

# *Introduction to Computers and How to Purchase Computers and Mobile Devices*

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## **Overview**

This introduction presents basic concepts associated with computers and their use: what a computer is, what a computer does, and how a computer knows what to do. It describes the principal components of a computer, including input devices, the processor, memory, output devices, and storage devices. You discover how system software is different from application software and become acquainted with the purpose of some personal computer application software packages. Computer communications channels, the Internet, the World Wide Web, and computer viruses and other malware are introduced. Finally, you find out how to purchase computers and mobile devices.

### Chapter Outline

#### I. What is a computer? [COM 2]

A computer is \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

All computers perform the four basic operations of the information processing cycle:

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

These operations describe the procedures a computer performs to process data into information and store it for future use.

Data is \_\_\_\_\_  
\_\_\_\_\_

Information is \_\_\_\_\_  
\_\_\_\_\_

Computer users (end users or users) are \_\_\_\_\_

Green computing involves \_\_\_\_\_

#### II. How does a computer know what to do? [COM 4]

A computer program (or software) is \_\_\_\_\_  
\_\_\_\_\_

Once the program is stored, the computer executes one instruction after another until the job is complete.

## III. The components of a computer [COM 3]

The six primary components of a computer are \_\_\_\_\_

A peripheral is \_\_\_\_\_

## IV. Personal computers and mobile devices [COM 4]

A personal computer is \_\_\_\_\_

A mobile computer is \_\_\_\_\_

A mobile device is \_\_\_\_\_

## A. Desktop computers [COM 4]

A desktop computer is \_\_\_\_\_

## B. Notebook computers [COM 4]

A notebook (laptop) computer is \_\_\_\_\_

A netbook is \_\_\_\_\_

The Tablet PC is \_\_\_\_\_

## C. Mobile devices [COM 4]

Mobile devices usually store \_\_\_\_\_

A smart phone is \_\_\_\_\_

A portable media player is \_\_\_\_\_

A digital camera is \_\_\_\_\_

## V. Input devices [COM 5]

An input device is \_\_\_\_\_

The two primary input devices are the keyboard and the mouse.

## A. Keyboard [COM 5]

A keyboard is \_\_\_\_\_

A stylus is \_\_\_\_\_

## B. Mouse and other pointing devices [COM 6]

A mouse is \_\_\_\_\_

A mouse is used to control the \_\_\_\_\_

A touchpad is \_\_\_\_\_

## 1. Other input for mobile devices [COM 7]

Most mobile devices use a variety of alternatives for entering data and instructions.

## VI. System unit [COM 8]

The system unit is \_\_\_\_\_

The motherboard (system board) is \_\_\_\_\_

## A. Processor [COM 8]

The processor (central processing unit or CPU) interprets and carries out \_\_\_\_\_

\_\_\_\_\_

The processor contains a control unit and an arithmetic/logic unit.

The control unit directs and coordinates \_\_\_\_\_

The arithmetic/logic unit performs \_\_\_\_\_

## B. Memory [COM 8]

Memory (random access memory or RAM) consists of \_\_\_\_\_

\_\_\_\_\_

The amount of memory typically is measured in kilobytes, megabytes, gigabytes, or terabytes.

One kilobyte (K or KB) equals \_\_\_\_\_

One megabyte (MB) equals \_\_\_\_\_

One gigabyte (GB) equals \_\_\_\_\_

One terabyte (TB) equals \_\_\_\_\_

## VII. Output devices [COM 9]

Output devices make \_\_\_\_\_

\_\_\_\_\_

Two commonly used output devices are printers and display devices.

## A. Printers [COM 9]

A photo printer produces \_\_\_\_\_

\_\_\_\_\_

A multifunctional peripheral (or all-in-one device) is \_\_\_\_\_

## B. Display devices [COM 10]

A display device is \_\_\_\_\_

\_\_\_\_\_

A monitor is \_\_\_\_\_

\_\_\_\_\_

An LCD monitor uses \_\_\_\_\_

Pixels are \_\_\_\_\_

Resolution is \_\_\_\_\_

## VIII. Storage devices [COM 10]

A storage device is \_\_\_\_\_  
\_\_\_\_\_

A storage medium is \_\_\_\_\_

## A. Hard disks [COM 11]

A hard disk is \_\_\_\_\_  
\_\_\_\_\_

A track is \_\_\_\_\_

Sectors are \_\_\_\_\_

A head crash occurs \_\_\_\_\_

A backup is \_\_\_\_\_

## 1. Portable hard disks [COM 12]

An external hard disk is \_\_\_\_\_  
\_\_\_\_\_

A removable hard disk is \_\_\_\_\_  
\_\_\_\_\_

## 2. Flash memory storage [COM 12]

Solid state media consist entirely of \_\_\_\_\_  
\_\_\_\_\_

A solid state drive (SSD) is \_\_\_\_\_  
\_\_\_\_\_

A memory card is \_\_\_\_\_  
\_\_\_\_\_

A USB flash (thumb) drive is \_\_\_\_\_  
\_\_\_\_\_

An ExpressCard module is \_\_\_\_\_  
\_\_\_\_\_

## B. Optical discs [COM 15]

An optical disc is \_\_\_\_\_  
\_\_\_\_\_

A CD-ROM (compact disc – read-only memory) is \_\_\_\_\_  
\_\_\_\_\_

To read a CD-ROM, insert the disc in a CD-ROM drive or a CD-ROM player.

A CD-R (compact disc – recordable) is \_\_\_\_\_  
\_\_\_\_\_

A CD-RW (compact disc – rewriteable) is \_\_\_\_\_

A DVD-ROM (digital video disc – ROM) is \_\_\_\_\_

To read a DVD-ROM, you need a DVD-ROM drive or DVD player.

Blu-ray (BD) has \_\_\_\_\_

DVD-RW, DVD+RW, and DVD+RAM are \_\_\_\_\_

BD-RE is \_\_\_\_\_

C. Cloud storage [COM 17]

Cloud storage is \_\_\_\_\_

IX. Communications devices [COM 17]

A communications device is \_\_\_\_\_

Communications occur over \_\_\_\_\_

X. Computer software [COM 18]

Software (or programs) consists of \_\_\_\_\_

A graphical user interface (GUI) allows you to \_\_\_\_\_

Installing is \_\_\_\_\_

Uninstalling is \_\_\_\_\_

A Web application is \_\_\_\_\_

Two types of software are system software and application software.

A. System software [COM 18]

System software consists of \_\_\_\_\_

The operating system coordinates \_\_\_\_\_

A utility program allows \_\_\_\_\_

B. Application software [COM 18]

Application software consists of \_\_\_\_\_

Commonly used applications include word processing, presentation, spreadsheet, database, and e-mail.

1. Word processing [COM 19]

Word processing software is \_\_\_\_\_

2. Presentation [COM 19]

Presentation software allows \_\_\_\_\_

3. Spreadsheet [COM 20]

Spreadsheet software allows \_\_\_\_\_

A worksheet is \_\_\_\_\_

4. Database [COM 20]

A database is \_\_\_\_\_

Database software allows \_\_\_\_\_

5. E-mail [COM 21]

An e-mail program is used to \_\_\_\_\_

XI. Networks and the Internet [COM 21]

A network is \_\_\_\_\_

When a computer is online, it is \_\_\_\_\_

A local area network (LAN) is \_\_\_\_\_

A wireless LAN (WLAN) is \_\_\_\_\_

A wide area network (WAN) is \_\_\_\_\_

A. The Internet [COM 22]

The Internet is \_\_\_\_\_

More than one billion people around the world use the Internet to:

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

An access provider is \_\_\_\_\_

An Internet service provider (ISP) is \_\_\_\_\_

An online service provider (OSP) provides \_\_\_\_\_

A wireless Internet service provider (wireless data provider) is \_\_\_\_\_

**B. The World Wide Web [COM 24]**

The World Wide Web (or the Web) is \_\_\_\_\_

A Web page is \_\_\_\_\_

A Web site is \_\_\_\_\_

A Web browser is \_\_\_\_\_

A Web page has a unique address, called a(n) \_\_\_\_\_

http:// stands for \_\_\_\_\_

A Web server is \_\_\_\_\_

The term Web 2.0 refers to \_\_\_\_\_

A social networking Web site (or online social network) is \_\_\_\_\_

A blog is \_\_\_\_\_

E-commerce (electronic commerce) is \_\_\_\_\_

**C. Searching the Web [COM 25]**

A search engine is \_\_\_\_\_

Search text describes \_\_\_\_\_

A subject directory classifies \_\_\_\_\_

**XII. Computer viruses and other malware [COM 26]**

A virus is \_\_\_\_\_

A worm is \_\_\_\_\_

A Trojan horse is \_\_\_\_\_

A rootkit is \_\_\_\_\_

Malware is \_\_\_\_\_

An antivirus program protects \_\_\_\_\_

XIII. Buyer's Guide: How to purchase computers and mobile devices. [COM 27]

A. How to purchase a desktop computer [COM 28]

Considerations for purchasing a desktop computer:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_
9. \_\_\_\_\_
10. \_\_\_\_\_
11. \_\_\_\_\_
12. \_\_\_\_\_
13. \_\_\_\_\_
14. \_\_\_\_\_
15. \_\_\_\_\_

B. How to purchase a notebook computer [COM 32]

Considerations for purchasing a notebook computer:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_
9. \_\_\_\_\_
10. \_\_\_\_\_
11. \_\_\_\_\_
12. \_\_\_\_\_
13. \_\_\_\_\_



14. \_\_\_\_\_

15. \_\_\_\_\_

16. \_\_\_\_\_

C. How to purchase a smart phone [COM 35]

Considerations for purchasing a smart phone:

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

6. \_\_\_\_\_

7. \_\_\_\_\_

D. How to purchase a portable media player [COM 36]

Considerations for purchasing a portable media player:

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

6. \_\_\_\_\_

7. \_\_\_\_\_

8. \_\_\_\_\_

E. How to purchase a digital camera [COM 37]

Considerations for purchasing a digital camera:

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

6. \_\_\_\_\_

7. \_\_\_\_\_

8. \_\_\_\_\_

9. \_\_\_\_\_

10. \_\_\_\_\_

## Review

### Matching (5)

Match each term on the left with the best description from the right.

- |                       |  |
|-----------------------|--|
| ___ 1. input device   | a. makes the information resulting from processing available for use                               |
| ___ 2. processor      | b. stores instructions and data while they are not being processed                                 |
| ___ 3. memory         | c. converts a computer's digital signals into analog signals that can be sent over telephone lines |
| ___ 4. output device  | d. interprets and carries out the basic instructions that operate a computer                       |
| ___ 5. storage device | e. stores data — including numbers, letters, graphics, and sound — while it is being processed     |
|                       | f. links a limited geographical area, such as a school computer laboratory or group of buildings   |
|                       | g. allows data, programs, commands, and user responses to be entered into a computer               |

### True-False (5)

Circle **T** if the statement is true and **F** if the statement is false.

- T F** 1. All computer processing requires data.
- T F** 2. The control unit performs the logical and arithmetic processes.
- T F** 3. A computer with 512 MB of memory can hold about 512 million characters.
- T F** 4. Generally, the more expensive the laser printer, the more pages it can print per minute.
- T F** 5. Dimensionality is the number of horizontal and vertical pixels in a display device.

### Modified True-False (5)

Circle **T** if the statement is true. If the statement is false, circle **F** and make the statement true by writing the replacement for the underlined word or phrase in the blank.

- T F** 1. A(n) sector is a narrow recording band that forms a full circle on the surface of the disk.  
\_\_\_\_\_
- T F** 2. You can erase the contents of CD-ROMs.  
\_\_\_\_\_
- T F** 3. Some widely used operating system software includes Web page authoring, personal finance, project management, accounting, computer-aided design, and desktop publishing.  
\_\_\_\_\_
- T F** 4. Access providers are categorized as ISPs, online service providers, and wireless Internet service providers.  
\_\_\_\_\_
- T F** 5. When you buy a computer system, use cash to purchase your system.  
\_\_\_\_\_

**Definitions (5)**

*Briefly define each term.*

1. computer user \_\_\_\_\_
2. processor \_\_\_\_\_
3. URL \_\_\_\_\_
4. http:// \_\_\_\_\_
5. e-commerce \_\_\_\_\_

**Personal Computer Devices (10)**

*Identify the devices that constitute the personal computer in Figure COM1, and note the operation(s) in the information processing cycle for which they are used.*

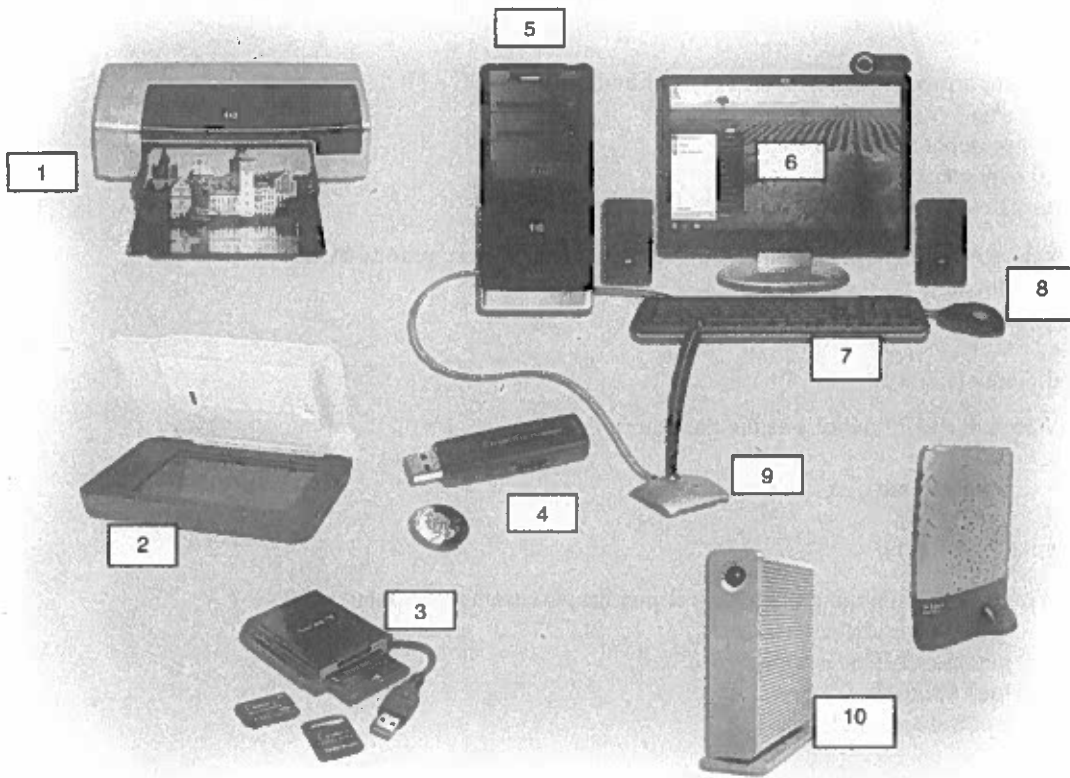


Figure COM1

Device	Information Processing Operation(s)
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____

5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_
9. \_\_\_\_\_
10. \_\_\_\_\_

### Multiple Choice (5)

*Circle the letter of the best answer.*

1. During what operation in the information processing cycle is the information created put into some form, such as a printed report or color graphics?
  - a. input
  - b. process
  - c. output
  - d. storage
2. Which of the following is not a type of mobile device?
  - a. smart phone
  - b. portable media player
  - c. digital camera
  - d. Tablet PC
3. Which of the following looks like a tiny ink pen but uses pressure instead of ink?
  - a. digital pencil
  - b. trackpad
  - c. stylus
  - d. touchpoint
4. Which of the following has the greatest storage capacity?
  - a. SSD
  - b. internal hard disks
  - c. CD-ROMs
  - d. DVD-ROMs
5. Which of the following is not a guideline for purchasing a desktop computer?
  - a. consider more than just price
  - b. buy the smallest computer available
  - c. look for free software
  - d. be aware of hidden costs

## Understanding a URL (4)

Identify the numbered parts of the URL in Figure COM2.

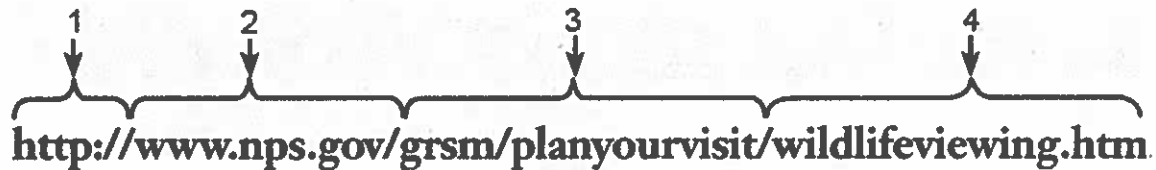


Figure COM2

- |          |          |
|----------|----------|
| 1. _____ | 3. _____ |
| 2. _____ | 4. _____ |

## Fill in the Blanks (5)

Write a word (or words) in the blank to complete each sentence correctly.

- The surface of the screen of an LCD monitor is composed of individual picture elements called \_\_\_\_\_.
- A(n) \_\_\_\_\_ is a duplicate of a file, program, or disk placed on a separate storage medium that you can use in case the original is lost, damaged, or destroyed.
- A Web \_\_\_\_\_ is a computer that delivers requested Web pages.
- A(n) \_\_\_\_\_ is a program that finds Web sites, Web pages, images, videos, news, maps, and other information related to a specific topic.
- A(n) \_\_\_\_\_ is a collection of data organized in a manner that allows access, retrieval, and use of that data.

## Sequence (4)

Use the numbers 1 – 4 to place these items in order.

- \_\_\_ When software requests a disk access, the read/write heads determine the current or new location of the data.
- \_\_\_ The head actuator positions the read/write head arms over the correct location on the platters to read or write data.
- \_\_\_ The circuit board controls the movement of the head actuator and a small motor.
- \_\_\_ A small motor spins the platters while the computer is running.

## Complete the Table

### VARIOUS MEMORY CARDS

Media Type	Storage Capacity	Use
CompactFlash	_____	Digital cameras, smart phones, PDAs, photo printers, portable media players, notebook computers, desktop computers
Secure Digital	512.MB to 8.GB	_____
_____	4 to 32 GB	Digital cameras
MicroSD	1 to 2 GB	_____
_____	_____	_____
Memory Stick PRO Duo	1 to 16 GB	_____
_____	_____	_____

## Short Answer (5)

Write a brief answer to each question.

1. What are four steps for preventing viruses and other malware?
2. How does an LCD monitor work?
3. How is system software different from application software? Why is a graphical user interface (GUI) important?
4. Why do people use the Internet? What are the three ways in which users connect to the Internet?
5. What is cloud storage? What are three different types of cloud storage?

## Activities

### Expanding on the Case

*Perform the following tasks.*

Expand on the report written in Case Study 2 by interviewing the representative of a business (e.g., a travel agency, a small local bookseller) that has been negatively impacted by the Internet.

*or*

Interview a classmate about his or her ideal notebook computer, as discussed in Case Study 3, and write the list of the hardware and software that would be included, the cost of each item, the total cost for the entire system, and his or her main reasons for using this system.

