

Dr.Nader 10:30 2022/18/1] AM] الخفاجي,

الحاسوب أو الكمبيوتر هو آلة إلكترونية تستقبل البيانات وتعالجها إلى معلومات ذات قيمة. كما يخزنها في وسائط تخزين مختلفة، وفي الغالب يكون قادراً على تبادل هذه النتائج والمعلومات مع أجهزة أخرى متوافقة. تستطيع أسرع الحواسيب اليوم القيام بمئات مليارات العمليات الحسابية والمنطقية في ثوانٍ قليلة.

Computer

A computer is a digital electronic machine that can be programmed to carry out sequences of arithmetic or logical operations (computation) automatically. Modern computers can perform generic sets of operations known as programs. These programs enable computers to perform a wide range of tasks. A computer system is a "complete" computer that includes the hardware, operating system (main software), and peripheral equipment needed and used for "full" operation.

This term may also refer to a group of computers that are linked and function together....

A general-purpose computer has four main components: the arithmetic logic unit (ALU), the control unit, the memory, and the input and output devices (collectively termed I/O). These parts are interconnected by buses, often made of groups of wires. Inside each of these parts are thousands to trillions of small electrical circuits which can be turned off or on by means of an electronic switch. Each circuit represents a bit (binary digit) of information so that when the circuit is on it represents a "1", and when off it represents a "0" (in positive logic representation). The circuits are arranged in logic gates so that one or more of the circuits may control the state of one or more of the other circuits.

Input Unit

A computer will only respond when a command is given to the device. These commands can be given using the input unit or the input devices.

For example: Using a keyboard we can type things on a Notepad and the computer processes the entered data and then displays the output of the same of the screen.

The data entered can be in the form of numbers, alphabet, images, etc. We enter the information using an input device, the processing units convert it into computer understandable languages and then the final output is received by a human-understandable language.

Output Unit

When we command a computer to perform a task, it reverts for the action performed and gives us a result. This result is called output. There are various output devices connected to the computer. The

most basic of which is a monitor. Whatever we write using a keyboard or click using a mouse, is all displayed on the monitor.

Thus, the output unit gives us the final result once the entire processing is done within the mechanism of a device.

For example: when we visit an ATM, we enter our details like language, pin, amount to be withdrawn, etc. and then the final money which the cash dispenser releases is our outcome. In this case, the cash dispenser acts as an output unit.

Memory Unit....

When we enter the data into the computer using an input device, the entered information immediately gets saved in the memory unit of the Central Processing Unit (CPU). Because of the presence of some existing programming, the Memory Unit transmits the data further to the other parts of the CPU.

Control Unit..

This is the core unit which manages the entire functioning of the computer device. It is one of the most essential components of the computer system.

The Control Unit collects the data entered using the input unit, leads it on for processing and once that is done, receives the output and presents it to the user. It can be said to be the centre of all processing actions taking place inside a computer device.

Arithmetic & Logical Unit..

As the name suggests, all the mathematical calculations or arithmetic operations are performed in the Arithmetic and Logical Unit of the CPU.

It can also perform actions like a comparison of data and decision-making actions. The ALU comprises circuits using which addition, subtraction, multiplication, division and other numerical based calculations can be performed.

Central Processing Unit (CPU)..

The Central Processing Unit is the core of any computer devices. It comprises three major components of the computer which have been discussed above:

Memory Unit..

Control Unit..

Arithmetic and Logical Unit..

All these three units are elements of CPU and together help in the efficient working and processing of data. It is also known as the “Brain of Computer” and no action can be conducted by a device without the execution and permission of the Central Processing Unit.

When we enter the data into the computer using an input device, the entered information immediately gets saved in the memory unit of the Central Processing Unit (CPU). Because of the presence of some existing programming, the Memory Unit transmits the data further to the other parts of the CPU.

Similarly, when the output of our command is processed by the computer, it is saved in the memory unit before giving the output to the user.

What is computer hardware?

Want to know what hardware is in your computer? Become a computer pro with our quick guide to these essential components and their roles.

Quite simply, computer hardware is the physical components that a computer system requires to function. It encompasses everything with a circuit board that operates within a PC or laptop; including the motherboard, graphics card, CPU (Central Processing Unit), ventilation fans, webcam, power supply, and so on.

What is a CPU (Central Processing/Processor Unit)?

The CPU (Central Processing Unit or processor) is responsible for processing all information from programs run by your computer. The 'clock speed', or the speed at which the processor processes information, is measured in gigahertz (GHz). This means that a processor advertising a high

What is a Hard Drive?

The hard drive is a storage device responsible for storing permanent and temporary data. This data comes in many different forms, but is essentially anything saved or installed to a computer: for example, computer programs, family photos, operating system, word-processing documents, and so on.

What is ROM explain?

ROM is an acronym for Read-Only Memory. It refers to computer memory chips containing permanent or semi-permanent data. Unlike RAM, ROM is non-volatile; even after you turn off your computer, the contents of ROM will remain. Almost every computer comes with a small amount of ROM containing the boot firmware.

What is ROM with example?

Why is ROM used?

ROM provides the necessary instructions for communication between various hardware components. As mentioned before, it is essential for the storage and operation of the BIOS, but it can also be used for basic data management, to hold software for basic processes of utilities and to read and write to peripheral devices.

Read-only memory, or ROM, is a type of computer storage containing non-volatile, permanent data that, normally, can only be read, not written to. ROM contains the programming that allows a computer to start up or regenerate each time it is turned on. ROM also performs large input/output (I/O) tasks and protects programs or software instructions. Once data is written on a ROM chip, it cannot be

What are the 3 types of memory in a computer?

There are three main types of memory: working memory, short-term memory, and long-term memory. Working memory and short-term memory allow you to store and use temporary information, while long-term holds your lifelong memories.

What are four 4 types of memory in a computer?

Memory consists of four types of memory chips RAM, ROM, CMOS and flash. RAM stand for random access memory and ROM stand for read only memory. These are also called primary memory of a computer.

What are the 5 types of RAM?

What is difference between RAM and ROM?

RAM is volatile memory that temporarily stores the files you are working on. ROM is non-volatile memory that permanently stores instructions for your computer.

What does the ALU arithmetic logic unit do?

The ALU performs simple addition, subtraction, multiplication, division, and logic operations, such as OR and AND. The memory stores the program's instructions and data.]

What is an arithmetic logic unit explain?

In computing, an arithmetic logic unit (ALU) is a combinational digital circuit that performs arithmetic and bitwise operations on integer binary numbers.

What is ALU control unit?..

An arithmetic logic unit (ALU) is a digital circuit used to perform arithmetic and logic operations. ... The control unit tells the ALU what operation to perform on that data, and the ALU stores the result in an output register. The control unit moves the data between these registers, the ALU, and memory.

What is control unit??..

The control unit (CU) is a component of a computer's central processing unit (CPU) that directs the operation of the processor. ... Most computer resources are managed by the CU. It he

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The Control Unit collects the data entered using the input unit, leads it on for processing and once that is done, receives the output and presents it to the user. It can be said to be the centre of all processing actions taking place inside a computer device.

Basically, the instructions taken, interpretation of entered data, issuing signals to execute the data and then finally retrieving the data is all done in the Control Unit.

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