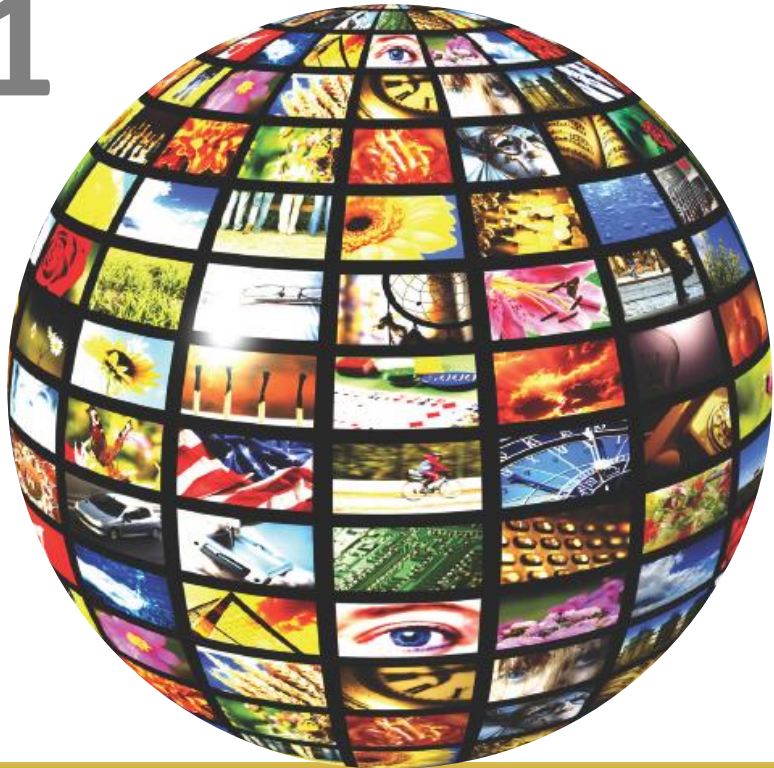**1**

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.
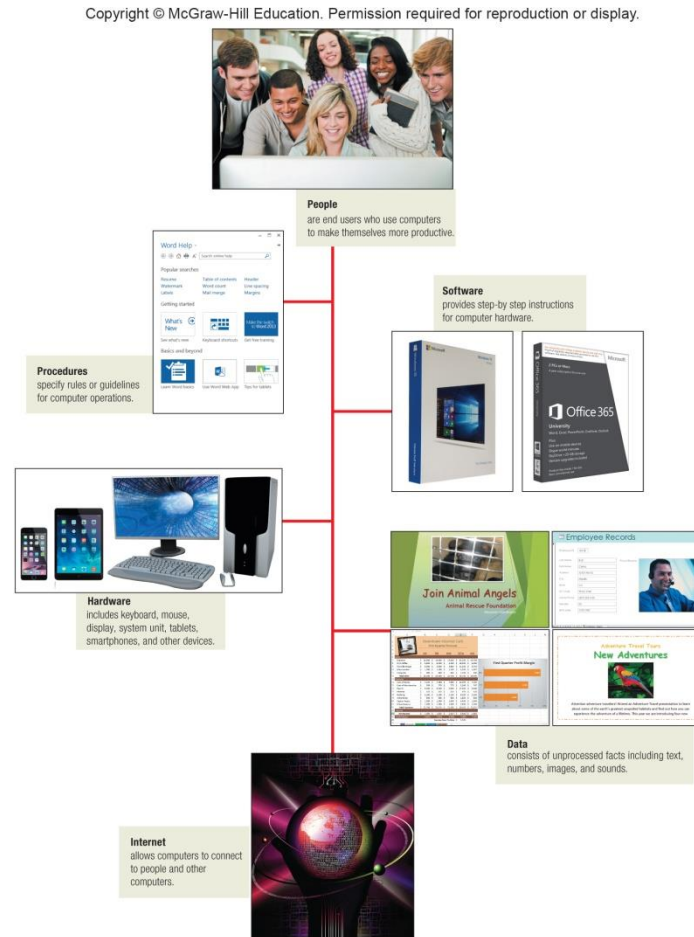
Information technology, the Internet, and You

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
are end users who use computers to make themselves more productive.

Software
provides step by step instructions for computer hardware.

Procedures
specify rules or guidelines for computer operations.

Hardware
includes keyboard, mouse, display, system unit, tablets, smartphones, and other devices.

Data
consists of unprocessed facts including text, numbers, images, and sounds.

Internet
allows computers to connect to people and other computers.

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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

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

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Djaypro screen shot copyright © Algoriddim.com. Used with permission

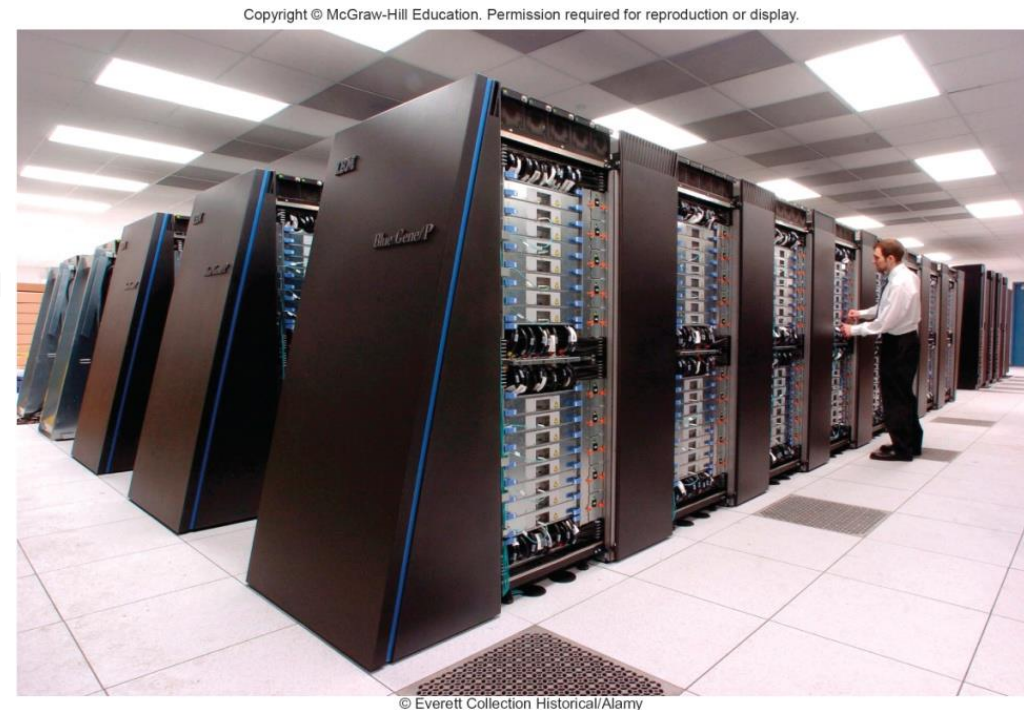# System Software Continued

- 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
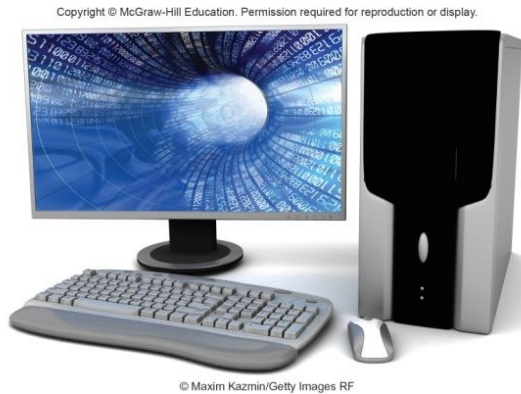   - Social media apps

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

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Personal Computer Types

- Desktop
- Laptop (Notebook)
- Tablet
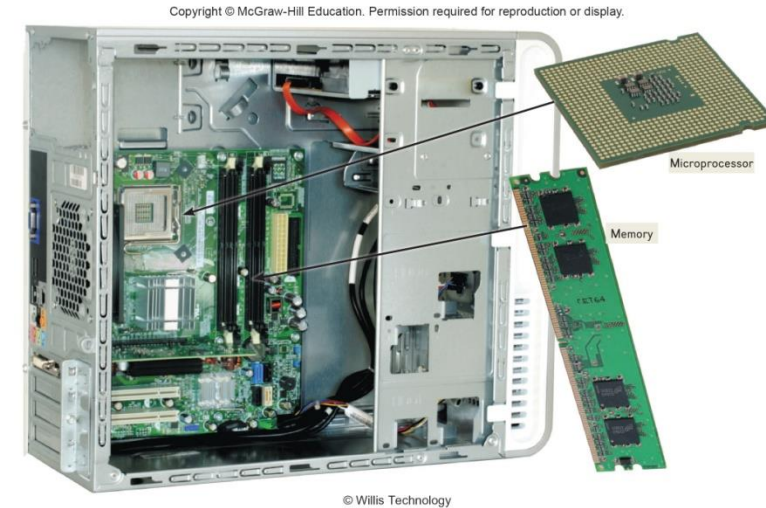
- Smartphones
- Wearables

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

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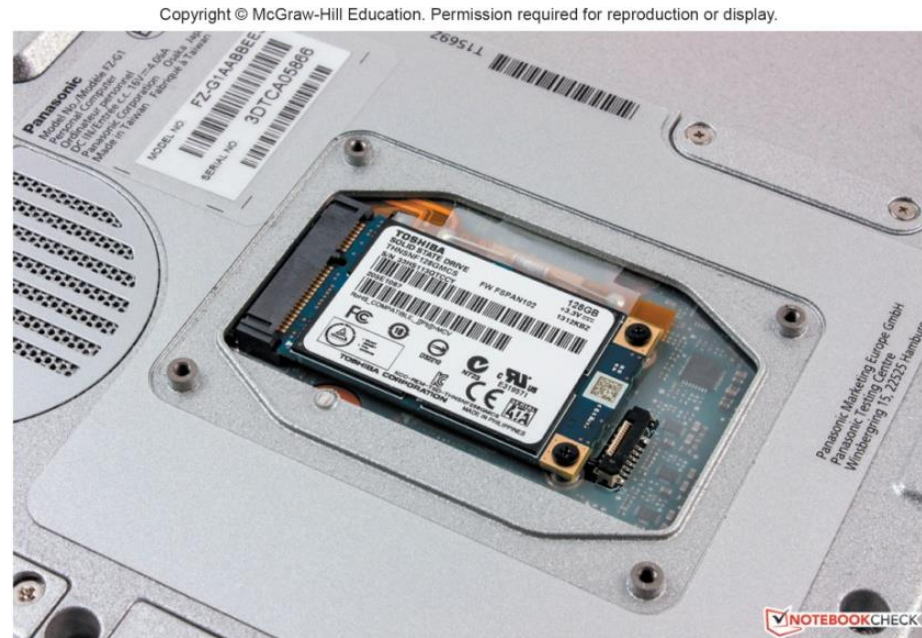Microprocessor

Memory

© Willis Technology

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

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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
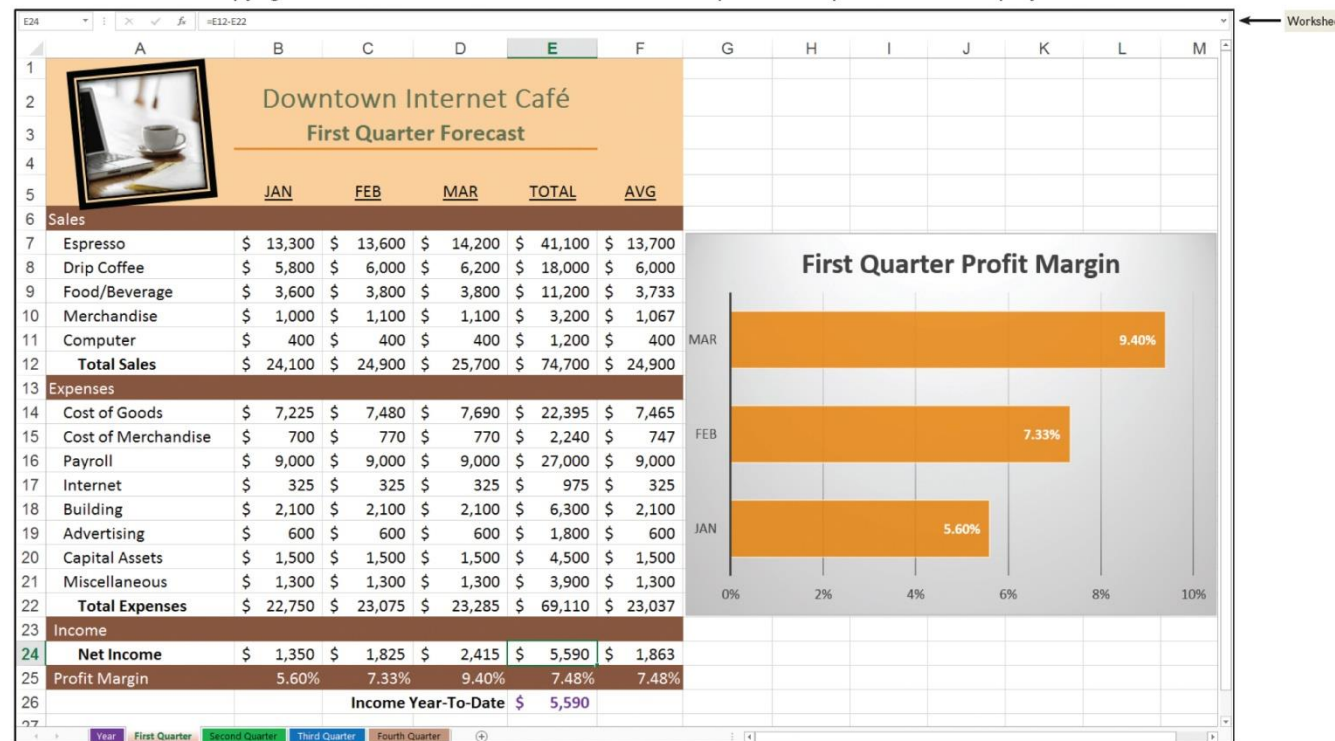 - Term papers
  - Memos
  - Letters

Adventure Travel Tours
New Adventures

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

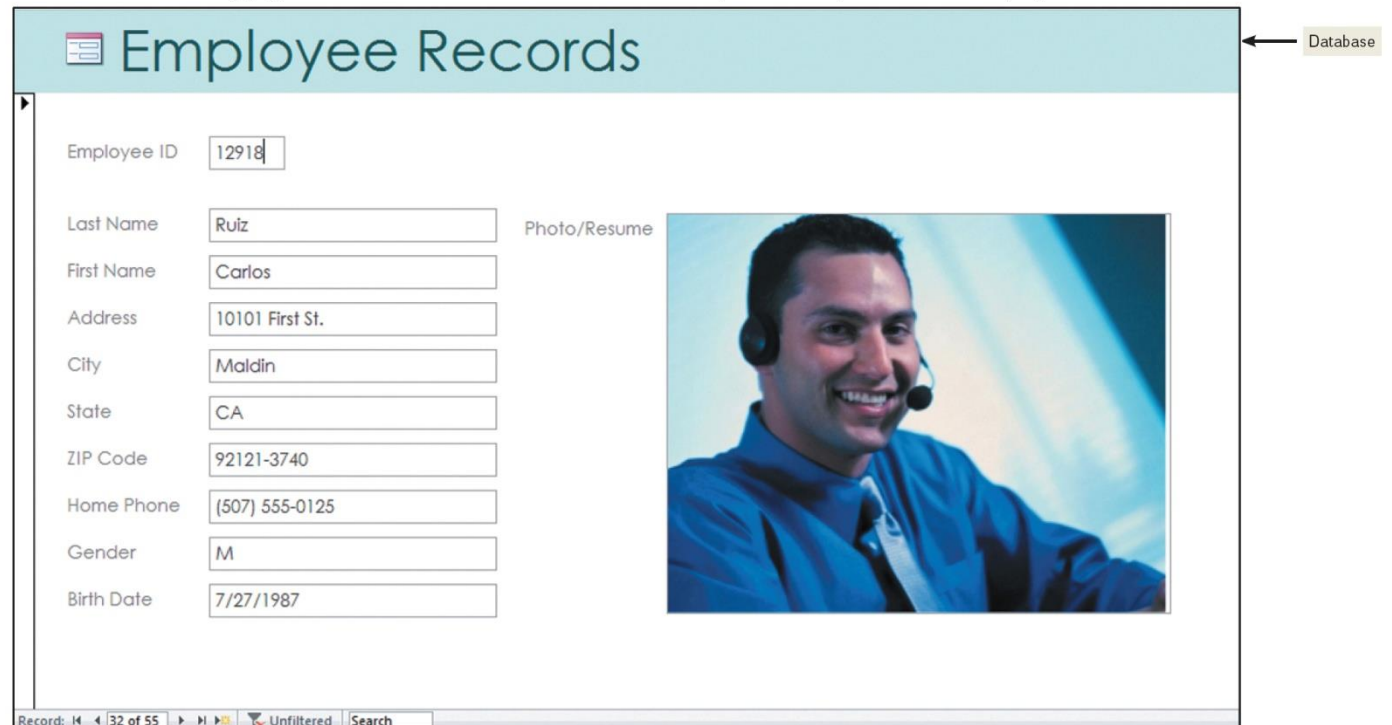Copyright © McGraw-Hill Education. Permission required for reproduction or display.

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

Database Files

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

Database

Employee Records

Employee ID	12918
Last Name	Ruiz
First Name	Carlos
Address	10101 First St.
City	Maldin
State	CA
ZIP Code	92121-3740
Home Phone	(507) 555-0125
Gender	M
Birth Date	7/27/1987

Photo/Resume

Record: 32 of 55 Unfiltered Search

Presentation Files

- Created by presentation graphics programs to prepare presentation materials.

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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

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

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
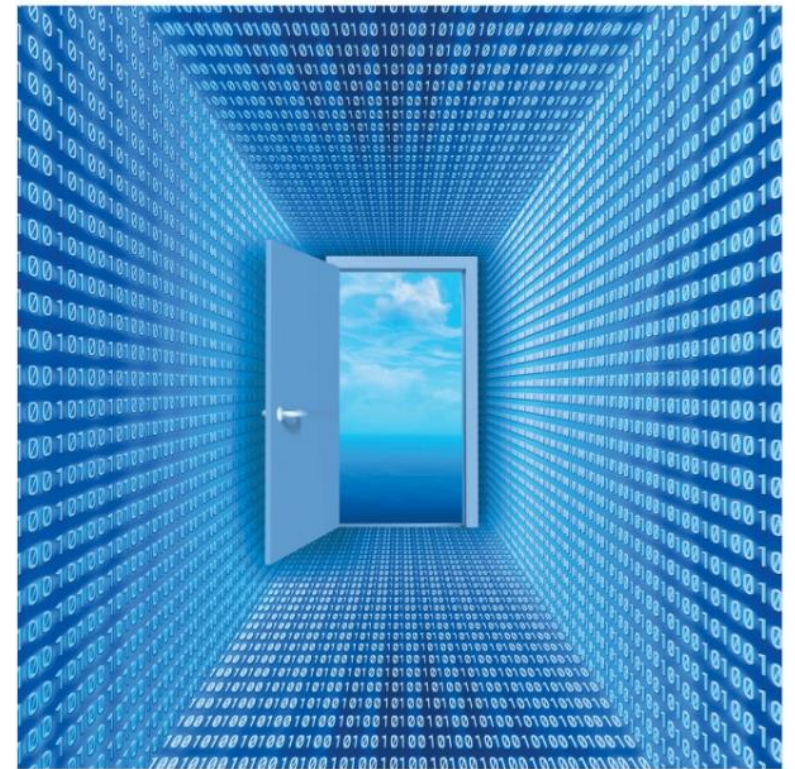
Careers in IT cont.

- 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

- 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?