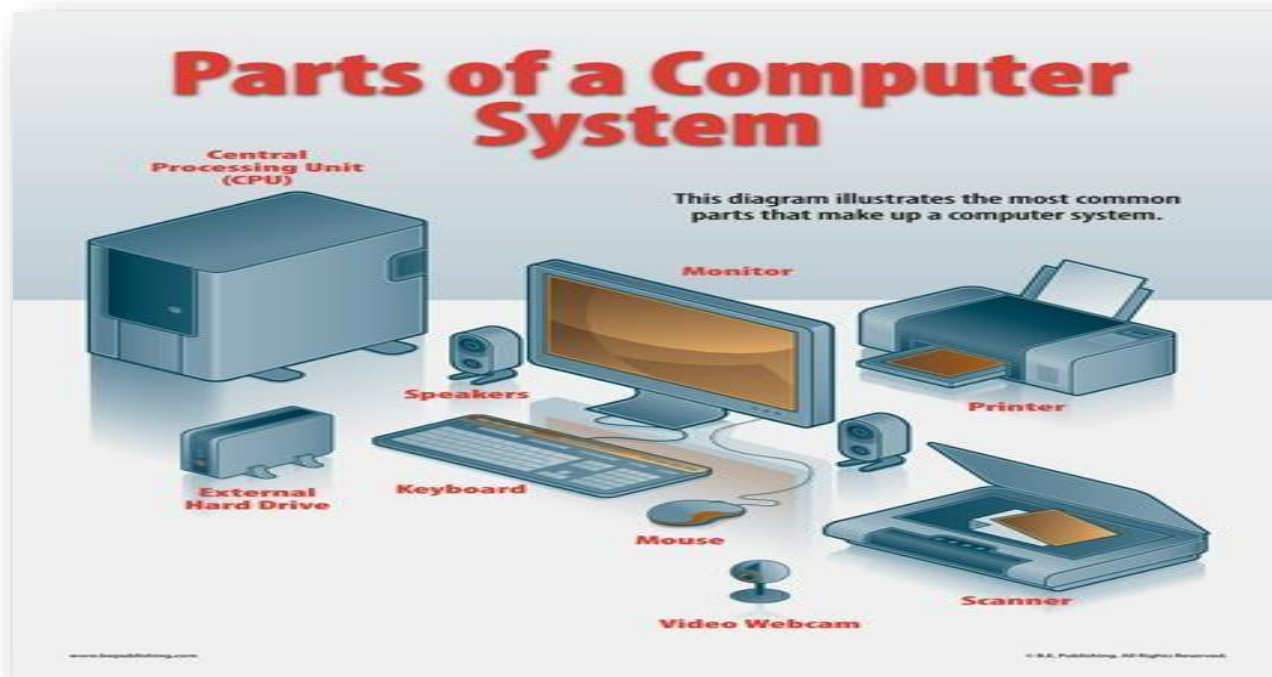


# Computer Skills



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Part 1

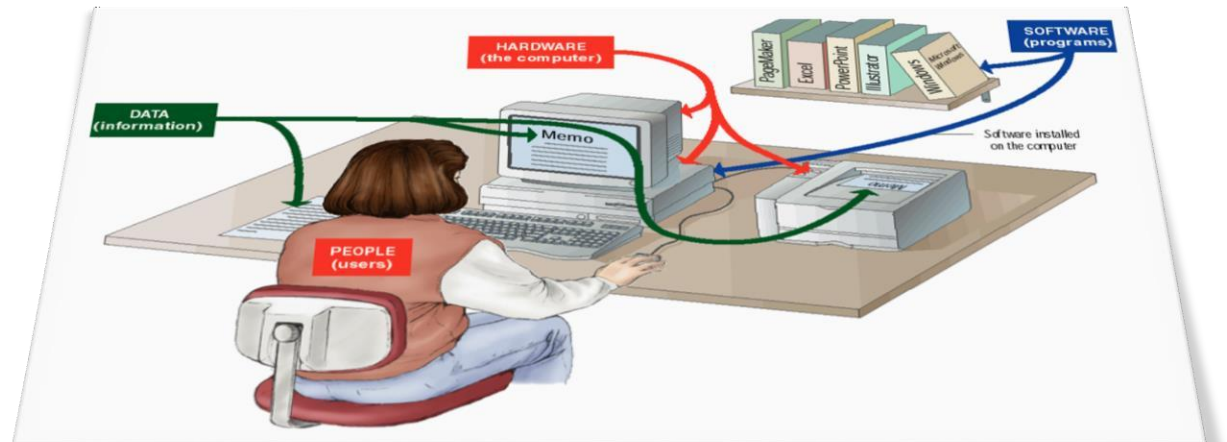
# Computer

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.

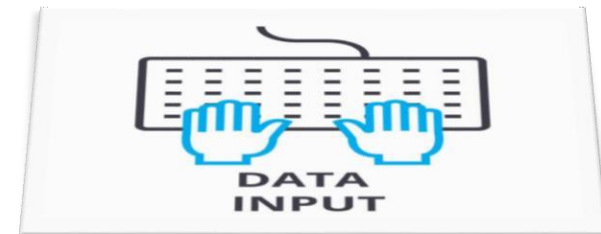
( In other words, software tells the computer what to do).

- 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:

People are the computer operators, (also known as users ).

- 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 consists ( letters, numbers, images, sounds) or anything of information, which by themselves may not make sense to a person.

- The computer reads and stores data of all kinds where words, numbers, images, or sound in the form of numbers.

Converting the text "hope" into binary

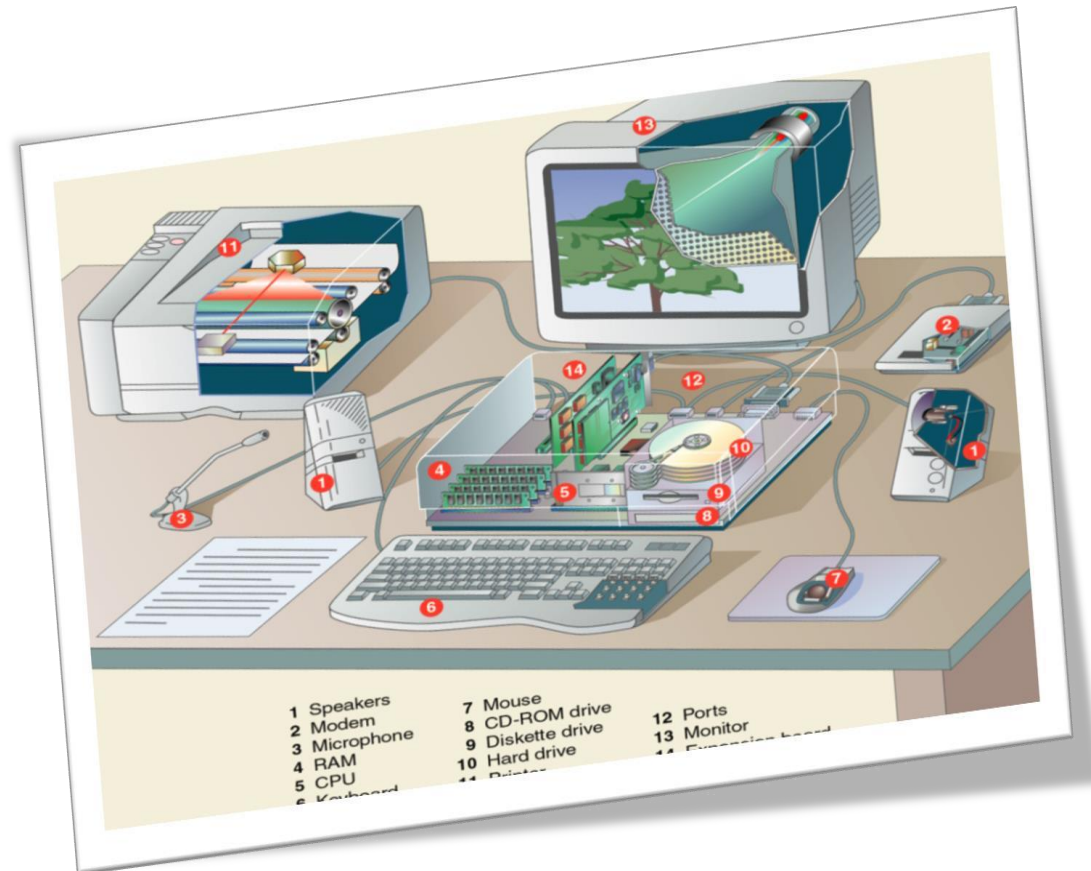
Characters:	h	o	p	e
ASCII Values:	104	111	112	101
Binary Values:	01101000	01101111	01110000	01100101
Bits:	8	8	8	8

ComputerHope.com

# Computer Hardware

The hardware has many parts, but the critical components fall into one of four categories:

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



# Input and output devices

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A computer would be **useless if you could not interact with it** because the machine could not receive instructions or deliver the results of its work.

## 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.

## *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 sometimes **called a laptop.**





**A smaller version of a notebook PC is sometimes referred to as a netbook (which is short for Internet book, implying that this type of computer is primarily for accessing the Internet rather than running applications).**

### **3- Tablet PC:**

**A portable computer that consists of a touchsensitive display screen mounted on a tabletsized 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**

## Multi-User Computers (اطلاع)

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**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.

- **A small network server** may look **similar to a desktop PC** but may have a different operating system, such as **Windows Server** or **Linux**.
- **A large server** that manages a wide-ranging network may look **similar to a mainframe**.
- **A group of servers** located together in a **single room or facility** is called a **server farm, or server cluster**.



## 2- Mainframe:

A large and powerful computer capable of processing and storing large amounts of business data. 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.

- The **modern mainframe unit** itself is a **large cabinet**, or a **series of cabinets**, each about the size of a refrigerator.
- A **mainframe** may be stored in its **own air conditioned room** in a **business** or **school** and may have **multiple employees** monitoring and maintaining it.

## 3- 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.**

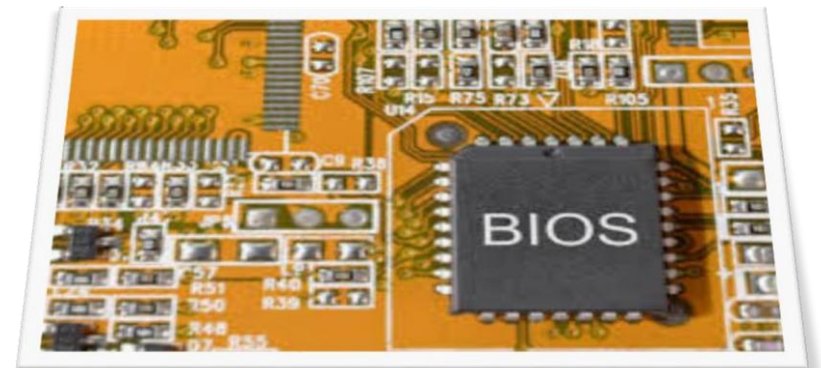
## Understanding Software Types

**Software tells the hardware what to do**, but different kinds of software accomplish that at different levels. The following sections provide an overview of the types of software a computer might include.

### 1- BIOS اطلاع

The most basic software is the **Basic Input Output System (BIOS)**.

This software is stored on a **read only chip** on the motherboard so that it doesn't accidentally get changed or corrupted.



This important software **helps the computer start-up and performs some basic testing** on the hardware.

## **2- Operating Systems**

**The operating system (OS) manages all the computer's activities after startup. 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.
4. **Special versions of Windows** and **Mac OS** also power 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- Utilities (أطلاع)

In addition to the main components of an operating system, **utility software** may also be available, either provided free with the OS or added on. Utility programs **assist with a wide range of system maintenance and security functions**, such as:



- Checking storage disks for errors.
- Blocking security and privacy threats.
- Backing up important files.

utility software that performs some useful service to the operating system, such as **optimizing or correcting the file storage system, backing up files, or ensuring security or privacy.**

## 4- Application Software

Is software that is designed to do something productive or fun, something of interest to a human user.

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 on a CD or DVD disc, or may be downloaded and installed over from the Internet.



Perhaps the best-known example in this software category is **Microsoft Office**, a suite of applications that includes a **word processor**, **Excel spreadsheet application**, a **database application**, and other applications.

**The End**