HTML menu choice are missing in Access 2000. Exporting an Access 2000 form, for instance, results in a page with a tabular display of the underlying data, not an HTML representation of the form.



- *Data Access Pages (DAP)*, the subject of the next chapter, use Access 2000's new Data Access Page designer to implement Microsoft's version of DHTML and DHTML data binding with ADO. DAP let you take advantage of Office Web Components to add charts, spreadsheets, and PivotTables to your pages. Microsoft DHTML isn't compatible with Netscape's current version, so DAP are suited only for intranets where all users have IE 4+ installed.

**Note**

Keep an installation of Access 97 active if you need to use Access to generate .idc/.htx files from tables and queries or .asp files from forms. Fortunately, Access 2000 lets you convert a database to Access 97 format; you then use Access 97's Publish to the Web Wizard to quickly create interactive Web pages from tables, queries, and forms.

## UNDERSTANDING ASP

Active Server Pages is a mature Microsoft technology that generates browser-independent HTML from directives contained in an .asp file. ASP is a *server-side* component of IIS 3+ and PWS; the Web server interprets the .asp file and sends a corresponding .htm file to the client's browser. If the .asp file contains scripts created with VBScript or JScript, the server's script engine executes the code. HTTP is a stateless protocol, so any changes made by the viewer to an interactive page, even the most trivial, must be sent to the server; the server then returns an updated version of the page. This process is called a *server round-trip*.

DAP, on the other hand, is a *client-side* technology. The Web server sends the entire content of the .htm file for the page; script embedded in the file executes on the client. DAP minimizes the number of server round-trips, an important consideration for highly trafficked Web sites.

You can open an .asp file directly in IE, but you're not likely to see any content in your browser. If you have FrontPage 2000 installed with default properties, attempting to open an .asp file in IE automatically launches FrontPage. Earlier versions of FrontPage open the FrontPage Editor. If the .asp file you want to open is on a machine with PWS or IIS, you open it in IE with a conventional domain name URL—

<http://www.domain.com/pagename.asp>—or an intranet URL—[[http://](http://servername/pagename.asp)]servername/pagename.asp. The Web server executes the .asp file and generates an .htm file for the requester.

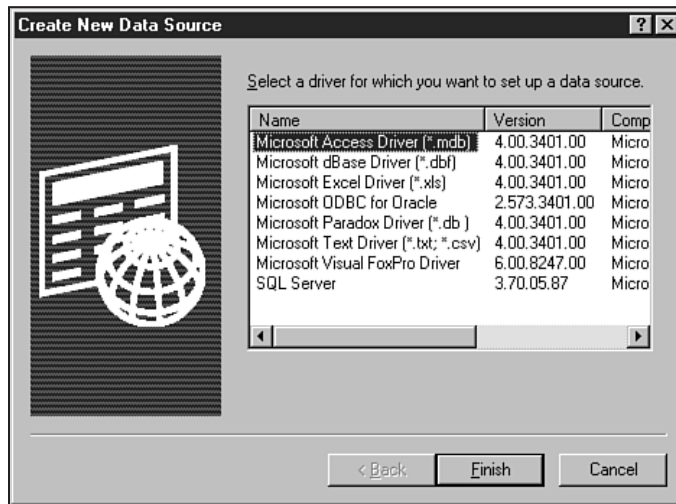
## CREATING AN ODBC DATA SOURCE FOR ASP

ASP use ADO for database connectivity, but Access 2000's ASP export feature doesn't use the Jet native OLE DB data provider, commonly known as *Jolt*. Therefore, you must have an ODBC system or file data source for your database on the server that hosts the .asp file. System data sources, which are accessible to all database applications running on the server, are more efficient than file data sources.

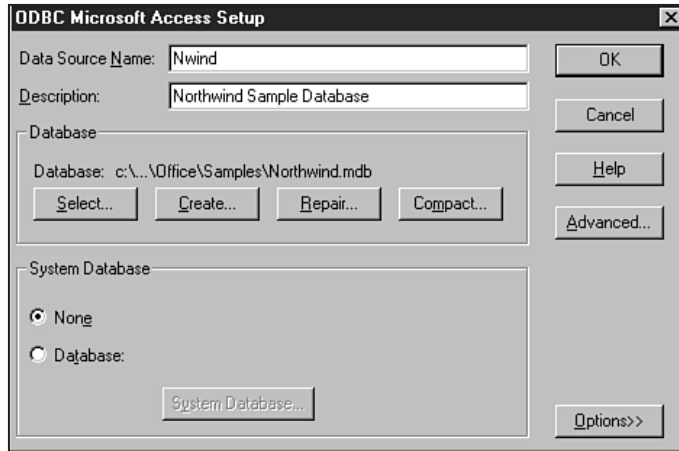
To create a system data source on the Web server—PWS running under Windows 98, for this example—do the following:

1. Launch Control Panel's ODBC Data Sources (32-bit) tool, which opens the ODBC Data Source Administrator dialog.
2. Click the System tab to display a list of all system data sources, called DSNs (data source names).
3. Click the Add button to open the Create New Data Source dialog, and select Microsoft Access Driver (\*.mdb) in the Name list (see Figure 17.27).

**Figure 17.27**  
Selecting the Access ODBC driver in the Create New Data Source dialog.



4. Click Finish to open the ODBC Microsoft Access Setup dialog.
5. Type a short DSN in the Data Source Name text box, and add an optional description of the data source in the Description text box.
6. Click Select to open the Select Database dialog, navigate to the ...\Office\Samples folder, and double-click Northwind.mdb in the Database Name text box to specify the database and return to the Setup dialog (see Figure 17.28). Northwind.mdb isn't secure, so you don't need to specify a system database.
7. Click OK twice to close the Setup and Administrator dialogs, and then close Control Panel.



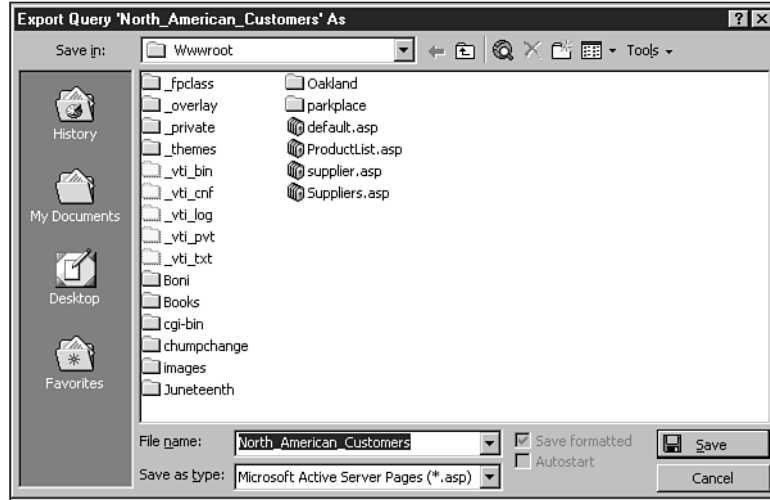
**Figure 17.28**  
Specifying the system  
DSN for  
Northwind.mdb.

## EXPORTING AN ACCESS QUERY TO ASP

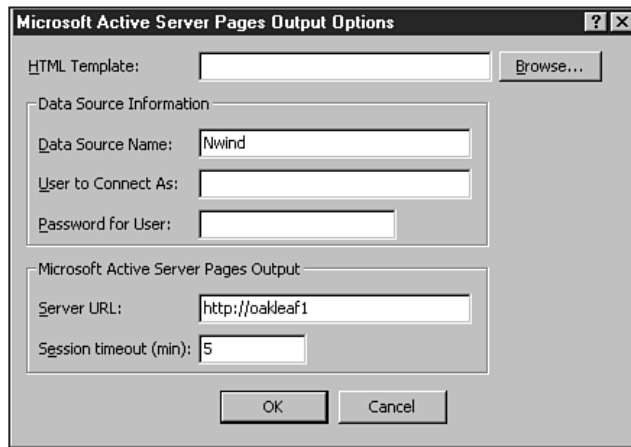
To export the North American Customers query you created earlier in the chapter to an .asp file, do the following:

1. Select North American Customers in the queries list, press F2, and change its name to **North\_American\_Customers**, substituting underscores for spaces. Spaces aren't permitted in URLs, and Access 2000 doesn't replace spaces in exported object names with underscores or the %32% HTML symbol for a space.  
Alternatively, you can change the file name in following step 3.
2. Choose **File, Export** to open the Export Query 'North\_American\_Customers' As dialog.
3. Select the destination folder, \Inetpub\Wwwroot for this example, in the Save In list, and then select Microsoft Active Server Pages (\*.asp) in the Save As Type list (see Figure 17.29). Selecting .asp disables the Save Formatted and Autostart check boxes.
4. Click Save to close the Export dialog and open the Microsoft Active Server Pages Output Options dialog.
5. Specify an HTML template for the file, if you like, and type the name of the system DSN you created in the preceding section in the Data Source Name text box.
6. Type **http://servername** in the Server URL text box; *servername* is the network name of the Web server (oak1eaf1 for this example). Type a timeout value in minutes in the Session Timeout text box (see Figure 17.30).
7. Click Save to create North\_American\_Customers.asp and close the Output Options dialog.
8. Close Access to prevent locking problems with Northwind.mdb, and then launch IE.

**Figure 17.29**  
Specifying the location, file name, and file type for an exported .asp file.



**Figure 17.30**  
Adding the DSN, server URL, and session timeout for the .asp file.



9. Type `http://servername/North_American_Customers.asp` in the Address text box and press Enter to execute the .asp file, which returns North\_American\_Customers[1].htm to your browser (see Figure 17.31).
10. Choose **V**iew, **S**ource to open North\_American\_Customers[1].htm in Notepad (see Figure 17.32) or your chosen HTML editor. The HTML source text is almost identical to that of the static North American Query exported to HTML (refer to Figure 17.15). Only the HTML template content is missing.

The advantage of creating ASPs to display tabular data from queries, compared to a simple query export operation, is that the data delivered is current as of the moment IIS generates the .htm page. Like tables and queries exported directly to .html files, the .htm page created by export to an .asp file is read-only.

Customer ID	Company Name	City	Region	Postal Code	Country
ANATR	Ana Trujillo Emparedados y helados	México D.F.		05021	Mexico
ANTON	Antonio Moreno Taquería	México D.F.		05023	Mexico
BOTTM	Bottom-Dollar Markets	Tsawassen	BC	T2F 8M4	Canada
CENTC	Centro comercial Moctezuma	México D.F.		05022	Mexico
GREAL	Great Lakes Food Market	Eugene	OR	97403	USA
HUNGC	Hungry Coyote Import Store	Elgin	OR	97827	USA
LAUGB	Laughing Bacchus Wine Cellars	Vancouver	BC	V3F 2K1	Canada
LAZYK	Lazy K Kountry Store	Walla Walla	WA	99362	USA
LETSS	Let's Stop N Shop	San Francisco	CA	94117	USA
LONEP	Lonesome Pine Restaurant	Portland	OR	97219	USA
MEREP	Mère Paillarde	Montréal	Québec	H1J 1C3	Canada

**Figure 17.31**  
The HTML page generated by North\_American\_Customers.asp.

```

<HTML>
<HEAD>
<META HTTP-EQUIV="Content-Type"
CONTENT="text/html; charset=windows-1252">
<TITLE>North_American_Customers</TITLE>
</HEAD>
<BODY>

<TABLE BORDER=1 BGCOLOR=#ffffff CELLSPACING=0><FONT FACE="Arial"
COLOR=#000000><CAPTION><B>North_American_Customers</B></CAPTION></FONT>

<THEAD>
<TR>
<TH BGCOLOR=#c0c0c0 BORDERCOLOR=#000000 ><FONT SIZE=2 FACE="Arial"
COLOR=#000000>Customer ID</FONT></TH>
<TH BGCOLOR=#c0c0c0 BORDERCOLOR=#000000 ><FONT SIZE=2 FACE="Arial"
COLOR=#000000>Company Name</FONT></TH>
<TH BGCOLOR=#c0c0c0 BORDERCOLOR=#000000 ><FONT SIZE=2 FACE="Arial"
COLOR=#000000>City</FONT></TH>
<TH BGCOLOR=#c0c0c0 BORDERCOLOR=#000000 ><FONT SIZE=2 FACE="Arial"
COLOR=#000000>Region</FONT></TH>
<TH BGCOLOR=#c0c0c0 BORDERCOLOR=#000000 ><FONT SIZE=2 FACE="Arial"
COLOR=#000000>Postal Code</FONT></TH>
<TH BGCOLOR=#c0c0c0 BORDERCOLOR=#000000 ><FONT SIZE=2 FACE="Arial"
COLOR=#000000>Country</FONT></TH>

```

**Figure 17.32**  
The first part of the HTML source text generated by the exported .asp file.



## TROUBLESHOOTING

### HTML TABLE IMPORT ERRORS

*Importing HTML tables generates unexpected “Import Errors” messages*

The Import HTML Wizard, like the Text Import Wizard, checks the values of each column for the first few rows of the HTML table. The first test is to determine if the column contains alphabetic characters; if so, the Wizard sets the Jet data type to Text. If the Wizard detects only numeric values, it also tests for a currency symbol and a decimal separator. If the currency symbol is present, the Wizard chooses the Currency data type; if not, the data type becomes Double if a decimal separator is present, otherwise the data type becomes Long Integer. If subsequent rows of a column contain entries that conflict with the selected data type, import errors occur. You can avoid most, if not all, import errors by choosing Text for the data type of all columns, then inspecting the table in Datasheet view to determine the appropriate field data type for each column.

## IN THE REAL WORLD—ASP VERSUS DAP

Access 97 offered the capability of exporting an Access form to an .asp file. The resulting forms—created in part by the ActiveX HTML Layout Control—weren’t pretty, but simple forms worked as advertised. Figure 17.33 illustrates the Customers.asp file created by Access 97 from the Northwind.mdb Customers table. The Country drop-down list lets you apply a filter to the query to display only records from the specified country. Unlike the ASP generated in this chapter’s example, Customers.asp was capable of updating the underlying Customers table.

**Figure 17.33**  
The Customers.asp file  
generated by Access  
97 opened in IE 5.0.

The screenshot shows a web browser window titled "Customers - Microsoft Internet Explorer". The address bar shows "http://oakleaf3/northwind/customers.asp". The main content area displays a form titled "Customers" with the following fields and values:

- Customer ID: ALFKJ
- Company Name: Alfreds Futterkiste
- Contact Name: Maria Anders
- Title: Sales Representative
- Address: Obere Str. 57a
- City: Berlin
- Region: (empty)
- Postal Code: 12209
- Country: Germany (dropdown menu)
- Phone: 030-0074321
- Fax: 030-0076545

At the bottom of the form, there are navigation buttons: < < > > >\*. Below these are three action buttons: Commit, Delete, and Refresh.

The obvious advantage of ASP is that the technology generates .htm files displaying forms that are compatible with any browser, not just Microsoft's current version of IE. Generic HTML controls placed by the Layout Control behaved the same in all browsers. Access 97's form export to ASP feature let you learn the basics of creating and deploying data-bound ASP without requiring a full understanding of the underlying technology. ASP export in Access 97 also introduced ActiveX Data Objects 1.0 to Access programmers. Access 97-generated ASP had some significant limitations, but most Access developers expected the problems to be overcome in V.next (Access 2000).

ASP is great technology and is the foundation of the commercial success of IIS 3+ as a Web server and Windows NT 4.0 as an operating system for Web servers. Many large publishing and e-commerce sites use ASP; Fawcette Technical Publishing's DevX Web site (<http://www.devx.com>) is a good example. DevX's target audience is Web, Visual Basic, and Java developers, plus information technology managers who pay a substantial semi-annual fee to subscribe at the site's Premier membership level. DevX must combine up-to-date technical content, stored in SQL Server databases, with top performance to maintain subscriber loyalty. ASP technology is a major contributor to the success of the DevX site.

**Note**

Microsoft's general-interest Slate Web site (<http://www.slate.com>) abandoned attempts to charge users for most of its content in February, 1999 and moved to an advertising-supported business model. DevX, which offers free Registered and paid Premier membership levels, is one of the few commercial Internet sites that has succeeded in charging for content. DevX also has substantial advertising income.

Now Microsoft wants Access users and developers to move from ASP in favor of DAP. The party line is that the Layout Control, better known as ControlPad, isn't "safe for scripting," so it was necessary to abandon form-to-ASP support in Access 2000. The irony in Microsoft's proposed ASP to DAP transition is that there's no support for form-to-DAP conversion in Access 2000.

Only time will tell if DAP succeeds as a proprietary—and thus intranet-only—technology or suffers the same fate as Access 97's form-to-ADP feature. As you progress through the next chapter, follow the steps carefully and remember to save your DAP frequently. If DAP succeeds, hopefully V.next will offer an Edit, Undo command.

--rj



# USING ACCESS WITH MICROSOFT WORD AND MAIL MERGE

## In this chapter

- Integrating Access 2000 with Word 2000 782
- Using the Access Mail Merge Wizard 782
- Creating and Previewing a New Form Letter 782
- Using an Existing Main Merge Document with a New Data Source 786
- Using Word 2000's Mail Merge Feature with Access Databases 789
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## INTEGRATING ACCESS 2000 WITH WORD 2000

Members of the Microsoft Office 2000 software suite are specifically designed to simplify the construction of cooperative applications. *Cooperative applications* use two or more Windows productivity applications to perform a specified task. One of the principal uses for database applications is creating mailing lists for use with form letters. Thus Access 2000—a member of the Professional and Premium editions of Microsoft Office 2000—includes a Mail Merge Wizard that not only automates the process of creating Word 2000 Merge data files but also helps you create new form letters.

You also can use the reverse process and create form letters by using Word 2000's mail merge process. Creating form letters from Word 2000 accommodates users who don't have Access 2000 on their computers. Word 2000 uses 32-bit Microsoft Query (Msqry32.exe) and the 32-bit Open Database Connectivity (ODBC) application programming interface (API) version 3.51 to connect to Access 2000 and earlier .mdb files, as well as to a variety of other desktop database types.

As with Excel worksheets, you can embed or link Word documents in bound or unbound object frames and add a complete word processing system to your Access application. If you embed the Word document in the object frame, you can take advantage of OLE 2.1's in-place activation to make the operating environment of Access almost identical to that of Word. Word's menu supplements the Access menu, and Word's toolbars appear as docked or floating toolbars on your display. Word's document editing window, in Page view, appears within the confines of your object frame.

## USING THE ACCESS MAIL MERGE WIZARD

Access 2000's Mail Merge Wizard can help you create a new main merge document or employ an existing main merge document from which to create form letters. The Mail Merge Wizard uses a table or a query as the data source for the merge data file. The sections that follow describe two methods of creating a form letter:

- Using the Mail Merge Wizard to create a new main merge document whose merge data source is an Access table
- Using an existing main merge document with a merge data source from an Access select query

### CREATING AND PREVIEWING A NEW FORM LETTER

When you first try a new wizard, it's customary to create a new object rather than use the wizard to modify an existing object, such as a main merge document. The following steps use the Mail Merge Wizard to create a new main merge document from records in the Customers table of Northwind.mdb.

1. Open Northwind.mdb, if necessary, and select the Customers table in the Database window.



2. Click the arrow of the Office Links button of the toolbar and select Merge-It from the drop-down menu to launch the Microsoft Mail Merge Wizard. Its first and only dialog is shown in Figure 21.1.

Sale Amount:	Order ID:	Company Name:
\$11,188	10417	Simons bistro
\$10,496	10479	Rattlesnake Canyon Grocery
\$10,192	10540	QUICK-Stop
\$10,165	10691	QUICK-Stop
\$9,921	10515	QUICK-Stop
\$9,195	10424	Mère Paillard
\$8,623	10514	Ernst Handel

**Figure 21.1**  
The sole dialog of the Microsoft Word Mail Merge Wizard.

3. Select the Create a New Document and Then Link the Data to It option to create a new main merge document using fields from the Customers table.
4. Click OK to launch Word 2000 if it isn't running, Word opens a new mail merge main document. (The Mail Merge Wizard uses dynamic data exchange (DDE) to communicate with Access 2000.)
5. Click the Insert Merge Field button to verify the fields from the Customers table in the drop-down list, as shown in Figure 21.2.
6. With the caret at the top of the document, choose InserT, Date and Time to display the Date and Time dialog; choose any date format you want and then click OK to add a date field to the main document.

**Tip #182 from**

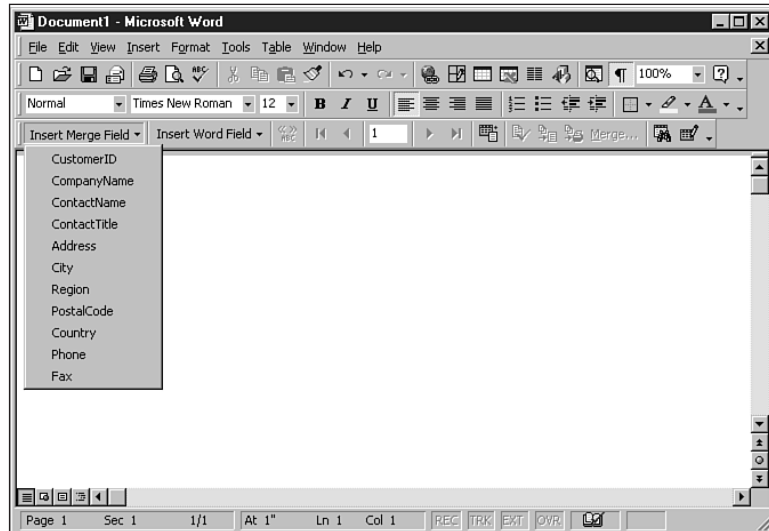
*RJ*



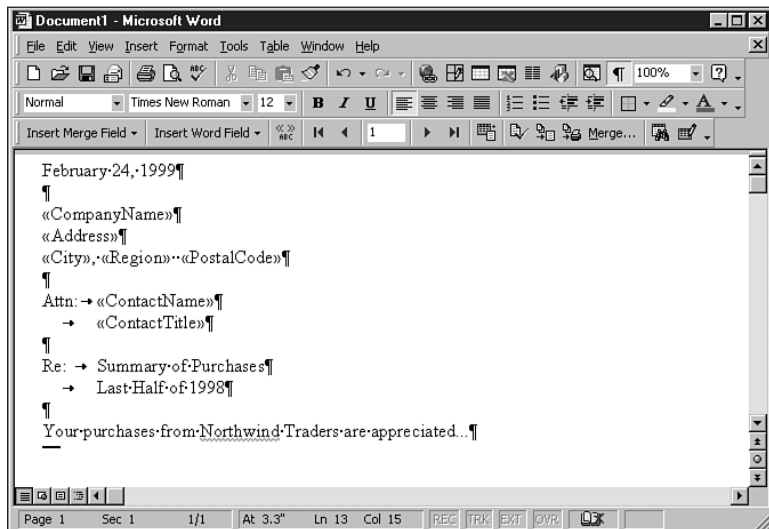
In Word 2000 click the Show/Hide button on Word's toolbar to display end-of-paragraph marks, space characters, tab characters, and other document symbols that are usually hidden. All figures of Word 2000 in this chapter were taken with the Show/Hide button in its down position.

7. Add a blank line, click the Insert Merge Field button to display the drop-down list, and insert the CompanyName, Address, City, Region, PostalCode, ContactName, and ContactTotal fields from the Customers table to create the address section of the main document (see Figure 21.3).

**Figure 21.2**  
Displaying the available merge fields in Word 2000's mail merge window.



**Figure 21.3**  
Adding the merge fields to the main merge document.



**Note**

Word doesn't permit spaces and other punctuation in merge data field names. The Mail Merge Wizard substitutes underscores ( ) for spaces and other illegal characters in Access field names, when present.

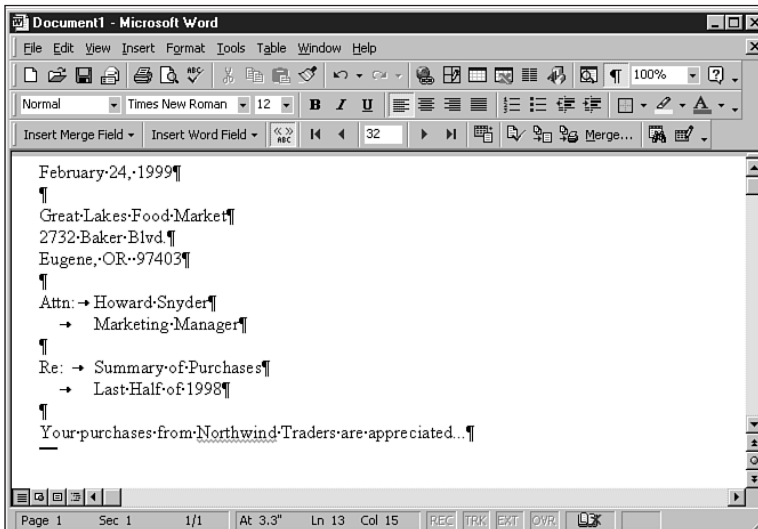


8. Click the View Merged Data button of the Mail Merge toolbar to preview the appearance of the first of your form letters.

**Caution**

Click the Find Record button of the toolbar, type **USA** in the Find What text box, and select Country from the In Field drop-down list. Click OK to find the first U.S. record.

9. The form letters go only to customers in the United States, so repeatedly click the Next Record button of the Mail Merge toolbar to find the first U.S. record. Alternatively, type **32** in the text box of the toolbar. The preview of the form letter for Great Lakes Food Market appears as shown in Figure 21.4.



**Figure 21.4**  
Previewing a form letter to a U.S. customer.

10. To send letters to U.S. customers, you need to create a query that returns only records whose Country column has the value "USA." Close Word and save your main merge document with an appropriate file name, such as **PurchaseSummary1998H2.doc**. This file is used in the next section, as well as later in the chapter when you open the Access data source from Word.

**Note**

The Mail Merge Wizard uses DDE to communicate with Word, so you can't use Word 2000's query features to select and sort the merge data. If you attempt to do so, you break the DDE link between Word and Access. Thus you need to base your final mail merge document on an Access query if you want to select or sort your records.



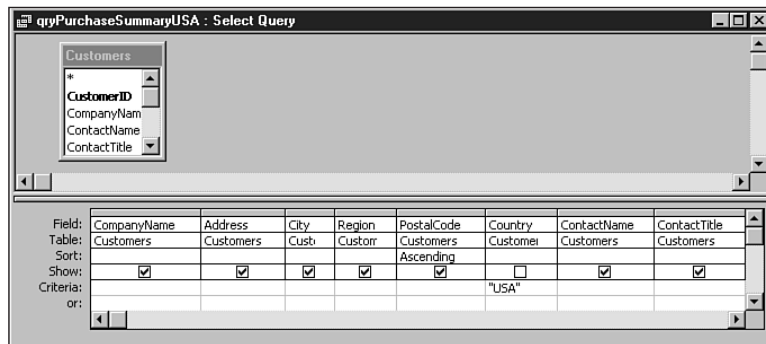
## USING AN EXISTING MAIN MERGE DOCUMENT WITH A NEW DATA SOURCE

After you create a standard main merge document, the most common practice is to use differing data sources to create form letters by addressee category. Take the following steps to use the main mail merge document you created in the preceding section, `PurchaseSummary1997H2.doc`, with a new data source based on a simple Access query:



1. Open a new query and add the Customers table.
2. Add the `CompanyName`, `Address`, `City`, `Region`, `PostalCode`, `Country`, `ContactName`, and `ContactTitle`, fields to the query.
3. Type **USA** as the criterion for the `Country` field and clear the `Show` check box to prevent `Country` from appearing in the query. Add an ascending sort to the `PostalCode` field. Your query design appears as shown in Figure 21.5.

**Figure 21.5**  
The query design for a mailing list of U.S. customers.



4. Click the `Run` button of the toolbar to verify the query result set (see Figure 21.6). Choose `File`, `Save` or `Save As`, and save the query with an appropriate name, such as `qryPurchaseSummaryUSA`.

**Figure 21.6**  
The query result set for U.S.-based customers.

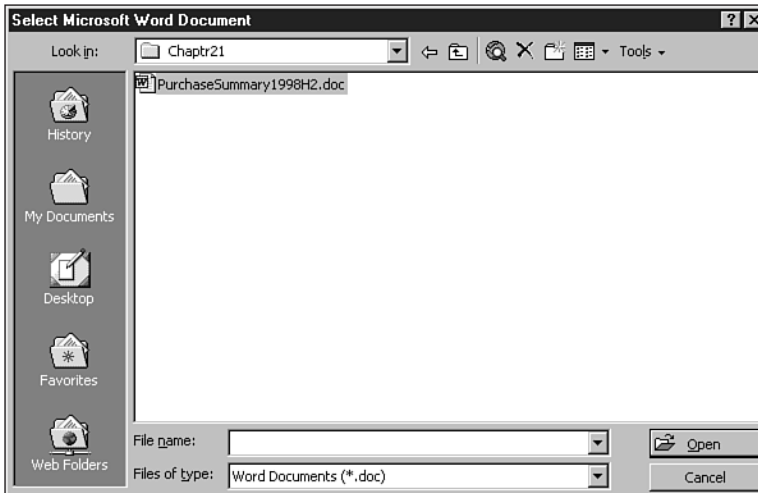
Company Name	Address	City	Region	Postal Code
The Cracker Box	55 Grizzly Peak Rd.	Butte	MT	59801
Split Rail Beer & Ale	P.O. Box 555	Lander	WY	82520
Save-a-lot Markets	187 Suffolk Ln.	Boise	ID	83720
Rattlesnake Canyon Grocery	2817 Milton Dr.	Albuquerque	NM	87110
Let's Stop N Shop	87 Polk St.	San Francisco	CA	94117
The Big Cheese	89 Jefferson Way	Portland	OR	97201
Lonesome Pine Restaurant	89 Chiaroscuro Rd.	Portland	OR	97219
Great Lakes Food Market	2732 Baker Blvd.	Eugene	OR	97403
Hungry Coyote Import Store	City Center Plaza	Elgin	OR	97827
Trail's Head Gourmet Provisioners	722 DaVinci Blvd.	Kirkland	WA	98034
White Clover Markets	305 - 14th Ave. S.	Seattle	WA	98128
Lazy K Kountry Store	12 Orchestra Terrace	Walla Walla	WA	99362
Old World Delicatessen	2743 Bering St.	Anchorage	AK	99508

**Tip #183 from***RJ*

You must save the query before attempting to start the merge operation. If you don't save the query, you receive a "The source object for the for the Mail Merge Wizard must be a table or query" error message.

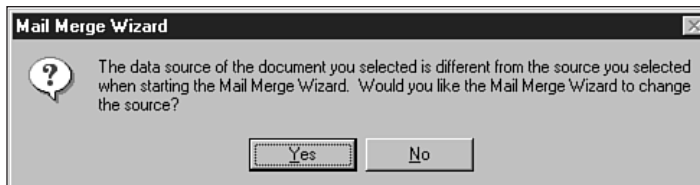


- With the query open, choose **T**ools, **O**ffice **L**inks, **M**erge It with MS Word to launch the Mail Merge Wizard. With the Link Your Data to an Existing Microsoft Word Document option marked (the default), click OK to display the Select Microsoft Word Document dialog (see Figure 21.7).



**Figure 21.7**  
Selecting the main merge document.

- Select your main merge document in the file list and click Open. After a few seconds for reading records, a message box, shown in Figure 21.8, appears when you change the data source for a merge document. Click Yes to change to the new data source.



**Figure 21.8**  
The message box that appears when you change the merge data source.

**Tip #184 from***RJ*

If you attempt to connect to an open document, you receive a "File in Use" error message. Click Cancel, and then click OK when the "Command Failed" error message appears. Close the merge document, and try again.

- Confirm that your query is the new merge data source by clicking the Insert Merge Field button and checking the field list. (The Country field shouldn't appear.)



Alternatively, you can click the Edit Data Source button on Word's Mail Merge toolbar to display the query in Access, as shown in Figure 21.9. (Click the Minimize button on Access's Query window and then click the Word document to return the focus to Word.)

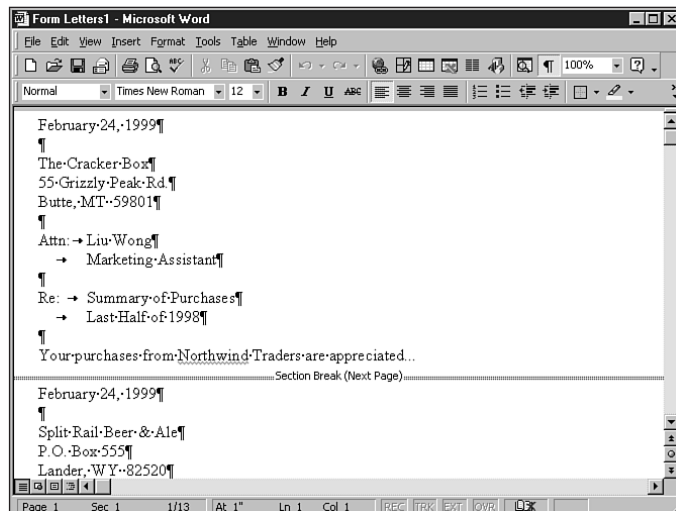
**Figure 21.9**  
Displaying the query  
result set from Word.

Company Name	Address	City	Region	Postal Code
The Cracker Box	55 Grizzly Peak Rd.	Butte	MT	59801
Split Rail Beer & Ale	P.O. Box 555	Lander	WY	82520
Save-a-lot Markets	187 Suffolk Ln.	Boise	ID	83720
Rattlesnake Canyon Grocery	2817 Milton Dr.	Albuquerque	NM	87110
Let's Stop N Shop	87 Polk St.	San Francisco	CA	94117
The Big Cheese	89 Jefferson Way	Portland	OR	97201
Lonesome Pine Restaurant	89 Chiaroscuro Rd.	Portland	OR	97219
Great Lakes Food Market	2732 Baker Blvd.	Eugene	OR	97403
Hungry Coyote Import Store	City Center Plaza	Elgin	OR	97827
Trail's Head Gourmet Provisioners	722 DaVinci Blvd.	Kirkland	WA	98034
White Clover Markets	305 - 14th Ave. S.	Seattle	WA	98128
Lazy K Kountry Store	12 Orchestra Terrace	Walla Walla	WA	99362
Old World Delicatessen	2743 Bering St.	Anchorage	AK	99508



- You can merge the main document and data source directly to the printer or create a series of form letters in a new document. The latter choice lets you inspect the letters before you print them. Click the Merge to New Document button to create the new form letter. The top of the first form letter appears as shown in Figure 21.10.

**Figure 21.10**  
The final version of the  
form letter addressed  
to U.S. customers.



If you close Word at this point, make sure you save your changes to PurchaseSummary1998H2.doc. The following sections use this file as the main merge document.

## USING WORD 2000'S MAIL MERGE FEATURE WITH ACCESS DATABASES

In many cases, Access 2000 isn't available to Word users who need to create form letters from data contained in Access .mdb files. Office 2000 includes Microsoft Query and the necessary 32-bit ODBC drivers to connect to Access .mdb files, Excel spreadsheets, Microsoft SQL Server OLAP Services, SQL Server, Oracle, Foxpro, and text databases. Microsoft Query is modeled on Access's Query Design window, but Microsoft Query displays the query result set automatically in a separate pane below the design pane as you construct the query. Office 2000 applications launch and control Microsoft Query with DDE.

### Note

You need to have Microsoft Office 2000 installed on your PC to create the examples in this section. Access 2000 and Jet 4.0 require the 32-bit ODBC 4.0 drivers. Office 2000 includes the 32-bit ODBC driver for Access 2000 databases, Odbcj32.dll.

Word 2000 includes the Mail Merge Helper, which is similar in concept to an Access wizard. The following three sections use the Mail Merge Helper to create a new Microsoft Query (MSQuery) data source and to use an existing MSQuery data source.

## CREATING A NEW MAIL MERGE DATA SOURCE WITH MICROSOFT QUERY AND AN ODBC DATA SOURCE

### Note

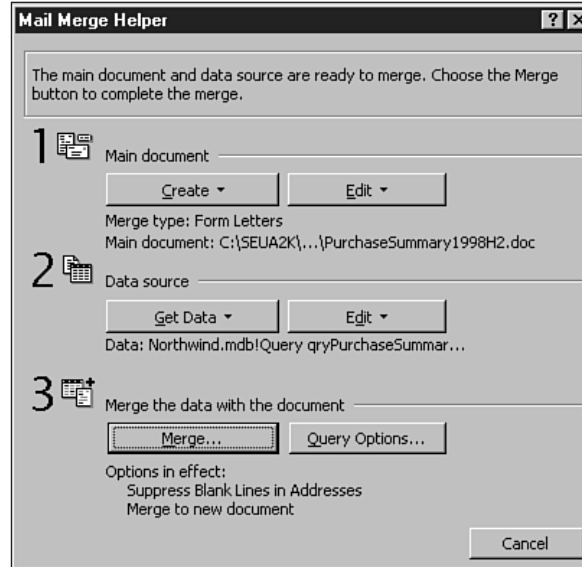
ODBC and Microsoft Query must be installed on your computer system before you can use the procedures described in this and the following sections of this chapter. If ODBC and MSQuery aren't installed on your computer, rerun the Microsoft Office 2000 Setup program and add these items to your system configuration.

To use Microsoft Query (MSQuery) to create a merge data source from a Microsoft Access database, follow these steps:

1. Launch Word 2000, if necessary, and open the PurchaseSummary1997H2.doc main merge document you created earlier in this chapter in the section "Creating and Previewing a New Form Letter."
2. Click the Mail Merge Helper button of the mail merge toolbar to open the Mail Merge Helper dialog (see Figure 21.11). The entry in the Data label of the Data Source section is Northwind.mdb!Query qryPurchaseSummaryUSA. This syntax is used for specifying the topic of a DDE conversation when you use Access as a DDE server.

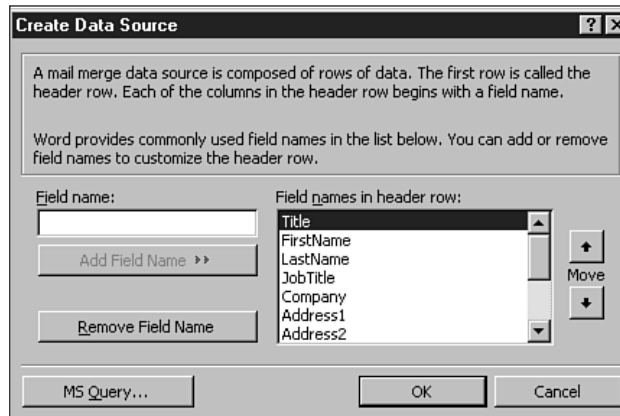


**Figure 21.11**  
The Mail Merge Helper dialog with an Access DDE merge data source specified.

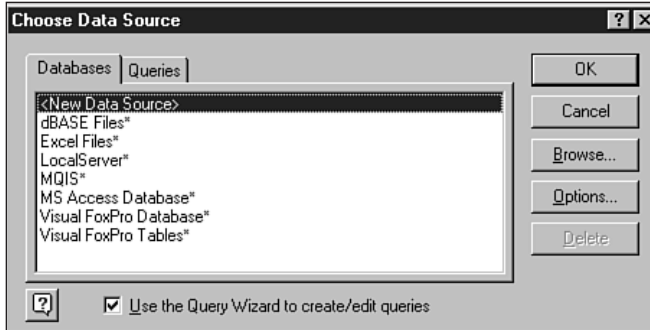


3. Click the Get Data button and select Create Data Source from the drop-down list to open the Create Data Source dialog. Word includes a set of default field names you can use to create merge data files (see Figure 21.12).

**Figure 21.12**  
Word 2000's Create Data Source dialog.



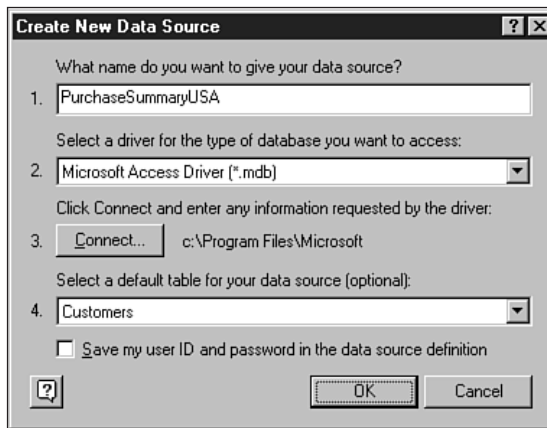
4. This example uses MSQuery to create the data source, so click the MS Query button to launch MSQuery. When MSQuery opens, the Choose Data Source dialog is active (see Figure 21.13).



**Figure 21.13**  
MSQuery's Choose Data Source dialog.

5. Click the Databases tab to bring the Databases list to the front of the dialog (if necessary); select <New Data Source> in the Databases list and then click OK. MSQuery displays the Create New Data Source dialog (see Figure 21.14).

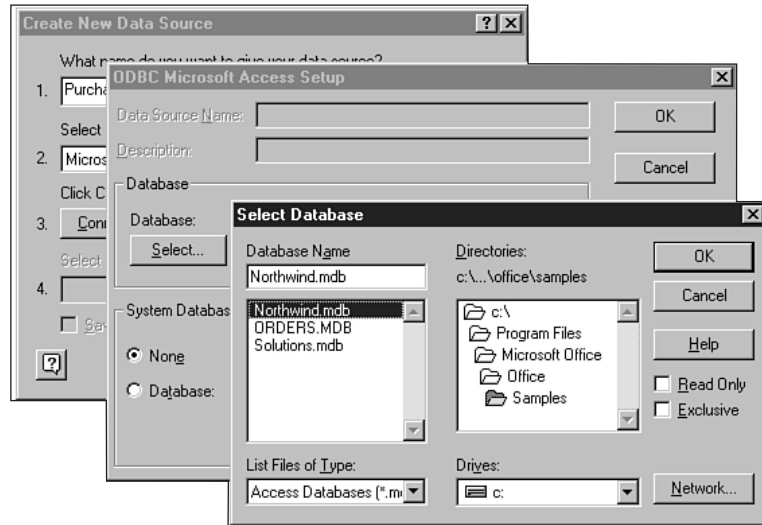
The Create New Data Source dialog contains four numbered controls: a text box, a drop-down list, a command button, and another drop-down list. When MSQuery first displays the Create New Data Source dialog, only the first text box is enabled. Each successive control is enabled as you complete each item. Figure 21.14 shows the Create New Data Source dialog after filling in all options for this data source. Each numbered control corresponds to an item of information that you must supply for MSQuery to create the data source: the data source's name, the driver for the data source, connection information for connecting to the data source, and an optional default table for the data source.



**Figure 21.14**  
MSQuery's Create New Data Source dialog.

6. In the first text box, type **PurchaseSummaryUSA** as the name of the new data source. As you type the data source name, MSQuery enables the drop-down list below it.
  7. In the drop-down list (item 2 in the Create New Data Source dialog), select Microsoft Access Driver (\*.mdb) as the driver for this data source.
  8. Click the Connect button to display the ODBC Microsoft Access Setup dialog (see Figure 21.15). Click the Select button in the Database frame to display the Select Database dialog.
- ➔ For detailed information on completing ODBC Data Sources, see “Linking Excel Worksheets,” p. 256.
9. Maneuver to the folder containing Northwind.mdb (usually C:\Program Files\Microsoft Office\Office\Samples) and select Northwind.mdb (see Figure 21.15). Click OK to return to the ODBC Microsoft Access Setup dialog.

**Figure 21.15**  
Choosing the connection for a new MSQuery data source.



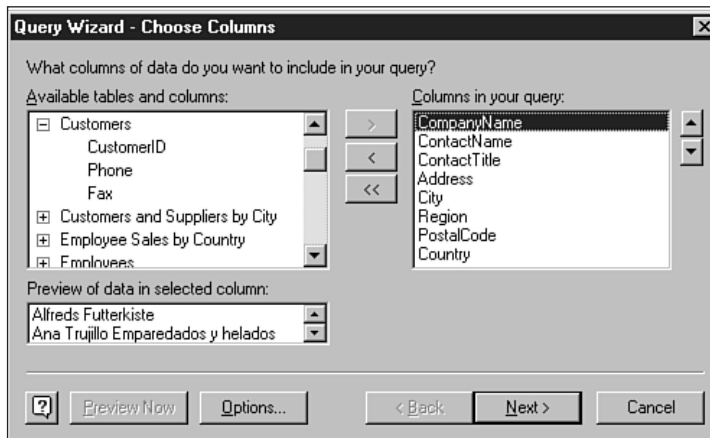
10. If you have secured Access or Northwind.mdb, click the Database option button in the System Database frame; then click the System Database button to open the System Database dialog. Select the System Database you're using and click OK to close the dialog. Click the Advanced button to open the Advanced dialog and then type your logon name and password in the text boxes. Click OK to close the Advanced dialog.
11. Click OK to close the ODBC Microsoft Access Setup dialog. The Create New Data Source dialog now displays the connected database's folder path and file name (or as much of it as will fit) next to the Connect button.
12. Optionally, you can select a table or query from the connected database as the default table for queries created from this data source. In the final drop-down list (item 4 in the Create New Data Source dialog), select Customers (refer to Figure 21.14).

**Tip #185 from***RJ*

If your Jet database is secure, mark the Save My User ID and Password in the Data Source Definition check box. Doing this eliminates the need to type your username and password each time you run the mailing list.

13. Click OK to close the Create New Data Source dialog. MSQuery adds the newly created data source to the Databases list in the Choose Data Source dialog.
14. Select PurchaseSummaryUSA in the Databases list of the Choose Data Source dialog and click OK. MSQuery automatically starts its Query Wizard; the first dialog of the Query Wizard is shown in Figure 21.16.

The Choose Columns dialog of the Query Wizard displays an expandable tree list of all tables and queries in the connected database, with the default table or query's branch selected and expanded for you as shown in Figure 21.16.



**Figure 21.16**  
MSQuery's Query Wizard dialog in which you select the columns for the new query.

15. Select the CompanyName field in the Available Tables and Columns list; then click the > button to copy the CompanyName field to the Columns in Your Query list.
16. Repeat step 15 to add the ContactName, ContactTitle, Address, City, Region, PostalCode, and Country fields to the Columns in Your Query list (see Figure 21.16). The specific order of the columns is unimportant. Click Next to continue with the second Query Wizard dialog.

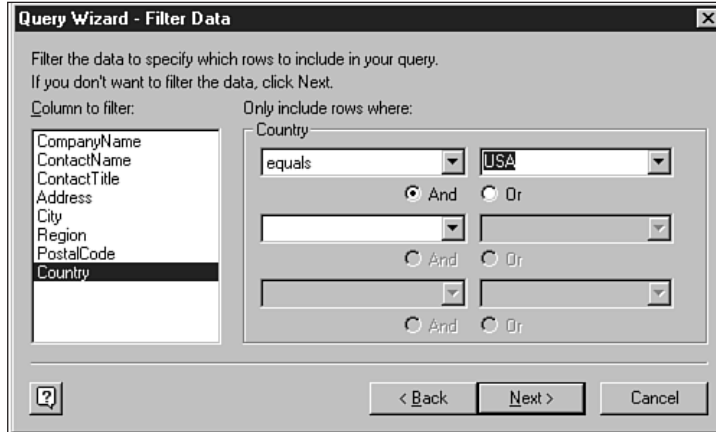
**Tip #186 from***RJ*

To preview the data in any field, select that field in either the the Columns of Your Query or Available Tables and Columns list and click the Preview Now button.

17. In the second step of the Query Wizard, you type criteria to restrict the data retrieved by MSQuery (see Figure 21.17). Select the Country field in the Column to Filter list, select **equals** in the first drop-down list in the Only Include Rows Where frame, and select **USA** in the second drop-down list (refer to Figure 21.17). Click Next.

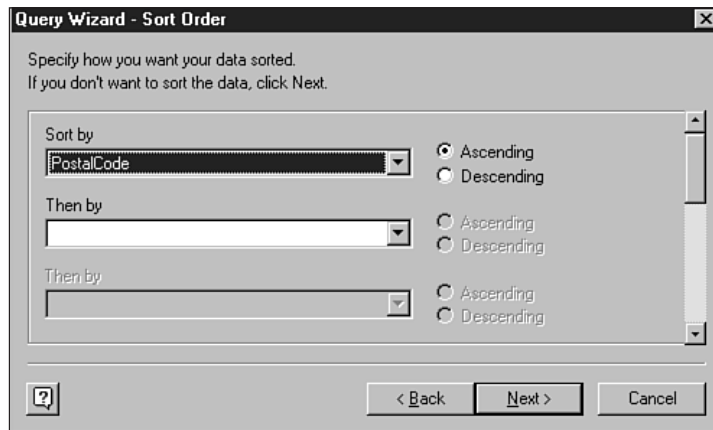


**Figure 21.17**  
The Filter Data dialog  
of MSQuery's Query  
Wizard.



18. In the Query Wizard's Sort Order dialog, you select how you want to sort the retrieved data. Select **PostalCode** in the first drop-down list; MSQuery automatically selects the Ascending option (see Figure 21.18). Click Next.

**Figure 21.18**  
The Sort Order dialog  
of MSQuery's Query  
Wizard.



19. Select the View Data or Edit Query in Microsoft Query option and then click Finish to complete the query (see Figure 21.19). Although you can immediately return data to Word or click the Save Query button to save your query, you should usually take a look at the finished query to make sure that it produces the results you desire.

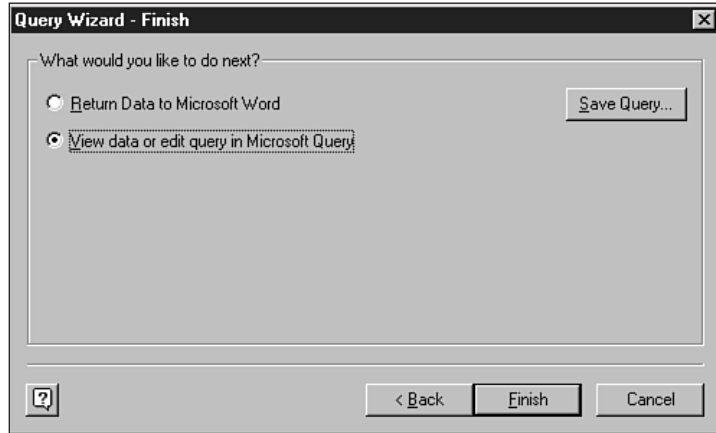
The completed query is shown in Figure 21.20; notice that the MSQuery query design grid resembles the query design grid in Access. The only difference is that MSQuery shows the query's results in a table underneath the criteria rows. Use the scroll bars to view the data returned by the query. You can add or edit criteria in MSQuery much as

you add or edit selection criteria in an Access query. MSQuery, however, uses single quotation marks (') for literal strings (as shown in Figure 21.20) instead of the double quotation marks (") used by Access.

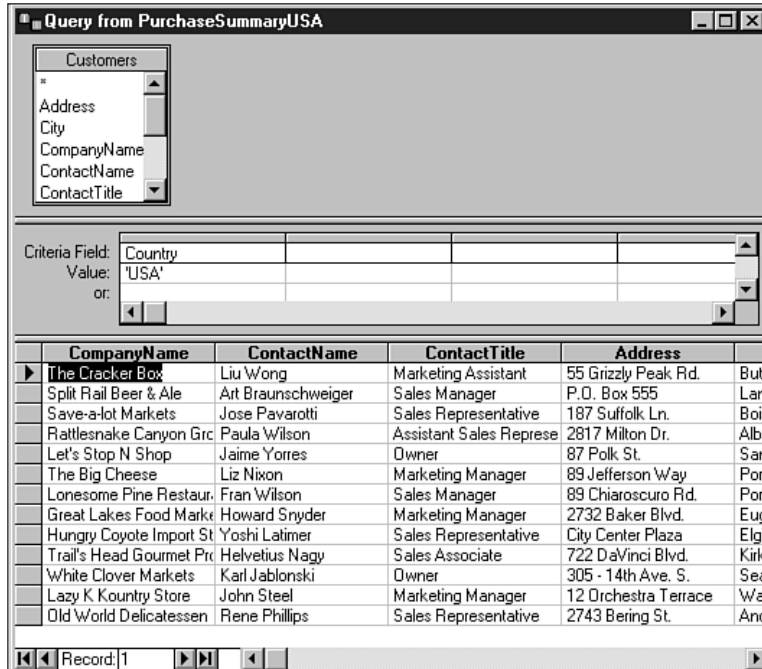


Another difference between MSQuery and Access is that MSQuery does not have a Sort row in the query design grid. Instead, in MSQuery you sort rows by selecting a column in the query's result and then clicking one of the sort order buttons on the toolbar. Essentially, the process in MSQuery is the same as sorting a table's view in Access.

**Figure 21.19**  
The final dialog of MSQuery's Query Wizard.



**Figure 21.20**  
The completed query in MSQuery.

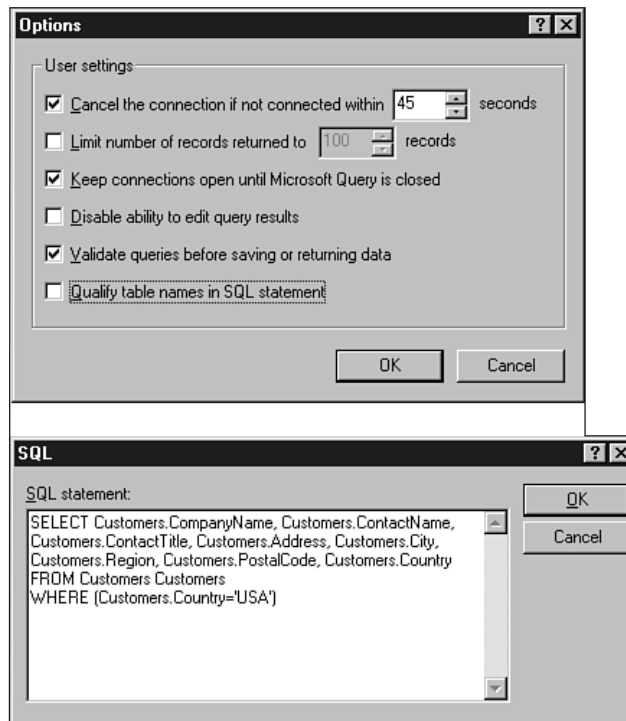


- Choose **E**dit, **O**ptions to open the Options dialog, and clear the Qualify Table Names in SQL Statement check box, as shown in Figure 21.21 (top), then click OK to close the dialog.

### Caution

If you don't clear the Qualify Table Names in SQL Statement check box, you're likely to encounter a "Could not merge the main document with the data source because the data records were empty or no data records matched your query options" error when you return to the Mail Merge Helper in step 23.

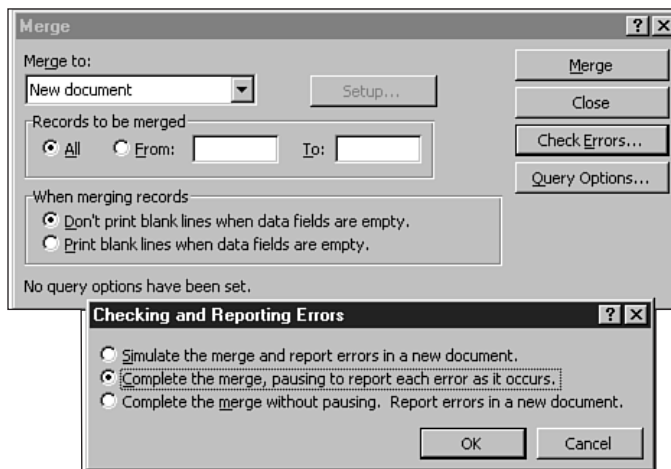
**Figure 21.21**  
Clearing the Qualify Table Names in SQL Statement check box in the Options dialog (top), and the result of clearing the check box in the SQL dialog (bottom).



- Click the SQL button to open the SQL dialog. Clearing the Qualify Table Names in SQL Statement check box doesn't remove the table name qualifiers (prefixes), such as Customers in Customers.CompanyName, but it does remove the reference to Northwind.mdb from the SQL FROM clause. After verifying that 'c:\Program Files\Microsoft Office\Office\Sample\Northwind'.Customers no longer appears in the SQL statement, as shown in Figure 21.21 (bottom), click OK to close the SQL dialog.
- Choose **F**ile, **S**ave to open the Save dialog. Assign a name, such as **PurchaseSummaryUSA.dqy**, to your query and click Save. By default, queries are saved in the \Application Data\Microsoft\Queries folder of your Windows directory.

You use the saved query in the section that follows, “Creating Form Letters from an Existing Query.”

23. Choose **File**, **Return Data to Microsoft Word** to close MSQuery and return to the Mail Merge Helper. The entry in the Data label of the Data Source section is now C:\Program Files\Microsoft Office\Office\Samples\Northwind.mdb. Click the Merge button of Mail Merge Helper to open the Merge dialog.
24. Accept the default New Document selection in the Merge To drop-down list. Click the Check Errors button of the Merge dialog to display the Checking and Reporting Errors dialog. Click the Complete the Merge, Pausing to Report Each Error as It Occurs option (see Figure 21.22).



**Figure 21.22**  
The Merge dialog and the Checking and Reporting Errors dialog.

25. Click OK to close the Checking and Reporting Errors dialog and click Merge to perform the merge. Word finishes merging the document and displays the first of the final form letters. After reviewing the form letters, close the form letters document; you don't need to save changes.

## CREATING FORM LETTERS FROM AN EXISTING QUERY

After you create and save a query with MSQuery, you can use the saved query to create another set of form letters. MSQuery's saved queries are similar to Access queries saved as queryDef objects in .mdb files. To use an existing .dqy file as the data source for a merge document, follow these steps:

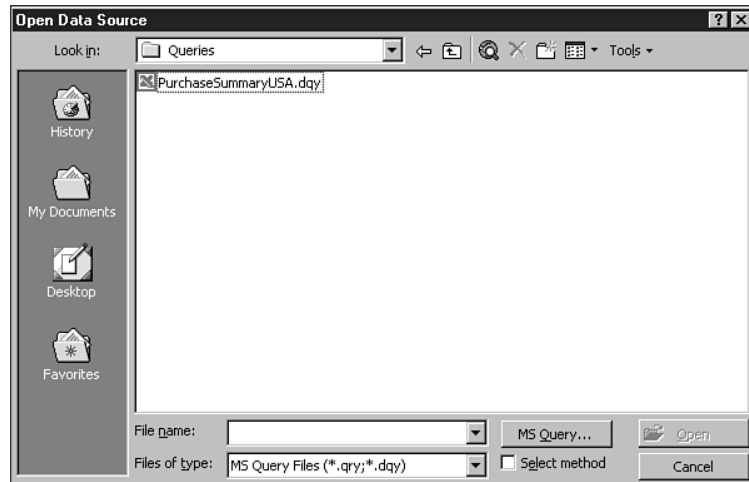
### Note

Versions of MSQuery prior to Office 97 saved queries in files with the .qry file extension. MSQuery in Office 97 and 2000 uses the .dqy file extension instead.

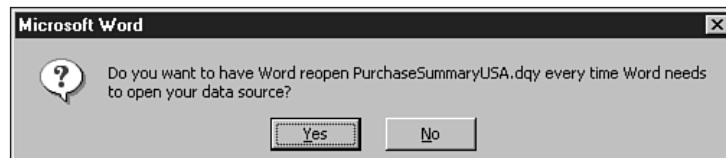


1. In Word 2000, click the Mail Merge Helper button to display the dialog.
2. Click the Get Data button and select Open Data Source from the drop-down list to display the Open Data Source dialog.
3. Choose the MS Query Files (\*.dqy) item in the Files of Type drop-down list.
4. Select the PurchaseSummaryUSA.dqy file you saved in step 20 of the preceding section and click Open (see Figure 21.23). The message box shown in Figure 21.24 appears.

**Figure 21.23**  
Choosing an existing MSQuery .dqy file in the Open Data Source dialog.



**Figure 21.24**  
Making the .dqy file the permanent source of data for the main merge document.



5. To make PurchaseSummary.dqy the permanent source of data for the PurchaseSummary1997H1.doc main merge document, click the Yes button of the message box to return to the Mail Merge Helper dialog. The path to and the name of your query file appear in the Data label of the Data Source section.

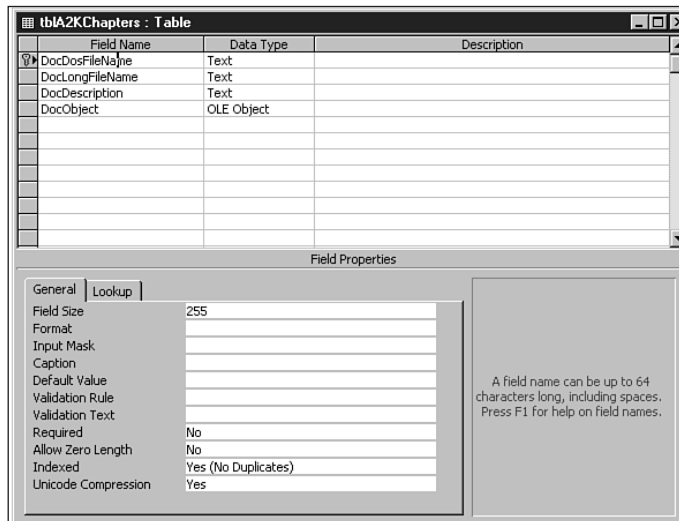
## EMBEDDING OR LINKING WORD DOCUMENTS IN ACCESS TABLES

Many word processing documents are a collection of individual paragraphs, each of which may change depending on the purpose of the document. If the document is a contract, many of the paragraphs are likely to be *boilerplate*: standard paragraphs that are added based on the jurisdiction and purpose of the contract and relationship between the parties.

Similarly, books are collections of chapters; when an author is writing a book, each chapter may go through several editing stages. Keeping track of boilerplate files and maintaining collections of book chapter files in various editing stages can be a daunting project. Even if you establish a workable DOS file-naming convention, you can easily lose track of the relationship between the file name and the content of the file.

Applications that track documents and maintain revision records for documents fall into the category of *document management systems*. Document management systems differ from image management systems; the latter systems handle static bitmapped images (usually created by scanners) rather than dynamic document content (editable data). With its OLE 2.1 capability, Access 2000 is a logical candidate for the creation of document management applications.

You can create a simple document management system by designing a table with one or more fields of the OLE Object data type to contain embedded documents or links to individual document files. You need a minimum of two other fields: one to identify the source file name of the document and the other to provide a document description. You can use additional fields to indicate document ownership, track document status, hold key terms, and control who can modify the document. Figure 21.25 shows the design of a simple table that stores the manuscript of this edition in the form of individual chapters in an OLE Object field.



**Figure 21.25**  
The design of the table for a simple document management system.

After you define the fields for your document table, you need to determine whether you want to embed the document's data in the table or link the documents to their source files. Make your choice based on the following criteria:

- Embedding the document lets you use in-place activation to review the document within Access. In-place activation is the less-intrusive process.

- Activating a linked document launches Word 2000 in its own window.
- Embedding the document provides an independent copy of the document that can serve as an archive. You can set the value of the Locked property of the object to Yes to allow the object to be activated but not altered.
- Linking the document lets you view changes to the document as they occur.
- Linking requires that the document remain in the same location. In most cases, moving the document to another drive or directory breaks the link.
- You can't save an embedded Word 2000 or Excel 2000 document to a file or print the embedded document using File menu choices in the in-place activated mode. The file menus of these applications don't replace the File menu of Access 2000 when the embedded objects are activated. However, you can open Word's window to make the Word File menu accessible.

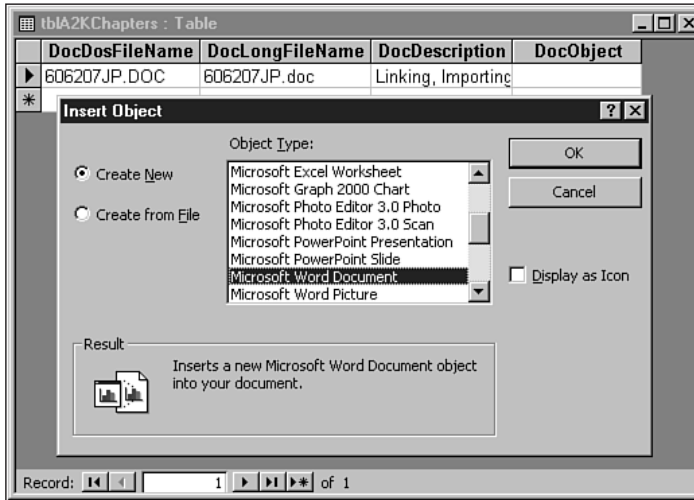
**Tip #187 from***RJ*

You can use Automation instructions in VBA modules to save an embedded Word 2000 document to a file or to print the document. The Object property of the object frame lets you manipulate embedded or linked objects with VBA code.

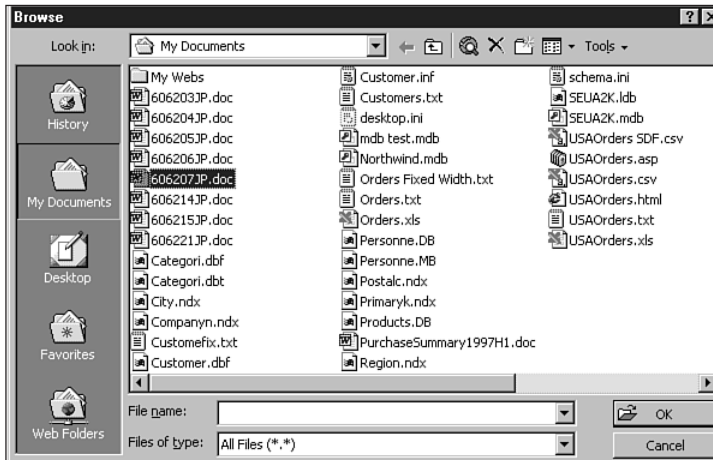
## EMBEDDING OR LINKING A WORD 2000 DOCUMENT IN A TABLE

To embed or link a Word 2000 document in an OLE Object field of a table with a design similar to that shown in Figure 21.25, follow these steps:

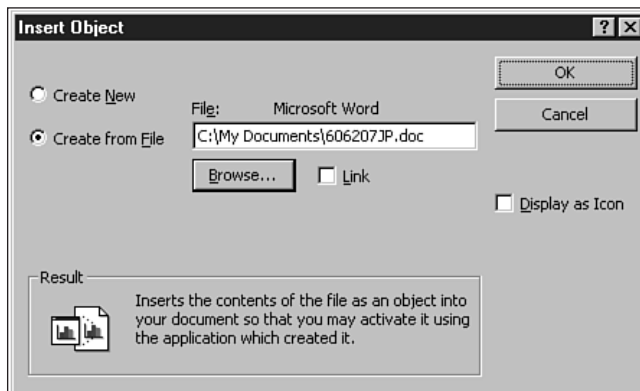
1. Place the caret in the OLE Object field and then choose Insert, Object to display the Insert Object dialog (see Figure 21.26).
2. You can create an empty Word document by accepting the default, Create New, and then clicking OK. To link or embed an existing document, click the Create from File option; the Object Type list changes to the File text box. (You don't need to select Microsoft Word Document when you insert an object from a file.)
3. You can type the path and file name in the File text box or click the Browse button to display the Browse dialog (see Figure 21.27). Select the file you want to use in the File Name list and then click Open to close the Browse dialog and return to the Insert Object dialog.
4. The file you selected in the preceding step appears in the File text box. At this point, you can choose between linking and embedding the file. The example that follows uses embedded objects to demonstrate in-place activation (see Figure 21.28). If you want to link the file, mark the Link text box. Click OK.
5. Position the record selector of the table to a different record to save the embedded object or the link to the object's file in your table, together with its OLE presentation.



**Figure 21.26**  
The Insert Object dialog.



**Figure 21.27**  
Selecting a source document file in the Browse dialog.



**Figure 21.28**  
Embedding a Word 2000 document object from a file.



Repeat steps 1 to 5 for each document you want to add to the table. You can activate the document object in Word 2000's window by double-clicking the OLE Object cell. Viewing the documents you insert in the file lets you verify that their contents correspond to their description.



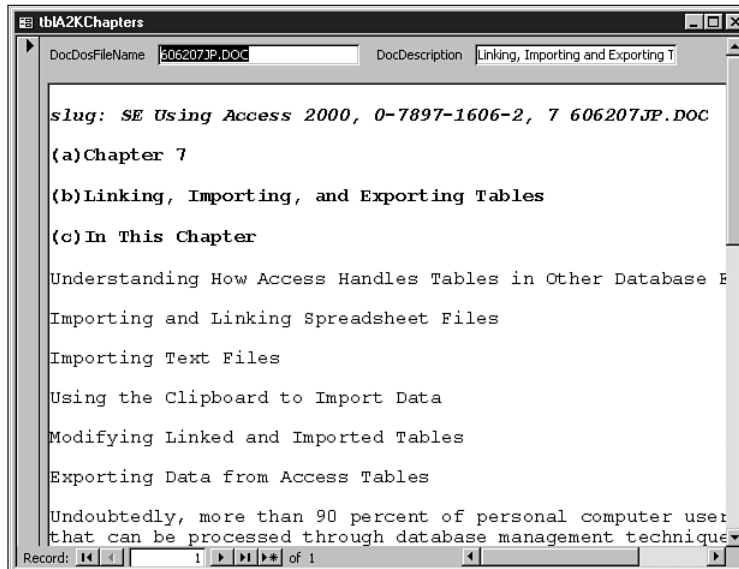
*If you don't find a Microsoft Word Document item in the list, see the "Missing OLE Server Registry Entries" topic of the "Troubleshooting" section near the end of this chapter.*

## CREATING A FORM TO DISPLAY THE EMBEDDED DOCUMENT

If your table contains only a few fields, you can use the AutoForm feature to create a simple form to display and edit your linked or embedded object. To create the document display form, follow these steps:

1. With the table containing your Word objects open with the focus in Datasheet view, click the arrow of the New Object button of the toolbar and select AutoForm from the drop-down menu. The Form Wizard automatically creates a standard form.
2. Click the Design View button of the toolbar and then relocate and resize the controls as necessary. Your bound object frame should occupy most of the display area. To view the entire document in its original format, set the Height property of the object frame to 11 inches and the Width property to 8.5 inches.
3. Return to Form view to display the presentation of the document. Figure 21.29 shows the presentation of the initial version of the manuscript for this chapter of the book. The size of the bound object frame of Figure 21.29 is about 8.5×11 inches.

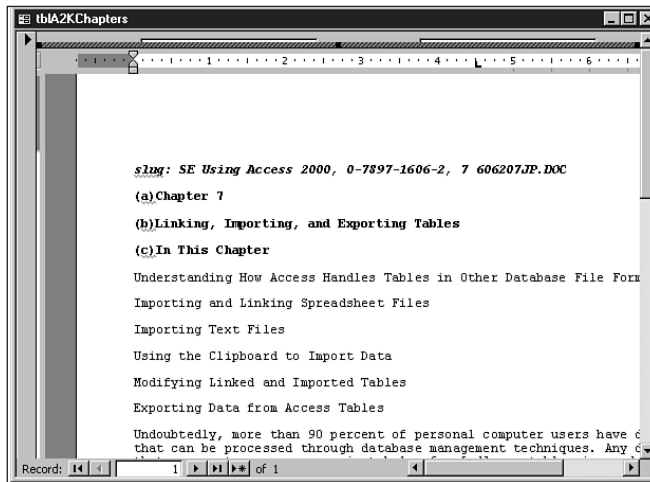
**Figure 21.29**  
The presentation of a Word 2000 document in a bound object frame.



4. Double-click the surface of the object frame to activate the object. Activating the object launches Word 2000 if it isn't running. If you embedded the document, activation adds

Word's toolbars to the display as docked toolbars. Word's menu choices take over Access's Edit and View menus, and Word adds its Insert, Format, Tools, and Table menus to the menubar (see Figure 21.30).

You can move through the document with the Page Up and Page Down keys. All editing features of Word 2000 are available when the document object is activated, but you can only view the document in Page Layout view. You may use the scroll bar of the Access form to view parts of the page that aren't visible on your display. (Using 800-x-600-pixel or higher resolution solves the partial display problem.)



**Figure 21.30**  
An embedded Word 2000 document activated in a bound object frame.

- Click the surface of the form, outside the bound object frame area, to deactivate the object and return to Presentation view of the document.

**Tip #188 from**

RJ

You can also click the record selection bar at the left edge of the form to deactivate the object and return to Presentation view.

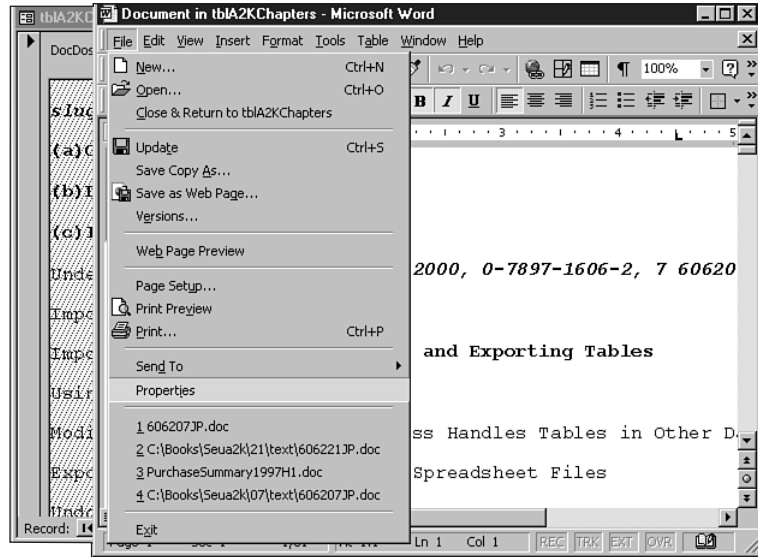
- To save the document to a file, to alter the page layout, or to print an embedded document, choose Edit, Document Object and select Open. Microsoft Word opens a separate window in which to edit the embedded document, and you can access the File menu of Word to save changes, as shown in Figure 21.31.
- Choose File, Close and Return to *FormName* to close Word's window and return to Access.


**Tip #189 from**

RJ

You can change the layout of the embedded document by opening the document in Word (see preceding step 6); choosing File, Page Setup; and then making the required adjustments.

**Figure 21.31**  
Opening the embed-  
ded document in  
Word 2000 window.



 You also can insert additional document objects directly into the form. To embed or link an object in Form view, position the record pointer on the blank (tentative append) record. An empty presentation appears in the bound object frame. Choose **Insert, Object** and follow steps 2 through 5 of the preceding section to embed or link additional document objects.

## TROUBLESHOOTING

### MISSING OLE SERVER REGISTRY ENTRIES

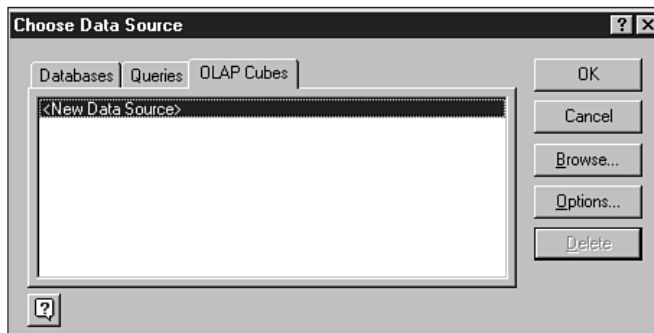
*The Microsoft Word Document entry doesn't appear in the Insert Object dialog's Object Type list, or attempting to insert a Word document results in a message box stating that the registration database entry is invalid or corrupted.*

The Registry entries for Word 2000 are missing or invalid. If the Word 2000 entry is missing, Word's Setup program probably did not complete its operation. (The last step of Setup adds entries to the Registry.) If the "corrupted" message appears, it is likely that you moved the Word files from the original directory in which Setup installed the files into a different directory. In either case, close Access, open Word, and choose **H**elp, **D**etect and **R**epair to open the Detect and Repair dialog. With an active network connection to the installation server share or the Office 2000 distribution CD-ROM 1 in the drive, click Start to initiate the process.

## IN THE REAL WORLD—MICROSOFT QUERY AND OLE DB

Microsoft Query arrived in the era of Access 1.0, and has changed only in minor respects over the years. Microsoft Query's layout clearly derives from the Access query design window. Microsoft Query is one of the few remaining Office-related tools that relies on DDE—instead of COM-based Automation—for interprocess communication. Access's Mail Merge Wizard is the other tool in which use of DDE appears to be cast in concrete. Continuing to employ DDE when “COM Everywhere” is Microsoft's rallying cry is another good example of not fixing an unbroken technology. This chapter introduced you to Microsoft Query, creating a tenuous connection to the following discussion of the product's new OLE DB feature.

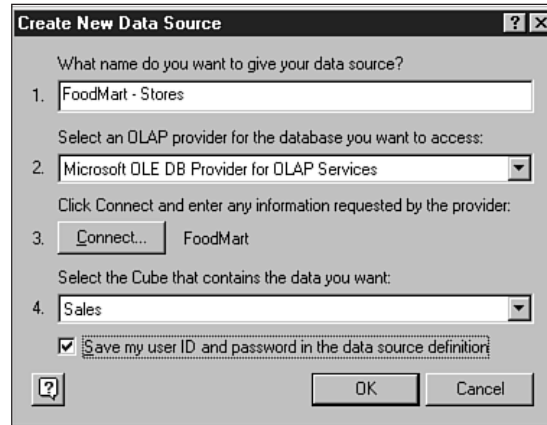
Excel 2000 depends on Query 2000 (Q2K, Msqry32.exe) to connect to databases, and previous versions of Microsoft Query relied on ODBC drivers for database connections. Q2K now offers support for OLE DB for OLAP, but only when you open Q2K from within Excel 2000 by choosing Data, PivotTable or PivotChart Report or Data, Get External Data, New Database Query. Figure 21.32 shows the OLAP Cubes page of the Q2K's Choose Data Sources dialog. (Refer to Figure 21.13 for the appearance of the dialog when you open Q2K from Word or in standalone mode.)



**Figure 21.32**  
The OLAP Cube page of Microsoft Query 2000's Choose Data Sources dialog opened from Excel's PivotTable Wizard.

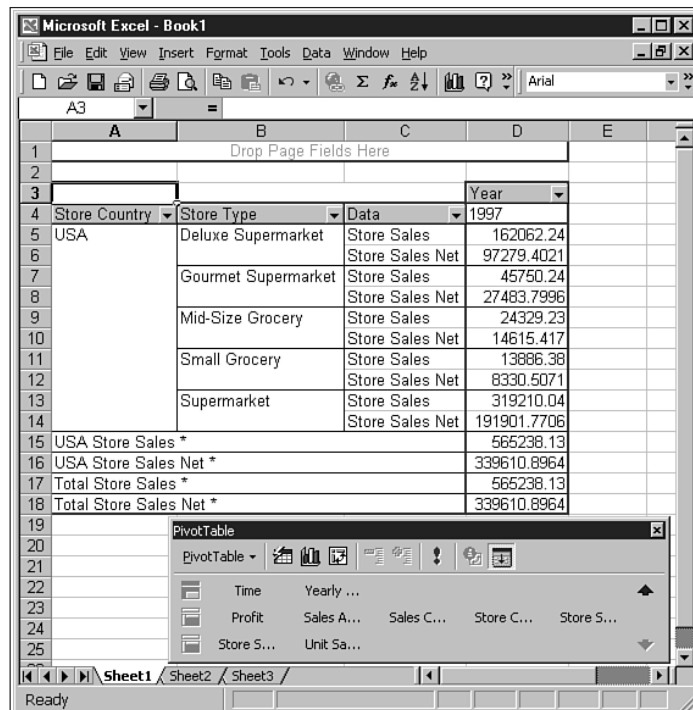
If you have a network connection to an installation of Microsoft OLAP Services for SQL Server, you can connect to the sample FoodMart OLAP database. Double-click the <New Data Source> item to open a Create New Data Source dialog similar to that for ODBC data sources. Type a name for your data source in text box 1, select the Microsoft OLE DB Provider for OLAP Services from list 2, click Connect, accept the default OLAP Server option. Next, type the server name in the Multi-Dimensional Connection dialog, and click Next to select the FoodMart database. Click Finish to return to the Create New Data Source dialog, select the Sales cube of FoodMart in list 3 (see Figure 21.33).

**Figure 21.33**  
Specifying the name,  
OLE DB for OLAP  
provider, database,  
and data cube in the  
Create New Data  
Source dialog.



Clicking OK returns you to the Choose Data Source dialog with your new OLAP data source selected. Click OK, Next and Finish to open Excel with an empty PivotTable sheet. Drag the fields from the PivotTable dialog to rows, columns, and data to create the hierarchical display of Store Country, Store Type, Store Sales, and Store Sales Net shown in Figure 21.34. It's unfortunate that the PivotTable dialog isn't a resizable window to better display dimension names as button captions, but tooltips overcome the truncated name problem.

**Figure 21.34**  
Designing the  
PivotTable from the  
data cube.



This “In the Real World” section isn’t meant to be an exhaustive discussion of the subject of Q2K or OLAP tables; it’s simply a shortcut to understanding the role of Q2K and to encourage your investigation of OLAP PivotTables. If you don’t have OLAP Services installed, you can work with a local .cub file. Check the Microsoft Web site’s OLAP pages at <http://www.microsoft.com/data/oledb/olap/> for downloadable .cub files to test. (The BobsVid.cub file included with the Microsoft Data Access SDK 2.0 doesn’t work with the current OLE DB for OLAP provider version.)

--rj

