Chapter Review

The Chapter Review reinforces the main concepts presented in this chapter.

To listen to an audio version of this Chapter Review, visit scsite.com/dc2010/ch1/review. To obtain help from other students about any concept in this chapter, visit scsite.com/dc2010/ch1/forum and post your thoughts or questions.

1. Why Is Computer Literacy Vital in Today's World?
Computer literacy, or *digital literacy*, involves having current knowledge and understanding of computers and their uses. The requirements that determine computer literacy change as technology changes. As computers become more a part of everyday life, many people believe that computer literacy is vital to success.

2. What Is a Computer, and What Is the Relationship between Data and Information? A **computer** is an electronic device, operating under the control of instructions stored in its own memory, that can accept data, process the data according to specified rules, produce results, and store the results for future use. **Data** is a collection of unprocessed items, which can include text, numbers, images, audio, and video. **Information** conveys meaning and is useful to people.

3. List and Describe the Five Components of a Computer.
The electric, electronic, and mechanical components of a computer, or **hardware**, include input devices, output devices, a system unit, storage devices, and communications devices. An **input device** allows you to enter data or instructions into a computer. An **output device** conveys information to one or more people. The **system unit** is a case that contains the electronic components of a computer that are used to process data. A **storage device** records and/or retrieves items to and from **storage media**. A **communications device** enables a computer to send and receive data, instructions, and information to and from one or more computers.

4. What Are the Advantages and Disadvantages That Users Experience When Working with Computers?
A **user** is anyone who communicates with a computer or utilizes the information it generates. Computers have the advantages of speed, reliability, consistency, storage, and communications. They perform operations at incredibly fast speeds, are dependable and reliable, consistently generate error-free results, can store enormous amounts of data, and can share processing with other computers. Disadvantages of computers relate to health risks, the violation of privacy, public safety, the impact on the labor force, and the impact on the environment.

Visit scsite.com/dc2010/ch1/quiz and then click Objectives 1 – 4.

5. What Is a Network, and What Are Its Benefits?
A **network** is a collection of computers and devices connected together, often wirelessly, via communications devices and transmission media. Networks allow computers to share *resources*, such as hardware, software, data, and information. Sharing resources saves time and money. The world's largest computer network is the Internet.

6. How Are the Internet and World Wide Web Used?
The Internet is a worldwide collection of networks that connects millions of businesses, government agencies, educational institutions, and individuals. People use the Internet to communicate with and meet other people; conduct research and access information and news; shop for goods and services; bank and invest; participate in online training; engage in entertaining activities; download music and videos; share information, photos, and videos; and access and interact with Web applications. The **Web**, short for World Wide Web, is a global library of documents containing information that is available to anyone connected to the Internet.

7. How Is System Software Different from Application Software? **Software**, also called a **program**, is a series of related instructions, organized for a common purpose, that tells the computer what actions to perform and how to perform them. **System software** consists of the programs that control or maintain the operations of a computer and its devices. Two types of system software are the *operating system*, which coordinates activities among computer hardware devices, and *utility programs*, which perform maintenance-type tasks usually related to managing a computer, its devices, or its programs. **Application software** consists of programs designed to make users more productive and/or assists them with personal tasks. Popular application software includes Web browsers, word processing software, spreadsheet software, database software, and presentation software.

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Chapter Review

8. What Are the Differences Among the Types, Sizes, and Functions in the Following Categories: Personal Computers (Desktop), Mobile Computers and Mobile Devices, Game Consoles, Servers, Mainframes, Super-computers, and Embedded Computers?   Industry experts typically classify computers in seven categories: personal computers (desktop), mobile computers and mobile devices, game consoles, servers, mainframes, supercomputers, and embedded computers. A **personal computer** is a computer that can perform all of its input, processing, output, and storage activities by itself. A **mobile computer** is a personal computer you can carry from place to place, and a **mobile device** is a computing device small enough to hold in your hand. A **game console** is a mobile computing device designed for single-player or multiplayer video games. A **server** controls access to the hardware, software, and other resources on a network and provides a centralized storage area for programs, data, and information. A **mainframe** is a large, expensive, powerful computer that can handle hundreds or thousands of connected users simulta-neously and can store tremendous amounts of data, instructions, and information. A **supercomputer** is the fastest, most powerful, and most expensive computer and is used for applications requiring complex, sophisticated mathematical calculations. An **embedded computer** is a special-purpose computer that functions as a component in a larger product.

9. What Is the Role of Each Element in an Information System?   An *information system* combines hardware, software, data, people, and procedures to produce timely and useful information. People in an informa-tion technology (IT) department develop procedures for processing data. Following these procedures, people use hardware and software to enter the data into a computer. Software processes the data and directs the computer hardware to store changes on storage media and produce information in a desired form.

10. How Do the Various Types of Computer Users Interact with Computers?   Computer users can be separated into five categories: home user, small office/home office user, mobile user, power user, and enterprise user. A **home user** is a family member who uses a computer for a variety of reasons, such as budgeting and per-sonal financial management, Web access, communica-tions, and entertainment. A **small office/home office** (*SOHO*) includes any company with fewer than 50 employees, as well as the self-employed individual who works from home. SOHO users access the Internet to look up information and use basic business software and sometimes industry-specific software. **Mobile users** are employees and students who work on a computer while away from a main office, home office, or school. A **power user** uses a workstation or other powerful computer to work with industry-specific software. Power users exist in all types of businesses. An **enterprise user** works in or interacts with a com-pany with many employees and uses a computer and computer network that processes high volumes of transactions in a single day.

11. How Does Society Use Computers in Education, Finance, Government, Health Care, Science, Publishing, Travel, and Manufacturing?   In education, students use computers and software to assist with learning or take distance learning classes. In finance, people use computers for **online banking** and **online investing**. Government offices have Web sites to provide citi-zens with up-to-date information, and government employees use computers as part of their daily rou-tines. In health care, computers are used to maintain patient records, monitor patients, deliver medication to nurse stations via robots, assist with medical tests and research, correspond with patients, file insurance claims, provide greater precision during operations, and as implants. All branches of science use computers to assist with collecting, analyzing, and modeling data and to communicate with colleagues around the world. Publishers use computers to assist in designing pages and make the content of their works available online. Many vehicles use some type of online navigation system to help people travel more quickly and safely. Manufacturers use **computer-aided manufacturing** (*CAM*) to assist with manufacturing processes.

🖑 Visit scsite.com/dc2010/ch1/quiz and then click Objectives 8 – 11.

Key Terms

You should know the Primary Terms and be familiar with the Secondary Terms. The list below helps focus your study.

🖑 **To see an example of and a definition for each term, and to access current and additional information from the Web, visit scsite.com/dc2010/ch1/terms.**

Primary Terms

(shown in bold-black characters in the chapter)

application software (16)
communications device (8)
computer (6)
computer literacy (5)
computer-aided
  manufacturing (38)
data (6)
desktop computer (20)
digital camera (23)
embedded computer (26)
enterprise user (32)
game console (24)
graphical user interface
  (GUI) (15)
green computing (10)
handheld computer (22)
hardware (6)
home user (28)
information (6)
input device (6)
installing (16)
Internet (11)
Internet-enabled (21)
laptop computer (20)
mainframe (25)
mobile computer (20)
mobile device (20)
mobile users (31)
network (10)
notebook computer (20)
online (10)
online banking (34)
online investing (35)
output device (7)
PDA (22)

personal computer (19)
photo sharing community
  (14)
portable media player (23)
power user (31)
program (15)
run (17)
server (25)
small office/home office (30)
smart phone (21)
social networking Web site
  (14)
software (15)
storage device (8)
storage media (8)
supercomputer (25)
system software (15)
system unit (7)
Tablet PC (21)
telecommuting (32)
user (9)
video sharing community
  (14)
Web (13)
Web 2.0 (14)
Web application (14)
Web page (13)
Web site (13)

Secondary Terms

(shown in italic characters in the chapter)

blog (14)
CAM (38)
camera phone (22)
client (10)
convergence (18)
CPU (central processing unit) (7)
developer (18)
digital literacy (5)
digital pen (21)
e-commerce (30)
enterprise computing (32)
execute (17)
FAQ (14)
gaming desktop computer (20)
garbage in, garbage out (9)
handhelds (22)
home theater PC (HTPC) (20)
icon (15)
information processing cycle (6)
information system (27)
*information technology (IT)
  department (32)*
instant message (22)
instructions (6)
loads (17)
memory (7)

multimedia (31)
neural network (36)
online social network (14)
operating system (15)
PC-compatible (19)
personal digital assistant (22)
picture message (22)
podcast (14)
processor (7)
programmer (18)
publish (13)
remote surgery (36)
resources (10)
server (10)
SOHO (30)
telematics (26)
telemedicine (36)
telesurgery (36)
text message (22)
tower (20)
Ultra-Mobile PC (UMPC) (22)
utility program (16)
video blog (14)
video message (22)
video phone (22)
Web cam (30)

handheld computer (22)

Checkpoint

The Checkpoint exercises test your knowledge of the chapter concepts. The page number containing the answer appears in parentheses after each exercise. The Beyond the Book exercises will help broaden your understanding of the concepts presented in this chapter.

👆 **To complete the Checkpoint exercises interactively, visit scsite.com/dc2010/ch1/check.**

True/False Mark T for True and F for False.

_____ 1. Many people believe that computer literacy is vital to success in today's world. (5)

_____ 2. Hardware consists of a series of instructions that tells the computer what actions to perform and how to perform them. (6)

_____ 3. The circuitry of the system unit usually is part of or is connected to a circuit board called the server. (7)

_____ 4. Green computing involves reducing the electricity consumed and environmental waste generated when using a computer. (10)

_____ 5. The client controls access to the resources on a network. (10)

_____ 6. Web pages rarely have built-in connections, or links, to other documents, graphics, other Web pages, or Web sites. (13)

_____ 7. A video sharing community is a type of social networking Web site that allows users to store and share their personal videos. (14)

_____ 8. A text message is a short note, typically fewer than 300 characters, sent to or from a smart phone or other mobile device. (22)

_____ 9. Because embedded computers are components in larger products, they usually are small and have limited hardware. (26)

_____ 10. Telecommuting is a work arrangement in which employees work away from a company's standard workplace and often communicate with the office through the computer. (32)

_____ 11. With online investing, the transaction fee for each trade usually is much more than when trading through a broker. (35)

Multiple Choice Select the best answer.

1. Computer literacy, also known as digital literacy, involves having a current knowledge and understanding of _____. (5)
   a. computer programming
   b. computers and their uses
   c. computer repair
   d. all of the above

2. _____ is/are a collection of unprocessed items, which can include text, numbers, images, audio, and video. (6)
   a. Data   b. Instructions
   c. Programs   d. Information

3. A _____ is a specific type of social networking Web site that allows users to create an online photo album and store and share their digital photos. (14)
   a. vodcast   b. blog
   c. photo sharing community   d. chat room

4. A _____ is recorded audio stored on a Web site that can be downloaded to a computer or portable media player. (14)
   a. podcast
   b. social networking Web site
   c. blog
   d. speaker

5. _____ consists of the programs that control or maintain the operations of the computer and its devices. (15)
   a. System software
   b. A communications device
   c. A graphical user interface (GUI)
   d. Application software

6. A(n) _____ message is a real-time Internet communication, where you exchange messages with other connected users. (22)
   a. text   b. instant
   c. picture   d. video

7. Many large companies use the word(s), _____, to refer to the huge network of computers that meets their diverse computing needs. (32)
   a. information technology
   b. enterprise computing
   c. telecommuting
   d. multimedia

8. _____ is a system that attempts to imitate the behavior of the human brain. (36)
   a. Telemedicine
   b. A kiosk
   c. E-commerce
   d. A neural network

Checkpoint

Matching Match the terms with their definitions.

_____ 1. processor (7)

_____ 2. storage device (8)

_____ 3. online social network (14)

_____ 4. application software (16)

_____ 5. install (16)

_____ 6. execute (17)

_____ 7. portable media player (23)

_____ 8. digital camera (23)

_____ 9. multimedia (31)

_____ 10. neural network (36)

a. interprets and carries out basic instructions that operate a computer

b. carry out the instructions in a computer program

c. combines text, graphics, audio, and video into one application

d. programs designed to make users more productive and/or assist them with personal tasks

e. a system that attempts to imitate the behavior of the human brain

f. mobile device on which you can store, organize, and play digital media

g. online community that encourages members to share their interests, ideas, stories, photos, music, and videos with other registered users

h. set up software to work with a computer and other hardware components

i. device that allows users to take pictures and store the photographed images digitally, instead of on traditional film

j. records (writes) and/or retrieves (reads) items to and from storage media

Short Answer Write a brief answer to each of the following questions.

1. What is a computer? _____ What is the information processing cycle? _____

2. Describe two health risks posed by computers. _____ How might computers have a negative effect on the environment? _____

3. What is a Web application? _____ What are some features of a Web 2.0 site? _____

4. What are seven categories of computers? _____ What determines how a computer is categorized? _____

5. How do Web sites benefit individuals' health care? _____ How does telesurgery differ from telemedicine? _____

Beyond the Book Follow the book element instructions below; present your findings (brief report, presentation, discussion, or other means).

1. Ethics & Issues — Select an Ethics & Issues in this chapter (9, 13, 29, 35, 39), find a recent newspaper/magazine article that supports one point of view presented, and then evaluate the article.

2. Computer Usage @ Work — Use the Web or a recent newspaper/magazine to locate three additional unique usages of computer technology in the transportation industry (39). What makes the use of these technologies unique to the transportation industry?

3. Companies on the Cutting Edge and Technology Trailblazers — Use the Web or a recent business newspaper/magazine to locate an interesting fact about Apple, Amazon, Bill Gates, or Tom Anderson that was not presented in the chapter (41).

4. High-Tech Talk — Locate a recent newspaper/magazine article that discusses topics related to Triangulation (40). Would you recommend the article you found? Why or why not?

5. FAQs and Web Links — Use the Web or a recent newspaper/magazine to locate three additional facts about an FAQ (14, 16, 17, 20, 22, 29) and Web Link (10, 12, 14, 15, 22, 23, 27, 28, 32, 38) that were not presented in the chapter.

6. Looking Ahead — Use the Web or a recent newspaper/magazine to discover additional uses of the technology presented in Embedded Computers May Improve Quality of Life (34).

7. Innovative Computing — Use the Web or a recent newspaper/magazine to locate two additional interesting facts about Wii a Welcome Medical Skill Builder (24) and E-Receipts Save Paper, Organize Life (29).

8. Making Use of the Web — Visit three of the Fun and Entertainment Web Sites (125) and outline the information on each Web site and the possible uses for each Web site.

9. Timeline 2010 — Select an event from the Timeline 2010 (54) and then research the history surrounding the event using the Web or a magazine article.