Journey into the World Of Computers

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Module 1

Module Objectives:

- Explain what a computer is
- List the application of computers
- Information Life Cycle

What is a Computer?

> A computer is a programmable device for processing, storing, and displaying information. [^1]

or

> Computer is an electronic device for storing and analyzing information fed into it, for calculation, or for controlling machinery automatically (Oxford Dictionary)
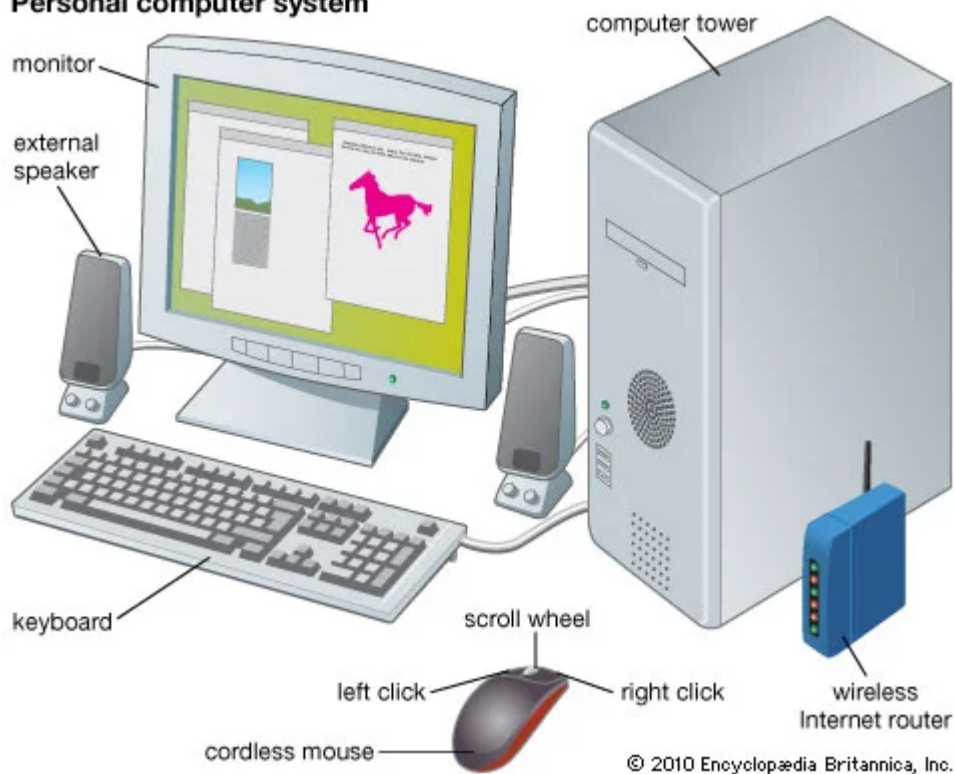

Image soure: www.britannica.com

Areas of Application

Computers are used in almost every field of human activity today. Some of the most common areas of application of computers include:

- **Education:** Computers are used in schools and universities to teach a wide range of subjects, from math and science to computer programming and art. Computers are also used to provide students with access to educational resources from around the world.
- **Business:** Computers are used in businesses of all sizes to manage inventory, track sales, communicate with customers, and process payments. Computers are also used to develop and market new products and services.
- **Government:** Computers are used by government agencies to provide services to citizens, manage public finances, and enforce laws.
- **Healthcare:** Computers are used in hospitals and clinics to diagnose diseases, track patient records, and perform surgery. Computers are also used to develop new drugs and medical treatments.
- **Science and engineering:** Computers are used by scientists and engineers to design experiments, analyze data, and develop new products and technologies.
- **Entertainment:** Computers are used to create and distribute movies, music, video games, and other forms of entertainment.

Data and Information

Computer process data (input)into information (output) and often store the data and resulting information for further use

What is a Data?

- Data is a collection of unprocessed items, which can be include text, numbers, images, audio and video.

Characteristics of Data:

- Data is raw, that is not very meaningful
- Requires processing to be done on them to suit requirements.
- Gets converted into information after processing.

What is a Process?

- the computation done on the data to generate result is called Process. It could be any arithmetic or logical operation done on the data.

Examples:

- addition
- subtraction
- multiplication
- comparisons using operators like <,>,=

What is Information?

- Information is defined as classified or organized data that has some `meaningful` value for the user.
- Information is also the `processed data` used to make decisions and take action. [^3]

How The Computer Process?

- The Computer needs processing instructions to be given to it for performing the computations.

Command: The instruction given is known as a Command.

Program: A set of instructions that tells a computer what to do.

Feature	Command	Program
Definition	A single instruction given to a computer	A set of instructions that tells a computer what to do
Execution	Executed immediately	Can be executed later
Purpose	Performs a specific task	Can perform a variety of tasks

Here are some examples of commands and programs:

Commands:

- ls (list directory contents)
- mkdir (create directory)
- rm (remove file or directory)
- ping (test network connectivity)
- shutdown (shut down computer)

Programs:

- Microsoft Word (word processor)
- Google Chrome (web browser)
- Adobe Photoshop (image editing software)
- VLC Media Player (video player)
- Minecraft (video game)

Multiple Choice (Select the best answer)

What is the primary function of a computer?

1. ☐ To store and process information
2. ☐ To display information
3. ☐ To perform calculations
4. ☑ All of the above

What is the fundamental difference between data and information?

1. ☐ Data is processed, while information is raw.
2. ☑ Data is unorganized facts, while information is organized and processed data.
3. ☐ Data and information are synonymous.
4. ☐ Information is stored on computers, while data is stored on paper.

What are the characteristics of data?

1. ☑ Data is raw, unorganized, and has no inherent meaning.
2. ☐ Data is processed, organized, and has meaning.
3. ☐ Data is stored in a database.
4. ☐ Data is displayed on a computer screen.

What is information?

1. ☐ Information is raw data.
2. ☑ Information is processed data that has been organized and given meaning.
3. ☐ Information is a type of computer program.
4. ☐ Information is a type of hardware.

What is a process?

1. ☐ A set of instructions that tell the computer what to do.
2. ☑ A computation done on data to generate a result.
3. ☐ A way to organize and store data.
4. ☐ A type of hardware device.

What is the definition of a command?

1. ☑ An instruction given to a computer to perform a specific task.
2. ☐ A program that runs on a computer.
3. ☐ A type of hardware component.
4. ☐ A type of software application.

What is the difference between a command and a program?

1. ☐ A command is a single instruction, while a program is a set of instructions.
2. ☐ A command is executed immediately, while a program can be executed later.
3. ☐ A command is used to perform a specific task, while a program can be used to perform a variety of tasks.
4. ☑ All of the above

Review Questions

- What is a computer?

References

[^1] Computer - Encyclopedia Britannica [^2] http://en.wikipedia.org/wiki/Computer [^3] What Is Data: Types of Data, and How to Analyze Data? - Simplilearn