

NIELIT Gorakhpur

Course Name: O Level (2nd Sem)

Subject: ICT

Topic: Virus and Anti-virus

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Computer Virus:

A computer virus is a program, script, or macro designed to cause damage, steal personal information, modify data, send e-mail, display messages, or some combination of these actions. When the virus is executed, it spreads by copying itself into or over data files, programs, or boot sector of a computer's hard drive, or potentially anything else writable. To help spread an infection the virus writers use detailed knowledge of security vulnerabilities, zero days, or social engineering to gain access to a host's computer.

Types of Viruses:

Boot Sector Virus:

They infect the master boot record, they are notoriously difficult to remove, often requiring a full system format. This is especially true if the virus has encrypted the boot sector or excessively damaged the code.

Polymorphic Virus:

Polymorphic viruses encrypt or encode themselves in a different way (using different algorithms and encryption keys) every time they infect a system. This makes it impossible for anti-viruses to find them using string or signature searches (because they are different in each encryption) and also enables them to create a large number of copies of themselves.

Worms: A worm is technically not a virus, but a program very similar to a virus; it has the ability to self-replicate, and can lead to negative effects on your system and most importantly they are detected and eliminated by antiviruses.

Trojan Horses: A Trojan horse or Trojan is a type of malware that is often disguised as legitimate software. Trojans can be employed by cyber-thieves and hackers trying to gain access to users' systems. Users are typically tricked by some form of social engineering into loading and executing Trojans on their systems. Once activated, Trojans can enable cyber-criminals to spy on you, steal your sensitive data, and gain backdoor access to your system.

Computer Virus Symptoms:

- A computer program disappears from its memory, especially if there is no known removal of the program.
- Unfamiliar music or sounds unexpectedly starts playing through the speakers.
- Icons appear on the desktop unrelated to any programs that are currently being installed, or new icons seem to appear when no software has been installed.
- An antivirus program will not run, or a new one will not install properly or at all.
- Previously installed antivirus programs will suddenly disable and can not be restarted.
- Files that have been recently opened suddenly have more than one extension, such as .exe, .vbs, .gif, or .jpg.
- Dialog boxes and menus seem to be distorted or different.
- Unusual error messages will pop up.
- Items are not printing correctly.
- Disk drives or disks become inaccessible.

Anti Virus:

Anti-virus software is a program or set of programs that are designed to prevent, search for, detect, and remove software viruses, and other malicious software like worms, trojans, adware, and more. There are several different companies that build and offer anti-virus software and what each offers can vary but all perform some basic functions:

- Scan specific files or directories for any malware or known malicious patterns.
- Remove any malicious code detected.
- Allow you to initiate a scan of a specific file or of your computer, or of a CD or flash drive at any time.

Exercise:

1. What is a computer virus? Explain its types and symptoms of virus.
2. What is anti-virus? what it does to remove viruses?