Designer/2000

Graphics Generator

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Introduction

What is the graphics generator?

The Graphics Generator is the Designer/2000 utility for creating production-quality Graphics displays using the chart module definitions that are recorded in the Repository. Using the Graphics Generator, you can generate a variety of charts in your displays, including drilldown and break charts.

The Graphics Generator includes a default template display and chart templates to facilitate rapid, first-time generation. You also can modify the template display and chart templates to precisely control the generated display.

What is a generated display?

A Graphics display is the application that is created when you generate from a chart module definition. A generated display typically contains the following components:
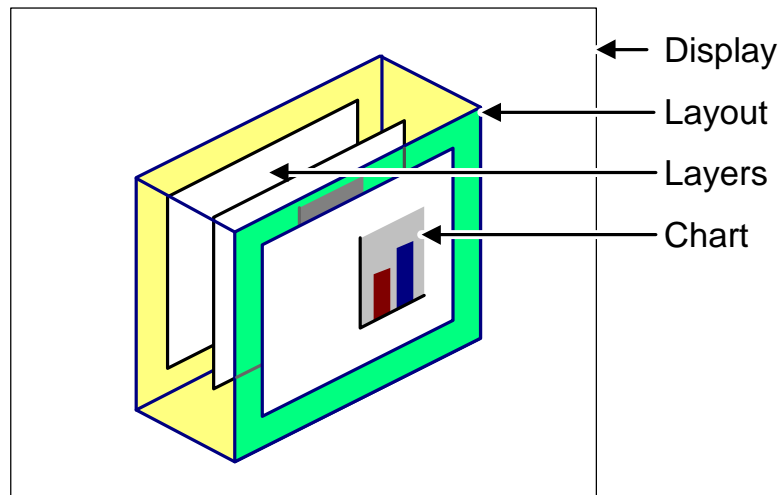
- Charts
- Layers
- Graphical Objects, Imported Objects, and Sounds

Charts

A chart is a diagram that visually represents data. Although a chart appears as a single object in a generated display, it consists of the following components:

- *Query*

A SQL SELECT statement used to retrieve the data for a chart. The Generator automatically creates a query for a chart using the table and column usages and the links defined in the chart module definition.

- *Chart Layout Area*

The chart layout area is the space that the chart and the chart legend occupy in a generated display. When you design a chart module definition, by default, all charts are created in the same layout area. You can adjust the size and location of the chart layout area. If the chart module definition contains more than one chart, you can create new chart layout areas

- *Chart Template*

Defines the graphical attributes of a chart such as the chart style, the axis and axis frame properties, and line and edge properties. The Graphics Generator supports seven chart styles.

- *Chart Data*

When you design a chart module definition, you create table and column usages. The table usages identify the tables that contain the data for the chart; the column usages identify the fields in the chart. Every field in a generated chart is either a category or a value:

> *Category*
> A category is a piece of independent data that has a value associated with it. For example, in a chart that displays employee salaries, the employee name is the category. Categories are usually plotted along a discrete or date axis which is also referred to as a category axis.
> *Values*
> A value is a piece of dependent data that is associated with a category. For example, in a chart that displays employee salaries, the amount associated with a particular employee is the value.Values are plotted along a continuous axis which is also referred to as a value axis.

Layers

When you design the chart module definition, you can specify multiple surfaces called layers. Layers are useful for hiding objects that you want to show only under certain conditions.

Using PL/SQL, you can manipulate existing layers at runtime. The active layer is the only layer that users can interact with, but you can change the active layer using PL/SQL, depending on where you want user input.

Graphical Objects, Imported Objects and Sounds

Graphical objects and sounds can be included in generated displays by adding them to the template display.

Graphical objects

The Graphics Generator supports shapes, text objects, and symbols in generated displays. By editing the template display, you can include artwork elements, titles, label artwork elements.

Imported objects

Artwork stored in the database or file system can be imported into the generated display.
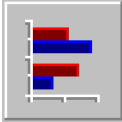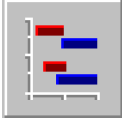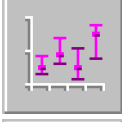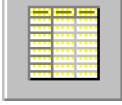
Sounds

If your system supports sound, you can make audio recordings to use in your displays. Sounds are useful for alerting end users to specific events at runtime. Note that playing sounds at runtime must be done programmatically using PL/SQL.
Note: The beta release of the Graphics Generator does not support PL/SQL.

Chart Types

The Graphics Generator supports seven types of charts in generated displays.

Chart Type		Suggested Use
Bar		Compare sets of data ranges horizontally
Column		Compare sets of data ranges horizontally
Gantt		Show sets of project data over an amount of time
High-low		Show high, low, and close values
Pie		Compare the ratios or percentages of parts of a whole
Scatter		Show data along two value axes; show standard deviations
Table		Show data in a table format

Specifying Chart Layout: Module Data Diagrammer Table Usages

Detailed Usages for Chart Modules enable you to specify the requirements and layout details for the display that is generated from a module definition. Details can be specified for each table usage and column usage in a module definition.

This dialog box within Detailed Usages for Chart Module allows you to specify the variables listed below. Invoke the dialogue by double clicking on the table usage, or Edit > Elements > Detailed Usages in the Module Data Diagrammer.

Table/View Name

The name of the table or view on which the table usage is based.

Placement group

Controls the size and location of the layout area.

Position dropdown list

NEW WINDOW	The chart is displayed on a new layout area in a new layer. This is the setting for
the	first table usage on a diagram.
NEW PAGE / NEW WINDOW	The chart is displayed on a new layout area in a new layer.
NEW PAGE	The chart is displayed on anew layer.
SAME PAGE	The chart is displayed on the current layer.
NEW POPUP	The chart is displayed in a new layout area on the current layer.
SAME POPUP	The chart is displayed on the current popup.

X and Y
Controls the horizontal and vertical position of the layout area in the generated display.

Width
The width of the layout area in the generated display.

Height
The height of the chart in the generated display.

Layout Style group

Type dropdown list
Specifies the type of chart to generate.

Custom Template
The name of a custom chart template.

Data group

Maximum Rows
Determines the number of categories in an axis chart or the number of rows that are returned by the chart query

Append New Rows
If you specify a value in the Maximum Rows field to control the number of rows that are returned by the chart query, select this checkbox to append each new data set returned by the query to the previous set. If this checkbox is not selected, each set of data returned will replace the previous set.

Working with Chart Templates

When you design a chart module definition, you select a chart type for each chart in module definition. Each chart type has an associated chart template which determines the appearance of the axis labels, fonts, objects, and legend in the generated display.

The Graphics Generator includes a default chart template for each of the seven chart types so that you can generate a display without first having to create or specify a chart template.

However, to modify the default appearance of a chart, you must modify the chart template used to generate it. Specifically, there are four ways that you can control or modify chart templates:

·   edit the default chart template used to generate the chart.
·   create a custom chart template.
·   use a different default set of chart templates. The set of seven chart templates that is initially attached to chart module definitions creates charts that have a three-dimensional appearance. There are three other default sets of   chart templates that you can use to change the appearance of the charts in your generated displays.
·   create a custom set of chart templates. You can create your own sets of chart templates and then apply them to the template display.

Selecting a Field Style

When you generate a display, the Generator applies a field style that is most suitable to the chart type and the data represented in the chart. You can override the default field style by editing the column usage that corresponds to the field.

To change the style of a field:

1.   Choose Edit>Elements>Detailed Usages from the Module Data Diagrammer and select the base table usage that   contains the column usage representing the field. Alternatively, double-click on the column usage.
2.   Select the Column Display tab.
3.   Select the column usage from the Column Usage list box.
4.   Select a field style from the Display Datatype dropdown list. The field style that you select must be a style that is   supported for the type of chart that you are generating.

     Note: *If the Display Datatype field is dimmed, you selected either a column usage for a field that is not*
     displayed in the chart or a column usage for an X-Category or Subcategory. If you selected a field that is not
     displayed, either select another column usage or specify that the column usage is to represent a displayed
field.   *Note that you cannot specify a field type for an X-Category or Subcategory field.*

5.   Click OK, then run the Graphics Generator to apply the field style to the chart in the generated display.

Detailed Usages for Chart Module: Column Display

Enables you to update the display details of how specified columns are to be displayed by a chart module definition when a chart is generated.

List box

The names of the column usages that exist for the specified table. The column that is highlighted in this list is the column for which display details are being specified. If the list box is empty, no column usages were specified for the table usage. The contents of the list box are determined by the search string in the Column Usage filter field.

Create Detailed Column Usage button

This button allows you to create one or more detailed column usages. When you select this button, the Create Detailed Column Usages dialog box is displayed. The new column usages are created above the currently selected column usage.

Delete Detailed Column Usage button

This button deletes a selected column usage.

Alias

A unique identifier for the column usage which can be used to reference the column from code or a derivation expression. If a module definition contains more than one column usage for a particular column, a number is appended to the alias to uniquely identify each column usage.

Interactive checkbox

Indicates whether the column usage represents an interactive field on the generated chart. If this check box is selected, the fields in the Group Fields group and the Field group are dimmed because you cannot set these attributes for interactive fields.

Plot As group

X Category

For axis charts, plots the data returned for the selected column usage along the independent axis of the generated chart.

Sub Category

For axis charts, plots the data returned for the selected column usage for each category. For example, in a chart that plots quarterly bonuses for an employee, the bonus fields are plotted for each employee name. The employee name is the category and the bonus is the subcategory.

Value

Plots the data returned for the selected column usage as value data.The data returned by fields selected as value fields determines whether a single or double Y axis will be created in the generated chart. Two Y axes are created when:
-        the fields specified as Value fields have datatypes that cannot be plotted along one Y axis; for example, dates and numbers.·
-        fields specified as Value fields have values of different magnitudes; for example, in a chart that plots employee   salaries, if the range of salaries is broad, the low salaries would be plotted against the first Y axis and the high   salaries would be plotted against the second Y axis.

Fields group

Display Datatype
Sets the field style for the selected column usage.

Custom Template

Specifies the name of a custom field template. If you specified a custom chart template and the custom field template is stored in that chart template, you do not need to specify the template in this field.

Axis Origin
For axis charts, the axis origin sets the origin of the chart axis to a literal value. For example, if you enter a value of 500 for a column chart that plots employee bonuses, the category axis (X axis) will be drawn at the 500 value along the continuous axis (Y axis).
If you do not specify a value, the Generator plots the axis origin as 0 for numeric values. For date values, the Generator uses the earliest date as the origin.

Group Fields group
Specifies an identifier that can be used by the Generator to group items together on the generated chart.

Name
Shows the existing item groups. You can add the selected column usage to an item group by selecting the item group from the dropdown list or by entering the name of a new item group in this field.
If the selected column usage represents a category in the generated chart, it is automatically placed in a system-defined item group named X-Category. If the selected column usage represents a subcategory, it is automatically placed in a system-defined item group named Subcategory.

Prompt
The label of the item group. Item group labels may be displayed in the chart legend.

Base
Specifies that the selected column usage represents a value that all other values in the item group are to use as an origin.

Label
The label of the field that is generated from the selected column usage.

Highlight
The highlighting format to apply to a field label.

Generated Graphics Application

Here is an example of a generated graphics application.