<u>Processor and Microcomputer Lab</u>

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Luc 1 : MotherBoard

<u>Motherboard:</u> An electronic board, also called the "Mother Board," which is called by many names, such as the main board, the system board, and the printed wired board.

Where all computer components are connected to it

Its primary role is to connect computer components to each other, whether these components are hardware or software

It also connects all these components to each other, organizes their work, and organizes the transfer of data between them

Benefits and Functions of the MotherBoard

1- It allows the exchange of data between all parts of the computer.

2- It performs basic input and output operations to and from the hard disk or to any device connected to the computer.

3 - It is what determines the extent of the device's ability to be updated in order to increase its speed and capabilities in the future.

4- It determines the type of accessory devices that we can install. We cannot connect devices that do not fit the motherboard. They may work, but not with traditional efficiency.

5- A computer equipped with a good motherboard will perform faster than another computer with a bad motherboard, even if the other components, such as random memory and the processor, are identical.
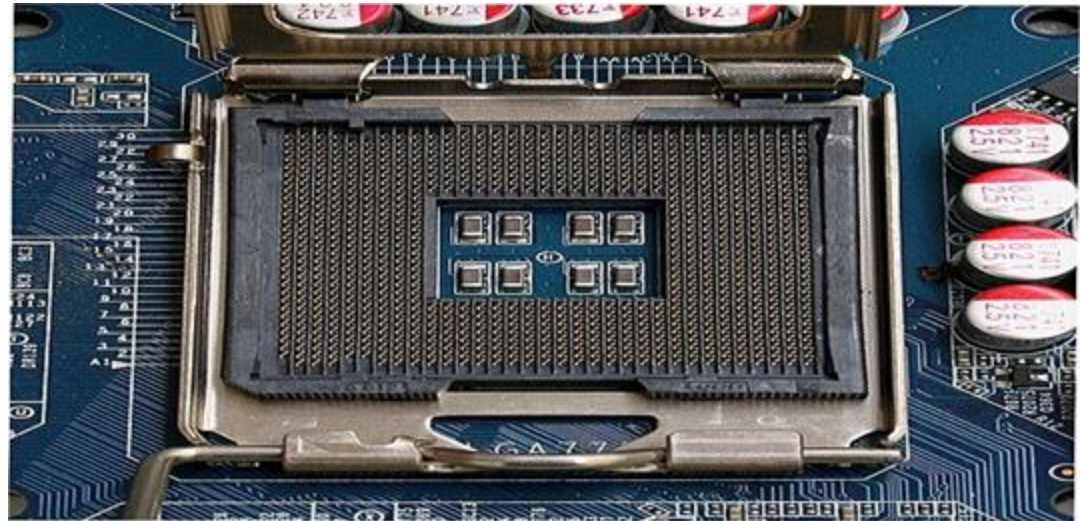
MotherBoard Components

The Power Connector : is a socket or port with holes connected to a cable to connect the electrical current to the motherboard in order for it to start working.
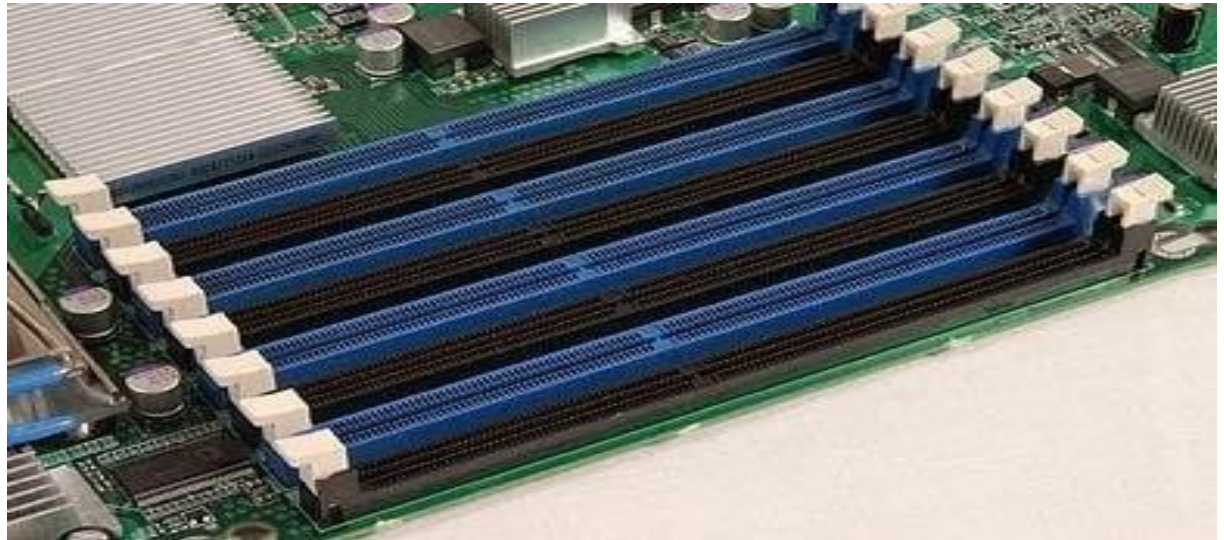
CPU Socket: It is a square made of plastic that has slots or holes proportional to the number of needles in the processor.

Different types of processors can be connected provided that the number of slots and the number of needles in the processor are proportional.

Memory Slots: They are long slots whose function is to connect random access memory (RAM) to the motherboard. Their shape varies depending on the type of memory and are often located to the right of the processor socket on most motherboards.
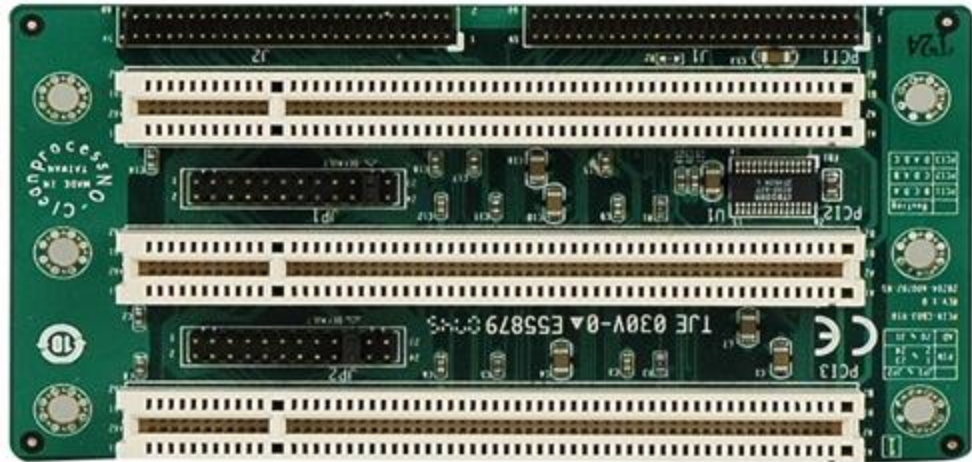
BIOS:It is an abbreviation for (Basic Input Output System), and one of its most important functions is managing and operating the computer's hardware. It loads the operating system and also helps the operating system and its programs operate the computer's components.
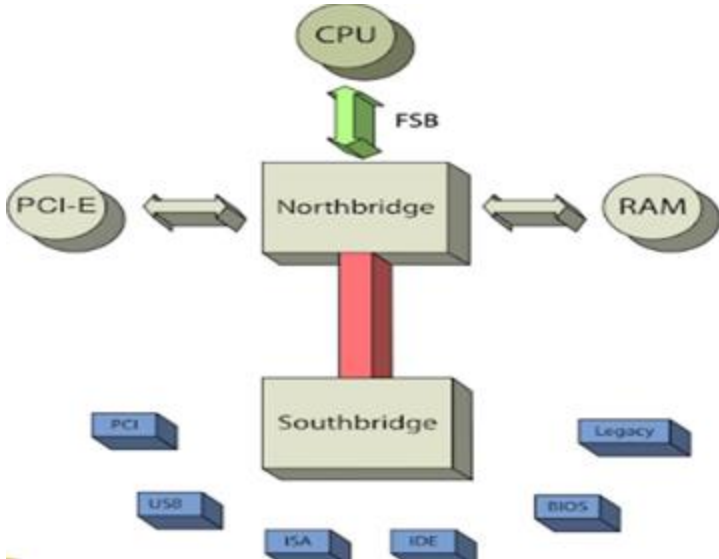

CMOS: which is an abbreviation for the word Complimentary Mealie Semiconductor. It is a chip in which all BIOS information is stored.

Expansion Slots : These are openings or slits located at the bottom of the motherboard, and their primary function is to connect the primary cards and secondary cards to the computer

Chipsets: which consist of two chips, each of which is called the North Bridge chip and the South Bridge chip, and its basic functions are to connect the motherboard pieces to each other, whether internal or external.

Winbond chips : which are two chips produced by two different companies, but they perform the same work. They work as a temperature sensor on the motherboard and processor, and also manage and regulate the efforts and number of turns of the fans connected to the computer
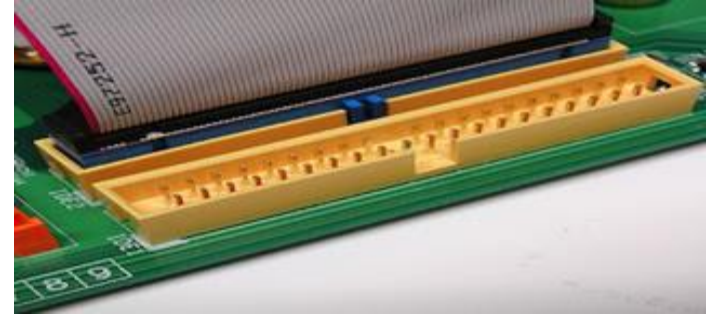
Timing Signal: which is an electrical circuit that generates waves or pulses, which in turn works to create synchronization and compatibility between the motherboard circuits due to the difference in voltage of the existing circuits

Voltage circuits :It is a group of circuits that regulate and distribute voltage to the processor, memory, and integrated circuits on the motherboard. There are three types of COILS, CAPACITORS, and MOSFETs. The first works to prevent excess electrical current, the second is responsible for the quality of the electrical signal that reaches the processor, and the third is responsible for Reduce resistance when charging and discharging electrical current.

IDE Interface : It is used to connect any device that has an IDE interface (usually hard disks and CD-ROMs).
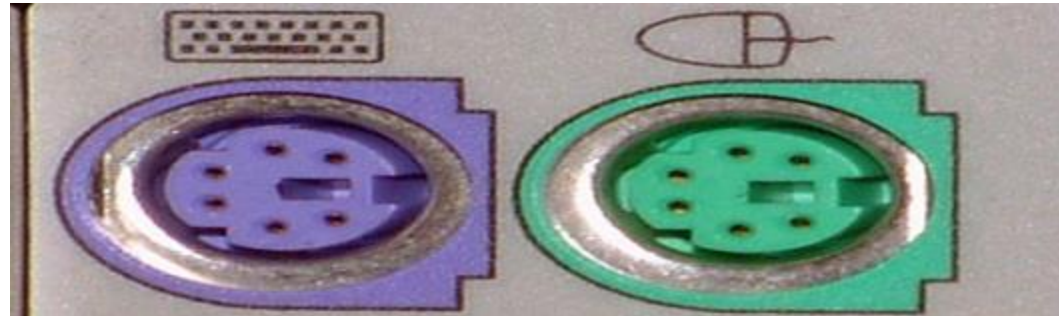

sata ports: are considered an alternative to IDE ports and are used in modern motherboards so that they are smaller, thinner and have the ability to transfer data more quickly.

Serial Ports: Its function is to connect the mouse and some external devices such as an Internet cable.

PS Ports: which are two ports that are similar in shape and different in color, and the keyboard and mouse are connected to them

Parallel Ports:Their normal function is to connect the scanner and printer

USB Ports:It is considered the most widely used port now, whether in the mouse, keyboard, or flash memory