

COMPUTER PROGRAMMING

Laser and Optoelectronic Engineering Department



Lecturer 1

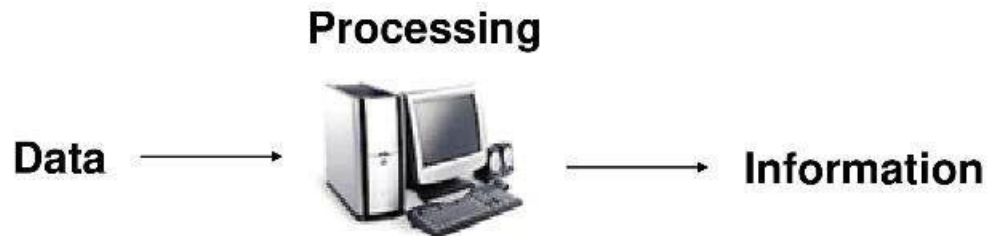
Introduction to Computers

- ❖ What is Computer?
- ❖ Computer Components
- ❖ Hardware Components



❖ What is Computer?

- **Computer:** is an electronic device which accepts data, processes it and returns new information as output.



- **data:** raw facts.
- **information:** meaningful data.

❖ Computer Components

The computer system has two main components which when both combined makes a computer system.

These are:

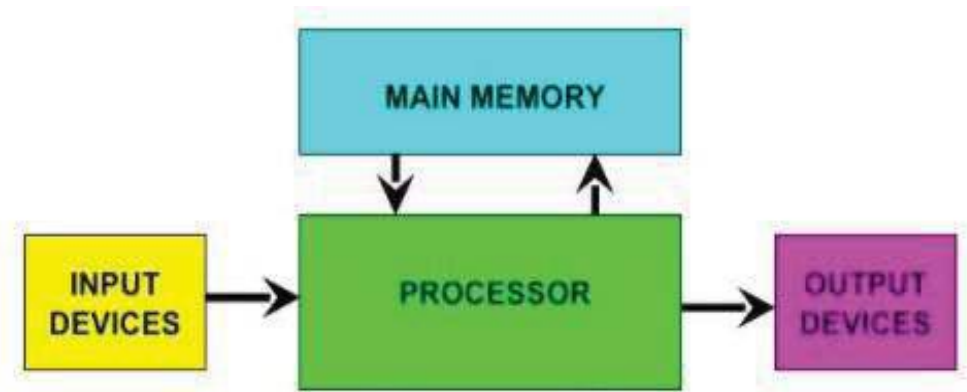
- Hardware
- Software



❖ Hardware Components

The major hardware components of a computer system are:

- Input devices
- Output devices
- Processor
- Memory



Input Devices

Input Devices are any electronic device that are connected to a computer to allow the user to input (insert) data to the computer.



KEYBOARD



MOUSE



JOYSTICK



MICROPHONE



SCANNER

Output Devices

Output Devices: allow the user to output (display or print) information (readable form) from the computer.

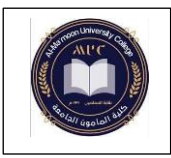


Processor

It is a small chip inside the computer. called the Central Processing Unit (CPU).

- It is the brain of computer.
- It does all decisions, calculations.
- It executes the instruction contained in software program (process data inside computer).
- It determines how fast your computer will run.
- It is measured by MHz (Mega Hertz).





CPU Parts

CPU have three basic parts.

1. Arithmetic and Logic Unit (ALU).

Performs arithmetic operations and logical operations.

2. Control Unit (CU).

It reads and interprets instructions from memory and transforms them into a series of signals to activate other parts of the computer.

3. Registers.

is the part of the computer that holds data and instructions for processing.

Memory

Hardware devices used to store data and information, this memory enables the user to get his data whenever he want.

CLASSIFICATION OF MEMORY

Broadly classified into two :

- Primary Memory (Main Memory).
- Secondary memory (secondary storage, mass storage).

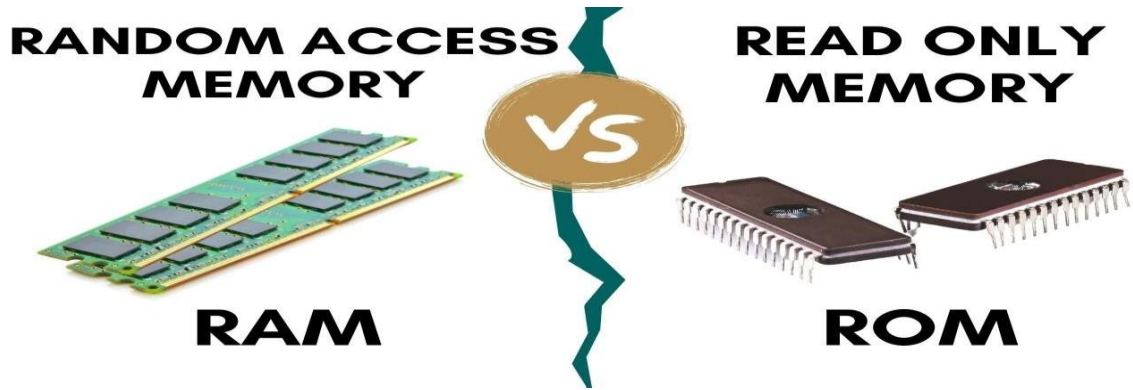
Primary Memory

Primary memory is the memory internal to the computer. i.e. the memory generally placed on the Mother board of the computer.

It can be further divided into two parts:

- RAM (Random Access Memory).
- ROM (Read Only Memory).





RAM	ROM
1. Temporary Storage.	1. Permanent storage.
2. Store data in MBs.	2. Store data in GBs.
3. Volatile.	3. Non-volatile.
4. Used in normal operations.	4. Used for the startup process of computers.
5. Writing data is faster.	5. Writing data is slower.

Secondary Memory

Secondary memory is the memory external to the computer. Also called storage devices, external Storage.

- for large storage of data.
- for permanent storage of data.



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Lecturer 2

Introduction to Computers

- ❖ Software
- ❖ Computer Language
- ❖ Homework

❖ Software

Software, simply are the computer programs. The instructions given to the computer in the form of a program is called Software.

Types of software

1. **System software**: Run fundamental operations

- Loading and running programs
- Saving and retrieving data
- Communicating with printers, modems, etc.

Examples of systems software

- » DOS
- » Windows 3.1, 95, 98, Me, 2000, and XP
- » Unix
- » Linux

2. **Application software**: Helps you to accomplish a certain task

Examples

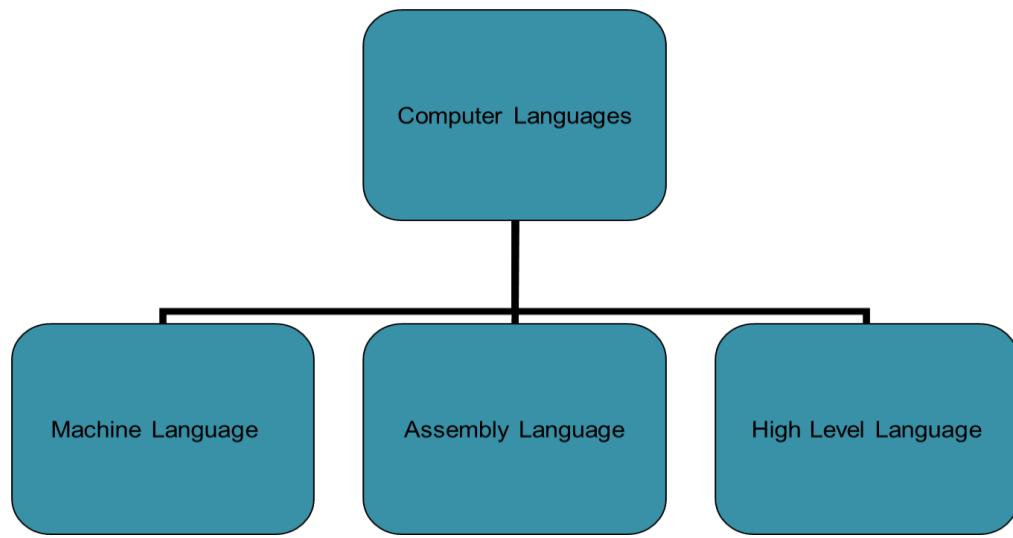
- » Word processing - memos, reports, etc.
- » Spreadsheets - budgets, etc.
- » Database - search, sort, select data
- » Educational - simulations, practice
- » Graphics - charts, diagrams



❖ Computer Language

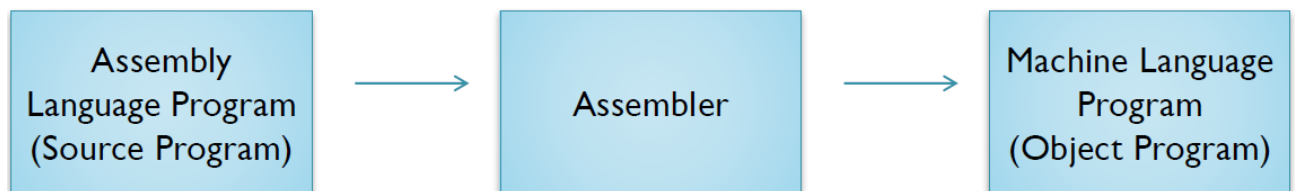
Means of communication used to communicate between people and the computer

Classification of Computer Languages



Machine language: These language instructions are directly executed by CPU.

Assembly language: The endeavor of giving machine language instructions a name structure that means bit strings of instructions of machine language are given name here

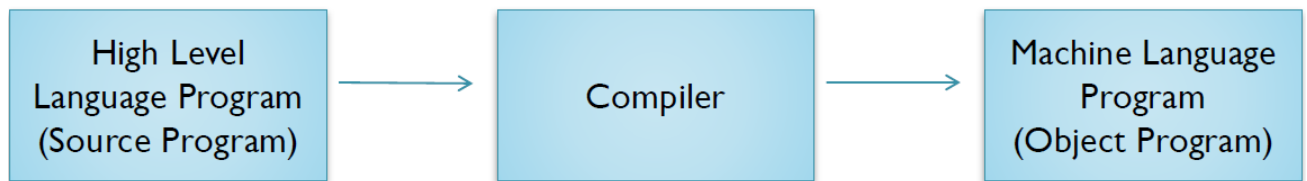


Assembler is needed to convert assembly language into machine language.





High Level Language: The user-friendly language ...more natural language than assembly language.



Complier is needed to convert high level to machine language.

❖ **Homework:**

- 1-Types of Computers According to their size and performance.
2. Computer features.

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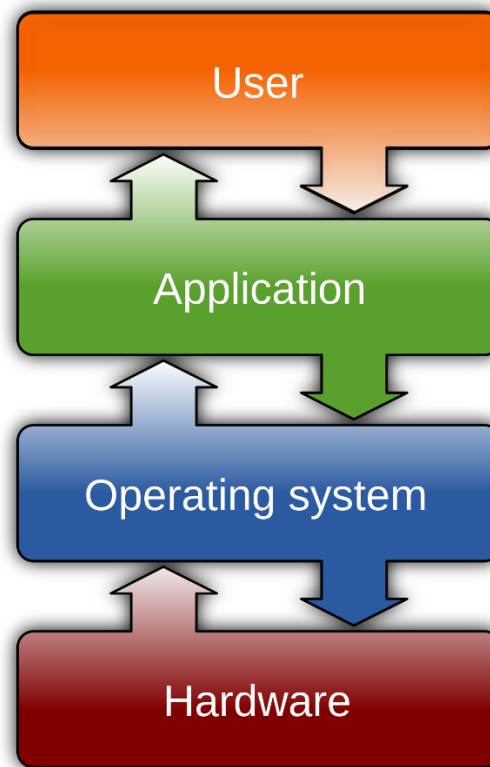
Lecturer 3

- ❖ **Operating System**
- ❖ **Abstract View of Computer System**
- ❖ **Computer System Organization and Operation**
- ❖ **Goals vs functions of Operating Systems**

Operating System

The Operating System (OS) is a system software which:

- Acts as intermediary between the hardware and user.
- Manages the system resources in an unbiased fashion between the hardware and software.
- Provides a platform on which other application programs are installed.



Abstract View of Computer System

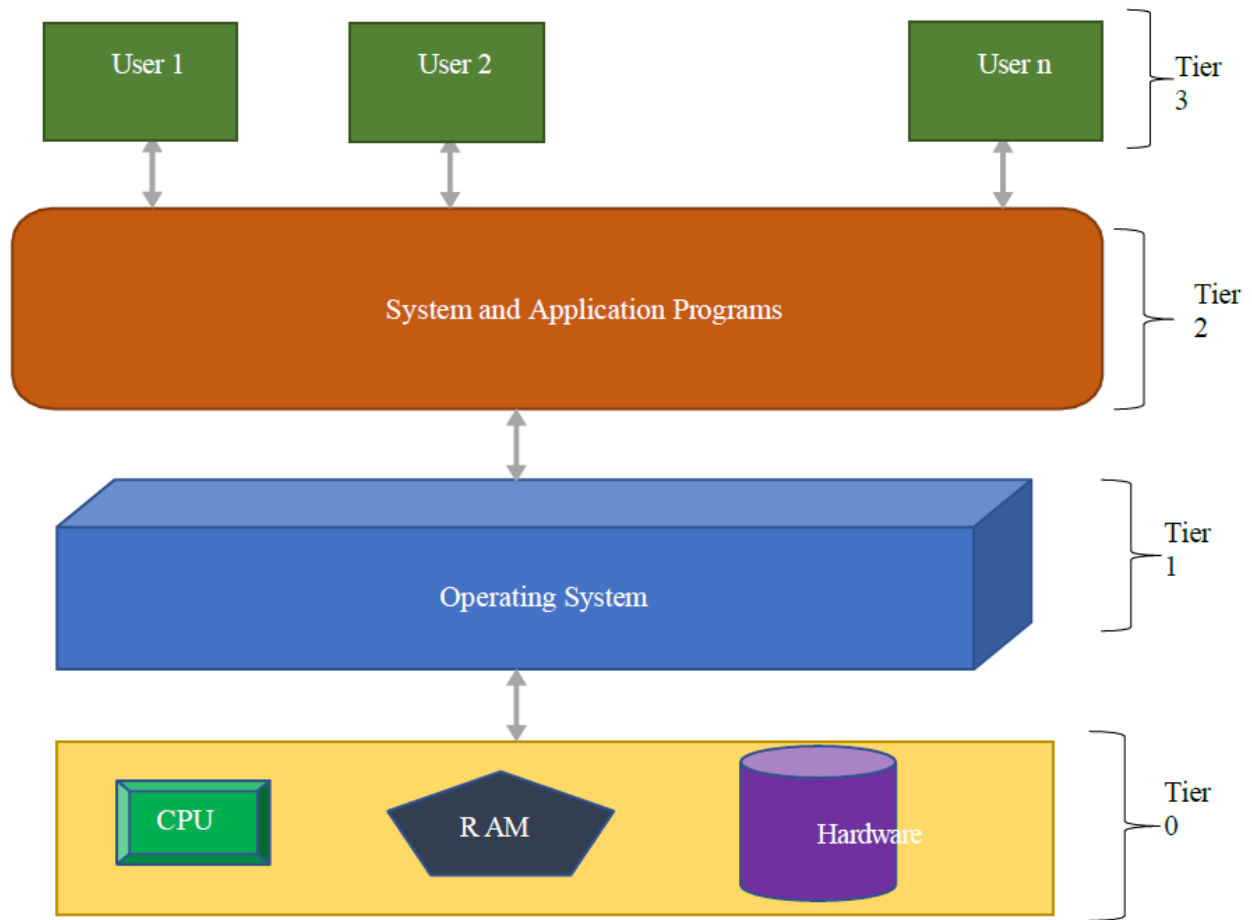
The computer system is mainly organized into four (4) tiers:

Tier 0: Lowest level, where we have the computer hardware e.g. CPU, RAM, ROM, Hard drive, I/O devices and buses etc.

Tier 1: Operating system

Tier 2: System and Application Programs are located on this tier e.g. Compilers, Assemblers, Device Drivers, Antiviruses and other application programs etc.

Tier 3: Users are located on this tier and if the users wants to get anything done on hardware then they will access it through the application software and OS. For example, if a user wants to watch a movie then the user will go to VLC player (or any other movie player software) and watch the video. The VLC player forwards the instructions (which tell about the resources requirement) to OS and OS will further execute them and allows the access to hardware.



Computer System Organization and Operation

Before we explore the computer system organization and operation, let us discuss some OS related key terminologies.

1. Kernel

The Kernel is the core component of the OS which helps the users to interact with the hardware. The kernel controls the communication between user and the hardware. If an application software wants to access any hardware or I/O device then it will first request to kernel and kernel will check the resources and allocate the resources or turn down the request.

2. System Call

If an application software wants to access any hardware e.g. CPU, RAM or ROM etc. then it will request to kernel that request is called system call.

3. Bit

The smallest entity a computer can process is called bit.

4. Bytes

Eight (8) bits = 1 Byte

5. Word

Number of bits a CPU processes simultaneously.

6. Registers

Smallest storage device which stores the data in bits.

Computer System Components and operation

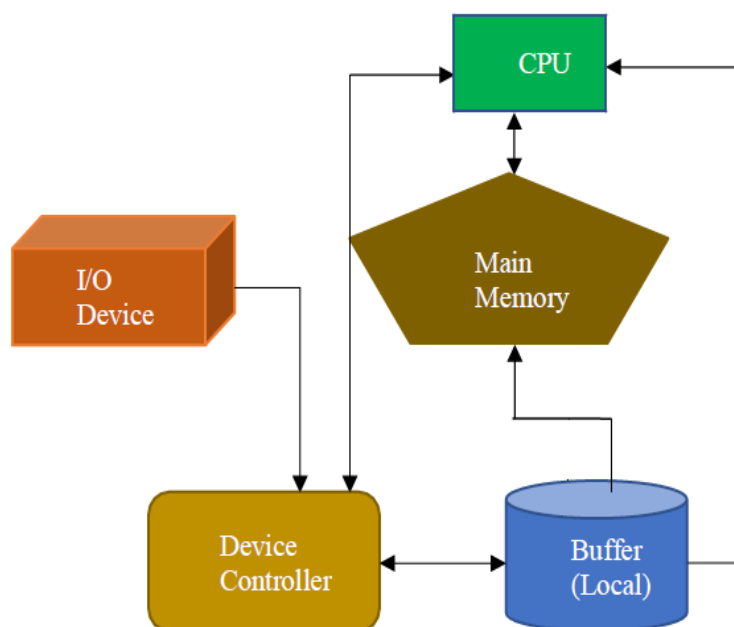
A modern general-purpose computer consists of following components:

- Central Processing Unit (CPU)
- Device Controller (DC)
- Memory

CPU has two internal parts Control Unit (CU) and Arithmetic Logic Unit (ALU). The CU fetches the instructions from RAM and the ALU firstly executes it and then forward the output to Main Memory (MM) or I/O device.

- The CPU and the DC are connected through common bus which provides the access to shared memory. Each DC is in charge of a specific type of device e.g. disk drivers, audio and video I/O devices etc. The CPU and the DC both can execute in parallel therefore there could be a clash of memory access which can be resolved by memory management controllers. Since, the CPU is much faster than I/O devices therefore to avoid the CPU idle state the DC uses a local buffer which manages the operations in the following fashion:

- a) The DC takes the data/process information from the I/O devices and then stores it in the local buffer.
- b) When the data gets completed then the DC sends an interrupt to CPU so, CPU can disengage itself with the on-going tasks.
- c) CPU then moves the data/Instruction from the local buffer to MM and then executes it.





Goals vs functions of Operating Systems

The primary goal of general-purpose OS is convenience (user friendly) while the efficiency is considered as a secondary goal. However, it is other way around for Network OS or any other server- based computing environment.

There are six (6) main functions of a general-purpose OS:

- Process Management
- Memory Management
- I/O Device Management
- File System Management
- Network Management
- Security and Protection

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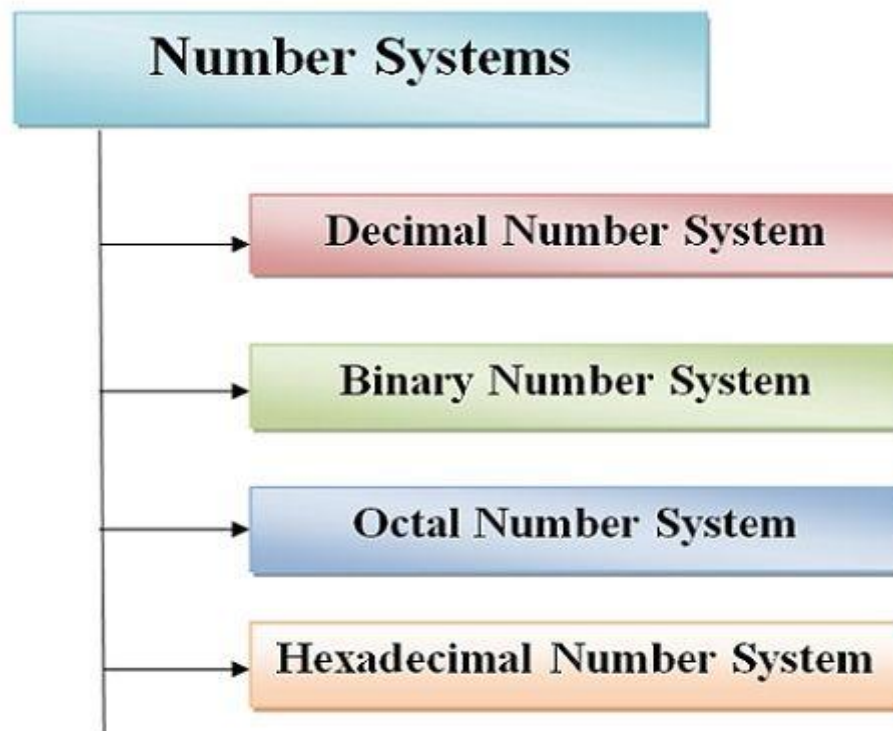
Lecturer 4

TYPES OF NUMBER SYSTEM

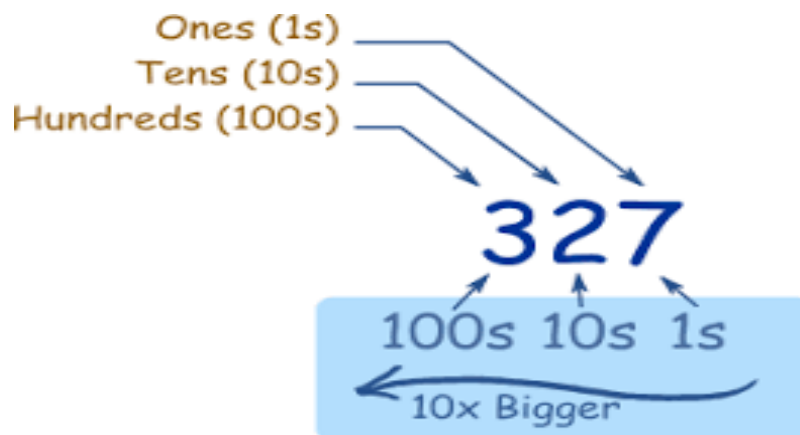
- ❖ DECIMAL NUMBER SYSTEM
- ❖ BINARY NUMBER SYSTEM
- ❖ OCTAL NUMBER SYSTEM
- ❖ HEXADECIMAL NUMBER SYSTEM



TYPES OF NUMBER SYSTEM



+ DECIMAL NUMBER SYSTEM:



- The decimal number system contains ten unique symbols 0,1,2,3,4,5,6,7,8 and 9.
- In decimal system 10 symbols are involved, so the base is 10.
- The value attached to the symbol depends on its location with respect to the decimal point.

For example:

9256.26

$$= 9 \times 1000 + 2 \times 100 + 5 \times 10 + 6 \times 1 + 2 \times (1/10) + 6 \times (1/100)$$

$$= 9 \times 10^3 + 2 \times 10^2 + 5 \times 10^1 + 6 \times 10^0 + 2 \times 10^{-1} + 6 \times 10^{-2}$$



BINARY NUMBER SYSTEM:

1	1	0	0	1	0	1	0
↓	↓	↓	↓	↓	↓	↓	↓
2^7	2^6	2^5	2^4	2^3	2^2	2^1	2^0
↓	↓	↓	↓	↓	↓	↓	↓
128	64	0	0	8	0	2	0

- The base of this number system is 2.
- It has two independent symbols.
- The symbols used are 0 and 1.
- A binary digit is called a bit.

Binary to decimal conversion:

For example:

(i) Convert $(10101)_2$ to decimal.

Solution:

(Positional weight)	2^4	2^3	2^2	2^1	2^0
Binary number	1	0	1	0	1

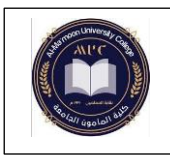
$$\begin{aligned} &= (1 \times 2^4) + (0 \times 2^3) + (1 \times 2^2) + (0 \times 2^1) + (1 \times 2^0) \\ &= 16 + 0 + 4 + 0 + 1 \\ &= (21)_{10} \end{aligned}$$

Decimal to binary conversion:

(i) Convert $(52)_{10}$ into binary.

2		52	
2		26	— 0
2		13	— 0
2		6	— 1
2		3	— 0
2		1	— 1
		0	— 1

Result of $(52)_{10}$ is $(110100)_2$



+ OCTAL NUMBER SYSTEM:

- Its base is 8.
- It has 8 independent symbols 0,1,2,3,4,5,6 and 7.
- Its base $8 = 2^3$, every 3- bit group of binary can be represented by an octal digit.

+ HEXADECIMAL NUMBER SYSTEM:

- The base or radix of this number system is 16.
- The symbols used are 0,1,2,3,4,5,6,7,8,9,A,B,C,D,E and F
- The base $16 = 2^4$, every 4 – bit group of binary can be represented by an hexadecimal digit.

Table of Number Systems

DECIMAL	BINARY	HEXADECIMAL	OCTAL
0	0000	0	0
1	0001	1	1
2	0010	2	2
3	0011	3	3
4	0100	4	4
5	0101	5	5
6	0110	6	6
7	0111	7	7
8	1000	8	10
9	1001	9	11
10	1010	A	12
11	1011	B	13
12	1100	C	14
13	1101	D	15
14	1110	E	16
15	1111	F	17

Homework:

1. Convert $(15)_{10}$ into binary.
2. Convert $(400)_{10}$ into binary.
3. Convert $(111)_2$ to decimal.
4. Convert $(11001)_2$ to decimal.

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Lecturer 5

LOGIC GATES

- ✚ NOT GATE (INVERTER)
- ✚ AND GATE
- ✚ OR GATE
- ✚ NAND GATE
- ✚ NOR GATE
- ✚ EXCLUSIVE – OR (X-OR) GATE
- ✚ EXCLUSIVE – NOR (X-NOR) GATE



LOGIC GATES:

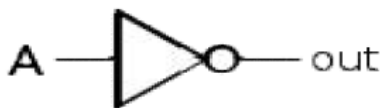
- Logic gates are the fundamental building blocks of digital systems.
- There are 3 basic types of gates AND, OR and NOT.
- Logic gates are electronic circuits because they are made up of a number of electronic devices and components.
- Inputs and outputs of logic gates can occur only in 2 levels. These two levels are termed HIGH and LOW, or TRUE and FALSE, or ON and OFF or simply 1 and 0.

DIFFERENT TYPES OF LOGIC GATES

+ NOT GATE (INVERTER):

- A NOT gate, also called an inverter, has only one input and one output.
- It is a device whose output is always the complement of its input.
- The output of a NOT gate is the logic 1 state when its input is in logic 0 state and the logic 0 state when its input is in logic 1 state.

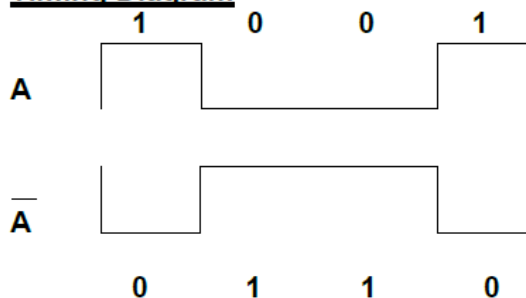
Logic Symbol



Truth table

INPUT A	OUTPUT $\bar{A}$
0	1
1	0

Timing Diagram



+ AND GATE:

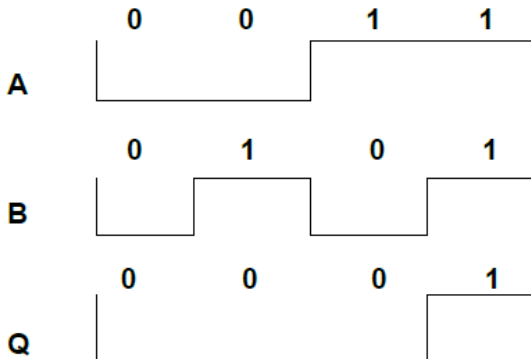
- An AND gate has two or more inputs but only one output.
- The output is logic 1 state only when each one of its inputs is at logic 1 state.
- The output is logic 0 state even if one of its inputs is at logic 0 state.



Logic Symbol



Timing Diagram



Truth Table

		OUTPUT
A	B	$Q = A \cdot B$
0	0	0
0	1	0
1	0	0
1	1	1

Note

The total number of possible combinations of binary inputs to a gate is determined by the following formula:

$$N = 2^n$$

Where **N** is the number of possible input combinations and **n** is the number of input variables. To illustrate,

For two input variables: $N = 2^2 = 4$ combinations

For three input variables: $N = 2^3 = 8$ combinations

For four input variables: $N = 2^4 = 16$ combinations

OR GATE:

- An OR gate may have two or more inputs but only one output.
- The output is logic 1 state, even if on
- The output is logic 0 state, only when each one of its inputs is in logic state.



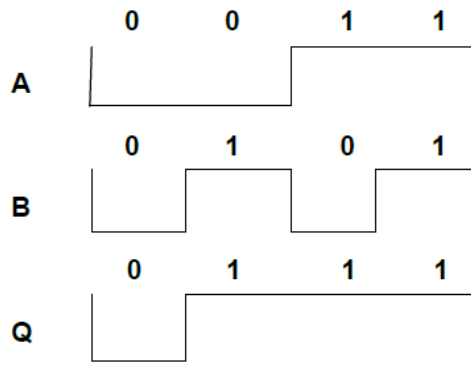
Logic Symbol



Truth Table

INPUT		OUTPUT
A	B	$Q = A + B$
0	0	0
0	1	1
1	0	1
1	1	1

Timing Diagram



NAND GATE:

- NAND gate is a combination of an AND gate and a NOT gate.
- The output is logic 0 when each of the input is logic 1 and for any other combination of inputs, the output is logic 1.

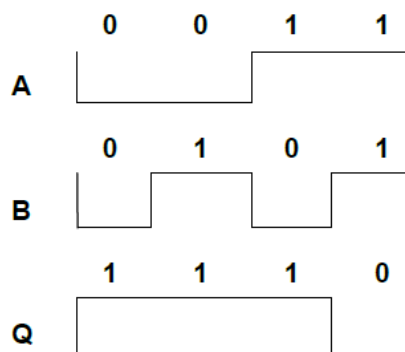
Logic Symbol



Truth Table

INPUT		OUTPUT
A	B	$Q = \overline{A \cdot B}$
0	0	1
0	1	1
1	0	1
1	1	0

Timing Diagram





NOR GATE:

- NOR gate is a combination of an OR gate and a NOT gate.
- The output is logic 1, only when each one of its input is logic 0 and for any other combination of inputs, the output is a logic 0 level.

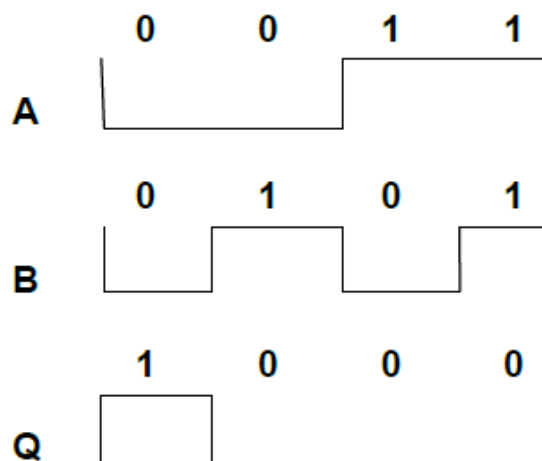
Logic Symbol



Truth Table

INPUT		OUTPUT
A	B	$Q = \overline{A + B}$
0	0	1
0	1	0
1	0	0
1	1	0

Timing Diagram





+ EXCLUSIVE – OR (X-OR) GATE:

- An X-OR gate is a two input, one output logic circuit.
- The output is logic 1 when one and only one of its two inputs is logic 1. When both the inputs is logic 0 or when both the inputs is logic 1, the output is logic 0.

Logic Symbol



INPUTS are **A** and **B**

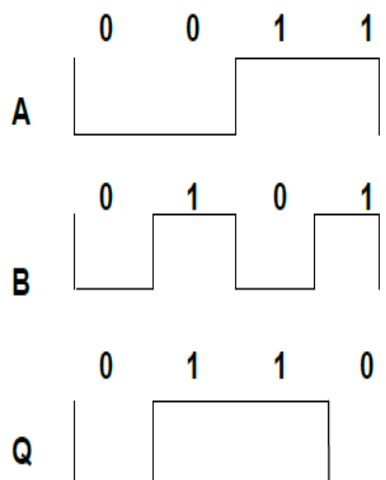
OUTPUT is $Q = A \oplus B$

$$= \overline{A}B + A\overline{B}$$

Truth Table

INPUT		OUTPUT
A	B	$Q = A \oplus B$
0	0	0
0	1	1
1	0	1
1	1	0

Timing Diagram

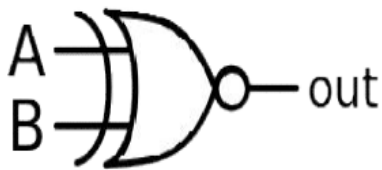




✚ EXCLUSIVE – NOR (X-NOR) GATE:

- An X-NOR gate is the combination of an X
- An X-NOR gate is a two input, one output logic circuit.
- The output is logic 1 only when both the inputs
- The output is logic 0 when one of the inputs is logic 0 and other is 1.

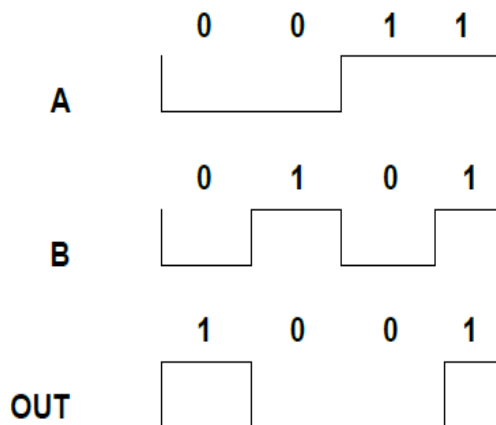
Logic Symbol

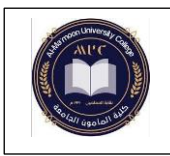


$$\text{OUT} = A B + \bar{A} \bar{B}$$
$$= A \text{ XNOR } B$$

INPUT		OUTPUT
A	B	OUT = A XNOR B
0	0	1
0	1	0
1	0	0
1	1	1

Timing Diagram





Example:

- (a) Develop the truth table for a 3-input AND gate.
- (b) Determine the total number of possible input combinations for a 4-input AND gate.

Solution

- (a) There are eight possible input combinations ($2^3 = 8$) for a 3-input AND gate. The input side of the truth table shows all eight combinations of three bits. The output side is all 0s except when all three input bits are 1s.

Inputs			Output
<i>A</i>	<i>B</i>	<i>C</i>	<i>X</i>
0	0	0	0
0	0	1	0
0	1	0	0
0	1	1	0
1	0	0	0
1	0	1	0
1	1	0	0
1	1	1	1

- (b) $N = 2^4 = 16$. There are 16 possible combinations of input bits for a 4-input AND gate.

Related Problem

Develop the truth table for a 4-input AND gate.

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Practical 1

Windows 10

- Desktop screen
- Playback options
- Working with icons
- Use windows
- Control Panel

- Desktop screen:

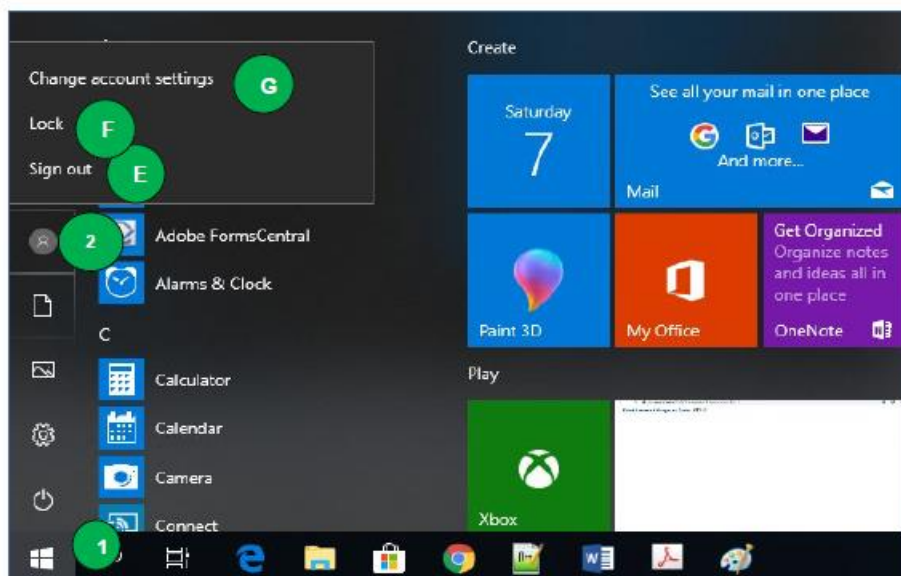
After turning on the computer by pressing the power switch, the computer begins the process of loading the operating system on the hard disk into memory. The start screen then appears, which requires entering the user name and password. The operating system verifies its validity. After that, the welcome screen appears for a while. Short, then the Desktop screen appears



- A. Icons
- B. Mouse pointer
- C. Desktop
- D. Start button
- E. Search box
- F. Taskbar icon
- G. Taskbar
- H. Notification area
- I. Time and Data

• Playback options

Start --> power

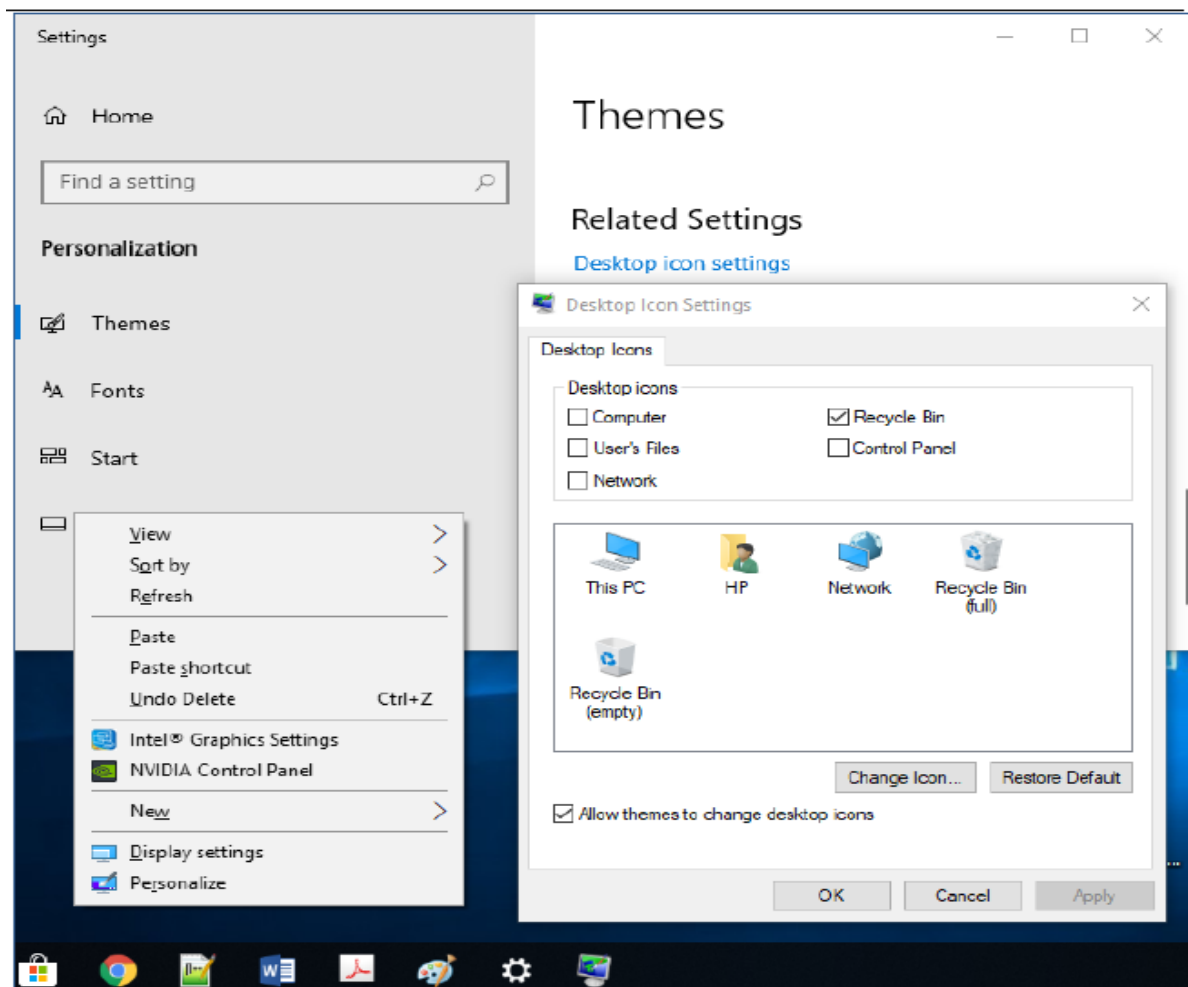


- A. Restart
- B. Shut down
- C. Hibernate
- D. Sleep
- E. sign out
- F. Lock
- G. Change Account Settings

- **Working with icons**

Right click → personalize → personalization

Themes → Desktop Icon Settings



 Select non-adjacent icons: We follow the following steps

1. We click the first icon and then press the **Ctrl** key continuously.
2. Select the rest of the spaced icons by clicking on them with the mouse while continuing to press Ctrl.

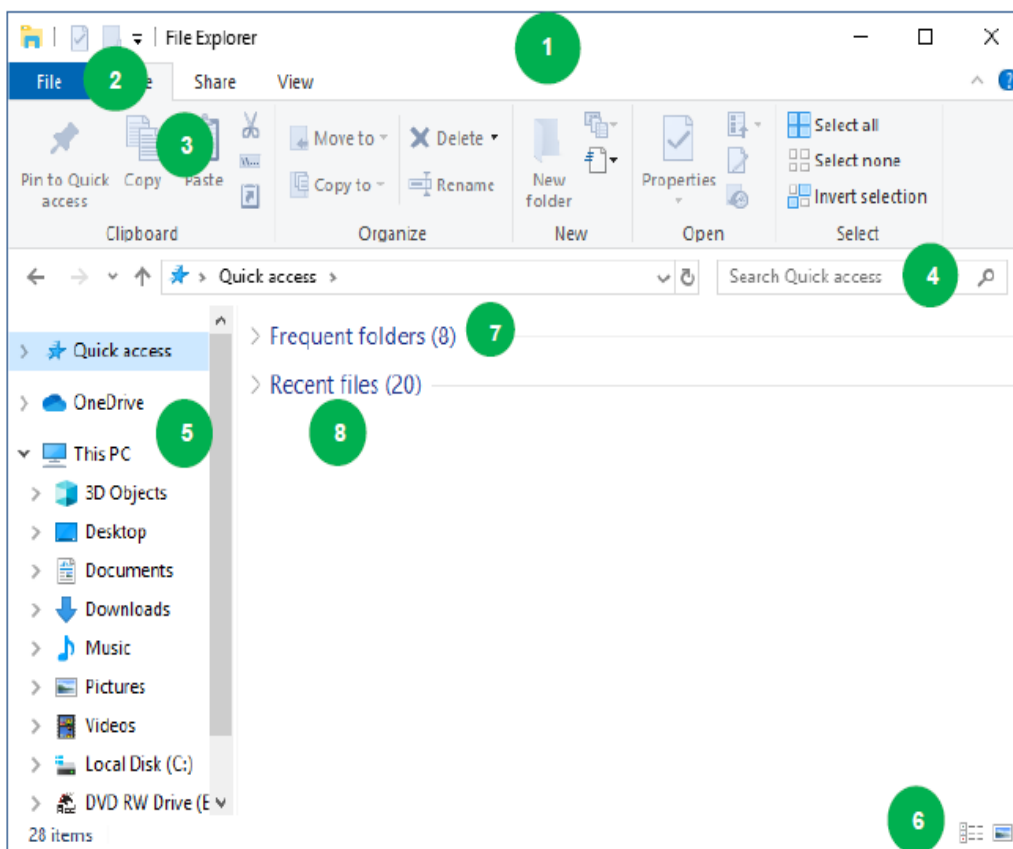
 Select adjacent icons: We follow these steps:

1. We click the first icon and then press the **Shift** key continuously.

2. Click another icon and hold down the Shift key to select the icons between the two selected icons.

- **Use windows**

Window: It is a frame that appears when you double-click on an element of the computer, and the contents of the window differ depending on the element that was opened.



1. Title Bar
2. File
3. Ribbon
4. Search Box
5. Navigation Bar
6. Status Bar
7. Frequent folder
8. Recent files

• Control Panel

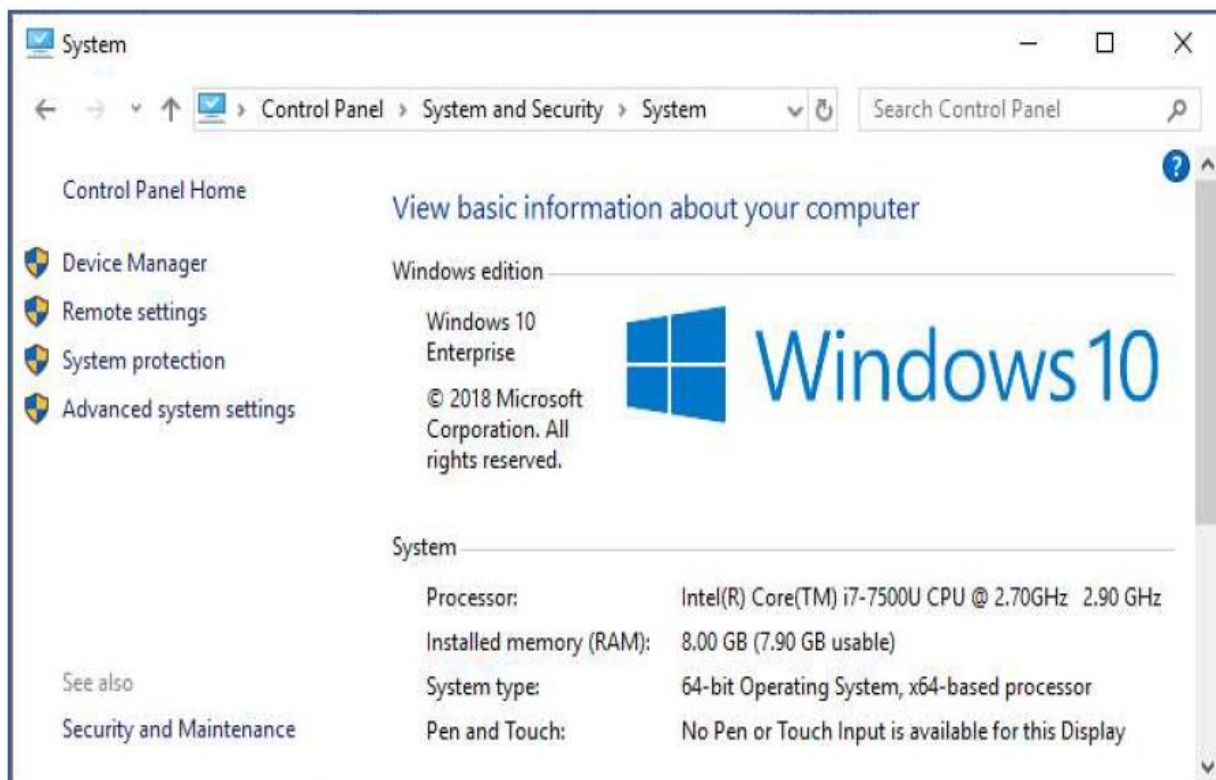
The Control Panel is one of the most important main desktop icons, through which the user can modify many Windows features and settings, such as changing the time and date, sound volume, desktop wallpaper, screen saver, screen resolution, language settings, and others.

The control panel can be accessed in several ways, including:

- Double-click on the control panel icon on the desktop.
- Start menu, which can be accessed using the search box.

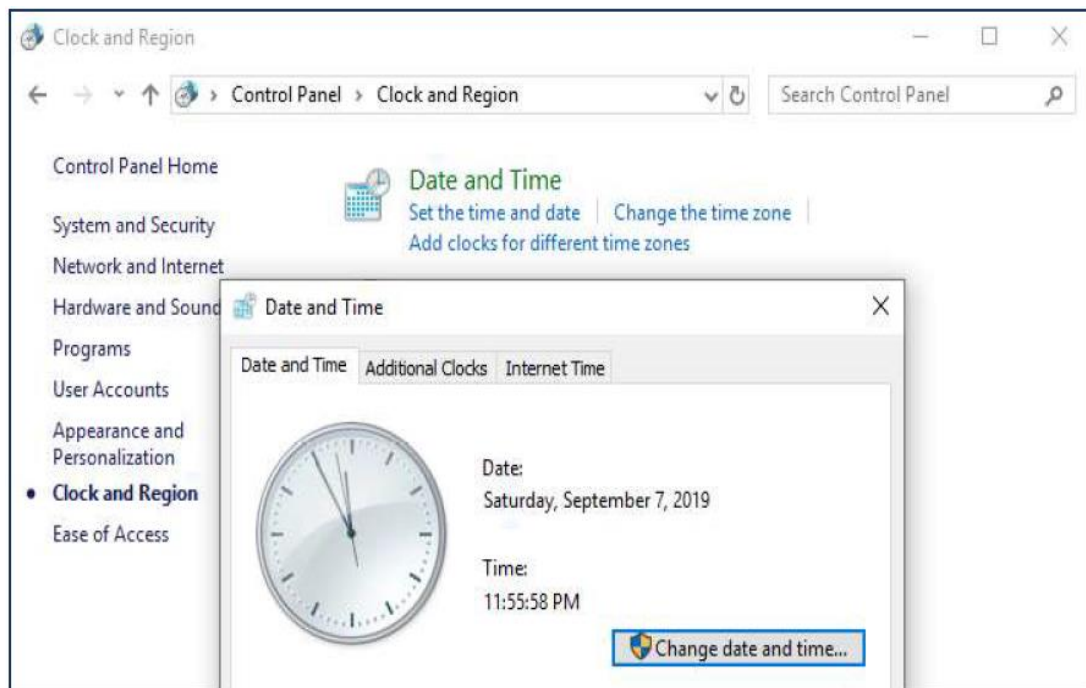
✓ Show basic computer information:

Control panel → system and security → system



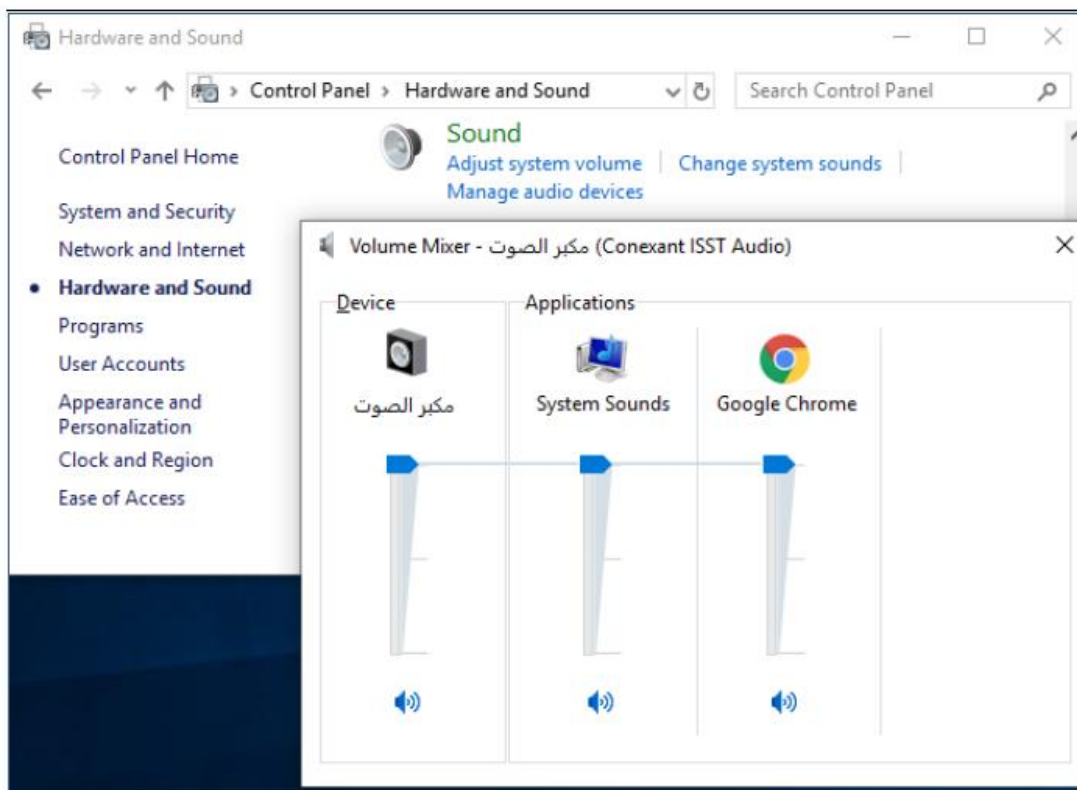
✓ Change time and date:

Control Panel → Clock and Region → Set the time date



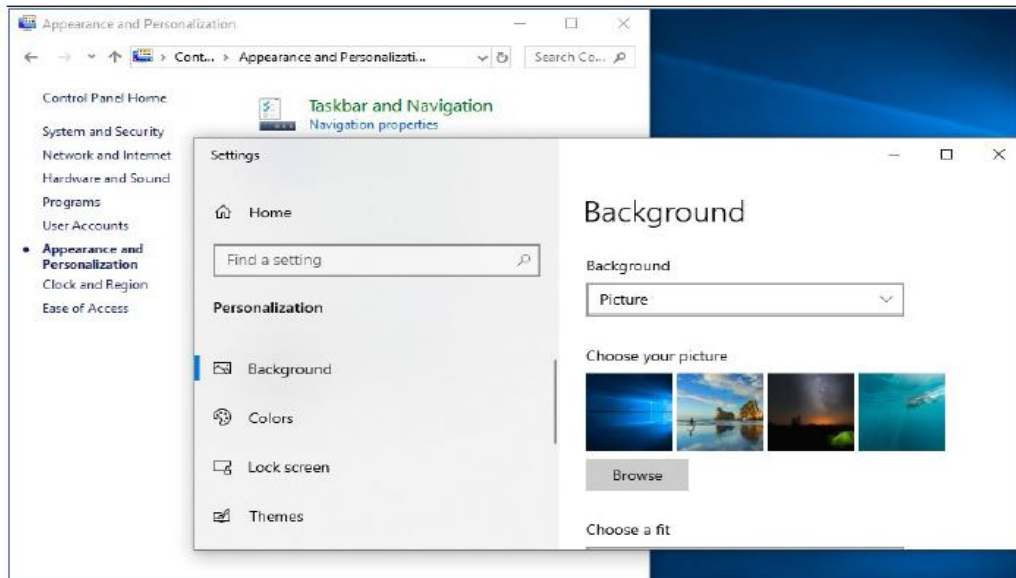
✓ Change sound settings:

Control Panel → Hardware and Sound → Adjust system volume.



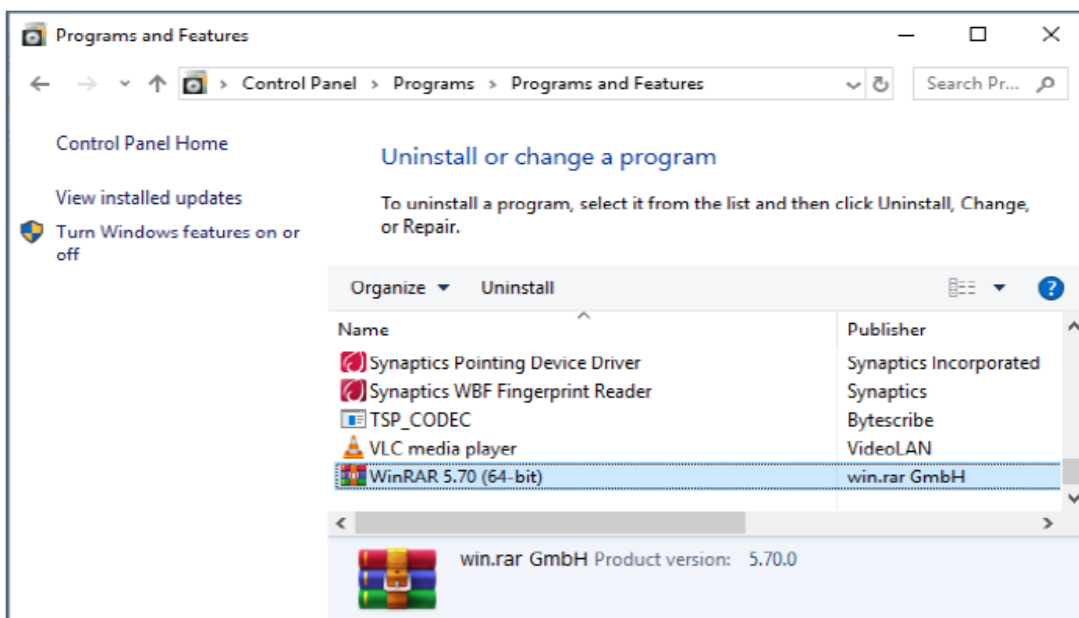
✓ Set up desktop wallpaper

Control Panel → Appearance and Personalization → Taskbar and Navigation → Background.



✓ Uninstall programs

Control Panel → Programs → Programs and Features →
Select the program to remove → Uninstall



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Practical 2

Introduction to Visual Basic.NET

- Object Model
- Visual Studio Environment
- Elements of the Integrated Development Environment (IDE)



Introduction to Visual Basic.NET

The newer programming languages, such as Visual Basic, C#, and Java, use a different approach: object-oriented programming (**OOP**)

- *Use objects (controls).
- *Event driven: code executed upon some events (button press, mouse move, click,).
- *Easy to change code and errors.

❖ Object Model

In Visual Basic you will work with objects, which have properties, methods, and events. Each object is based on a class.

Objects

Examples of objects are forms and controls. Forms are the windows and dialog boxes you place on the screen; controls are the components you place inside a form, such as text boxes, buttons, and list boxes.

Properties

Properties tell something about or control the behavior of an object, such as its name, color, size, or location. Example object. property=value
textbox.name= new

Methods

Built in procedure actions associated with objects are called methods. Some typical methods are Close, Show, and Clear. Each of the predefined objects has a set of methods that you can use.

Events

An event occurs when the user takes an action, such as clicking a button, pressing a key, scrolling, or closing a window.

Classes

Classes contain the definition of all available properties, methods, and events. Each time that you create a new object, it must be based on a class. For example, you may decide to place three buttons on your form. Each button is based on the Button class and is considered one object, called an *instance* of the class.



Three steps to start V.B. program and to build VB application

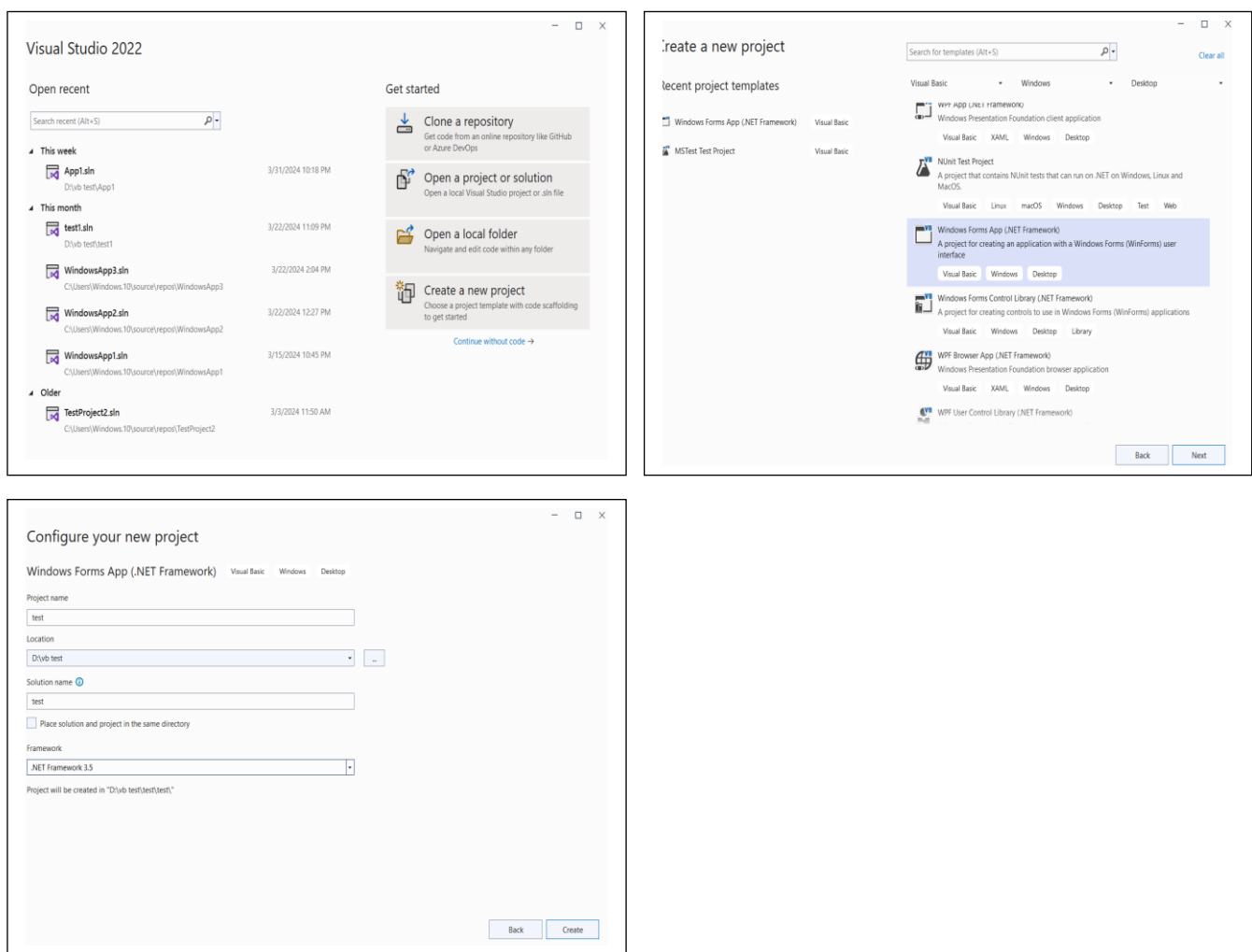
1-draw user interface (use toolbox controls (objects)).

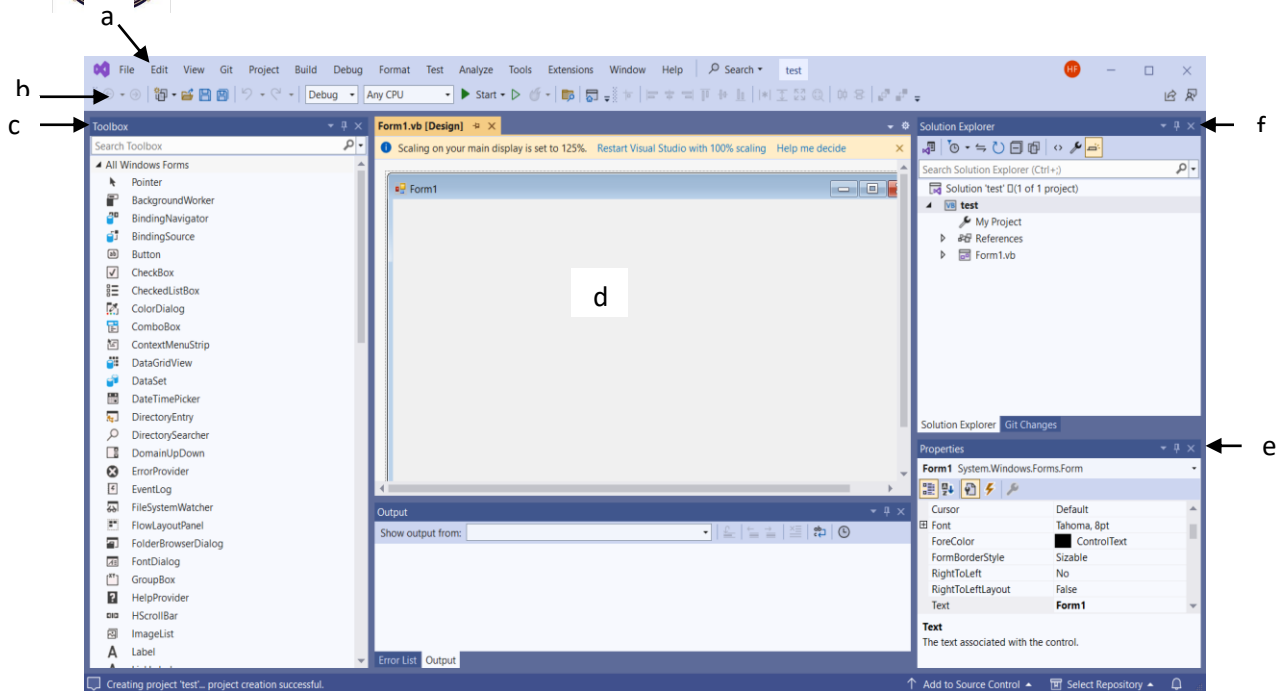
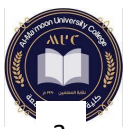
2-set properties values for each object.

3-write the code (attach code for each control (object)) then execute the program.

❖ Visual Studio Environment

The Visual Studio environment is where you create and test your projects. A development environment, such as Visual Studio, is called an integrated development environment (IDE). The IDE consists of various tools, including a form designer, which allows you to visually create a form; an editor, for entering and modifying program code; a compiler, for translating the Visual Basic statements into the intermediate machine code; a debugger, to help locate and correct program errors; an object browser, to view available classes, objects, properties, methods, and events; and a Help facility.





❖ Elements of the Integrated Development Environment (IDE) :

The IDE environment consists of many elements. Some elements are displayed when Visual Basic is started (by default) as in the following figure. Other elements are displayed if user requires them. We will list some of these elements.

a- Menu Bar: It contains a standard command like: File, Edit, View, Window, Help menus, and specific command such as: Project, Format, or Debug menus.

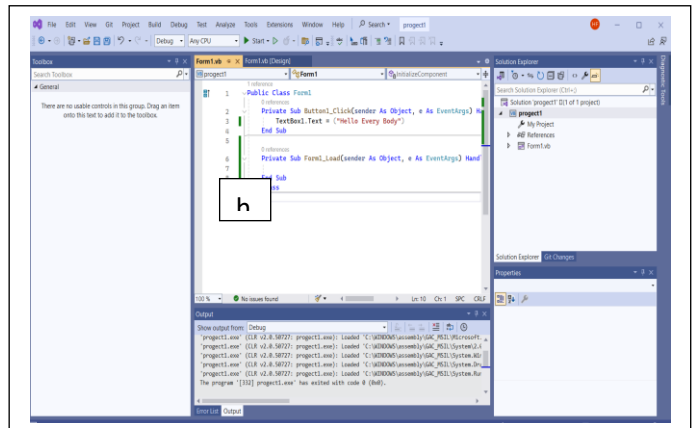
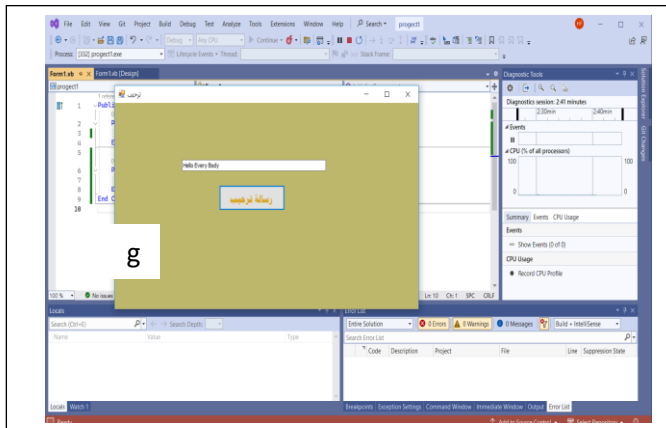
b- Toolbar: It contains the most commonly used commands (button), if clicked an action represented by that button is carried out.

c- Toolbox: It contains a collection of tools that are needed for project design.

d- Form Designer: It is a window for each form to customize the designed interface of the application. Using the form designer, the user can add controls, graphics, and text to create the desired form appearance.

e- Properties Window: It is a List of properties settings for a selected form or a control. These properties are characteristics (such as size, visible, or color) of the selected object. It provides an easy way to set properties.

f- Project Explorer Window: It is a list of the forms and modules for the current projects. It is a hierarchical tree-branch structure, where the project is at the top of the tree and other parts like forms, modules) descend from this tree.



g- Form Layout Window: The Form Layout window is a small screen. Which is used to reposition the form of the application so that it appears in proper place when project is run.

h- Code Editor Window: Code Editor Window is used to write a VB code for an application. For each form there is a separate code editor window. It is displayed when user clicks on form or object in form.

COMPUTER PROGRAMMING

Laser and Optoelectronic Engineering Department



Practical 3

Example in Vb.

Example:

Design a welcome interface for some small programs. When you click the welcome button, the welcome text appears inside the text box. While the programmer button is used to show the name of the programmer. And the exit button to exit the program.



```
Public Class Form1
```

```
    Private Sub TextBox1_TextChanged(sender As Object, e As EventArgs) Handles  
        TextBox1.TextChanged
```

```
    End Sub
```

Welcome Button :

```
    Private Sub Button1_Click(sender As Object, e As EventArgs) Handles  
        Button1.Click
```

```
        TextBox1.Text = "Welcome to Visual Basic"
```

```
    End Sub
```

Programmer Button :

```
    Private Sub Button2_Click(sender As Object, e As EventArgs) Handles  
        Button2.Click
```

```
        TextBox1.Text = "Done By: HALA"
```

```
    End Sub
```



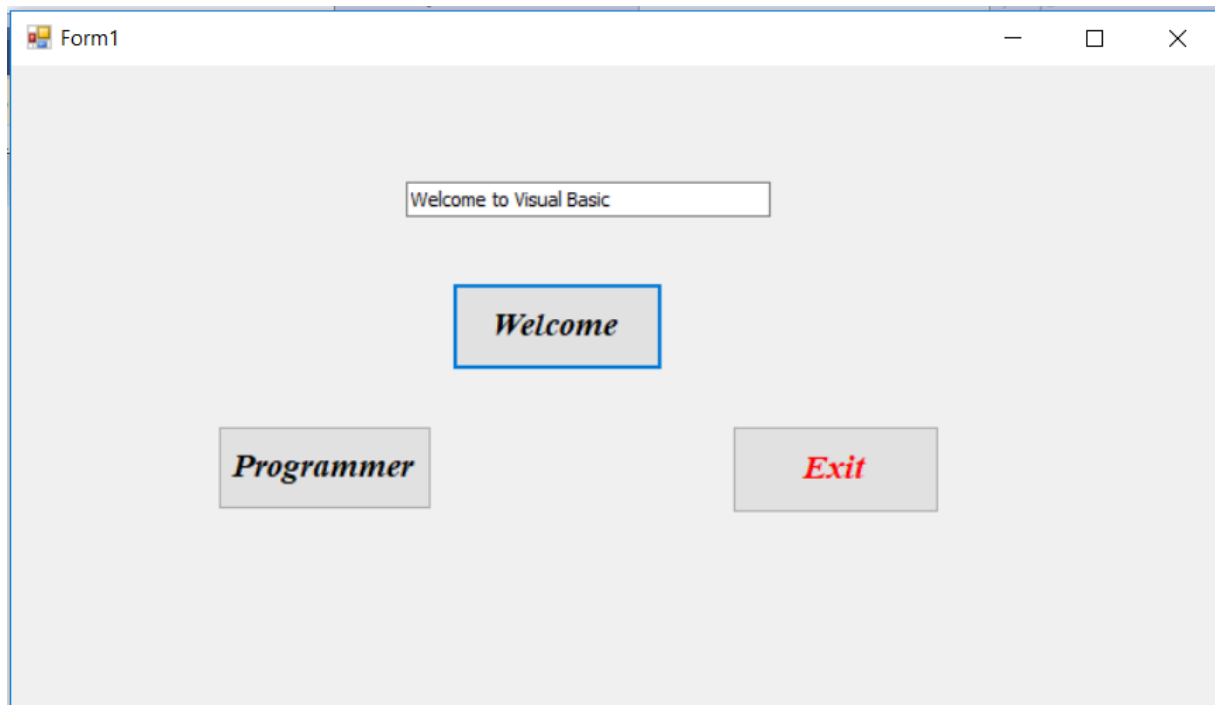
Exit Button :

Private Sub Button3_Click(sender As Object, e As EventArgs) Handles
Button3.Click

End

End Sub

End Class



Word Processors

Word processors offer you the flexibility to format documents by making changes to the font, the page layout, and the page style.

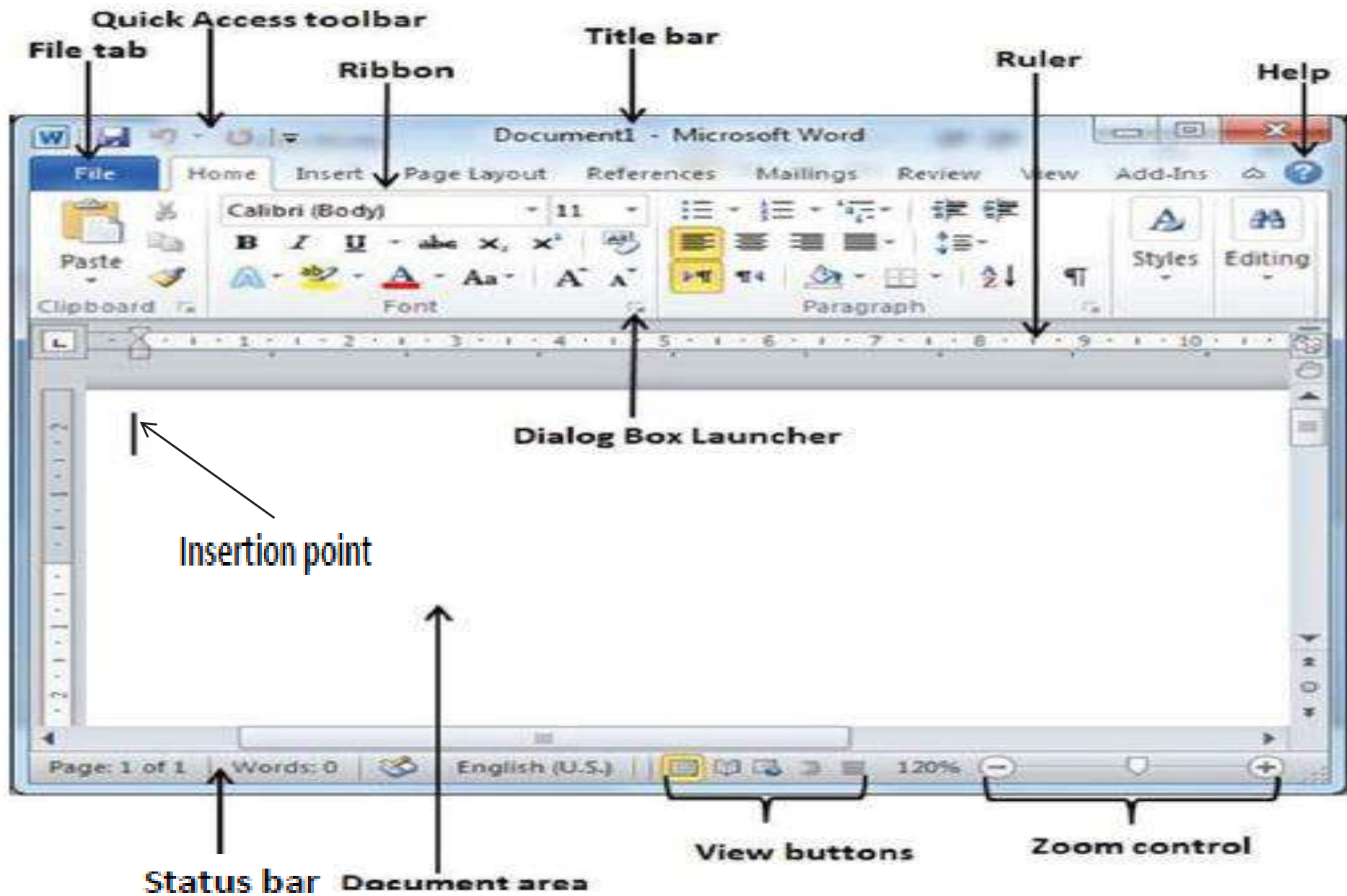
❑ **Starting Microsoft Word**

From the Start Menu

1. Click the **Start Menu**.
 2. Click the **All Programs** option from the menu .
 3. Search for **Microsoft Office** from the submenu and click it.
 4. Search for **Microsoft Word 2010** from the submenu and click it.
- ✓ **Or** double-click on the Word desktop icon.
- ✓ **Or** From the Search Window by typing Word and click it.

This will launch the Microsoft Word 2010 application and you will see the following window.

MS Word Window



- **Title bar**

This lies in the middle and at the top of the window. Title bar displays the name of the document you are currently using.

- **Quick Access Toolbar**

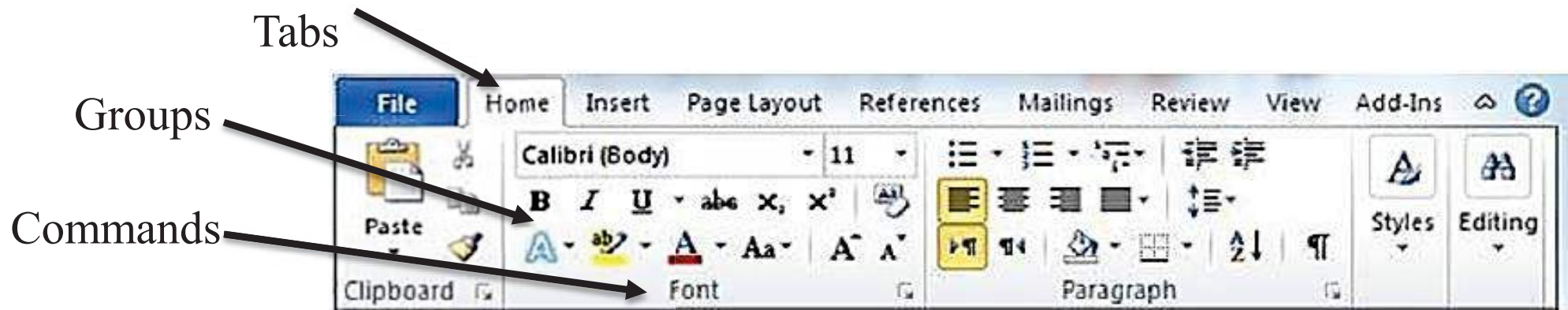
provide immediate access to an operation.

 Save	Saves the current document
 Save As	Allows you to save the current document under a different name or location
 Open	Opens a previously saved document
 Close	Closes the current document
 Options	Provides access to options that allow you to control how Word looks and works
 Exit	Allows you to close and exit Microsoft Word



- **Ribbon**

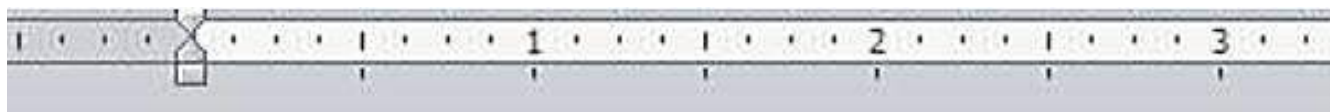
Ribbon contains commands organized in three components:



- **Tabs:** These appear across the top of the Ribbon and contain groups of related commands. **Home, Insert, Page Layout**, etc.
- **Groups:** They organize related commands; each group name appears below the group on the Ribbon. For example, group of commands related to **fonts** or group of commands related to **alignment**, etc.
- **Commands:** Commands appear within each group as mentioned above. you are currently using.

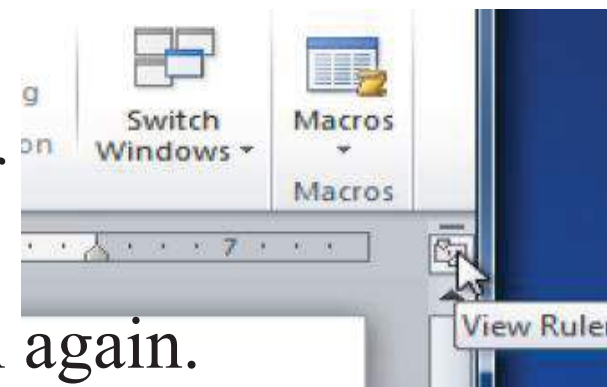
Rulers

Word has two rulers, a horizontal and a vertical rulers. it use to determine where you want to place an object. If the rulers do not display in your Word window:



To Hide or View the Ruler:

- ✓ Click the View Ruler icon over the scrollbar to hide the ruler.
- ✓ To show the ruler, click the View Ruler icon again.



Help

The Help Icon can be used to get word related help anytime you like. This provides nice tutorial on various subjects related to word.



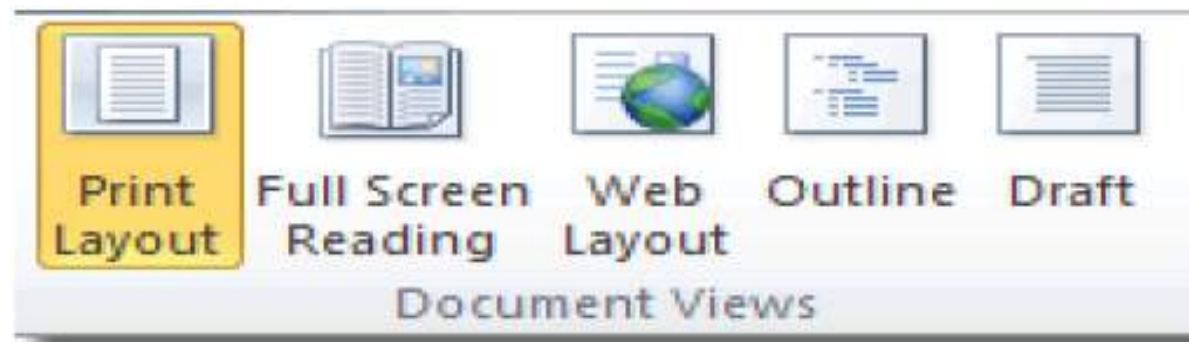
Zoom Control

Zoom control lets you zoom in for a closer look at your text. The zoom control consists of a slider to increase/decrease the zoom ratio for your document.



View Buttons

The group of five buttons located to the left of the Zoom control, near the bottom of the screen, lets you switch through the Word's various document views



Microsoft Word gives you five different views of a document

- **Print Layout view:** This displays pages exactly as they will appear when printed.
- **Full Screen Reading view:** This gives a full screen view of the document.
- **Web Layout view:** This shows how a document appears when viewed by a Web browser, such as Internet Explorer.
- **Outline view:** This lets you work with outlines established using Word's standard heading styles.
- **Draft view:** This formats text as it appears on the printed page with a few exceptions. For example, headers and footers aren't shown. Most people prefer this mode.

Document Area

This is the area where you type.

insertion point

it represents the location where text will appear when you type.

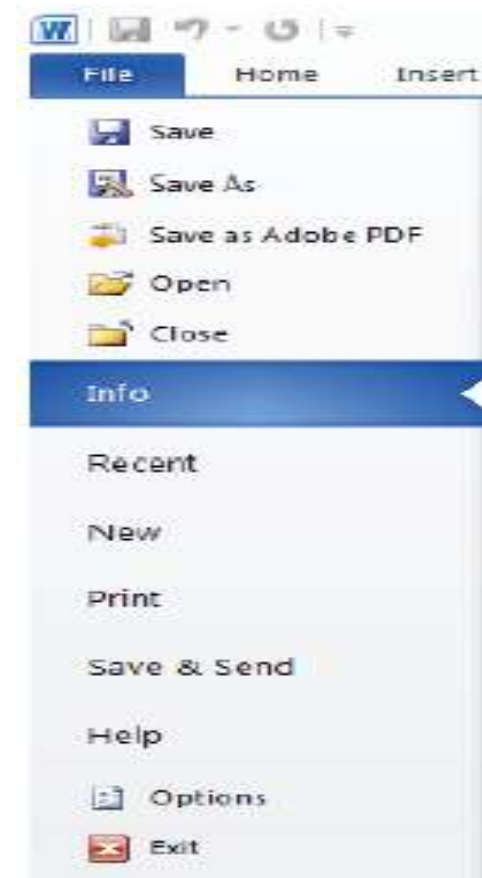
- **Status Bar**

This bar contains the total number of pages and words in the document, language, etc.

You can configure the status bar by right-clicking anywhere on it.

- **File Tab**

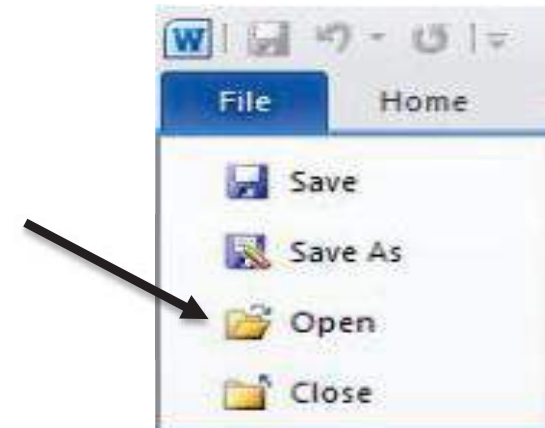
This tab provide more options for working with a document.



Word files are called documents. Whenever you start a new project in Word, you'll need to create a new document

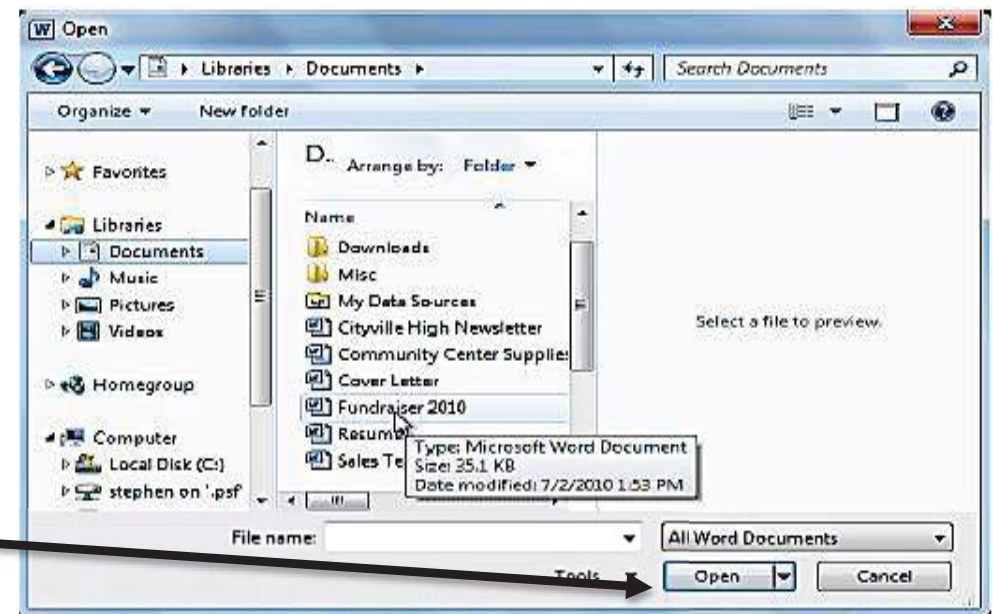
□ How to Create a New, Blank Document

1. Click the **File** tab.
2. Click **New**.
3. Select **Blank Document**.
4. Click **Create**.



□ How to Open an Existing Document

1. Click **File** tab.
2. Select **Open**.
3. Select the document you want to open from dialog box, and then click **open**.

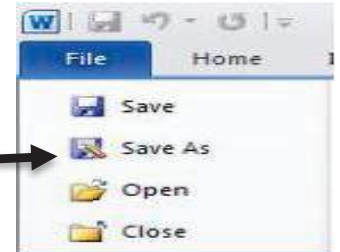


□ How to Open a Recent Document

1. Click **File** tab.
2. Select **Recent**. Then click the document you want to open.

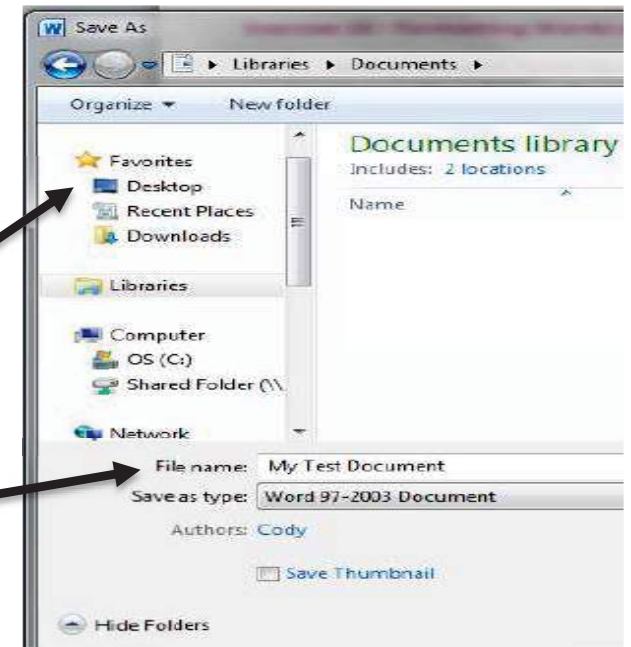
□ How to Save a Document

➤ Use the Save As Command:



Save As allows you to choose a name and location for your document. It's useful if you want to save in another location or by another name

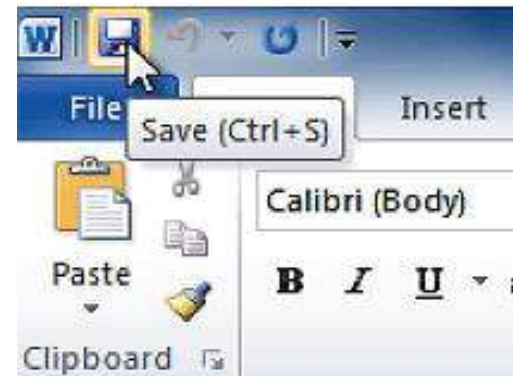
1. Click **File** tab.
2. Select **Save As**.
3. The Save As dialog box will appear.
 - Select the **location** where you wish to save the document.
 - Enter a **name** for the document and click **Save**.



➤ To Use the Save Command:

It's useful if you have made changes to the document, the file will automatically save without a dialogue box coming up by:

1. Click the **Save** command on the **Quick Access Toolbar**.
2. The document will be saved in its current location with the same file name.



Or press the **Ctrl + S keys** from keyboard to save the changes.

- ✓ If you are saving for the first time and select **Save**, the Save As dialog box will appear.

□ How to Print a Document

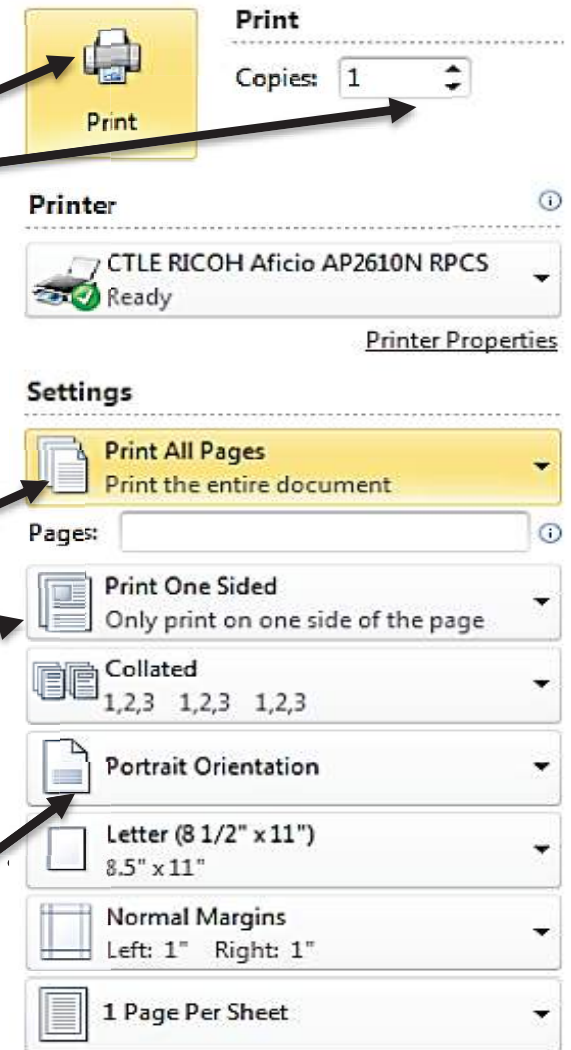
To print your document:

1. Click the **File** tab.
2. Click the **Print** command.
3. Select the number of copies.
4. Click the **Print** button to print your document.

If you want to change the setting such as:

- This dropdown shows the available printers.
- Select to print the (all pages, current page, custom page range).
- Select to print the document (one or both sides).
- Select the Orientation (landscape, portrait).

➤ **Print preview** automatically displays when you click on the Print command in the file tab.



❑ How to Quick Print a Document

To print something with a single click, click **Quick Print** command on the **Quick Access Toolbar**.

This feature prints the document using the **default settings** and the **default printer**.

❑ Close the active document without closing Word

1. Click the **File** tab.

2. Select **Close**. 

Or press ctrl +w from keyboard.

❑ Exit Microsoft word

If you want to leave the Word program:

1. Click the **File** tab.

2. Click **Exit**. 

Or click X in the top right of window.

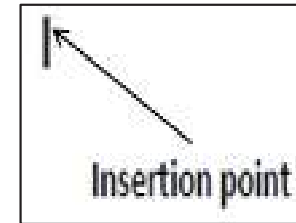


Working with Text

□ Insert Text:

1. Click the mouse in the location you wish text to appear . The insertion point appears.

2. Write the text you wish to appear.



□ Delete Text:

Using Backspace & Delete Keys

➤ Backspace

place the insertion point **after** the text you want to delete and press the **Backspace** key to delete text to the **left** of the insertion point.

➤ Delete

place the insertion point **before** the text you want to delete and press the **Delete** key to delete text to the **right** of the insertion point.

❑ Select Specific Text:

You can select a specific **text**, **line of text**, or one or more **paragraphs**.

1. Place the insertion point in front of the of the text, sentence, or paragraphs you want to select.
2. Click and hold while you drag your insertion point to select the text you want.

A highlighted box will appear over the selected text and a toolbar with formatting options appears. This makes formatting commands easily accessible, which may save you time. If the toolbar does not appear at first, try moving the mouse over the selection.



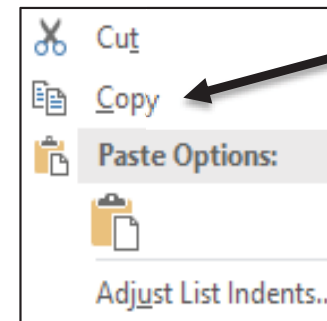
✓ **Note:** To select a single word quickly double-click that word.

□ Copy, Cut & Paste Text

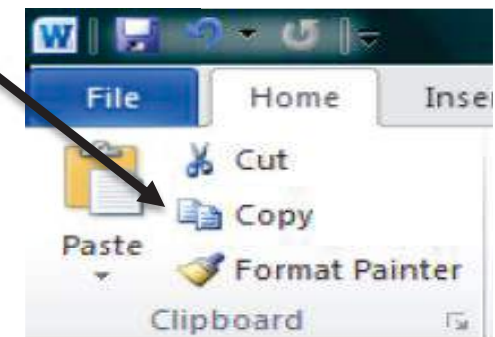
➤ Copy

Creating a duplicate copy of the text at the desired location without deleting the text from its original location.

1. Select the text you want to copy.
2. You have various options available to copy the selected text.
 - Using **Right-Click**: right-click on the selected text, click **Copy**.



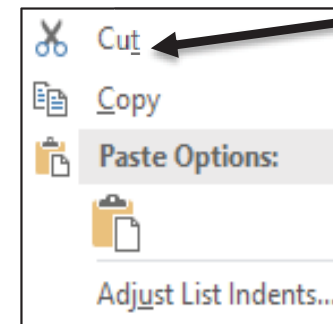
- Using **Ribbon Copy Button**: click the **copy button** available at the ribbon.
- Using **Ctrl + C Keys** from keyboard.



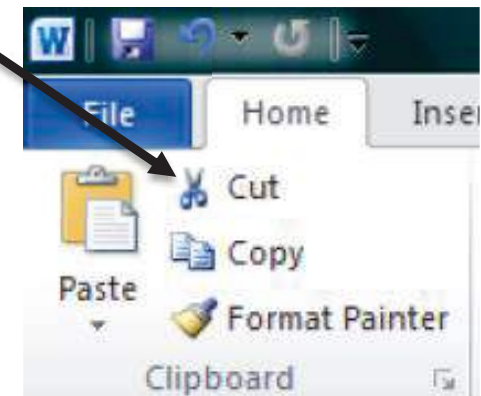
➤ Cut

Moving the text from its original location to a new desired location.

1. Select the text you want to cut.
2. You have various options available to cut the selected text.
 - Using **Right-Click**: right-click on the selected text, click **Cut**.

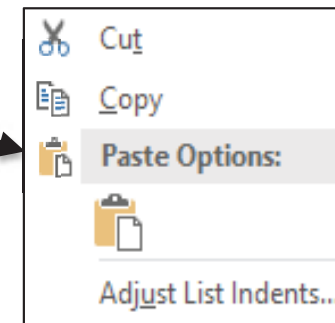


- Using **Ribbon Cut Button**: click the **Cut button** available at the ribbon.
- Using **Ctrl + X Keys** from keyboard.

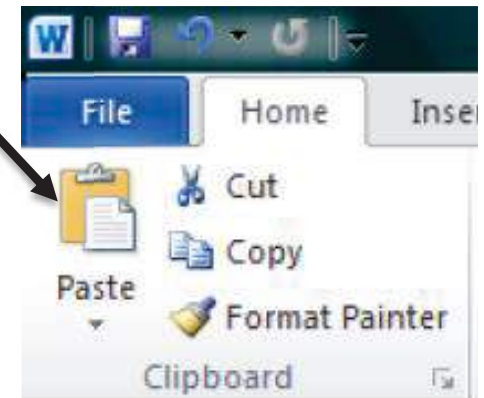


➤ **Past**

1. Click at the place where you want to put the selected text.
2. You have various options available to past the selected text.
 - Using **Right-Click**: right-click at the place where you want to past the selected text, click **Past**.



- Using **Ribbon Paste Button**: click the **Paste** button available at the ribbon.
- Using **Ctrl + V** Keys from keyboard.



□ Undo & Repeat operations

Microsoft word provides two important features called the **Undo** and the **Repeat or Redo**.

➤ **Undo feature** is used to reverse the last action you performed.

you can access by clicking **Undo** command from the **Quick Access toolbar**



Or Ctrl + Z Keys from keyboard (Undo the previous action).

➤ **Redo feature** is used to repeat the last action.

you can access by clicking **Redo** command from the **Quick Access toolbar**.



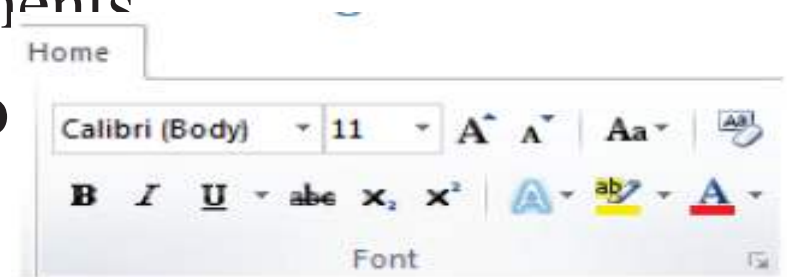
Or Ctrl + Y Keys from keyboard (Redo the previous action).

Formatting Text

□ The Home Tab

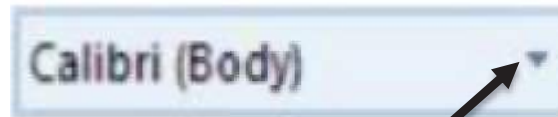
The **Font Group** in the Home Tab allows you to change your text font style, size, color and many other elements

To do that, **select the text which needs to be changed and do the following:**



➤ Change the Font Type

1. Select the text and click Home tab, find the Font toolbox.
2. Click the Font Type button to list down all the fonts available.

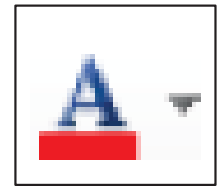


➤ Change the Font Size

1. Select the text and click Home tab, find the Font toolbox.
2. Click the Font Size button to list down all the fonts size available, Click on the size you require, for example choose (14).



➤ Change the Font Color



1. Select the text and click Home tab, find the Font toolbox.
2. Click the Font color button to list down all the colors available, for example choose (blue color).



➤ Change the Text Case

1. Select the text and click Home tab, find the Font toolbox.
2. Click the Change Case button to list down all the options available, select the desired case option from the list, which includes: **Sentence case, lowercase, UPPERCASE, Capitalize Each Word, and tOGGLE cASE.**

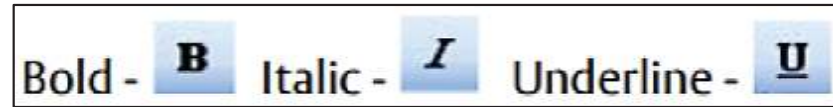
➤ Highlight the Text

1. Click the Text Highlight Color button from Home tab to list down all the Highlight Color available.
2. Select the text you wish to highlighting it.



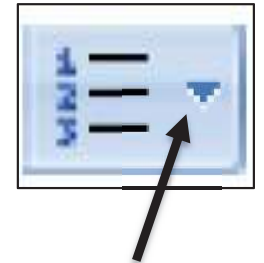
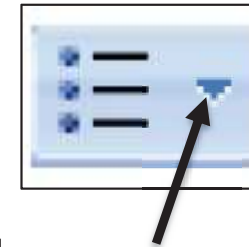
To clear highlighting, click the highlighted color button again.

➤ How to format text bold, italics, underline, strike-through



1. Select the text and click **Home tab**, find the **Font toolbox**.
2. Click the "**B**" will make your text **BOLD**, the "*I*" will put it in *italics*, and the "U" will add an underline to your text, the "~~abc~~" will add a line through your text.

➤ How to add Bulleted or Numbered List



You can use the bullet or numbering options to **organize information into lists**.

1. Select a list of text to which you want to assign bullets or numbers.
2. From the **Home tab**, click the **Paragraph group**.
3. Click the **Bullets** or **Numbering** buttons to list down all the Bullet or Numbers available, Select the bullet or number you would like to be inserted.

➤ How to Create a Multilevel-List

1. Select the text that you want to format as a multilevel list.
2. From the **Home tab**, click the **Paragraph group**.
3. Click the **Multilevel List buttons** to list down all the Bullet or Numbers available, Select the bullet or number you would like to be inserted.
4. Position your insertion point at the **end of a list** item and press the **Enter key** then, press the **TAB key** from keyboard.





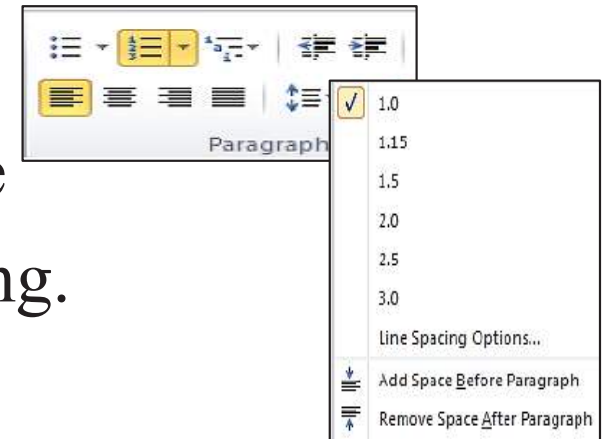
➤ How to Align Text

There are four types of paragraph alignment available in Microsoft Word. — left-aligned, center-aligned, right-aligned, and justified.

1. From the **Home Tab**, click the **Paragraph toolbox**.
2. Select the text that you would like to align.
3. Select the icon for left, center, right, or justify:
 - **Align Left:** Aligns all the selected text to the left margin.
 - **Align Center:** Aligns all the selected text in center (an equal distance from the left and right margins).
 - **Align Right:** Aligns all the selected text to the right margin.
 - **Justify:** Justified text is equal on both sides and lines up equally to the right and left margins.

➤ How to change the line and paragraph spacing

1. From the **Home Tab**, click the **Paragraph** toolbox.
2. Select the text that you would like to change the spacing.
3. Select the **line spacing button**.



The dropdown arrow will allow you to see the different choices for line and paragraph spacing.

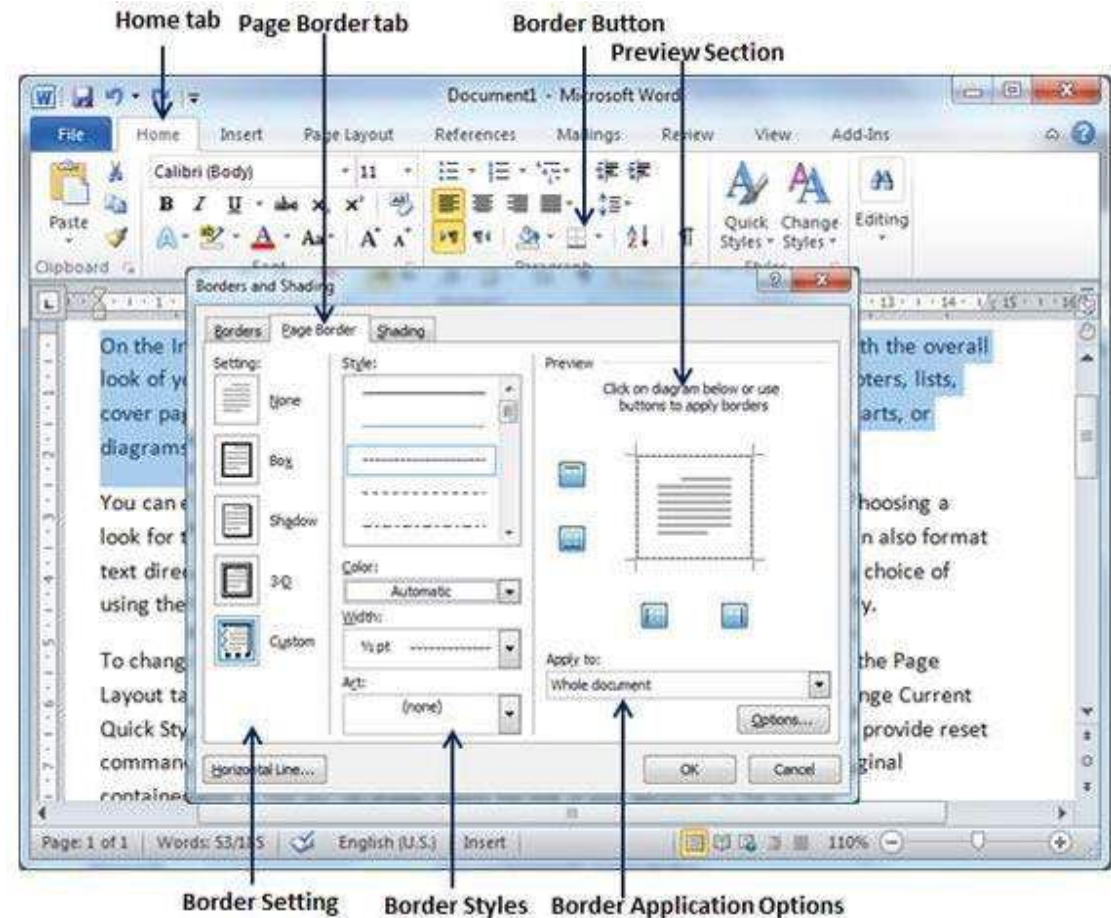
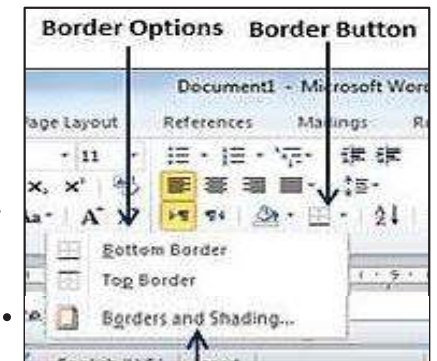
➤ How to increase or decrease the indent of a paragraph

1. From the **Home Tab**, click the **Paragraph** toolbox.
2. Select the text that you would like to increase the indentation of.
3. Click either the **increase or decrease indent button**.



➤ How to add Borders to Page

1. From the **Home Tab**, click the **Paragraph** toolbox.
2. Click the **Border Button** to display a list of options.
3. Select the **Border and Shading** option available at the bottom.
4. Click the **Page Border** tab which will display a list of border settings, styles and options whether this border should be applied to the whole document or just one page or the first page.
5. You can customize your border by setting its **color**, **width**.



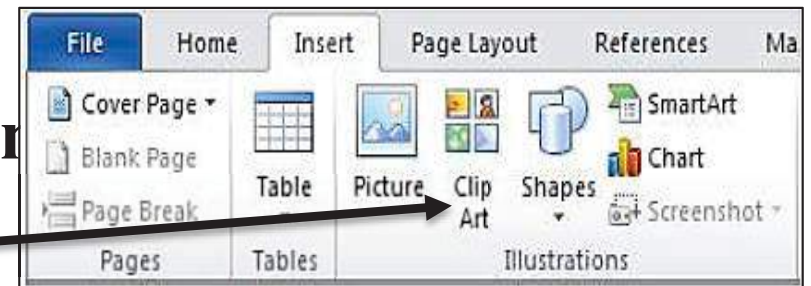
❑ The Insert Tab

You can add a picture to your document from the "**Clip Art**" album that comes with the program, or you can **insert pictures** from a file that you have previously saved on the computer.

➤ How to add Clip Art

1. Place insertion point where you wish to insert the picture in your document.

2. From the **Insert tab**, in the **Illustrations** toolbox, Click **Clip Art** button.



2. Clip Art pane will display. From the **search bar** type in the clip art you are looking for and click **Go**.



3. Double-click on the clip art to insert it into your document.

➤ **How to Insert Pictures from File saved in your compute**

1. Click where you want to insert the picture in your document.
2. On the Insert tab, in the Illustrations group, click Picture.
3. Locate the picture that you want to insert. For example, you might have a picture file located in My Documents.
4. Click the picture that you want to add, then click insert.

➤ **How to Resize a Picture**

1. Select the picture you want to resize, small circles or squares, also known as sizing handles, will appear at the corners and sides of the picture.
2. Click and hold on a sizing handle away from or toward the center to increase or decrease the size of the picture.

➤ How to add a Header

1. From the **Insert Tab**, click **Header & Footer toolbox**.



2. Click the **Header or Footer button** that you want to add to your document, and your header or footer area will open.

3. Type text in the header or footer area.

4. To return to the body of your document, click **Close Header and Footer** on the Design.



➤ How to add Page Numbers

1. From the **Insert Tab**, in the **Header & Footer toolbox**

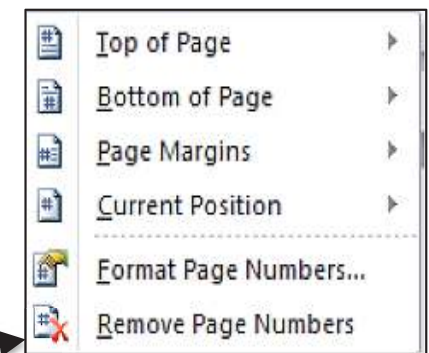
2. Click **Page Number button**.



3. From the dropdown menu, select the location where you would like to place your page numbers.

4. To remove page number from your document,

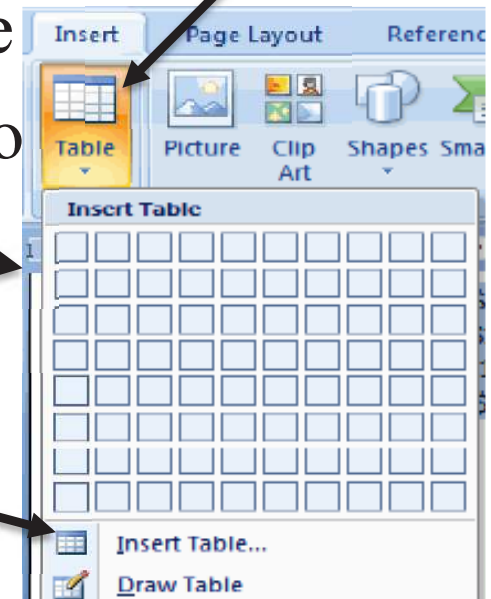
Click **Remove** at the bottom of the menu.



➤ How to Insert a Blank Table

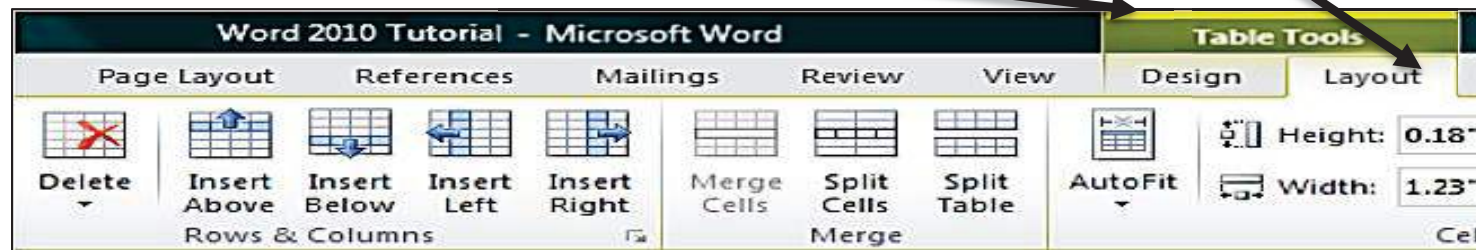
A **table** is a grid of cells arranged in rows and columns.

1. Place insertion point where you wish to insert a blank table in your document.
 2. From the **Insert Tab**, click the **Tables toolbox**, click the **Table button**.
 3. Click and drag over the small boxes to determine the number of columns and rows for your table, you will see a highlighted the rows and columns .
- Or**, you can click the **Insert Table** menu item to type in the number of columns and rows.



➤ How to add Row/Column to Table

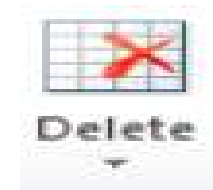
1. Click on the table.
2. Under **Table Tools**, go to the **Layout** tab.



3. Click on the **Insert Above** or **Insert Below** to add a row, Click on **Insert Left** or **Insert Right** to insert a column.

➤ How to Delete Table, Row, Column or Cell

1. Click on the Table, Row, Column or Cell.
2. Under **Table Tools**, go to the **Layout** tab.
3. Click on **Delete** to remove table, column, row or cell.



Or can delete row or column by Select the row or column.

Right-click your mouse and Select Delete Columns or Rows.

Thank you

For yours listening

