The Digital Revolution
- Where can you find computers?
  - Computers are everywhere
- What is computer literacy?
  - Knowledge and understanding of computers and their uses

What Is a Computer?
- How is a computer defined?
  - Electronic machine operating under the control of instructions stored in its own memory
    - Accepts data
    - Manipulates data
    - Produces results
    - Stores results
- What are data and information?
  - Data
    - Raw facts, figures, and symbols
  - Information
    - Data that is organized, meaningful, and useful
- Who is a user?
  - Person who communicates with a computer or uses the information it generates
- What are hardware and software?
  - Hardware
    - Electronic and mechanical equipment
  - Software
    - Instructions that tell hardware how to perform tasks
- What is the information processing cycle?
  - Input
  - Process
  - Output
  - Storage
  - Communication

The Components of a Computer
- What are common computer hardware components?
  - Printer
  - Speaker
  - PC camera
  - Monitor
  - System unit
  - Scanner
  - Keyboard
  - Modem
  - Microphone
  - Mouse
  - Digital Camera
- What is an input device?
  - Hardware used to enter data and instructions
    - Microphone
• Keyboard
• PC camera
• Scanner
• Digital camera
• Mouse

• What is an output device?
  o Hardware that conveys information to a user
    • Printer
    • Monitor
    • Speakers

• What is the system unit?
  o Box-like device containing electronic components connected to motherboard
  o Also called a chassis
    • CD-RW drive
    • Zip drive
    • Hard disk drive (inside case)
    • CD-ROM or DVD-ROM drive
    • Floppy disk drive

• What are two main components on the motherboard?
  o 1. Central Processing Unit (CPU)
    • Also called a processor or processor chip
    • Carries out instructions that tell computer what to do
    • On PCs called a microprocessor chip
  o 2. Memory
    • Temporary holding place for data and instructions
    • Internal – reside inside the system unit

• What is a chip?
  o Device with microscopic pathways that carry electrical currents
  o Attaches to motherboard
    • Memory chip
  o Processor chip packaging

• What is storage?
  o Holds data, instructions, and information for future use
  o Storage Medium
    • Physical material on which data, instructions, and information are stored
  o Storage Device
    • Records and retrieves items to and from a storage medium

• What are common storage devices or drives?
  o CD-RW drive
  o Hard disk Drive
  o CD-ROM or DVD-ROM drive
  o ZIP drive
  o Floppy disk drive

• What is a floppy disk?
  o Thin, circular, flexible disk enclosed in rigid plastic
  o A Zip® disk is a higher capacity disk

• What is a hard disk?
  o Provides much greater storage capacity than a floppy disk
    • Self-contained hard disk
    • Removable hard disk

• What is a compact disc?
• Portable storage media
  • CD-ROM
  • CD-RW
  • DVD-ROM
    • Can hold a full-length movie
  • DVD+RW
• What is miniature storage media?
  o Portable, thin, credit card size memory
  o Used in digital cameras and handheld computers
• What is a communications device?
  o Establishes a connection between two computers using cable, telephone lines, and satellites
  o One type is a modem

Why Is a Computer So Powerful?
• What makes a computer powerful?
  o Storage
  o Reliability
  o Speed
  o Accuracy
  o Communications

Computer Software
• What is a computer program?
  o A series of instructions that tells the computer what to do
• What happens when you run a program from a CD-ROM?
  o Usually must install part or all on the hard disk
    • Step 1: Insert the CD-ROM into the CD-ROM drive
    • Step 2: Instruct the computer to run the program
      • Step 2a: Setup program installs to hard drive
      • Step 3: The program executes
• What is system software?
  o Programs that control the operations of the computer and its devices
  o Operating System (OS)
  o Utility Programs
• What is the user interface?
  o Controls how you enter data and commands and how information displays
• What is a graphical user interface (GUI)?
  o Uses visual images such as icons
    • Icon represents program, instruction, or some other object
• What is application software?
  o Programs that perform specific tasks for users
  o Software Suite
    • Popular software applications bundled together as a single unit
  o Office XP
    • Word Processing – documents
    • Spreadsheet – calculates numbers arranged in rows and columns
    • Database – organizes and retrieves, manipulates and displays data
    • Presentation graphics
• What are shareware, freeware, public-domain software?
  o Shareware
    • Copyrighted software distributed free for trial period
• Send payment to developer on honor system
  o Freeware
    • Software provided at no cost
    • Copyrighted
    • Cannot resell it as your own
  o Public-Domain Software
    • Freeware donated for public use
    • No copyright restrictions
• What is an application service provider (ASP)?
  o Third-party company that manages and distributes software and services on the Internet
• Who designs and writes software?
  o Systems analyst
  o Programmer
  o Packaged software purchased off the shelf

**Networks and the Internet**

• What is a network?
  o Collection of computers and devices connected together
  o Communications Device
    • Modem
  o Communications Media
    • Cables
    • Telephone lines
    • Cellular radio
    • Satellites
• What are the reasons to network?
  o To share resources
    • Hardware devices
    • Software programs
    • Data
    • Information
  o To save time and money
• What is a local area network (LAN)?
  o Network that connects computers in a limited geographic area
  o Components
    • **Server**
    • Controls access to software, printer and storage
    • **Client**
    • Referred to as “workstations”
    • Accesses storage on the server
  o Difference
    • Server is more powerful
    • Has more storage space
• What is a wide area network (WAN)?
  o Network that covers large geographical area
• What is the Internet?
  o Worldwide collection of networks that links millions of computers together
• Why do users access the Internet?
  o E-mail
  o Information
  o Shopping
Meeting people
Entertainment

How do users connect to the Internet?
- Internet Service Provider (ISP)
  - Provides access to the Internet
- Online Service Provider (OSP)
  - Provides access to the Internet and specialized services
    - (AOL and MSN)

What is the World Wide Web (WWW)?
- Billions of documents, called Web pages, linked together on computers throughout the world
- Web site
  - Collection of related Web pages
- Web page
  - Contains text, graphics, sound, or video and links to other Web pages
  - Link – built-in connection to another Web document
- Web browser
  - Program used to access and view Web pages

How do you connect to Internet and display a Web page?
- 1: Use computer to make a local telephone call to an online service provider
- 2: Use browser such as Internet Explorer to display a Web page
- 3: Enter the address of the Web site
- 4: The Web browser locates the Web site and displays the Web page

Categories of Computers
- What are the categories of computers?
  - Personal computer
  - Handheld computer
  - Internet appliance
  - Mid-range server
  - Mainframe
  - Supercomputer
    - Can execute 12 trillion instructions per second
    - Used for complex mathematical calculations

Personal Computers
- What are the two most popular series of personal computers?
  - PC and compatibles use the Windows operating system
    - Follow the specifications of the original IBM personal computer
  - Apple Macintosh uses the Macintosh operating system (Mac OS)
- What is a notebook computer?
  - Portable, small enough to fit on your lap
  - Also called a laptop
  - Generally more expensive than a desktop computer

Handheld Computers
- What is a handheld computer?
  - Small computer that fits in your hand
  - Also called a palmtop or pocket computer
- How do you input data with a handheld computer?
  - Keyboard
  - Stylus
  - Speech recognition
  - Handwriting recognition
What is a personal digital assistant (PDA)?
- Provides personal organizer functions
  - Calendar
  - Appointment book
  - Address book
  - Calculator
  - Notepad

What are Web-enabled handheld computers?
- Allow wireless Internet access
  - Web-enabled two-way pager
  - Web-enabled cellular telephone
  - Web-enabled handheld computer

Internet Appliances
- What is an Internet appliance?
  - Computer whose main purpose is to connect to Internet from home
  - Web TV is one example

Elements of an Information System
- What are information system elements?
  - Hardware
  - Software
  - Data
  - People
  - Procedures

Examples of Computer Usage
- What are five categories of computer users?
  - Home
  - Mobile
  - Large Business
  - Small Office/Home Office
  - Power

- What software is available for a home user?
  - Communications
  - Personal finance management
  - Web access
  - Entertainment

- What software is available for a small office/home office (SOHO) user?
  - Local area network (LAN)
  - Productivity software
  - Specialty software
  - Web usage
  - E-mail
  - E-commerce

- What is available for a mobile user?
  - Hardware
    - Notebook computers
    - Handheld computers
    - Web-enabled cellular telephones
  - Software
    - Productivity
    - Presentation

- What are the needs of the large business user?
Network
Sales management
Accounting
Desktop publishing
Information Systems or Information Technology department
Productivity software
Scheduling
Web access
Telecommuting

- What are the needs of a power user?
  - Speed and large amounts of storage
  - Types of power users
    - Engineers
    - Architects
    - Desktop publishers
    - Graphic artists

Computer User as a Web Publisher
- Why do users publish Web pages?
  - Family information
  - Resume online
  - Electronic storefront
  - Photo communities

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