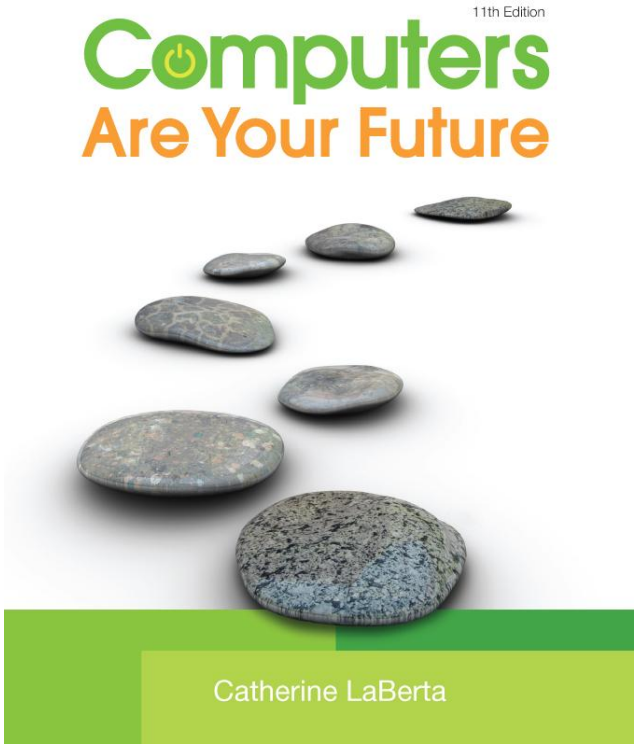
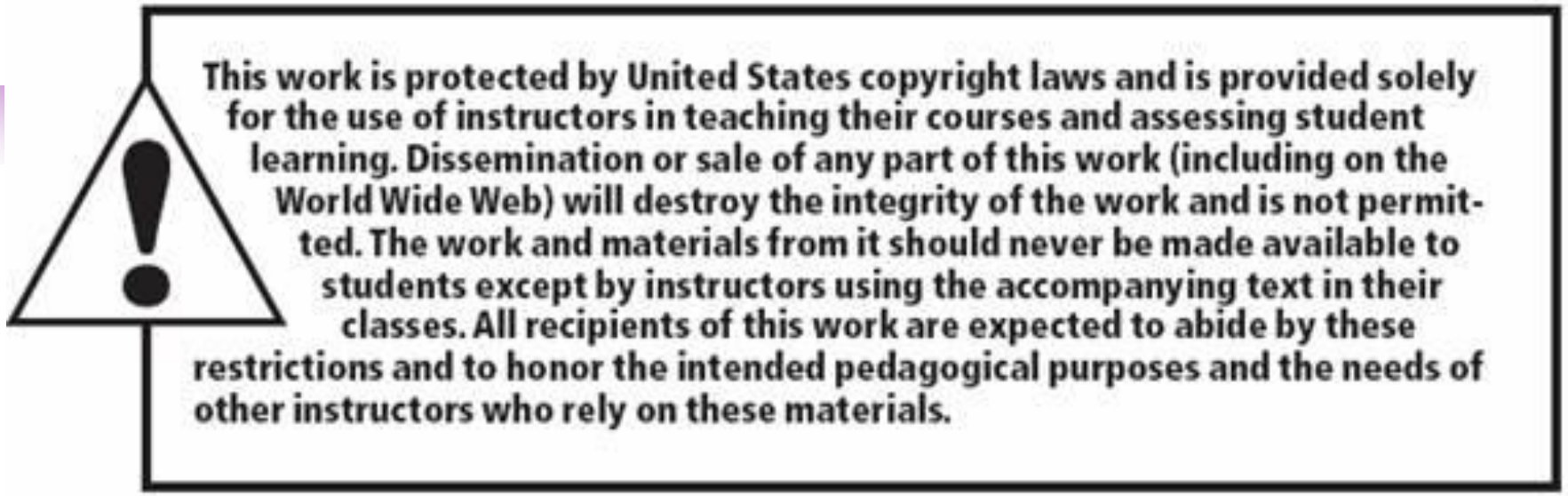
Computers Are Your Future
Eleventh Edition

Chapter 1: Computers & You





Computers & You

Objectives

- Define the word *computer* and name the four basic operations that a computer performs.
- Describe the two main components of a computer system: hardware and software.

Objectives

- Provide examples of hardware devices that handle input, processing, output, and storage tasks.
- Give an example of the information-processing cycle in action.
- Discuss the two major categories and the various types of computers.

Objectives

- Explain the advantages and disadvantages of computer use.
- Understand the risks involved in using hardware and software.
- Recognize the ethical and societal impacts of computer usage.

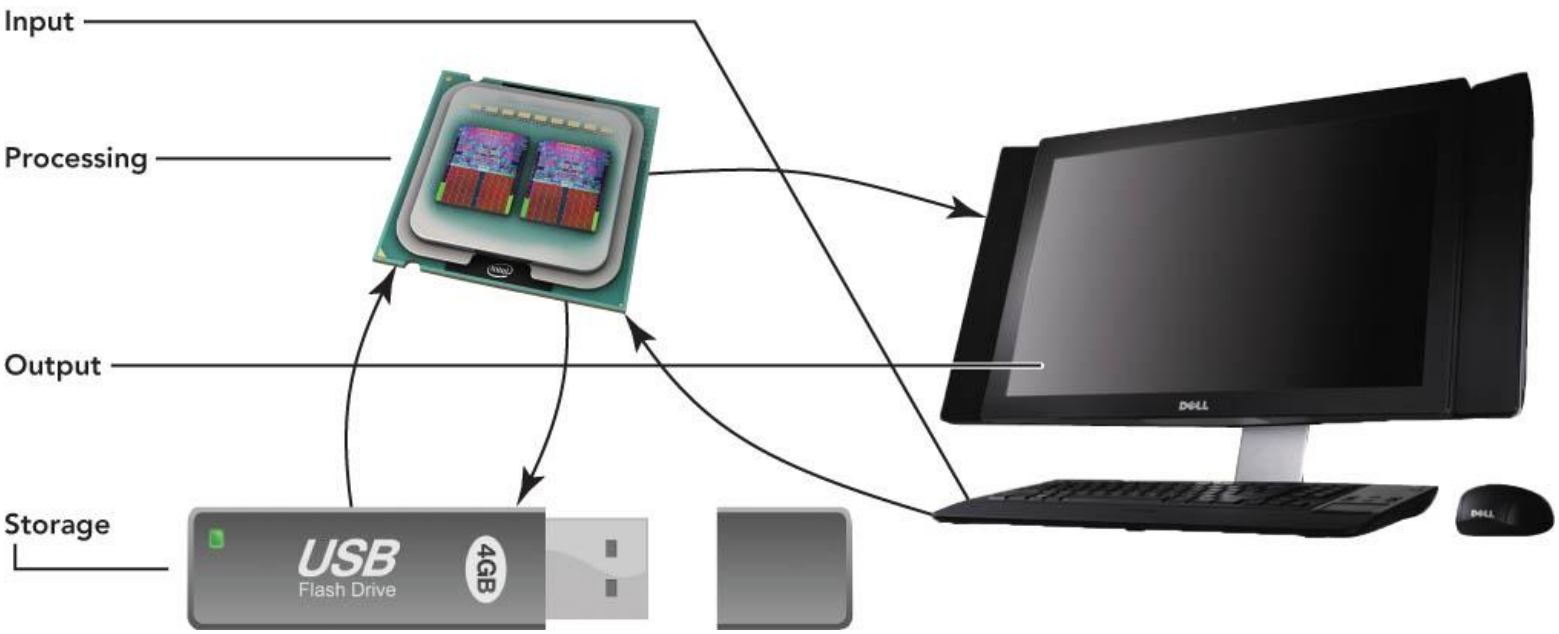
Objectives

- Discuss how computers affect employment.
- List ways to be a responsible computer user.

Computer Fundamentals

- A **computer** is a device that performs the information-processing cycle.
- The **information-processing cycle** consists of four basic operations: input, processing, output, and storage.

Computer Fundamentals



Computer Fundamentals

- A **computer system** is a group of associated components that work together.
- Computer system components are categorized into two main groups:
  - Hardware
  - Software

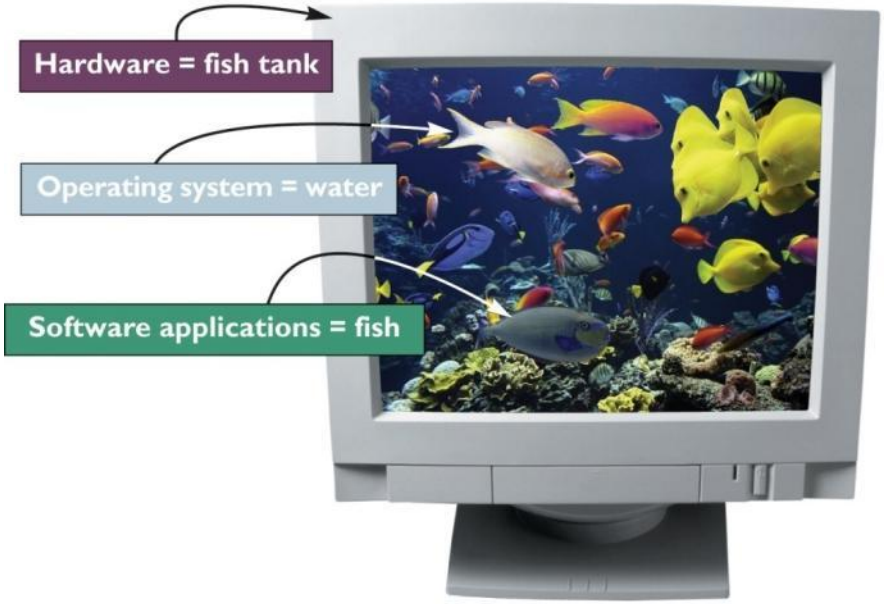
Computer Fundamentals

- **Hardware** is made up of the physical parts of the computer and includes such components as the system unit, monitor, keyboard, and printer.
- **Software** is made up of all the programs that instruct the computer.

Computer Fundamentals

Software can be classified as one of the following types:

- **System software** includes the programs that assist with the proper functioning of the computer.
- **Application software** includes the programs used to perform tasks.



Computer Fundamentals

- **Input**, the first operation of the information-processing cycle, enables the computer to accept data.
  - **Data** refers to facts that are raw and unorganized.
  - Data is entered into the computer for processing through the use of **input devices** such as a keyboard or mouse.

Computer Fundamentals

- **Processing**, the second operation of the information-processing cycle, converts data into information.
  - **Information** refers to consolidated, organized, processed data.
  - **The central processing unit (CPU)** processes data into information.
  - **Random access memory (RAM)** temporarily stores programs and data needed by the CPU.

Computer Fundamentals

- **Output**, the third operation of the information-processing cycle, requires **output devices** such as monitors and printers to display results for people to see or hear.

Computer Fundamentals

- **Storage**, the fourth operation of the information-processing cycle, holds programs, software, and data that the computer system uses.
  - **Storage devices** include hard drives, CD and DVD drives, and media card readers that are used with USB drives and flash memory cards.

Computer Fundamentals

- **Communications** is the high-speed movement of data or information.
- A **communication device** is a hardware component that moves data into and out of a computer.
- A **network** connects two or more computers to share input/output devices and other resources through the use of a **network interface card**.

Computer Fundamentals

Types of Computers

- Computers can be separated into two main types:
  - **Computers for individuals** are normally designed for one user at a time.
  - **Computers for organizations** are designed to be used by many people at the same time.

Types of Computers

Desktop computer

All-in-one computer

Notebook

Types of Computers

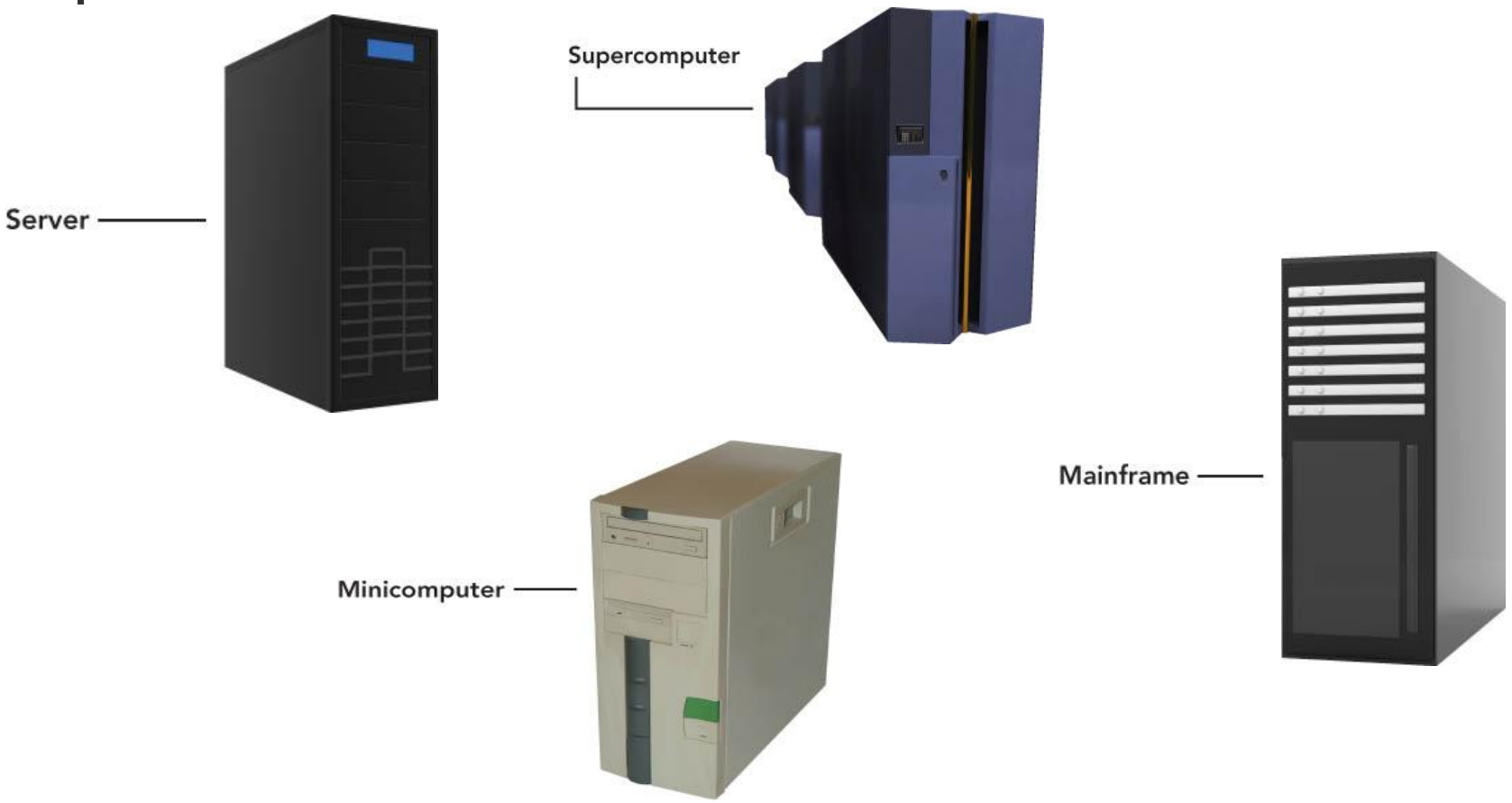
Tablet PC

Netbook

PDA
(personal digital assistant)

Smartphone

Types of Computers



Types of Computers

- Computers for individuals
  - **Personal computers (PCs)** are generally either Mac (Apple's Macintosh) systems or IBM-compatible systems.
  - **Desktop computers**, designed for home or office desk use, now include **all-in-one computers** that combine the system unit and the monitor.

Types of Computers

- Computers for individuals
  - **Notebook computers** are small enough for easy computer mobility.
  - **Subnotebooks** run full desktop operating systems but have fewer components than notebooks, weigh less, and are smaller.
  - **Tablet PCs** can be used to input data with a keyboard or mouse, and the user can write on the monitor with a special pen or stylus.

Types of Computers

- Computers for individuals
  - **Netbooks** are small, inexpensive notebooks designed primarily for wireless Web browsing and e-mail.
  - **Smartphones** combine the capabilities of **handheld computers**, such as PDAs, and mobile phones.
  - **Professional workstations** are intended for technical applications that need powerful processing and output.

Types of Computers

- Computers for organizations
  - **Servers** enable users connected to a computer network to have access to the network's programs, hardware, and data.
  - **Clients** include the user computers connected to the network.
  - A **client/server network** includes the use of client computers with centralized servers.

Types of Computers

- Computers for organizations
  - **Minicomputers** or **midrange servers** are designed to meet the needs of smaller companies or businesses.
  - **Mainframes** carry out very large processing jobs to meet the needs of large companies or agencies of the government.
  - **Supercomputers** are able to perform extremely high-speed processing and show underlying patterns.

Computers, Society, & You

- Web-based applications
  - Online applications such as Google Docs encourage collaboration.
  - A **wiki** allows anyone to contribute or modify content of a collection of Web pages.
  - Social interaction forms include instant messaging, Twitter, and games.
  - **Social networks** include Facebook and MySpace.

Computers, Society, & You

- When using computer hardware:
  - Do not plug too many devices into electrical outlets.
  - Use surge protectors.
  - Place hardware where it can't fall or be damaged.
  - Provide adequate space for air circulation around hardware.
  - Securely fasten computer cables, cords, and wires.

Computers, Society, & You

- Software programs contain flaws.
  - Errors cause programs to run slowly or miscalculate.
  - These bugs are almost impossible to eliminate completely.

Computers, Society, & You

- **Computer ethics** deals with moral dilemmas relating to computer usage.
- Unethical behavior includes sending viruses, stealing credit card information, computer stalking, and installing illegitimate copies of software on computers.

Computers, Society, & You

- Computers provide disabled and disadvantaged people with added support and opportunities.
- **E-learning** allows students to learn without requiring them to be at a specific location at a specific time.

Computers, Society, & You

- Skilled workers who are computer proficient are in high demand.
- **Automation** is the replacement of people by machines and computers.
- Computer technology has aided globalization and the resulting outsourcing of jobs, as well as **structural unemployment**—the obsolescence of certain jobs.

Computers, Society, & You

- Be a responsible computer user.
  - Understand how one's computer use affects others.
  - Obey laws and conform to requests regarding use of cell phones.
  - Be aware of **e-waste** and the proper disposal of outdated computer hardware.

Computers, Society, & You

- Stay informed about advances in computer technology.
  - Upgrade software to obtain the latest software features.
  - Stay informed to help avoid computer viruses.

Summary

- A computer is a device that can perform the information-processing cycle: input, processing, output, and storage.
- A computer system includes both hardware and software.

Summary

- Computers are designed for individuals and for organizations.
- Learning to use computer hardware correctly can reduce equipment damage and user injuries.

Summary

- Computer ethics guide how a computer should be used.
- Computers are causing a shift in employment and creating new job opportunities.

Summary

- Computer users should be responsible and concerned about how their computer use affect others and the environment.