

# Computer Skill

## *Theory*



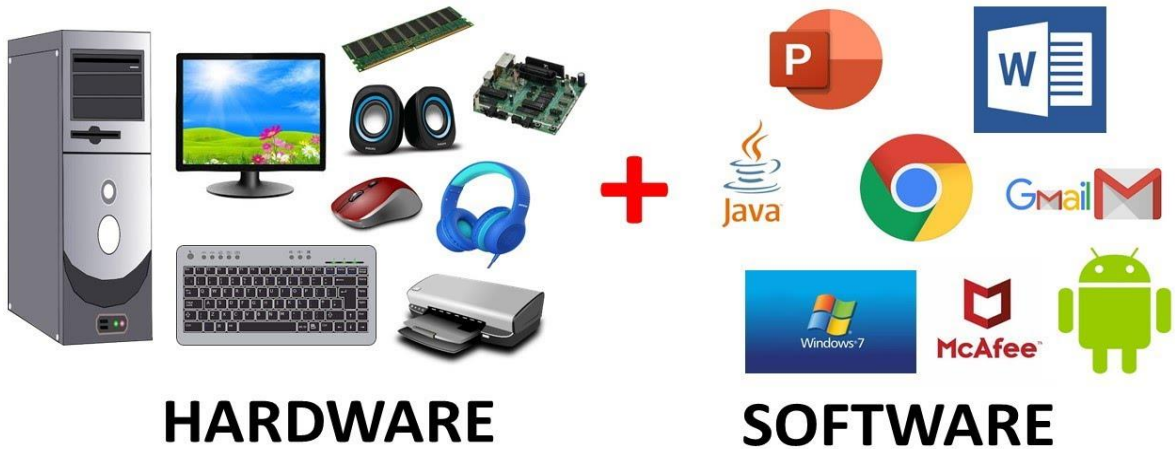
**2021-2022**

**Hardware:** refers to the physical components of a computer system i.e. those components, Which you can actually touch. Hardware includes:

1. system unit
2. keyboard
3. monitor
4. mouse
5. disks
6. Modem
7. printer
8. Scanner
9. speakers
10. web camera
11. cables
12. Microphone

**Software:** programs are a set of instructions, which make the computer to do Something useful.

# HARDWARE AND SOFTWARE

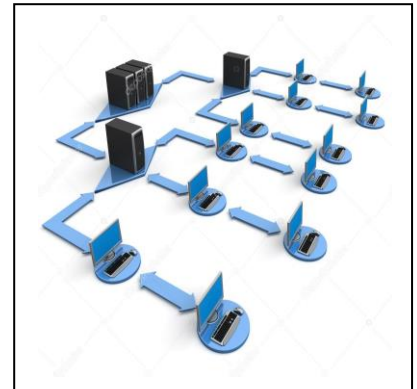


## Types of computer:

**1. Super computer:** Super computers are the biggest and fastest computers. They are designed to process huge amount of data. A super computer can process trillions of instructions in a second.



**2. Mainframe computer:** smaller and slower than the super Computer. It used by national and international companies Such as banks and universities.



**3. personal computer (PC) :** is a small, inexpensive computer designed for home or office user. A PC is used to run application programs such as word-processors, spreadsheets, databases, presentation software etc.



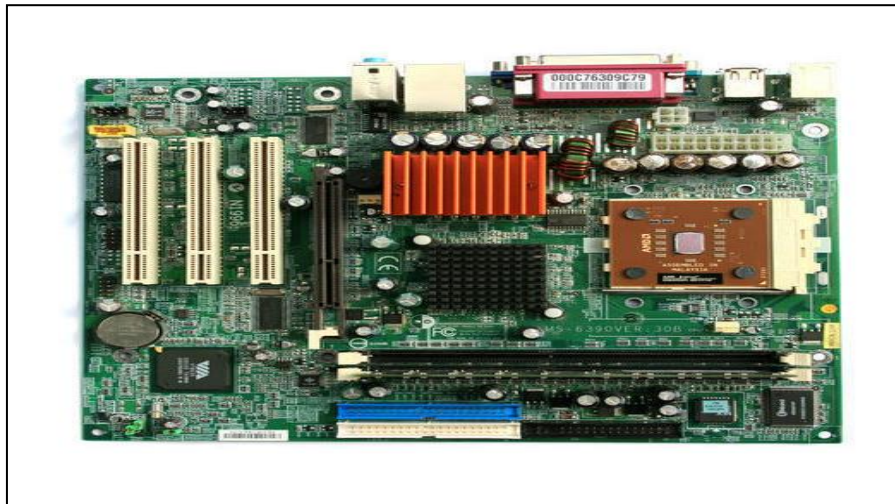
## There are different types of personal computer:

1. **Desktop computers:** are designed for home or office use. These computers are used to run application programs such as word-processors.
2. **Laptop computers:** are light weight portable computers with a built-in (thin screen) monitor, keyboard, hard-disk drive, battery.
3. **Tablet:** are similar with laptops but these have an LCD screen, which the user can write using special pens or stylus.
4. **Personal digital assistants (PDAs) :** are hand held computers, designed to manage the day to day tasks.
5. **Multimedia players:** are electronic devices capable of recording and playing sound.
6. **Mobile Phones and Smart phones.**

## Main parts of computer:

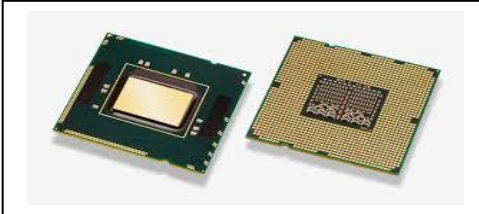
### 1. System unit:

This is the main part of computer which contain most important part inside it. One of the important part is motherboard, it is an electronic board where the central processing unit (CPU), random access memory (RAM) and read only memory (ROM) reside. Also inside the case there are hard disk and CD/DVD drive.



## 2. central processing unit (CPU):

It is the most important piece in computer, also referred to as the central processor or processor, it is the „brain“ of the computer. All processes information and calculation does through (CPU). The speed of the CPU is measured in megahertz (MHz) or gigahertz (GHz). 1MHz is equal to 1 million cycles per second. 1GHz is equal to 1 billion cycles per second.



## 3. Memory:

Refers to a device that is used to store information for immediate use in a computer or related computer hardware device.

**There are two types of memory:**

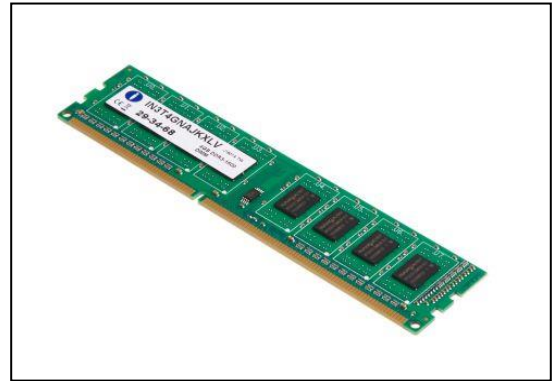
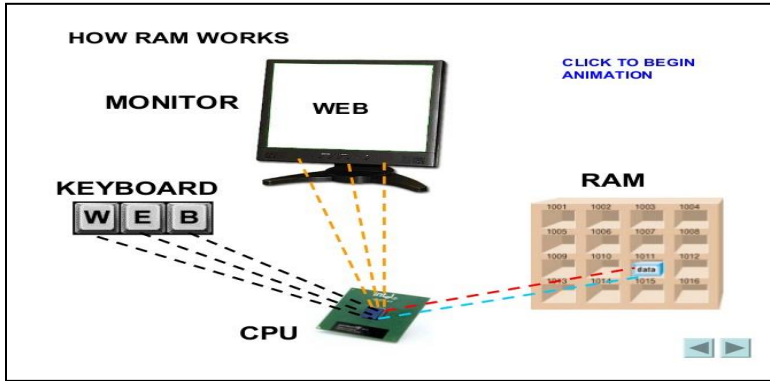
1. Primary memory (main memory or primary storage) .
2. Secondary memory (Secondary storage).

### Primary memory:

1. **Random Access Memory (RAM)**
2. **Read Only Memory (ROM)**

### RAM:

Is volatile storage that holds the program and data that the CPU would be processing. The information you type on the keyboard is stored in the RAM. If the computer's power supply is cut off, the information held in the RAM is lost. For this reason, RAM is also called volatile memory.



## ROM:

The ROM chip retains important instructions permanently. When the power supply is turned off, the instructions stored in ROM are not lost. The capacity of the ROM is typically smaller compared to that of the RAM.

## secondary memory:

### 1. Hard disk:

It is used to store all data, program and operating system . It contain magnetic cylinder that rotate in very high speed , about 4500 to 7200 rotation per minute.



### 2. Floppy disk:



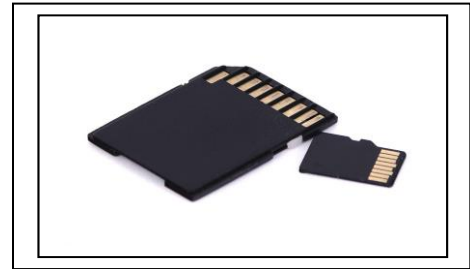
### 3. Optical disk:

- CD (compact disk)
- DVD ( digital video disk)

### 4. USB flash drive :



5. Memory card:



6. Online file storage:



**Typically all computers will have these ports:**

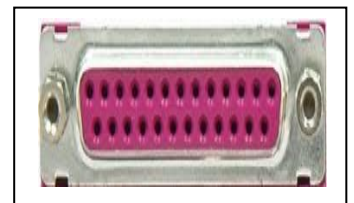
1. **USB port** : is a slot in the computer that supports fast transfer data rates. USB flash disks, digital cameras, mice, keyboards etc can be connected to the computer via the USB port.



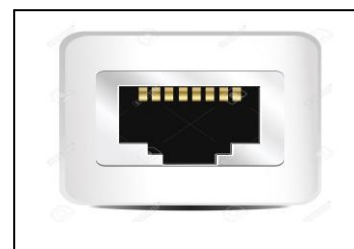
2. **Serial port** : is a general-purpose interface that can be used to connect mice and keyboards to the computer.



3. **Parallel port** : is an interface that connects the printer to the computer.

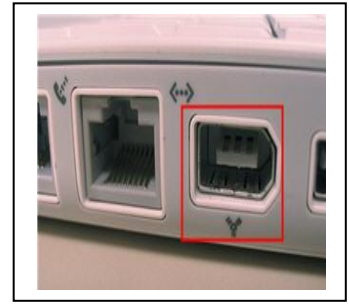


4. **Network port** :  
Is used to connect the computer to a network or a modem.





5. **FireWire port :**  
is a slot that connects digital video cameras to the computer. FireWire supports faster transfer data rates than USB ports.



## Computer Performance

1. CPU speed
2. RAM size
3. Hard disk size
4. Operating system

## Memory Units

1. **Bit:** short for Binary Digit is the smallest unit of information on the computer. A single bit can hold only one of two values: 0 or 1. A group of eight bits (e.g. 10110010) make up one byte.
2. **Byte (B):** is the amount of storage needed to store one character (e.g. a, c,+, =, %, 8). So, for instance, a computer with 32,000 bytes of memory can store up to 32,000 characters in its memory.
3. **Kilobyte (KB):** is equivalent to 1024 bytes.
4. **Megabyte (MB):** is equivalent to 1024 (KB).
5. **Gigabytes (GB):** is equivalent to 1024 (MB).
6. **Terabyte (TB):** equivalent to 1024 (GB).





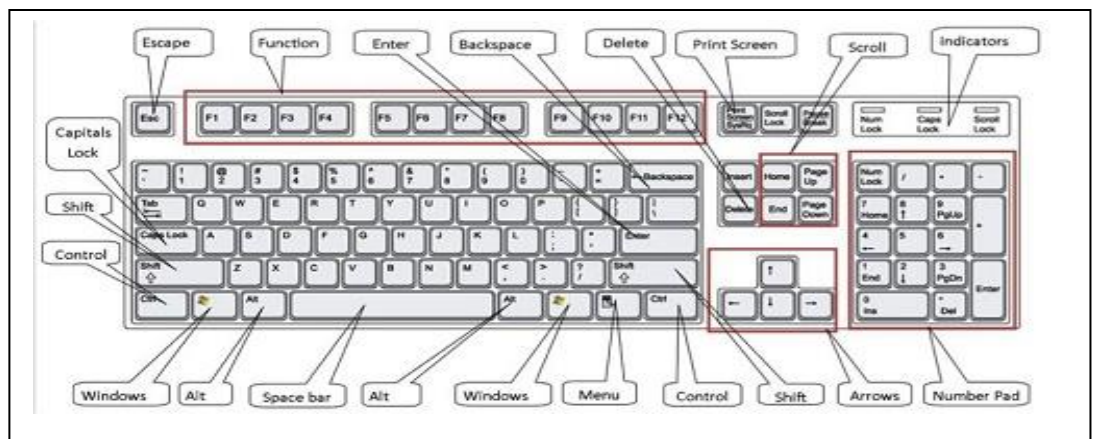
## Input Devices

An input device is any piece of equipment used to enter data to the computer.

**Mouse:** a device that controls the movement of the cursor or pointer on a display screen. The mouse may contain up to three push buttons each of which has a different functions depending on the program being used have.



## **Keyboard:**



**Scanner:** is a device that transfers printed text and images to a computer.

**Touchpad:** is a small, touch-sensitive pad used as a pointing device on most laptop computers. By moving a finger or other object along the pad, you can move the pointer on the display screen.



**Stylus:** is a painting and drawing device shaped like a pen used on digitizing tablets or touch screens on mobile phones.



**Web camera or Webcam:** is a device used to hold video communications over Internet. Typically webcams are used with communication programs such as Skype and MSN Messenger.



**Microphone:** is a device that allows sound signals to be converted into digital files that may be stored on the computer.



## Output Devices

An output device is any piece of equipment that translates information processed by the computer into a form that we can understand e.g. monitor, printers and speakers.

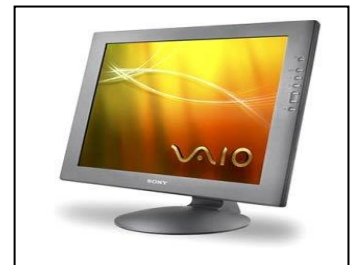
**Monitor:** also known as the display screen, video display is the most common output device. Monitors can have different screen sizes e.g. 14", 15", 17", 19" and 21" inch.

There are two main categories of monitors:

**Cathode-ray tube (CRT) monitors:** have a vacuum tube used as a display screen. This same kind of display technology is used for televisions and flight-information monitors at airports.



**Thin Film Transistor Liquid Crystal Display (TFT-LCD):** monitors – are made up of two plates of glass with a substance in between them.



**Printers:** there are three categories of printers: dot-matrix, inkjet and laser printers.

1. Dot-matrix printer.
2. Inkjet printer.
3. Laser printer.

**Speakers:**



**Headphones:**



### **Input / Output Devices:**

#### **1. Touch screens:**

can also be used as both input and output devices. These screens are covered with a plastic layer, behind which are invisible beams of infrared light. Users can input requests for information by pressing buttons or menus displayed.

#### **2. Modems:**

are used as input devices when these receive information from the Internet (such as email). They are used as output devices when sending information (such as email) to a recipient.

# Software:

Programs are simply a set of instructions, which make the computer do something useful.

All software can be divided into two categories **operating system software** and **application software**.

## **1. operating system software:**

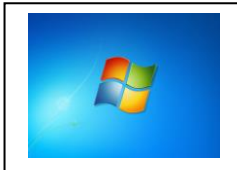
Is a program that controls the computer and enables it to run applications software

.Systems software allows the computer to manage its internal resources.

This software is designed to allow the computer system to manage its own resources (disks, monitor, keyboard, and printer).

**There are several brands of system software:**

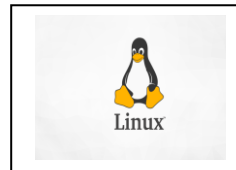
### **1. windows**



### **2. Macintosh**



### **3. Linux**



### **4.unix**



## **2. Applications Software:**

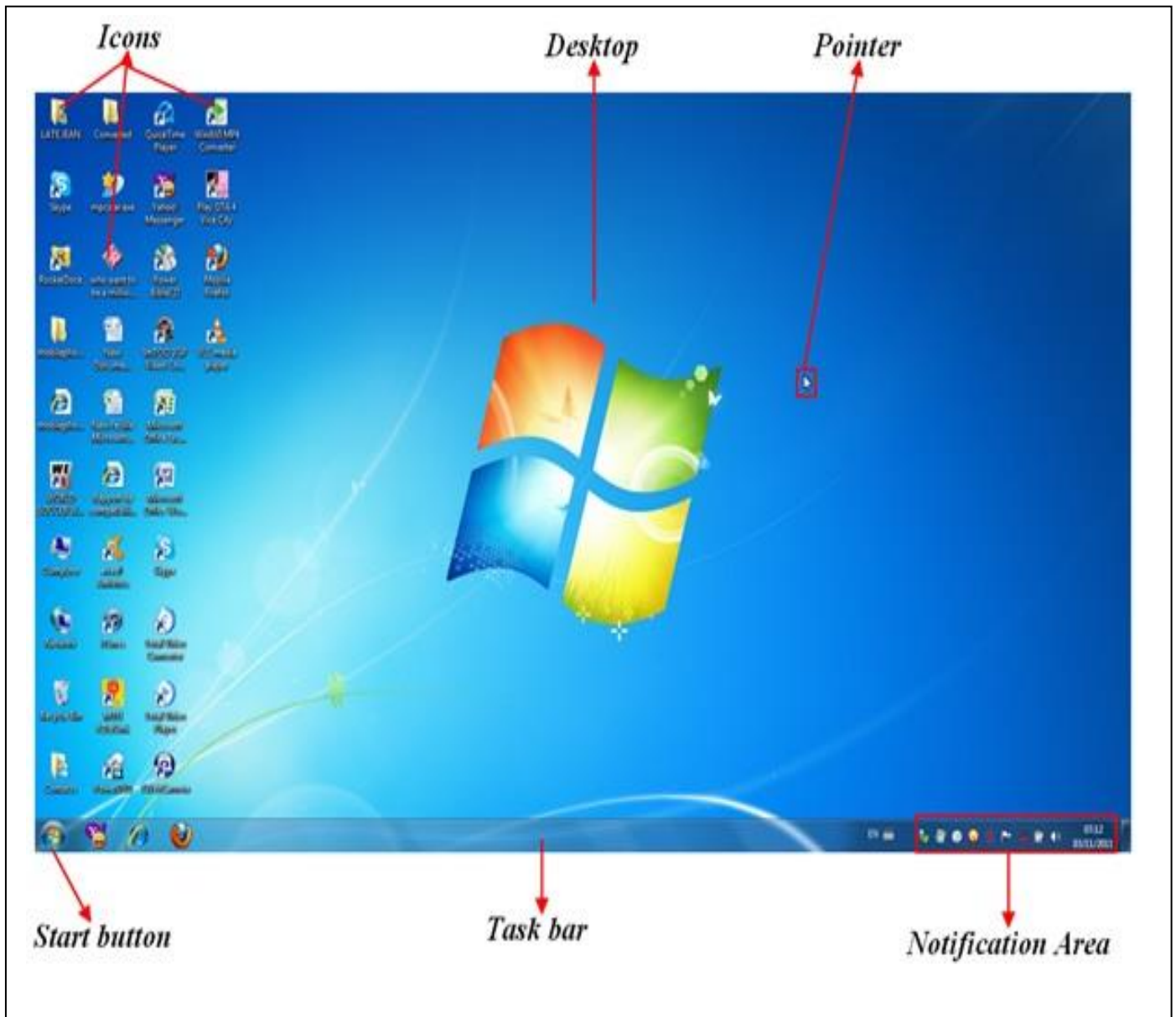
Is programs that help the user carry out specific tasks on the computer.

- 1. Word-processing programs** (e.g. MS Word)—used to prepare text.
- 2. Spreadsheet programs** (e.g. MS Excel)—used to analyses and summaries numerical data.
- 3. Database programs** (e.g. MS Access)—used to organize and manage large quantities of data.
- 4. Presentation graphics programs** (e.g. MS PowerPoint)—used to be displayed data to a group of people.

- 5. **Photo editing programs** (Adobe Photoshop)—used to alter images and graphics.
- 6. **Internet Web Browsers** (e.g. Google ) used to locate and display information at Web sites.

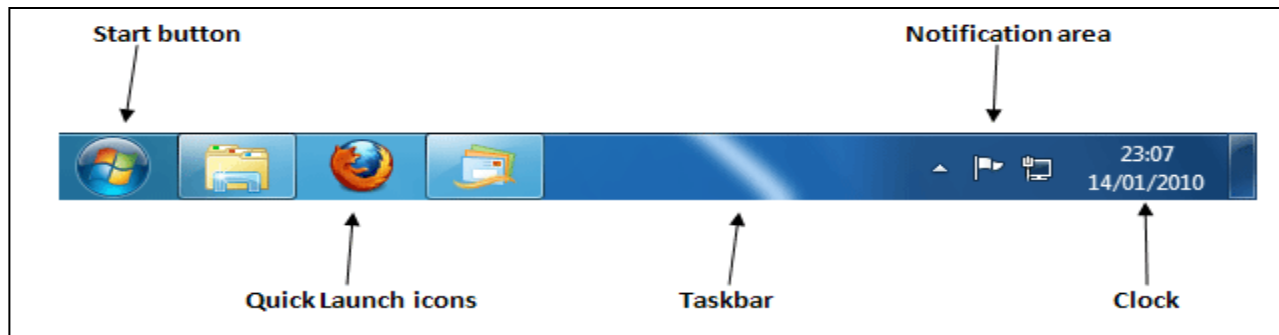
**What is a desktop?**

If you are using Windows 7, after you start your computer the first thing you see is the desktop. The desktop is your work area.



## What is taskbar?

The taskbar is a long bar that by default runs along the bottom of your desktop. The **(Start button, Quick Launch toolbar, the notification area and clock)** are located on the taskbar.



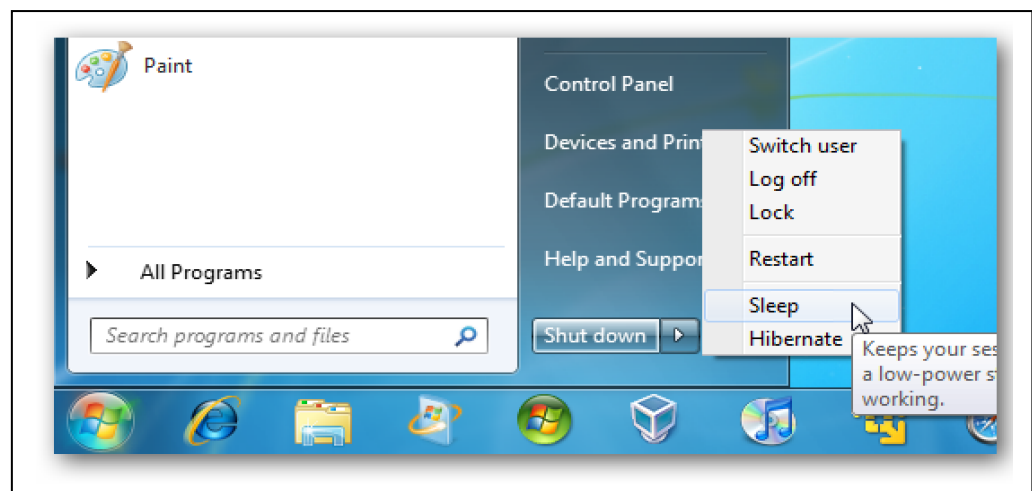
## What is a desktop shortcut?

A desktop shortcut, usually represented by an icon, is a small file that points to a program, folder, document, or Internet location. Clicking on a shortcut icon takes you directly to the object to which the shortcut points. Shortcut icons contain a small arrow in their lower-left corner. Shortcuts are merely pointers; deleting a shortcut does not delete the item to which the shortcut points.

### **How do you create a desktop shortcut?**

**Start button >>> all program >> > select program >>> right click >>> send to >>> create shortcut.**

## Shutdown:





Ctrl + A = select all

Ctrl + B = Bold

Ctrl + C = copy

Ctrl + D = font tab

Ctrl + F = find

Ctrl + G = go to

Ctrl + H = replace

Ctrl + I = italic

Ctrl + K = insert hyperlink

Ctrl + O = open

Ctrl + P = print

Ctrl + R = text to right

Ctrl + S = save

Ctrl + U = underline

Ctrl + V = paste

Ctrl + W = close

Ctrl + X = cut

Ctrl + Y = redo

Ctrl + Z = undo

Alt + Shift = change language

Alt + F4 = shut down

Alt + Ctrl + delete = shut down

◆ Differentiate between RAM and ROM

	<b>RAM</b>		<b>ROM</b>
1	It is volatile or temporary memory.	1	It is non volatile or permanent memory.
2	It is read/write memory.	2	It is read only memory.
3	It is fixed in the memory card slot on the motherboard.	3	It is attached with the motherboard.
4	It is working area of computer.	4	It is start up memory of the computer which stores the startup information.