Discovering Computers
Technology in a World of Computers, Mobile Devices, and the Internet

Chapter 1
Digital Literacy

Objectives Overview

- Differentiate among laptops, tablets, and servers
- Describe the purpose and uses of smartphones, digital cameras, portable media players, e-book readers, and game devices
- Describe the relationship between data and information
- Briefly explain various input options
- Differentiate the Internet from the web, and describe the relationship among the web, webpages, websites, and web servers
- Explain the purpose of a browser, a search engine, and an online social network

See Page 2 for Detailed Objectives
Copyright © Cengage Learning. All rights reserved.
Objectives Overview

- Briefly describe digital security risks associated with viruses and other malware, privacy, your health, and the environment
- Differentiate between an operating system and applications
- Differentiate between wired and wireless technologies, and identify reasons individuals and businesses use networks

- Discuss how society uses technology in education, retail, finance, entertainment, health care, travel, government, science, publishing, and manufacturing
- Identify technology used by home users, small office/home office users, mobile users, power users, and enterprise users

A World of Technology

- Because technology changes, you must keep up with the changes to remain digitally literate
- **Digital literacy** involves having a current knowledge and understanding of computers, mobile devices, the Internet, and related technologies
Computers

• A **computer** is an electronic device, operating under the control of instructions stored in its own memory.

![Diagram of computer functions: Accepts data (input), Processing, Produces information (output)]

**Computers**

• Laptop
• Tablet
• Desktop
• Server
Mobile and Game Devices

- Smartphone
- Digital camera
- Portable media player
- E-book reader
- Game console

Data and Information

**DATA (input)**
- 2 Medium Sodas $1.49 each
- 1 Small Turkey Sub $3.99 each
- 1 Carrot Sticks $4.49 each
- 1 Bag of Chips $0.99 each
- 3 Cookies $0.39 each
- Amount Received $20.00

**STORAGE and PROCESSES**
- Stores entered data.
- Computes each item’s total price by multiplying the quantity ordered by the item price (e.g., 2 * 1.49 = 2.98).
- Organizes data.
- Sums all item total prices to determine order total due from customer (13.12).
- Calculates change due to customer by subtracting the order total from amount received (20.00 - 13.12 = 6.88).
- Stores resulting information.

**INFORMATION (output)**
Data and Information

• A keyboard contains keys you press to enter data and instructions into a computer or mobile device.

Data and Information

• A pointing device is an input device that allows a user to control a small symbol on the screen called a pointer.
• Some mobile devices and computers enable you to speak data instructions using voice input and to capture live full-motion images using video input.
Data and Information

• A scanner is a light-sensing input device that converts printed text and images into a form the computer can process.

Data and Information

• An output device is any hardware component that conveys information from a computer or mobile device to one or more people.

• A printer is an output device that produces text and graphics on a physical medium such as paper.
Data and Information

• A display is an output device that visually conveys text, graphics, and video information

Data and Information

• Speakers allow you to hear audio such as music, voice, and other sounds
  – Earbuds
  – Headphones
Data and Information

Memory consists of electronic components that store instructions waiting to be executed and the data needed by those instructions.

A computer keeps data, instructions, and information on a storage media.

A storage device records (writes) and/or retrieves (reads) items to and from storage media.
The Internet

- The **Internet** is a worldwide collection of networks that connects millions of businesses, government agencies, educational institutions, and individuals.

---

The Internet

The World Wide Web (or web, for short) is a global library of information available to anyone connected to the Internet.

- The **web** consists of a worldwide collection of electronic documents, each of which is called a **webpage**.

- A **website** is a collection of related webpages.

- A **web server** is a computer that delivers requested webpages to your computer.
The Internet

• A **browser** is software that enables users with an Internet connection to access and view webpages on a computer or mobile device.
The Internet

- A **search engine** is software that finds websites, webpages, images, videos, news, maps, and other information related to a specific topic.

- An **online social network** encourages members to share their interests, ideas, stories, photos, music, and videos with other registered users.
Digital Safety and Security

• It is important that users protect their computers and mobile devices

- Viruses and Other Malware
- Privacy
- Health Concerns
- Environmental Issues

Digital Safety and Security

• **Green computing** involves reducing the electricity consumed and environmental waste generated when using a computer

• Strategies include:
  - Recycling
  - Using energy efficient hardware and energy saving features
  - Regulating manufacturing processes
  - Extending the life of computers
  - Immediately donating or properly disposing of replaced computers
Programs and Apps

- **Software**, also called a **program**, tells the computer what tasks to perform and how to perform them.

  - **System Software**
    - Operating system
    - Utility program

  - **Application Software**

- Installing is the process of setting up software to work with the computer, printer, and other hardware.
- Once installed, you can run an application so that you can interact with it.
- You interact with a program or application through its user interface.
Programs and Apps

- A software developer, sometimes called an application developer or computer programmer, is someone who develops programs and apps or writes the instructions that direct the computer or mobile device to process data into information.

Communications and Networks

- In the course of a day, it is likely you use, or use information generated by, one or more of these communications technologies:

  - Chat rooms
  - Email
  - Fax
  - FTP
  - GPS
  - Instant messaging
  - Internet
  - Newsgroups
  - RSS
  - Video conference
  - Voice mail
  - VoIP
  - Wireless Internet access points
  - Wireless messaging services
Communications and Networks

- A **communications device** is hardware capable of transferring items from computers and devices to transmission media and vice versa.

- Examples of wireless communications technologies include:
  - Wi-Fi
  - Bluetooth
  - Cellular radio
Communications and Networks

• A **network** is a collection of computers and devices connected together via communications devices and transmission media.

---

Communications and Networks

**Home Networks**

- Connect to the Internet
- Share a single high-speed Internet connection
- Access photos, music, videos, and other content
- Share devices
- Play multiplayer games
- Connect game consoles to the Internet
- Subscribe to and use VoIP

**Business Networks**

- Facilitate communications
- Share hardware
- Share data, information, and software
Uses of Technology in Society

- Education
- Government
- Finance
- Retail
- Entertainment
- Health Care
- Travel
- Science
- Publishing
- Manufacturing

Technology Users

- Home User
- Small/Home Office User
- Mobile User
- Power User
- Enterprise User