

Chapter One

Introduction to Computers

Discovering Computers 2011

Living in a Digital World



A World of Computers

- Computers are everywhere



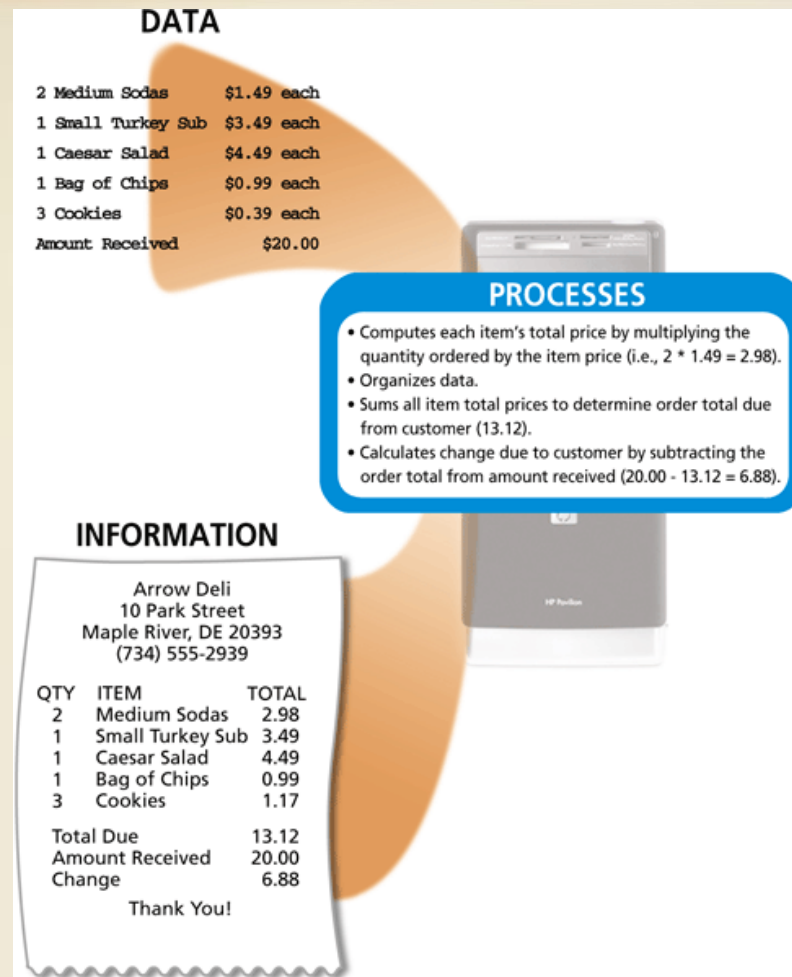
What Is a Computer?

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



Information Processing Cycle

What Is a Computer?



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



Advantages and Disadvantages of Using Computers

Advantages of Using Computers

Speed

Reliability

Consistency

Storage

Communications

Disadvantages of Using Computers

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



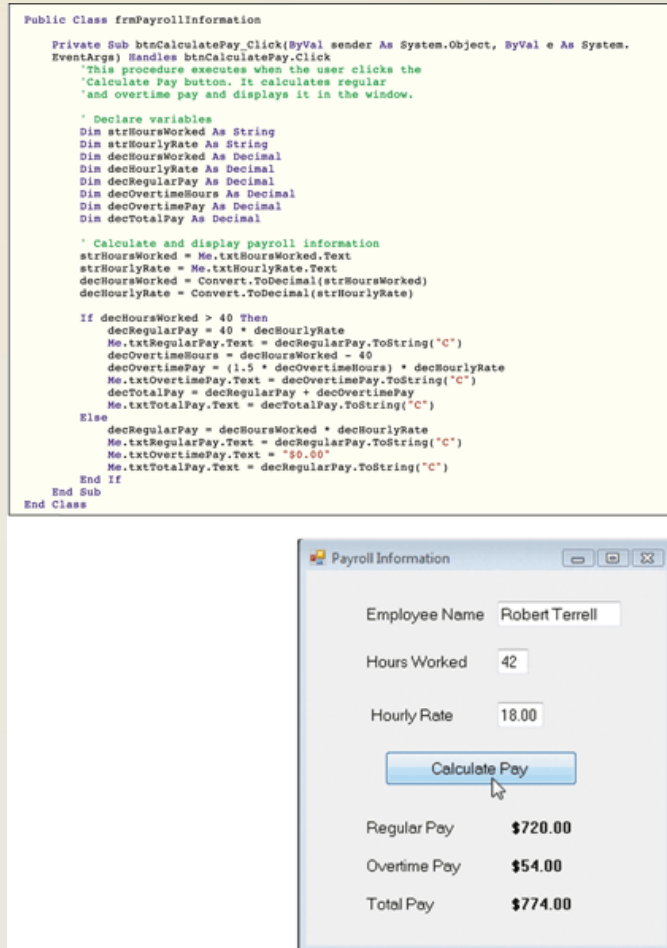
Application Software



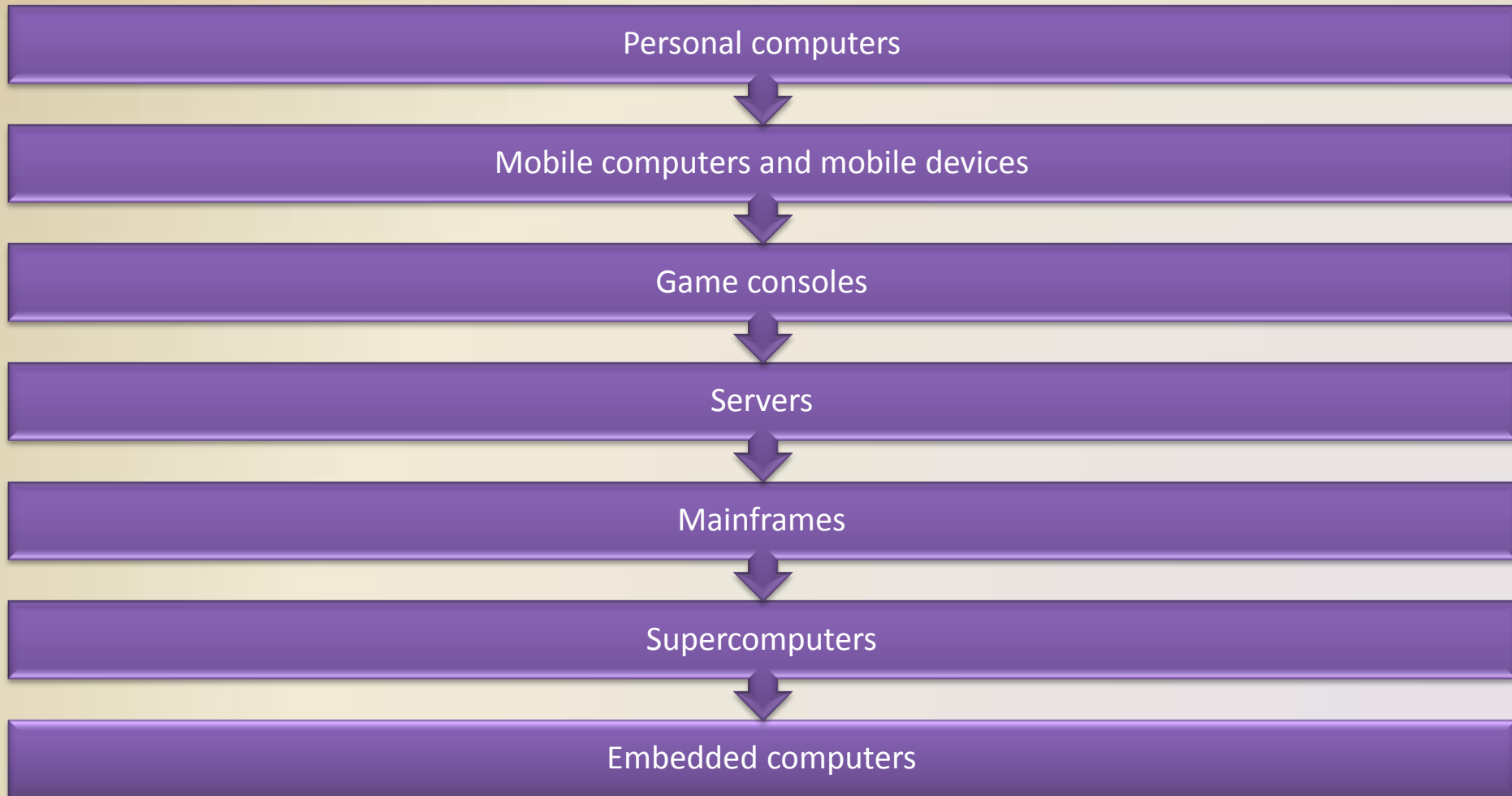
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Computer Software

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



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



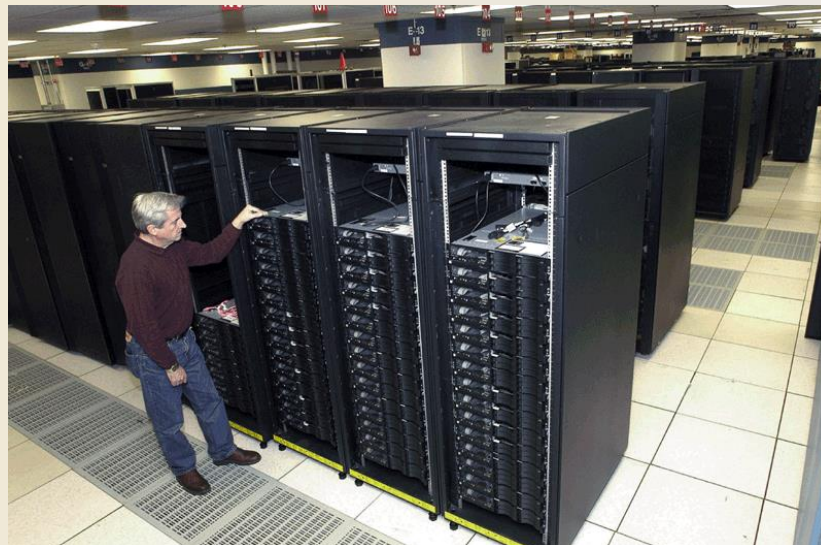
Mainframes

- 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



Embedded Computers

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

Consumer Electronics

- Mobile and digital telephones
- Digital televisions
- Cameras
- Video recorders
- DVD players and recorders
- Answering machines

Home Automation Devices

- Thermostats
- Sprinkling systems
- Security monitoring systems
- Appliances
- Lights

Automobiles

- Antilock brakes
- Engine control modules
- Airbag controller
- Cruise control

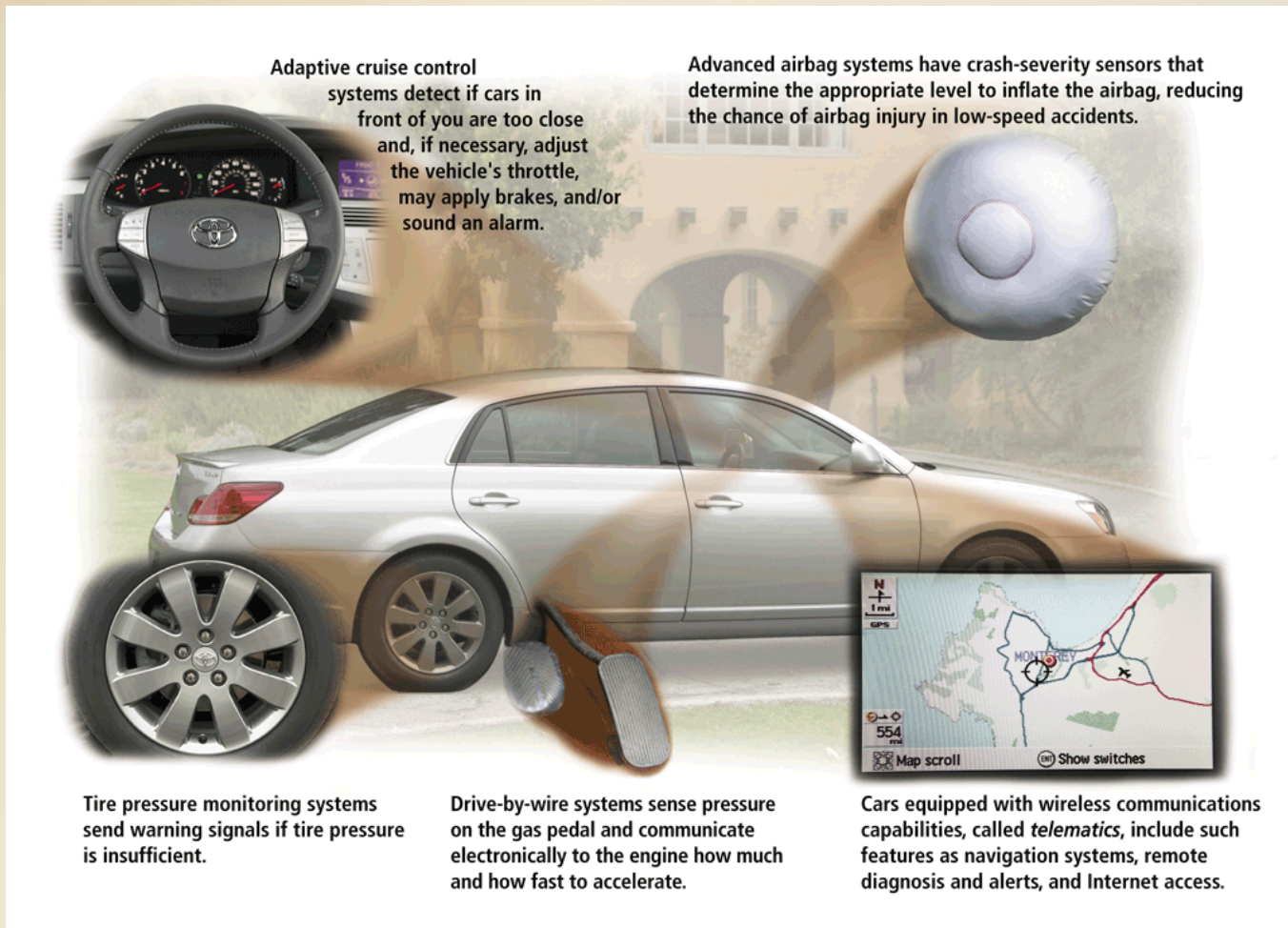
Process Controllers and Robotics

- Remote monitoring systems
- Power monitors
- Machine controllers
- Medical devices

Computer Devices and Office Machines

- Keyboards
- Printers
- Faxes
- Copiers

Embedded Computers



Elements of an Information System

Hardware

Software

Data

People

Procedures



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Elements of an Information System

