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Lesson 1
Computers and Operating Systems

Computer Literacy BASICS: A Comprehensive Guide to IC^3, 5th Edition

Morrison / Wells / Ruffolo

About the Presentations

- The presentations cover the objectives found in the opening of each lesson.

- All lesson objectives are listed in the beginning of each presentation.

- You may customize the presentations to fit your class needs.

- Some figures from the lessons are included. A complete set of images from the book can be found on the Instructor Resources disc.

Objectives

- Describe the importance of computers in daily life.
- Explain the difference between system software and application software.
- Describe the four major types of operating systems.
- Identify the tasks an operating system performs.
- Start a computer.
- Use an operating system and start an application.
- Lock and shut down a computer.

Lesson 1

Words to Know

- application software
- boot process
- buffer
- command-line interface
- data
- driver

- embedded operating system
- graphical user interface (GUI)
- hardware
- icon
- information processing cycle

Lesson 1

Words to Know (continued)

- multiuser operating system
- open-source software
- operating system
- random access memory (RAM)

- server operating system
- software
- swapping
- system software
- utility program
- virtual memory

Understanding the Importance of Computers

- Computers are everywhere.

- Computers are used in your cell phone, in ATMs, in your home thermostat, and in your car's cruise control.

- Computers assist you in most parts of your daily life and play a central role in worldwide communications, entertainment, education, commerce, and other business activities.

Lesson 1

Understanding the Importance of Computers (continued)

- Computers have been around since the late 1940s.
- Then, they were massive, special-purpose machines with names such as UNIVAC and ENIAC and were designed for use by the military and government.
- They took hours to complete a calculation, occupied small buildings or entire city blocks, and cost millions of dollars.

Understanding the Importance of Computers (continued)

- Today's smartphones have more processing power than a UNIVAC, cost less than any of its components, and fit in the palm of your hand.

- The future promises innovations such as wearable computers, using human thought as input, and computer-controlled, micro-controlled robots that treat and possibly cure cancer.

Understanding the Importance of Computers (continued)

- Understanding what a computer is and how it works can help you appreciate and use it more effectively.

- A **computer** is an electronic device that receives data (input), processes data, stores data, and produces a result (output).

- **Data** is a collection of raw unprocessed facts, including text, numbers, sound, images, and video.

Understanding the Importance of Computers (continued)

- The actual machine—wires, transistors, and circuits—is called **hardware**.

- **Software** consists of instructions or programs for controlling the computer.

- **Data** is text, numbers, sound, images, or video.

- The computer receives data through an input device, processes the data, produces the output information on an output device, and stores the information on a storage device.

Lesson 1

Understanding the Importance of Computers (continued)

- The input and output devices, such as keyboards and monitors, are types of hardware called **peripherals**.

- Data transformed into meaningful form becomes **information**.

FIGURE 1–3

Lesson 1

Understanding the Importance of Computers (continued)

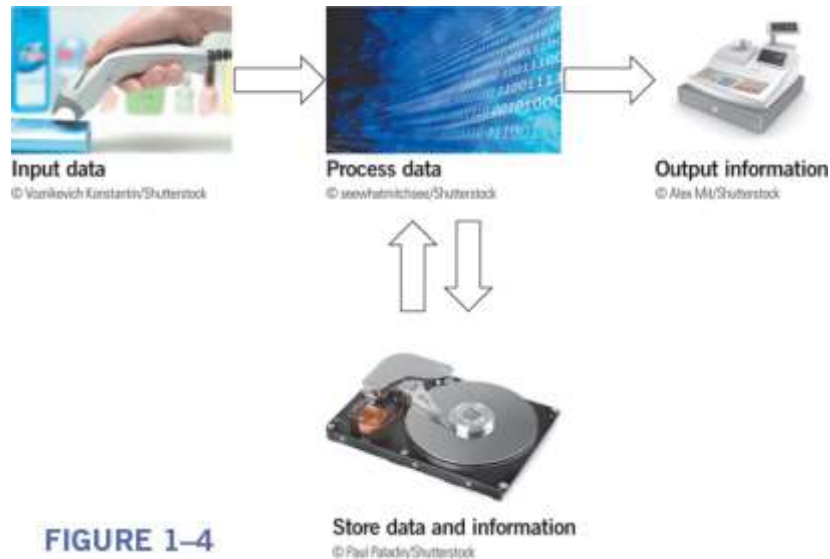- Input, processing, output, and storage (IPOS) is called the *information processing cycle*.

Input data
© Vzonikevich Konstantin/Shutterstock

Process data
© seewhatmitchsee/Shutterstock

Output information
© Alex Mit/Shutterstock

Store data and information
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FIGURE 1–4

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Understanding the Importance of Computers (continued)

- **Computer Literacy**

- To be ***computer literate*** means that you can use today's computers efficiently to enhance your life and the lives of those around you.

- Computer literacy also means you understand a wide range of information about current technology and how it is used to solve problems.

- A ***digital divide*** is an economic gap between those who are computer literate and have access to computer technology, and those who do not.

Lesson 1

Types of Software

- Software provides the means for you to interact with the computer's hardware.

- A *graphical user interface (GUI)* displays pictures called *icons* that allow you to interact with data and execute commands.
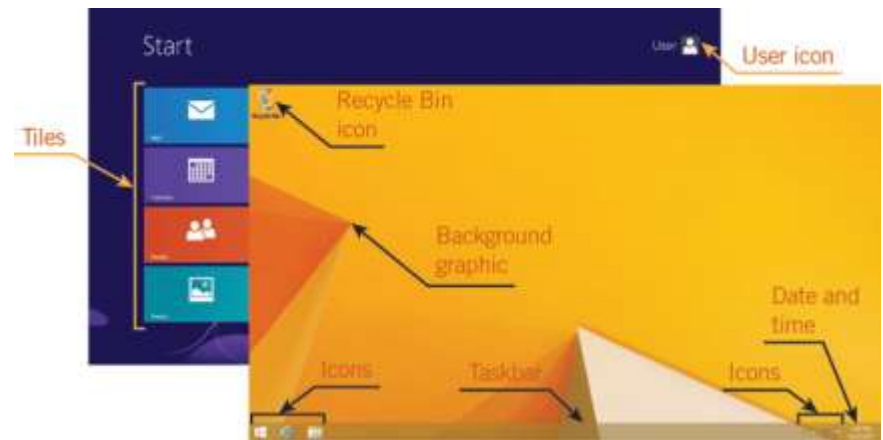

FIGURE 1–5

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Types of Software (continued)

- Some software uses a ***command-line interface***, which requires you to type text commands to interact with the computer.

FIGURE 1–6

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Types of Software (continued)

- **System Software and Application Software**
- A computer relies on two types of software: system software and application software.
- *System software* runs a computer and includes the operating system and utility programs.
  - An **operating system** is software that coordinates the resources and activities on a computer.
  - A **utility program** helps the operating system set up, maintain, and protect a computer.

Lesson 1

Types of Software (continued)

- **System Software and Application Software (continued)**

- *Application software* is the software used to directly complete a specific task or to create something electronically.

- Application software helps you perform tasks such as writing a report, creating a video, viewing a Web page, or sending photos to a friend.

Lesson 1

Types of Software (continued)

- **System Software and Application Software (continued)**

TABLE 1–1

	OPERATING SYSTEM	APPLICATIONSOFTWARE
Purpose	Operates and controls computer hardware and runs application software	Provides services and information directly to users
Role in a computer system	Coordinates the activities of users, application software, and hardware	Performs tasks based upon user input
Typical tasks	Monitors hardware Manages resources Controls input and output Processes data	Creates documents such as reports and charts Provides entertainment Displays photos
Examples	Windows 8 Mac OS X Android	Microsoft Word (word-processing) Adobe Photoshop (graphics editing) Mozilla Firefox (Web browser)

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Types of Operating Systems

- Operating systems fall into four major categories depending on the type of device for which they are designed:
  - Personal computers
  - Mobile computing devices
  - Servers
  - Devices other than computers

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