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 **Computer Viruses**

**Project Guide:- Presented By:-**

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**ABSTRACT**

A computer virus is a computer program that can spread across computers and networks by making copies of itself, usually without the user’s knowledge. Viruses can have harmful side effects. These can range from displaying irritating messages to deleting all the files on your computer. A virus program has to be run before it can infect your computer. Viruses have ways of making sure that this happens. They can attach themselves to other programs or hide in code that is run automatically when you open certain types of files. The virus can copy itself to other files or disks and make changes on your computer. Virus side effects, often called the payload, are the aspect of most interest to users. Password-protecting the documents on a particular day, mailing information about the user and machine to an address somewhere are some of the harmful side effects of viruses. Various kinds of viruses include macro virus, parasitic or file virus, Boot virus Particular code used in the WebPages and the security measures taken by service providers and by you. One solution to prevent the viruses is anti-virus softwares. Anti-virus software can detect viruses, prevent access to infected files and often eliminate the infection.

Computer viruses are starting to affect mobile phones too. The virus is rare and is unlikely to cause much damage. Anti-virus experts expect that as mobile phones become more sophisticated they will be targeted by virus writers. Some firms are already working on anti-virus software for mobile phones. VBS/Timo-A, Love Bug,Timofonica,CABIR,aka ACE-? and UNAVAILABLE are some of the viruses that affect the mobile phones

**INTRODUCTION**

The person might have a computer virus infection when the computer starts acting differently. For instance getting slow or when they turn the computer on, it says that all the data is erased or when they start writing a document, it looks different, some chapters might be missing or something else abnormal has happened.

The next thing usually the person whose computer might be infected with virus, panics. The person might think that all the work that have been done is missing. That could be true, but in most cases viruses have not done any harm jet, but when one start doing something and are not sure what you do, that might be harmful. When some people try to get rid of viruses they delete files or they might even format the whole hard disk like my cousin did. That is not the best way to act when the person think that he has a virus infection.

What people do when they get sick? They go to see a doctor if they do not know what is wrong with them. It is the same way with viruses, if the person does not know what to do they call someone who knows more about viruses and they get professional help.

If the person read email at their PC or if they use diskettes to transfer files between the computer at work and the computer at home, or if they just transfer files between the two computers they have a good possibility to get a virus. They might get viruses also when they download files from any internet site. There was a time when people were able to be sure that some sites we secure, that those secure sites did not have any virus problems, but nowadays the people can not be sure of anything. There has been viruses even in Microsoft's download sites.

In this report I am going to introduce different malware types and how they spread out and how to deal with them. Most common viruses nowadays are macro viruses and I am going to spend a little more time with them. I am going to give an example of trojan horses stealing passwords.

**A brief history of the computer virus**

Before 1988, the word "virus" had a strictly biological meaning. In that year, Robert Morris wrote and released the first "Internet worm", forcing everyone in the computer community to immediately consider this new electronic threat. While Morris created his virus to demonstrate a security flaw in ARPANET, the predecessor to the Internet, today's virus writers often have a more malicious intent. The Internet today spans the globe and serves billions of users, providing an environment in which a single virus can conceivably cause rapid and widespread damage to systems throughout the world.

The first viruses were harmless, created in computer laboratories as research projects in the early 1980s. The first malicious viruses were spread on floppy disks exchanged by computer enthusiasts. In the late 1980s and early 1990s, Bulletin Board Systems (BBSes) became a popular means of sharing software, and thus unintentionally became a means of distributing the computer viruses that had started appearing with increasing regularity. The growth of the shareware movement and the popularity of pirated software were also helpful to virus replication.

 **Viruses**

 A computer virus is a program, a block of executable code, which attach itself to, overwrite or otherwise replace another program in order to reproduce itself without a knowledge of a PC user.

Most viruses are pretty harmless. The user might not even notice the virus for years. Sometimes viruses might cause random damage to data files and over a long period they might destroy files and disks. Even benign viruses cause damage by occupying disk space and main memory, by using up CPU processing time. There is also the time and expense wasted in detecting and removing viruses.

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| **Types Of Viruses** **Boot sector Virus:** A virus which attaches itself to the first part of the hard disk that is read by the computer upon bootup. These are normally spread by floppy disks. **Macro Virus:**Macro viruses are viruses that use another application's macro programming language to distribute themselves. They infect documents such as MS Word or MS Excel and are typically spread to other similar documents.**Memory Resident Viruses:**Memory Resident Viruses reside in a computers volitale memory (RAM). They are initiated from a virus which runs on the computer and they stay in memory after it's initiating program closes. **Rootkit Virus:** A rootkit virus is an undetectable virus which attempts to allow someone to gain control of a computer system. The term rootkit comes from the linux administrator root user. These viruses are usually installed by trojans and are normally disguised as operating system files.**Polymorphic Viruses:**A polymorphic virus not only replicates itself by creating multiple files of itself, but it also changes it's digital signature every time it replicates. This makes it difficult for less sophisticated antivirus software to detect.**Logic Bombs/Time Bombs:** These are viruses which are programmed to initiate at a specific date or when a specific event occurs. Some examples are a virus which deletes your photos on Halloween, or a virus which deletes a database table if a certain employee gets fired. |
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**Virus sources**

 Viruses do not just appear, there is always somebody that has made it and they have own reason to so. Viruses are written everywhere in the world. Now when the information flow in the net and Internet grows, it does not matter where the virus is made.

Most of the writers are young men. There are also few university students, professors, computer store managers, writers and even a doctor has written a virus. One thing is common to these writers, all of them are men, women do not waste their time writing viruses. Women are either smarter or they are just so good that never get caught.

**Why do people write and spread viruses?**

 It is difficult to know why people write them. Everyone has their own reasons. Some general reasons are to experiment how to write viruses or to test their programming talent. Some people just like to see how the virus spreads and gets famous around the World. The following is a list from news group postings alt.comp.virus and tries to explain why people write and spread viruses.

* They don't understand or prefer not to think about the consequences for other people.
* They simply don't care.
* They don't consider it to be their problem if someone else is inconvenienced.
* They draw a false distinction between creating/publishing viruses and distributing them.

**How viruses activate**

 We are always afraid that viruses do something harmful to files when they get active, but not all the viruses activate. Some viruses just spread out, but when viruses activate they do very different things. Might play a part of melody or play music in the background, show a picture or animated picture, show text, format hard disk or do changes to files.

As an example, in one unnamed company: over a long period of time, the files in a server were corrupted just a bit. So backup copies were taken from the corrupted files. And after they noticed that something was wrong, it was too late to get back the data from the backups. That kind of event is the worst that can happen for the uses.

There is also talk that viruses have done something to hardware like hard disk or monitor. Viruses can not do any harm to hardware but they can do harm to programs and for example to BIOS so that computer does not start after that. Usually you can start the computer from a boot diskette if the computer does not start otherwise.

**How viruses act**

 Viruses main mission is to spread out and then get active. Some viruses just spread out and never activate. Viruses when they spread out, they make copies of self and spreading is harmful.

**How viruses spread out**

 Viruses mission is to hop from program to other and this should happen as quickly as possible. Usually viruses join to the host program in some way. They even write over part of the host program.

A computer is infected with a boot sector virus if it is booted from an infected floppy disk. Boot sector infections cannot normally spread across a network. These viruses spread normally via floppy disks which may come from virtually any source:

* Unsolicited demonstration disks.
* Brand-new software.
* Disks used on your PC by salesmen or engineers.
* Repaired hardware.

**Damage cause by various viruses**

* OPRAH WINFREY VIRUS: Your 200MB hard drive suddenly shrinks to 80MB, and then slowly expands back to 200MB.
* AT&T VIRUS: Every three minutes it tells you what great service you are getting.
* MCI VIRUS: Every three minutes it reminds you that you're paying too much for the AT&T virus
* POLITICALLY CORRECT VIRUS: Never calls itself a "virus", but instead refers to itself as an "electronic microorganism."
* RIGHT TO LIFE VIRUS: Won't allow you to delete a file, regardless of how old it is. If you attempt to erase a file, it requires you to first see a counselor about possible alternatives.
* ROSS PEROT VIRUS: Activates every component in your system, just before the whole darn thing quits.
* MARIO CUOMO VIRUS: It would be a great virus, but it refuses to run.
* TED TURNER VIRUS: Colorizes your monochrome monitor.
* ARNOLD SCHWARZENEGGER VIRUS: Terminates and stays resident. It'll be back.
* DAN QUAYLE VIRUS #2: Their is sumthing rong wit your komputer, ewe jsut cant figyour out watt!
* GOVERNMENT ECONOMIST VIRUS: Nothing works, but all your diagnostic software says everything is fine.
* NEW WORLD ORDER VIRUS: Probably harmless, but it makes a lot of people really mad just thinking about it.
* FEDERAL BUREAUCRAT VIRUS: Divides your hard disk into hundreds of little units, each of which does practically nothing, but all of which claim to be the most important part of your computer.
* GALLUP VIRUS: Sixty percent of the PCs infected will lose 38 percent of their data 14 percent of the time. (plus or minus a 3.5 percent margin of error.)

**How to provide protection against viruses**

 Best way to protect yourself is to prepare your computer against viruses in advance. One way to protect you computer is to use updated anti-virus program. When you get an email attachment, you should first check the attachment by checking the file with a anti-virus program.

As an example in one unnamed Finnish company all information was mailed in email attachments. There was this one Word document that was mailed to everybody. That email attachment was infected by a macro virus. Everyone got the infected attachment and those who opened that attachment by Word got that CAP-macro virus. After all there were a few thousand infections. It took lots of time and money to clear that virus.

One can protect the computer against boot sector viruses by setting the BIOS to start from a hard disk rather than from a floppy disk.

Write protection is a good way to prohibit against viruses. Write protection works well in floppy disks, Windows NT and UNIX, but not that well in Windows and Windows95.

 **Different anti-virus programs**

 There are three different kind of anti-viral packages: activity monitors, authentication or change-detection software, and scanners. Each type has its own strengths and weaknesses. Commercial anti-viral programs have a combination of the above mentioned functions.

There are over ten good anti-viral programs. Most knows programs are Data Fellows F-Prot, Elia Shim Virus Safe, ESaSS Thunder BYTE, IBM Anti-Virus, McAfee Scan, Microsoft Anti-Virus, Symantec Norton Anti-Virus and S&S Dr Solomon's AVTK.

On a day-to-day basis, the average corporation should be very interested in the scan time; these impact strongly the users, who should be scanning hard drives and disks on a daily basis. If a product takes too long to carry out these basic tasks, users will be unwilling to wait, and will stop using it. This is clearly undesirable - the perfect anti-virus product would be one which takes no time to run and finds all viruses.

 **Conclusion**

* There are lots of viruses in the world and new viruses are coming up every day. There are new anti-virus programs and techniques developed too. It is good to be aware of viruses and other malware and it is cheaper to protect you environment from them rather then being sorry.
* There might be a virus in your computer if it starts acting differently. There is no reason to panic if the computer virus is found.
* It is good to be a little suspicious of malware when you surf in the Internet and download files. Some files that look interesting might hide a malware.
* A computer virus is a program that reproduces itself and its mission is to spread out. Most viruses are harmless and some viruses might cause random damage to data files.
* Marco viruses spread from applications which use macros. Macro viruses spreads fast because people share so much data, email documents and use the Internet to get documents. Macros are also very easy to write.
* Some people want to experiment how to write viruses and test their programming talent. At the same time they do not understand about the consequences for other people or they simply do not care.

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