Information technology, the Internet, and You
Learning Objectives

• Explain the parts of an information system: people, procedures, software, hardware, data, and the Internet.
• Distinguish between system software and application software.
• Differentiate between the kinds of system software programs.
• Define and compare general purpose, specialized, and mobile applications.
Learning Objectives cont.

- Identify the four types of computers and the four types of personal computers.
- Describe the different types of computer hardware, including the system unit, input, output, storage, and communication devices.
- Define data and describe document, worksheet, database, and presentation files.
- Explain computer connectivity, the wireless revolution, the Internet, and cloud computing.
Introduction

- Personal computers are common life tools
- New forms of learning have developed
  - College courses
    - Not just quarters or semesters
- Computers offer many communication avenues
Parts of an Information System

- People
- Procedures
- Software
- Hardware
- Data
- The Internet
People

- End users who use computers
- Most important part of any system
- Contact is
  - Direct
  - Indirect
Software

- Another name for programs
- There are two major kinds of software:
  - System Software
    - Software used by computers
  - Application Software
    - Software you use

- The purpose of software
  - Convert data into information
System Software

- Enables application software to interact with the computer hardware
- Background software helps manage resources
- Collection of system programs
  - Operating Systems
  - Utilities
  - Device Drivers
• Operating System
  • Coordinates computer resources
  • Provides the user interface
  • Runs applications
• Embedded operating system
  • Used by Smartphones and tablets
    • Real-time operating systems (RTOS)
• Standalone operating system
  • Used by desktops
• Networking operating systems
  • Used to run networks
System Software Continued

- **Utilities**
  - Perform specific tasks related to managing computer resources
- **Antivirus Program**
  - Protects from viruses
    - Can damage your software or hardware
    - Comprise the security and privacy of personal data
Application Software

- End-user software
- Types of application software
  - General-Purpose applications
    - Widely used programs
      - Browsers
      - Word Processor
  - Specialized applications
    - More narrowly focused
      - Web Authoring
- Apps
  - Designed for mobile devices
    - Social media apps
Hardware – Types of Computers

- Supercomputers
  - Most powerful computers
- Mainframe computers
  - Process large amounts of data
- Midrange computers
  - Servers
- Personal computers
  - PCs
  - Five types of PCs
Personal Computer Types

- Desktop
- Laptop (Notebook)
- Tablet
- Smartphones
- Wearables
Personal Computer Hardware

• Four basic categories of equipment
  • System Unit
  • Input/Output
  • Secondary Storage
  • Communications
System Unit

- System Unit
  - Houses most of the electronic components
- Two important components
  - Microprocessor
  - Memory
    - Holds data currently being processed
    - Holds the processed information before it is output
    - Temporary storage, contents are lost when power is off
Input/Output Devices

- **Input**
  - Translate data into computer language
    - Keyboard and Mouse

- **Output**
  - Translate computer data into usable information
    - Display and Printer
Secondary Storage

- Holds data and programs even if power is off
- Hard disk
- Solid-state storage
  - No moving parts
  - More reliable
  - Requires less power
- Optical disc
  - Laser technology
  - CDs, DVDs, Blu-ray
Communications

- Communication devices
  - Provide the ability for personal computers to communicate

- Modems
  - Modify audio, video and other types of data for Internet usage
Data

• Raw, unprocessed facts
• Processed data becomes information
• Digital data is stored electronically in files
• Four common types of files
  • Document
  • Worksheet
  • Database
  • Presentation
Document Files

• Created by word processors
  • Term papers
  • Memos
  • Letters

Attention adventure travelers! Attend an Adventure Travel presentation to learn about some of the earth’s greatest unspoiled habitats and find out how you can experience the adventure of a lifetime. This year we are introducing four new...
Worksheet Files

- Created by electronic spreadsheets to analyze things like budgets and to predict sales
Database Files

- Typically created by database management programs to contain highly structured and organized data
Presentation Files

- Created by presentation graphics programs to prepare presentation materials.
Connectivity and the Mobile Internet

• Connectivity
  • Sharing of information

• Network
  • Communications system connecting two or more devices
  • Central to the concept of connectivity
  • Largest network is the Internet
  • Web provides a multimedia interface for Internet resources
Three things driving the forces of technology

- Cloud computing
  - Computers on the Internet
  - Access to more resources

- Wireless technology
  - Changing the way we communicate
    - Tablets, smartphones, wearable devices

- The Internet of Things (IoT)
  - Continuing development of the Internet
  - Allowing all types of devices to communicate
Each chapter highlights careers in IT

- Webmaster – page 48
  - Develops and maintains websites and web resources
- Software Engineer – page 77
  - Analyzes users’ needs and creates application software
- Computer Support Specialist – page 104
  - Provides technical support to customers and other users
Careers in IT cont.

- **Computer Technician** – page 130
  - Repairs and install computer components and systems

- **Technical Writer** – page 161
  - Prepares instruction manuals, technical reports, and other scientific or technical documents

- **Network Administrator** – page 212
  - Creates and maintains computer networks
A Look to the Future

Using and Understanding Information Technology
- The Internet and the Web
- Powerful Software
- Powerful Hardware
- Security, Privacy and Ethics
- Organizations
- Changing Times
Open-Ended Questions (Page 1 of 2)

• Explain the parts of an information system. What part do people play in this system?

• What is system software? What kinds of programs are included in system software?

• Define and compare general-purpose applications, specialized applications and apps. Describe some different types of general-purpose applications. Describe some types of specialized applications.
Open-Ended Questions (Page 2 of 2)

- Describe the different types of computers. What is the most common type? What are the types of personal computers?

- What is connectivity? What is a computer network? What are the Internet and the Web? What is cloud computing, the wireless revolution and IoT?