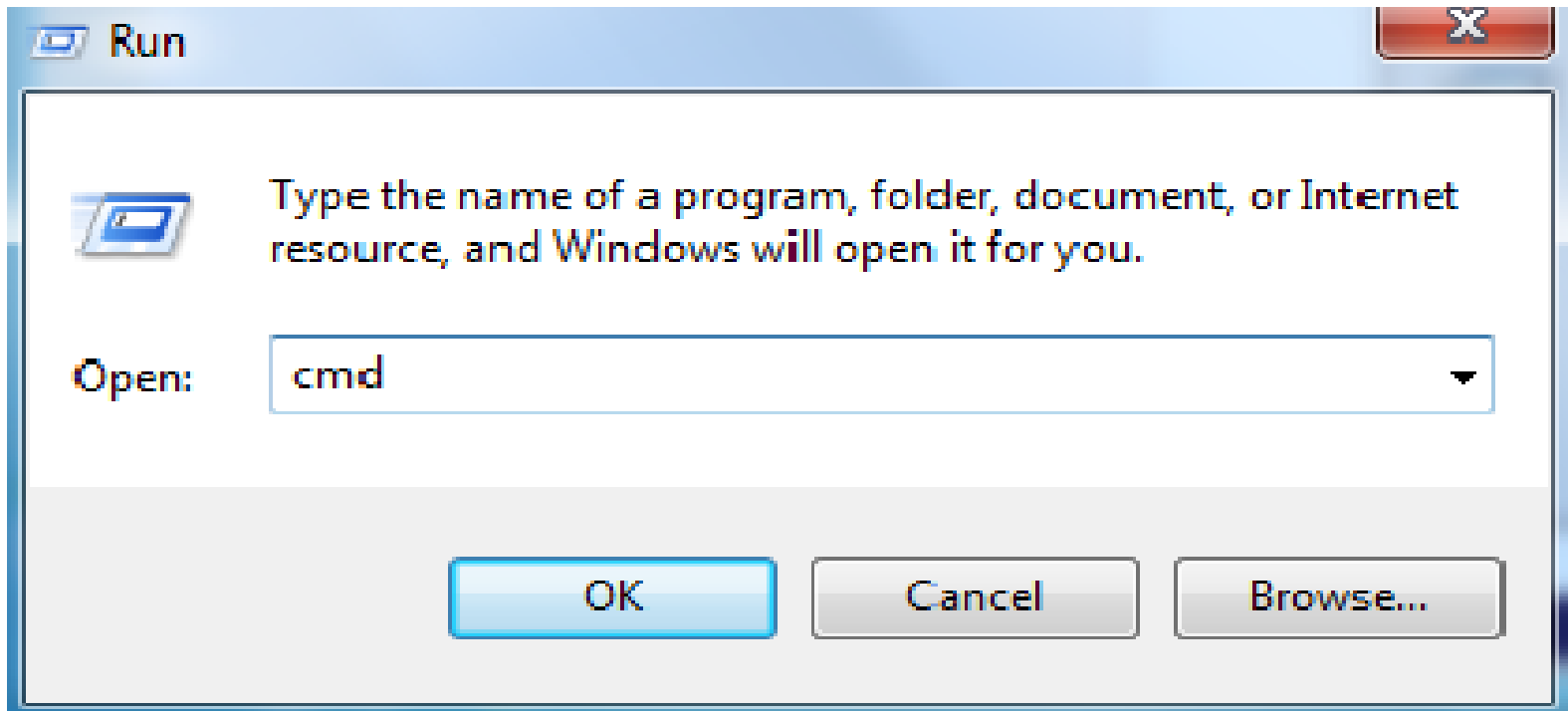


MS DOS COMMANDS

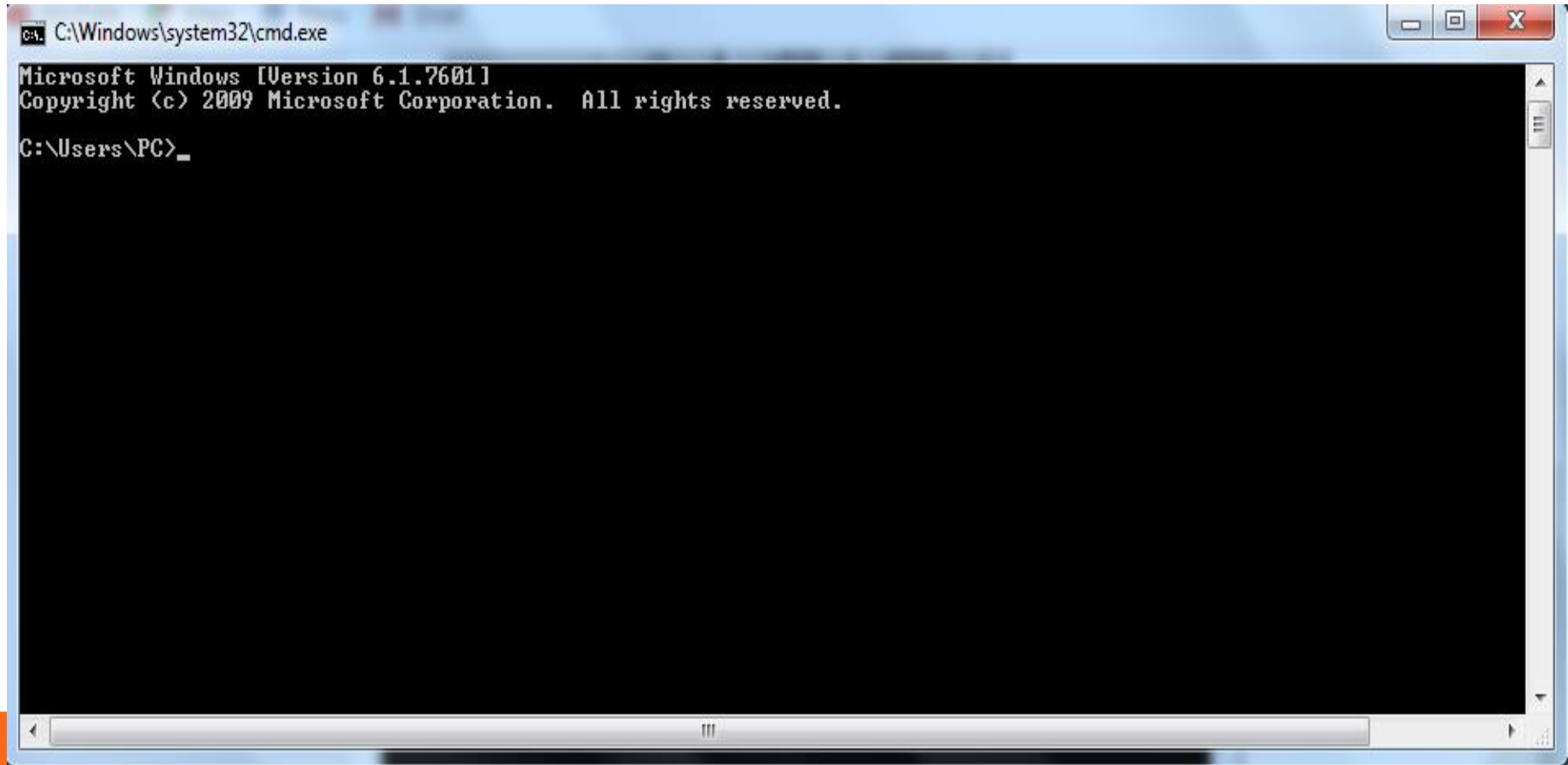
WRITTEN BY LAYTH.A

HOW TO OPEN MS-DOS COMMAND PROMPT

OPEN RUN WINDOW THEN TYPE CMD



MS DOS PROMPT



Written by Layth.A

MS-DOS COMMANDS :: MD (MKDIR)

Creates a directory.

The command **mkdir** is the same as the md command, they do the same thing.

2-MS-DOS COMMANDS :: CD (CHANGE DIRECTORY)

Use the cd command to make a different directory the "current" directory ("cd" is short for "change directory").

DOS Instructions:

CD Instruction: used for moving between folders ,for example

1)to move from used folder to one back folder.

cd ..

2)to move directly to C part.

**cd **

Cd filename

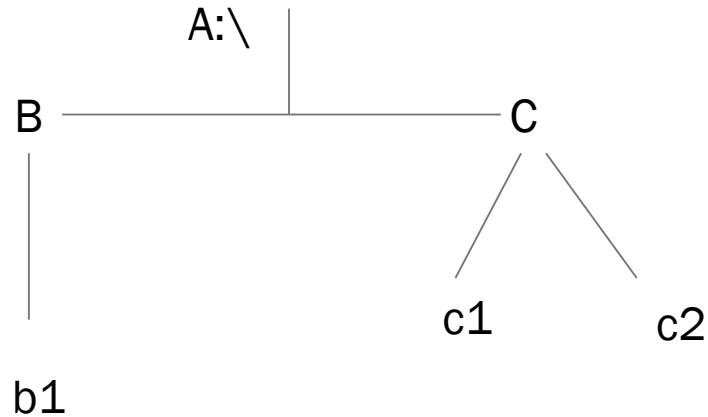
filename is the name of the folder wanted to move to or the completed path of it .

3-MS-DOS COMMANDES :: NOTEPAD TO CREATE FILE

PC\A > notepad list.txt


Type list.txt

3-MS-DOS COMMANDS :: TREE



Note//All is Folders and sub folders

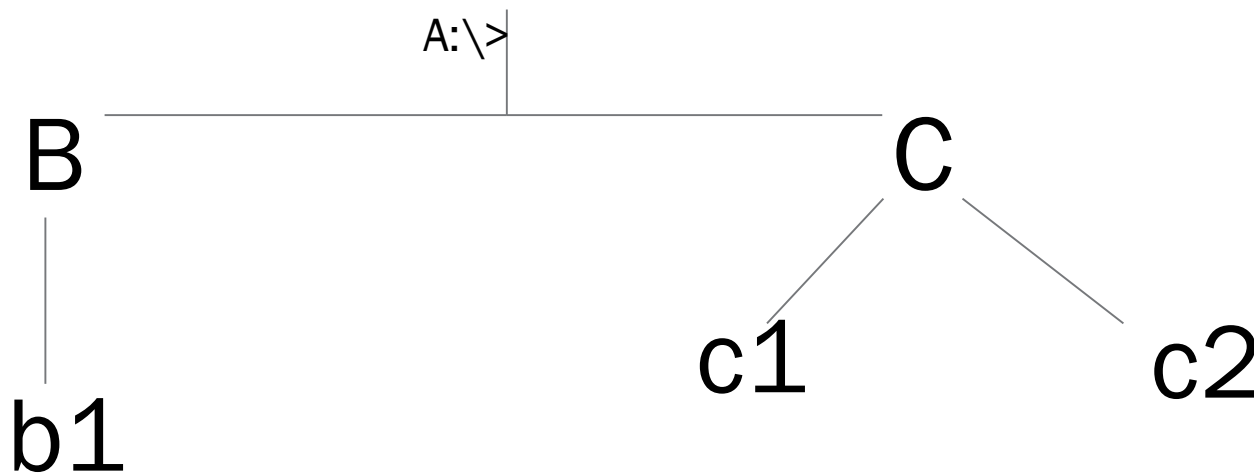

```
C:\>md A
C:\>cd A
C:\ A>
C:\A>md B
C:\A>md C
C:\A>cd B
C:\ A\ B> md b1
C:\ A\ B> cd ..
C:\ A>cd C
C:\ A\C>md c1
C:\ A\C>md c2
C:\ A\C>cd ..
C:\ A>tree
```



Deleting folders

To delete a directory, use the `rd` command.

The **rd** command stands for "remove directory"

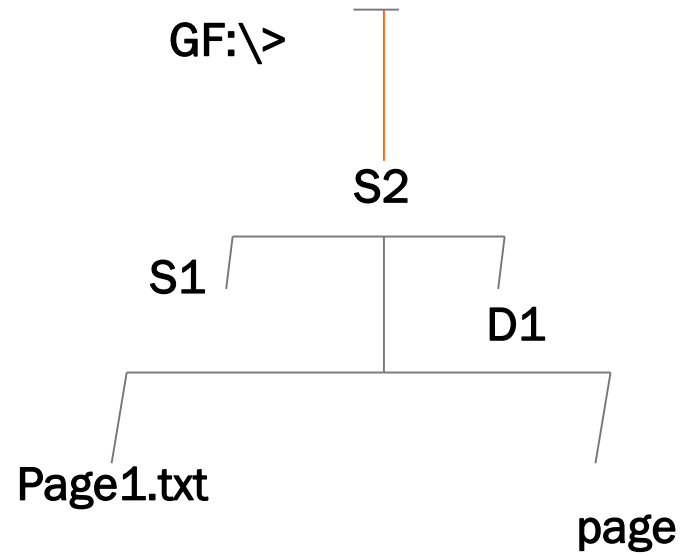


DELETING FILES

TO DELETE A FILE, YOU WILL USE THE **DEL** COMMAND.



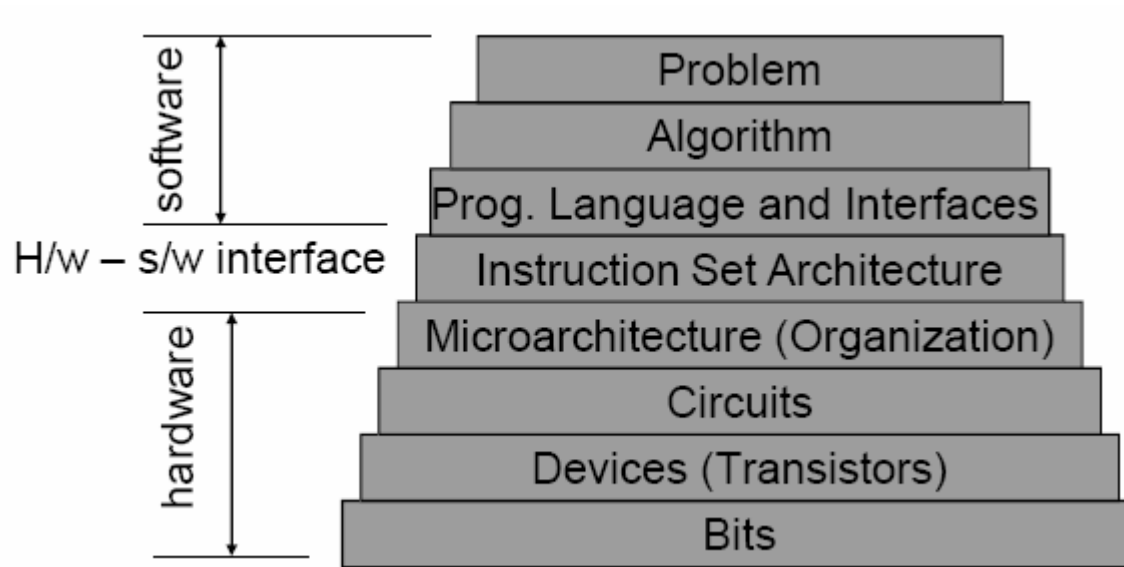
CREATE THE FOLLOWING TREE BY USING MS DOS



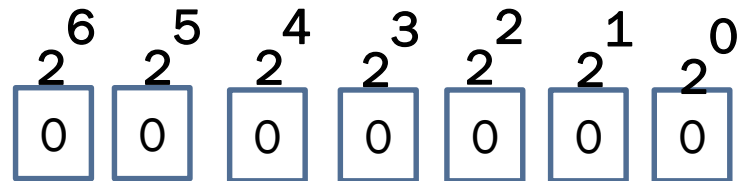
RESULTS QUIZ

```
C:.\n├── s2\n│   ├── page.txt\n│   ├── d1\n│   ├── page\n│   └── s1\nC: \GF>
```

MACHINE LANGUAGE



**BINARY NUMBER SYSTEM IS MADE OF ONLY 0
AND 1
BIT IS A SINGLE BINARY DIGIT**



Example

$$0+0=0$$

$$0+1=1$$

$$1+1=10$$

$$(1101)_2 = (13)_{10}$$

$$(13)_{10} = (1101)_2$$

$$(13)_{10} = (13/2=6 \text{ AND REMAINED} = 1$$

$$6/2=3 \text{ AND REMAINED} = 0$$

$$3/2=1 \text{ AND REMAINED} = 1$$

$$1/2=0 \text{ AND REMAINED} = 1$$

UP DOWN LEFT RIGHT



$$(1.1)_2 = ?$$

$$(10.101)_2 = ?$$

$$(25)_{10}$$

TRANSISTORS IN CPU CONFIGURATION

-OR GATE

-AND GATE

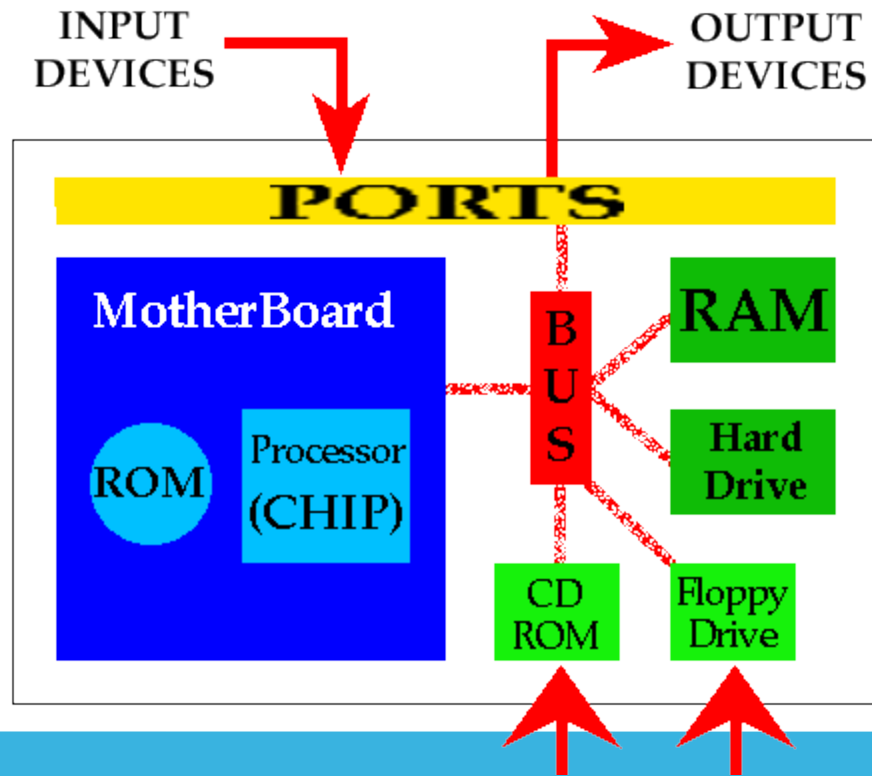
-NOT GATE

$F=A+AB$ (**A** AND **B** IS INPUTS)

$F=A(BC)=\mathbf{AB}+\mathbf{AC}$

OUTPUTS = 2^N (N= NUMBER OF INPUT)

COMPUTER COMPONENTS



WHAT HAPPENED WHEN PRESSING THE POWER BUTTEN

POST/ IS PERFORMED TO CHECK ALL HRADWARE IN SIDE COMPUTER

BIOS /CHECH THE HARD DRIVE FOR **BOOT LOADER** LOACATED IN THE FIRST SECTOR OF hd

BOOT LOADER/ LOOKS FOR **OS** AND LOAD IT LIKE WINDOWS OR MAC OX LINUX .

STARTS UP PROGRAMS .EX ANITVIRUS

WIN REGISTRY IS A DATABASE INFORMATION AND SETTING ,VALUES FOR SOFTWARE IN OS WHEN NEW PROGRAM NEW SUBKEY CREATE AND IT WILL ADD IN WIN REGISTRY

Chapter One

Introduction to Computer

Computer

A computer is an electronic device, operating under the control of instructions stored in its own memory that can accept data (input), process the data according to specified rules, produce information (output), and store the information for future use¹.

Functionalities of a computer²

Any digital computer carries out five functions in gross terms:

- Takes data as input.
- Stores the data/instructions in its memory and use them when required.
- Processes the data and converts it into useful information.
- Generates the output
- Controls all the above four steps.



Computer Components

Any kind of computers consists of **HARDWARE AND SOFTWARE**.

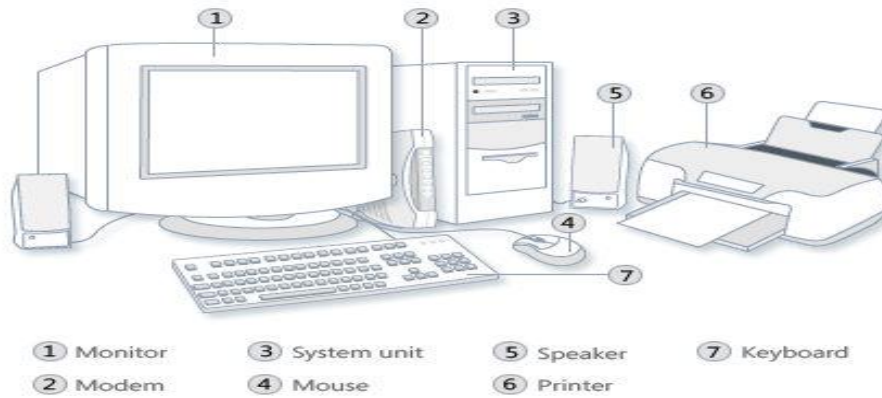
Hardware:

Computer hardware is the collection of physical elements that constitutes a computer system. Computer hardware refers to the physical parts or components of a computer such as the monitor, mouse, keyboard, computer data storage, hard drive disk (HDD), system unit (graphic cards, sound cards, memory, motherboard and chips), etc. all of which are physical objects that can be touched.³

¹ Vermaat, Misty E. Microsoft Office 2013 Introductory. Cengage Learning, p.IT3. 2014

² http://www.tutorialspoint.com/computer_fundamentals/computer_quick_guide.htm



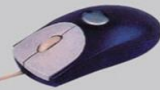









³ http://en.wikipedia.org/wiki/Computer_hardware



Input Devices

Input device is any peripheral (piece of computer hardware equipment to provide data and control signals to an information processing system such as a computer or other information appliance.

Input device Translate data from **form** that humans understand to one that the computer can work with. Most common are keyboard and mouse

Examples of Manual Input Devices			
Keyboard 	Numeric Keypad 	Pointing Device 	Remote Control 
Joystick 	Touch Screen 	Scanner 	Graphics Tablet 
Microphone 	Digital Camera 	Webcams 	Light Pens 

Example of Input Devices:-

1. Keyboard	2. Mouse (pointing device)	3. Microphone
4. Touch screen	5. Scanner	6. Webcam
7. Touchpads	8. MIDI keyboard	9.
10. Graphics Tablets	11. Cameras	12. Pen Input
13. Video Capture Hardware	14. Microphone	15. Trackballs
16. Barcode reader	17. Digital camera	18. Joystick
19. Gamepad	20. Electronic Whiteboard	21.

Note: The most common use keyboard is the QWERTY keyboard. Generally standard Keyboard has 104 keys.

Central Processing Unit (CPU)

A CPU is brain of a computer. It is responsible for all functions and processes. Regarding computing power, the CPU is the most important element of a computer system.

The CPU is comprised of three main parts :

* **Arithmetic Logic Unit (ALU):** Executes all arithmetic and logical operations. Arithmetic calculations like as addition, subtraction, multiplication and division. Logical operation like compare numbers, letters, or special characters

* **Control Unit (CU):** controls and co-ordinates computer components.

1. Read the code for the next instruction to be executed.
2. Increment the program counter so it points to the next instruction.
3. Read whatever data the instruction requires from cells in memory.
4. Provide the necessary data to an ALU or register.
5. If the instruction requires an ALU or specialized hardware to complete, instruct the hardware to perform the requested operation.

* **Registers :**Stores the data that is to be executed next, "very fast storage area".

Primary Memory:-

1. **RAM:** Random Access Memory (RAM) is a memory scheme within the computer system responsible for storing data on a temporary basis, so that it can be promptly accessed by the processor as and when needed. It is volatile in nature, which means that data will be erased once supply to the storage device is turned off. RAM stores data randomly and the processor accesses these data randomly from the RAM storage. RAM is considered "random access" because you can access any memory cell directly if you know the row and column that intersect at that cell.
2. **ROM (Read Only Memory):** ROM is a permanent form of storage. ROM stays active regardless of whether power supply to it is turned on or off. ROM devices do not allow data stored on them to be modified.

Secondary Memory:-

Stores data and programs permanently :its retained after the power is turned off

1. **Hard drive (HD):** A hard disk is part of a unit, often called a "disk drive," "hard drive," or "hard disk drive," that store and provides relatively quick access to large amounts of data on an electromagnetically charged surface or set of surfaces.
2. **Optical Disk:** an optical disc drive (ODD) is a disk drive that uses laser light as part of the process of reading or writing data to or from optical discs. Some drives can only read from discs, but recent drives are commonly both readers and recorders, also called burners or writers. Compact discs, DVDs, and Blu-ray discs are common types of optical media which can be read and recorded by such drives. Optical drive is the generic name; drives are usually described as "CD" "DVD", or "Bluray", followed by "drive", "writer", etc. There are three main types of optical media: CD, DVD, and Blu-ray disc. CDs can store up to 700 megabytes (MB) of data and DVDs can store up to 8.4 GB of data. Blu-ray discs, which are the newest type of optical media, can store up to 50 GB of data. This storage capacity is a clear advantage over the floppy disk storage media (a magnetic media), which only has a capacity of 1.44 MB.

3. Flash Disk

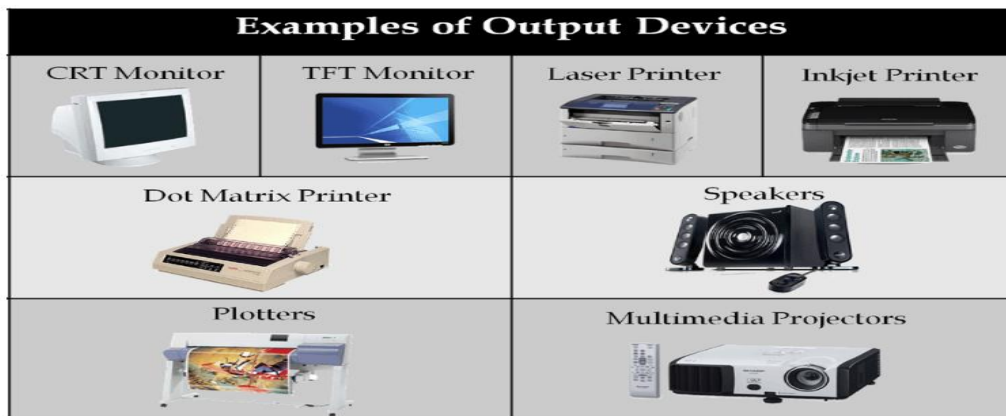
A storage module made of flash memory chips. A Flash disks have no mechanical platters or access arms, but the term "disk" is used because the data are accessed as if they were on a hard drive. The disk storage structure is emulated.

Comparison between Main memory (RAM) and Secondary Memory (Hard disk)

RAM	Hard Disk (Hard Drive)
Memory	Storage
Smaller amount (typically 500 MB-6 GB)	Much larger amount (typically 80GB to 1000 GB)
Temporary storage of files and programs A little like your real desktop - has only your current work on it (which could be ruined by a spill of Coke or coffee!)	Permanent storage of files and programs Like a file cabinet - has long-term storage of work (it's safe from spills!)
Contents disappear when you turn off power to the computer and when the computer crashes	Contents remain when you turn off the power to the computer (they don't disappear unless you purposely delete them), and when the computer crashes
Consists of chips (microprocessors)	Consists of hard disks (platters)
When you want to use a program, a temporary copy is put into RAM and that's the copy you use	Holds the original copy of the program permanently

Output devices

An output device is any piece of computer hardware equipment used to communicate the results of data processing carried out by an information processing system (such as a computer) which converts the electronically generated information into human-readable form.



Example on Output Devices:

1. Monitor	2. LCD Projection Panels
3. Printers (all types)	4. Computer Output Microfilm (COM)
5. Plotters	6. Speaker(s)
7. Projector	

Note Basic types of monitors are a.Cathode Ray Tube (CRT). B. Liquid Crystal Displays (LCD). c.light-emitting diode (LED).

Printer types: 1-Laser Printer. 2-Ink Jet Printer. 3-Dot Matrix Printer

Software

Software is a generic term for organized collections of computer data and instructions, often broken into two major categories: system software that provides the basic non-task-specific functions of the computer, and application software which is used by users to accomplish specific tasks.

Software Types

- A. System software** is responsible for controlling, integrating, and managing the individual hardware components of a computer system so that other software and the users of the system see it as a functional unit without having to be concerned with the low-level details such as transferring data from memory to disk, or rendering text onto a display. Generally, system software consists of an operating system and some fundamental utilities such as disk formatters, file managers, display managers, text editors, user authentication (login) and management tools, and networking and device control software.
- B. Application software** is used to accomplish specific tasks other than just running the computer system. Application software may consist of a single program, such as an image viewer; a small collection of programs (often called a software package) that work closely together to accomplish a task, such as a spreadsheet or text processing system; a larger collection (often called a software suite) of related but independent programs and packages that have a common user interface or shared data format, such as Microsoft Office, which consists of closely integrated word processor, spreadsheet, database, etc.; or a software system, such as a database management system, which is a collection of fundamental programs that may provide some service to a variety of other independent applications.

Comparison Application Software and System Software

	System Software	Application Software
	Computer software, or just software is a general term primarily used for digitally stored data such as computer programs and other kinds of information read and written by computers. App comes under computer software though it has a wide scope now.	Application software, also known as an application or an "app", is computer software designed to help the user to perform specific tasks.
Example:	1) Microsoft Windows 2) Linux 3) Unix 4) Mac OSX 5) DOS	1) Opera (Web Browser) 2) Microsoft Word (Word Processing) 3) Microsoft Excel (Spreadsheet software) 4) MySQL (Database Software) 5) Microsoft PowerPoint (Presentation Software) 6) Adobe Photoshop (Graphics Software)
Interaction:	Generally, users do not interact with system software as it works in the background.	Users always interact with application software while doing different activities.
Dependency:	System software can run independently of the application software.	Application software cannot run without the presence of the system software.

Unit of Measurements

Storage measurements: The basic unit used in computer data storage is called a bit (binary digit). Computers use these little bits, which are composed of ones and zeros, to do things and talk to other computers. All your files, for instance, are kept in the computer as binary files and translated into words and pictures by the software (which is also ones and zeros). This two number system, is called a “binary number system” since it has only two numbers in it. The decimal number system in contrast has ten unique digits, zero through nine.

Computer Storage units

Bit	BIT	0 or 1
Kilobyte	KB	1024 bytes
Megabyte	MB	1024 kilobytes
Gigabyte	GB	1024 megabytes
Terabyte	TB	1024 gigabytes

Size example

- 1 bit - answer to an yes/no question
- 1 byte - a number from 0 to 255.
- 90 bytes: enough to store a typical line of text from a book.
- 4 KB: about one page of text.
- 120 KB: the text of a typical pocket book.
- 3 MB - a three minute song (128k bitrate)
- 650-900 MB - an CD-ROM
- 1 GB -114 minutes of uncompressed CD-quality audio at 1.4 Mbit/s
- 8-16 GB - size of a normal flash drive

Speed measurement: The speed of Central Processing Unit (CPU) is measured by Hertz (Hz), Which represent a CPU cycle. The speed of CPU is known as Computer Speed.

CPU SPEED MEASURES	
1 hertz or Hz	1 cycle per second
1 MHz	1 million cycles per second or 1000 Hz
1 GHz	1 billion cycles per second or 1000 MHz

Computers classification^{*}**

Computers can be generally classified by size and power as follows, though there is Considerable overlap:

- **Personal computer:** A small, single-user computer based on a microprocessor. In addition to the microprocessor, a personal computer has a keyboard for entering data, a monitor for displaying information, and a storage device for saving data.
- **workstation :** A powerful, single-user computer. A workstation is like a personal computer, but it has a more powerful microprocessor and a higher-quality monitor.
- **minicomputer :** A multi-user computer capable of supporting from 10 to hundreds of users simultaneously.
- **mainframe :** A powerful multi-user computer capable of supporting many hundreds or thousands of users simultaneously.
- **supercomputer :** An extremely fast computer that can perform hundreds of millions of instructions per second.

Laptop and Smartphone Computers

LAPTOP: A laptop is a battery or AC-powered personal computer that can be easily carried and used in a variety of locations. Many laptops are designed to have all of the functionality of a desktop computer, which means they can generally run the same software and open the same types of files. However, some laptops, such as netbooks, sacrifice some functionality in order to be even more portable.

Netbook: A netbook is a type of laptop that is designed to be even more portable. Netbooks are often cheaper than laptops or desktops. They are generally less powerful than other types of computers, but they provide enough power for email and internet access, which is where the name "netbook" comes from.

Mobile Device: A mobile device is basically any handheld computer. It is designed to be extremely portable, often fitting in the palm of your hand or in your pocket. Some mobile devices are more powerful, and they allow you to do many of

^{***}<http://www.acobas.net/teaching/survival/handouts/pcwebopedia.pdf>

the same things you can do with a desktop or laptop computer. These include tablet computers, e-readers, and smartphones.

Tablet Computers: Like laptops, tablet computers are designed to be portable. However, they provide a very different computing experience. The most obvious difference is that tablet computers don't have keyboards or touchpads. Instead, the entire screen is touch-sensitive, allowing you to type on a virtual keyboard and use your finger as a mouse pointer. Tablet computers are mostly designed for consuming media, and they are optimized for tasks like web browsing, watching videos, reading e-books, and playing games. For many people, a "regular" computer like a desktop or laptop is still needed in order to use some programs. However, the convenience of a tablet computer means that it may be ideal as a second computer.

Smartphones: A smartphone is a powerful mobile phone that is designed to run a variety of applications in addition to phone service. They are basically small tablet computers, and they can be used for web browsing, watching videos, reading e-books, playing games and more.

Data, Information and Knowledge

Data: Facts and figures which relay something specific, but which are not organized in any way and which provide no further information regarding patterns, context, etc. So data means "unstructured facts and figures that have the least impact on the typical manager."

Information: For data to become information, it must be contextualized, categorized, calculated and condensed. Information thus paints a bigger picture; it is data with relevance and purpose. It may convey a trend in the environment, or perhaps indicate a pattern of sales for a given period of time. Essentially information is found "in answers to questions that begin with such words as who, what, where, when, and how many".

Knowledge: Knowledge is closely linked to doing and implies know-how and understanding. The knowledge possessed by each individual is a product of his experience, and encompasses the norms by which he evaluates new inputs from his surroundings.

The content of the human mind can be classified into four categories:

1. Data: symbols
2. Information: data that are processed to be useful; provides answers to "who", "what", "where", and "when" questions
3. Knowledge: application of data and information; answers "how" questions
4. Wisdom: evaluated understanding.

We need to understand that processing data produced Information and process Information produces Knowledge and so on

Characteristics of Computer

Speed, accuracy, diligence, storage capability and versatility are some of the key characteristics of a computer. A brief overview of these characteristics are

- **Speed:** The computer can process data very fast, at the rate of millions of instructions per second. Some calculations that would have taken hours and days to complete otherwise, can be completed in a few seconds using the computer. For example, calculation and generation of salary slips of thousands of employees of an organization, weather forecasting that requires analysis of a large amount of data related to temperature, pressure and humidity of various places, etc.
- **Accuracy:** Computer provides a high degree of accuracy. For example, the computer can accurately give the result of division of any two numbers up to 10 decimal places.
- **Diligence:** When used for a longer period of time, the computer does not get tired or fatigued. It can perform long and complex calculations with the same speed and accuracy from the start till the end.
- **Storage Capability:** Large volumes of data and information can be stored in the computer and also retrieved whenever required. A limited amount of data can be stored, temporarily, in the primary memory. Secondary storage devices like floppy disk and compact disk can store a large amount of data permanently.
- **Versatility:** Computer is versatile in nature. It can perform different types of tasks with the same ease. At one moment you can use the computer to prepare a letter document and in the next moment you may play music or print a document. Computers have several limitations too. Computer can only perform tasks that it has been programmed to do.

Computer cannot do any work without instructions from the user. It executes instructions as specified by the user and does not take its own decisions.

Computer Viruses*

Viruses: A virus is a small piece of software that piggybacks on real programs. For example, a virus might attach itself to a program such as a spreadsheet program. Each time the spreadsheet program runs, the virus runs, too, and it has the chance to reproduce (by attaching to other programs) or wreak havoc.

- E-mail viruses:** An e-mail virus travels as an attachment to e-mail messages, and usually replicates itself by automatically mailing itself to dozens of people in the victim's e-mail address book. Some e-mail viruses don't even require a double-click -- they launch when you view the infected message in the preview pane of your e-mail software [source: Johnson].
- Trojan horses:** A Trojan horse is simply a computer program. The program claims to do one thing (it may claim to be a game) but instead does damage when you run it (it may erase your hard disk). Trojan horses have no way to replicate automatically.
- Worms:** A worm is a small piece of software that uses computer networks and security holes to replicate itself. A copy of the worm scans the network for another machine that has a specific security hole. It copies itself to the new machine using the security hole, and then starts replicating from there, as well.

What are some tips to avoid viruses and lessen their impact?*

- Install anti-virus software from a reputable vendor. Update it and use it regularly.
- In addition to scanning for viruses on a regular basis, install an "on access" scanner (included in most anti-virus software packages) and configure it to start each time you start up your computer. This will protect your system by checking for viruses each time you run an executable file.
- Use a virus scan before you open any new programs or files that may contain executable code. This includes packaged software that you buy from the store as well as any program you might download from the Internet.
- If you are a member of an online community or chat room, be very careful about accepting files or clicking links that you find or that people send you within the community.
- Make sure you back up your data (documents, bookmark files, important email messages, etc.) on disc so that in the event of a virus infection, you do not lose valuable work.

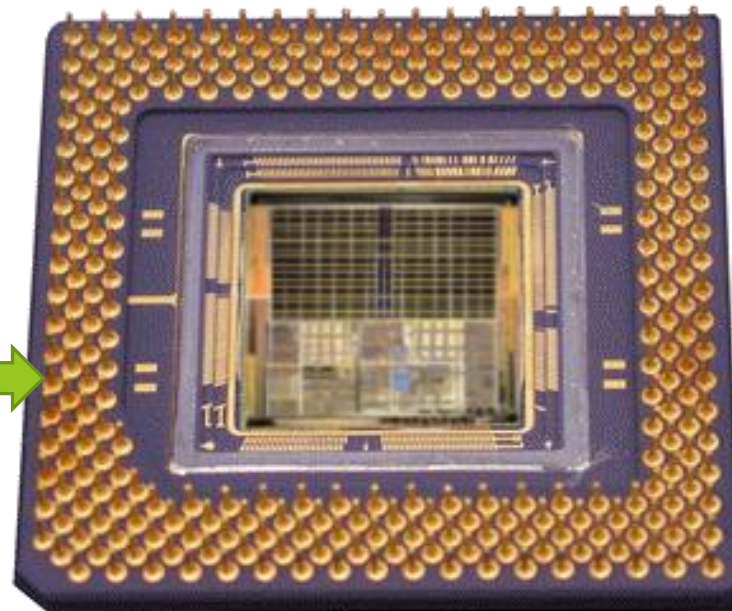
*<http://computer.howstuffworks.com/virus.htm>

*<http://www.us-cert.gov/publications/virus-basics>

The CPU

- The **CPU** (**C**entral **P**rocessing **U**nit) is the 'brains' of the computer.
- The **purpose** of the CPU is to carry out program instructions (*each CPU type is designed to understand a specific group of instructions, the **instruction set***).
- On personal computers and small workstations, the CPU is housed in a single chip called a *microprocessor*.

A typical modern CPU design showing the pins that connect it to the motherboard



What are the components of a typical CPU?

There are huge variations in CPU designs but most will share the following key components:

- An **electronic clock**
- The **control unit**
- An **instruction unit** which consists of:
 - The **arithmetic logic unit (ALU)**
 - The **floating point unit (FPU)**
 - Various **registers** such as the **accumulator**.
- Various **buses**
- The **bus management unit**

typical CPU components – **the clock**

- An **electronic clock** regulates the rate at which the CPU runs and synchronizes all the various computer components.
- The higher the clock frequency, the more instructions the CPU can execute per second.
- The speed of the clock (*and therefore the speed of the CPU*) is measured in Megahertz (MHz).

typical CPU components – **the control unit**

- The **control unit** performs the tasks of:
 - × **Fetching** instructions from memory
 - × **Decoding** the instructions
 - × Managing the **execution** of instructions and the storing of the results
- It does this mainly by controlling the links between the other components of the CPU.
- It also contains various registers such as:
 - the **Program Counter** which stores the memory address of the next instruction.
 - the **Current Instruction register** which stores the instruction currently being executed.

typical CPU components – the **INSTRUCTION** unit

- An **instruction unit** consists of:
 - The **arithmetic logic unit** (ALU) which **executes** basic arithmetic and logical operations on integer data that it is linked to. Examples of such operations include:
 - Integer arithmetic operations (*addition, subtraction*)
 - Logic operations (*AND, NOT, OR, XOR*)
 - The **floating point unit** (FPU) which performs math functions on floating point numbers (*non-integer numbers*).
 - Various **registers** such as the **accumulator** that are used while instructions are being executed.

typical CPU components – **Buses**

- **Buses** are sets of tiny parallel wires that carry data between CPU components and between the CPU and external devices and RAM. The three main bus types are:
 - **address buses** - used to set which **memory address** a CPU component is linked to for a read/write operation.
 - **data buses** - used to **exchange** the **data** between a memory address and the CPU when a read/write operation is carried out.
 - **control buses** - used to **transfer command codes** and return status signals between components of the CPU and external devices.
- The **bus management unit** manages the transfer of data along the external bus connections, including the links to RAM.

Memory interface

Level 2 (L2) cache

Level 1 (L1)
Data Cache

Level 1 (L1)
Instruction
Cache

Floating
point
unit

Memory
Controller

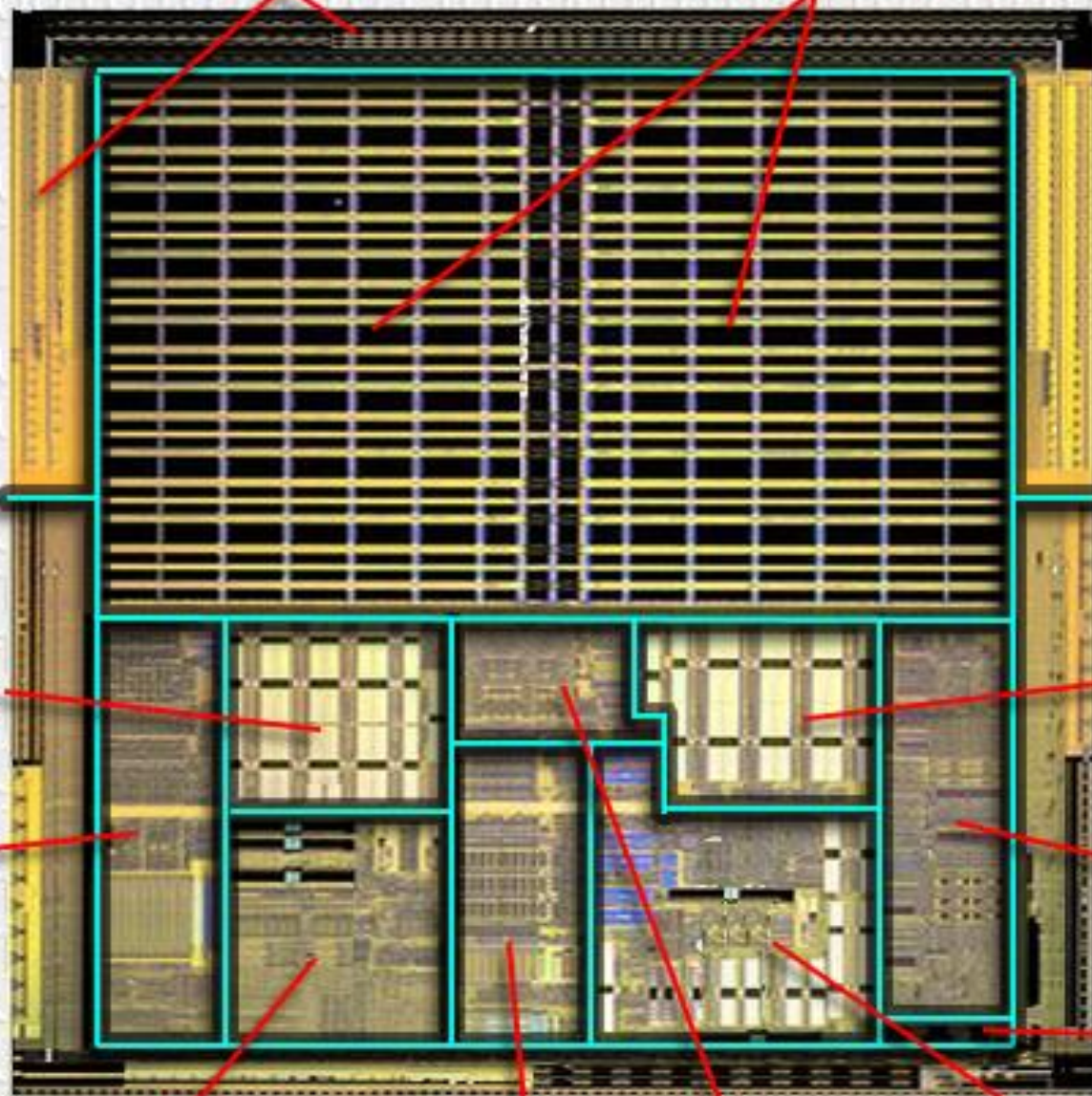
Clock
generator

Load /
Store

Execution
units

Bus unit

Microcode
unit



The functions of the CPU

1 - The Fetch step:

- This involves **retrieving** a binary instruction from a memory address and storing it in the **Current Instruction** register.
- The memory address of the instruction is stored in a register called the **Program Counter (PC)** so the CPU can keep track of which instruction is next.
- After an instruction is fetched, the PC is **updated** so the CPU knows the address of the next instruction it has to fetch.



The functions of the CPU

2 - The Decode step:

- This involves the CPU **identifying** the operation code (op-code) part of the instruction which tells it which operation to perform.
- If the op-code requires the CPU to act on some data then the second part of the instruction will contain either the data or the memory address where the data is stored.

MEMORY CONTENTS							
1	1	0	0	0	1	1	0

OP-CODE			ADDRESS OF DATA				
1	1	0	0	0	1	1	0

The functions of the CPU

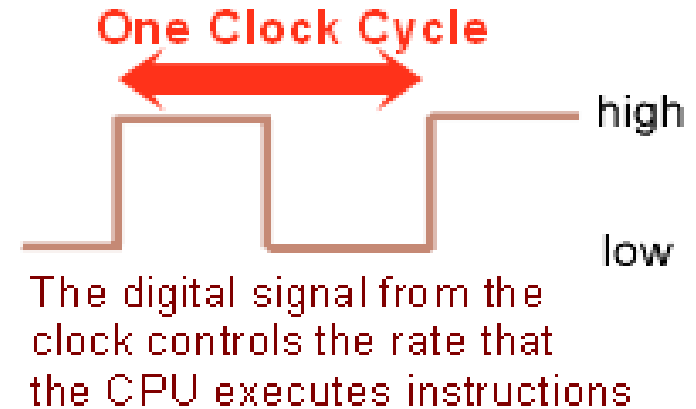
3 - The Execute step:

- In this step the **control unit** links together the parts of the CPU that are needed to **execute the instruction**.
 - If the instruction involved integer arithmetic or logical operations then the **arithmetic logic unit (ALU)** would be connected to the relevant memory locations
 - Some types of instructions **alter the program counter** rather than produce result data. This allows programs to carry out **iteration loops** and **conditional program execution** rather than stepping through instructions in sequence.
 - Some instructions involve an additional **write-back step** if data is written back to RAM.

CPU characteristics vs. performance

Clock speed:

- Although it might seem that a computer is carrying out many tasks simultaneously, the CPU is actually only ever processing one instruction at a time and is constantly switching between programs (*sets of instructions*).
- The speed that the processor executes instructions is controlled by the *clock speed* and is measured in MHz (***megahertz***).
- The CPU requires a fixed number of clock cycles to perform each instruction.



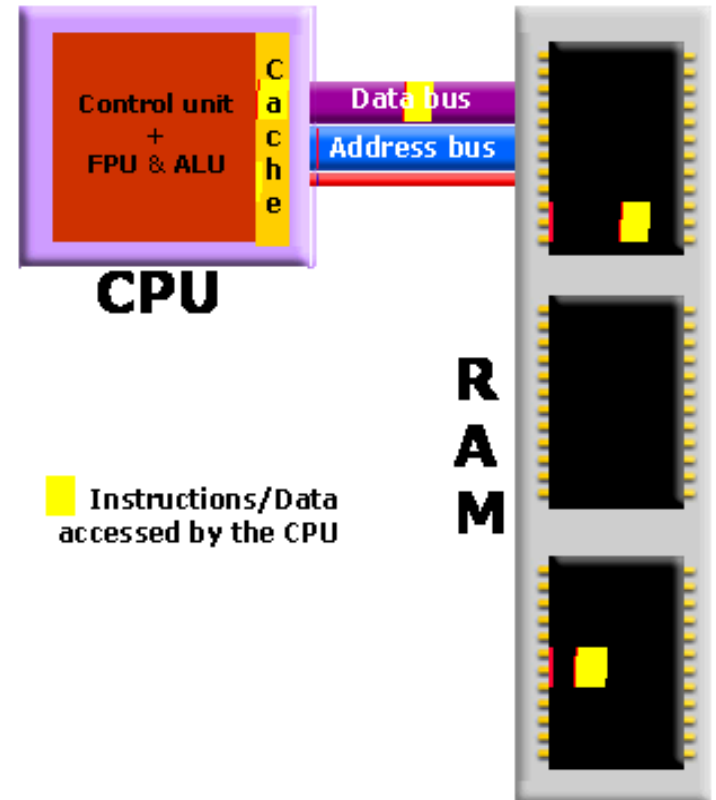
Summary:

- The **higher** the clock speed, the more instructions the CPU can execute per second, resulting in a faster running computer system.

CPU characteristics vs. performance

Cache size:

- Cache memory is a small amount of very fast memory that is built into the CPU. **Blocks** of instructions and data that are in use by the CPU are copied from RAM into cache memory, along with the associated memory addresses.
- If the CPU needs to access a memory address it first checks the cache memory to see if there is a match. If there is then it access the contents of the cache version.



Summary:

A CPU with a larger cache memory and more levels of cache memory will have a higher performance than one without cache memory.

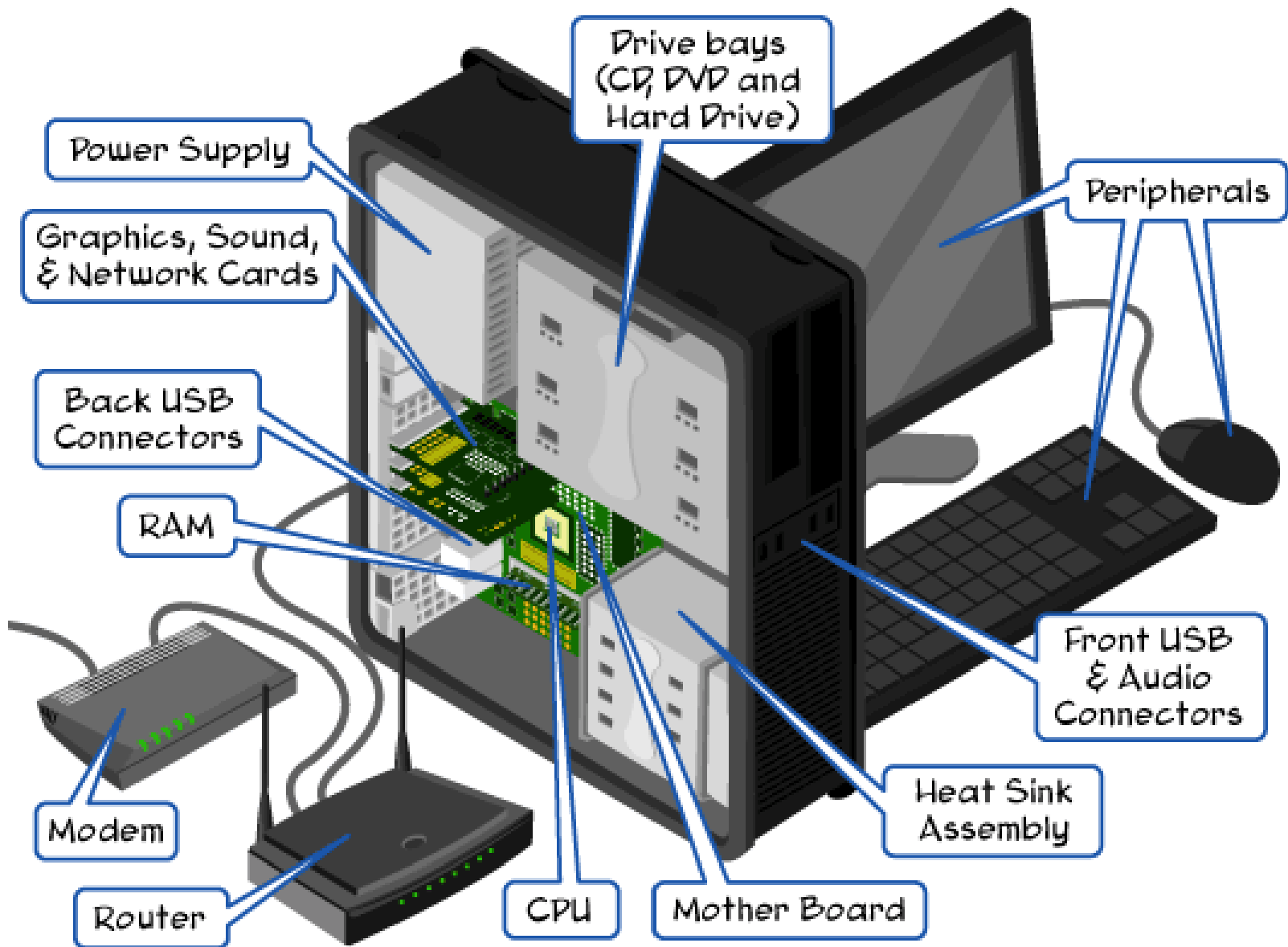
CPU characteristics vs. performance

Number of Cores:

- A multi-core processor is a single computing component with two or more independent actual processors (called "cores").
- A dual-core processor contains two cores and a quad-core processor contains four cores. Each core can process instructions independently of the other cores.
- The biggest performance gain when using a multi-core processor is when the software has been specifically written to run on multiple cores.

Summary:

- A multi-core CPU will have a higher performance than a single-core CPU with the same clock speed.

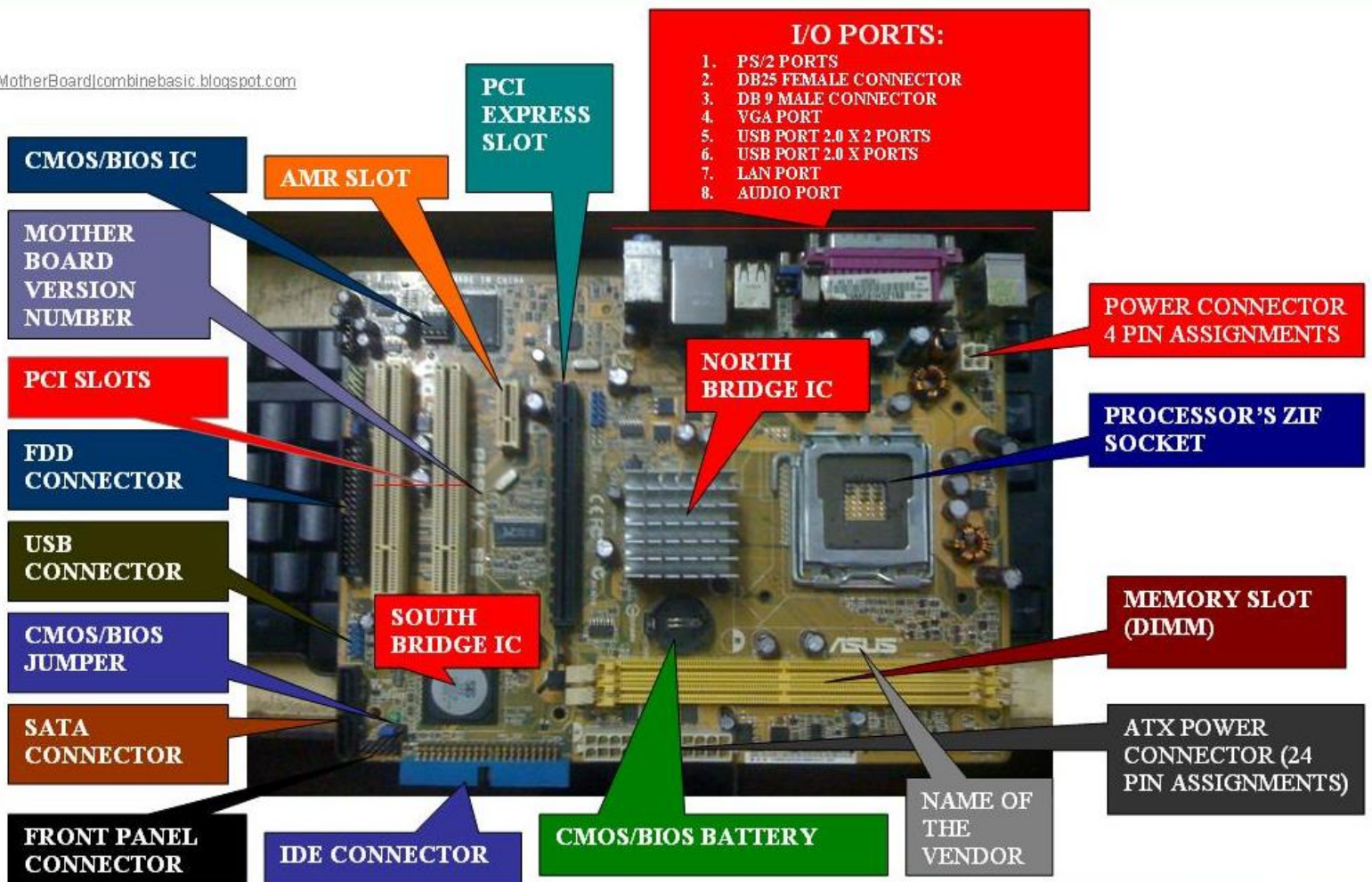


PARTS AND FUNCTIONS OF MOTHERBOARD

The computer **Motherboard** or shortly **MOBO** is one of the most important part of the Personal computer (PC).It is a hardware of the computer installed inside the system unit(**CPU**).This MOBO hardware act as the main board or the central or core assembly of the computer system unit. In other words inside of the CPU case there are a lot of other hardware's connected to the MOBO, namely: **Hard Disk Drive(HDD)**, **CD/DVD ROM**, **USB Card reader**, **FDD Drive**, **processor**, **RAM**, **LAN card**, **Wireless LAN Card**, **USB expansion board**, **VGA Card** and the **Power Supply Unit(PSU)**.These are all types of hardware's inside the system unit of the Personal Computer.

Computer motherboard designed to take advantage of the most demand application of a program. One of the most application is to meet the system requirements of the 3G application. Just like the movie games as high innovative applications of computer programming. As the form factor of motherboard as a series of versions of the MOBO from AT, ATX, BTX, LPX, and NLPX .Compatible words being broadcast, that's why it is the MOBO will synchronized the speed of processor, RAM, and Video Card(VGA).Unlike only if the MOBO is built-in through the **Input/Output ports**.

[e.MotherBoardIcombinebasic.blogspot.com](http://MotherBoardIcombinebasic.blogspot.com)



Parts of the Motherboard

Functions:

1. I/O ports- this is located in the rear panel of the CPU. This use to connect the outside hardware or peripherals of the computer.

- **PS/2 ports-** these are used to connect the mouse(green color)and the keyboard(purple color)
- **DB 25 female connector(*printer port*)-**this is use to connect the impact printer, one of that the DOT MATRIX printer, ex. the Epson LX 300 +
- **DB 9 male connector (*Serial or com1 port*)-**this use to connect a serial device of the computer, such as the serial mouse and external modem.
- **VGA port(built-in)-** this is use to interface the DB cord of the monitor screen or to connect the monitor screen of the computer. The fastest video card versions are based on the standard of the VGA slots, ex: the AGP and PCIe card.
- **USB 2.0 × 2 ports-** these are the ports of the USB devices of the computer. Attached externally of the system unit, one of that is the USB flash drive. As of now the versions or speed of the USB are the 1.0 and 2.0 compatible.
- **LAN port-** this called as Local Area Network of the computer. This is use to connect the numbers of node or workstations (PC) to form a local area network of the computer with in their area. Using the type of communication media such as the network switch and router.
- **Audio Port-** this is use to connect the speaker, mic, and MIDI(Musical Instrument Digital Interface) device of the computer

2. ATX Power connector (4 pin)- this is use to connect the 4 pin of the power supply unit (PSU) .This is separate of the 20 or 24 pin of ATX power supply to provide DC voltage of computer processor.

3. Processor's ZIF Socket- part of MOBO use to hold the processor or CPU chip (Zero Insertion Force).The compatibility of the socket depend of the computer processor type. Such as the **AM2 socket of the AMD** and the **socket 775 of the Intel company**.

4. Memory slot (DIMM)- this is called as Dual Inline Memory Module, this is the slot of computer memory or what we called RAM. The memory slot depend of the type of the memory. Such as the **PC 133 SDRAM and PC 400 SDRAM-DDR 1**.

5. ATX Power connector (24 or 28 pin)- a group of connector of the MOBO, This is separate of the 4 pin power assignments. Its provide a DC power output to the system board(SB)from the output of the Power Supply Unit.

6. Name of the Vendor- this is the manufacturer name. This is important to know the manufacturer or vendor. So you can download through the internet site the drivers software of the MOBO.

7. CMOS/BIOS BATTERY- In this part, the CMOS/BIOS battery is hold, So that it can provide 3 volts direct current/voltage to the CMOS IC. To preserve the BIOS settings of the computer. Such as the time module, hardware information and settings/parameter, etc.

- CMOS-Complimentary Metal Oxide Semiconductor
- BIOS- Basic Input/Output System. Is a set of a program stored in CMOS IC, use to preserved the BIOS configuration of the computer
- CMOS BATTERY PART NUMBER- lithium dry cell CR 2032 3 volts

8. IDE connector (Integrated Drive Electronics)- this connector is use to connect the IDE cable of the HDD(Hard Disk Drive) or CD/DVD ROM to the Motherboard IDE.

9. Front panel connectors (F-Panel) - this is use to connect the Power LED, HDD LED, Power Switch and Reset switch of the computer system unit(CPU).

10. SATA connector-this is Serial Advance Technology Attachment. The new standard of the IDE connection array of the computer HDD(SATA HDD)to the motherboard system.

11. CMOS/BIOS jumper- this is use to disable the BIOS default setup. Such as to disabled the supervisor password of the BIOS.

- How to disable password before the BIOS setup
- Turn off CPU
- Change jumper to clear
- Remove the CMOS battery
- Reinsert the BIOS battery
- Change jumper to normal
- Power up computer
- Press “del” or “F2” to enter BIOS setup

12. USB connector (header)- this is use to connect the USB port of the front panel USB 2.0 x 2 port.

13. FDD connector- the connector of the FDD cable through the system board. Normally there are 34 pins out of it to connect the 3.5” 1.44mb Floppy Disk Drive.

14. PCI slots- a part of the computer motherboard use to connect the I/O cards of the computer. Such as LAN card, WIFI card, USB expansion card and Sound card.

15. Motherboard Version number- here you can get the version of the motherboard driver software. So that you can download it exactly to the manufacturer website.

16. CMOS/BIOS IC- this is the type of BIOS IC being use by the computer MOBO.A set of a program being installed in this IC to preserved the BIOS configuration settings of the computer. Such as the speed of the CPU chip and RAM, etc.

17. AMR slot- this is the **AUDIO Modem Riser**. Being use to demodulate and modulate the analog audio of the computer.

18. PCI express slot- a part of the computer that hold the computer video card(**VGA**), the PCIe card. The latest and the most fastest card being installed and most compatible with 3d and 4g gaming of the computer. The old video card type is the AGP or Accelerated Graphic Ports and the standard of the PCIe.

19. North Bridge IC- is a passion name as being north of the PCI buses or the PCI slots of the MOBO. The true name of the north bridge is **MCI or Memory Controller Hub**. Assigned to manage and control the computer memory before the processing of the CPU chip.

20. South Bridge IC-is a passion name as being south of the PCI buses or PCI slots. The true name of the south bridge is **I/O Controller HUB(ICH)**. Its is a type of microchip task to control all the Input and output devices of the computer. Such as the keyboard and mouse. And the monitor screen of the computer, that commonly found at the rear back of the CPU or system unit.

Chapter Two

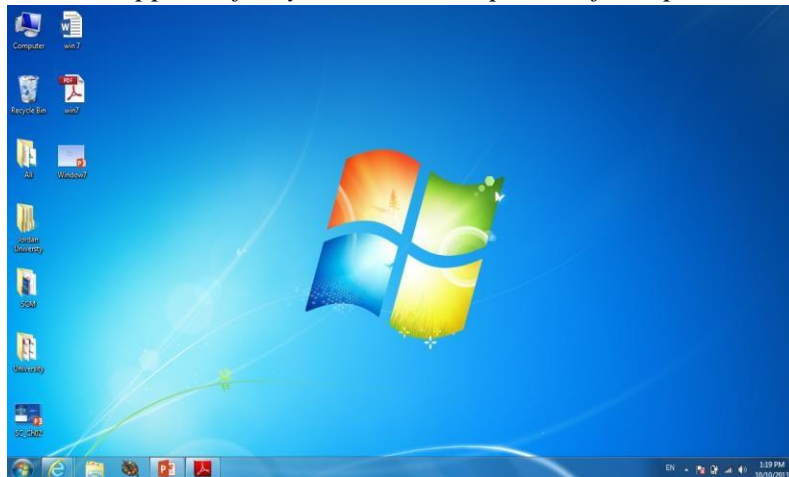
Windows 7

Windows 7

Windows 7 is an operating system that Microsoft has produced for use on personal computers. It is the follow-up to the Windows Vista Operating System, which was released in 2006.

An operating system allows your computer to manage software and perform essential tasks. It is also a Graphical User Interface (GUI) that allows you to visually interact with your computer's functions in a logical, fun, and easy way. interact with your computer's functions in a logical, fun, and easy way.*

The first screen appear after you turn on the power of computer is a desktop



- If it is a shared PC; more than one user use it, or one user with password protected, you will arrive at Welcome Screen



Or



1 - The Desktop

The Desktop is the main Windows 7 screen (see image below). It is the work area where dialog boxes, windows, icons, and menus appear. Like an office desk, the Windows 7 desktop contains items you can use to do your job. For instance, from your desktop, you can perform file-management tasks and run software applications. You can customize the appearance of the desktop to suit your preferences.

*<http://www.gcflearnfree.org/windows/windows7/4>

Desktop Icons

The Desktop is where you'll find icons (small pictures) for many of your most frequently used programs. You'll most likely see icons for Computer, Documents, Recycle Bin, and Internet Explorer.

- Computer – Allows you to see what drives are attached to your computer (for example, your local

hard disk

drive, your CD/DVD drives, any networked shared drives, and external drives, such as a USB flash drive). You can also view the files that are located on these drives.

- Documents – Supplies a 'catch-all' place for your personal files. Within here you can see your files, any shared

files from other computer users and any music or pictures you may have stored. The Documents folder will sometimes be identified by your name instead of the word "Documents." – Stores any files you delete until you empty it.

- Recycle Bin – Contains Windows' built in web browser that integrates with other

- Internet Exp – Windows

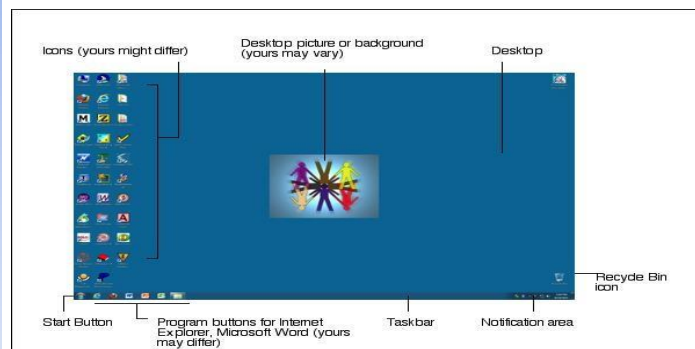
components

(such as your folders and Documents).

The Desktop Components

The desktop for Windows 7 consists of two main components

1. Desktop that contains many components like icons "file, folder, shortcut. Etc...)
2. Task Bars

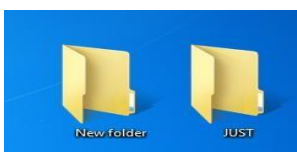


Desktop Components

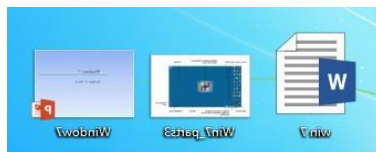
1- Icons: An icon is a graphic image, a small picture or object that represents a file, program, web page, or command. Icons help you execute commands, open programs or documents quickly. To execute a command by using an icon, click or double-click on the icon. It is also useful to recognize quickly an object in a browser list. For example, all documents using the same extension have the same icon.

We can classify icons as the following

- Folder Icons • File Icons • Shortcut Icons



Folder Icons



File Icons



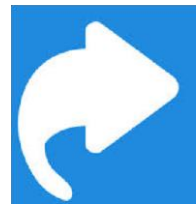
Shortcut Icons

What is the difference between a file, a folder, and a shortcut?

All the data on your hard drive consists of files and folders. The basic difference between the two is that files store data, while folders store files and other folders. The folders, often referred to as directories, are used to organize files on your computer. The folders themselves take up virtually no space on the hard drive. Files, on the other hand, is a collection of data. stored in one unit, identified by a filename. And filename period file extension can range from a few bytes to several gigabytes. They can be documents, programs, libraries, and other compilations of data. File name consists of two part name and extension



A shortcut is a link that points to a program on the computer. Shortcuts allow users to create links to their programs in any folder, Start bar, Taskbar, Desktop or other locations on their computer. A shortcut in Windows is commonly identified by a small arrow in the bottom corner of the icon.



Special Icons on the desktop

• Recycle bin:

The Recycle Bin is a location (Folder) where deleted files are temporarily stored on Microsoft Windows. The Recycling Bin allows users to recover files that have been deleted in Windows.



• My Computer:

My Computer allows the user to explore the contents of their computer drives as well as manage their computer files. Once My Computer is open you'll see all available drives on your computer. For most users, you'll only be concerned with the Local Disc (C:) drive, which is the hard drive and what



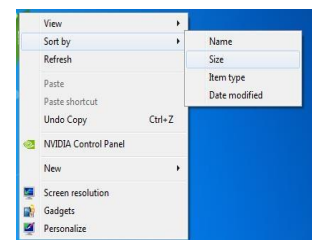
stores all your files.

Icon Operations

• Arrange Icons On the Desktop

To change the arrangement of icons on the desktop do the following

- 1 - Right Click the desktop
- 2- Click Sort by
- 3- Select one of the 4 options to arrange icons from sub-menu

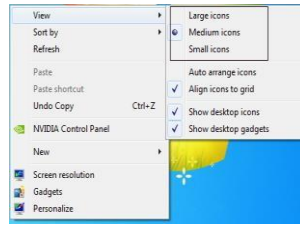


• View/Hide Icons

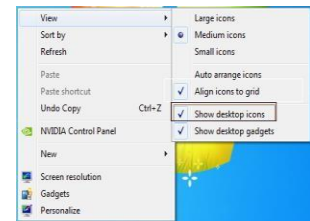
- 1- Right Click the desktop
- 2- Click View

3- Check to see if Auto Arrange has a check mark

4- If it does uncheck it



• Change Icon size



1- Right Click the desktop

2- Click View

3- Show the required size

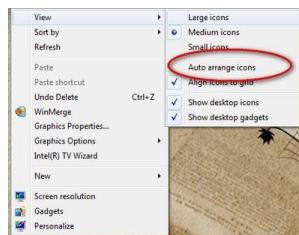
• Auto Arrange Icon

1 - Right Click the desktop

2- Click View

3- Check to see if Auto Arrange has a check mark

4- If it does uncheck it

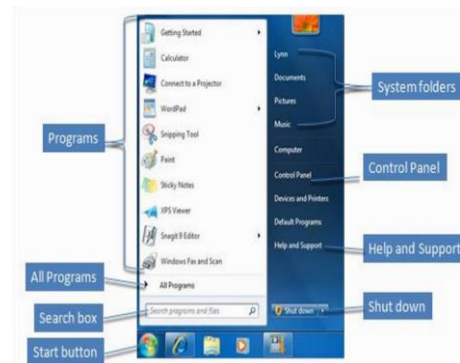


Start Menu Parts

The Start menu for Windows 7 consists of many Parts, to show

Use the Start menu to do these common activities:

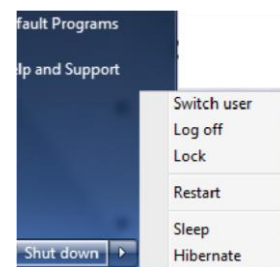
- Start programs
- Open commonly used folders
- Search for files, folders, and programs
- Adjust computer settings
- Get help with the Windows operating system
- Turn off the computer
- Log off from Windows or switch to a different user account



Shutting Down the computer

At the bottom of the right pane is the Shut down button. Click the Shut down button to turn off your computer.

Clicking the arrow next to the Shut down button displays a menu with additional options for switching users, logging off, restarting, or shutting down.



- **Switch user:** If you have more than one user account on your computer, Fast User Switching is an easy way for another person to log on to the computer without logging you off or closing your programs and files.
- **Log off:** When you log off from Windows, all of the programs you were using are closed, but the computer is not turned off.
- **Lock:** Locking your PC is a good option if you'll be back soon. You'll have to enter your password when you come back, which helps keep your work more secure.

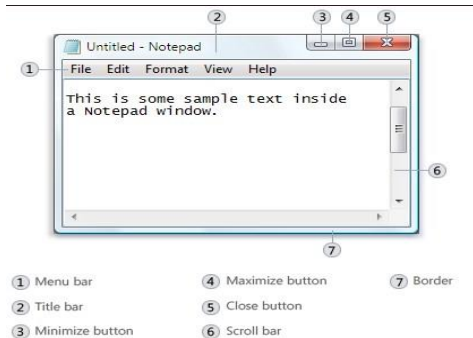
- **Restart:** The Restart button "reboots" your computer (it is sometimes called a "warm boot" or "soft boot.") That means it saves your information to the hard drive, turns off the computer for a moment, and then turns it back on again.
- **Sleep:** Clicking on Sleep puts your computer in a low-power state, but doesn't turn it off. The main advantage is that it allows you to get back to work quickly, without having to wait for the computer to do a full reboot

Working with Windows


Whenever you open a program, file, or folder, it appears on your screen in a box or frame called a window (that's where the Windows operating system gets its name). Because windows are everywhere in Windows, it's important to understand how to move them, change their size, or just make them go away. **Parts of a window**

Although the contents of every window are different, all windows share some things in common. For one thing, windows always appear on the desktop - the main work area of your screen. In addition, most windows have the same basic parts.



- **Title bar.** Displays the name of the document and program (or the folder name if you're working in a folder).
- **Minimize, Maximize, and Close buttons.** These buttons hide the window, enlarge it to fill the whole screen, and close it, respectively (more details on these shortly).
- **Menu bar.** Contains items that you can click to make choices in a program.
- **Scroll bar.** Let's you scroll the contents of the window to see information that is currently out of view.
- **Borders and corners.** You can drag these with your mouse pointer to change the size of the window.



Moving a window


To move a window, point to its title bar with the mouse pointer . Then drag the window to the location that you want. (Dragging means pointing to an item, holding down the mouse button, moving the item with the pointer, and then releasing the mouse button.)

Changing the size of a window


- To make a window fill the entire screen, click its Maximize button  or double-click the window's title bar.
- To return a maximized window to its former size, click its Restore button  (this appears in place of the Maximize button).
- To resize a window (make it smaller or bigger), point to any of the window's borders or corners. When the mouse pointer changes to a two headed arrow (see picture below), drag the border or corner to shrink or enlarge the window.
- A window that is maximized cannot be resized. You must restore it to its previous size first.



Hiding a window

- Hiding a window is called minimizing it. If you want to get a window out of the way temporarily without closing it, minimize it.
- To minimize a window, click its Minimize button . The window disappears from the desktop and is visible only as a button on the taskbar, the long horizontal bar at the bottom of your screen.
- To make a minimized window appear again on the desktop, click its taskbar button. The window appears exactly as it did before you minimized it.

Closing a window

- Closing a window removes it from the desktop and taskbar. If you're done with a program or document and don't need to return to it right away, close it.
- To close a window, click its Close button .
- If you close a document without saving any changes you made, a message appears that gives you the option to save your changes.

Switching between windows

If you open more than one program or document, your desktop can quickly become cluttered with windows. Keeping track of which windows you have open isn't always easy, because some windows might partially or completely cover others.

Using the taskbar.

The taskbar provides a way to organize all of your windows. Each window has a corresponding button on the taskbar. To switch to another window, just click its taskbar button. The window appears in front of all other windows, becoming the active window—the one you're currently working in.

To easily identify a window, point to its taskbar button. When you point to a taskbar button, you'll see a thumbnail-sized preview of the window, whether the content of the window is a document, a photo, or even a running video. This preview is especially useful if you can't identify a window by its title alone.

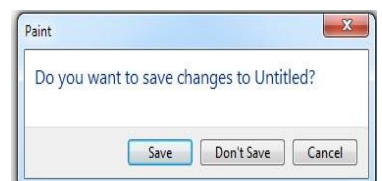
- Using **Alt +Tab**. You can switch to the previous window by pressing Alt+Tab, or cycle through all open windows and the desktop by holding down Alt and repeatedly pressing Tab. Release Alt to show the selected window.
- Using Aero Flip 3D. Aero Flip 3D arranges your windows in a three-dimensional stack that you can quickly flip through. To use Flip 3D:
- Hold down the Windows logo key & and press Tab to open Flip 3D.



Dialog boxes

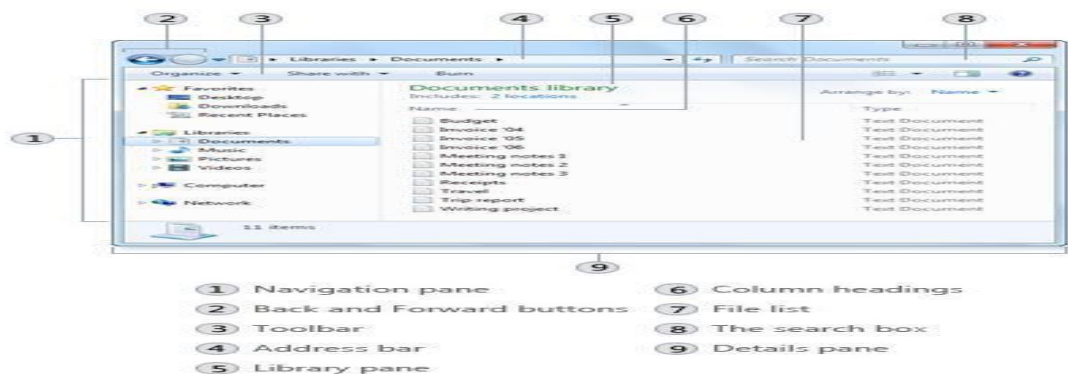
A dialog box is a special type of window that asks you a question, allows you to select options to perform a task, or provides you with information. You'll often see dialog boxes when a program or Windows needs a response from you before it can continue.

Unlike regular windows, most dialog boxes can't be maximized, minimized, or resized. They can, however, be moved.





Understanding the parts of a window

When you open a folder or library, you see it in a window. The various parts of this window are designed to help you navigate around Windows or work with files, folders, and libraries more easily. Here's a typical window and each of its parts:



Window part What it's useful for

Navigation pane: Use the navigation pane to access libraries, folders, saved searches, and even entire hard disks. Use the Favorites section to open your most commonly used folders and searches; use the Libraries section to access your libraries. You can also expand Computer to browse folders and subfolders.

Back and Forward buttons: Use the **Back** button  and the **Forward** button  to navigate to other folders or libraries you've already opened without closing the current window. These buttons work together with the address bar; after you use the address bar to change folders.

Toolbar: Use the toolbar to perform common tasks, such as changing the appearance of your files and folders, burning files to a CD, or starting a digital picture slide show. The toolbar's buttons change to show only the tasks that are relevant.


Address bar: Use the address bar to navigate to a different folder or library or to go back to a previous one. Library pane The library pane appears only when you are in a library (such as the Documents library). Use the library pane to customize the library or to arrange the files by different properties.

Column headings: Use the column headings to change how the files in the file list are organized. For example, you can click the left side of a column heading to change the order the files and folders are displayed in, or you can click the right side to filter the files in different ways. (Note that column headings are available only in Details view.)


File list: This is where the contents of the current folder or library are displayed. If you type in the search box to find a file, only the files that match your current view (including files in subfolders) will appear.

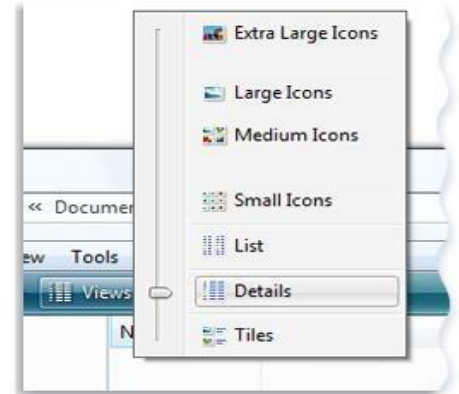
Search box: Type a word or phrase in the search box to look for an item in the current folder or library. The search begins as soon as you begin typing—so if you type "B," for example, all the files with names starting with the letter B will appear in the file list.

Details pane Use the details pane to see the most common properties associated with the selected file. File properties are information about a file, such as the author, the date you last changed the file, and any descriptive tags you might have added to the file.

Preview pane: Use the preview pane to see the contents of most files. If you select an e-mail message, text file, or picture, for example, you can see its contents without opening it in a program. If you don't see the preview pane, click the **Preview pane** button  in the toolbar to turn it on.

Viewing and arranging files and folders

When you open a folder or library, you can change how the files look in the window. For example, you might prefer larger (or smaller) icons or a view that lets you see different kinds of information about each file. To make these kinds of changes, use the **Views** button  in the toolbar.



Each time you click the left side of the Views button, it changes the way your files and folders are displayed by cycling through

five different views: Large Icons, List, a view called Details that shows several columns of information about the file, a smaller icon view called Tiles, and a view called Content that shows some of the content from within the file. If you click the arrow on the right side of the Views button, you have more choices. Move the slider up or down to fine tune the size of the file and folder icons. You can see the icons change size as you move the slider.

Working with file and folder 1. Selecting • Single object

To select a single object, click on it once.

• Multiple object

There are several ways to select Multiple files or folders.

- To select a consecutive group of files or folders, click the first item, press and hold down the Shift key, and then click the last item.
- To select Multiple files or folders that are near each other, drag the mouse pointer to create a selection around the outside of all the items that you want to include.
- To select non-consecutive files or folders, press and hold down the Ctrl key, and then click each item that you want to select.
- To select all of the files or folders in a window, on the toolbar, click **Organize**, and then click **Select all**. If you want to exclude one or more items from your selection, press and hold down the Ctrl key, and then click the items.

Notes: After selecting files or folders, you can perform many common tasks, such as copying, deleting, renaming, printing, and compressing. Simply right-click the selected items, and then click the appropriate choice.

2. Rename

- Click the file or folder to select it
- Click the organize button on the toolbar, and then click Rename
- With the name selected highlights, type a new name, or click to position the insertion point, and then edit the name.
- Press Enter

Notes:

- Right-click the file or folder you want to rename, click Rename, type a name, and then press Enter.
- You can also select the file, then press **F2**, type a name, and then press Enter.

- *File names can be up to 255 characters. You can use spaces and underscores in names, but you can't use the following characters: * : < > | ? " \ or /. Remember the best way to keep your files organized is with a consistent naming convention.*

3. Copying

When you copy an item, the original item remains in its original location— plus you have the new copy

- Open the location that contains the file you want to copy.
- Right-click the file, and then click Copy.
- Open the location where you want to store the copy.
- Right-click an empty space within the location, and then click Paste. The copy of the original file is now stored in the new location. **Notes:**
- *Another way to copy and paste files is to use the keyboard shortcuts **Ctrl+C** (Copy) and **Ctrl+V** (Paste).*
- *You can also press and hold the right-mouse button and then drag the file to the new location. When you release the mouse button, click Copy here.*

4. Moving (cut)

Moving a file (or folder) is different from copying it. Moving cuts the item from its previous location and places it in a new location. Copying leaves the original item where it was and creates a copy of the item elsewhere. In other words, when you copy something you end up with two of it. When you move something, you only have the one thing.

- Open the drive or folder containing the file or folder you want to move.
- Select the files or folders you want to move.
- Click the Organize button on the toolbar, and then click Cut.
- Display the destination folder where you want to move the files or folder.
- Click the Organize button on the toolbar, and then click Paste.

Copy or Move a File or Folder Using Drag and Drop

- Open the drive or folder containing the file or folder you want to copy or move.
- Select the files or folders you want to copy or move.
- In the Navigation pane, point to a folder list to display the expand and collapse arrows.
- Click the arrows to display the destination folder, and then click the destination folder.
- Right-click the selected files or folders, drag to the destination folder, and then click Copy **Here** or **Move Here**.

Notes:

To move the selected items, drag them to the destination folder. To copy the items, hold down the Ctrl key while you drag.

*Another way to copy and paste files is to use the keyboard shortcuts **Ctrl+X** (Cut) and **Ctrl+V** (Paste). Pay attention to pop-up messages that appear when dragging—you can use these to find out what will happen when you release the mouse button.*

5. Create a Folder

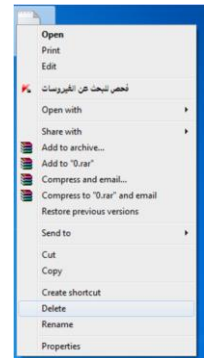
- Open the drive or folder where you want to create a folder.
- Click the **New folder** button on the toolbar.
- With the New Folder name selected, type a new name.
- Press Enter.

Notes:

*Right-click a blank area on the desktop or in the folder window, point to **New**, and then click **Folder**.*

6. Deleting

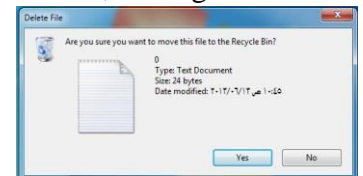
- Select the file or folder.
- Click the Organize button and select Delete from the pull-down menu.
- After you select delete a confirmation message appears.



Notes:

- You can also delete a file or folder by press right click on the item and then click delete.
- Or press Del buttons on the keyboard.
- The easiest way to delete on the desktop by drag and drop it to recycle Bin.

- When you delete a file or folder from your hard disk, it's not deleted right away. Instead, it's stored in the Recycle Bin until the Recycle Bin is emptied.
- If you delete a file or folder from a network folder or from a USB flash drive, it might be permanently deleted rather than being stored in the Recycle Bin.
- If a file cant be deleted, it might be in use by a program that's currently running. Try closing the program or restarting your computer to fix the problem. For more information.




Note: To permanently delete a file without first moving it to the Recycle Bin, select the file, and then press **Shift + Delete**.

Permanently delete files from the Recycle Bin

- When you delete a file, it's usually moved to the Recycle Bin so that you can restore the file later if necessary.
 - To permanently remove files from your computer and reclaim any hard disk space they were using, you need to delete the files from the Recycle Bin. You can delete individual files from the Recycle Bin or empty the entire Recycle Bin at once.
1. Open the Recycle Bin by double-clicking the Recycle Bin on the desktop.
 2. Do one of the following:
 - To permanently delete one file, click it, press Delete, and then click Yes.
 - To delete all of the files, on the toolbar, click Empty the Recycle Bin, and then click Yes.

Notes:

- You can empty the Recycle Bin without i  Empty Recycle Bin opening it by right-clicking the Recycle Bin and then clicking **Empty Recycle Bin**.
- You can permanently delete a file from your computer without sending it to the Recycle Bin by clicking the file and then pressing **Shift + Delete**.

Restore item from recycle Bin

- Open the Recycle Bin by double-clicking the Recycle Bin on the desktop.
- Do one of the following:
 - To restore a file, click it, and then, on the toolbar, click Restore this item.
 - To restore all of the files, make sure that no files are selected, and then, on the toolbar, click Restore all items.
- The files will be restored to their original locations on your computer.



Note

- Deleted files do not stay in the Recycle Bin indefinitely. By default, the deleted files in the Recycle Bin can occupy 10% of your hard disk space. When you've deleted enough files to exceed this 10%, the oldest files in the Recycle Bin are automatically and permanently deleted from your hard disk.

7. Opening an existing file or folder


- To open a file, double-click it. The file will usually open in the program that you used to create or change it. For example, a text file will open in your word-processing program.

8. Search for a file and folder

Windows provides several ways to find files and folders. There isn't one best way to search—you can use different methods for different situations.

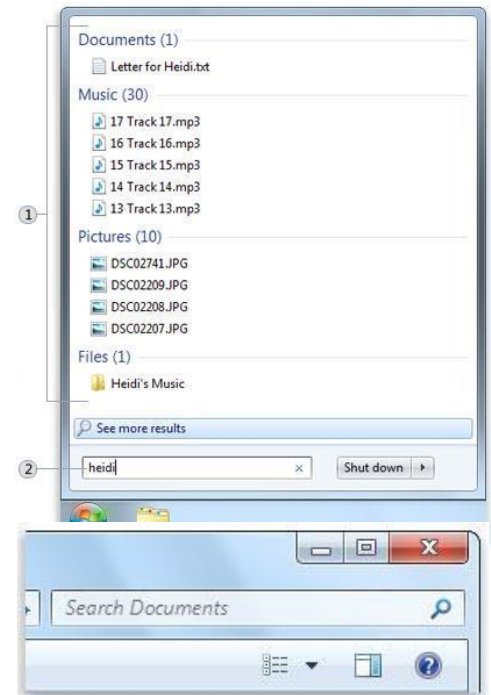
A. Use the search box on the Start menu

You can use the search box on the Start menu to find files, folders, programs, and e-mail messages Stored on your computer.

- Click the Start button  and then type a word or part of a word in the search box.
- Search result appear as soon as you start typing in the search box.

as you start typing in the search box. As you type, items that match your text will appear on the Start menu. The search results are based on text in the file name, text in the file, tags, and other file properties.

B. Use the search box in a folder or library

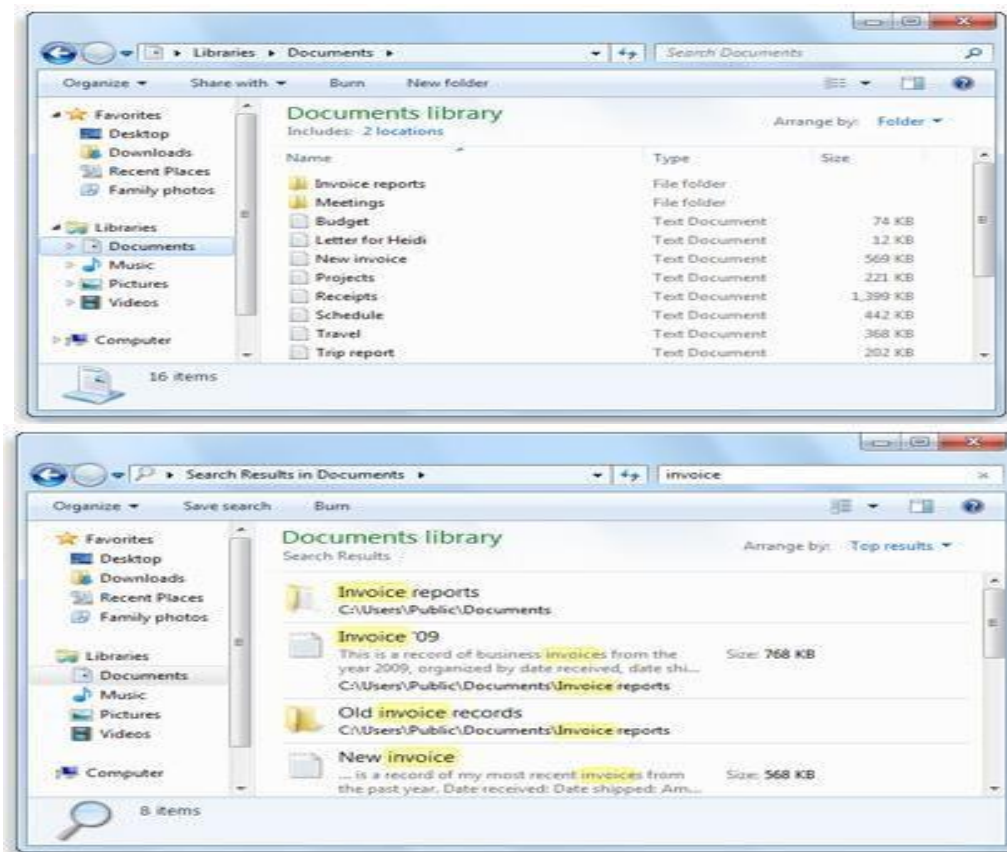


Browsing for the file might mean looking through hundreds of files and subfolders. To save time and effort, use the search box at the top of the open window.

The search box filters the current view based on text that you type. The search looks for text in the file name and contents; and in the file properties, such as in tags. In a library, the search includes all folders included in the library as well as subfolders within those folders. To search for a file or folder by using the search box:

- Type a word or part of a word in the search box.
- As you type, the contents of the folder or library are filtered to reflect each successive character you type. When you see the file that you want, stop typing.

For example, now, suppose that you're looking for your invoice files, so you type "invoice11 in the search box. As you type, the view is automatically filtered and you see something like this:




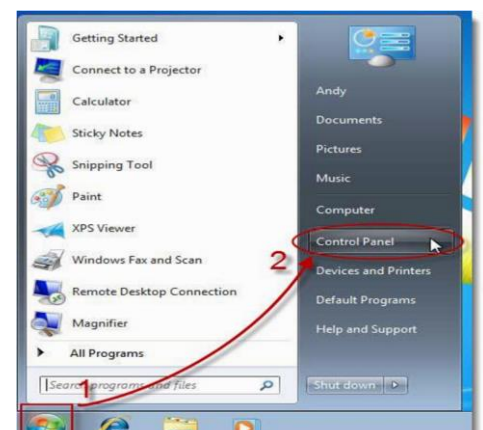
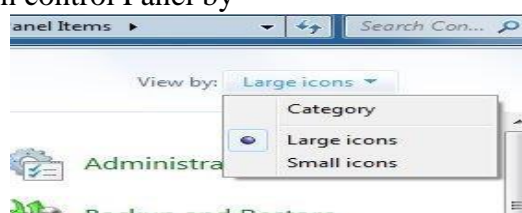
Notes:

- You can use a question mark (?) as a wildcard for a single character and an asterisk (*) as a wildcard for any number of characters.
- The easiest way to start search window is by press **F3**
- If you know which file type it is, you can just enter the file extension ("JPG" for example) in the search box.
- You can also use other techniques in the search box to quickly narrow down a search. For example, if you're searching for a file based on one or more of its properties (such as a tag or the date the file was last modified), you can use search filters to specify the property in your search. Or, you can type keywords in the search box to narrow down your results even further.

Working with Control Panel

You can use Control Panel to change settings for Windows. These settings control nearly everything about how Windows looks and works, and you can use them to set up Windows so that it's just right for you.

- Open Control Panel by clicking the **Start** button  and then clicking **Control Panel**.
- You can display Control Panel screen with different view types as follow Open control Panel by



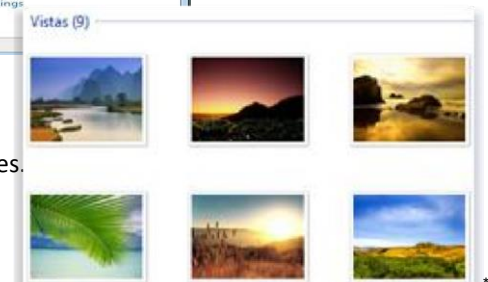
There are two ways to find Control Panel items:
 o **Use search:** To find a setting you're interested in or a task you want to perform, type a word or phrase in the search box. For example, type "sound" to find specific settings for your sound card, system sounds, and the volume icon on the taskbar.
 o **Browse:** you can explore Control Panel by clicking different categories (for example, System and Security, Programs, or Ease of Access), and viewing common tasks listed under each category or, under **View by**, click either **Large icons** or **Small icons** to view a list of all Control Panel items.
 • The following table gives you a description of all the Control Panel categories, including the various programs you can find by clicking each category's hyperlink* .

Category Name	... To Display These Groups of Links
System and Security	Action Center, Windows Firewall, System, Windows Update, Power Options, Backup and Restore, BitLocker Drive Encryption, and Administrative Tools
User Accounts	User Accounts, Windows CardSpace, Credential Manager, and Mail (32-bit)
Network and Internet	Network and Sharing Center, Homegroup, and Internet Options
Appearance and Personalization	Personalization, Display, Desktop Gadgets, Taskbar and Start Menu, Ease of Access Center, Folder Options, and Fonts
Hardware and Sound	Devices and Printers, AutoPlay, Sound, Power Options, Display, and Windows Mobility Center
Clock, Language, and Region	Date and Time, and Region and Language
Programs	Programs and Features, Default Programs, and Desktop Gadgets
Ease of Access	Ease of Access Center and Speech Recognition



Change desktop background (wallpaper)

<http://www.dummies.com/how-to/content/windows-7-control-panel-features>.



Your desktop background (also called wallpaper) can be a digital picture from your personal collection or one that comes with Windows. You can also select a color for your desktop background or use a color to frame your background picture. Windows comes with lots of desktop background choices.

- To change the desktop background

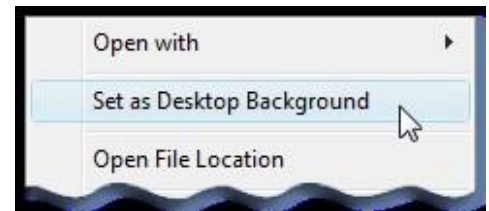
1. Open Desktop Background by clicking the **Start** button, clicking **Control Panel**, clicking **Appearance and Personalization**, clicking **Personalization**, and then clicking **Desktop Background**.
2. Click the picture or color you want for your desktop background. If the picture you want to use is not in the list of desktop background pictures, click the Picture location down arrow to view other categories, or click Browse to search for the picture on your computer. When you find the picture you want, double-click it. It will become your desktop background and appear in the list of desktop backgrounds.



3. Under How should the picture be positioned, choose to have the picture fit the screen, tile, or be centered on the screen, and then click OK.

Note:

You can make any picture stored on your computer (or a picture you are currently viewing) your desktop background by rightclicking the picture, and then clicking *Set as Desktop Background*.



Change screen saver

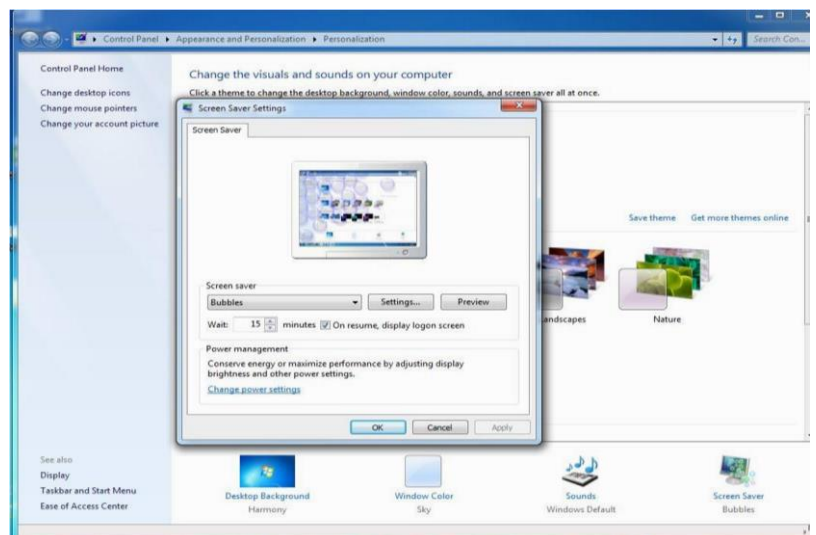
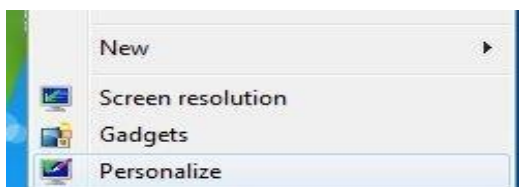
Windows comes with several screen savers. You can also create your own screen savers from personal pictures you've saved on your computer, or some software companies might develop additional screen savers for download or purchase.

To change a screen saver

1. Open Screen Saver Settings by clicking the Start button, clicking Control Panel, clicking Appearance and Personalization, clicking Personalization, and then clicking Screen Saver.
2. Under Screen saver, in the drop-down list, click the screen saver you want to use.
3. Click Preview to see what your chosen screen saver will look like.
4. Click OK.

Note:

- To clear a screen saver, move your mouse or press any key.
- You can change wallpaper and screen saver by right click on the desktop and then choose personalize



How to use the taskbar

You can customize the taskbar, including the way taskbar buttons look, how they group together when you have more than one window open, change where the taskbar is on your desktop, and decide what icons and apps are on it.



Rearrange taskbar buttons

- To rearrange the order of app buttons on the taskbar, drag a button from its current position to a different position on the taskbar. You can rearrange apps as often as you like.
- All open files from the same app are always grouped together, even if you didn't open them one after the other. This is so you can see all of the previews for that app at the same time.

Move the taskbar

- Usually, you can find the taskbar at the bottom of the desktop, but you can move it to the sides or top of the desktop. Before you can move the taskbar, you need to unlock it.
- Press and hold or right-click an empty space on the taskbar. If **Lock the taskbar** has a check mark next to it, the taskbar is locked. You can unlock it by tapping or clicking **Lock the taskbar**, which removes the check mark.
- To move the taskbar Do one of the following:
 - o Tap an empty space on the taskbar, and then drag it to one of the four edges of the desktop. When the taskbar is where you want it, let go.
 - o (If you're using a mouse, click an empty space on the taskbar, and then hold down the mouse button as you drag the taskbar to one of the four edges of the desktop. When the taskbar is where you want it, release the mouse button.)

Change how taskbar buttons appear

- You can choose how buttons are grouped together when there's more than one window open, and change the size of taskbar button icons.

1. On the **Taskbar** tab, select one of the options from the **Taskbar buttons** list:

- **Always combine, hide labels**

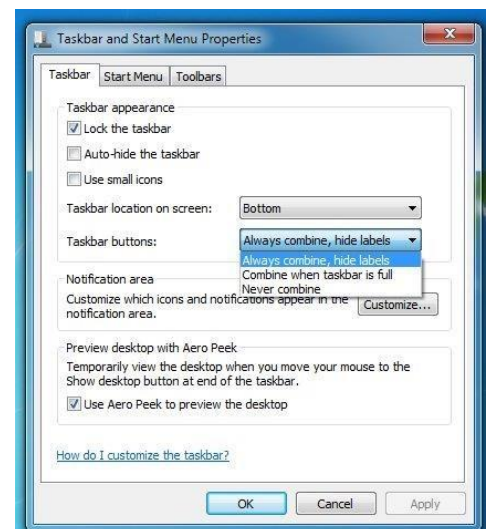
This is the default setting. Each app appears as a single, unlabeled button, even when multiple windows for that app are open.

- **Combine when taskbar is full**

This setting shows each window as an individual, labeled button. When the taskbar becomes crowded, apps with multiple open windows collapse into a single app button, tap or clicking the button displays a list of the windows that are open.

- **Never combine**

This setting shows each window as an individual, labeled button, and never combines them, no matter how many windows are open. As more apps and windows open, buttons get smaller, and eventually the buttons will scroll.



2. To use small taskbar button icons, select the **Use small taskbar buttons** check box. To use large icons, clear the check box.

3. Tap or click **OK**.

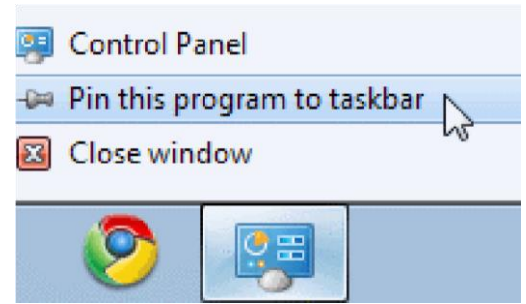
Pin an app to the taskbar

You can pin an app directly to the taskbar for quick and easy access.

- Swipe in from the right edge of the screen, and then tap Search. (If you're using a mouse, point to the upper-right corner of the screen, move the mouse pointer down, and then click Search.) In the

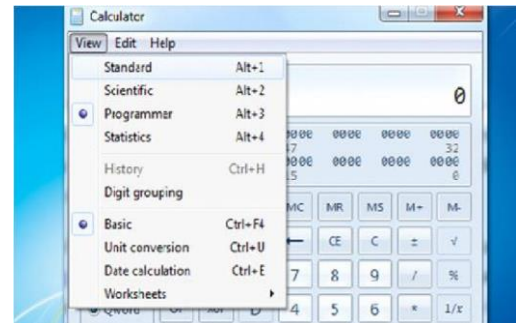
search box, enter the name of the app you want to pin. Then on the search results page, tap or click the app to open it on the desktop.

- On the desktop, press and hold or right-click the app's button on the taskbar to open the app's Jump List (a list of shortcuts to recently opened files, folders, and websites), and then tap or click Pin this program to taskbar.
- To remove a pinned app from the taskbar, open the app's Jump List, and then tap or click Unpin this program from taskbar.



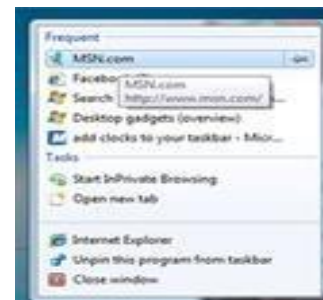
Some Notes: around Windows 7 1. Surpass basic math

Calculator has several dynamic new features - click the **View** menu to check them out. Unit conversion translates Celsius to Fahrenheit, kilometers to miles, meters to feet, grams to ounces, joules to BTUs, and more. You can use the new calculation worksheets to quickly compute everyday stuff like fuel economy and auto lease payments. The Programmer and Statistics modes handle the geekier tasks.



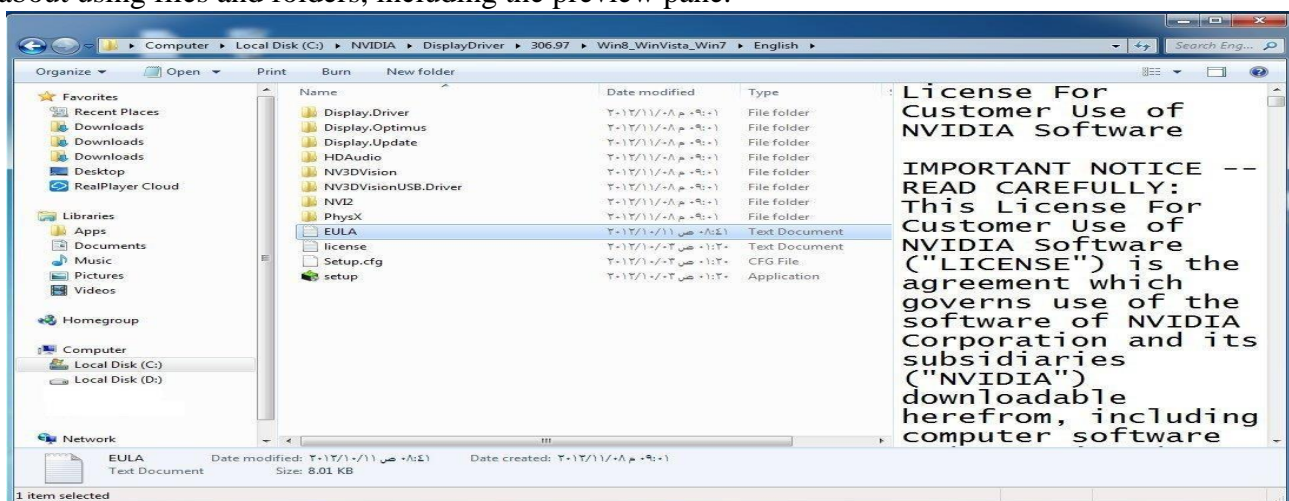
2. Drag files from Jump Lists

With Jump Lists, you get a quick-access list of your most frequently or recently used files. Just look for the right pointing arrow next to programs on your Start menu or left-click a program on the taskbar. You can use Jump Lists to open files and programs in just a few clicks. Even better, you can drag items from Jump Lists into open folders or email.



3. Preview your files

Another great time saver is the file preview pane within a folder or library. Use it to see a file's contents without opening the file in a program. You can open the preview pane in a window by pressing Alt+P. Items such as photos and PDF files will be previewed in this area when you click them. Learn more about using files and folders, including the preview pane.

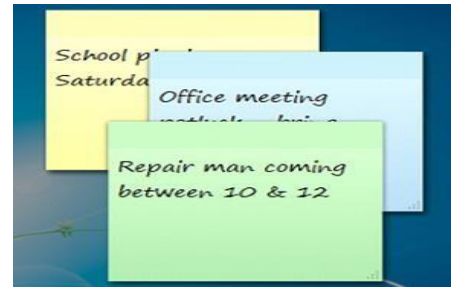


4. Easily customize your Sticky Notes

Now you can make the Sticky Notes you keep on your desktop even handier. You can format the text and change its color, as well as resize, collapse, and flip through several Sticky Notes. If you have a Tablet PC or touchscreen, you can use multiple input (pen and touch) methods within a single note.

Notes: Open Sticky Notes by tapping the Start button. In the search

- box, type Sticky Notes, and then tap Sticky Notes in the list of results.
- To create additional notes, click the New Note button. □ You can also open a new note by pressing **Ctrl+N**.



5. Desktop Gadgets

Windows contains mini-programs called gadgets, which offer information at a glance and provide easy access to frequently used tools. For example, you can use gadgets to display a picture slide show or view continuously updated headlines. Some of the gadgets that come with Windows 7 are Calendar, Clock, Weather, Feed Headlines, Slide Show, and Picture Puzzle.

