



# COMPUTER

## Lecture 1&2

Second stage

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Assistant Lecture : Saif Salah  
Kareem

# Introduction to Computer

## Computer

A computer is an electronic device, operating under the control of instructions stored in its own memory that can accept data (input), process the data according to specified rules, produce information (output), and store the information for future use

Any digital computer carries out five functions in gross terms:

- 1- Takes data as input.
- 2- Stores the data\ instruction in its memory and use them when required.
- 3- Processes the data and converts it into useful information.
- 4- Generates the output
- 5- Controls all the above four steps.

# Introduction to Computer



**Figure 1: Computer Function**



# Computer Components

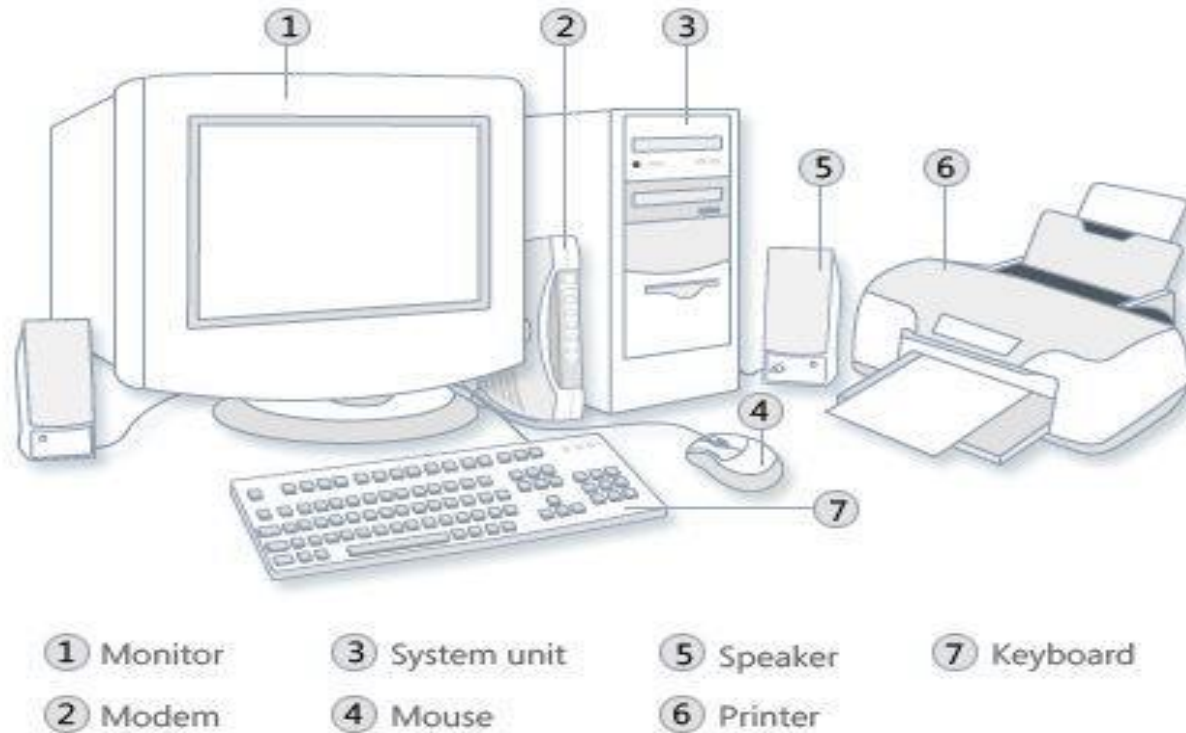
Any kind of Computers consist of:

1. HARDWARE .
2. SOFTWARE .

## HARDWARE:

- Computer hardware is the collection of physical elements that constitutes a computer system. Computer hardware refers to the physical parts or components of a computer such as the monitor, mouse, keyboard, computer data storage, hard drive disk (HDD), system unit (graphic cards, sound cards, memory, motherboard and chips), etc. all of which are physical objects that can be touched.

# Computer Components



**Figure 2: Computer Hardware**

# Computer Components

## HARDWARE:

1. Input Devices
2. Central Processing Unit (CPU)
3. Memory
4. Output devices



# Computer Components

- HARDWARE

1. **Input Devices**

Input device is any peripheral (piece of computer hardware equipment to provide data and control signals to an information processing system such as a computer or other information appliance).



# Computer Components

- **HARDWARE**

## **2. Central Processing Unit (CPU)**

A CPU is brain of a computer. It is responsible for all functions and processes. Regarding computing power, the CPU is the most important element of a computer system.

The CPU is comprised of three main parts:

- a. Arithmetic Logic Unit (ALU)**
- b. Control Unit (CU)**
- c. Registers**





# Computer Components

- **HARDWARE**

- a. **Arithmetic Logic Unit (ALU):** Executes all arithmetic and logical operations. Arithmetic calculations like as addition, subtraction, multiplication and division. Logical operation like compare numbers, letters, or special characters
- b. **Control Unit (CU) :** controls and co-ordinates computer components.
- **Registers :** Stores the data that is to be executed next, "very fast storage area".

# Computer Components

- HARDWARE

- 3. Memory:-

- **ROM:** *(Read Only Memory)*
- **RAM:** *Random Access Memory (RAM)*



# Computer Components

- HARDWARE

## 3. Memory:-

- **ROM: (*Read Only Memory*):**

ROM is a permanent form of storage. ROM stays active regardless of whether power supply to it is turned on or off. ROM devices do not allow data stored on them to be modified.



# Computer Components

## • HARDWARE

### 3.Memory:-

**RAM: *Random Access Memory (RAM)*** is a memory scheme within the computer system responsible for storing data on a temporary basis, so that it can be promptly accessed by the processor as and when needed. It is volatile in nature, which means that data will be erased once supply to the storage device is turned off. RAM stores data randomly and the processor accesses these data randomly from the RAM storage. RAM is considered "random access" because you can access any memory cell directly if you know the row and column that intersect at that cell



# Computer Components

- HARDWARE

## 3.Memory:-

- **Hard drive (HD)**

A hard disk is part of a unit, often called a "disk drive," "hard drive," or "hard disk drive," that store and provides relatively quick access to large amounts of data



# Computer Components

- HARDWARE

## 4. Output devices








An output device is any piece of computer hardware equipment used to communicate the results of data processing carried out by an information processing system (such as a computer) which converts the electronically generated information into human-readable form.



# Computer Components

- HARDWARE

## 4. Output devices

Examples of Output Devices			
<p>CRT Monitor</p> 	<p>TFT Monitor</p> 	<p>Laser Printer</p> 	<p>Inkjet Printer</p> 
<p>Dot Matrix Printer</p> 		<p>Speakers</p> 	
<p>Plotters</p> 		<p>Multimedia Projectors</p> 