LECTURE SCHEDULE 4

Computer Viruses, Worms and Vaccines

Computer Viruses

Computer virus is a small software program that is designed to spread from one computer to another and to interfere with computer operation. A true virus is capable of self replication on a machine. Virus may spread between files or disks.

- There are estimated 30,000 computer viruses in existence.
- Over 300 new ones are created each month.
- First virus was created to show loopholes in software.
- Today almost 87% of all viruses are spread through the internet.

Symptoms of Virus Attack

- Computer runs slower than usual
- Computer no longer boots up
- Screen sometimes flicker
- Speaker beeps periodically
- System crashes for no reason
- Files/directories sometimes disappear
- Denial of Service (DoS)

Types Computer Viruses

- **Trojan Horse**
    - Requires Windows to work
    - Once infected, runs in the background
- **Worm**
    - Spread over network connection
    - Worms replicate
- **Macro**
    - Specific to certain applications
    - Comprise a high percentage of the viruses
- **E-mail viruses**

- An e-mail virus travels as an attachment to e-mail messages, and usually replicates itself by automatically mailing itself to dozens of people in the victim's e-mail address book.
- Some e-mail viruses don't even require a double-click -- they launch when you view the infected message in the preview pane of your e-mail software.

Worms

A worm is a small piece of software that uses computer networks and security holes to replicate itself. A copy of the worm scans the network for another machine that has a specific security hole. It copies itself to the new machine using the security hole, and then starts replicating from there, as well.

Worms use computer time and network bandwidth when they replicate. A worm called Code Red made huge headlines in 2001. Experts predicted that this worm could clog the Internet so effectively that things would completely grind to a halt.

A worm usually exploits some sort of security hole in a piece of software or the operating system. For example, the Slammer worm (which caused mayhem in January 2003) exploited a hole in Microsoft's SQL server.

Worms normally move around and infect other machines through computer networks. Using a network, a worm can expand from a single copy incredibly quickly. The Code Red worm replicated itself more than 250,000 times in approximately nine hours on July 19, 2001.

Protect computer against viruses:

- Gain knowledge about viruses
- Proper configurations
- Run only necessary programs
- Install Anti-virus software and update

Vaccines

Vaccines or Antivirus software is a computer program that detects, prevents, and takes action to disarm or remove malicious software programs, such as viruses and worms. New viruses, worms, and other threats are created by cyber terrorists and discovered every day. So updating

antivirus software is periodically mandatory. List of some top Anti Virus Programs which are very useful to users:

Norton AntiVirus – Norton AntiVirus is the most popular and secure virus scanner for checking boot sector records at startup. The live update feature automatically installs new updates for regular protection against viruses.

AVG Free Edition – AVG Resident Shield provides real-time protection executions of files and programs. It features a smart e-mail scanner, virus updates and virus vault for secure handling of the files which are infected by viruses. The base version for windows is Free for private and non-commercial use.

McAfee VirusScan for Windows: This antivirus package detects all virus types, including Word and Excel macros; boot-sector infections; and file, multipartite, stealth, polymorphic, and encrypted viruses.

Kaspersky Anti-Virus Personal Pro – It is a commonly used virus protection solution offering full protection against macro-viruses and unknown viruses.

ESET NOD32 Antivirus – ESET NOD32 Anti-virus is available as an anti-virus for small businesses, individuals and for large networks.

avast! Home Edition – A free antivirus solution for scanning disk, CDs, and E-mail.

Panda Antivirus Platinum – It is a complete virus protection package for home and business users. It comes with an easy installation and automatic protection from latest viruses.

Avira - Windows and Linux anti virus, firewall, anti spam, recovery solutions against malware infection