

- 1  Chapter 12  
Computers and Society: Security and Privacy
- 2  Chapter 12 Objectives
- 3  Computer Security: Risks and Safeguards  
**What is a computer security risk?**
- 4  Computer Security: Risks and Safeguards
  - 1 **What is a computer virus?**
  - 2
    - ❖ Potentially damaging program that affects computer negatively by altering way computer works
    - ❖ Segment of program code from some outside source that implants itself in computer
- 5  Computer Security: Risks and Safeguards
  - 1 **What are the ways viruses can be activated?**
  - 2
    - ❖ Opening infected file
    - ❖ Running infected program
    - ❖ Booting computer with infected floppy disk in disk drive
- 6  Computer Security: Risks and Safeguards
  - 1 **What is the source of a virus?**
  - 2
    - ❖ Written by programmer
      - Some write viruses as challenge
      - Others write viruses to cause destruction or to slow Internet
- 7  Computer Security: Risks and Safeguards  
**What are signs of a virus infection?**
- 8  Computer Security: Risks and Safeguards  
**What are the three main types of virus?**
- 9  Computer Security: Risks and Safeguards  
**How do viruses activate?**
- 10  Computer Security: Risks and Safeguards
  - 1 **How can you protect your system from a macro virus?**
  - 2
    - ❖ Set macro's security level in all applications that allow you to write macros
    - ❖ At medium security level, warning displays when you attempt to open document that contains macro
- 11  Computer Security: Risks and Safeguards
  - 1 **What does an antivirus program do?**
  - 2
    - ❖ Detects and identifies viruses
    - ❖ Inoculates existing program files
    - ❖ Removes or quarantines viruses
    - ❖ Creates rescue disk
- 12  Computer Security: Risks and Safeguards

- 1 **How does an antivirus program scan for a virus?**  
2 ❖ Scans for
- Programs that attempt to modify boot program, operating system, and other programs that normally read from but not modified
  - Files you download from the Web
  - E-mail attachments
  - Files you open
  - All removable media, such as a floppy
- 13  Computer Security: Risks and Safeguards  
1 **How does an antivirus program inoculate a program file?**  
2 ❖ Antivirus program records file size and creation date and uses this information to detect if a virus tampers with inoculated program file
- 14  Computer Security: Risks and Safeguards  
**What two types of virus are more difficult to detect?**
- 15  Computer Security: Risks and Safeguards  
1 **What does an antivirus program do once it detects a virus?**  
2 ❖ Removes virus if possible  
❖ Quarantines infected file in folder on hard disk
- 16  Computer Security: Risks and Safeguards  
1 **What is a rescue disk?**  
2 ❖ Removable disk that contains uninfected copy of key operating system commands and startup information  
❖ Upon startup, rescue disk finds and removes boot sector virus
- 17  Computer Security: Risks and Safeguards  
1 **What should you do if a virus infects your system?**  
2 ❖ Remove virus  
❖ If you share data with other users, then immediately inform them of virus infection
- 18  Computer Security: Risks and Safeguards  
1 **How can you stay informed about viruses?**  
2 ❖ Several Web sites publish list of virus alerts and virus hoaxes
- 19  Computer Security: Risks and Safeguards  
1 **What is unauthorized access?**  
2 ❖ Use of computer or network without permission
- 20  Computer Security: Risks and Safeguards  
**How can unauthorized access and use be prevented?**
- 21  Computer Security: Risks and Safeguards  
1 **How can you make your password more secure?**  
2 ❖ Longer passwords provide greater security

- 22  Computer Security: Risks and Safeguards
- 1 **How should you select a user name and password?**
  - 2 ❖ **Avoid obvious passwords, such as your initials or birthday**  
❖ **Select password that is easy for you to remember**
- 23  Computer Security: Risks and Safeguards
- 1 **What is a biometric device?**
  - 2 ❖ **Translates person's characteristics into digital code that is compared to digital code stored in computer**
- 24  Computer Security: Risks and Safeguards
- 1 **What is a fingerprint scanner?**
  - 2 ❖ **Captures curves and indentations of a fingerprint**
- 25  Computer Security: Risks and Safeguards
- 1 **What is a hand geometry system?**
  - 2 ❖ **Measures shape and size of person's hand**  
❖ **Typically used as time and attendance device by large companies**
- 26  Computer Security: Risks and Safeguards
- 1 **What is a face recognition system?**
  - 2 ❖ **Captures face image and compares it to stored image to see if person is legitimate user**  
❖ **Can recognize people with or without glasses, makeup, or jewelry, and with new hairstyles**
- 27  Computer Security: Risks and Safeguards
- 1 **What is an iris verification system?**
  - 2 ❖ **Reads patterns in tiny blood vessels in back of eye**
- 28  Computer Security: Risks and Safeguards
- 1 **What is an audit trail?**
  - 2 ❖ **Records in file both successful and unsuccessful access attempts**
- 29  Computer Security: Risks and Safeguards
- 1 **What is software theft?**
  - 2 ❖ **Can range from someone stealing media that contains software to intentional piracy of software**  
❖ **Software piracy is unauthorized and illegal duplication of copyrighted software**
- 30  Computer Security: Risks and Safeguards
- Single-User License vs Site License**
- 31  Computer Security: Risks and Safeguards
- 1 **What is encryption?**
  - 2 ❖ **Process of converting readable data into unreadable characters to prevent unauthorized access**

- ❖ **Used to transmit files over Internet**
- 32  Computer Security: Risks and Safeguards
  - 1 **What are some data encryption methods?**
  - 2 ❖ **Encryption key (formula) often uses more than one of these methods**
- 33  Computer Security: Risks and Safeguards
  - How does public key encryption work?**
- 34  Computer Security: Risks and Safeguards
  - 1 **What is a system failure?**
  - 2 ❖ **Prolonged malfunction of computer**  
❖ **Can cause loss of hardware, software, data, or information**
- 35  Computer Security: Risks and Safeguards
  - 1 **What is a surge protector?**
  - 2 ❖ **Smooths out minor noise, provides stable current flow, and keeps overvoltage from reaching computer**  
❖ **Amount of protection proportional to its cost**  
❖ **Also called surge suppressor**
- 36  Computer Security: Risks and Safeguards
  - 1 **What is an uninterruptible power supply (UPS)?**
  - 2 ❖ **Surge protector and battery that can provide power during temporary loss of power**
- 37  Computer Security: Risks and Safeguards
  - How do the types of backup compare?**
- 38  Computer Security: Risks and Safeguards
  - 1 **What are backup procedures?**
  - 2 ❖ **Specify regular plan of copying and storing important data and program files**
- 39  Computer Security: Risks and Safeguards
  - What is a three-generation backup policy?**
- 40  Computer Security: Risks and Safeguards
  - 1 **What is a disaster recovery plan?**
  - 2 ❖ **Written plan describing steps company would take to restore computer operations in event of a disaster**  
❖ **Contains four major components**
- 41  Computer Security: Risks and Safeguards
  - 1 **What services can help with security plans?**
  - 2 ❖ **International Computer Security Association (ICSA) can assist companies and individuals who need help with computer security plans**

- 42  Internet and Network Security
- 1 **How do Web browsers provide secure data transmission?**
  - 2
    - ❖ Many Web browsers use encryption
    - ❖ Web site that uses encryption techniques to secure its data is known as secure site
      - Use digital certificates with security protocol
- 43  Internet and Network Security
- 1 **What is Secure Sockets Layer (SSL)?**
  - 2
    - ❖ Provides private-key encryption of all data that passes between client and server
- 44  Internet and Network Security
- 1 **What is Pretty Good Privacy (PGP)?**
  - 2
    - ❖ One of most popular e-mail digital encryption programs
    - ❖ Freeware for personal, non-commercial users
    - ❖ Uses public-key encryption scheme
- 45  Internet and Network Security
- 1 **What is a digital signature?**
  - 2
    - ❖ Encrypted code that person, Web site, or company attaches to electronic message to verify identity of message sender
      - Code usually consists of user's name and hash of all or part of message
- 46  Internet and Network Security
- 1 **What is a personal firewall?**
  - 2
    - ❖ Software program that detects and protects personal computer and its data from unauthorized intrusions
    - ❖ Constantly monitors all transmissions to and from computer
    - ❖ Informs you of any attempted intrusions
- 47  Internet and Network Security
- 1 **What is another way to protect your personal computer?**
  - 2
    - ❖ Disable File and Print Sharing on Internet connection
- 48  Information Privacy
- 1 **What is information privacy?**
  - 2
    - ❖ Right of individuals and companies to deny or restrict collection and use of information about them
    - ❖ More difficult to maintain today because huge databases store this data in online

**databases**

49  Information Privacy

**What are ways to safeguard personal information?**

50  Information Privacy

**What are ways to safeguard personal information (continued)?**

51  Information Privacy

**What is an electronic profile?**

52  Information Privacy

**What is a cookie?**

- ❖ Small file that Web server stores on *your* computer
- ❖ Typically contains data about you
- ❖ Web site can read data only from its own cookie file
- ❖ Some Web sites sell or trade information stored in your cookie to advertisers

53  Information Privacy

**How can cookies track user preferences?**

54  Information Privacy

**How can you set your browser to control cookies?**

- ❖ Set browser to accept cookies automatically, or prompt you if you wish to accept cookie, or disable cookie use
- ❖ Many Web sites do not allow you to access features if you disable cookie use

55  Information Privacy

**What is a cookie manager?**

- ❖ Software program that selectively blocks cookies

56  Information Privacy

**What is spyware?**

- ❖ Program placed on computer without user's knowledge
- ❖ Secretly collects information about user
- ❖ Can enter computer as virus or as a result of installing new program

57  Information Privacy

**How can you control spam?**

58  Information Privacy

**What privacy laws have been enacted?**

- ❖ Many federal and state laws regarding storage and disclosure of personal data, such as:

59  Information Privacy

**What is employee monitoring?**

- ❖ Using computers to observe employee's computer use, including e-mail, keyboard activity, and Web sites visited
- ❖ Legal for employers to use monitoring software programs

60  Information Privacy

1 **What is one of the most controversial issues surrounding the Internet?**

2 ❖ **Availability of objectionable material such as racist literature and obscene pictures**

61  **Information Privacy**

1 **What is filtering software?**

2 ❖ **Can restrict access to specified Web sites**

❖ **Some filter sites use specific words**

❖ **Others filter e-mail messages and chat rooms**

62  **Summary of Computers and Society: Security and Privacy**

❖ **Computer security: risks and safeguards**

❖ **How viruses work and how to prevent them**

❖ **Internet and network security**

❖ **Information privacy**