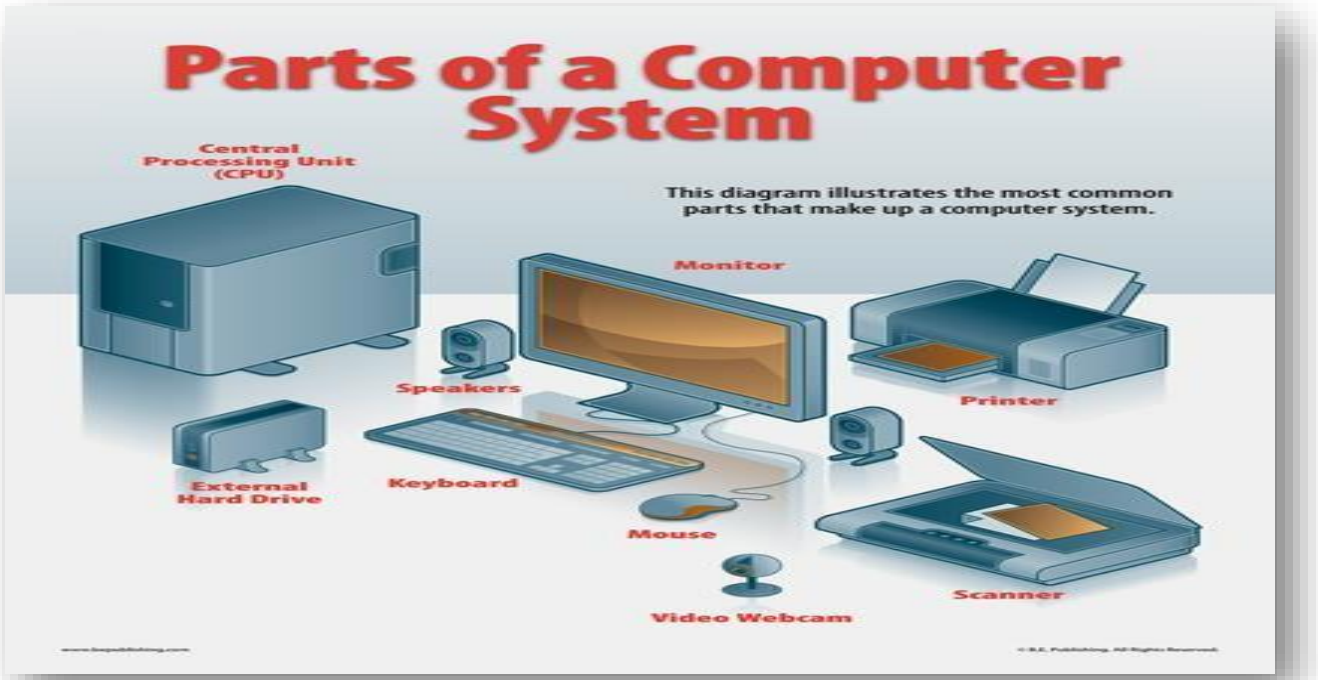
Baghdad University
College of Science for Women
Computer Science Department

Computer Skills



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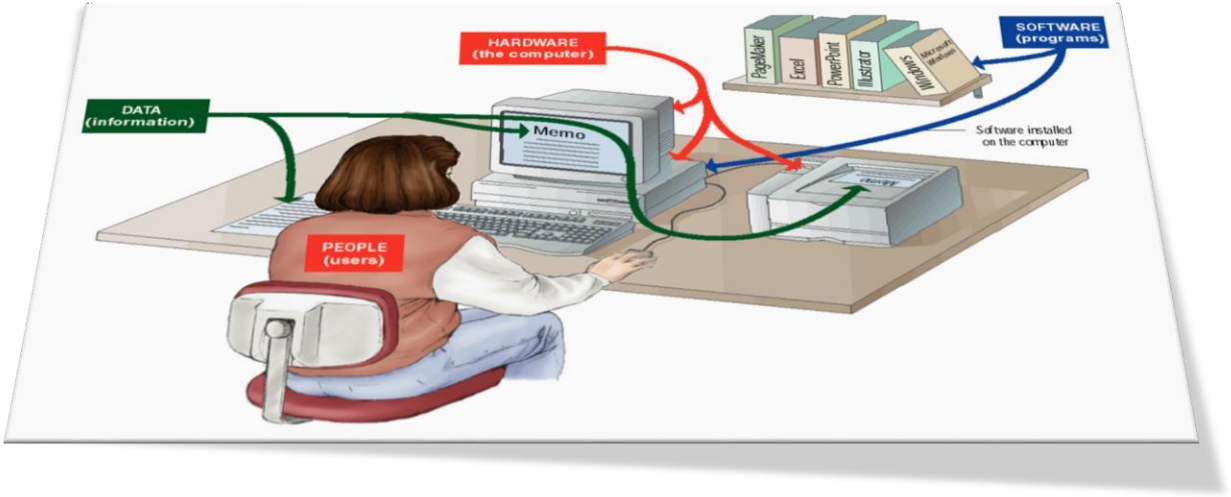
Computer

A computer is an electronic device that processes data, converting it into information that is useful to people.

Any computer regardless of its type is controlled by programmed instructions, which give the machine a purpose and tell it what to do.

A complete computer system consists of four parts:

1. **Hardware**
2. **Software**
3. **Users**
4. **Data**



1- Hardware:

The physical devices that make up the computer are called hardware.

(Hardware is any part of the computer you can touch).

➢ **A computer's hardware consists of interconnected electronic devices that you can use to:**

1. **Control the computer's operation.**
2. **Input.**
3. **Output.**

2- Software:

Software is a set of instructions that makes the computer perform tasks (In other words, software tells the computer what to do).

- **Some programs exist primarily for the computer's use, helping it perform tasks and manage its own resources.**
- **Other types of programs exist for user, enabling him or her to perform tasks such as creating documents.**

3- Users:

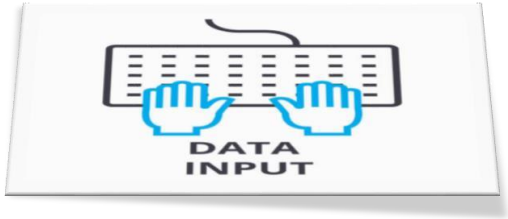
User is any person that desire work to be done by a computer. The user could be a programmer, an OS designer or an end user.

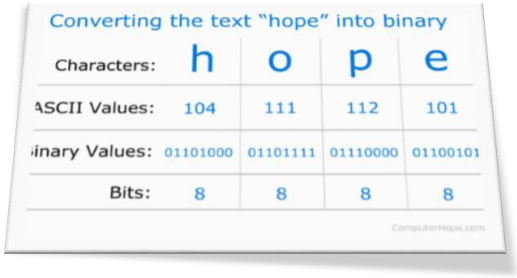
- **It can be argued that some computer systems are complete without a person's involvement; however, no computer is totally autonomous. Even if a computer can do its job without a person sitting in front of it, people still design, build program, and repair computer systems.**

4- Data:

Data is information such as facts, numbers, images or sounds which is used to analyze something or make decision. This data by themselves may not make sense to a person.

- **The computer can read different kinds of data which is stored in a form that can be processed by a computer.**

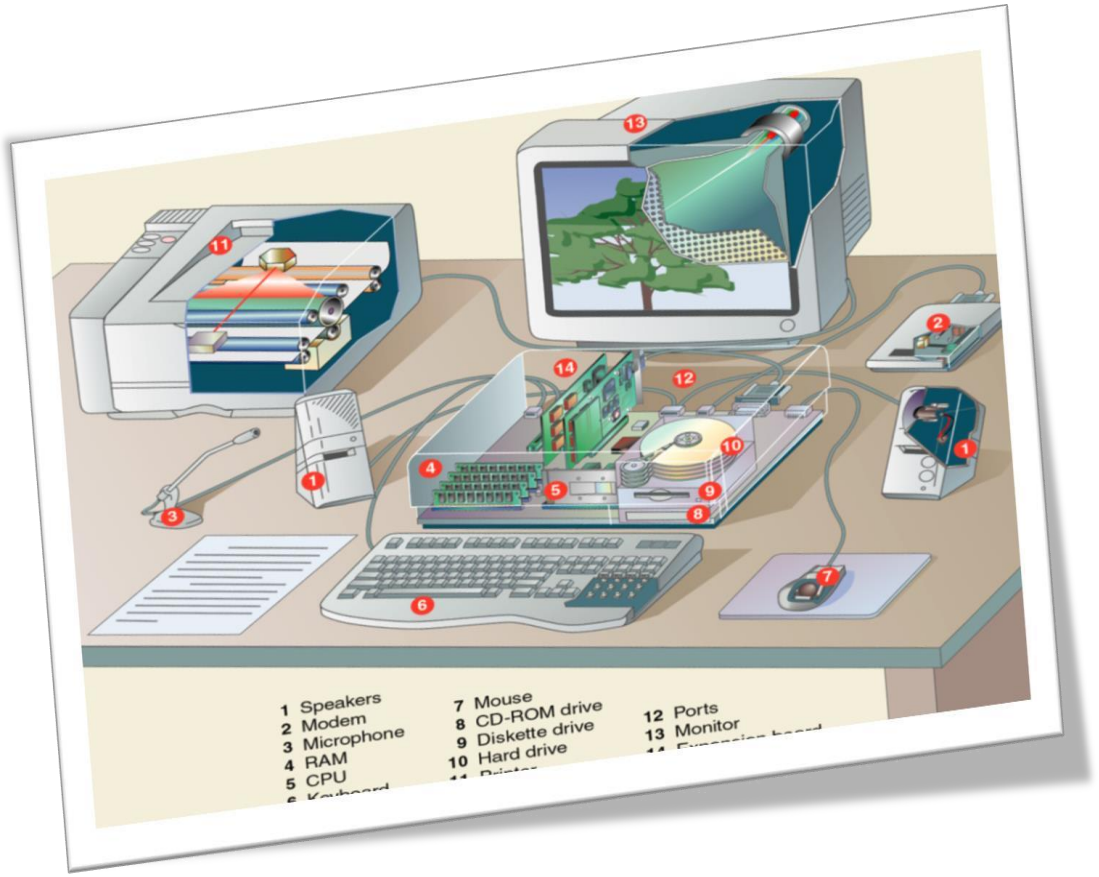




Computer Hardware

The hardware is used to solve the computing problems of the users and divide into:

1. **Input and output devices.**
2. **Memory.**
3. **Processor.**
4. **Storage.**



Input and output devices

1- Input devices:

Accept data and instructions from the user or from another computer system.

- **The most common input device is the keyboard, which accepts letters, numbers, and commands from the user.**

- **Another important type of input device is the mouse, which lets you select options from on-screen menus.**

2- Output devices:

Return processed data to the user or to another computer system.

- **The most common output devices are the monitor and the printer.**

- **The computer sends output to the monitor when the user needs only to see the output.**

- **It sends output to the printer when the user requests a paper copy (also called a hard copy) of a document.**

Types of Computers

1. Personal Computers:

When most people think about computers, they picture a personal computer or PC. This type of computer is called personal because it is designed for only one person to use at a time.

Personal computers fall into several categories that are differentiated from one another by their sizes. The most common sizes are:

1- Desktop PC:

A computer designed to be used at a desk, and seldom moved. This type of computer consists of a large metal box called a system unit that contains most of the essential components, with a separate monitor, keyboard, and mouse that all plug into the system unit.

2- Notebook PC:

A portable computer designed to fold up like a notebook for carrying. The cover opens up to reveal a built-in screen, keyboard, and pointing device, which substitutes for a mouse. This type of computer is also called a laptop.

3- *Tablet PC:*

A portable computer that consists of a touch sensitive display screen mounted on a tablet sized plastic frame with a small computer inside. There is no built-in keyboard or pointing device; a software-based keyboard pops up onscreen when needed, and your finger sliding on the screen serves as a pointing device.

4- *Smartphone:*

A mobile phone that can run computer applications and has internet access capability. Smartphones usually have a touch-sensitive screen, provide voice calls, text messaging, and Internet access.

Many have a variety of location-aware applications, such as a global positioning system (GPS) and mapping program, and a local business guide

2. Multi-User Computers (اطلاع)

Multi-user computers are designed to serve groups of people, from a small office to a huge international enterprise. Here are some common types of multi-user computers:

1- Server:

A computer dedicated to serving and supporting a network, a group of network users, and/or their information needs. Many networks employ servers to provide centrally accessible storage space for data and share common devices like printers and scanners.

2- Mainframe:

Users sit at a terminal connected to mainframe where the terminal consists of a keyboard and a video display. Many users are accessing the same main computer through these terminals. These users share resources and may exchange information. For example, a mainframe might collect all the sales data from hundreds of cash registers in a large department store and make it available to executives.

Supercomputer:

A supercomputer is the largest and most powerful type of computer available, occupying large rooms and even entire floors of a building.

Supercomputers typically are used in high-tech academic, governmental, and scientific research facilities.

Understanding Software Types

The Software can be divided into system software and application software.

The system software: **comprises of operating system and utility system.**

Operating Systems

The operating system can be defined as a program that acts as an interface between the user and the computer hardware and controls the execution of all kinds of programs. The operating system serves several purposes:

- **It provides the user interface that humans use to communicate commands and receive feedback.**
- **It runs applications, and enables humans to interact with them.**
- **It controls and manages the file storage system.**
- **It communicates with the hardware, instructing it to take action to accomplish tasks.**

For example, the OS tells the printer to print a document and tells the monitor what image to display.

Microsoft Windows is the most popular operating system. Other operating systems are:

1. **Mac OS and Linux for desktop and notebook PCs.**
2. **UNIX for mainframes and servers.**
3. **Android and IOS for tablets and smartphones.**

Each operating system has its own unique set of features, benefits, and drawbacks, so must learn as much as you can about the operating systems available and choose a computer that will run the operating system that best fits your needs.

3- *Application Software*

Application software is a type of computer program that performs a specific personal, educational, and business function. The OS keeps the computer running, but the applications give people a reason to use the computer.

- **Most computers come with some application software already installed. You can purchase additional software, and many applications are available for free.**

- **The software may be provided by a CD, DVD disc, or downloaded and installed over from the Internet.**

The best-known example of this software category is the Microsoft Office, a suite of applications which includes a word processor, Excel spreadsheet application, a database application, and more.