

Discovering Computers
Concepts for a Digital World **2003**
Web and XP Enhanced

Chapter 1 Objectives

Explain the importance of computer literacy

Explain the purpose of a network

Define the term computer

Discuss the uses of the Internet and the World Wide Web

Identify the components of a computer

Describe the categories of computers and their uses

Explain why a computer is a powerful tool

Identify the various types of computer users

Differentiate among the various types of software

Understand how a user can be a Web publisher

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The Digital Revolution

Where can you find computers?

• Computers are everywhere

Next p. 12 Fig. 1-1

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The Digital Revolution

What is computer literacy?

- Knowledge and understanding of computers and their uses

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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

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What Is a Computer?

Data
Raw facts, figures, and symbols

Information
Data that is organized, meaningful, and useful

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What Is a Computer?

Who is a **user**?

- Person who communicates with a computer or uses the information it generates



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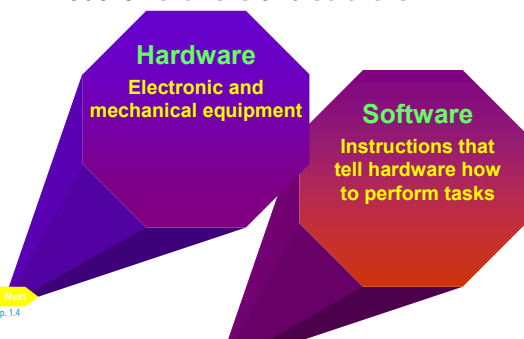
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What Is a Computer?

What are **hardware** and **software**?

Hardware
Electronic and mechanical equipment

Software
Instructions that tell hardware how to perform tasks

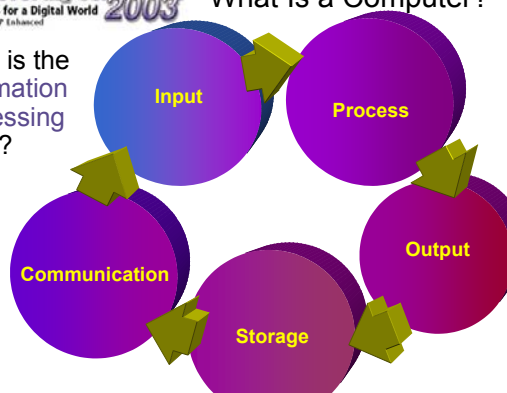


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What Is a Computer?

What is the **information processing cycle**?



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The Components of a Computer

What are common computer hardware components?




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p. 15 Fig. 1-3

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The Components of a Computer

What is an **input device**?

- Hardware used to enter data and instructions




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The Components of a Computer

What is an **output device**?

- Hardware that conveys information to a user



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p. 16 Fig. 1-3

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The Components of a Computer

What is the **system unit**?

- Box-like device containing electronic components connected to motherboard
- Also called a **chassis**

CD-RW drive
Zip® drive
hard disk drive (inside case)
CD-ROM or DVD-ROM drive
floppy disk drive

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p. 18 Fig. 1-3

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The Components of a Computer

What are two main components on the motherboard?

Central Processing Unit (CPU)

Also called a **processor**

Carries out instructions that tell computer what to do

Memory

Temporary holding place for data and instructions

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The Components of a Computer

What is a **chip**?

- Device with microscopic pathways that carry electrical currents
- Attaches to motherboard

memory chip
processor chip packaging

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The Components of a Computer

What is **storage**?

- Holds data, instructions, and information for future use

Storage Medium

Physical material on which data, instructions, and information are stored

Storage Device

Records and retrieves items to and from a storage medium

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The Components of a Computer

What are common **storage devices or drives**?

CD-RW drive
hard disk drive
CD-ROM or DVD-ROM drive
ZIP® drive
floppy disk drive

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The Components of a Computer

What is a **floppy disk**?

- Thin, circular, flexible disk enclosed in rigid plastic
- A Zip® disk is a higher capacity disk


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The Components of a Computer

What is a **hard disk**?

- Provides much greater storage capacity than a floppy disk



self-contained hard disk

removable hard disk

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The Components of a Computer

What is a **compact disc**?

- Portable storage media
 - CD-ROM
 - CD-RW
 - DVD-ROM
 - DVD+RW



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The Components of a Computer

What is **miniature storage media**?

- Portable, thin, credit card size memory
- Used in digital cameras and handheld computers



Memory card miniature storage media


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The Components of a Computer

What is a **communications device**?

- Establishes a connection between two computers using cable, telephone lines, and satellites
- One type is a modem



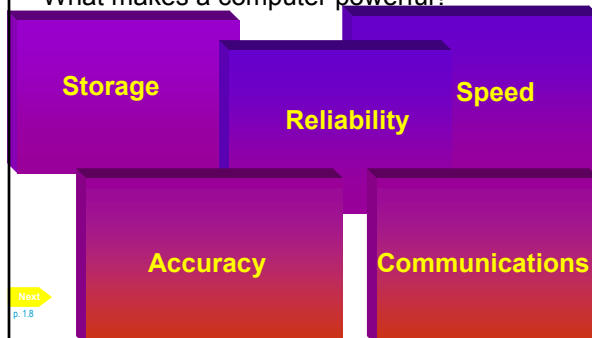
modem

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Why Is a Computer So Powerful?

What makes a computer powerful?



Storage

Reliability

Speed

Accuracy

Communications

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Computer Software

What is a **computer program**?

- A series of instructions that tells the computer what to do

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* COMPUTE REGULAR TIME PAY
MULTIPLY REGULAR-TIME-HOURS BY HOURLY-PAY-RATE
GIVING REGULAR-TIME-PAY.

* COMPUTE OVERTIME PAY
IF OVERTIME-HOURS > 0
  COMPUTE OVERTIME-PAY = OVERTIME-HOURS * 1.5 * HOURLY-PAY-RATE
ELSE
  MOVE 0 TO OVERTIME-PAY.

* COMPUTE GROSS PAY
ADD REGULAR-TIME-PAY TO OVERTIME-PAY
GIVING GROSS-PAY.

* PRINT GROSS PAY
MOVE GROSS-PAY TO GROSS-PAY-OUT.
WRITE REPORT-LINE-OUT FROM DETAIL-LINE
AFTER ADVANCING 2 LINES.

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What happens when you run a program from a CD-ROM?

Step 1: Insert the CD-ROM into the CD-ROM drive

Step 2: Instruct the computer to run the program

Step 3: The program executes

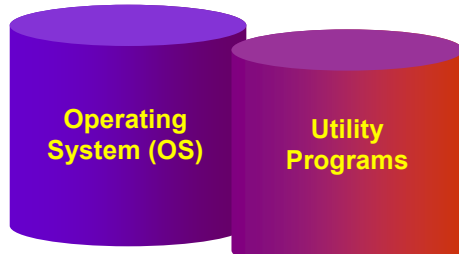


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What is system software?

- Programs that control the operations of the computer and its devices



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What is the user interface?

- Controls how you enter data and commands and how information displays




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What is a graphical user interface (GUI)?

- Uses visual images such as icons
- Icon represents program, instruction, or some other object

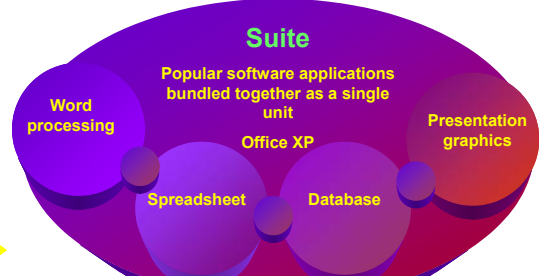


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What is application software?

- Programs that perform specific tasks for users



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What are shareware, freeware, public-domain software?

- Shareware**
 - Copyrighted software distributed free for trial period
 - Send payment to developer on honor system
- Freeware**
 - Software provided at no cost
 - Copyrighted
 - Cannot resell it as your own
- Public-Domain Software**
 - Freeware donated for public use
 - No copyright restrictions

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Discovering Computers 2003 Concepts for a Digital World Web and XP Enhanced **Computer Software**

What is an application service provider (ASP)?

Third-party company that manages and distributes software and services on the Internet

You can run the programs from the Internet

Both free and paid ASPs

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Discovering Computers 2003 Concepts for a Digital World Web and XP Enhanced **Computer Software**

Who designs and writes software?

- Systems analyst
- Programmer

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Discovering Computers 2003 Concepts for a Digital World Web and XP Enhanced **Networks and the Internet**

What is a network?

- Collection of computers and devices connected together

Communications Device
Modem

Communications Media
• Cables
• Telephone lines
• Cellular radio
• Satellites

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Discovering Computers 2003 Concepts for a Digital World Web and XP Enhanced **Networks and the Internet**

What are the reasons to network?

Hardware devices

To share resources

Software programs

Data

Information

To save time and money

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Discovering Computers 2003 Concepts for a Digital World Web and XP Enhanced **Networks and the Internet**

What is a local area network (LAN)?

- Network that connects computers in a limited geographic area

Next p. 1.16 Fig. 1-16

Discovering Computers 2003 Concepts for a Digital World Web and XP Enhanced **Networks and the Internet**

What is a wide area network (WAN)?


- Network that covers large geographical area

Next p. 1.16 Fig. 1-17

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What is the Internet?

- Worldwide collection of networks that links millions of computers together




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Why do users access the Internet?

- E-mail
- Information
- Shopping
- Meeting people
- Entertainment



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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)

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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


Web browser
Program used to access and view Web pages

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How do you connect to Internet and display a Web page?

- Use computer to make a local telephone call to an online service provider
- Use browser such as Internet Explorer to display a Web page
- Enter the address of the Web site
- The Web browser locates the Web site and displays the Web page



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Discovering Computers 2003 Categories of Computers
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What are the categories of computers?

CATEGORIES OF COMPUTERS



| Category | Physical size | Number of simultaneously connected users | General price range |
|--|--|--|--------------------------------------|
| Personal computer (desktop or notebook) | Fits on a desk or on your lap | Usually one, or many networked | Several thousand dollars or less |
| Handheld computer | Fits in your hand | Usually one | Several hundred dollars or less |
| Internet appliance | Fits on a countertop | Usually one | Several hundred dollars or less |
| Mid-range server | Small cabinet | Two to thousands | \$5,000 to \$850,000 |
| Mainframe | Partial room to a full room of equipment | Hundreds to thousands | \$300,000 to several million dollars |
| Supercomputer | Full room of equipment | Hundreds to thousands | Several million dollars and up |

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Personal Computers

What are the two most popular series of personal computers?



Apple Macintosh uses the Macintosh operating system (Mac OS)

PC and compatibles use the Windows operating system


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Personal Computers

What is a notebook computer?

- Portable, small enough to fit on your lap
- Also called a laptop
- Generally more expensive than a desktop computer




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Handheld Computers

What is a handheld computer?

- Small computer that fits in your hand
- Also called a palmtop or pocket computer




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Handheld Computers

How do you input data with a handheld computer?

- ❖ Keyboard
- ❖ Stylus
- ❖ Speech recognition
- ❖ Handwriting recognition



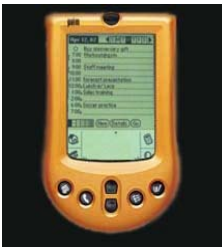
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Handheld Computers

What is a personal digital assistant (PDA)?

- Provides personal organizer functions
 - Calendar
 - Appointment book
 - Address book
 - Calculator
 - Notepad



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Handheld Computers

What are Web-enabled handheld computers?

- Allow wireless Internet access



Web-enabled cellular telephone

Web-enabled two-way pager

Web-enabled handheld computer

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Internet Appliances

What is an Internet appliance?

- Computer whose main purpose is to connect to Internet from home
- Web TV is one example



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Elements of an Information System

What are information system elements?

- Hardware
- Software
- Data
- People
- Procedures



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Examples of Computer Usage

What are five categories of computer users?



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Examples of Computer Usage

What software is available for a home user?



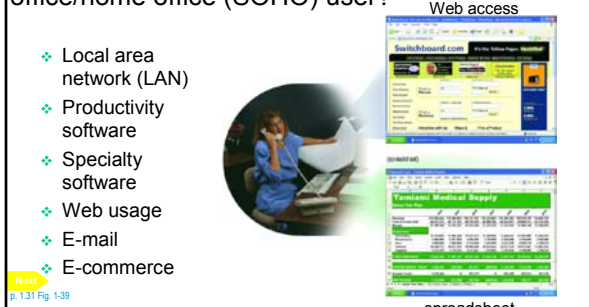
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Examples of Computer Usage

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



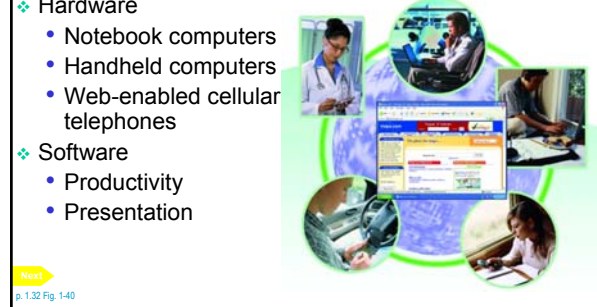
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Examples of Computer Usage

What is available for a mobile user?

- ❖ Hardware
 - Notebook computers
 - Handheld computers
 - Web-enabled cellular telephones
- ❖ Software
 - Productivity
 - Presentation




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Examples of Computer Usage

What are the needs of the large business user?

- Network
- Sales management
- Accounting
- Desktop publishing
- Information systems department
- Productivity software
- Scheduling
- Web access
- Telecommuting




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Examples of Computer Usage

What are the needs of a power user?

- ❖ Speed and large amounts of storage
- ❖ Types of power users
 - Engineers
 - Architects
 - Desktop publishers
 - Graphic artists



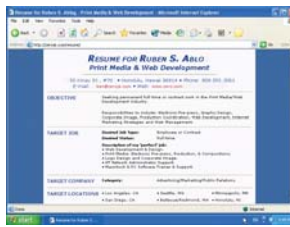
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Computer User as a Web Publisher

Why do users publish Web pages?

- ❖ Family information
- ❖ Resume online
- ❖ Electronic storefront
- ❖ Photo communities



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Summary of Introduction to Computers

- The digital revolution
- What is a computer?
- The components of a computer
- Why is a computer so powerful?
- Computer software
- Networks and the Internet
- Categories of computers
- Personal computers **(continued)**

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Summary of Introduction to Computers (cont'd)

- Handheld computers
- Internet appliances
- Elements of an information system
- Examples of computer usage
- Computer user as a Web publisher

Chapter 1 Complete

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