#### **Chapter One**

# Introduction to Computers

### Discovering Computers 2011

Living in a Digital World



### **A World of Computers**

### Computers are everywhere



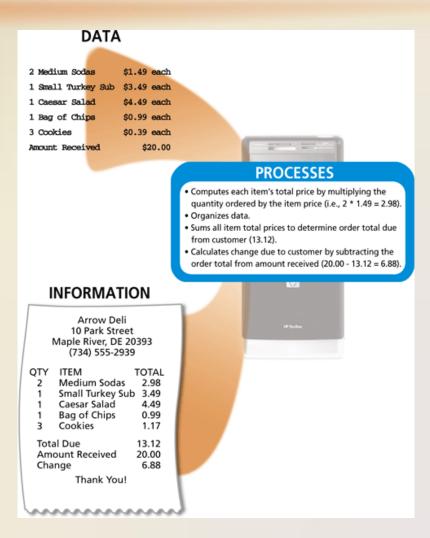
### What Is a Computer?

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



#### **Information Processing Cycle**

### What Is a Computer?



Page 6 Figure 1-2

### **The Components of a Computer**

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

Allows you to enter data and instructions into a computer		
<ul> <li>Hardware component that conveys information to one or more people</li> </ul>		
<ul> <li>Case that contains the electronic components of the computer that are used to process data</li> </ul>		
<ul> <li>Holds data, instructions, and information for future use</li> </ul>		
<ul> <li>Enables a computer to send and receive data, instructions, and information to and from one or more computers or mobile devices</li> </ul>		

### **The Components of a Computer**



Page 7 Figure 1-3

### Advantages and Disadvantages of Using Computers

#### Advantages of Using Computers

#### Speed

### Reliability

Consistency

#### Storage

#### Communications



Health Risks

Violation of Privacy

**Public Safety** 

Impact on Labor Force

Impact on Environment

### **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



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Pages 15 - 16 Figures 1-10 - 1-11



#### **Application Software**

### **Computer Software**

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

Public Class frmPayrollInformation						
Private Sub btnCalculatePay_Click(ByVal sender As System.Object, ByVal e As System. EventArge) Handles btnCalculatePay.Click 'This procedure executes when the user clicks the 'Calculate Pay buttom. It calculates regular 'and overtime pay and displays it in the window.						
<sup>1</sup> Declare variables Dim striffour#Worked As String Dim striffour#Worked As Decimal Dim decHour#Worked As Decimal Dim decKour#Wate As Decimal Dim decOvertimePay As Decimal Dim decOvertimePay As Decimal Dim decOvertimePay As Decimal						
Calculate and display payroll inf strBoursWorked = Me.txtBoursWorked. strBourlyMate.Te decHoursWorked = Convert.ToDecimal( decHoursWorked = Convert.ToDecimal( strDourlyMate = Convert.ToDec	.Text ext (strEoursWorked)					
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End Sub End Class						
-	Payroll Information					
	Employee Name	Robert Terrell				
	Hours Worked	42				
	Hourly Rate	18.00				

Calculate Pay

\$720.00

\$54.00

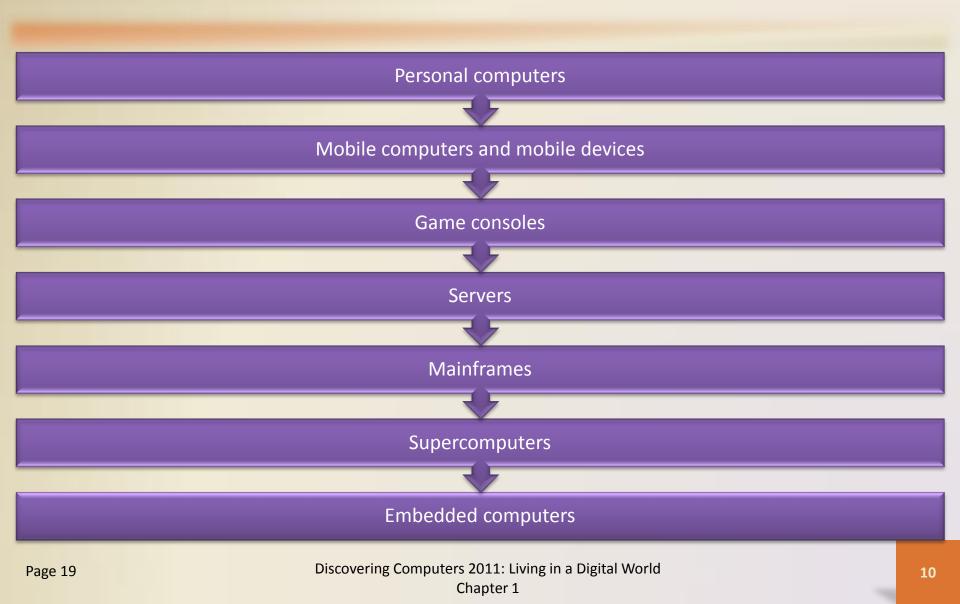
\$774.00

Regular Pay

Overtime Pay

Total Pay

### **Categories of Computers**



### 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



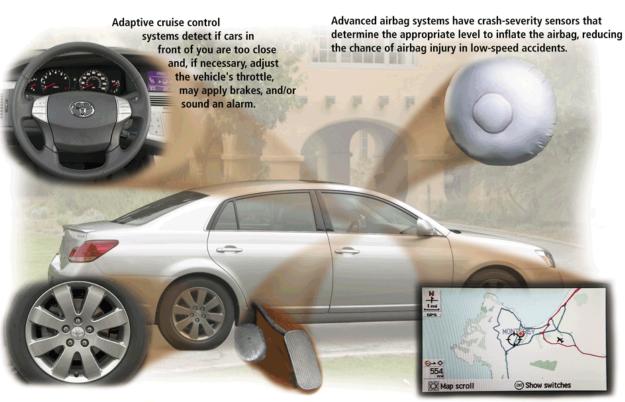
Page 25 Figure 1-27

### **Embedded Computers**

 An embedded computer is a special-purpose computer that functions as a component in a larger product

Consumer	Home Automation	Automobiles	Process Controllers	Computer Devices
Electronics	Devices		and Robotics	and Office Machines
<ul> <li>Mobile and digital telephones</li> <li>Digital televisions</li> <li>Cameras</li> <li>Video recorders</li> <li>DVD players and recorders</li> <li>Answering machines</li> </ul>	<ul> <li>Thermostats</li> <li>Sprinkling systems</li> <li>Security monitoring systems</li> <li>Appliances</li> <li>Lights</li> </ul>	<ul> <li>Antilock brakes</li> <li>Engine control modules</li> <li>Airbag controller</li> <li>Cruise control</li> </ul>	<ul> <li>Remote monitoring systems</li> <li>Power monitors</li> <li>Machine controllers</li> <li>Medical devices</li> </ul>	<ul> <li>Keyboards</li> <li>Printers</li> <li>Faxes</li> <li>Copiers</li> </ul>

### **Embedded Computers**



Tire pressure monitoring systems send warning signals if tire pressure is insufficient. Drive-by-wire systems sense pressure on the gas pedal and communicate electronically to the engine how much and how fast to accelerate. Cars equipped with wireless communications capabilities, called *telematics*, include such features as navigation systems, remote diagnosis and alerts, and Internet access.

## **Elements of an Information System**



## People

## Procedures



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## **Elements of an Information System**

