

# 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.

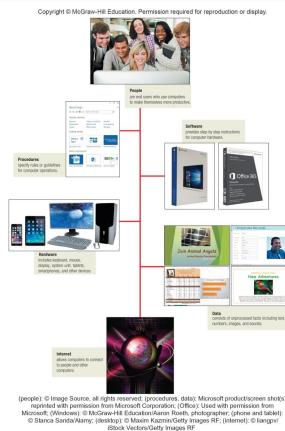


## Introduction

- 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

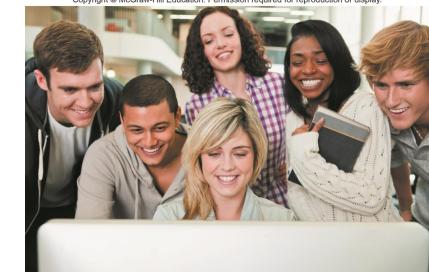
- People
- Procedures
- Software



- Hardware
- Data
- The Internet

## People

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



5

## 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

7

6

8

## System Software cont.

- 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

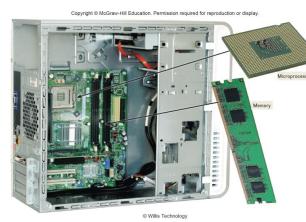


## Personal Computer Hardware

- 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



17

## Communications

- Communication devices
  - Provide the ability for personal computers to communicate
- Modems
  - Modify audio, video and other types of data for Internet usage

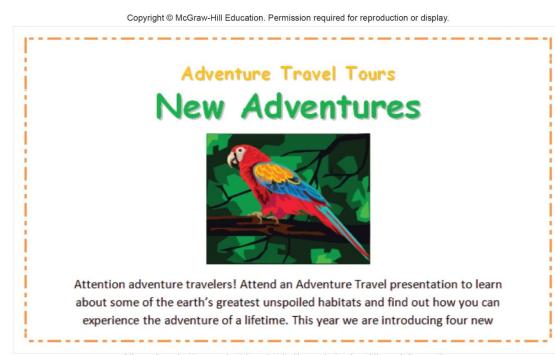
## Data

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

18

## Document Files

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

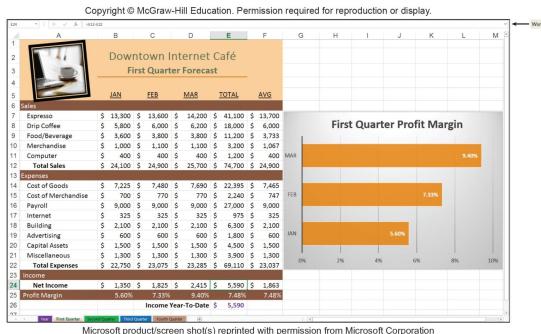


19

20

## Worksheet Files

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



Microsoft product/screen shot(s) reprinted with permission from Microsoft Corporation

21

## Database Files

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

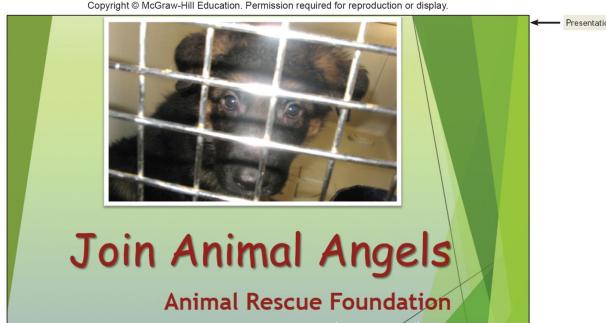


Microsoft product/screen shot(s) reprinted with permission from Microsoft Corporation

22

## Presentation Files

- Created by presentation graphics programs to prepare presentation materials.



Microsoft product/screen shot(s) reprinted with permission from Microsoft Corporation

23

## 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

24

## Connectivity cont.

- 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

25

## Careers in IT

- 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

Information technology, the Internet, and You

## Careers in IT cont.

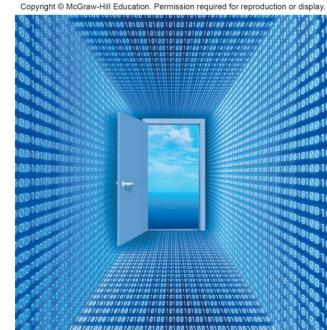
- Computer Technician – page 130
  - Repairs and installs computer components and systems
- Technical Writer – page 161
  - Prepares instruction manuals, technical reports, and other scientific or technical documents
- Network Administrator – page 212
  - Creates and maintains computer networks

27

## 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



26

28

## 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?