Objectives Overview

- Explain why computer literacy is vital to success in today's world
- Describe the five components of a computer
- Discuss the advantages and disadvantages that users experience when working with computers
- Discuss the uses of the Internet and World Wide Web
- Distinguish between system software and application software
Objectives Overview

- Differentiate among types, sizes, and functions of computers in each category
- Explain how home users, small office/home office users, mobile users, power users, and enterprise users each interact with computers
- Discuss how society uses computers in education, finance, government, health care, science, publishing, travel, and manufacturing

See Page 1 for Detailed Objectives

Discovering Computers and Microsoft Office 2007
Chapter 1
A World of Computers

- Computers are everywhere
What is Computer Literacy?

- Knowledge and understanding of computers and their uses
- Computers are everywhere
What Is a Computer?

- A **computer** is an electronic device, operating under the control of instructions stored in its own memory.

**Information Processing Cycle**

- Collects **data** (input)
- Processing
- Produces **information** (output)
What Is a Computer?

DATA
2 Medium Sodas $1.49 each
1 Small Turkey Sub $3.49 each
1 Caesar Salad $4.49 each
1 Bag of Chips $0.99 each
3 Cookies $0.39 each
Amount Received $20.00

INFORMATION
Arrow Deli
10 Park Street
Maple River, DE 20393
(734) 555-2939

<table>
<thead>
<tr>
<th>QTY</th>
<th>ITEM</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Medium Sodas</td>
<td>2.98</td>
</tr>
<tr>
<td>1</td>
<td>Small Turkey Sub</td>
<td>3.49</td>
</tr>
<tr>
<td>1</td>
<td>Caesar Salad</td>
<td>4.49</td>
</tr>
<tr>
<td>1</td>
<td>Bag of Chips</td>
<td>0.99</td>
</tr>
<tr>
<td>3</td>
<td>Cookies</td>
<td>1.17</td>
</tr>
<tr>
<td></td>
<td>Total Due</td>
<td>13.12</td>
</tr>
<tr>
<td></td>
<td>Amount Received</td>
<td>20.00</td>
</tr>
<tr>
<td></td>
<td>Change</td>
<td>6.88</td>
</tr>
</tbody>
</table>

Thank You!

PROCESSES
• Computes each item’s total price by multiplying the quantity ordered by the item price (i.e., 2 * 1.49 = 2.98).
• Organizes data.
• Sums all item total prices to determine order total due from customer (13.12).
• Calculates change due to customer by subtracting the order total from amount received (20.00 - 13.12 = 6.88).
The Components of a Computer

• A computer contains many electric, electronic, and mechanical components known as **hardware**

  **Input Device**
  • Allows you to enter data and instructions into a computer

  **Output Device**
  • Hardware component that conveys information to one or more people

  **System Unit**
  • Case that contains the electronic components of the computer that are used to process data

  **Storage Device**
  • Holds data, instructions, and information for future use

  **Communications Device**
  • Enables a computer to send and receive data, instructions, and information to and from one or more computers or mobile devices
The Components of a Computer

- Printer (output device)
- Optical disc drive (storage device)
- Hard disk drive (storage device)
- System unit (processor, memory, and storage devices)
- Monitor (output device)
- Screen
- Web cam (input device)
- Speakers (output device)
- Keyboard (input device)
- Mouse (input device)
- Microphone (input device)
- USB flash drive (storage device)
- Card reader/writer (storage device)
- Memory cards (storage device)
- External hard disk (storage device)
- Modem (communications device)
Advantages and Disadvantages of Using Computers

**Advantages of Using Computers**
- Speed
- Reliability
- Consistency
- Storage
- Communications

**Disadvantages of Using Computers**
- Violation of Privacy
- Public Safety
- Impact on Labor Force
- Health Risks
- Impact on Environment
Advantages and Disadvantages of Using Computers

• **Green computing** involves reducing the electricity consumed and environmental waste generated when using a computer

• Strategies include:
  – Recycling
  – Regulating manufacturing processes
  – Extending the life of computers
  – Immediately donating or properly disposing of replaced computers
Networks and the Internet

- A **network** is a collection of computers and devices connected together, often wirelessly, via communications devices and transmission media.

- The **Internet** is a worldwide collection of networks that connects millions of businesses, government agencies, educational institutions, and individuals.
Networks and the Internet
People use the Internet for a variety of reasons:

- Communicate
- Research and Access Information
- Shop
- Bank and Invest
- Online Trading
- Entertainment
- Share Information
- Download Videos
- Web Application

Networks and the Internet
Networks and the Internet

- A social networking Web site encourages members to share their interests, ideas, stories, photos, music, and videos with other registered users
  - Also called an online social network
Computer Software

- **Software**, also called a *program*, tells the computer what tasks to perform and how to perform them.

### System Software
- Operating system
- Utility program

### Application Software
Computer Software

• **Installing** is the process of setting up software to work with the computer, printer, and other hardware.

![Installing and Running a Computer Program](image)

**Installing and Running a Computer Program**

**Step 1: INSTALL**
When you insert a program disc, such as a photo editing program, in the optical disc drive for the first time, the computer begins the procedure of installing the program on the hard disk.

**Step 2: RUN**
Once installed, you can instruct the computer to run the program. The computer transfers instructions from the hard disk to memory.

**Step 3: USE**
The program executes so that you can use it. This program enables you to edit photos.
Computer Software

• A programmer develops software or writes the instructions that direct the computer to process data into information.

```vbnet
Public Class frmPayrollInformation
    Private Sub btnCalculatePay_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles btnCalculatePay.Click
        ' This procedure executes when the user clicks the Calculate Pay button. It calculates regular
        ' and overtime pay and displays it in the window.
        Dim strHoursWorked As String
        Dim strHourlyRate As String
        Dim decHoursWorked As Decimal
        Dim decHourlyRate As Decimal
        Dim decRegularPay As Decimal
        Dim decOvertimeHours As Decimal
        Dim decOvertimePay As Decimal
        Dim decTotalPay As Decimal

        ' Calculate and display payroll information
        strHoursWorked = Me.txtHoursWorked.Text
        strHourlyRate = Me.txtHourlyRate.Text
        decHoursWorked = Convert.ToDecimal(strHoursWorked)
        decHourlyRate = Convert.ToDecimal(strHourlyRate)

        If decHoursWorked > 40 Then
            decRegularPay = 40 * decHourlyRate
            Me.txtRegularPay.Text = decRegularPay.ToString("C")
            decOvertimeHours = decHoursWorked - 40
            decOvertimePay = (1.5 * decOvertimeHours) * decHourlyRate
            Me.txtOvertimePay.Text = decOvertimePay.ToString("C")
            decTotalPay = decRegularPay + decOvertimePay
            Me.txtTotalPay.Text = decTotalPay.ToString("C")
        Else
            decRegularPay = decHoursWorked * decHourlyRate
            Me.txtRegularPay.Text = decRegularPay.ToString("C")
            Me.txtOvertimePay.Text = "0.00"
            Me.txtTotalPay.Text = decRegularPay.ToString("C")
        End If
    End Sub
End Class
```
Categories of Computers

- Personal computers
- Mobile computers and mobile devices
- Game consoles
- Servers
- Mainframes
- Supercomputers
- Embedded computers
Personal Computers

• A personal computer can perform all of its input, processing, output, and storage activities by itself
• Two popular architectures are the PC and the Apple
  – Desktop computer
Mobile Computers and Mobile Devices

**Mobile Computer**

- Personal computer you can carry from place to place

  Examples include **notebook computers**, **laptop computers**, **netbooks**, and **Tablet PCs**

**Mobile Device**

- Computing device small enough to hold in your hand

  Examples include **smart phones**, **PDAs**, **handheld computers**, **portable media players**, and **digital cameras**
Mobile Computers and Mobile Devices

- Notebook computer
- Tablet PC
- Smart phone
- PDA
Mobile Computers and Mobile Devices

- Handheld computer
- Portable media player
- Digital camera

Click to view Web Link, click Chapter 1, Click Web Link from left navigation, then click Digital Cameras below Chapter 1.
A game console is a mobile computing device designed for single-player or multiplayer video games.
Servers

• A server controls access to the hardware, software, and other resources on a network
  – Provides a centralized storage area for programs, data, and information
Mainframes

- A **mainframe** is a large, expensive, powerful computer that can handle hundreds or thousands of connected users simultaneously.
Supercomputers

• A **supercomputer** is the fastest, most powerful computer
  – Fastest supercomputers are capable of processing more than one quadrillion instructions in a single second
An embedded computer is a special-purpose computer that functions as a component in a larger product.

- Consumer Electronics
- Home Automation Devices
- Automobiles
- Process Controllers and Robotics
- Computer Devices and Office Machines
Embedded Computers

Adaptive cruise control systems detect if cars in front of you are too close and, if necessary, adjust the vehicle’s throttle, may apply brakes, and/or sound an alarm.

Tire pressure monitoring systems send warning signals if tire pressure is insufficient.

Advanced airbag systems have crash-severity sensors that determine the appropriate level to inflate the airbag, reducing the chance of airbag injury in low-speed accidents.

Cars equipped with wireless communications capabilities, called telematics, include such features as navigation systems, remote diagnosis and alerts, and Internet access.

Drive-by-wire systems sense pressure on the gas pedal and communicate electronically to the engine how much and how fast to accelerate.
Examples of Computer Usage

**Home User**
- Personal financial management
- Web access
- Communications
- Entertainment

**Small Office/Home Office User**
- Look up information
- Send and receive e-mail messages
- Make telephone calls

**Mobile User**
- Connect to other computers on a network or the Internet
- Transfer information
- Play video games
- Listen to music
- Watch movies
Examples of Computer Usage

- **Power User**
  - Work with multimedia
  - Use industry-specific software

- **Enterprise User**
  - Communicate among employees
  - Process high volumes of transactions
  - Blog
Computer Applications in Society

Science

Publishing

Travel

Manufacturing
Video: Computer History in a Barn

CLICK TO START
Summary

Basic computer concepts

Components of a computer

Networks, the Internet, and computer software

Many different categories of computers, computer users, and computer applications in society
Chapter One

Introduction to Computers

Discovering Computers & Microsoft Office 2007
A Fundamental Combined Approach

Chapter 1 Complete