

**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

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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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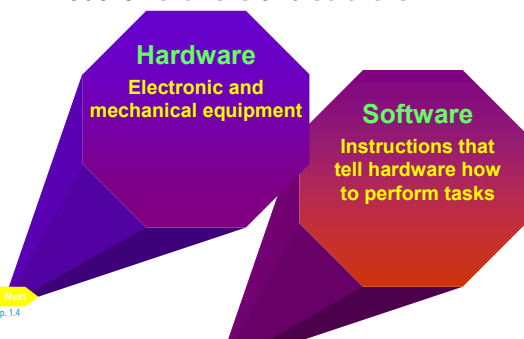
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## What Is a Computer?

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

**Hardware**  
Electronic and mechanical equipment

**Software**  
Instructions that tell hardware how to perform tasks

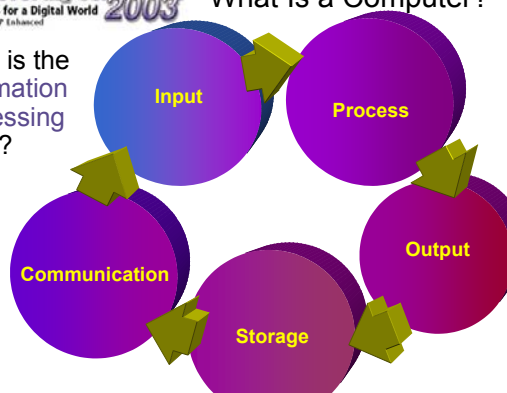


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## What Is a Computer?

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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## 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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### 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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### 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



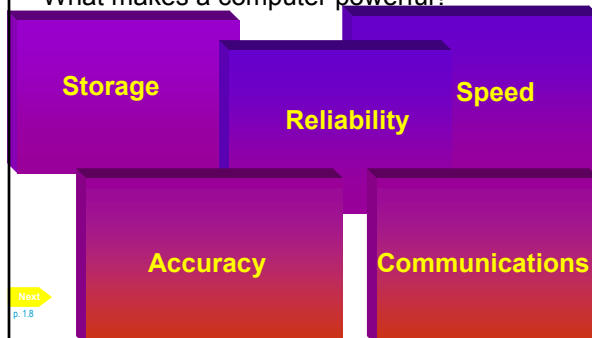
modem

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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

```

* 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

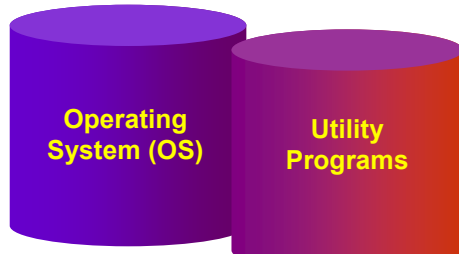


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What is system software?

- 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

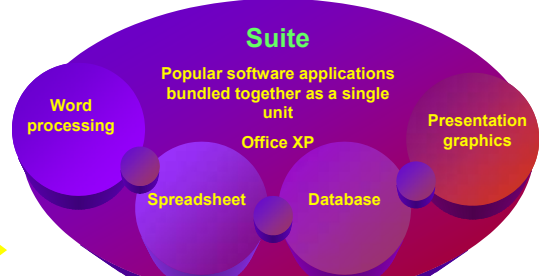


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What is application software?

- 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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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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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

To save time and money

Software programs

Data

Information

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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

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What is a wide area network (WAN)?


- Network that covers large geographical area

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

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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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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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**Discovering Computers 2003** Concepts for a Digital World Web and XP Enhanced **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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How do you input data with a handheld computer?

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

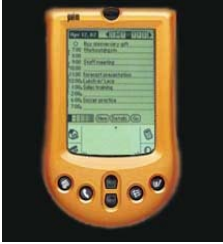


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What is a personal digital assistant (PDA)?

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



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What are Web-enabled handheld computers?

- Allow wireless Internet access



Web-enabled two-way pager

Web-enabled cellular telephone

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?



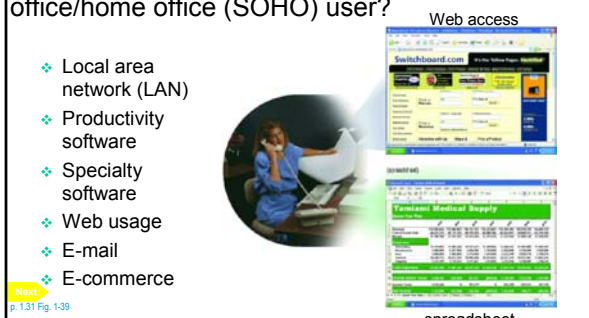
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## Examples of Computer Usage

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



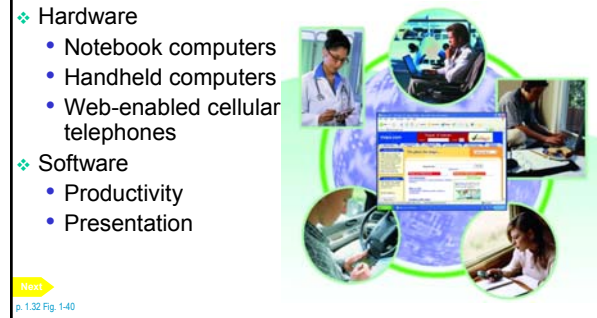
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## Examples of Computer Usage

What is available for a mobile user?

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



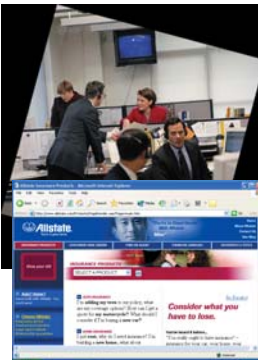
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### Examples of Computer Usage

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



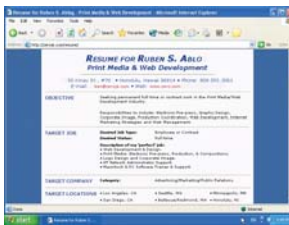
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### Computer User as a Web Publisher

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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