كليـــــــة
المستقبل الجامعـة
قسم التمريـض

Lec **2 :Computer Basic**

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introduction

Computer: The computer is an automatic device that receives all the information and data sent to it and processes it into valuable information, and stores it in many different media or comes out as information that appears on different output devices that a person can understand, **deal with and benefit from.**

Computer generations

The first generation 1945-1951

- Computers of this generation used vacuum valves in building logic circuits.
- Mercury delay lines were used to construct the memory.
- Computers in this generation were characterized by low speed due to the low speed of the valves.
- The size of the computer was large, in addition to the need to provide the necessary cooling devices due to the high temperature of the valves.
- Among the most important characteristics of this generation is the use of machine language, which in turn has made it difficult to deal with and operate the computer.
- In this generation, perforated paper cards were used to store data.

Computer generations

❑ **The second generation 1952-1960**

➢ The discharge valves were replaced by a transistor, which in turn increased the computer's speed.

➢ Computers of this generation used high-level programming languages, such as (Fortran language).

➢ It has the advantage of speed, low volume and less power consumption.

➢ Hard disks appeared in this generation, as they were used to store data for later reference.

Computer generations

The third generation 1961-1969

➤ Integrated circuits used a small field.

➤ The use of these circuits resulted in a decrease in the size and cost of the computer and an increase in its speed and accuracy

➤ To develop what happened to the operating system and the emergence of what is called multiprogramming and multiprocessors.

➤ New high-end programming languages such as Basic and Pascal have appeared

Computer generations

Fourth generation 1970

➢ Large Scale ICs were used.

➢ The emergence of semiconductors where these technologies were used in the manufacture of computer circuits and memory.

➢ Its speed is greater than that of previous generations.

➢ The emergence of floppy disks and the development of computer software.

Computer generations

Fifth Generation 1985

➢ Very large integrated circuits (VLSI) appeared, which were called microprocessors (micro).

➢ This generation has seen the emergence and use of artificial intelligence.

➢ The emergence of small and portable computers with better specifications in terms of speed, memory capacity and information security.

➢ The emergence of new storage units, such as hard drives and CDs.

➢ The computers of this generation are still under development and improvement, as efforts are currently focused on increasing the intelligence of computers

The advantages of using computers in education

Among the advantages and benefits offered by the computer for the educational process:

o The element of excitement and excitement that gives it to students, as the computer stimulates students to learn without boredom and grumbling, and loves them with educational material.

o It develops students' skills and helps in achieving educational goals.

o It is easy for students to understand and learn, if used in explanation and presentation.

o It increases the speed and efficiency of the educational process.

Basic computer components

The computer consists of two types of components, namely:

1- Physical components

When we mention the term physical parts, it is intended to be all that can be touched from a computer from electronic parts or peripheral devices, and the physical parts are divided into three main sections; they are the output devices, the input devices, and the different processing units.

2- Software

They are the parts that cannot be touched in a computer, and the software parts are the main part that determines the nature of work and use of the computer, and divides the software into operating systems, applications.

Basic computer components

It is divided into three sections:

❖ System Unit, which is made up of: Power supply, motherboard, processor, memory, storage unit, screen card, and sound card.

❖ Input Units, which are made up of: keyboard, mouse, microphone, scanner and camera.

❖ Output Units, which are made up of: screen, speakers, and printer.

Basic computer components

1- System unit components

- **The Power Supply**, which is a box located at the back of the

computer box, is used to supply the device with the energy needed to operate it.

- **Motherboard**, also called because it is the piece that all other computer parts

  are connected to in the computer, and its mission is to allow and coordinate

  between all devices, to cooperate and transfer data,

  and to communicate information to various parts of

  the computer via the local carrier.

Basic computer components

- **Central Processing Unit (CPU),** which is the brain behind the computer, where it receives and processes orders, and gives results in the form of information to take advantage of them, which is a square shape, lightweight, consisting of millions of transistors, which were collected In a small size slide of the silicone, so that this chip is installed by the manufacturer on the cover of the processor, or inside it, until you connect the needles under the processor.

  - **ROM is an abbreviation of Read Only Memory**, which is a basic type of memory. As the name implies, it contains readable components that cannot be written on. It is a ROM, which means that data is kept even when power is turned off.
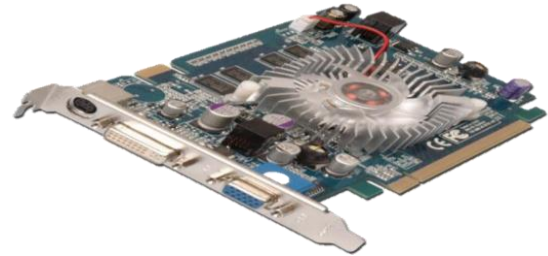
Basic computer components

- **RAM, which is an abbreviation of Random Access Memory**, and depends on the temporary memory, to store data and commands, then process it, and output it for execution, where RAM plays a large role in the speed of the computer, to process information, and the larger the size of the RAM, the more information it processes In a short time, as the RAM does not keep any data inside, so the information is kept on hard disks, to provide storage space.

- **Storage unit Hard Disk**, which is the main volume in the computer, and the hard disk consists of magnetic disks, which circulate in a circular motion, and an electromagnetic picker performs the process of reading and writing to and from magnetic disks, and each hard disk is distinguished from any other disk by its storage capacity, Rotational speed.
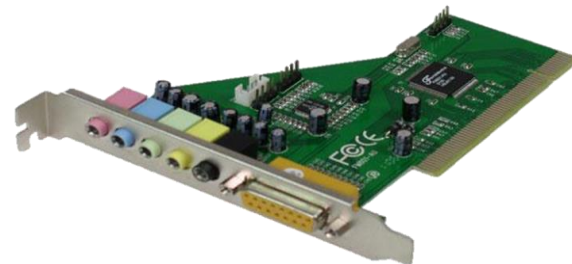
Basic computer components

- **VGA card**, used to display images, where the images are executed in the console, then transferred to the RAM, and then displayed by the graphics card.

- **Sound Card**, which is a card, which facilitates the input and output to and from the device, through the audio signal, and with the presence of computer programs.

2- Input Units

o Keyboard, which is a basic keyboard, consisting of buttons, used to enter data into the computer, and these buttons are written in uppercase and lowercase letters, and in several languages, symbols, and numbers.

o Mouse, used manually to point and click, and is used on an auxiliary surface for the user to control, and the mouse consists of two buttons and a wheel in the middle.

o MIC microphone, the microphone is used to record sounds on a computer, so the user can make voice calls over the Internet.

o Disk Drivers It is the electronic piece responsible for reading and inserting CDs into a computer.

2- Input Units

- **Scanner,** used to enter graphics and images into a computer, as it converts them into digital images, to suit the nature of the device, and to facilitate the process of storing them in files, and calling them when needed.

- **Webcam**, a digital camera, that sends images continuously, or intermittently, to a web provider, and is used to communicate over the Internet, where images are instantly transferred between contacts in chat programs.

3- Output Units

- ✓ Monitor is one of the main components of a computer, and it shows everything the user is doing.

- ✓ Speakers, which is the unit responsible for audio output on a computer.

- ✓ Printer, which is a device used to create paper copies of any document on the computer, and the printer is provided with the document, by connecting it to the computer.

3- Output Units

✓ Plotters, a device similar to the work of a printer, but used to draw and print images and engineering and architectural forms such as house maps, buildings, and others.

✓ Data Show, a device used to magnify what is displayed on the computer screen and display it on a large screen to an audience of viewers in the fields of education, seminars and lectures.

Software

❑ **Operating System:** The operating system is defined as the main program responsible for running all programs and other applications on the computer, in other words, it is the system that contains all the commands that enable the computer to perform various tasks, such as starting up, appearing on the screen, and using the disc Flexible, solid to store information, also runs programs, such as game processing, words, and an Internet browser, where he receives commands from these programs, passes them to the processor, then organizes their display on the screen, takes results from the processor, sends them for storage on the hard disk, or for printing on The printer machine.
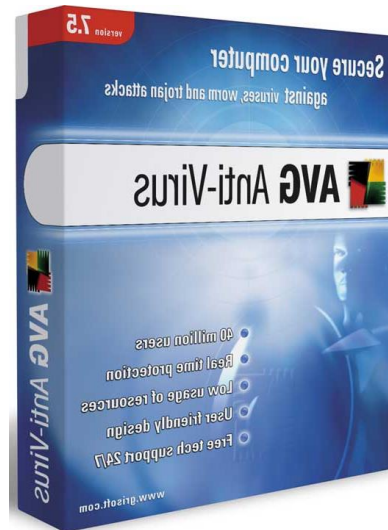
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3- Output Units

❑ Applications: These are the various programs that run on a computer, such as Internet browsers, audio and video players, text editing programs, and other applications and programs used on a computer.

❑ Commercial software

❑ Sharing software

❑ Software free of charge

❑ General software

Q \ What is the difference between RAM and ROM?

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Thank you