

UNIT – 1

PC Software and Multimedia

Introduction to Word Processing Software and it's Features

- A word processor is software or a device that allows users to create, edit, and print documents. It enables you to write text, store it electronically, display it on a screen, modify it by entering commands and characters from the keyboard, and print it.

Features of Word Processing Software

- **Working With Text and Styles**

Microsoft Word is a word processor, which means that it's designed primarily for text-based documents. These can be business reports, student papers, informal notes from a call or a lecture, or letters to friends and relatives.

- **Saving and Printing**

After you create a document in Word, you usually want to save it for later access, send to someone, print it out, or any combination of these uses.

- **Word and Compatibility**

Microsoft Word has been designed for years to maximize compatibility between versions. Typically, versions of Microsoft Word can open files created in previous versions of the software and save files in formats usable by earlier versions.

- **Preview Facility** : Before getting a print of our document, we can get a preview of document. If mistakes are there, we can change the document.

- **Easy Typing** : In MS Word, typing is so easy because
 - we need not click enter button after the end of a line as in case of type writer.

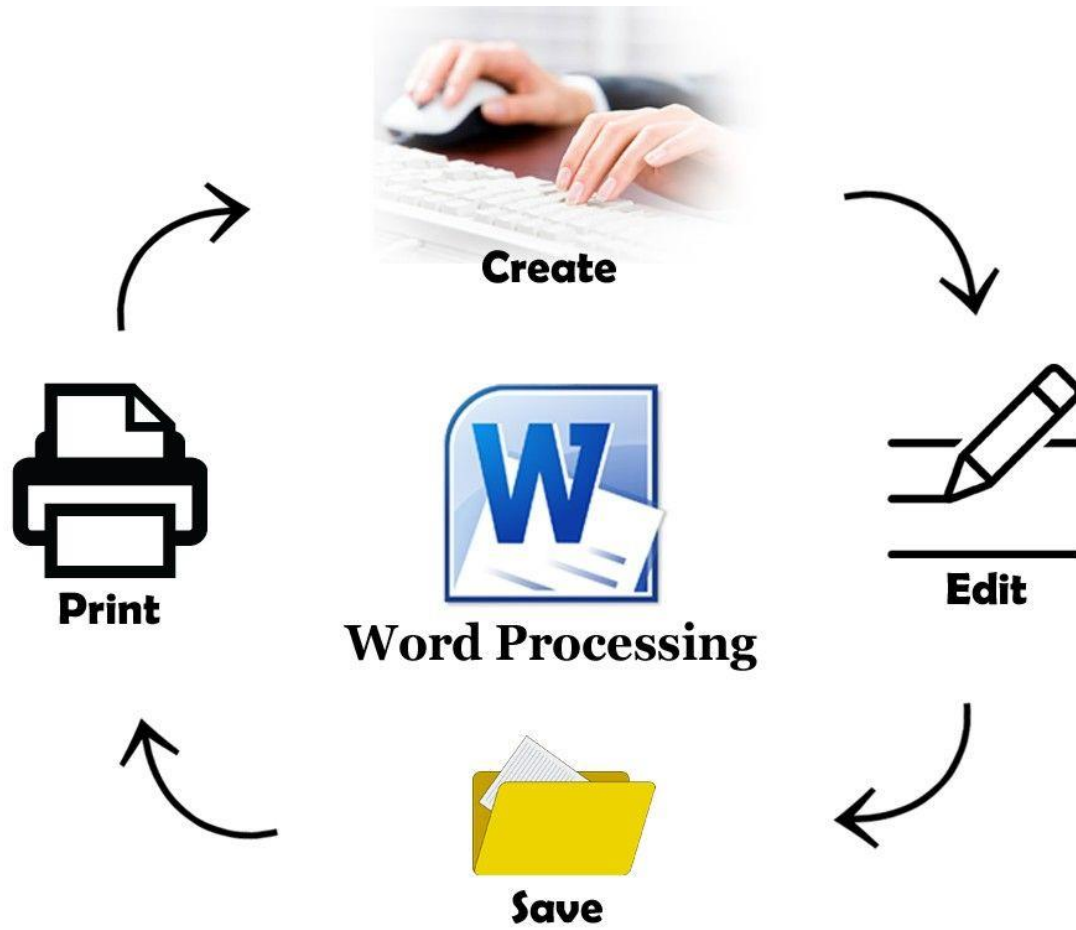
- **Adding, Removing and Copying Text** : Documents can be modified easily in MS Office. We need not strike off any word as in the case of type writer. We can easily place a new word in place of existing one. The new word or paragraphs will automatically be adjusted in the place of deleted or modified text. We can also copy a part or whole of the matter from one file or document to another document.
- **Spell Check of words** : The spellings of words in the document can be rectified automatically. We can find alternative words to our typed words. Not only that, even the grammatical errors can also be rectified in word processor

- **Headers and Footers** : A Header is the text appearing above the document and Footer is the text appearing below the document. In Word Processor, we can create these Headers and Footers in the document easily.
- **Creation of Tables** : Tables can be created neatly in word processor. If you give directions for required number of rows and columns, word processor provides a ready made table to work .
- **Bullets and Numbering** : Bullets are special symbols which can be put for different points in a document whereas numbers are ascending figures like 1, 2, 3, etc. Which can be assigned to different points in the paragraph or document. In word processor we can assign such bullets or numbers automatically with a single command.

Each of the tabs contains the following tools:

- **Home:** Clipboard, Fonts, Paragraph, Styles, and Editing.
- **Insert:** Pages, Tables, Illustrations, Links, Header & Footer, Text, and Symbols.
- **Page Layout:** Themes, Page Setup, Page Background, Paragraph, Arrange
- **References:** Table of Contents, Footnote, Citation & Bibliography, Captions, Index, and Table of Authorities
- **Mailings:** Create, Start Mail Merge, Write & Insert Fields, Preview Results, Finish
- **Review:** Proofing, Comments, Tracking, Changes, Compare, Protect
- **View:** Document Views, Show/Hide, Zoom, Window, Macros

Four Major Parts of Word Processing Software

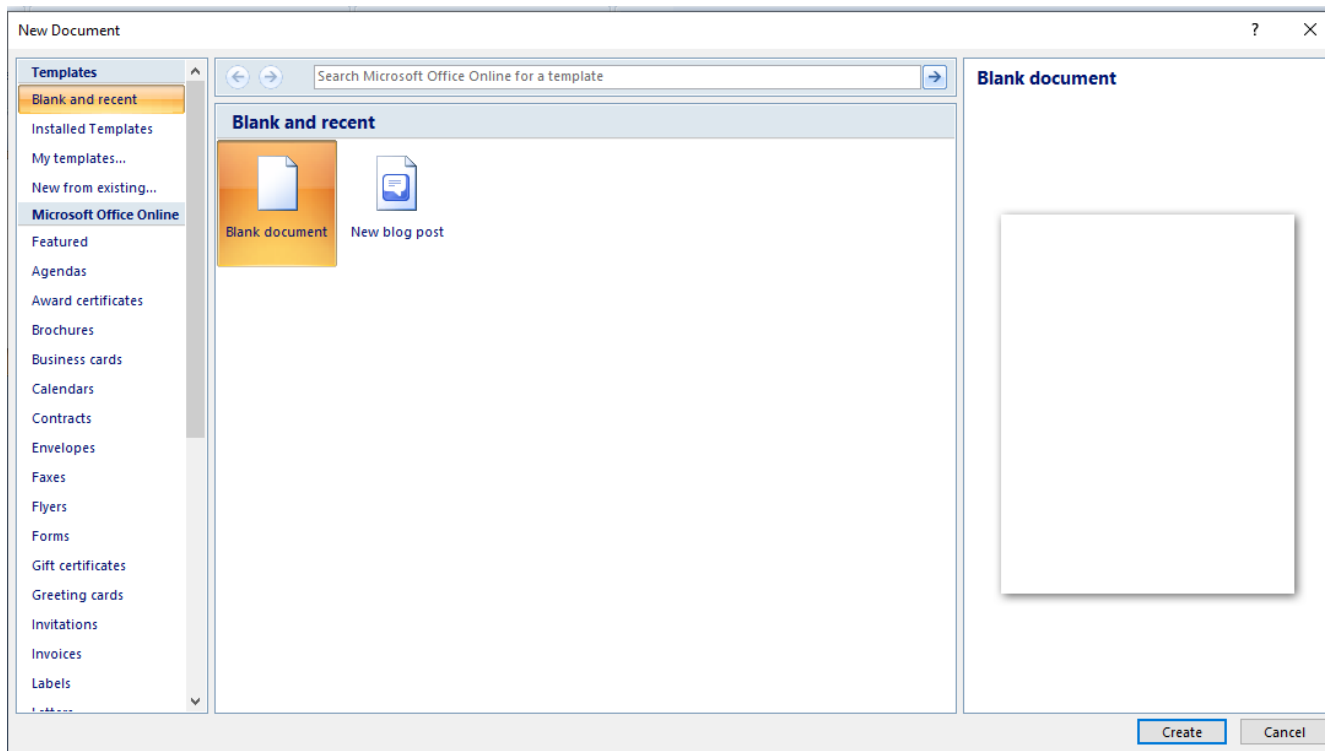


Creating, Saving, Opening, and Printing the Documents

- **Create a New Document**

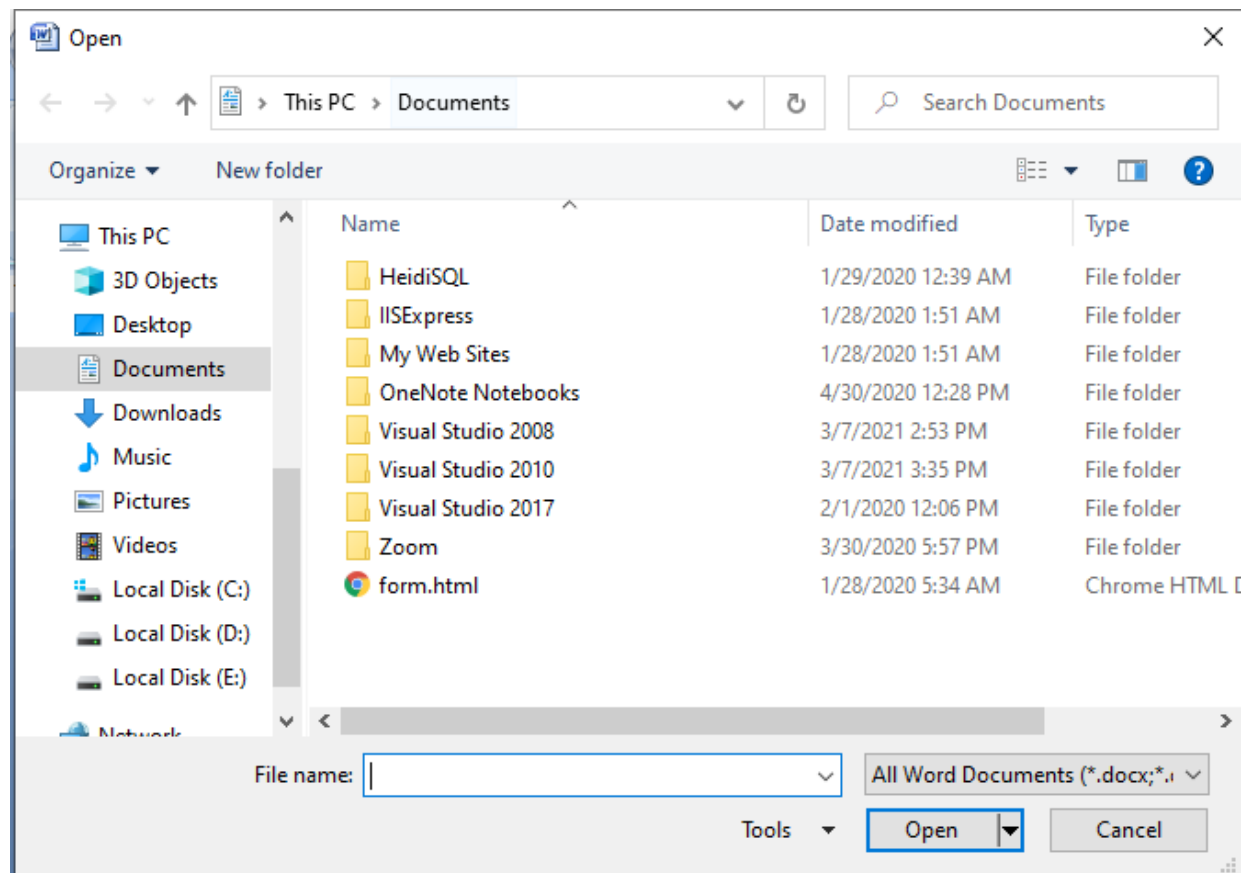
There are several ways to create new documents, open existing documents, and save documents in Word:

- I. Click the Microsoft Office Button and Click New or
- II. Press CTRL+N on the keyboard.



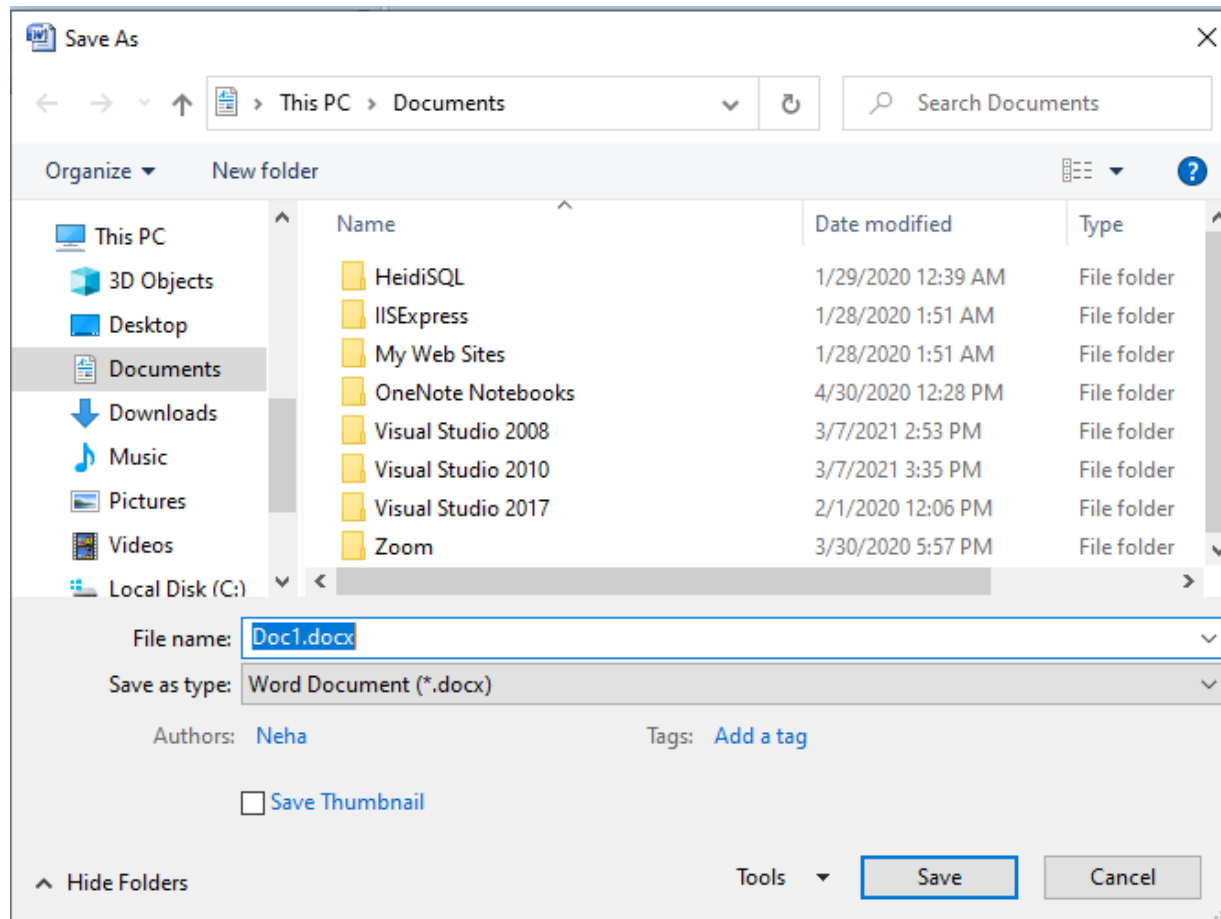
- **Opening an Existing Document**

- I. Click the Microsoft Office Button and Click Open, or
 - II. Press CTRL+O on the keyboard, or
 - III. If you have recently used the document you can click the Microsoft Office Button and click the name of the document in the Recent Documents section of the window
- Insert picture of recent docs



- **Saving a Document**

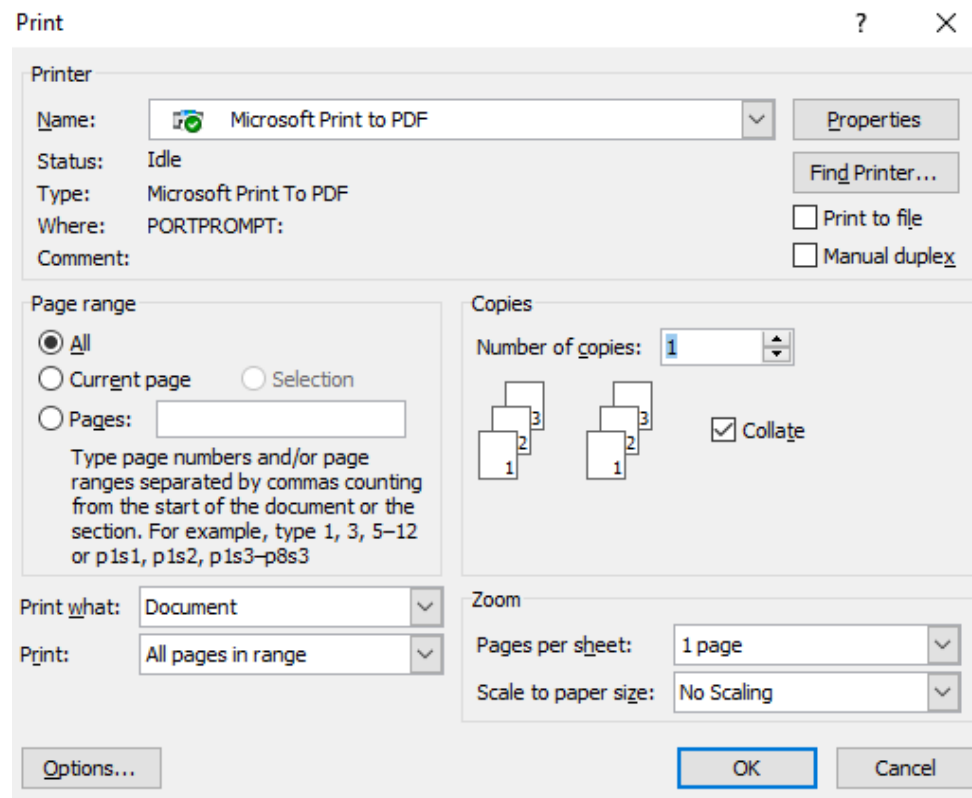
- I. Click the Microsoft Office Button and Click Save or Save As, or
- II. Press CTRL+S on the keyboard, or
- III. Click the File icon on the Quick Access Toolbar.



- **Printing Document to a file page**

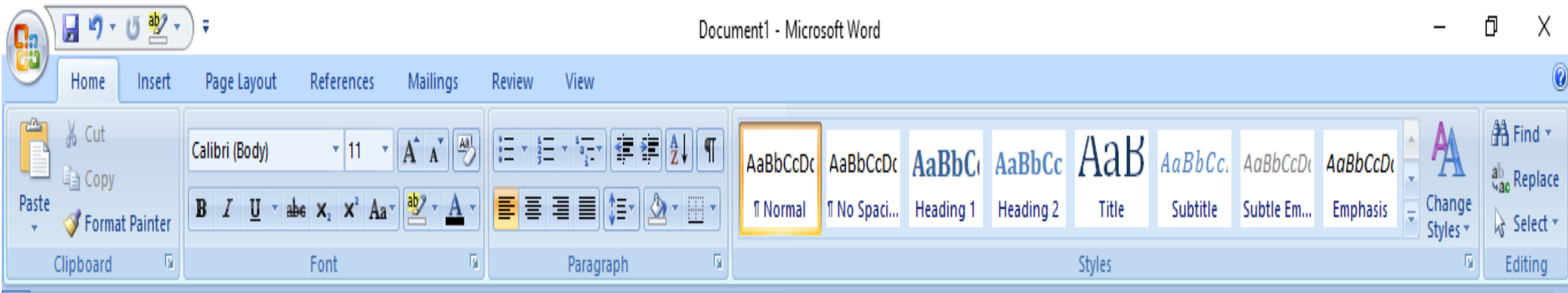
You can print the document.

- I. Print – In print option you can change the number of copies, Select page no., choose printer etc before printing.
- II. Quick Print – In quick print the document is directly send to the printer without making any changes.
- III. Print Preview – Preview and make changes to pages before printing.

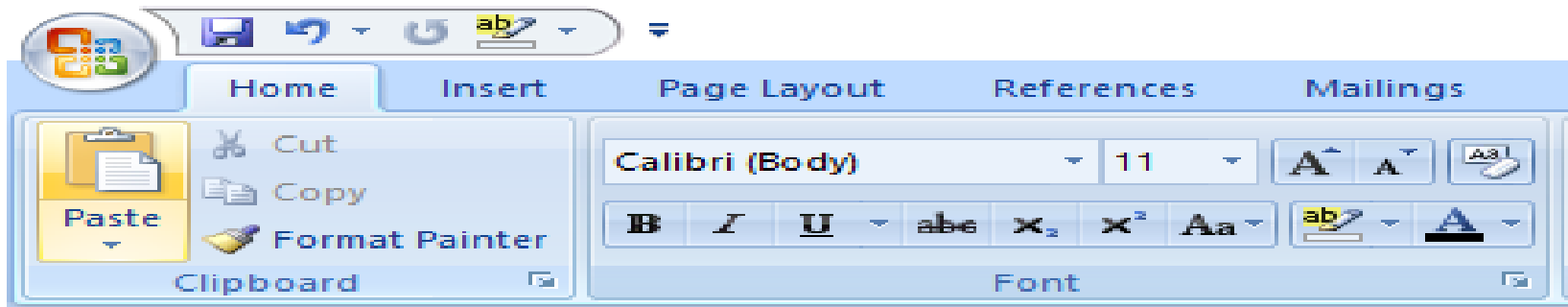


Home Tab

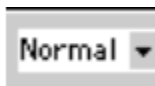
- Most of those frequently used commands are located in the Home Tab.
- The Ribbon is located close to the top of the Word window.
- The Ribbon is organized into a set of task-oriented tabs, and each tab on the Ribbon contains groups of commands.
- The Home Tab contains the most frequently used commands in Word.



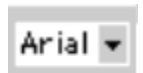
Home Tab 1. Setting Fonts



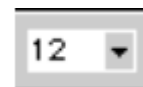
Formatting Features of Ms word:-



Select the style to apply to paragraphs



Changes the font of the selected text



Changes the size of selected text and numbers



Makes selected text and numbers bold



Makes selected text and numbers italic



Underlines selected text and numbers



Used for superscript and subscript of the text



It is used to highlight the important text



It is used to change the color of the font.



It is used to draw a line through the middle of the selected text.



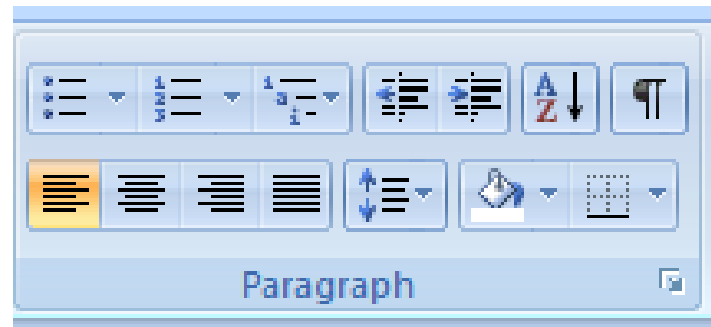
It is used for sentence case, Lower case, Upper case, ToGgLe case etc.



It is also used to change the size of the selected text

Home Tab 2. Paragraph Settings

Make sure the “Home” tab is active and click the “Paragraph Settings” button in the lower-right corner of the “Paragraph” section. On the “Paragraph” dialog box, select the settings you want to change



Aligns to the left with a ragged right margin.



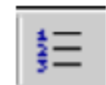
Centers the selected text.



Aligns to the right with a ragged left margin.



Aligns the selected text to both the left and right margins



Makes a numbered list or reverts back to normal.



Add, or remove, bullets in a selected paragraph.



Decreases the indent to the previous tab stop.



Indents the selected paragraph to the next tab stop.



Adds or removes a border around selected text or objects.



It is used to give the spacing between the lines.



It is used to sort the Lines in order to alphabetical or numerical.



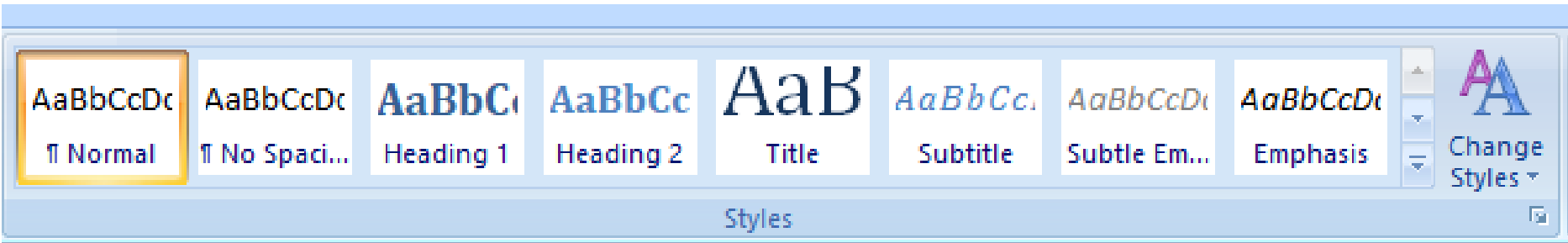
Show paragraph marks and other hidden formatting symbol.



Color the background behind the selected text or paragraph.

Home Tab 3. Various Styles

- Style refers to the format of your paragraph. MS Word offers several quick styles that you can use.
- These include heading, No spacing, Subtitles, Emphasized text, List paragraph, etc.
- To apply a list go to the “ Home” tab on the ribbon and go to the “Style Group”.
- You will see some style in white boxes.
- You can scroll through these styles to find one you want to use, or you can click the arrow in the “Style” tab to select the one you want.

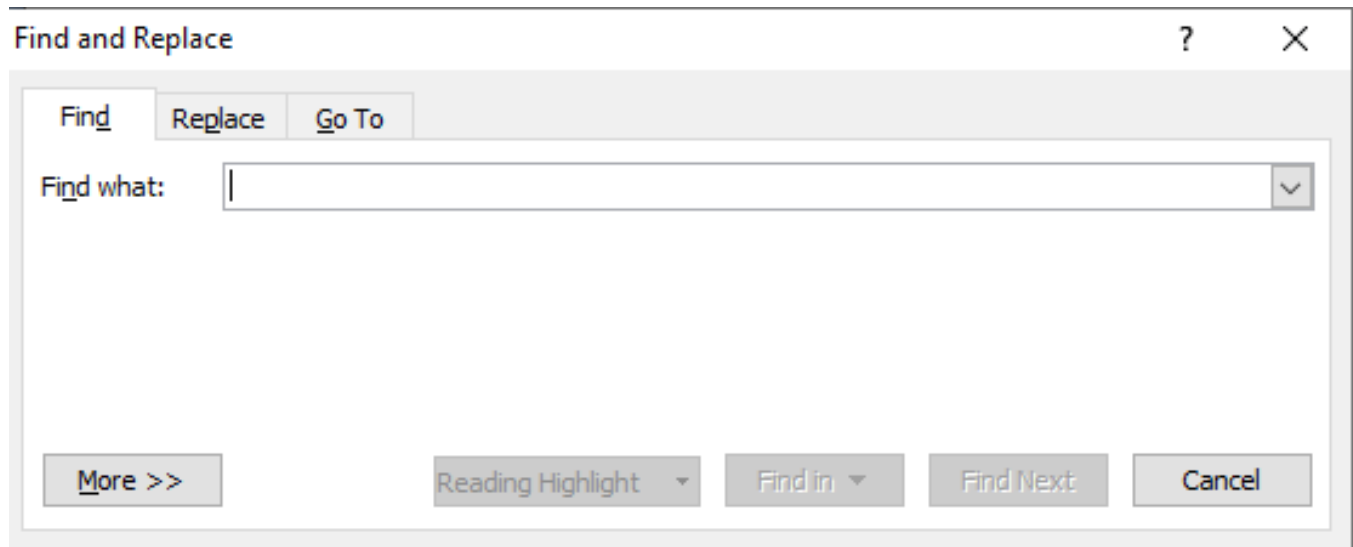


Home Tab 4.Find and Replace

- Find and Replace helps you to find words or formats in a document and can let you replace all instances of a word or format.
- This is particularly handy in long documents. To use Find and Replace, use the shortcut Ctrl+H or navigate to Editing in the Home tab of the ribbon, then choose Find and Replace.

FIND TAB STEPS:

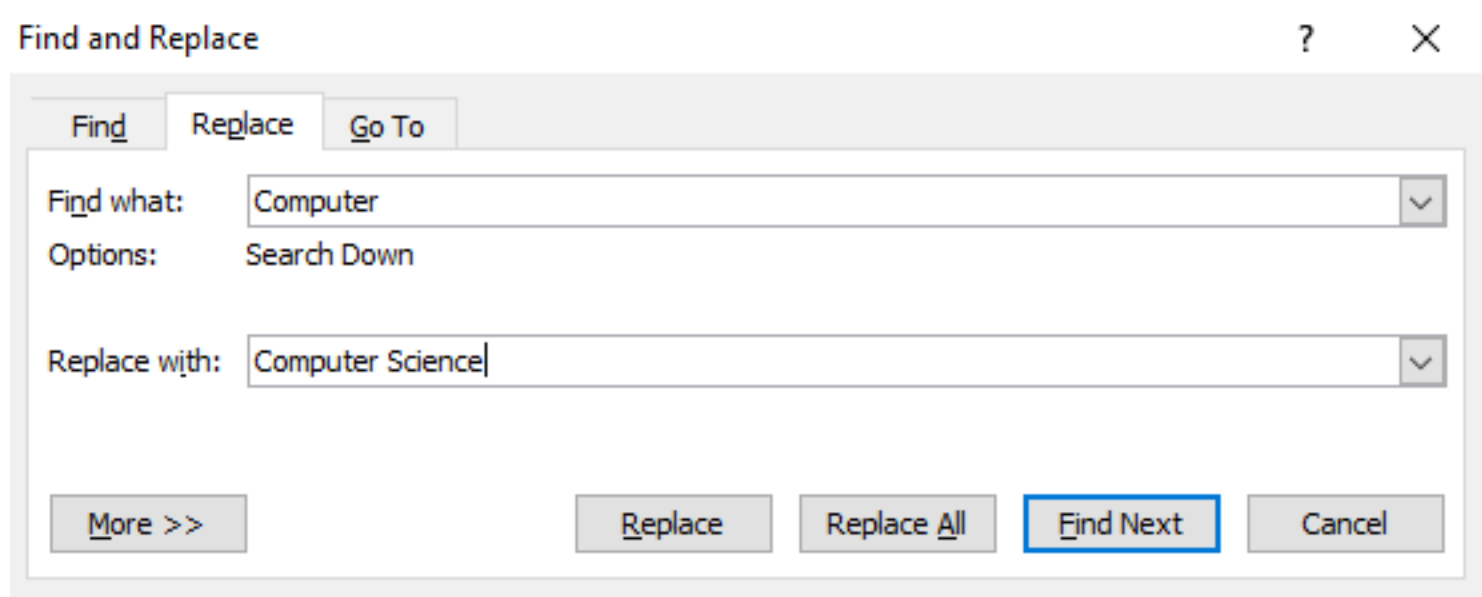
- Find searches for specified text in the active document
- To find a specified text in the document go to Edit menu choose find option or click the find icon () on the toolbar or make use of the shortcut key combination Ctrl+F.
- The Find and Replace dialog box will get displayed.
- Enter the text to be searched in the Find what tab.
- Clicking the Find Next button the specified text will be located in the document.



REPLACE TAB STEPS:

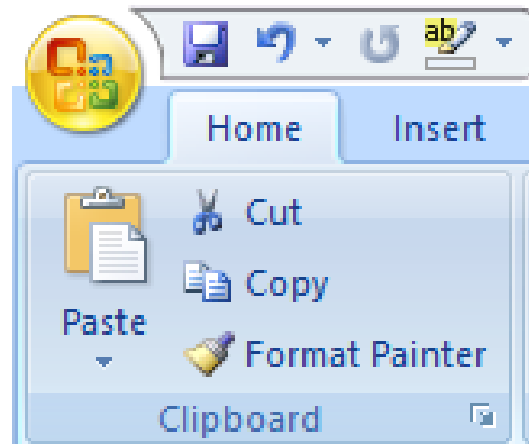
To find and replace a word or phrase in your document you need to :

- Go to Edit section in the Home Tab select “Replace” to open the find /replace dialog box.
- Enter the text in the “Find what” box.
- Enter the text in the replace box which you want to replace.
- Note : If you do not enter any character at the “Replace box”, the program will delete all the results matching the search criteria.



Home Tab 4.Format Painter

- Many times we need to apply the same formatting effects, like font, font size, style, color, border, shading and many more to different portions in active document with the help of Format Painter facility in MS Word.
- Format in MS Word is an important tool of Microsoft Word.
- You can use Format Painter to quickly applied copied formatting from one place to another place in the active document of MS Word.
- If you want to cancel Format paint then you just simply press ESC key.



Method 1: Format Painter using the Shortcut Key Combination

Step 1. If you want to copy formatting to place and apply on another place then first you have to select the formatted text or shape which formatting you want to copy.

Step 2. To copy the formatting press CTRL+SHIFT+C shortcut key combination.

Step 3. Select the target text or shape on which you want to paste or apply copied formatting.

Step 4. To paste formatting on target location you have to press CTRL+SHIFT+V shortcut key combination.

Method 2: Format Painter using the Mouse

You can also use another method to copy formatting from one place to another place using the Mouse:

Step 1. Select the formatted text or shape (source location) which formatting you want to copy.

Step 2. Now, Click on the Format Painter button which is placed in the Home tab >>> Clipboard group for copy formatting.

Step 3. Select the target text or shape (target location) on which you want to paste formatting.

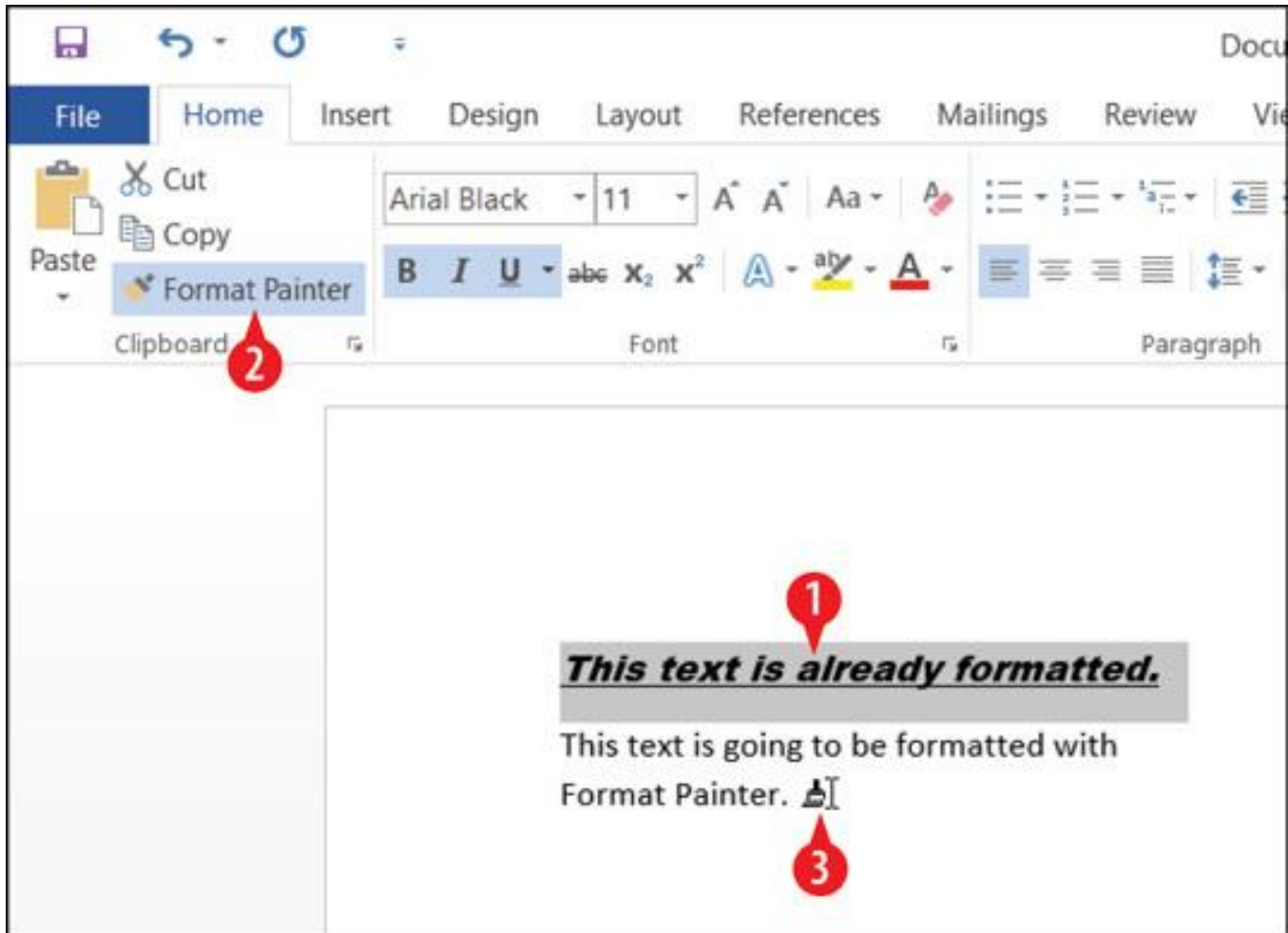
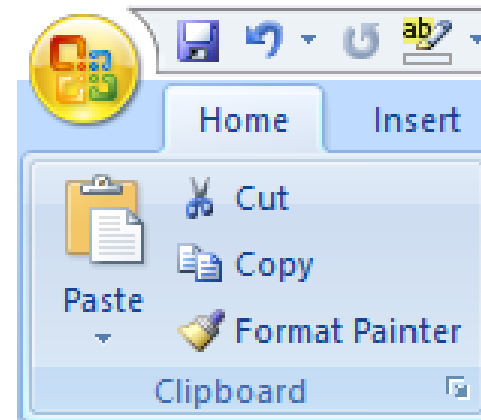


Figure : Format painter using the mouse

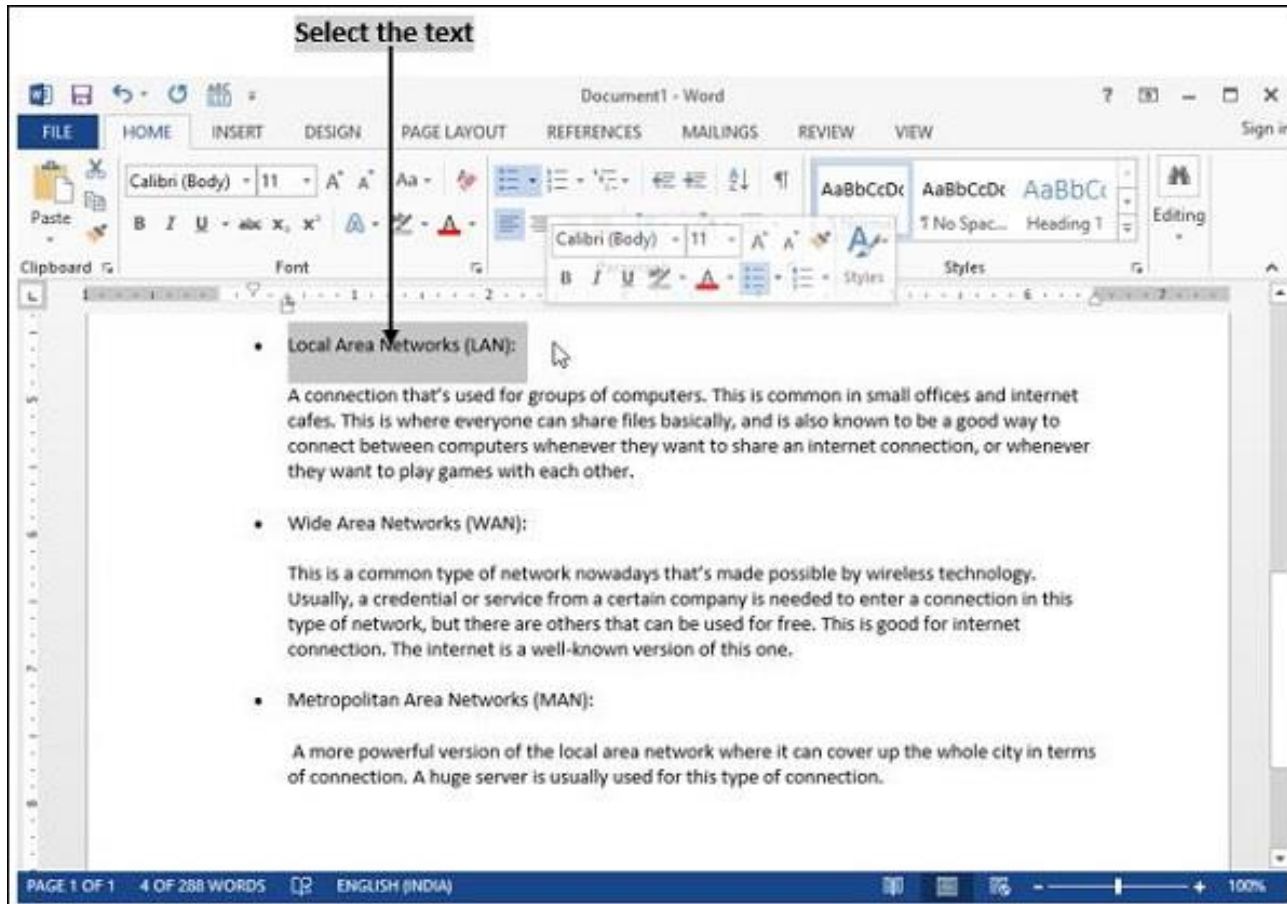
Copy, Cut and Paste

Cut :

- Deleting unnecessary data from a document is called cutting.
- In Microsoft Word, you can cut text from one area of a document and paste that text anywhere in the document.
- After you cut the text, it gets stored in the clipboard.
- If you want to cut any text or word from a document, it is advisable to Select the word first.
- To cut, **Right Click → Cut**.
- The shortcut key is "**Ctrl + X**".



Cut Using Mouse



Right click and select cut

The screenshot displays the Microsoft Word interface with a right-click context menu open over a bulleted list. The menu options are: Cut, Copy, Paste Options, Adjust List Indents..., Separate List, Join To Previous List, Font..., Paragraph..., Define, Synonyms, Translate, Search with Bing, Hyperlink..., and New Comment. The 'Cut' option is highlighted with a mouse cursor. An arrow points from the title 'Right click and select cut' to the 'Cut' option.

Local Area Networks (LAN):
A connection that's used in small offices, schools, and internet cafes. This is where everyone connects between computers and they want to play games.

Wide Area Networks (WAN):
This is a common type of network, but it's usually made possible by wireless technology. Usually, a credential or password is needed to enter a connection in this type of network, but it's used for free. This is good for internet of this one.

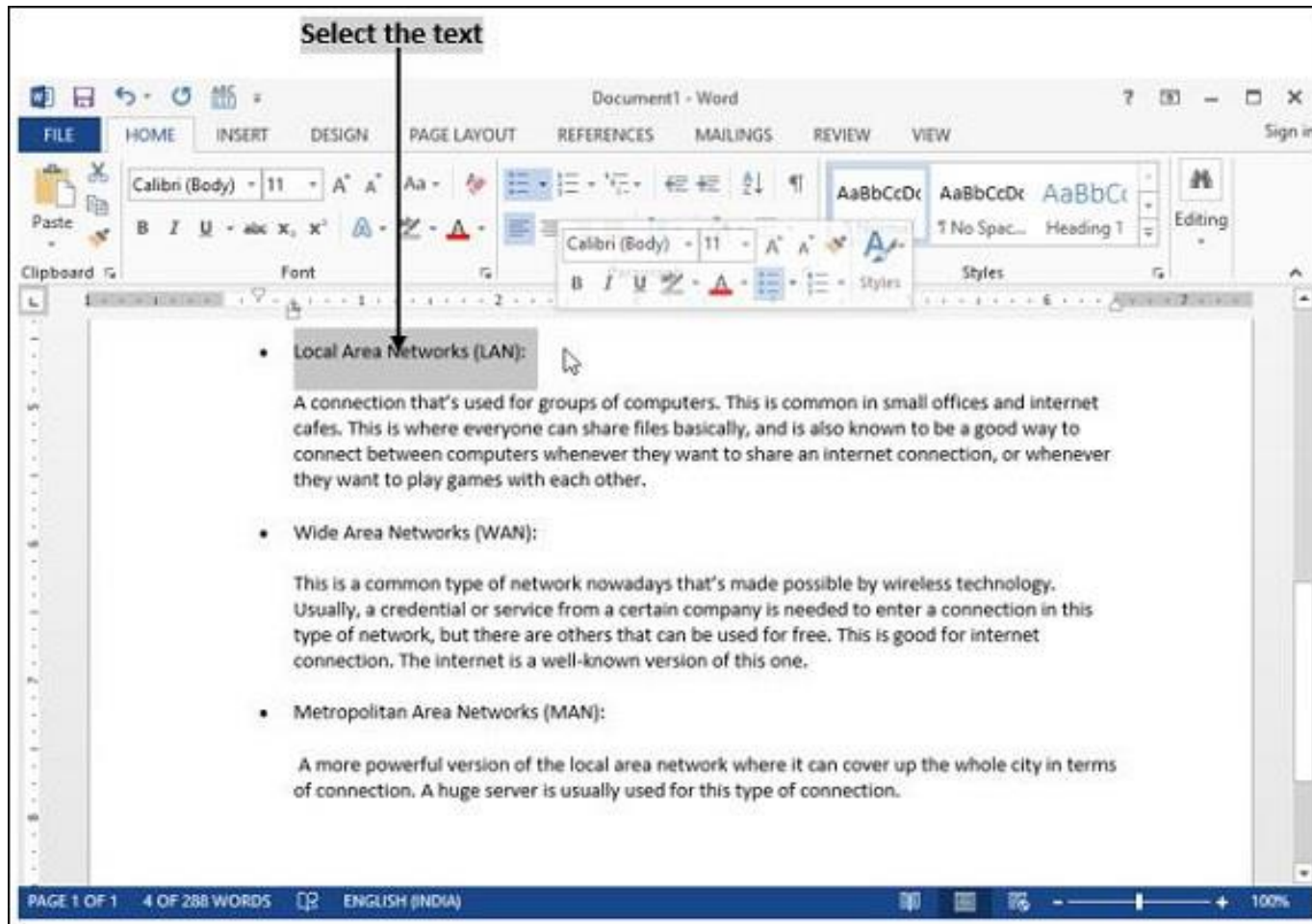
Metropolitan Area Network (MAN):
A more powerful version of a connection. A huge network where it can cover up the whole city in terms of this type of connection.

Document1 - Word
FILE HOME INSERT DESIGN PAGE LAYOUT REFERENCES MAILINGS REVIEW VIEW
Calibri (Body) 11 A A Aa B I U - atx x, x' A - Z - A -
Clipboard Font Calibri (Body) 11 A A Aa B I U - atx x, x' A - Z - A - Styles
AaBbCcDc AaBbCcDc AaBbCc
Normal No Spac... Heading 1
Editing
PAGE 1 OF 1 4 OF 288 WORDS ENGLISH (INDIA) 100%

Copy:

- Copy option can be used when we need to retype the same text as it reduces time and effort.
- By using copy option, you can copy the text from one location to another.
- Information stored on the clipboard stays there until new information is either cut or copied.
- Each time you use cut or copy, you replace the old information on the clipboard with the information you just cut or copied.
- To copy, Right Click → Copy.
- The shortcut key is "Ctrl + C".

Copy Using Mouse



The image shows a screenshot of the Microsoft Word application interface. The title bar reads "Document1 - Word". The ribbon at the top includes "FILE", "HOME", "INSERT", "DESIGN", "PAGE LAYOUT", "REFERENCES", "MAILINGS", "REVIEW", and "VIEW". The "HOME" ribbon is active, showing font settings (Calibri (Body), size 11) and paragraph alignment options. The document content consists of a bulleted list with three items: "Local Area Networks (LAN)", "Wide Area Networks (WAN)", and "Metropolitan Area Networks (MAN)". The first item, "Local Area Networks (LAN)", is highlighted with a grey selection background. A mouse cursor is positioned over the highlighted text. A black arrow points from the text "Select the text" above to the highlighted area. The status bar at the bottom indicates "PAGE 1 OF 1", "4 OF 288 WORDS", and "ENGLISH (INDIA)".

Select the text

- **Local Area Networks (LAN):**
A connection that's used for groups of computers. This is common in small offices and internet cafes. This is where everyone can share files basically, and is also known to be a good way to connect between computers whenever they want to share an internet connection, or whenever they want to play games with each other.
- **Wide Area Networks (WAN):**
This is a common type of network nowadays that's made possible by wireless technology. Usually, a credential or service from a certain company is needed to enter a connection in this type of network, but there are others that can be used for free. This is good for internet connection. The internet is a well-known version of this one.
- **Metropolitan Area Networks (MAN):**
A more powerful version of the local area network where it can cover up the whole city in terms of connection. A huge server is usually used for this type of connection.

PAGE 1 OF 1 4 OF 288 WORDS ENGLISH (INDIA) 100%

Right click and select copy

The screenshot shows the Microsoft Word interface with a document titled "Document1 - Word". The ribbon is set to the "HOME" tab, showing font and paragraph options. A bulleted list is selected, and a right-click context menu is open over it. The "Copy" option is highlighted, and a black arrow points to it from the title "Right click and select copy" above. The status bar at the bottom indicates "PAGE 1 OF 1", "4 OF 288 WORDS", and "ENGLISH (INDIA)".

Document1 - Word

FILE HOME INSERT DESIGN PAGE LAYOUT REFERENCES MAILINGS REVIEW VIEW Sign in

Clipboard Font Styles

- Local Area Networks (LANs)
A connection that's used in small offices and internet cafes. This is where everyone connects between computers they want to play games.
- Wide Area Networks (WANs)
This is a common type of network. Usually, a credential or security type of network, but there's also a type of connection. The internet is made possible by wireless technology.
- Metropolitan Area Networks (MANs)
A more powerful version of connection. A huge set of connections is needed to enter a connection in this type of network. This is good for internet connections. This one.

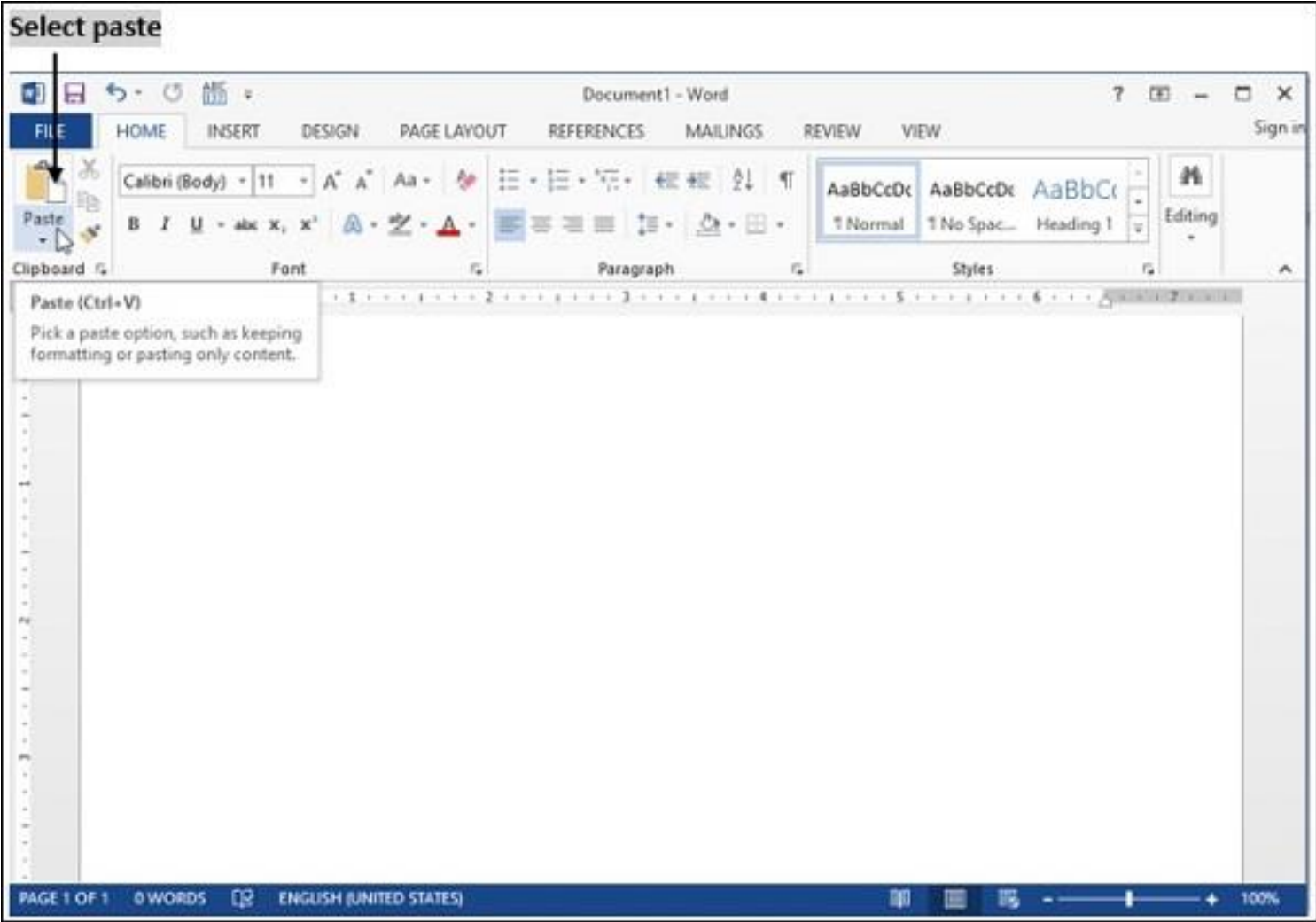
Copy

PAGE 1 OF 1 4 OF 288 WORDS ENGLISH (INDIA) 100%

Paste:

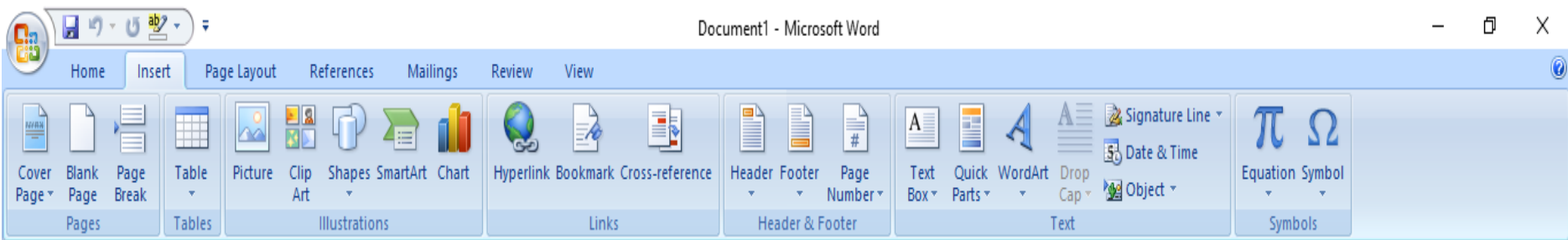
- Select your text and then copy it..
- Use mouse to move the cursor to desired position to paste the copied text.
- Click paste to insert the copied text in its new place.
- You can paste clipboard information as often as you like.
- To paste, **Right Click → Paste**.
- The shortcut key is "**Ctrl + V**".

Paste Using Mouse



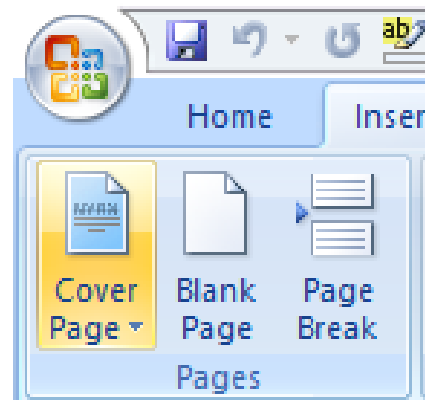
Insert Tab

- The Insert Tab is right next to the Home Tab in Microsoft Word 2007.
- The Insert Tab is used to insert different features such as tables, pictures, clip art, shapes, charts, page numbers, word art, headers, and footers into a document.



Insert Tab 1. Pages

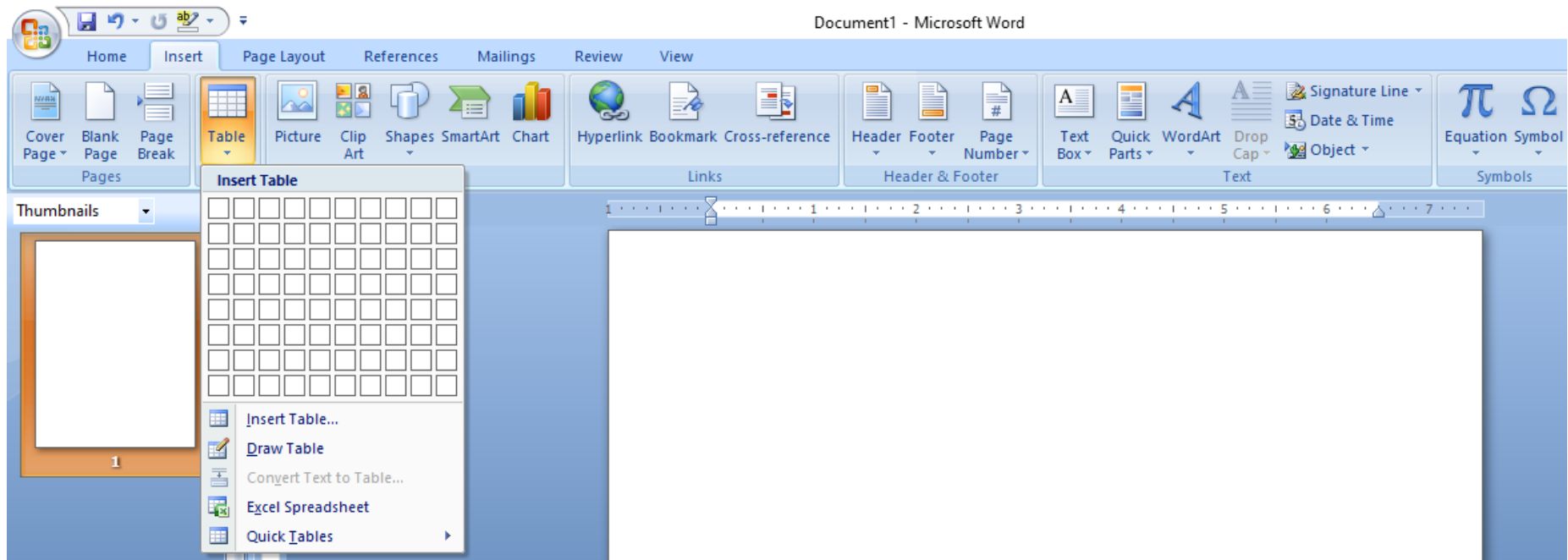
- **Cover Page** :This button can be used to insert a pre-formatted cover page for a document. The information that is to appear on the page is filled in after the page is created.
- **Blank Page** :To insert a new blank page for a document at the cursor position, click this button.
- **Page Break** :Click this button to end a page at the current cursor position and start a new page.



Insert Tab 2.Tables

Tables :

- This button is used to insert a table into the document.
- A grid will appear that can be used to create the table.
- Additional options for creating a table are also available, such as drawing a table or using the Quick Tables feature.

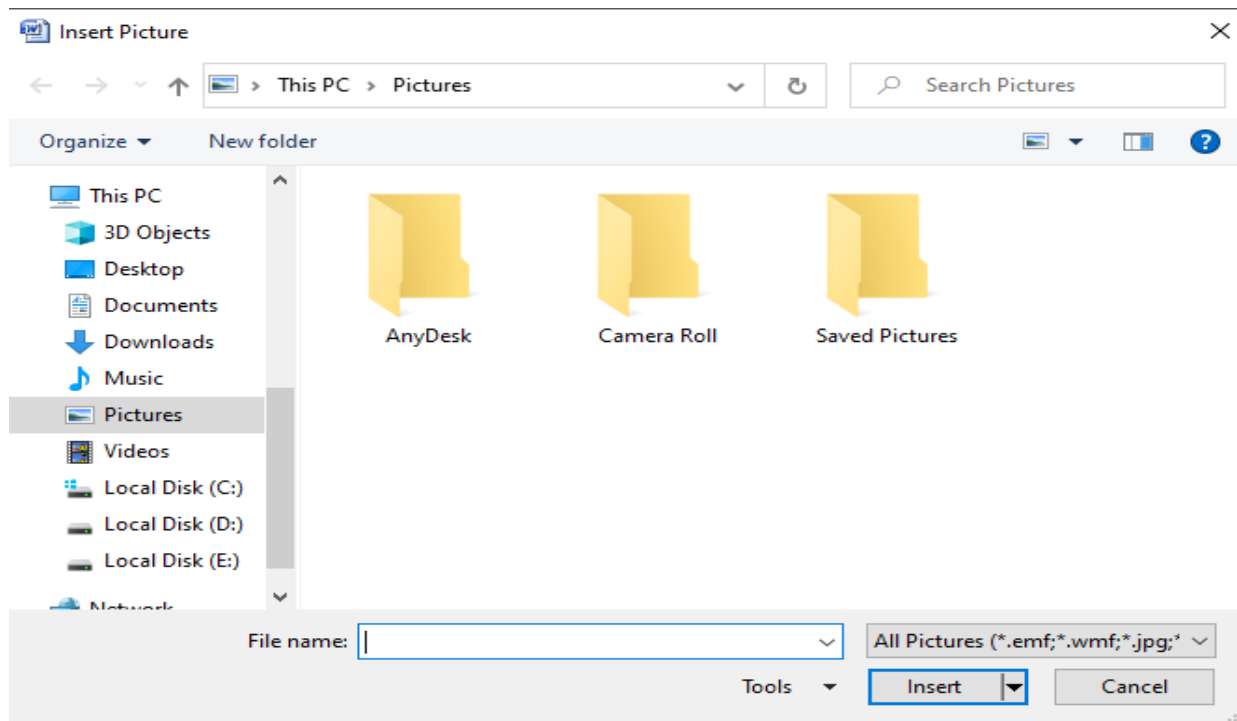


Insert Tab 3. Illustrations

Picture, Clip art, Shapes, Smart art, Chart

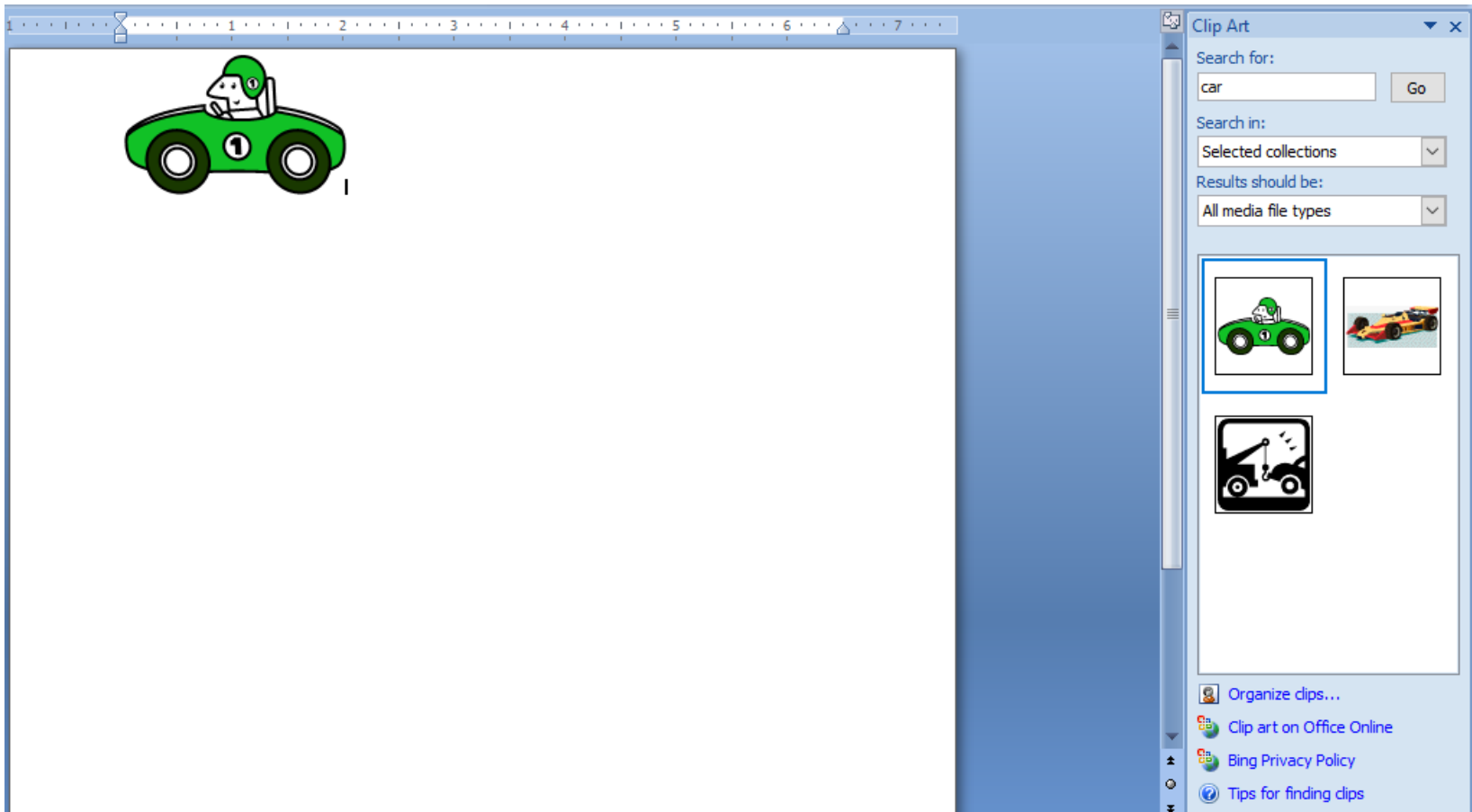
Picture :

- To insert a picture from a file on the computer into the document, click this button.
- The Insert Picture dialog box will appear.
- This dialog box is used to select the picture that is to be inserted into the document.



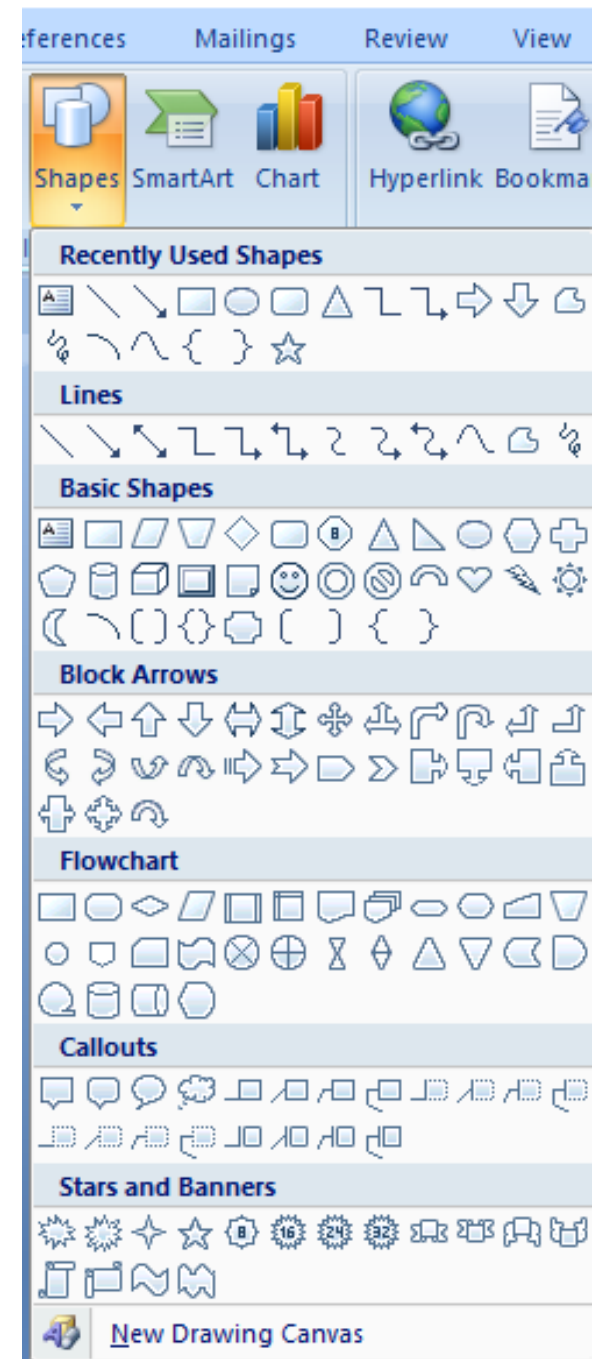
Clip Art :

- In word 2007 , You have the ability to search clip art files on your local computer and on Microsoft office online.
- You can Modify that clip art using picture editing tool.



Shapes :

- This button is used to insert ready-made shapes such as circles, squares, arrows, and triangles into a document.
- When the button is clicked, a gallery of different shapes will appear.
- To insert a shape, click the desired shape and then draw the shape in the document.



Smart art :

- Smart Art To insert a Smart Art graphic into the document, click this button.
- Smart Art graphics are objects such as Venn diagrams and organizational charts.
- When the button is clicked, a gallery of different categories and shapes will be displayed.

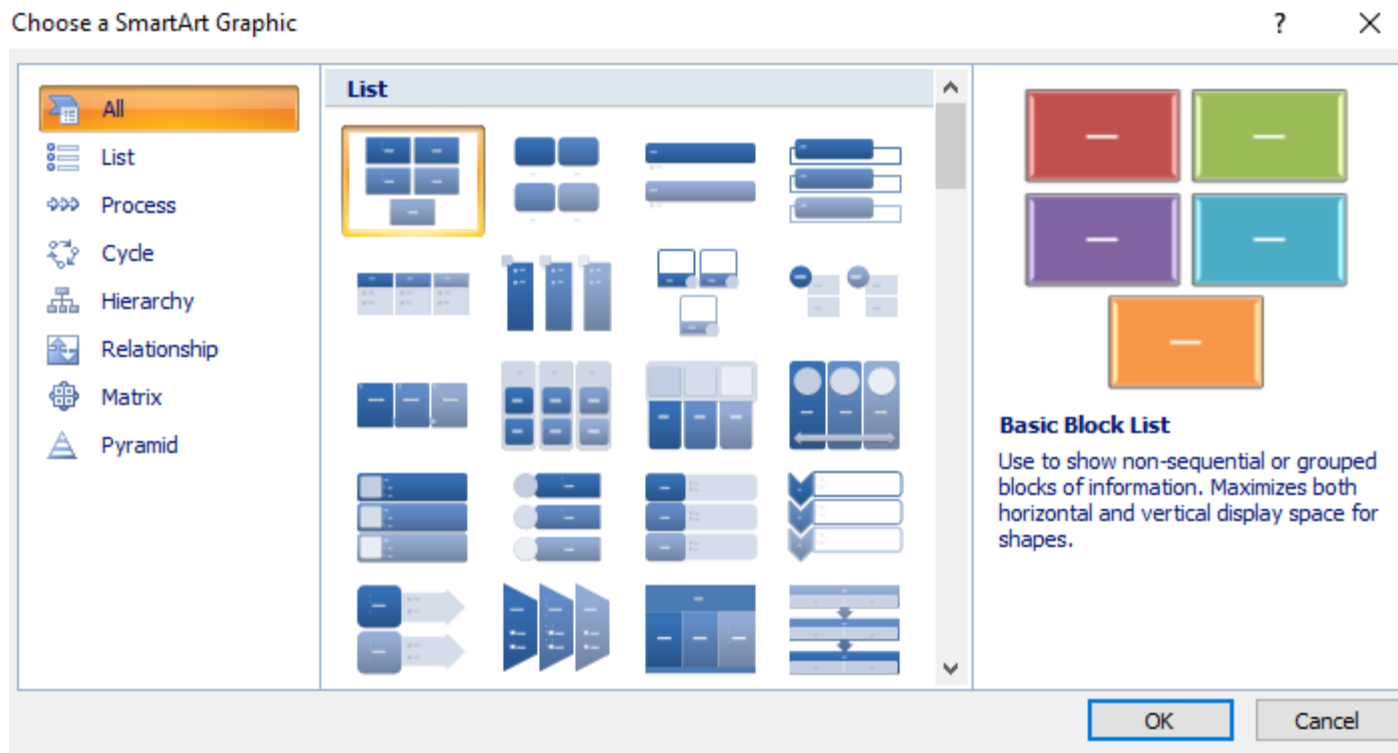
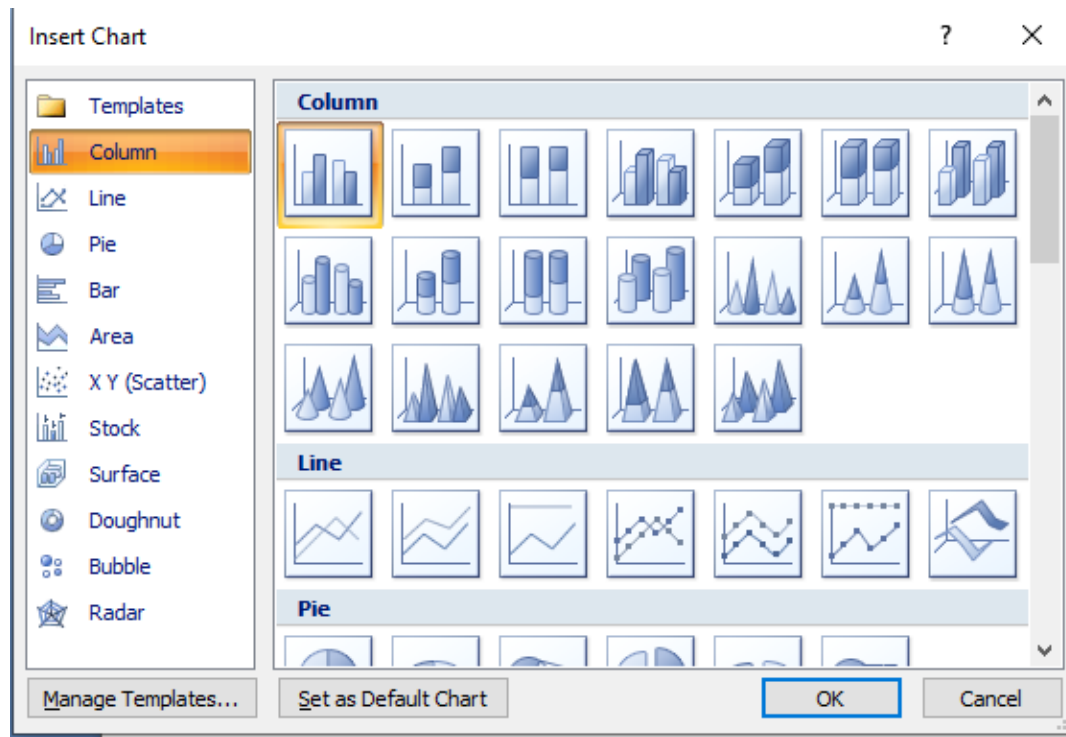


Chart :

- Group/Button Description Chart Use this feature to insert a bar, area, or line chart.
- When this button is clicked the Insert Chart dialog box will display.
- In this dialog box, it is possible to specify the type of chart.



Insert Tab 4.Links

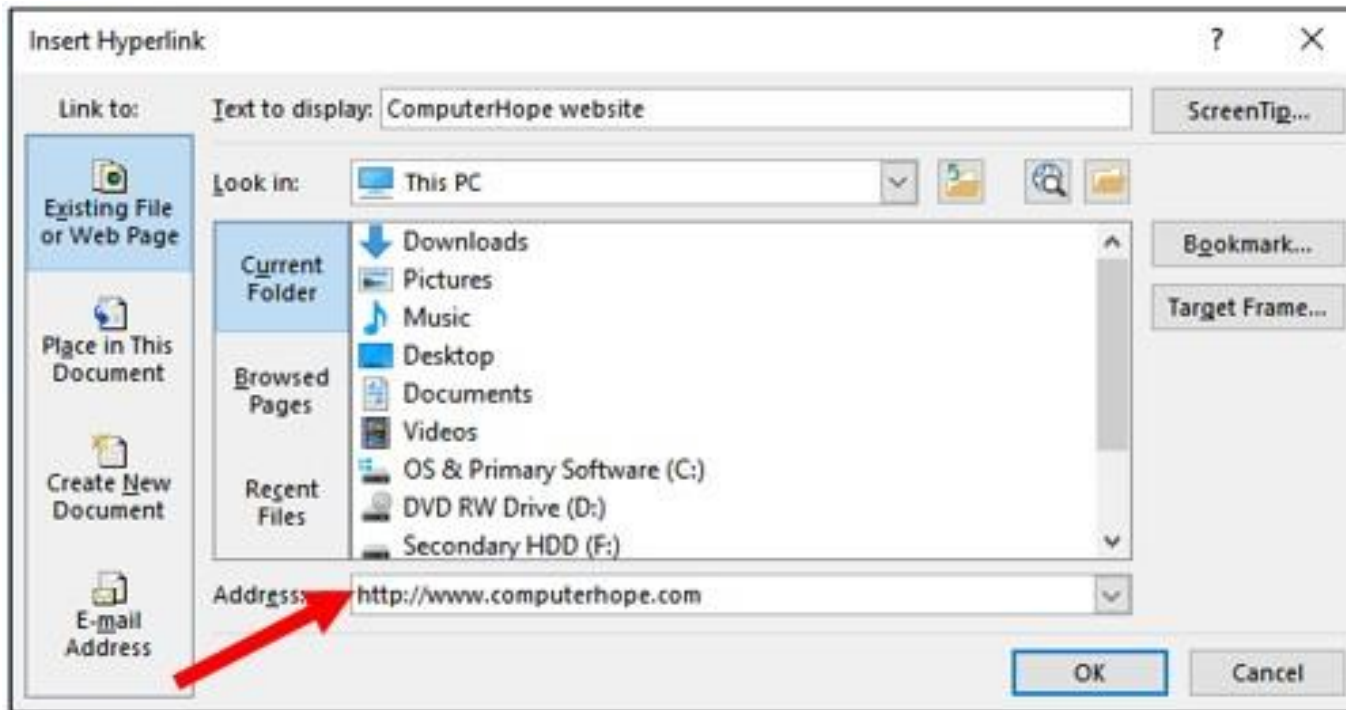
Hyperlink and Bookmark

Inserting a hyperlink

- Open Microsoft Word.
- Type the appropriate text in the Word document.
- With your mouse or keyboard, highlight the text you want to turn into a hyperlink. For example, in the picture below, the text "ComputerHope website" is highlighted.

The **ComputerHope website** is a great site for learning about computers.

- In the menu bar or Ribbon at the top of the Word program window, click the Insert tab.
- On the Insert tab, in the Links section, click the Hyperlink or Link option.
- In the Insert Hyperlink window, type in the web page address you want to set the highlighted text to link to in the Address text field, then click OK.

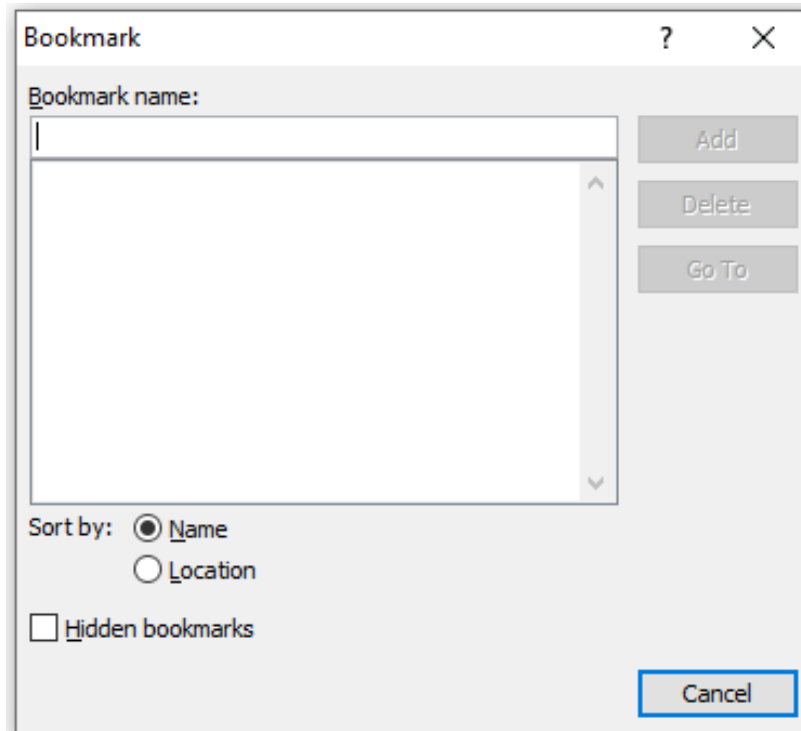


- As you can see in the image below, the highlighted text is now a hyperlink, set to the desired web page.

The [ComputerHope website](http://www.computerhope.com) is a great site for learning about computers.

Bookmark :

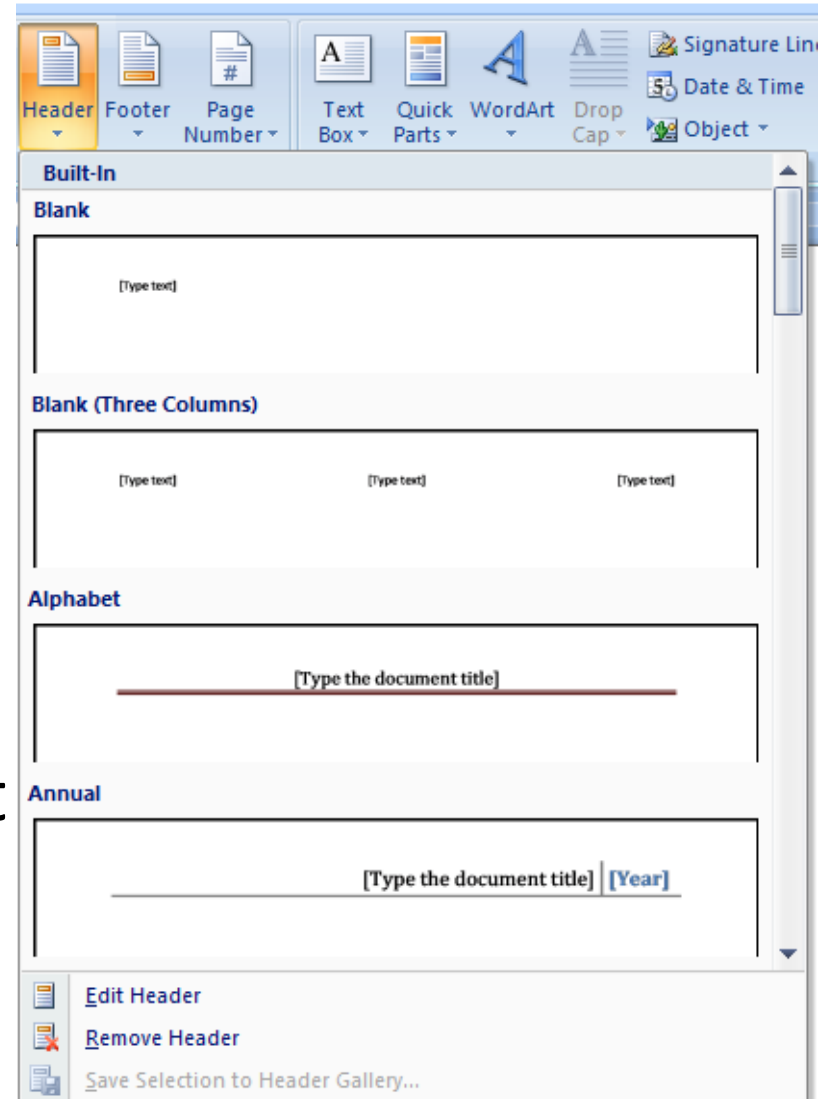
- Create a bookmark to assign a name to a specific point in a document
- A bookmark in Word works like a bookmark you might place in a book: it marks a place that you want to find again easily. ...



Insert Tab 5.Header & Footer

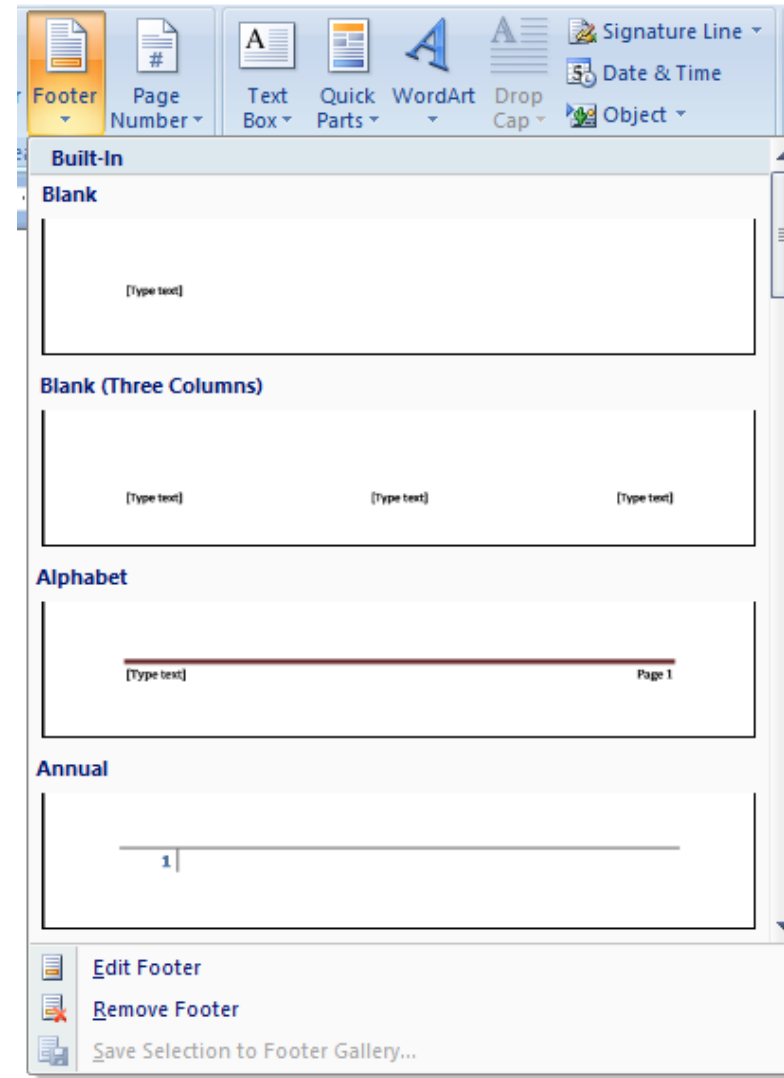
Header :

- To insert text that appears at the top of each page of the document, click this button. A gallery of header styles and formats will appear.
- Click the heading style that is to be applied to insert it into the document.



Footer :

- This button is used to insert text that appears at the bottom of each page of the document. A gallery of footer styles and formats will appear.
- Click the footer style that is displayed to insert it into the document.



Insert Tab 6. Word Art

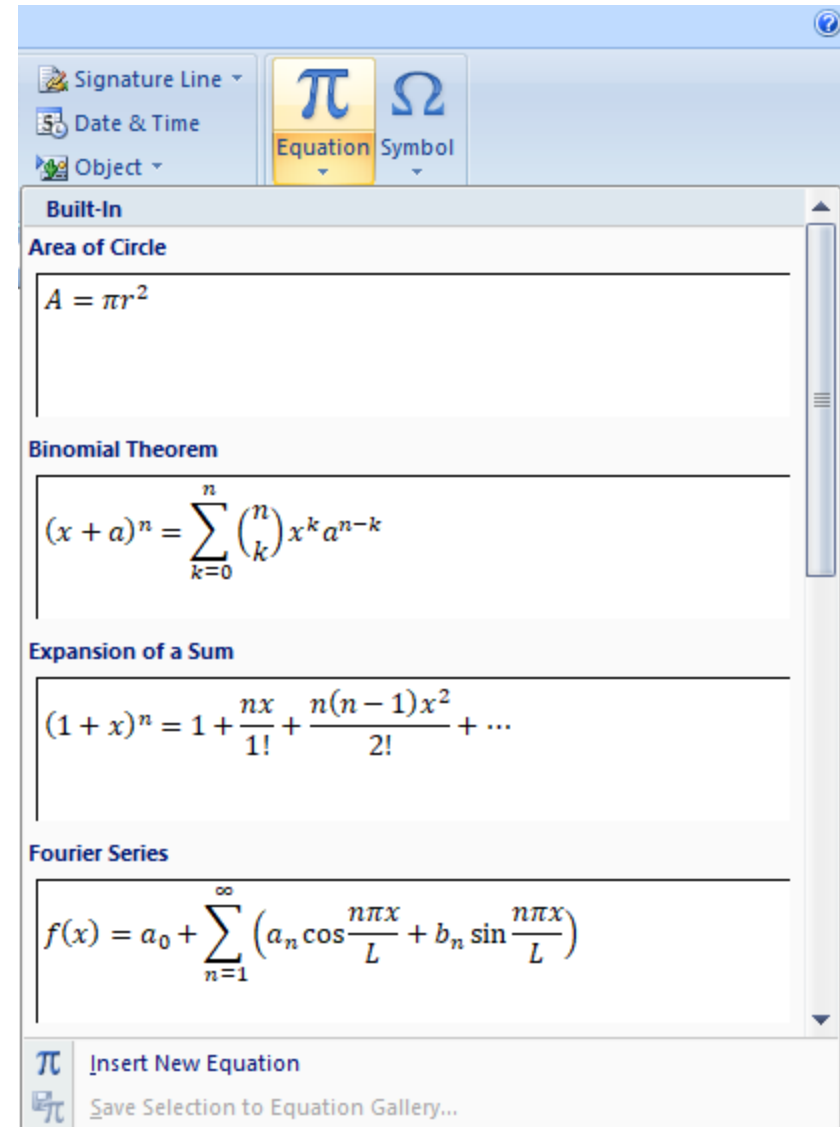
- Click **Insert** > **WordArt**, and pick the WordArt style you want.
- To insert decorative text into the document, click this button.
- A gallery of different styles of WordArt will display.
- Click the desired format to create the WordArt image.



Insert Tab 7. Equation and Symbols

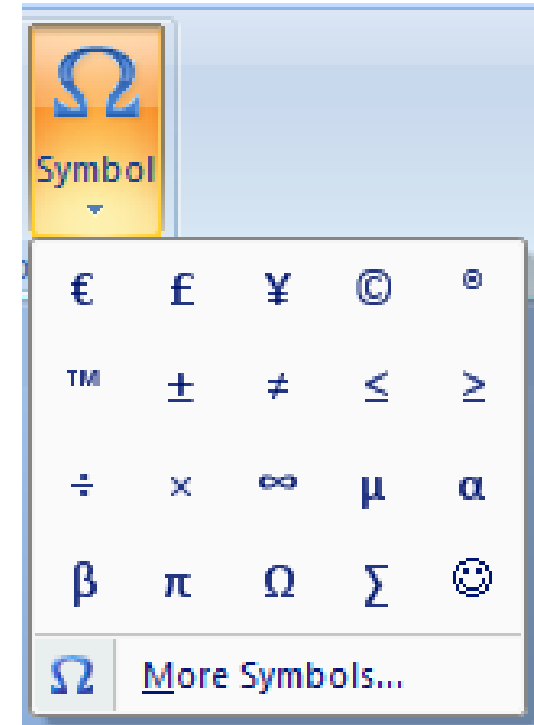
Equation :

- This button is used to insert a mathematical equation into a document.
- The equation tools ribbon will appear when the button is clicked.
- This ribbon is used to create the equation. A list of common equations is also available.



Symbol :

- Click this button to insert a symbol such as a copyright or trademark into the document.
- It has the symbol that are not present in your keyboard like copyright symbol, Trademark Symbol, Paragraph Marks, and Unicode Character.



Unit – 1

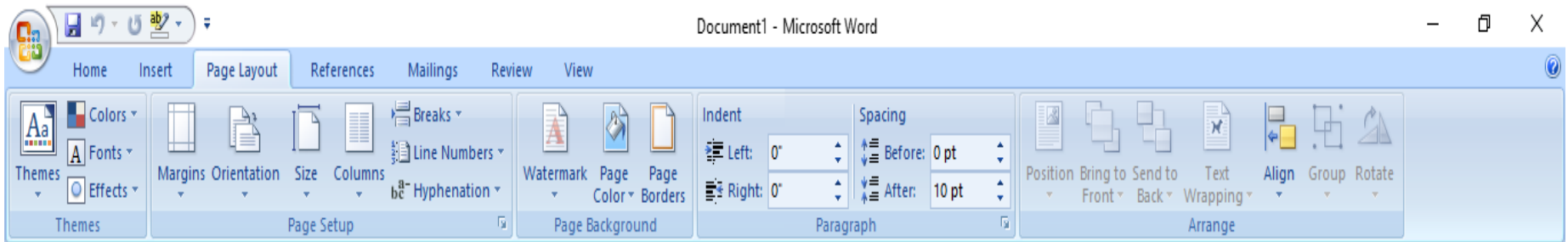
Part -II

**Page Layout Tab, Mailing Tab,
Review Tab, View Tab**

Page Layout Tab

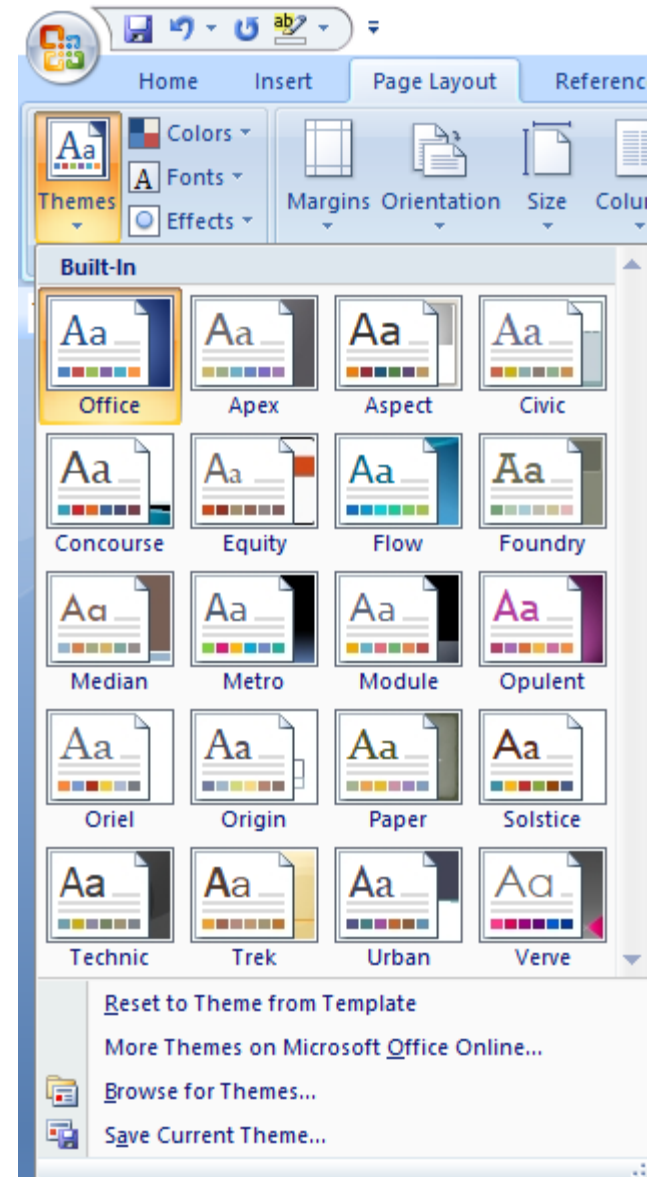
Introduction :

- The Page Layout Tab holds all the options that allow you to arrange your document pages just the way you want them.
- You can set margins, apply themes, control of page orientation and size, add sections and line breaks, display line numbers, and set paragraph indentation and lines.



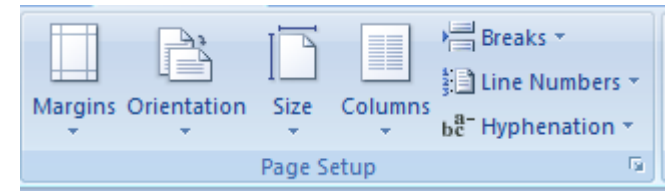
Document Themes :

- On the Page Layout Tab, in the Themes Group, click the Themes button. A gallery opens.
- Hover your mouse pointer over the many themes in the Themes gallery. Word enables you to preview the themes in your document via the Live Preview feature.
- To make the change permanent, click the theme you want to see.



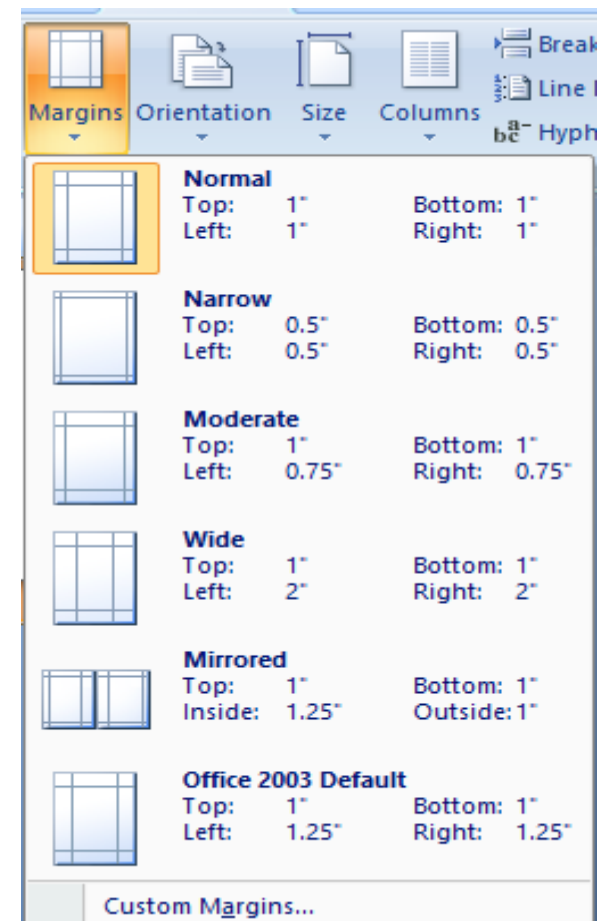
Page Layout Tab 1. Page Setup

- You can display the "Page Setup" dialog box, Margins Tab, by clicking on the page layout tab.



1. Margin :

- In the Page Setup group, click the Margins button. There you will see a gallery showing a number of margin options. Click one of the options, and Word applies the margins to your document.
- If none of the gallery's options are satisfactory, click the Custom Margins option. The Page Setup dialog box opens with the Margins tab displayed.
- Use the options in the Page Setup Dialog Box to adjust the margins to your satisfaction. When you have finished, click OK.



2. Orientation -

The drop-down contains the commands: Portrait and Landscape. This provides a shortcut to the (Page Setup)(Page tab, Orientation).

3. **Size** - Drop-Down. Lets you select from all the different available paper sizes. This provides a shortcut to the (Page Setup)(Page tab, Paper size drop-down).

4. **Columns** - Drop-Down. The drop-down contains the commands: One, Two, Three, Left and Right and the command More Columns. Provides access to 1,2,3 column layouts.



Fig : Size

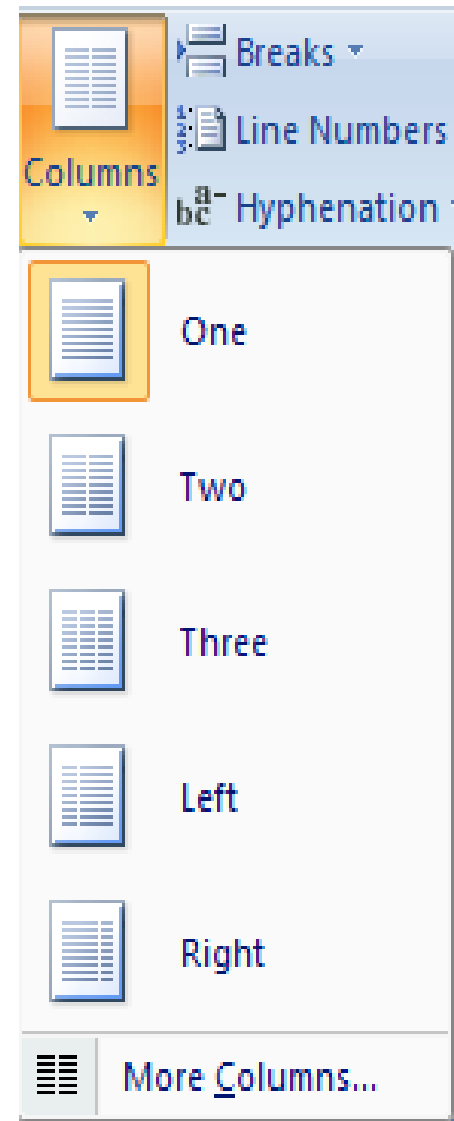


Fig : Columns

5. **Breaks** - Drop-Down. The drop-down contains the commands: Insert Page Break, Remove Page Break and Reset All Page Breaks.
6. **Line Numbers** - Drop-Down. The drop-down contains the commands: None, Continuous, Restart Each Page, Restart Each Section, Suppress for Current Paragraph and Line Numbering Options. The Line Numbering Options displays the "Page Setup" dialog box (Layout tab).
7. **Hyphenation** - Drop-Down. The drop-down contains the commands: None, Automatic, Manual and Hyphenation Options. The Hyphenation Options displays the "Hyphenation" dialog box.

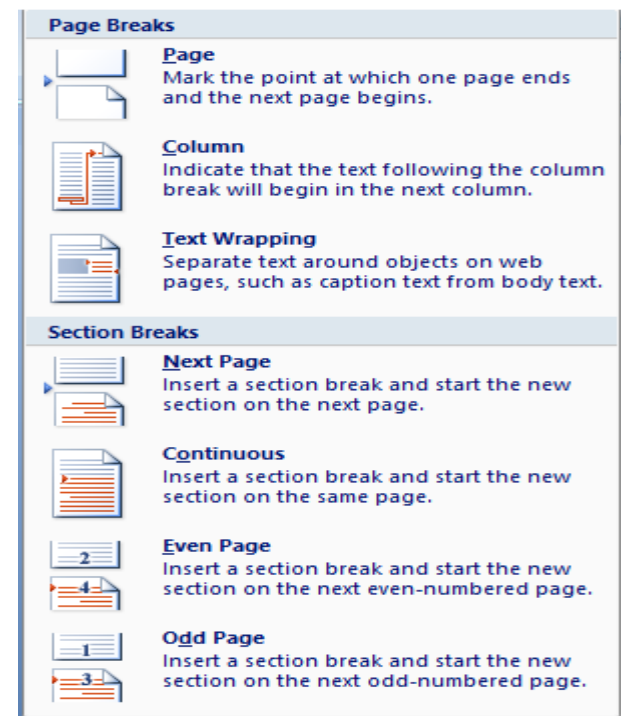


Figure : Breaks

experimentation to demonstrate how automated hyphenation works. You need words like antidisestablishmentarianism and other such humungous exemplars of massively long words in order to demonstrate this – it's also to exemplify it using column width rather than

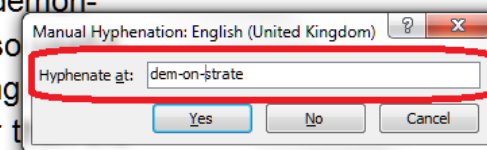
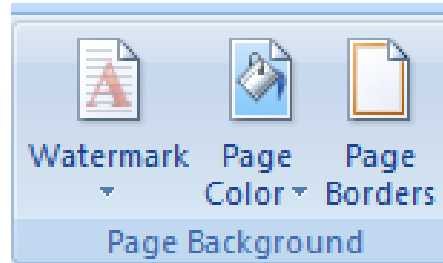


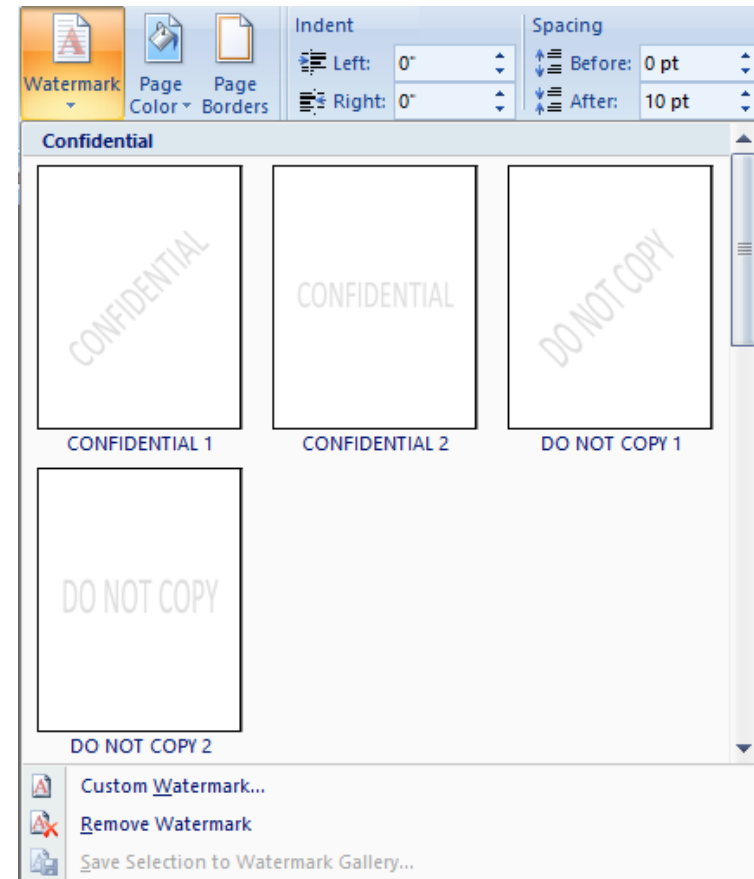
Figure : Hyphenation

Page Layout Tab 2. Page Background



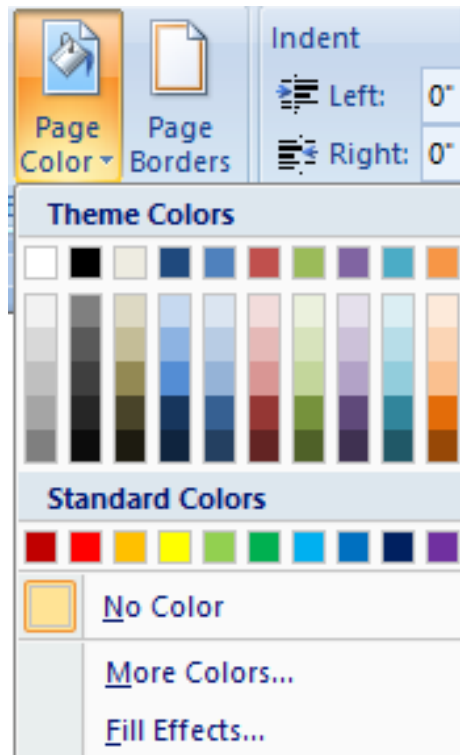
1. Watermarks :

- In the Page Background group, click the Watermark button. A gallery opens with a number of standard watermarks.
- Click the one you want to use.
- If you don't want to use any of the standard watermarks you can create your own by clicking the Custom Watermark command. The Print Watermark dialog opens.
- Use the options in that dialog to create a text watermark or to select an image to use as a picture watermark.
- When you've completed created your watermark, click OK.



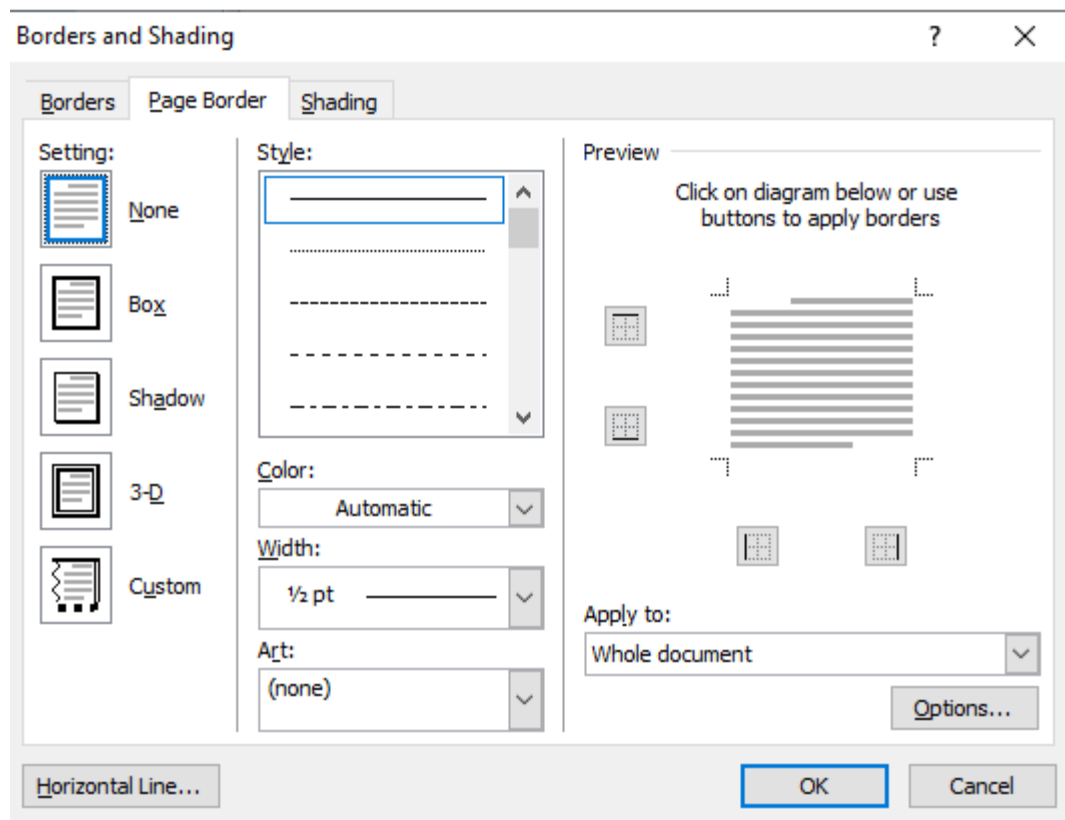
Page Color :

- On the Ribbon, click on the Design tab
- Locate the Page Background group
- Click on the Page Color button
- Click on a color to set your page background color



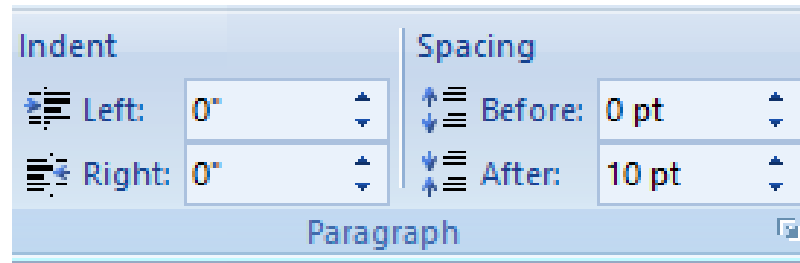
Page Borders :

- Go to Page Layout>Page Background>Page Borders.
- Make selections for how you want the border to look.
- To adjust the distance between the border and the edge of the page, select Options. Make your changes and select OK.
- Select OK.



Page Layout Tab 3.Paragraph

You can quickly display the "Paragraph" dialog box, Indents and Spacing tab, by clicking on the Paragraph section of Page layout tab.



Indent Left -

- Move in the left side of the Paragraph by a certain amount.
- This can be used to change the left indentation for the current selection.

Indent Right -

- Move in the left side of the Paragraph by a certain amount.
- This can be used to change the right indentation for the current selection.

Spacing Before -

- This automatically updates to indicate how much spacing is defined before the paragraph of the current selection.
- This can be used to change the spacing for the current selection.

Spacing After -

- The automatically updates to indicate how much spacing is defined after the paragraph of the current selection.
- This can be used to change the spacing for the current selection.

Mailing Tab 1.Create Envelops and Labels

Creating Envelops

- Go ahead and open up Word and select the “Mailings” tab.
- Next, click the “Envelopes” button.
- The Envelopes and Labels window will appear. This is where we’ll enter all of our information.
- In the “Delivery Address” box (1), enter the recipient’s address. The “Return Address” box (2)

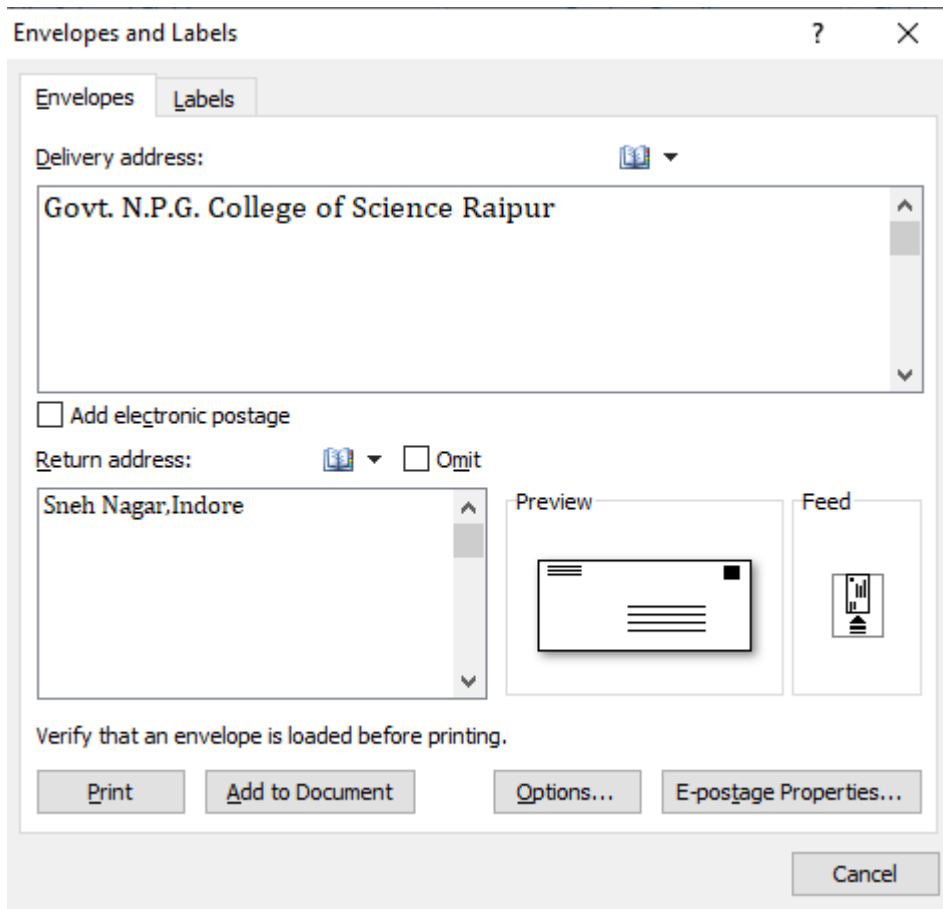


Figure : Creating Envelops

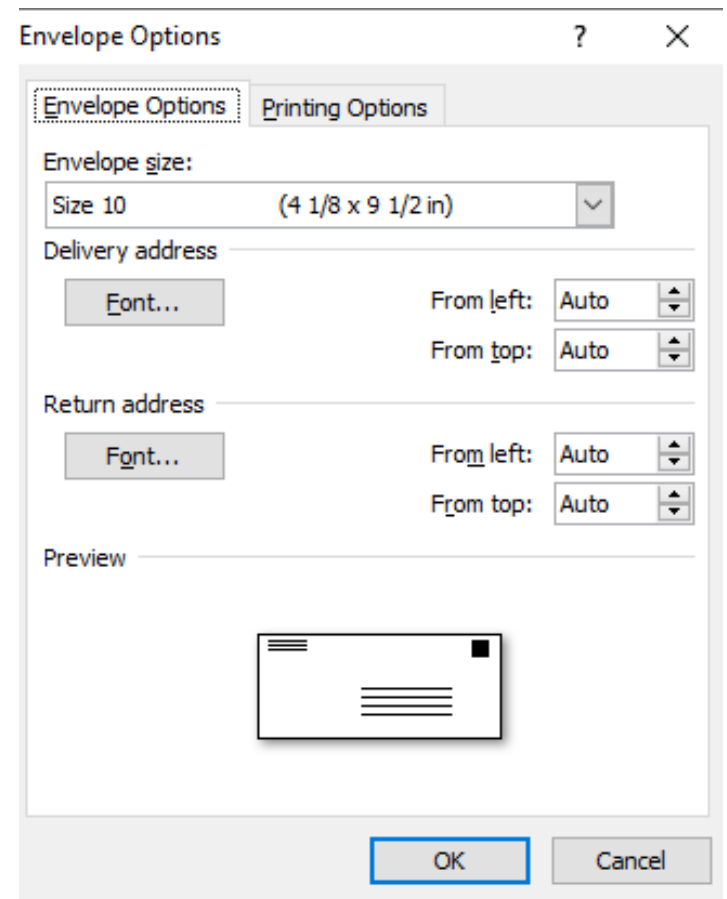


Figure : options of envelops

Sneh Nagar, Indore

Govt. N.P.G. College of Science Raipur

Figure : Envelops

Creating Labels:

- 1) Start Microsoft Word.
- 2) Click the New Document button.
- 3) From the Tools menu, select Letters and Mailings, then select Envelopes and Labels.
- 4) Select the Labels tab, click Options, select the type of labels you want to create and then click OK.
- 5) Click New Document.

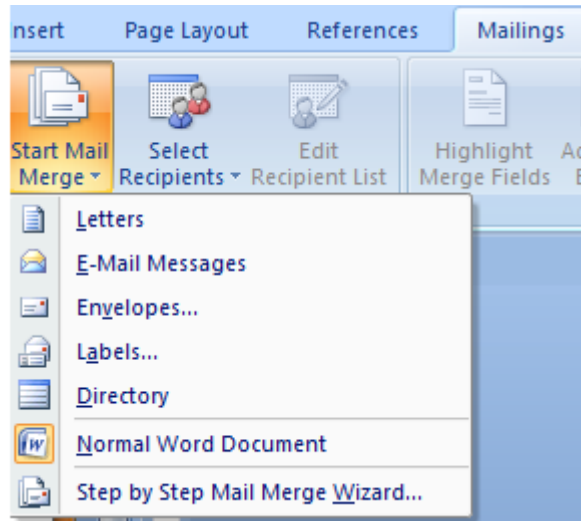
The screenshot shows the 'Envelopes and Labels' dialog box with the 'Labels' tab selected. The 'Address' field contains the text 'Govt. N.P.G. College'. The 'Print' section has two radio buttons: 'Full page of the same label' (selected) and 'Single label'. Below these are two spinners for 'Row' and 'Column', both set to '1'. The 'Label' section displays 'Microsoft, 30 Per Page Address Label' and a small icon of a label. At the bottom, there are buttons for 'Print', 'New Document', 'Options...', 'E-postage Properties...', and 'Cancel'. A note at the bottom reads: 'Before printing, insert labels in your printer's manual feeder.'

Govt. N.P.G. College	Govt. N.P.G. College	Govt. N.P.G. College	Govt. N.P.G. College	Govt. N.P.G. College	Govt. N.P.G. College	Govt. N.P.G. College	Govt. N.P.G. College	Govt. N.P.G. College	Govt. N.P.G. College
Govt. N.P.G. College	Govt. N.P.G. College	Govt. N.P.G. College	Govt. N.P.G. College	Govt. N.P.G. College	Govt. N.P.G. College	Govt. N.P.G. College	Govt. N.P.G. College	Govt. N.P.G. College	Govt. N.P.G. College
Govt. N.P.G. College	Govt. N.P.G. College	Govt. N.P.G. College	Govt. N.P.G. College	Govt. N.P.G. College	Govt. N.P.G. College	Govt. N.P.G. College	Govt. N.P.G. College	Govt. N.P.G. College	Govt. N.P.G. College

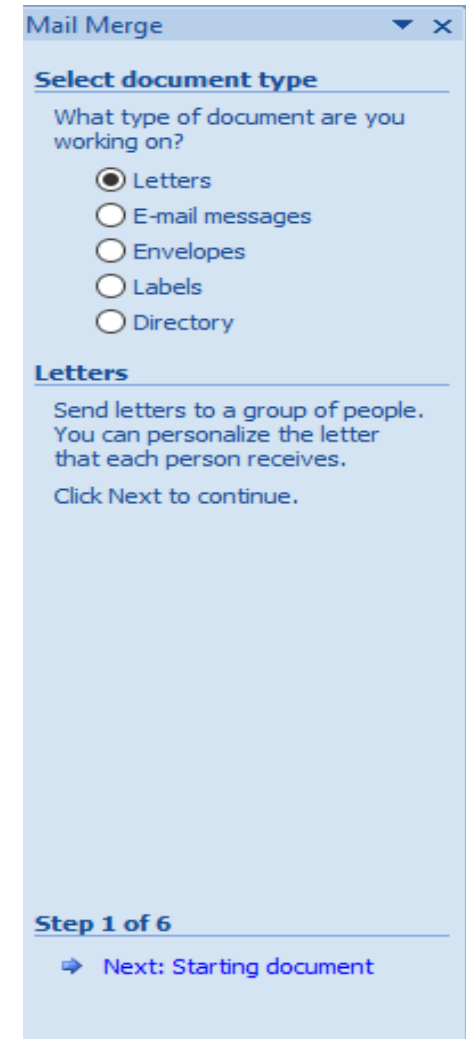
Figure : Creating Labels

Mailing Tab 2. Mail Merge

- i) In a blank Microsoft Word document, click on the Mailings tab, and in the Start Mail Merge group, click Start Mail Merge.
- ii) Click Step-by-Step Mail Merge Wizard.

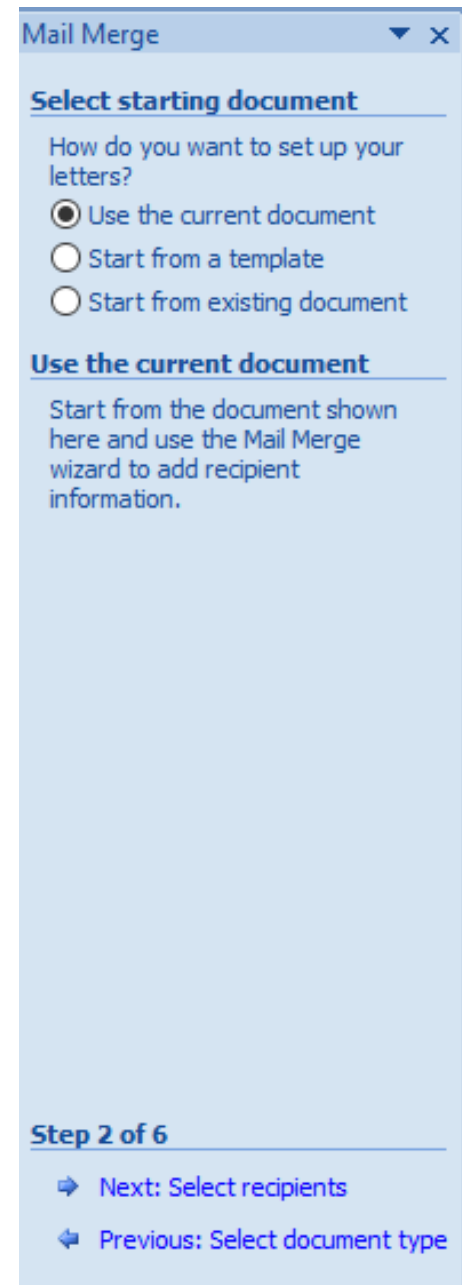


- iii) Select your document type. In this we will select **Letters**. Click Next: Starting document.



i)Figure : Select document type

- iv) Select the starting document. In this example we will use the current (blank) document. Select **Use the current document** and then click Next: Select recipients.



ii) Figure : Selecting the document

- v) Select recipients. In this Example we will create a new list, so select **Type a new list** and then click Create
- vi) Create a list by adding data in the New Address List dialog box and clicking OK.

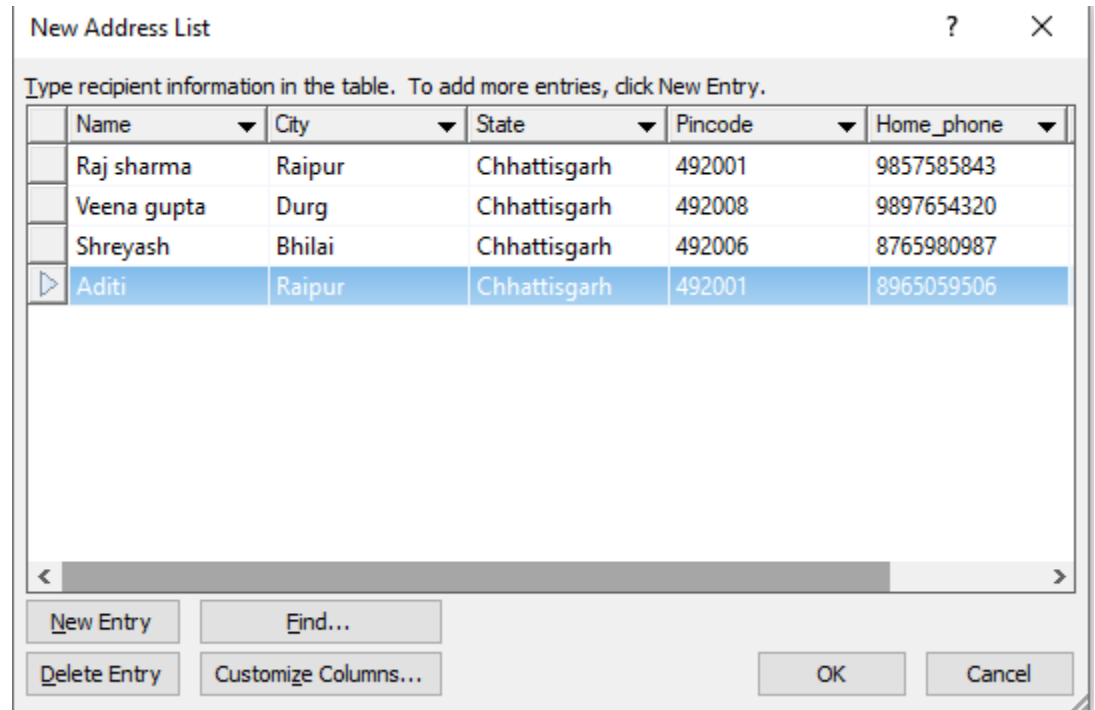
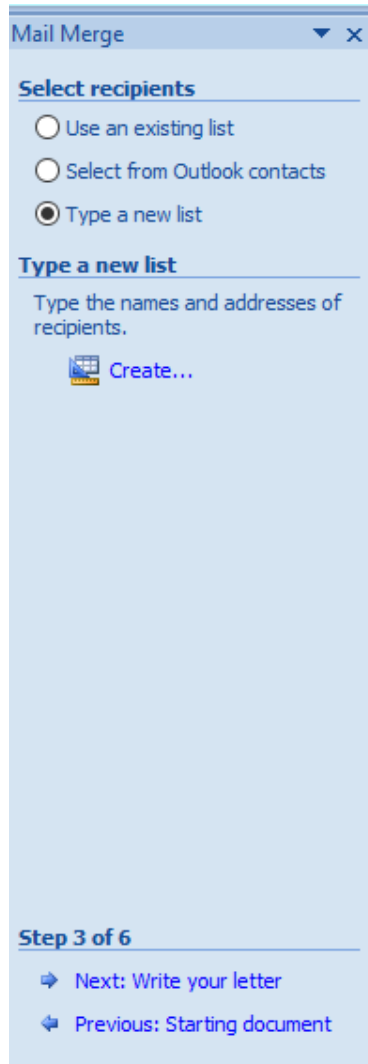
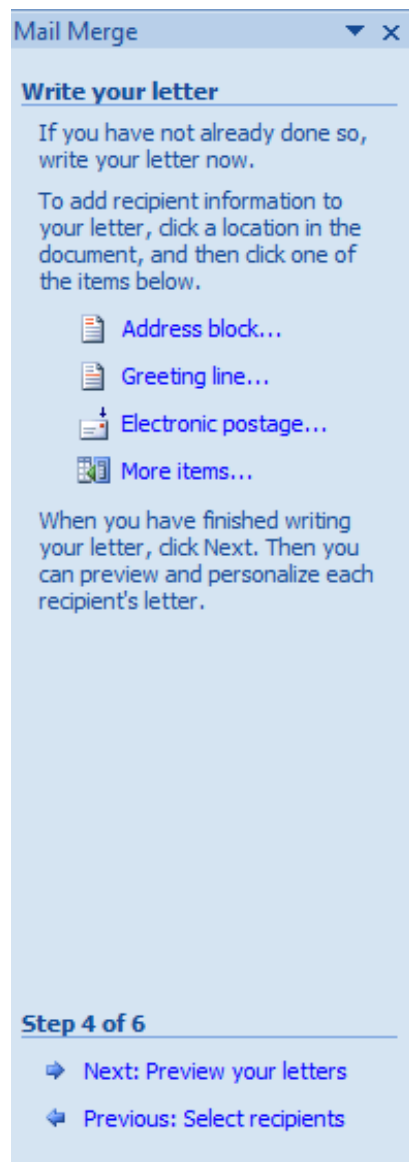


Figure : Add new Recipients

iii) Figure : Add the Recipients

- vii) Click Next: Write your letter.
- viii) For adding the address block click on More items



Dear «Name»

You are invited to the conference, I hope you will come

To

«City»

«State»

«Home_phone»

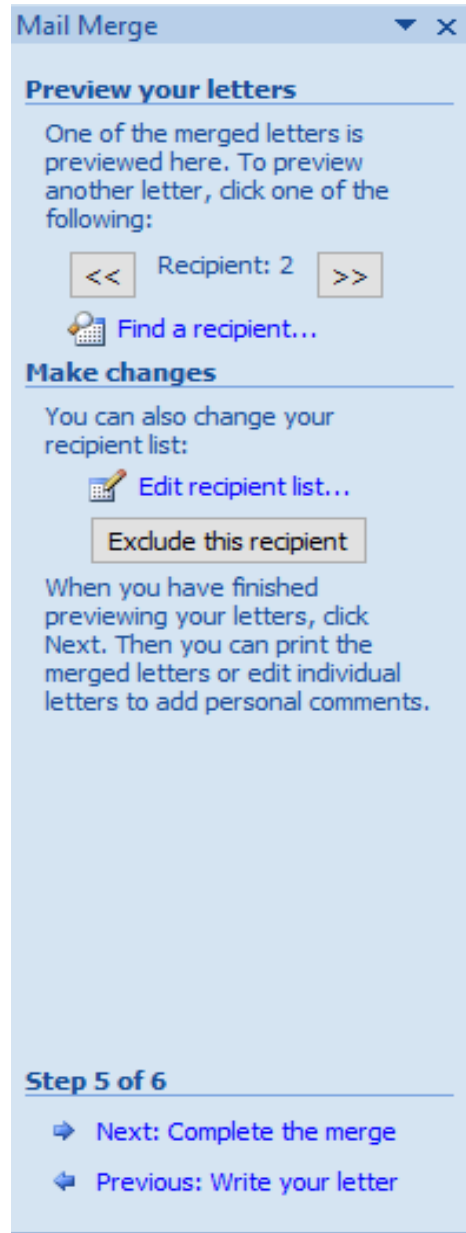
«Email»|

Figure : Letter

iv) Write Your Letter

ix)

Click on Preview your letter




Mail Merge

Preview your letters


One of the merged letters is previewed here. To preview another letter, click one of the following:

<< Recipient: 2 >>

 Find a recipient...

Make changes

You can also change your recipient list:

 Edit recipient list...

Exclude this recipient

When you have finished previewing your letters, click Next. Then you can print the merged letters or edit individual letters to add personal comments.

Step 5 of 6

➔ Next: Complete the merge

⬅ Previous: Write your letter

Dear Veena gupta

You are invited to the conference, I hope you will come

To

Durg

Chhattisgarh

9897654320

veena@gamil.com|

Dear Raj sharma

You are invited to the conference, I hope you will come

To

Raipur

Chhattisgarh

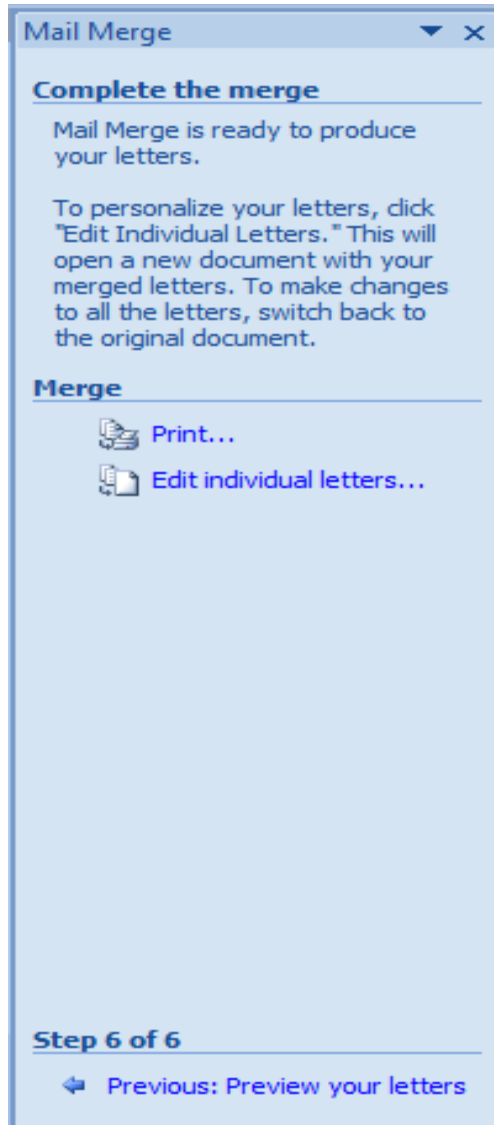
9857585843

raj@gmail.com|

v) Figure : Preview your letter

Figure : Letter Preview

- x) Click Print to print your letters or Edit individual letters to further personalize some or all of the letters.



- vi) Complete the merge

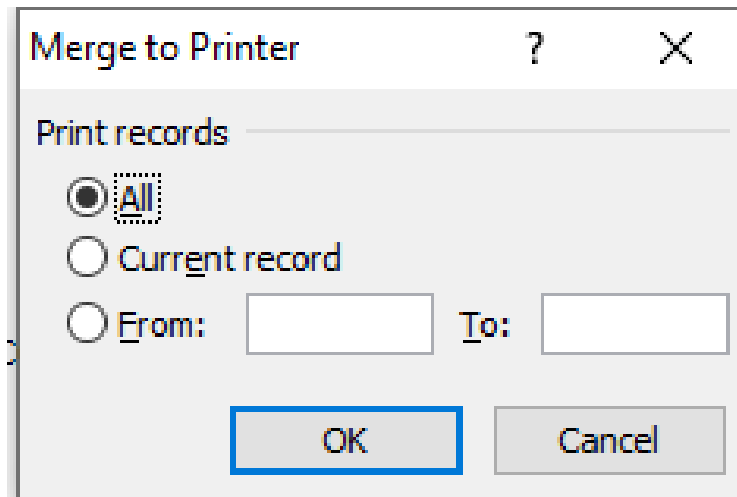
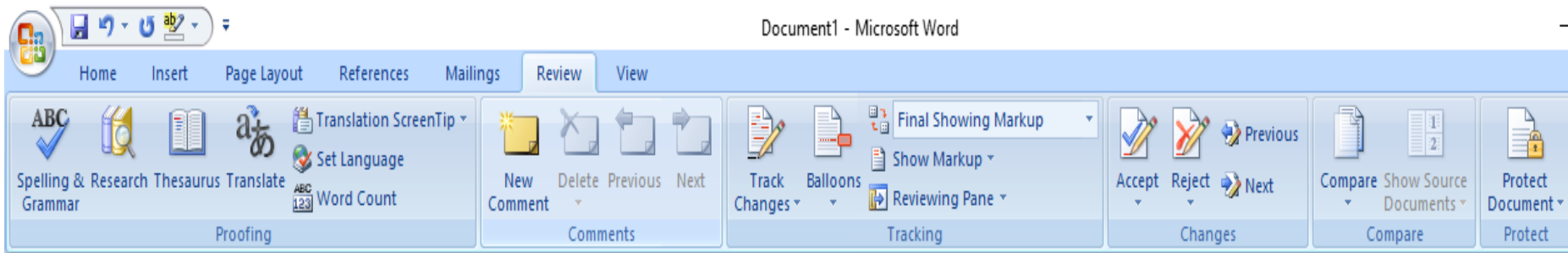


Figure : Merge Options

Review tab 1. Spelling and Grammar check

- Open most Office programs, click the **Review** tab on the ribbon. In Access or InfoPath you can skip this step. In Project you'll go to the **Project** tab.
- Click **Spelling** or **Spelling & Grammar**.
- If the program finds spelling mistakes, a dialog box appears with the first misspelled word found by the spelling checker.
- After you decide how to resolve the misspelling (ignoring it, adding it to the program's dictionary, or changing it), the program moves to the next misspelled word.



Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make a type specimen book. It has survived not only five centuries, but also the leap into electronic typesetting,

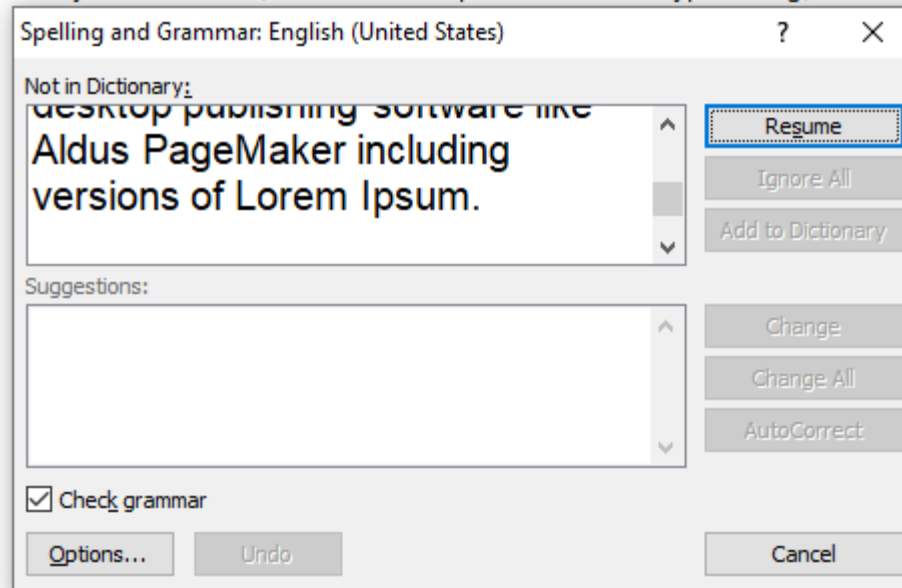


Figure : Before Spelling and Grammar Check

Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make a type specimen book. It has survived not only five centuries, but also the leap into electronic typesetting, remaining essentially unchanged. It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently with desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.

Figure : After Spelling and Grammar Check

Review Tab 2. New Comment

- Insert a comment
- Select the text you want to comment on, or click at the end of the text.
- On the **Review** tab, click **New Comment**.
- Type your comment. Word shows your comment in a balloon in the document's margin.



Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make a type specimen book. It has survived not only five centuries, but also the leap into electronic typesetting, remaining essentially unchanged. It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently with desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.

Comment [N1]: Popular word

Review Tab 3. Protect Document

- Click the review tab
- Click on the protect document.
- Click on Restrict formatting and editing.
- Check all the checkboxes.
- Click on “Yes,Start enforcing protection.”

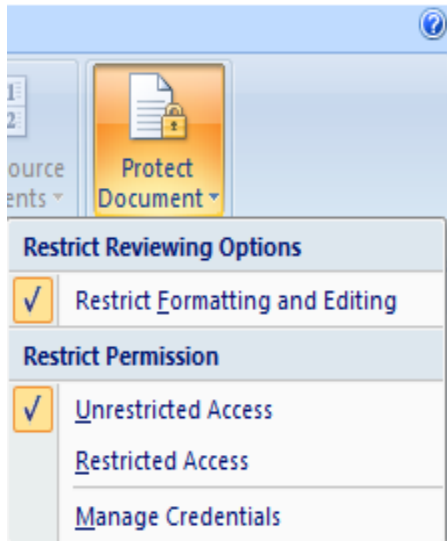


Figure : i) Protect Document

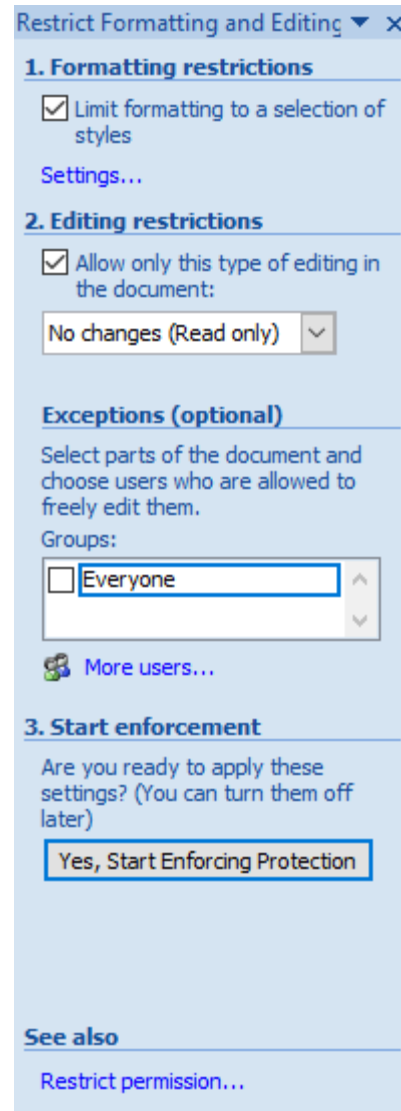


Figure : ii) Checkbox selection

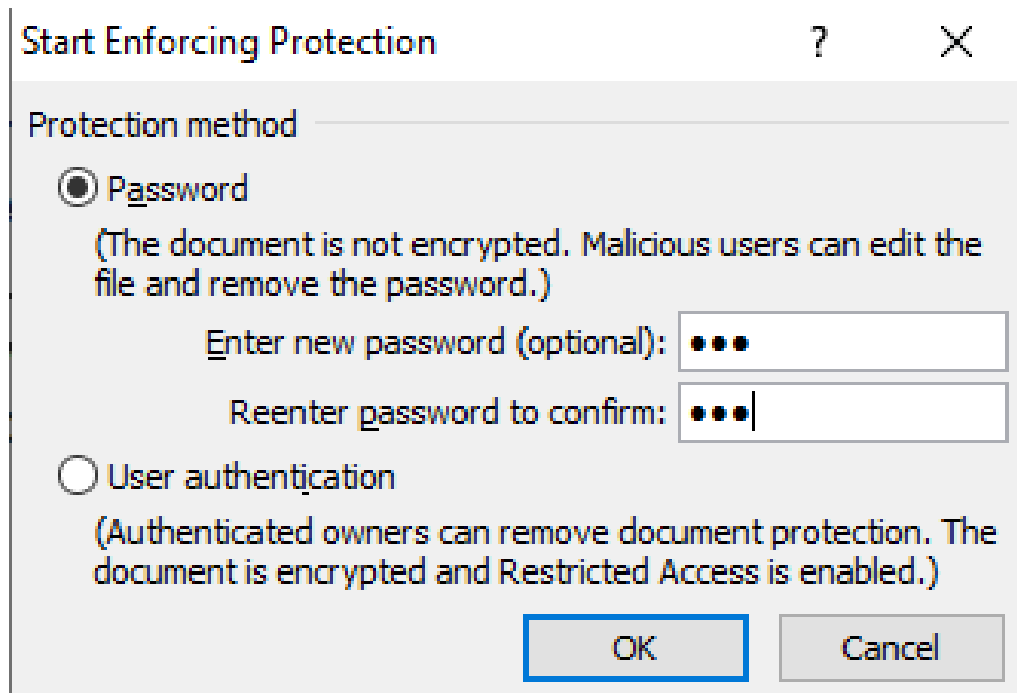


Figure : iii) Setting the password

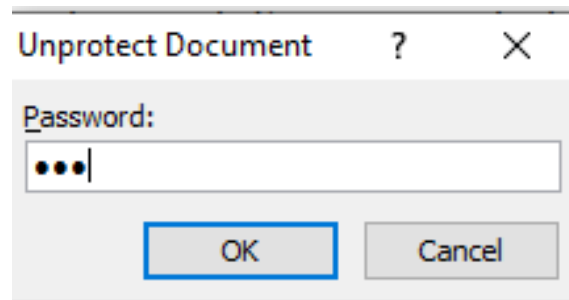
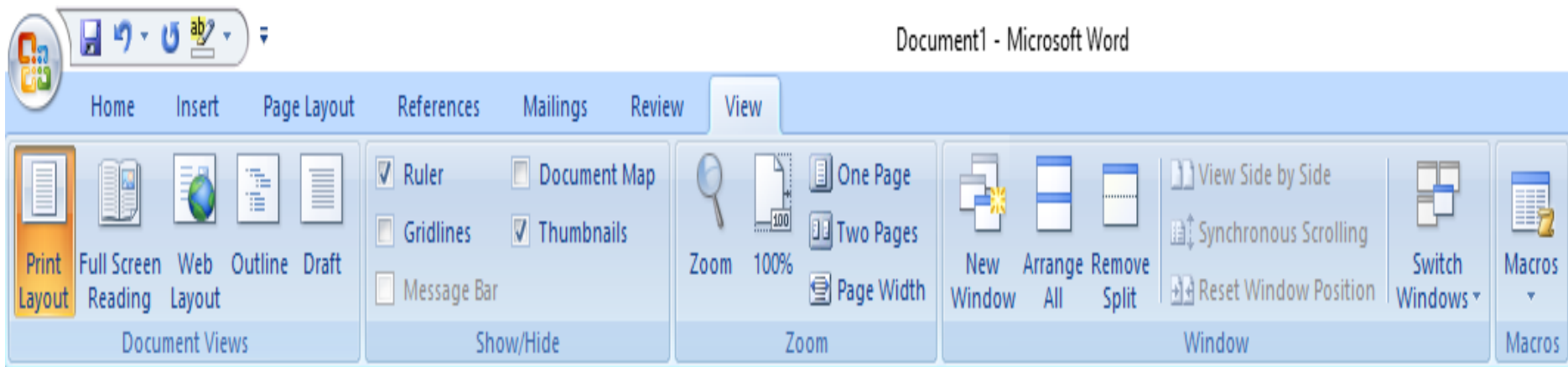


Figure : iv) Removing the Password from the document

View Tab 1. Documents View

The View tab enables you to switch between Normal or Master Page, and Single Page or Two-Page Spread views. This tab also gives you control over showing boundaries, guides, rulers, and other layout tools, zooming the size of your view of the publication, and managing Publisher windows you have open.



Documents View has 5 options:

- i) Print Layout
- ii) Full Screen Reading
- iii) Web layout
- iv) Outline
- v) Draft

Print Layout:

The screen shot below shows what the Print Layout looks like. This view can be used to see what your document will look like when printed. Print Layout is also the default view of Microsoft Word 2007.

Full Screen reading:

You can use this one to see the document in reading mode in Microsoft Word 2007. When using this view, the Ribbon is hidden to maximize your reading area.

Web Layout:

Moving on to the Web Layout in Microsoft Word 2007 Document Views. This layout is handy especially when you want to see the document in a web browser format like the Internet Explorer.

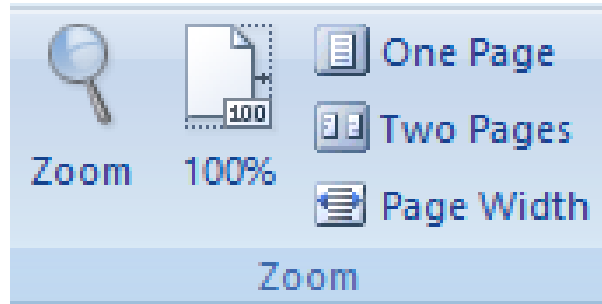
Outline:

The Outline view is probably one of the most useful styles especially if you are working on a long document in Microsoft Word 2007. When you switch to this layout, all you see is the document divided into different heading levels. You can choose the level of detail that you would like to see by controlling the Show Level option.

Draft:

The final layout we are going to look at is the Draft view. This is the most common format as you will use this one when working on a document. When using this layout style you will see the document in a regular editing format. The headers and footers are not available when working with the Draft view in Microsoft Word 2007.

View Tab 2. Zoom



Everything relating to adjusting the display percentage of the active document. There is also a new zoom slider in the bottom right corner next to the status bar.

- **Zoom** - Displays the "Zoom" dialog box. This can also be accessed from the status bar by clicking on the view percentage.
- **100%** - Adjusts the zoom to 100% of its normal size. Lets you quickly return to 100%.
- **One Page** - Adjust the zoom so an entire page fits in the application window.
- **Two Pages** - Adjust the zoom so two entire pages fit in the application window.
- **Page Width** - Adjust the zoom so the width of the page is the same as the width of the application window.

View Tab 3.Window



- **New Window** - Lets you create a new window of the active document.
- **Arrange All** - Tile all the open windows side by side on the screen. This will also maximizes the application / document to a full screen.
- **Split** - Splits the current window into two parts.
- **View Side by Side** - Displays two documents side by side so they can be easily compared. If you have more than two documents open the "Compare Side by Side" dialog box is displayed so you can choose which document to display next to the active document. allowing you to scroll multiple windows at the same time.
- **Synchronous Scrolling** - Toggles the synchronize scrolling of the two documents that are displayed side by side. This is only enabled when you are viewing two documents side by side.
- **Reset Window Position** - Resets the windows positions so they take up the same amount of space on the screen when two documents are displayed side by side. This is only enabled when you are viewing two documents side by side.
- **Switch Windows** - Drop-Down. Lets you switch between all the currently active documents. This displays all the window / documents that are currently open in the particular session. Previously these were displayed on the Window menu.

UNIT - 2

WORKING WITH MS-EXCEL

1. Introduction To MS Excel

- Microsoft Excel is a spreadsheet, developed by Microsoft for Windows, macOS, Android and iOS.
- Microsoft Excel is a spreadsheet program that is used to record and analyze numerical data.
- Alphabetical letters are usually assigned to columns and numbers are usually assigned to rows. The point where a column and a row meet is called a cell.
- The address of a cell is given by the letter representing the column and the number representing a row.

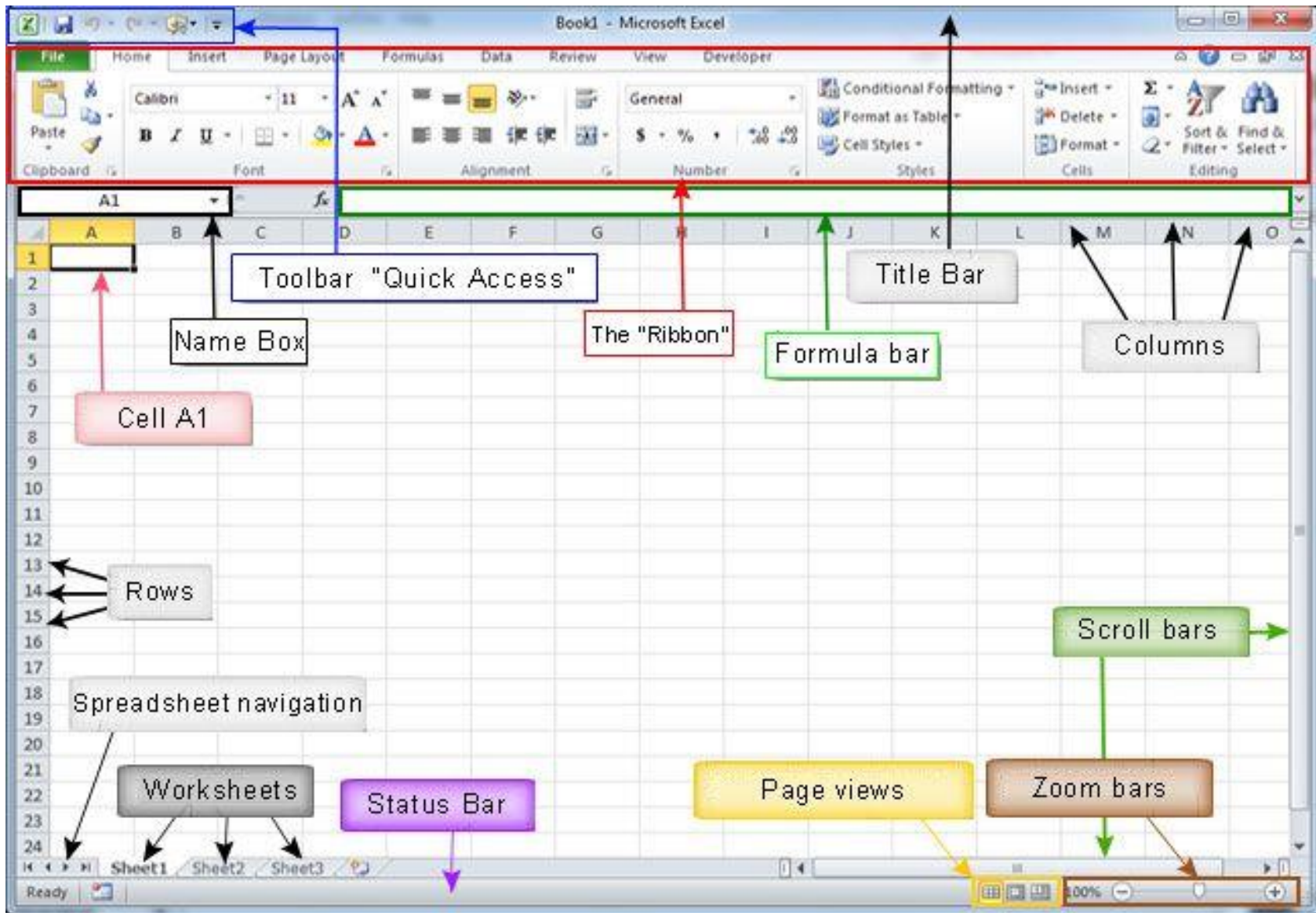


Figure : Overview of Microsoft Excel

2. Use of Microsoft Excel

1. Business Analysis

- The number 1 use of MS Excel in the workplace is to do business analysis.
- Business analysis is essentially using collected data to inform decision making.

2. People Management

- You may be surprised to learn that one of the top uses of Excel in business is to manage people.
- MS Excel is a powerful way to organize information about people, whether they are employees, customers, supporters, or training attendees.

3. Managing Operations

- Excel is relied on heavily to manage the day-to-day operations of many businesses.

4. Mathematical formulas of MS Excel make things easier

- Next best use of MS Excel is that it makes easy for you to solve complex mathematical problems in a much simpler way without much manual effort. There are so many formulas in MS Excel and by using these formulas you can implement lots of operations like finding sum, average, etc.

5. Add sophistication to data presentations

- Next use of MS Excel is that it helps you in adding more sophistication to your data presentations which means that you can improve the data bars, you can highlight any specific items that you want to highlight and make your data much more presentable easily.

6. Manage expenses

- MS Excel helps in managing expenses.
- Eg.- Suppose if a doctor is earning around 50,000 per month then he will make some expenses as well and if he wants to know how much he is exactly spending per month then he can do it with the help of MS Excel easily. He can write his monthly income as well as expenses in the excel tables and then he can get to know that how much he is spending and he can thus, control his expenses accordingly.

3. Creating new sheet, Saving, Opening, Printing Workbook

Create :

- If you are working in MS Excel and want to begin work in a new Excel file, You can easily create a new workbook. To do so , You can use a command on the office menu or a keyboard shortcut.
- 1. Click the office button

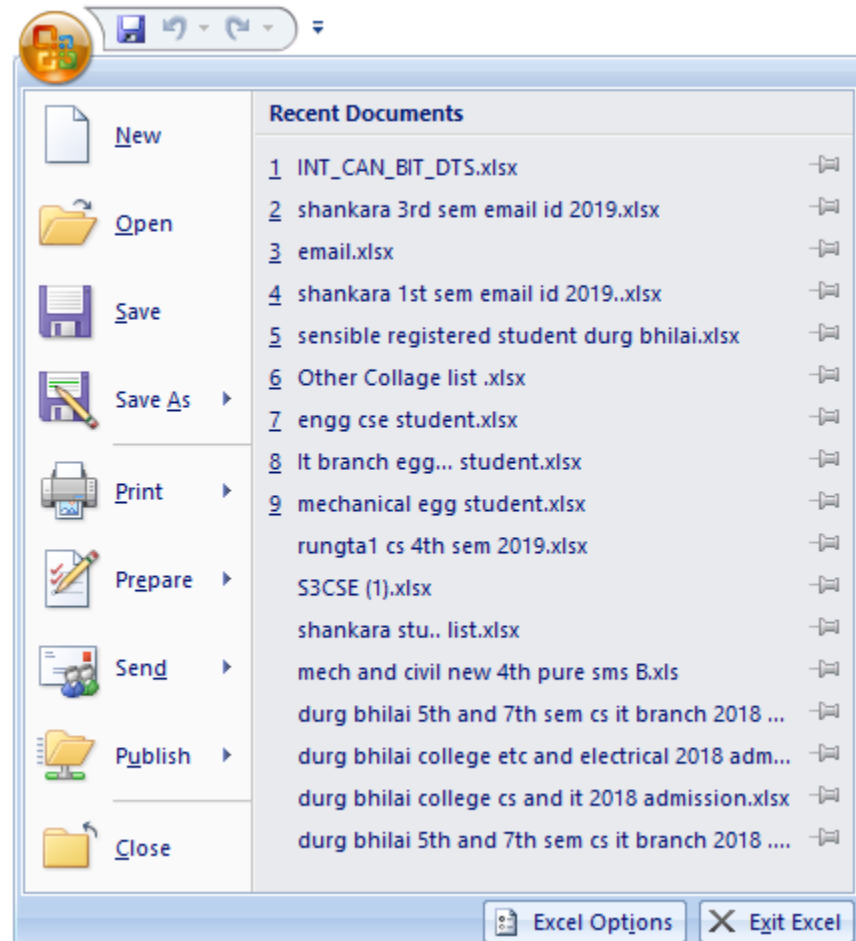


Figure : The Office menu appears

- 2. Choose New

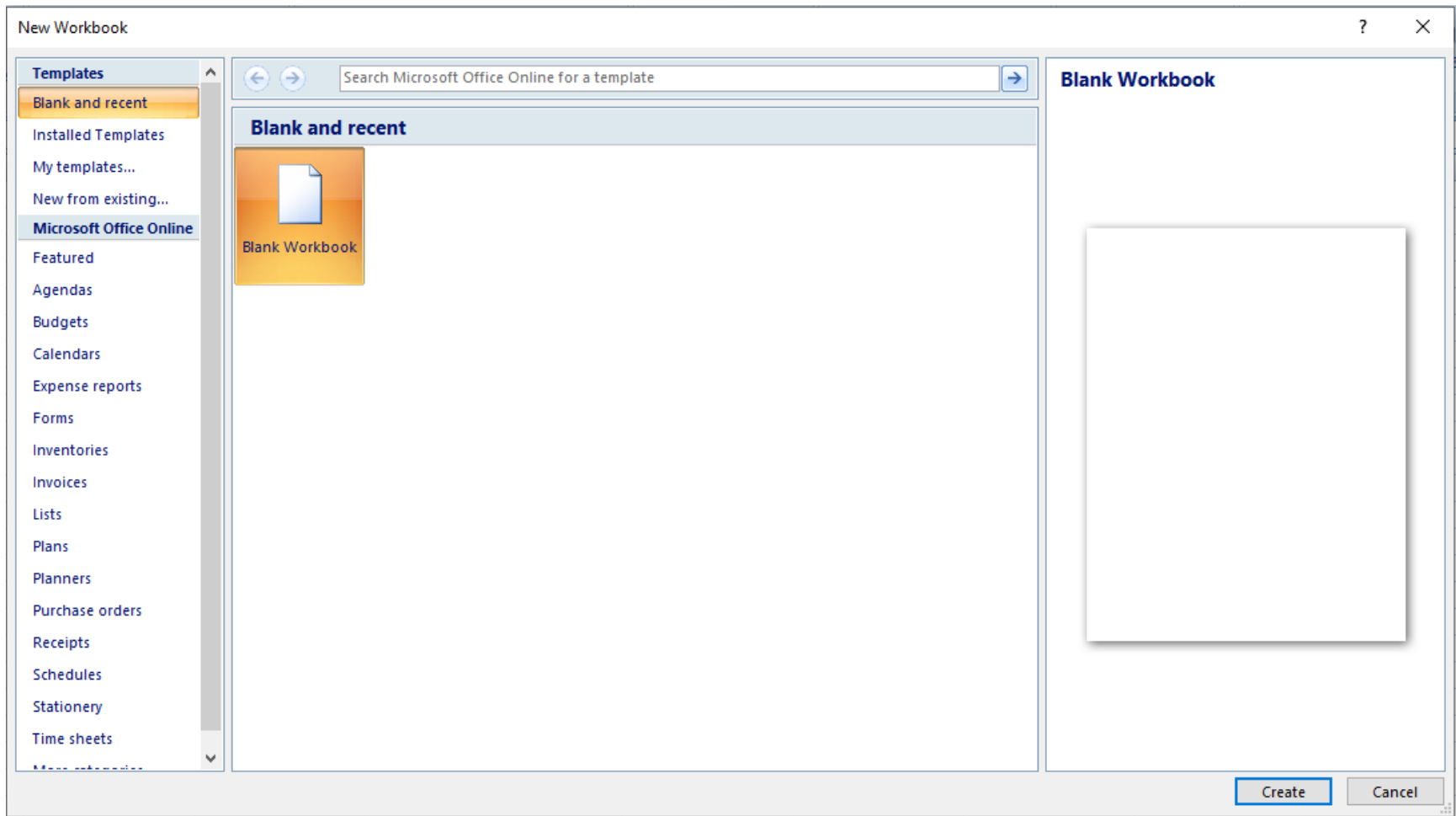


Figure : The new workbook dialog box appears

- 3. Click the blank workbook icon.
- 4. Click the create button : Excel creates a new , blank workbook based on the default template.

Save :

1. Click the office button and choose save.
2. The save as dialog box appears.
3. Click the save in drop down button and select the folder in which you want to save the file.
4. Type the descriptive name for the file in the File name box.
5. Click the save button to save the file in the selected folder.

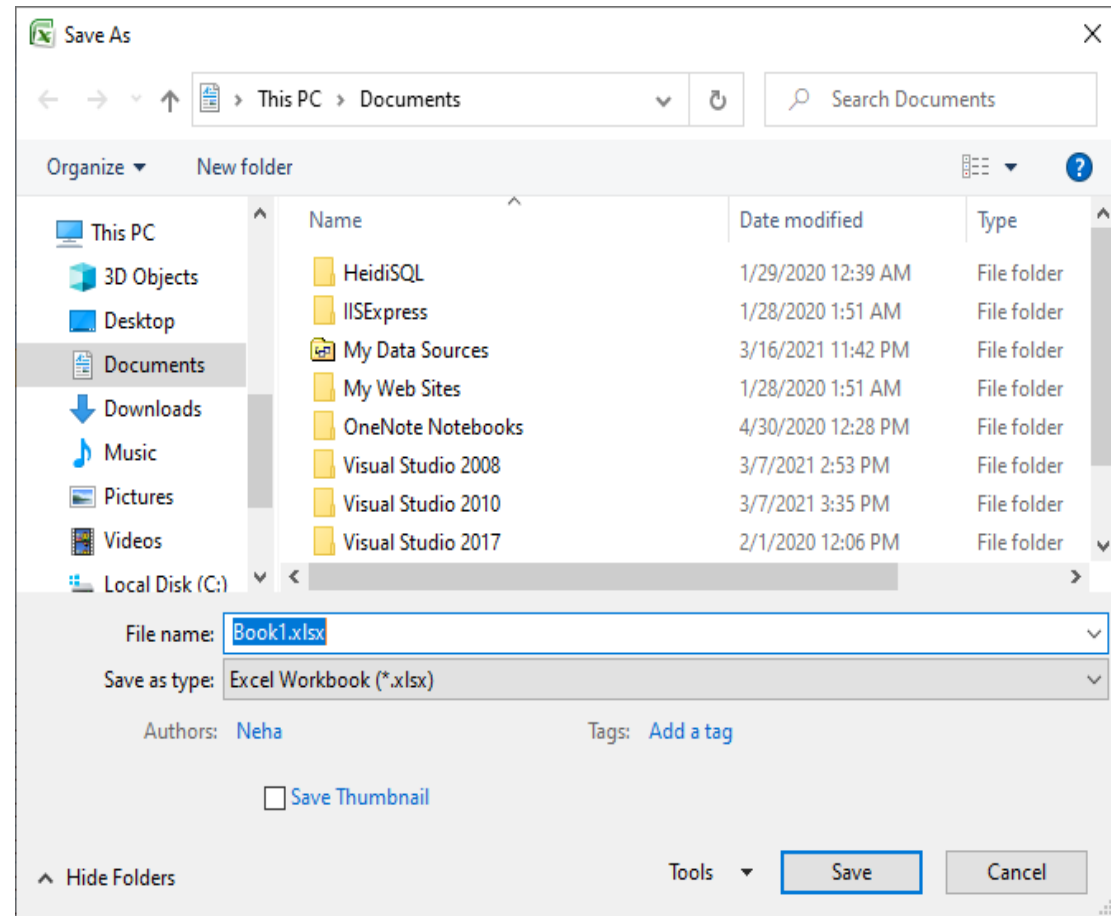


Figure: The save as dialog box is appears

Open :

1. Click the office button and choose Open. The Open Dialog box will appears.
2. Then Select the Drive and folders in which your file is stored.
3. Or type the name of the file in “File Name” dialog box.
4. Click Open Button to open the file.

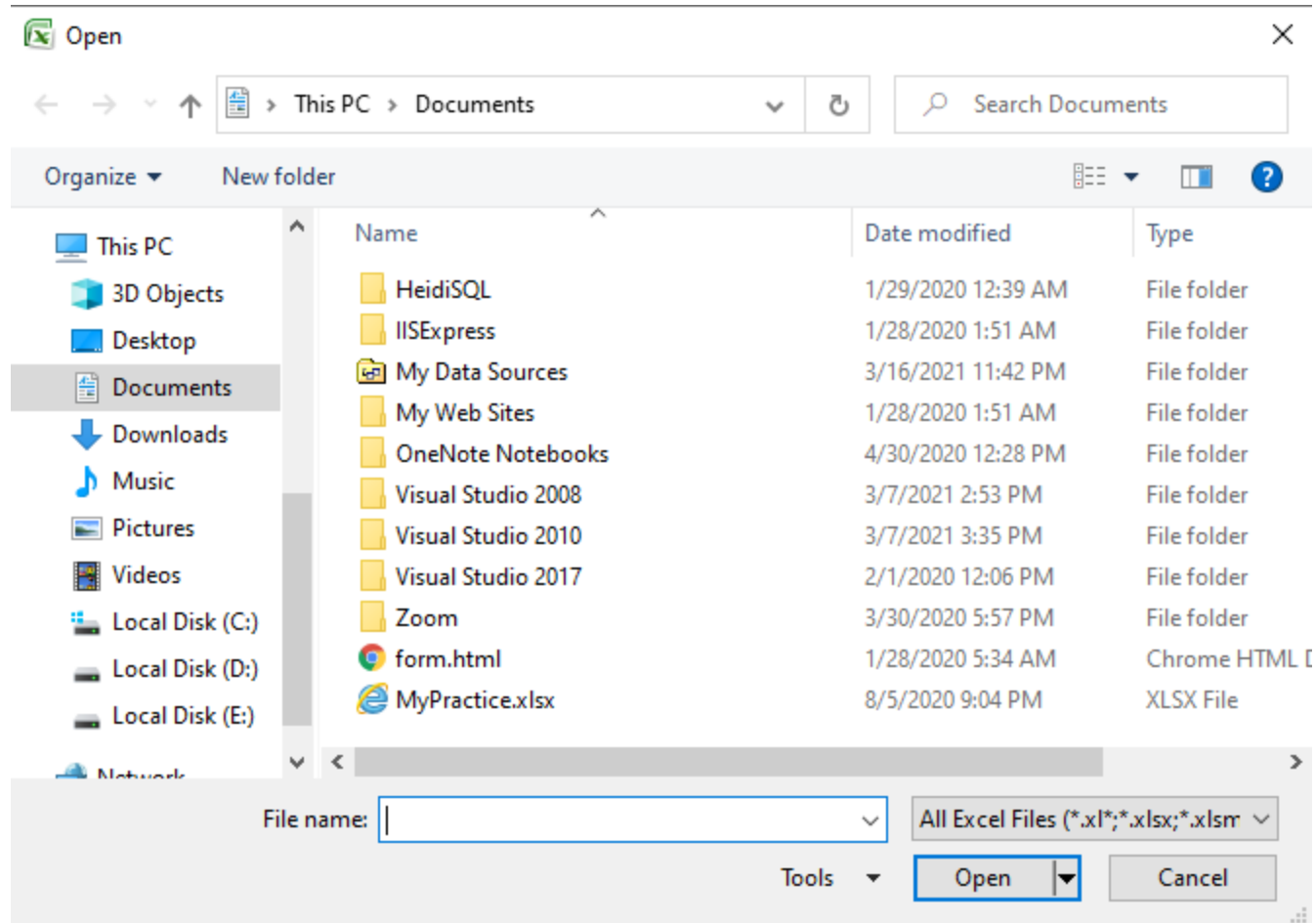


Figure : Open dialog box is appears

Print :

- Select the worksheets that you want to print.
- Click **File > Print**, or press CTRL+P.
- Click the **Print** button or adjust **Settings** before you click the **Print** button.

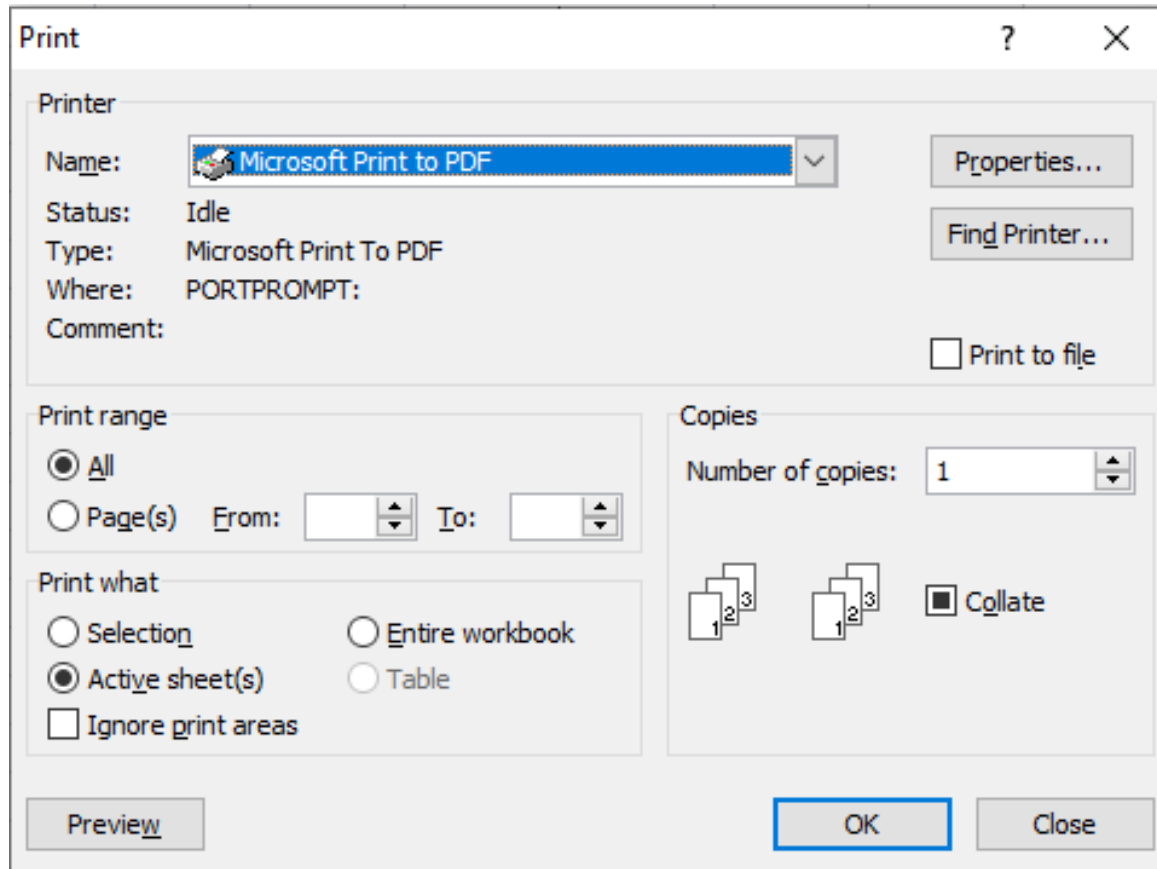
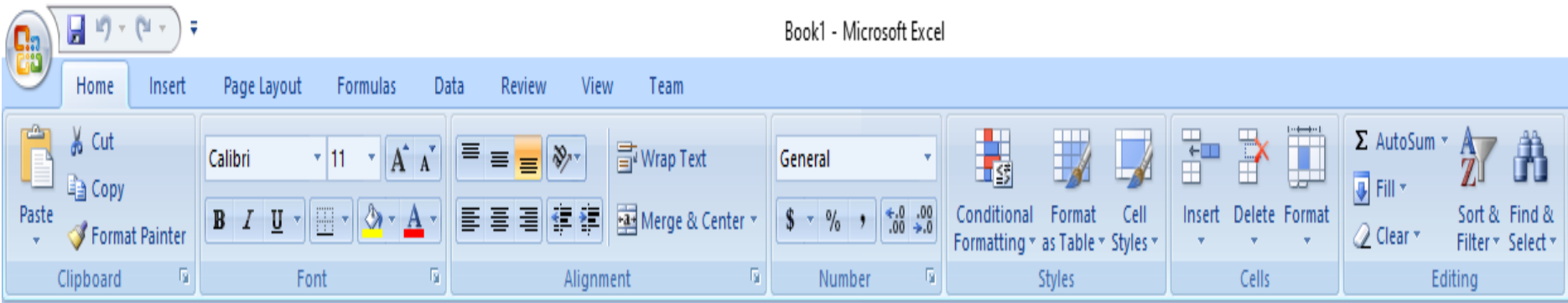


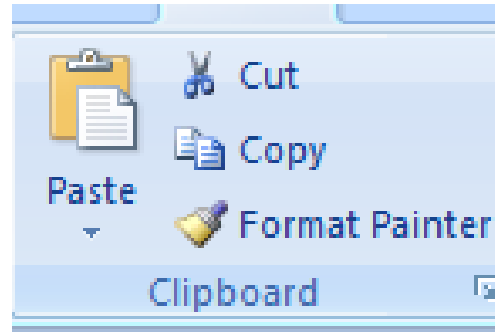
Figure : Print Dialog Box is Appears

4.Home Tab

- The home tab ribbon of Microsoft excel is made up of 7 groups that is the collection of very important command.
- Most of the commands are commonly used in manipulating the data



Home Tab 1.Clipboard Group



Cut, Copy, Paste and Format Painter

Cut : (Ctrl + X) – It is for cutting the select section from the document and placing It on the clipboard.

Copy : (Ctrl + C) - Copies the selected section and places it on the clipboard.

Paste : (Ctrl + V) – Use this command to paste the content of the clipboard to the desired location.

Format Painter : Use this tool to copy formatting from one place And apply the copied format to another place.

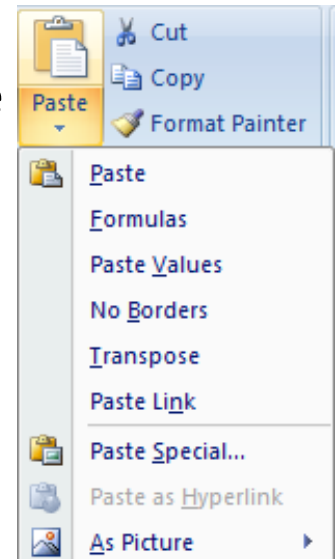
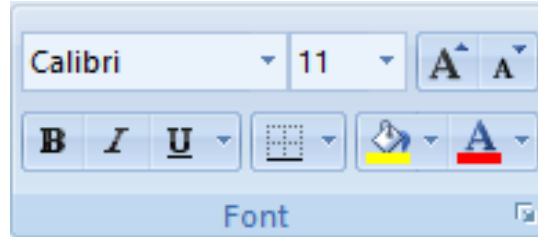


Figure : Various Paste Option

Home Tab 2. Font Formatting Tab Working With Fonts



We use this option to change the font style and font-size. We can make it bold, italic and underline. Also, this group contains border styles, fill color, font color.

Font : Use this tool to change the Font Style. Clicking on the drop down button You will be able to get more fonts.

Font Size : This command is for changing the font size . Highlight the cells you want to change the size of and then select the size you want.

Bold(B) : Make the selected text bold.

Italic (I) : Make the selected text to be italicized.

Underline (U) : Underline the selected text . Using the drop down button you can get the double underline.

Increase font size : this is another way of increasing the font size.

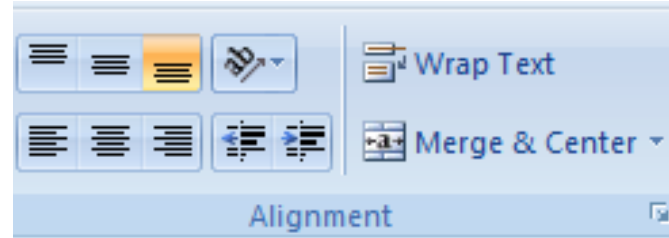
Decrease font size : Use this shortcut for decreasing the font size.

Borders : Use this command for setting the borders in selected cells.

Fill Color : Color the background of selected text.

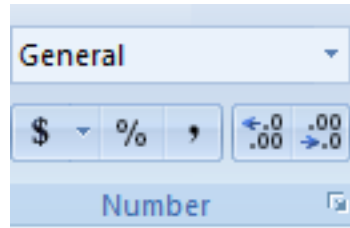
Font Color : Change the text color.

Home Tab 3.The Alignment Group



- 1. Top Align :** This command align text to the top of the cell.
- 2. Middle Align :** this tool will align text such that it will be centered towards the top and bottom of the cell.
- 3. Bottom Align :** Use this command to align text to the bottom of the cell.
- 4. Align text Left :** this tool lets you align text to the left of the cell.
- 5. Align text Right :** this tool lets you align text to the right of the cell.
- 6. Center :** This Command is for centering text in the cell.
- 7. Decrease Indent :** This tool decrease the margin between the cell border and the text in the cell.
- 8. Increase Indent :** This tool increase the margin between the cell border and the text in the cell.
- 9. Orientation :** Use this command to rotate selected text to a diagonal or vertical angle orientation. This is often use for labeling narrow column.
- 10. Wrap text :** This command makes all content visible within a cell by displaying it on multiple lines.
- 11. Merge and center :** This command is used to joined the selected cells into one larger cell and centers the contents in a new cell.

Home Tab 4. The Number Group



- **General** : This command Helps you to choose how the values in a cell are displayed.
- **Accounting number format** : Use this command to set the alternate currency format you want to use for the selected cell. Open drop – down button for more currencies.
- **Percentage Style** : Use this command to apply the percentage format to selected cells.
- **Comma Style** : This displays the content of the cell with a thousand separator.
- **Increase Decimal** : It shows more decimal places.
- **Decrease Decimal** : Show less precise value by showing fewer decimal places.

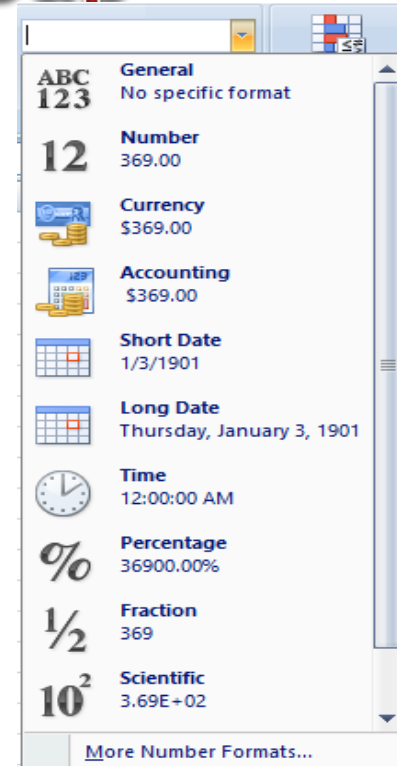
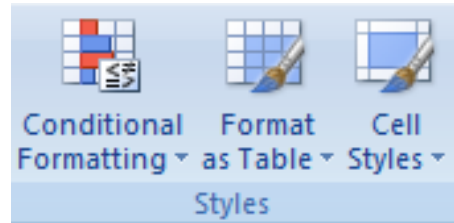


Figure : General



Figure : Accounting Number format

Home Tab 5. Style Group



- **Conditional Formatting :**

This button is used to select different formatting for cells based on particular criteria.

It is possible to highlight interesting cells, emphasize unusual values, and visualize data using Data Bars, Color Scales, and Icon sets.

- **Format as Table :**

Click this button to quickly format a selected range of cells as a table using a gallery of table styles.

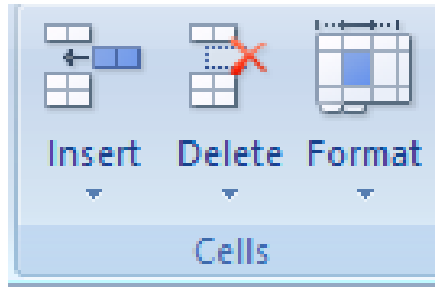
- **Cell Styles :**

This button is used to apply predefined formatting to a single cell.

A gallery of styles will appear.

Move the mouse pointer over the style to see a Live Preview of the style.

Home Tab 6. Cells Group



1. Insert :

- To insert cells, sheet rows, or sheet columns, click this button. A list of possible options will appear.
- Click the option that is to be applied to the worksheet.

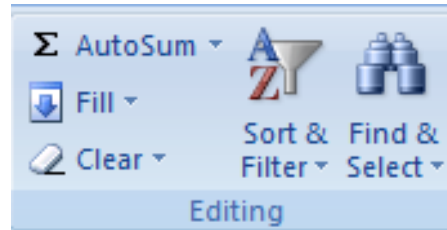
2. Delete :

- This button is used to delete cells, sheet rows, or sheet columns from a worksheet.
- If the arrow is clicked, a list of available options will appear.

3. Format :

- Click this button to change the row or column height and width, to organize worksheets in the workbook, to protect the document, or to hide a sheet in the workbook.
- A list of available options will appear when the arrow is clicked.

Home Tab 7. Editing Group



1. Auto Sum :

- To display the sum of selected cells directly to the right or below the selection, click this button.
- Where the sum is displayed will depend on whether the selection range is a column or row.

2. Fill :

- Click this button to continue a pattern of values in a selected range of cells.

3. Clear:

- This button is used to clear the contents from the cells in the selected range.
- It can also be used to clear the formatting or comments associated with the cell selection.

4. Sort and Filter :

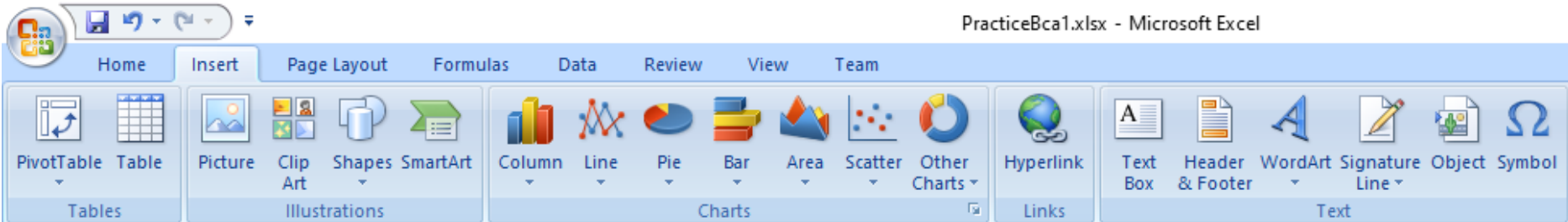
- To sort the data in a selected range of cells, click this button.
- It is also possible to filter out specific data in the selected cells.

5. Find and Select :

- Click this button to locate specific data in a worksheet or a range of cells.
- It is also possible to replace data within the worksheet or range of cells

Insert Tab

- We use Insert tab to insert the picture, charts, filter, hyperlink etc. We use this option to insert the objects in Excel. To open the insert tab, press shortcut keys Alt+N.
- The insert tab have following groups:
 1. Tables
 2. Illustrations
 3. Charts
 4. Links
 5. Text



Insert Tab 1. Tables(Pivot tables)

Pivot Table :

- A pivot table is used to display the Excel worksheet table into another Summarize form.
- A pivot table terms all the data into small, concise report that tells exactly what user need to know.

Steps :

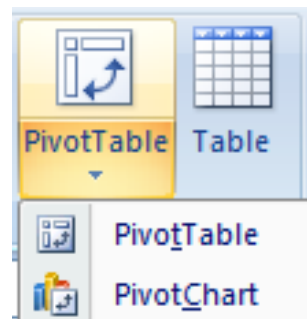
1. Go to insert menu and select the pivot table option.
2. A dialog box appears which ask for range, click on the text box and then select the data source from the excel sheets with column heading.
3. Now select the place that is new worksheet or existing worksheet.
4. Select anyone option from two options given as below.
 - i) New worksheet : To insert new table I new worksheet.
 - ii) Existing worksheet : To insert pivot table in existing file in which the data source is present.
5. Then click on “OK” Button. It will insert pivot table with the selected data source.

How to create pivot table?

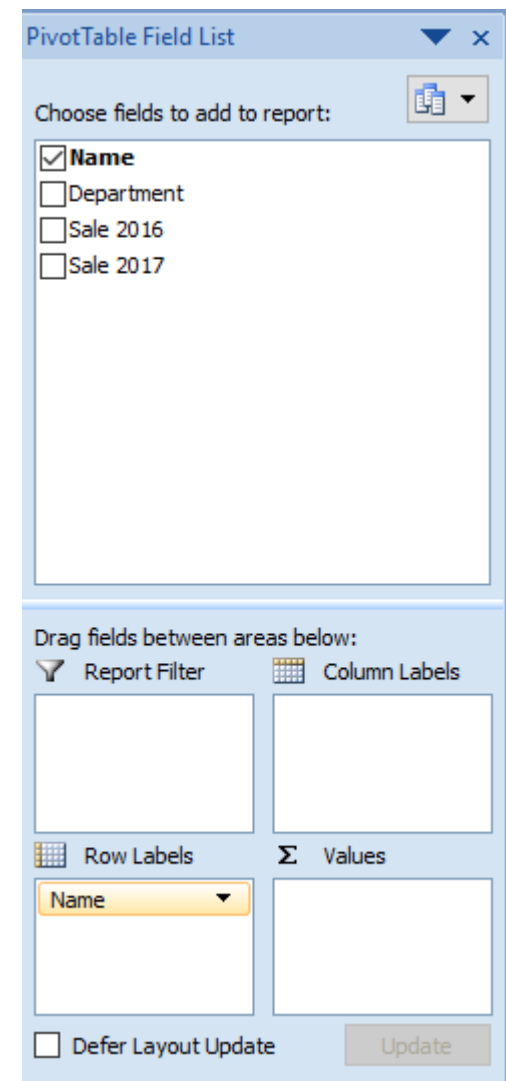
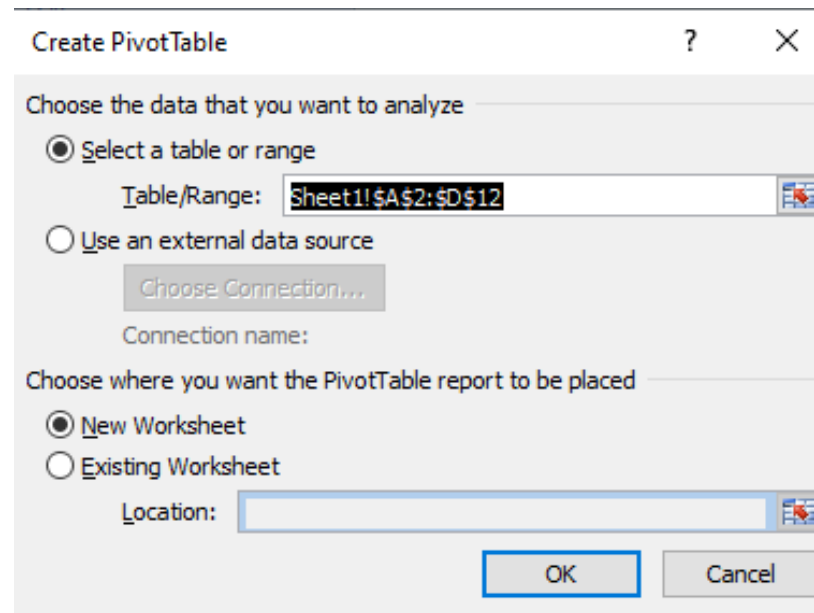
- Insert the data :

Name	Department	Sale 2016	Sale 2017
ram	Electronics	1200	1100
shyam	hardware	1100	1230
om	Electronics	1134	2200
raman	Electronics	1232	2100
deepak	hardware	1150	1400
raj	hardware	1200	1300
rihan	Electronics	2000	1500
amit	furniture	1280	3200
anil	furniture	800	1240
monu	furniture	2300	1750

- Click on Pivot table :



- Dialog box appears where you can select the area.



- Then the Table is appears

Row Labels
amit
anil
deepak
monu
om
raj
ram
raman
rihan
shyam
Grand Total

Insert Tab (Tables)

Table :

- This button is used to insert a table into the worksheet.
- Tables make it easy to analyze and sort data.

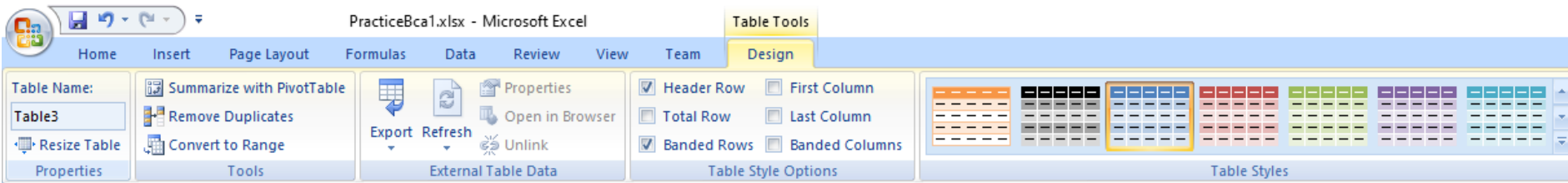


Figure : Table Formatting Options

Column1	Column2	Column3	Column4

Figure : Tables

Insert Tab 2.Illustrations

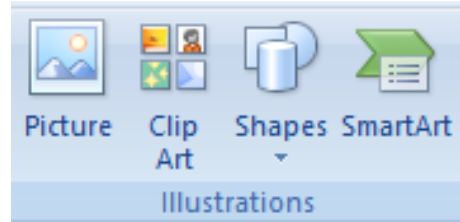


Illustration: - We use this option to insert the Pictures, Online Pictures, Shapes, SmartArt and Screenshot. It means if we want to insert any image, we can use Illustration feature.

Picture :-

- To insert a picture that has been stored on the computer, click this button.
- When the button is clicked, the Insert Picture dialog box will appear.
- This dialog box is used to locate the picture that is to be inserted into the worksheet.

Shapes :-

- Shapes are objects, such as rectangles, circles, lines, and arrows. To insert a shape into the worksheet, click this button.
- When the button is clicked, a gallery of different shapes is displayed.

Smart Art :-

- To insert objects such as organization charts, click this button. A gallery of different objects is displayed.
- This gallery is divided into categories, such as list, process, cycle, hierarchy, relationship, matrix, or pyramid.

Clip Art :

- In excel 2007 , You have the ability to search clip art files on your local computer and on Microsoft office online.
- You can Modify that clip art using picture editing tool.

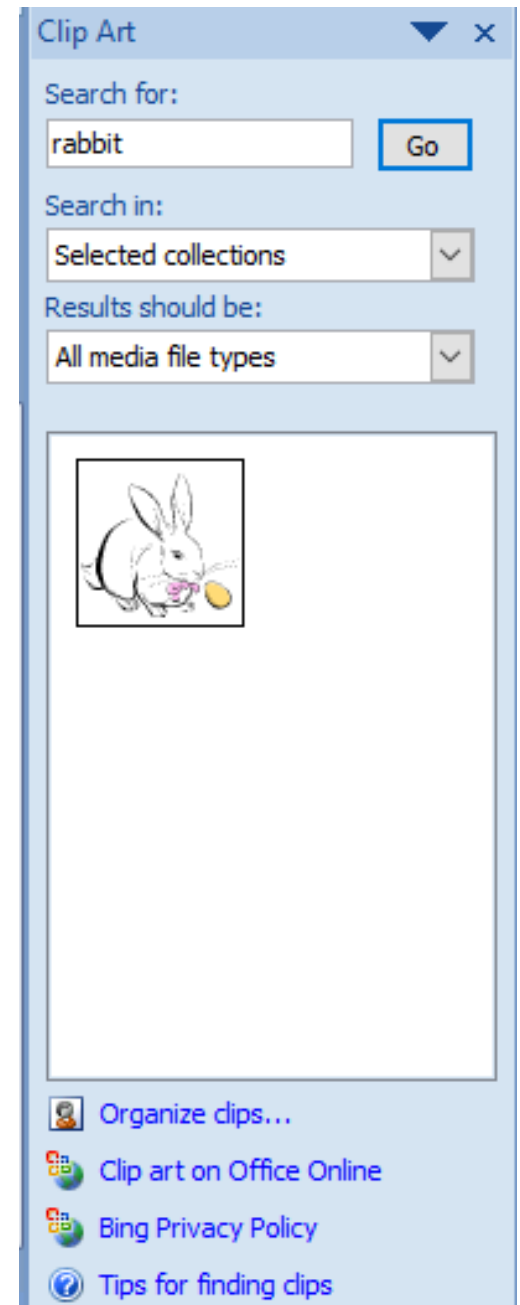
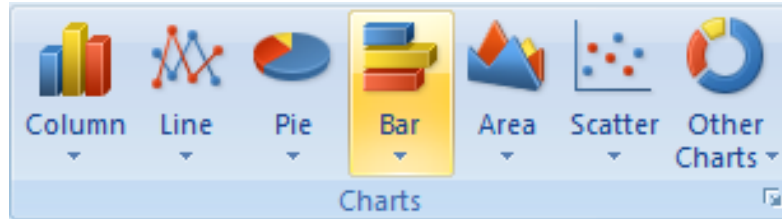


Figure : ClipArt

Insert Tab 3. Chart Group



Charts: -

- Charts is very important and useful function in Excel. In excel, we have different and good numbers of readymade chart options. We have multiple types of different charts in Excel Column, Bar, Radar, Line, Area, Combo, Pie and Bubbles chart.
- A chart is a visual representative of data in both columns and rows.
- Charts are usually used to analyze trends and patterns in data sets.

Types of Charts :

1) **Column chart:** - It is made up of horizontal or vertical column which represents the comparison of two or more things.

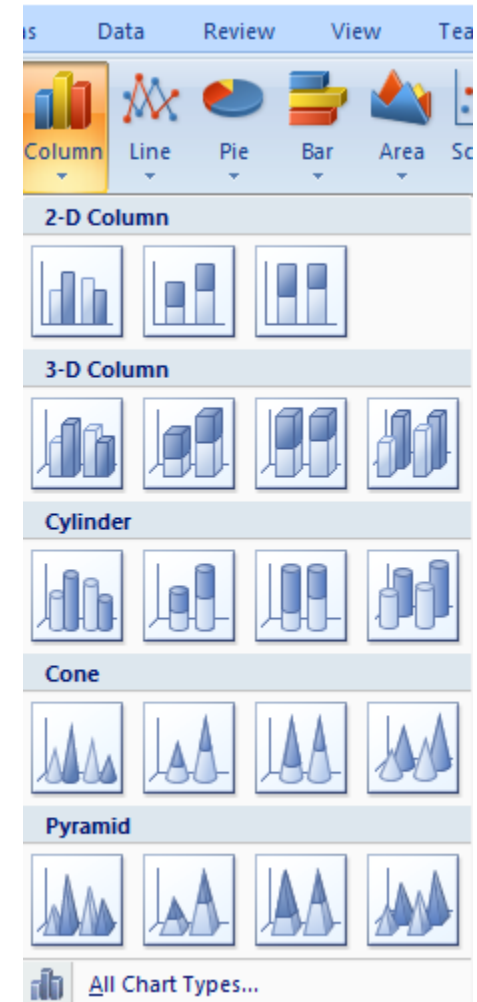


Figure : Column chart

2) Line Chart :

- Line chart is represented through different data series and it represented through different color of shading.
- It shows continuous change over the line.

3) Bar chart:-

- A bar chart is a chart that shows information about two or more discrete objects, events, locations or groups of people, etc.

4) Pie Chart :

- It is a circular graph where the pieces of the pie are used to represent a percent (%) of a whole.
- These charts denote use horizontal and vertical axes to plot charts.
- The circle of the pie represents 100%, The size of each slice show which part of 100% it represents.

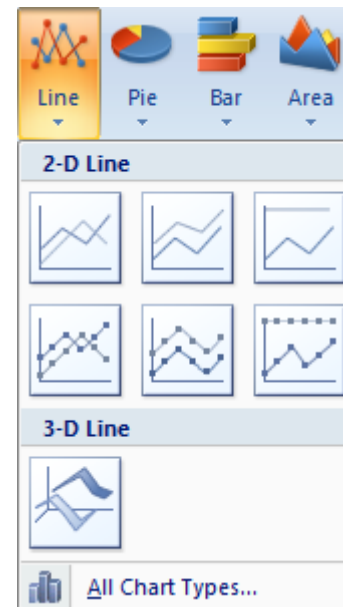


Fig : Line Chart

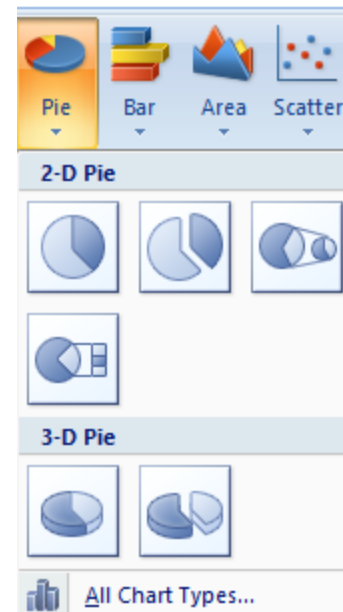


Fig : Pie Chart



Fig : Bar Chart

5) Area chart:-

- It emphasizes the magnitude of change over time by displaying the sum of plotted values, an area chart shows the relationship of parts to a whole.
- It combines some of the characteristics of a line chart with a bar chart.

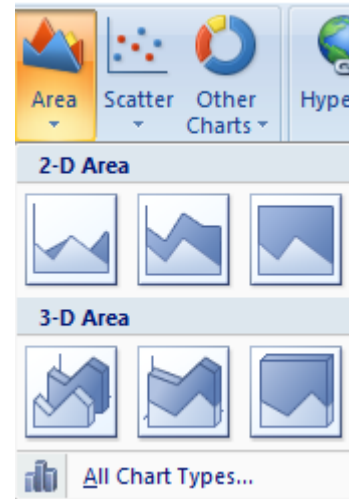


Figure :Area Chart

6) Other chart:-

- Excel offers other chart types, such as Stock, Surface, Doughnut, Bubble, and Radar.
- To locate a menu of all available chart types in newer Excel versions, begin to insert any chart type and click **All Chart Types ...**

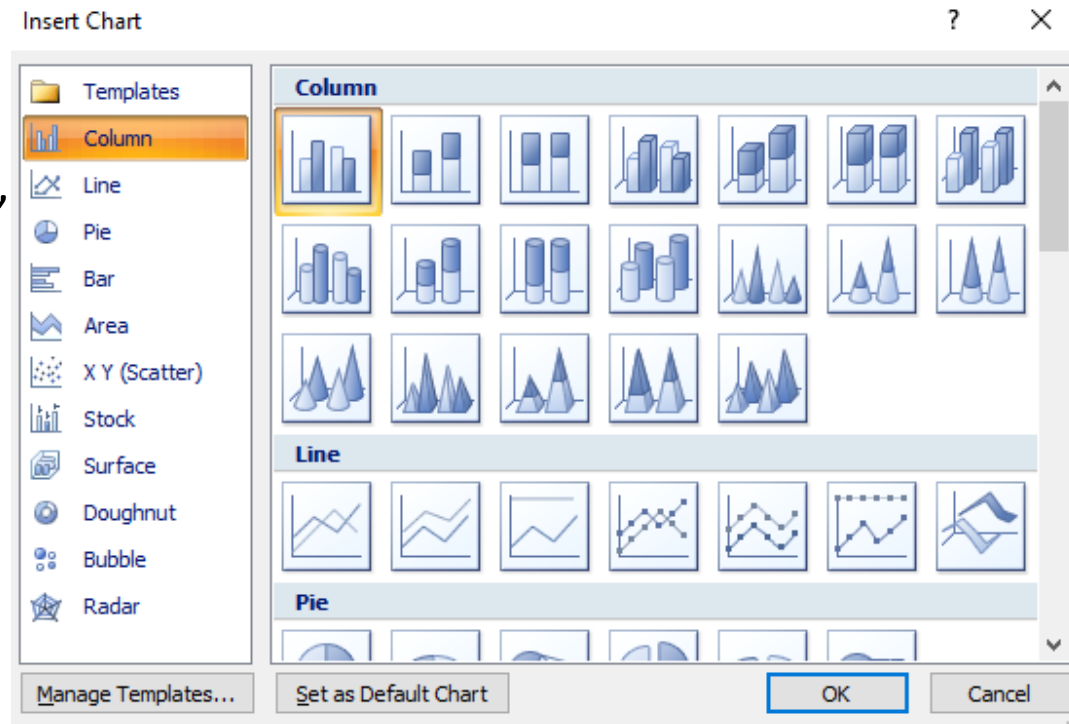


Figure : Other Chart

Steps to create a chart in MS Excel:

1. Open Excel
2. Enter the sample data
3. Select the data you want to represent in graph
4. Click on INSERT tab from the ribbon
5. Click on the Column chart drop down button
6. Select the chart type you want

Example :

hindi	70
English	15
Urdu	5
tamil	7
Marathi	3

Figure : Data

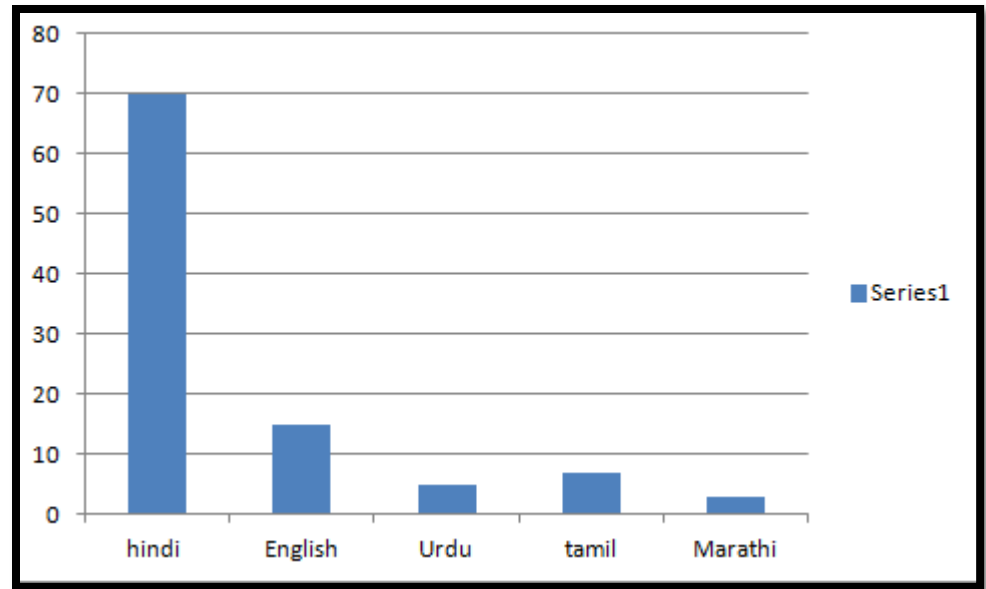


Figure : Column Chart

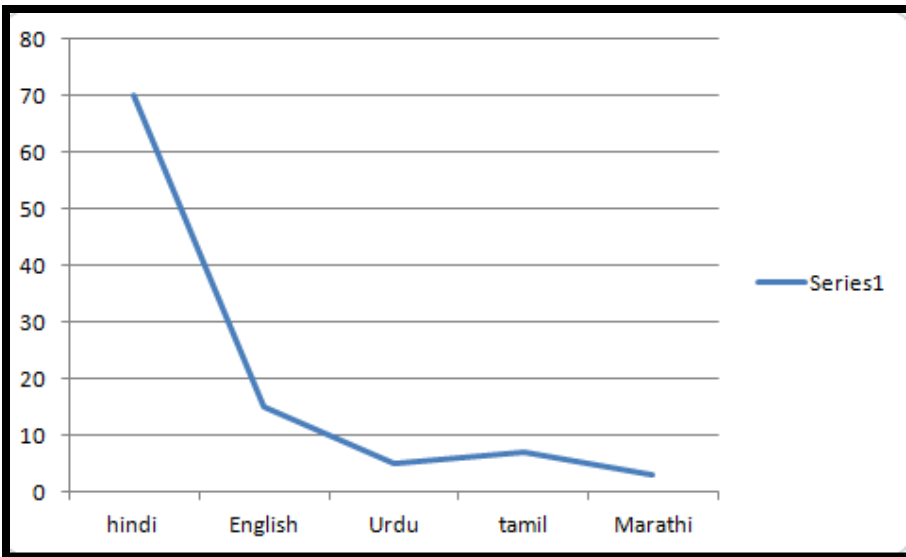


Figure : Line chart

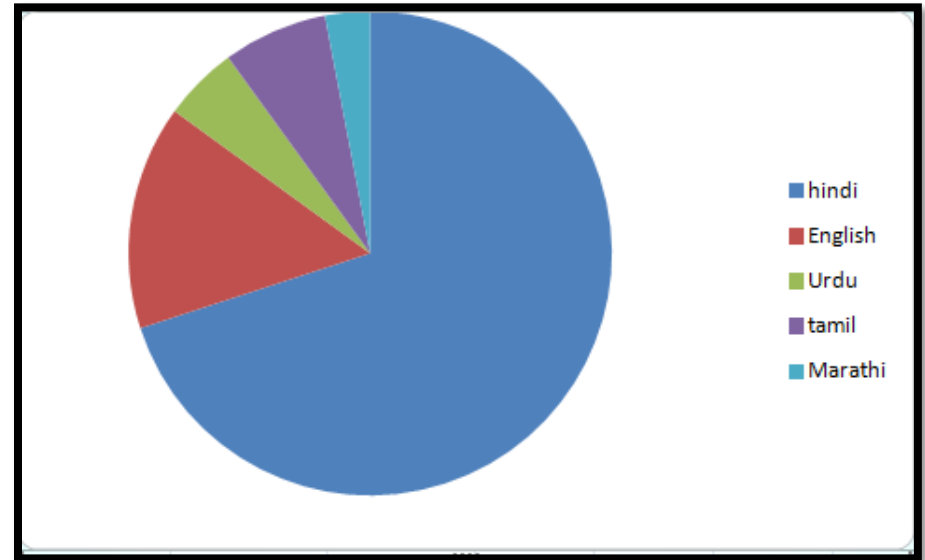


Figure : Pie Chart

Example :

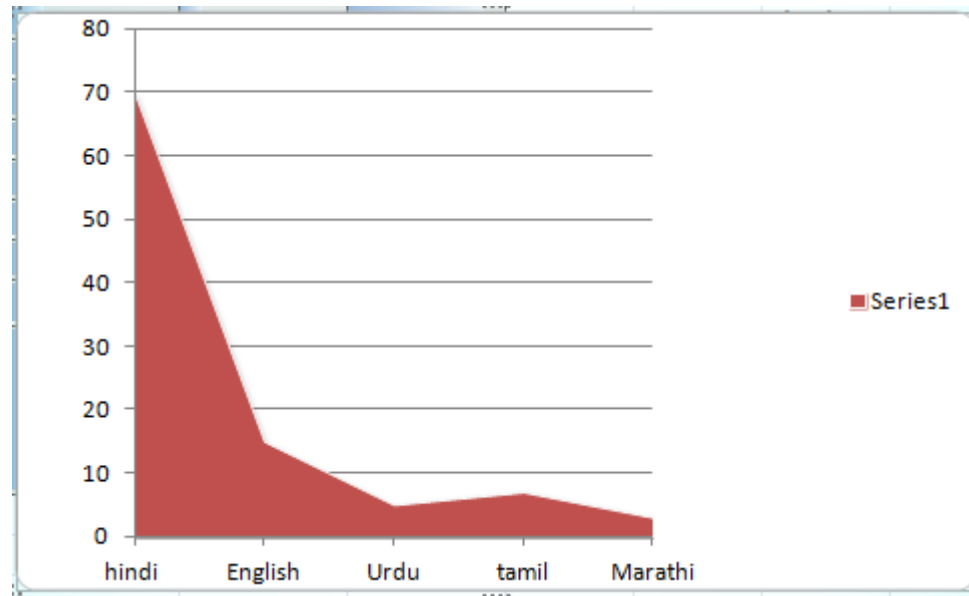


Figure : Area Chart

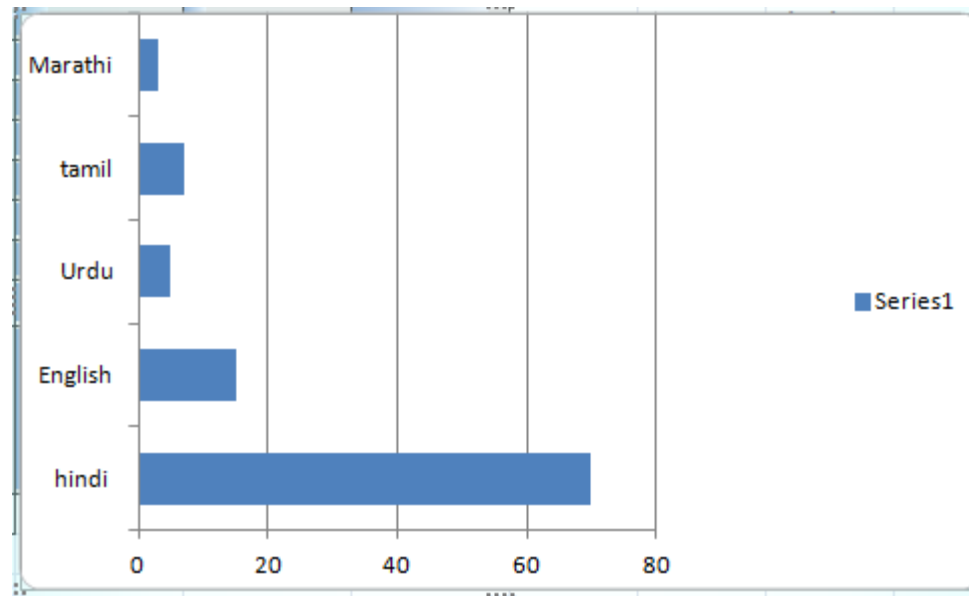
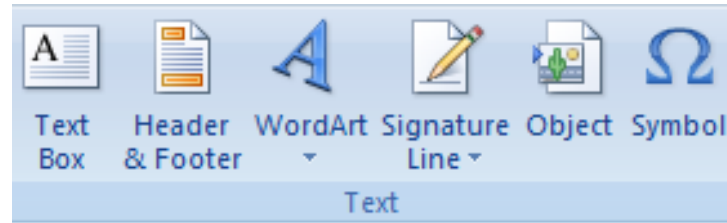


Figure : Bar Chart

Insert Tab 4. Text Group



1. Text Box

- This button is used to insert a textbox into the worksheet. Text boxes can be used to highlight an item in a chart or within the worksheet.
- Textboxes can be inserted and/or positioned anywhere within the worksheet page.

2. Header and Footer :

- To insert a header and/or footer into a worksheet, click this button.
- The header or footer area of the worksheet will display when this button is clicked. The header or footer can be inserted directly into this area.

3. Word Art :

- Click this button to insert a Word Art object into the worksheet or chart. A gallery of Word Art styles will appear.
- Select any of the styles to display the text box. The text box is where the text for the Word Art can be specified.

4. Signature Line :

- Use this button to insert a signature line into the worksheet.
- The signature line specifies the individual who is to sign the file in order to access it.

5. Object:

- To insert an embedded object, such as documents from other programs, click this button. A dialog box will display from which a list of options can be chosen.
- Click the Create from File option to insert a designated file.

6. Symbol :

- This button is used to insert a symbol, such as a copyright symbol, into the worksheet.
- When the button is clicked, a gallery of different symbols will appear

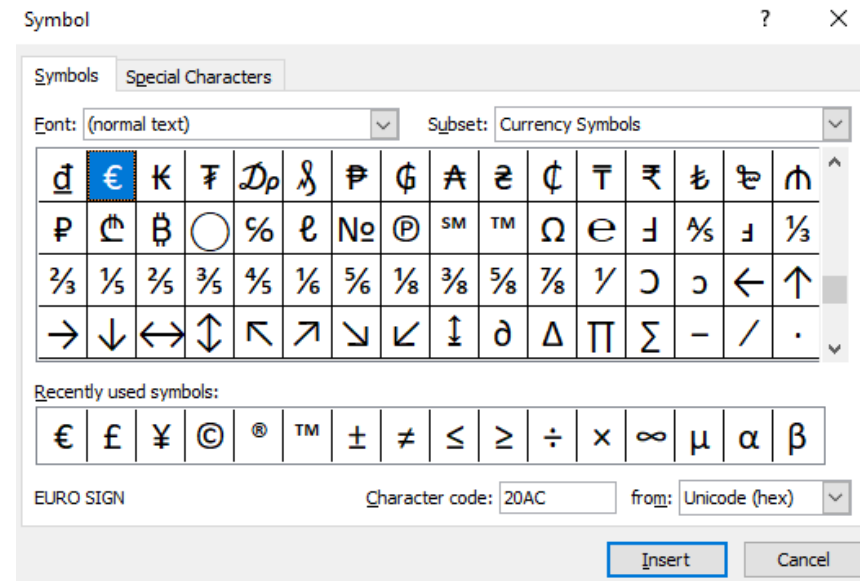


Figure : Symbol

Page Layout Tab

In Page Layout option, we have various commands which we use to prepare the workbook for printing and exporting to PDF format. Through this command, we can adjust the page in the way we want to see after printing.

The Page Layout Tab is divided into the following groups:

1. Themes Group
2. Page Setup Group
3. Scale to Fit Group
4. Sheet Options Group
5. Arrange Group

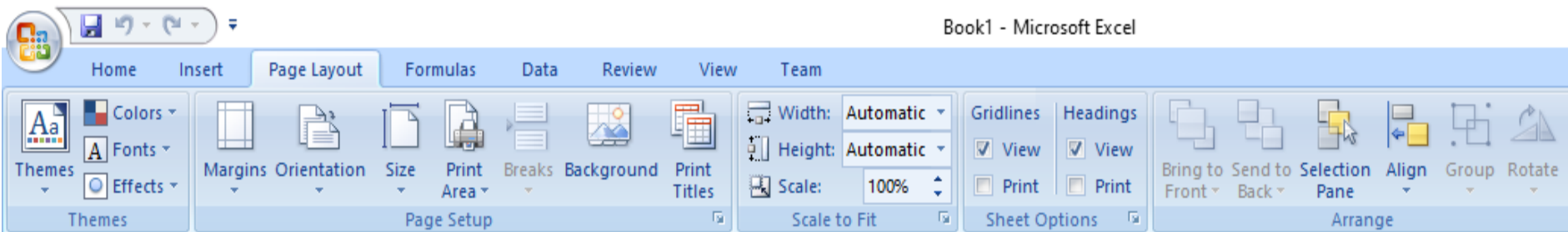
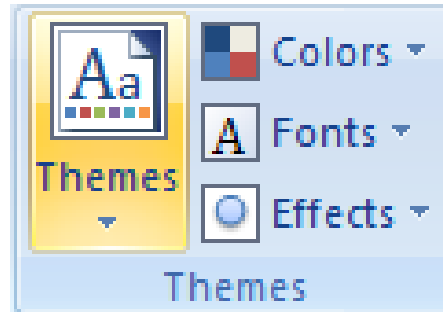


Figure : Page Layout Ribbon

Page Layout 1.Themes Tab



a) Themes: -

- This option is used to change the theme color of workbook by just click of a button.
- Each theme has 12 colors, two fonts (heading and body), SmartArt and the effects for shape.

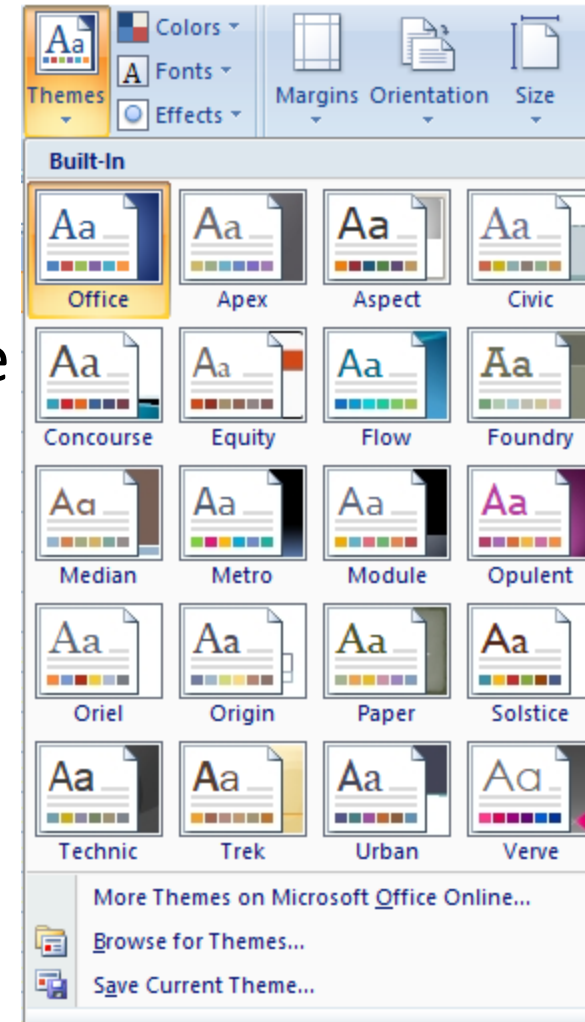
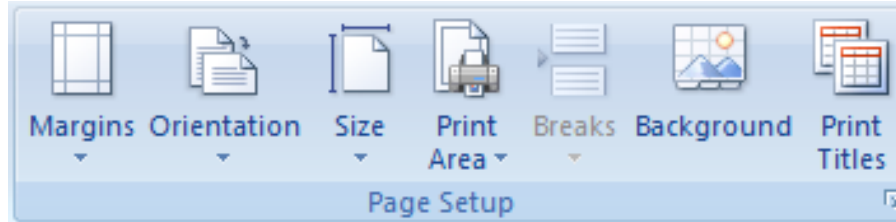


Figure : Themes Group

Page Layout 2. Page Setup Group



Margins:

- The first Page Setup option is Margins, which lets you control the white space in your document.
- We would like to switch margins in the worksheet from Normal to Narrow so we can see more of data when we print this file.
- Go ahead and click on Margins command and then select Narrow from the drop down menu.

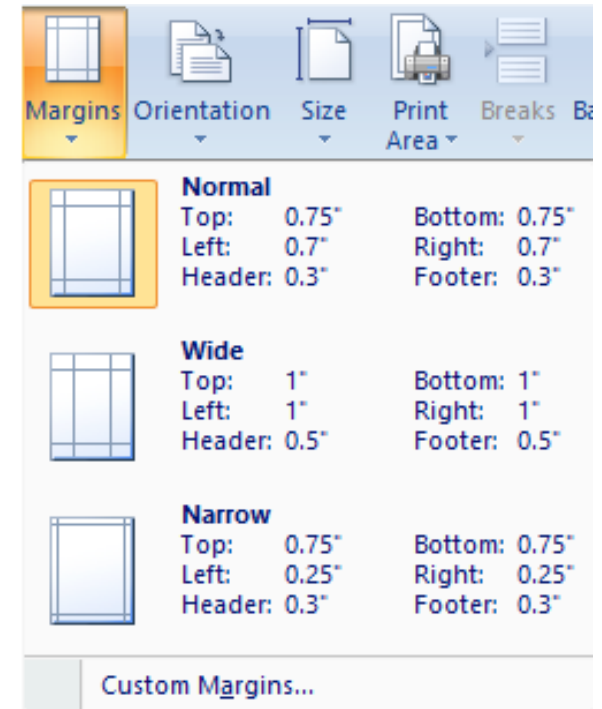


Figure : Margins Tab

Orientation - Drop-Down. Lets you switch between Portrait and Landscape.

Size - Drop-Down. Lets you select from all the different available paper sizes. The More Paper Sizes displays the "Page Setup" dialog box, Page tab.

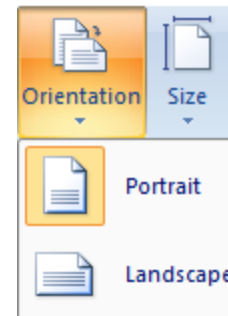


Figure : Orientation

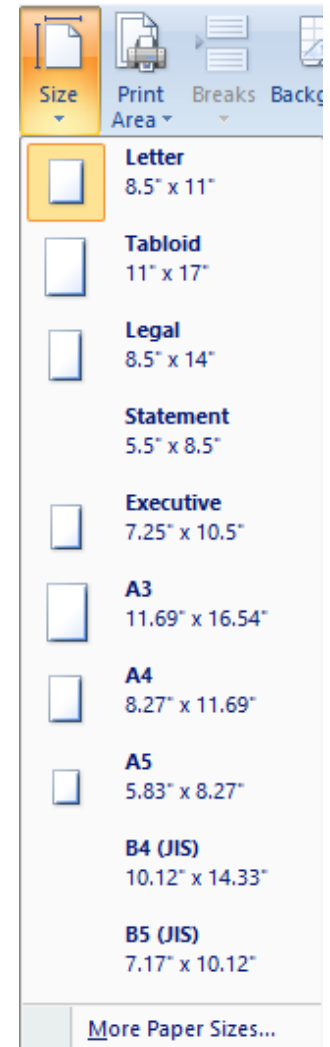


Figure : Size

- **Print Area** - Drop-Down. This drop-down contains the commands: Set Print Area and Clear Print Area.
- The default print area for Excel is ALL of the data. Unless you have set up your pages this can make for a very confusing pile of paper, especially if you have lots of columns.
- Another way is to set the print area. To do this highlight the data you want to print, click on the page layout, print area, set print area.

<u>Name</u>	<u>Maths</u>	<u>Science</u>	<u>Hindi</u>	<u>English</u>	<u>Sanskrit</u>	<u>Total</u>
<u>Aditya</u>	<u>98</u>	<u>76</u>	<u>79</u>	<u>76</u>	<u>53</u>	<u>382</u>
<u>Anita</u>	<u>65</u>	<u>56</u>	<u>81</u>	<u>74</u>	<u>55</u>	<u>331</u>
<u>Anushka</u>	<u>89</u>	<u>94</u>	<u>85</u>	<u>100</u>	<u>69</u>	<u>437</u>
<u>Arun</u>	<u>87</u>	<u>98</u>	<u>78</u>	<u>45</u>	<u>45</u>	<u>353</u>
<u>Krishna</u>	<u>87</u>	<u>100</u>	<u>83</u>	<u>71</u>	<u>57</u>	<u>398</u>
<u>Nisha</u>	<u>67</u>	<u>56</u>	<u>67</u>	<u>94</u>	<u>85</u>	<u>369</u>
<u>Prateek</u>	<u>54</u>	<u>65</u>	<u>80</u>	<u>75</u>	<u>54</u>	<u>328</u>
<u>Ram</u>	<u>98</u>	<u>95</u>	<u>84</u>	<u>98</u>	<u>56</u>	<u>431</u>
<u>Renuka</u>	<u>76</u>	<u>98</u>	<u>82</u>	<u>73</u>	<u>58</u>	<u>387</u>
<u>Rohan</u>	<u>67</u>	<u>92</u>	<u>87</u>	<u>95</u>	<u>67</u>	<u>408</u>
<u>Shesh</u>	<u>78</u>	<u>93</u>	<u>86</u>	<u>96</u>	<u>68</u>	<u>421</u>
<u>Sudha</u>	<u>78</u>	<u>76</u>	<u>53</u>	<u>67</u>	<u>87</u>	<u>361</u>
<u>Sudhir</u>	<u>76</u>	<u>77</u>	<u>78</u>	<u>77</u>	<u>52</u>	<u>360</u>

Figure : Selecting the print area

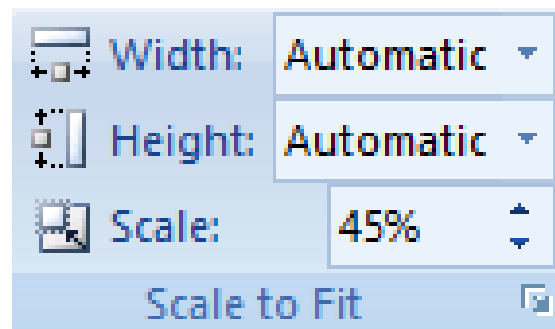
<u>Name</u>	<u>Maths</u>	<u>Science</u>	<u>Hindi</u>	<u>English</u>
<u>Aditya</u>	<u>98</u>	<u>76</u>	<u>79</u>	<u>76</u>
<u>Anita</u>	<u>65</u>	<u>56</u>	<u>81</u>	<u>74</u>
<u>Anushka</u>	<u>89</u>	<u>94</u>	<u>85</u>	<u>100</u>
<u>Arun</u>	<u>87</u>	<u>98</u>	<u>78</u>	<u>45</u>
<u>Krishna</u>	<u>87</u>	<u>100</u>	<u>83</u>	<u>71</u>
<u>Nisha</u>	<u>67</u>	<u>56</u>	<u>67</u>	<u>94</u>
<u>Prateek</u>	<u>54</u>	<u>65</u>	<u>80</u>	<u>75</u>
<u>Ram</u>	<u>98</u>	<u>95</u>	<u>84</u>	<u>98</u>
<u>Renuka</u>	<u>76</u>	<u>98</u>	<u>82</u>	<u>73</u>

Figure : Previewing the print area

- **Breaks** - Drop-Down. This drop-down contains the commands: Insert Page Break, Remove Page Break and Reset All Page Breaks.
- **Background** - Displays the "Sheet Background" dialog box to let you add a background image to the back of a worksheet. This caption changes to 'Delete Background' if an image is assigned to the active worksheet.

Page Layout 3. Scale to Fit Tab

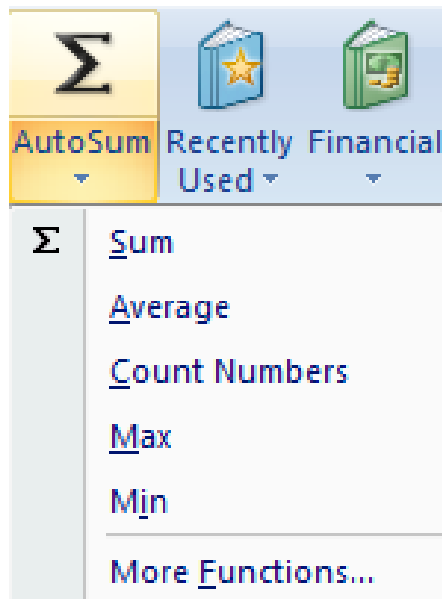
- **Scale to Fit:** -This option helps to fit the page for printing by shrinking or enlarging its size to better fit the pages. We can use Scale to fit to adjust the width and height by describing the scale %age.
- If your worksheet has a lot of columns, you can use the **Scale to Fit** options to reduce the size of the worksheet to better fit the printed page.



Formulas Tab 4.Function Library

Mathematical Function :

To perform basic mathematical operations such as addition, subtraction, or multiplication; combine numbers; and produce numeric results, use the following arithmetic operators.



1. Sum : This Function is used to perform the addition of two or multiple operands.
2. Average : In order to take the average of more than one range using a single function, first start the = AVERAGE function. After adding your first range press "," (comma) and then select the second range of values, end the function with a parenthesis (bracket) and press enter.
3. MIN/MAX
 - I. MIN - Will return the smallest number found in a set of values.
 - II. MAX - Will return the highest number found in a set of values.
4. COUNT - Counts the number of cells in a range than contain numbers

Example :

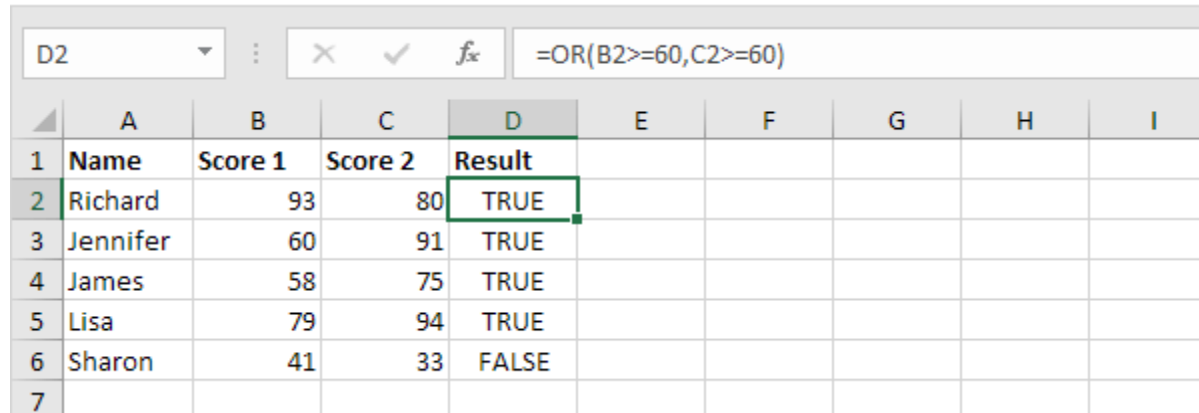
	A	B	C	D	E	F	G
1	Order Number	Date	Customer	Amount	Country	City	Phone
2	1	5/1/2016	Customer1	\$ 125.00	Canada	Ottawa	(555) 555-0001
3	2	5/1/2016	Customer6	\$ 175.00	Canada	Halifax	(555) 555-0006
4	3	5/1/2016	Customer2	\$ 150.00	United States	Washington	(555) 555-0002
5	4	5/2/2016	Customer1	\$ 250.00	Canada	Ottawa	(555) 555-0001
6	5	5/2/2016	Customer1	\$ 215.00	Canada	Ottawa	(555) 555-0001
7	6	5/2/2016	Customer2	\$ 315.00	United States	Washington	(555) 555-0002
8	7	5/2/2016	Customer3	\$ 125.00	United Kingdom	London	(555) 555-0003
9	8	5/2/2016	Customer1	\$ 50.00	Canada	Ottawa	(555) 555-0001
10	9	5/2/2016	Customer7	\$ 750.00	United States	New York	(555) 555-0007
11	10	5/2/2016	Customer4	\$ 35.00	France	Paris	(555) 555-0004
12	11	5/3/2016	Customer5	\$ 250.00	China	Beijing	(555) 555-0005
13	12	5/3/2016	Customer5	\$ 115.00	China	Beijing	(555) 555-0005
14	13	5/4/2016	Customer4	\$ 175.00	France	Paris	(555) 555-0004
15	14	5/4/2016	Customer5	\$ 125.00	China	Beijing	(555) 555-0005
16	15	5/4/2016	Customer1	\$ 150.00	Canada	Ottawa	(555) 555-0001
17	16	5/4/2016	Customer7	\$ 150.00	United States	New York	(555) 555-0007
18	17	5/4/2016	Customer1	\$ 150.00	Canada	Ottawa	(555) 555-0001
19	18	5/4/2016	Customer1	\$ 250.00	Canada	Ottawa	(555) 555-0001
20	19	5/4/2016	Customer4	\$ 135.00	France	Paris	(555) 555-0004
21	20	5/4/2016	Customer2	\$ 400.00	United States	Washington	(555) 555-0002
22							
23			Sum:	=sum(D2:D21			
24				SUM(number1, [number2], ...)			

Sum:	=SUM(D2:D21)
Average:	=AVERAGE(D2:D21)
Max:	=MAX(D2:D21)
Min:	=MIN(D2:D21)
Count:	=COUNT(D2:D21)

Sum:	\$ 4,090.00
Average:	\$ 204.50
Max:	\$ 750.00
Min:	\$ 35.00
Count:	20

Logical Function

3. Or : The OR function returns TRUE if any of the conditions are TRUE and returns FALSE if all conditions are false.



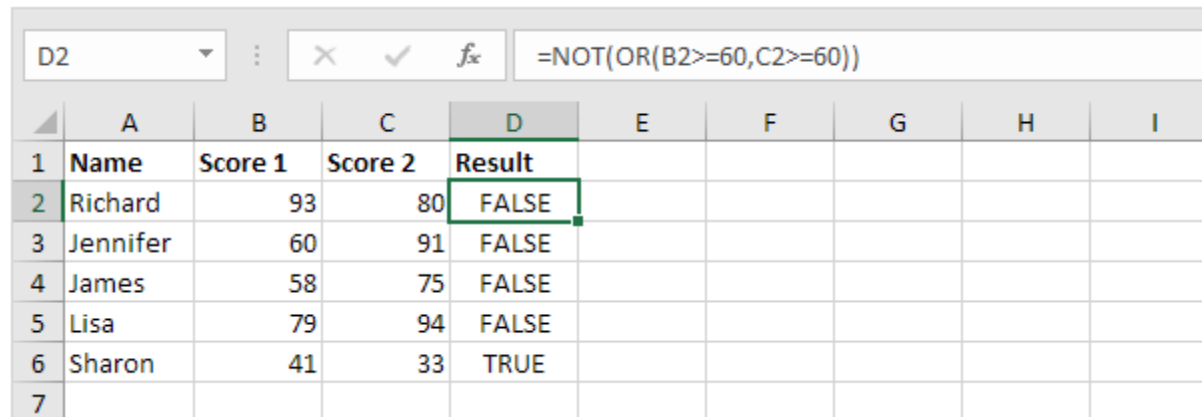
The screenshot shows an Excel spreadsheet with the following data:

	A	B	C	D	E	F	G	H	I
1	Name	Score 1	Score 2	Result					
2	Richard	93	80	TRUE					
3	Jennifer	60	91	TRUE					
4	James	58	75	TRUE					
5	Lisa	79	94	TRUE					
6	Sharon	41	33	FALSE					
7									

The formula bar for cell D2 shows: `=OR(B2>=60,C2>=60)`

4. Not :

- The NOT function changes TRUE to FALSE, and FALSE to TRUE.
- For example, take a look at the NOT function in cell D2 below.



The screenshot shows an Excel spreadsheet with the following data:

	A	B	C	D	E	F	G	H	I
1	Name	Score 1	Score 2	Result					
2	Richard	93	80	FALSE					
3	Jennifer	60	91	FALSE					
4	James	58	75	FALSE					
5	Lisa	79	94	FALSE					
6	Sharon	41	33	TRUE					
7									

The formula bar for cell D2 shows: `=NOT(OR(B2>=60,C2>=60))`

Math and Trig Functions in ms Excel :

1. SIN/COS/TAN function : The Excel function returns the sine/cose/tane of angle given in radians.

- To supply an angle to SIN/COS/TAN in degrees, multiply the angle by $PI()/180$ or use the Radians function to convert to radians.

S.No.	Angle	Sin	Cos	Tan
1	60	0.866025404	0.5	1.732051

`=SIN(J3*PI()/180)`

`=COS(J3*PI()/180)`

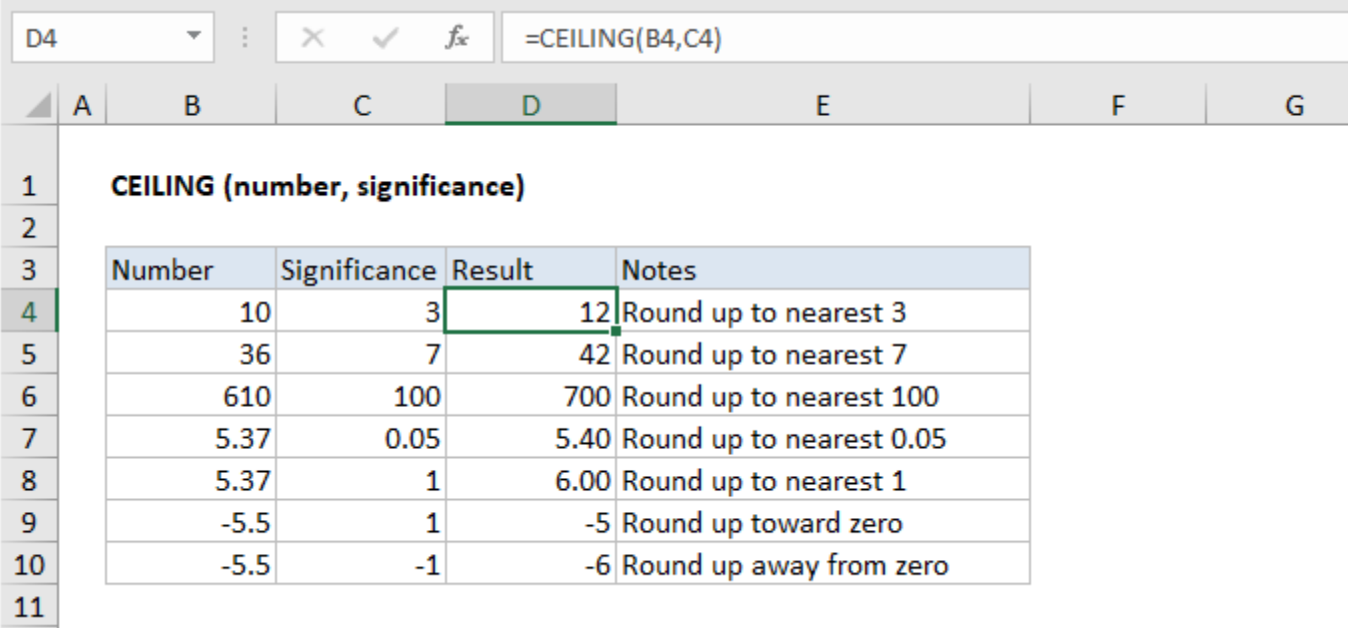
`=TAN(J3*PI()/180)`



2. Ceiling and Floor Function :

Ceiling Function : The Excel CEILING function is categorized under Math and Trigonometry functions. The function will return a number that is rounded up to a supplied number that is away from zero to the nearest multiple of a given number.

- **Formula :**
- =CEILING(number, significance)



The screenshot shows an Excel spreadsheet with the following content:

Formula bar: D4 =CEILING(B4,C4)

Row 1: **CEILING (number, significance)**

Number	Significance	Result	Notes
10	3	12	Round up to nearest 3
36	7	42	Round up to nearest 7
610	100	700	Round up to nearest 100
5.37	0.05	5.40	Round up to nearest 0.05
5.37	1	6.00	Round up to nearest 1
-5.5	1	-5	Round up toward zero
-5.5	-1	-6	Round up away from zero

- **Floor Function** : The Microsoft Excel FLOOR function returns a number rounded down based on a multiple of significance.
- The FLOOR function is a built-in function in Excel that is categorized as a Math/Trig Function.
- **Formula** :
- FLOOR(number, significance)

The screenshot shows an Excel spreadsheet with the following content:

Formula bar: `=FLOOR(B5,C5)`

Worksheet grid:

	A	B	C	D	E
1					
2		FLOOR (number, significance)			
3					
4		Number	Significance	Result	Notes
5		10	3	9	Round down to nearest 3
6		36	7	35	Round down to nearest 7
7		660	100	600	Round down to nearest 100

3. **MOD function :**

- The MOD function is categorized under Excel Math and Trigonometry functions. The function helps find a remainder after a number (dividend) is divided by another number (divisor).
- **Formula**
- =MOD(number,divisor)

4. **FACT function :** The Microsoft Excel FACT function returns the factorial of a number.

- **Formula**
- =FACT(number)

5. **LOG function :** Returns the logarithm of a number to the base you specify.

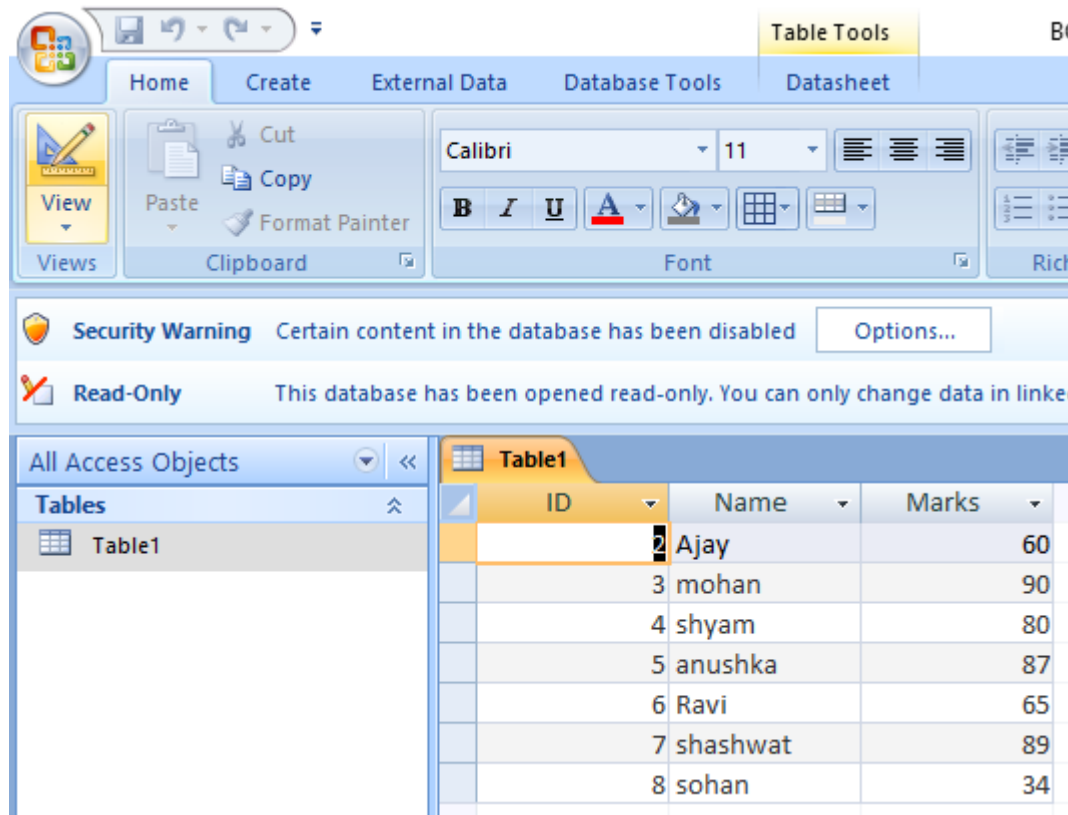
- **Formula :**
- =LOG(number, [base])

DATA TAB 1. GET EXTERNAL DATA FROM MS ACCESS

It is mainly used import data from a simple external database powered by Microsoft Access database. We will import the products table into excel.

STEPS :

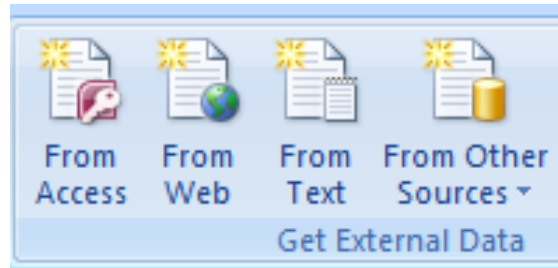
1. Create a record in Ms access data base.



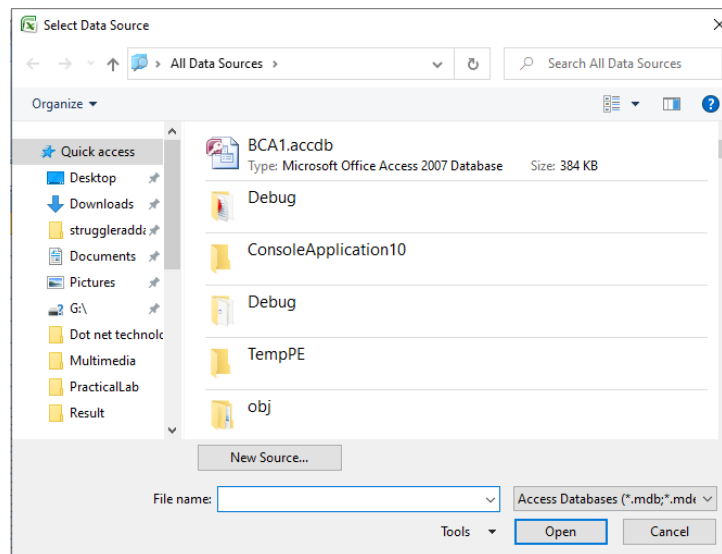
The screenshot shows the Microsoft Excel interface with the 'Table Tools' ribbon active. The 'Table Tools' ribbon has tabs for 'Home', 'Create', 'External Data', 'Database Tools', and 'Datasheet'. The 'Home' tab is selected, showing the 'Clipboard' group with 'Cut', 'Copy', 'Paste', and 'Format Painter' options. The 'Font' group shows 'Calibri' font, size '11', and bold, italic, and underline options. A 'Security Warning' message is displayed, stating 'Certain content in the database has been disabled'. Below the warning, a 'Read-Only' message states 'This database has been opened read-only. You can only change data in linked tables'. The 'All Access Objects' task pane is visible on the left, showing 'Table1' under the 'Tables' category. The main area displays a table with the following data:

ID	Name	Marks
2	Ajay	60
3	mohan	90
4	shyam	80
5	anushka	87
6	Ravi	65
7	shashwat	89
8	sohan	34

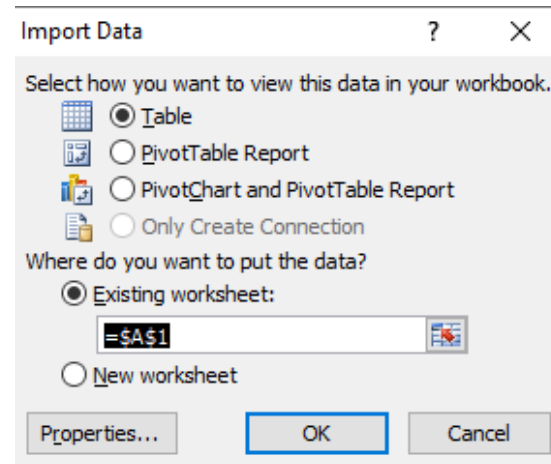
2. Open a new workbook
3. Click on the Data tab
4. Click on from Access button as shown below



5. The following dialog box will appear.



- Browse to the database that you was create in ms access and
- Click on Open button



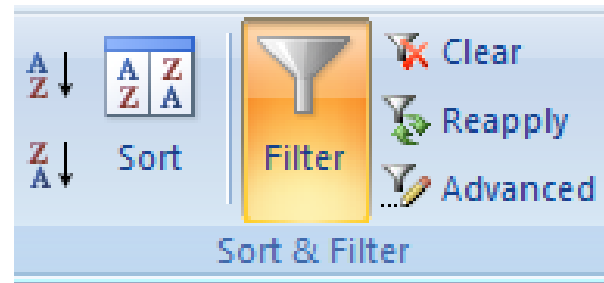
- Click on OK button
- You will get the following data

	A	B	C
1	ID	Name	Marks
2	2	Ajay	60
3	3	mohan	90
4	4	shyam	80
5	5	anushka	87
6	6	Ravi	65
7	7	shashwat	89
8	8	sohan	34

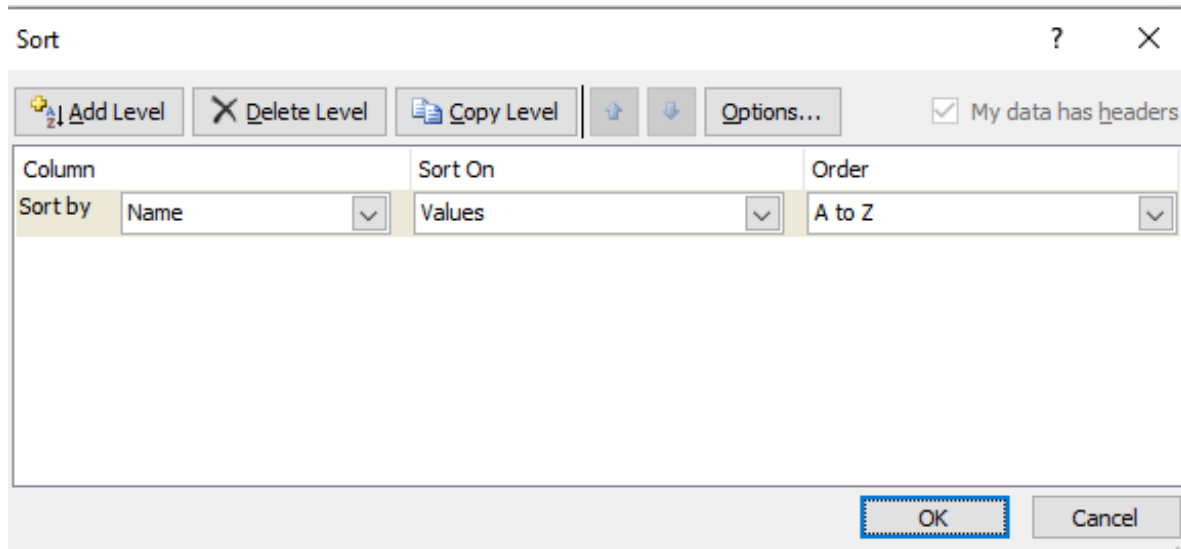
DATA TAB 2. SORT AND FILTER OPTION

Sort data :

- For a quick sort, click the arrow below the Sort & Filtering icon in the Editing group of the Home ribbon and choose the Sort A to Z / Z to A icons in the Sort & Filter group of the Data ribbon.
- In Excel , these are labeled Sort Smallest to Largest and vice versa.



- For a more complex sort, go to the Data ribbon, click the arrow below the Sort & Filter icon in the sort and filter group and choose Custom Sort.



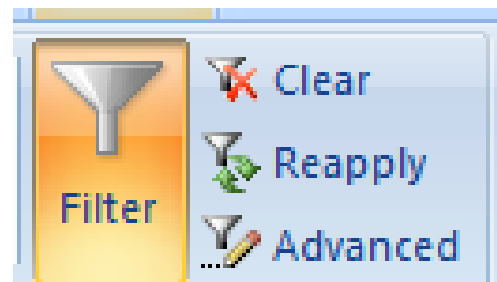
- Under Column, choose the first column that you would like to sort. If you want to sort multiple columns, click the Add Level button.
- Under Sort On, choose how you would like to sort.
- Under Order, choose A to Z (ascending), Z to A (descending), or Custom List.
- Click OK to perform the sort.

Filter data :

- Go to the Data ribbon, and then click Filter in the Sort & Filter group.
- Check the box next to the criteria you wish to match and click OK. Click on the arrow next to another heading to further filter the data.

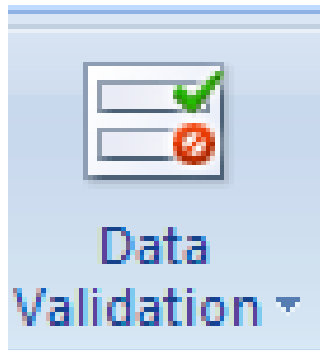
To clear the filter, choose one of these options:

- Go to the Data ribbon and click the Clear icon in the Sort & Filter group.

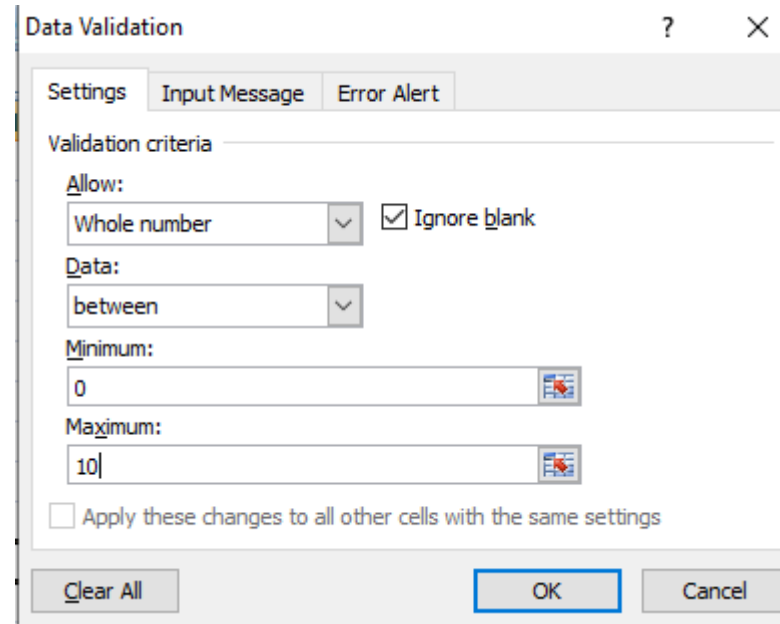


DATA TAB 3. DATA VALIDATION

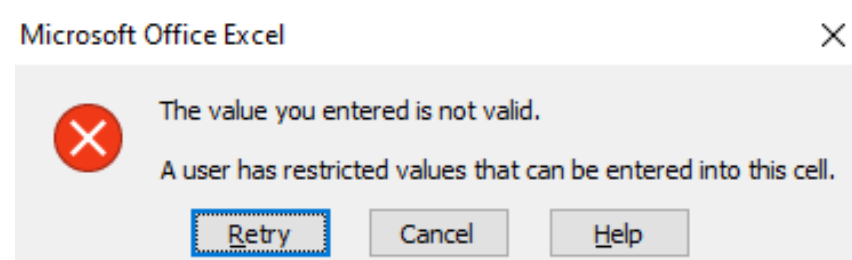
- MS Excel data validation feature allows you to set up certain rules that dictate what can be entered into a cell. For example, you may want to limit data entry in a particular cell to whole numbers between 0 and 10. If the user makes an invalid entry, you can display a custom message as shown below.
- Click on the data tab and then click on the validation.



- The dialog box appears set the validation as your need.



- Then if you entered the value that is not under the set range it will give you a message .

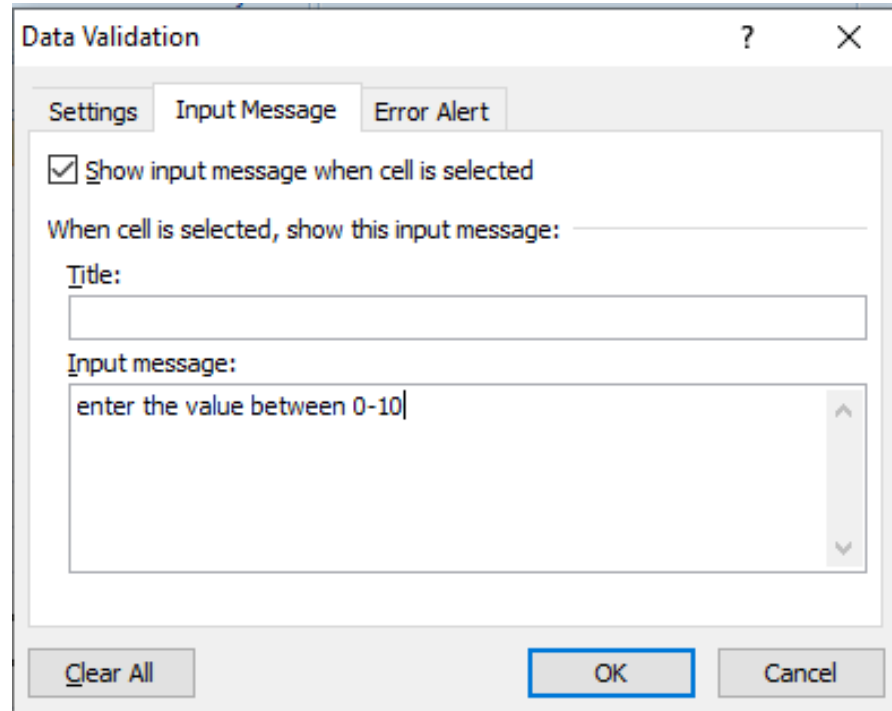


Settings Tab :

- **Any Value** – Selecting this option removes any existing data validation.
- **Whole Number** – The user must enter a whole number. For example, you can specify that the entry must be a whole number greater than or equal to 50.
- **Decimal** – The user must enter a number. For example, you can specify that the entry must be greater than or equal to 10 and less than or equal to 20.
- **List** – The user must choose from a list of entries you provide. You will create drop-down list with this validation. You have to give input ranges then those values will appear in the drop-down.
- **Date** – The user must enter a date. You specify a valid date range from choices in the Data drop-down list. For example, you can specify that the entered data must be greater than or equal to January 1, 2013, and less than or equal to December 31, 2013.
- **Time** – The user must enter a time. You specify a valid time range from choices in the Data drop-down list. For example, you can specify that the entered data must be later than 12:00 p.m.
- **Text Length** – The length of the data (number of characters) is limited. You specify a valid length by using the Data drop-down list. For example, you can specify that the length of the entered data be 1 (a single alphanumeric character).
- **Custom** – To use this option, you must supply a logical formula that determines the validity of the user's entry (a logical formula returns either TRUE or FALSE).

Input Message Tab

You can set the input help message with this tab. Fill the title and Input message of the Input message tab and the input message will appear when the cell is selected.



The screenshot shows the 'Data Validation' dialog box with the 'Input Message' tab selected. The 'Show input message when cell is selected' checkbox is checked. The 'Title' field is empty. The 'Input message' field contains the text 'enter the value between 0-10'. The dialog has 'Clear All', 'OK', and 'Cancel' buttons at the bottom.

Data Validation

Settings Input Message Error Alert

Show input message when cell is selected

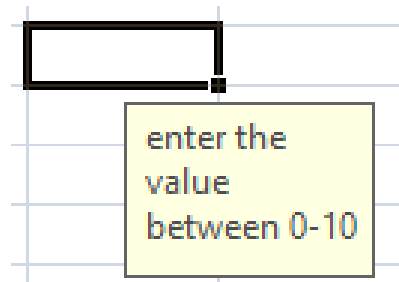
When cell is selected, show this input message:

Title:

Input message:

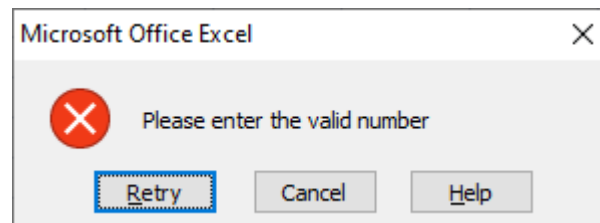
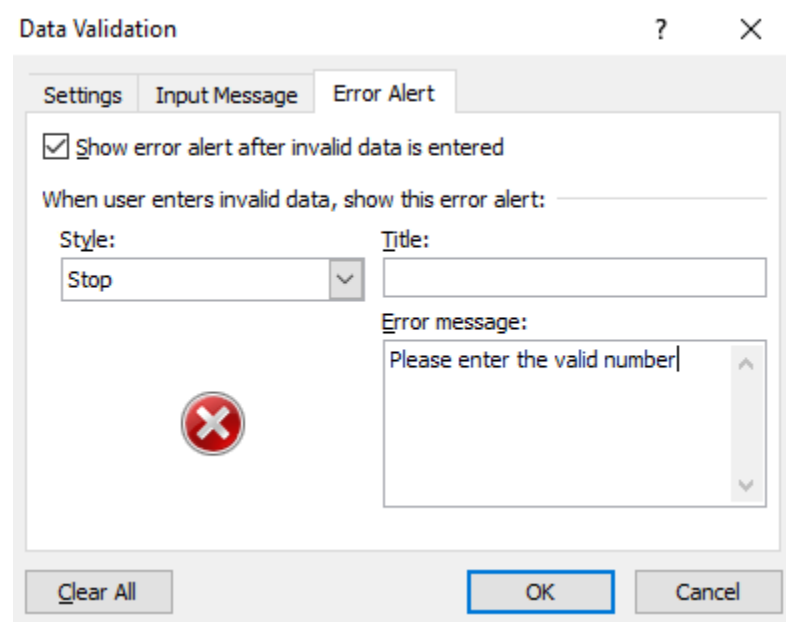
enter the value between 0-10

Clear All OK Cancel



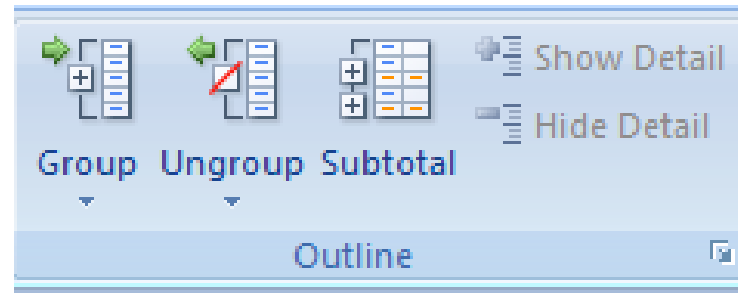
Error Alert Tab:

You can specify an error message with this tab. Fill the title and error message. Select the style of the error as stop, warning or Information as per you need.



Data tab 4. Group and Ungroup

- Group is a tool in excel with which we can group two or more rows or columns together, it helps to represent the group of rows or columns together, also it gives us an option of minimize and maximize the group.
- minimizing the group hides those rows or columns grouped together and maximizing shows the group, Group option is available in the data tab under the outline section.

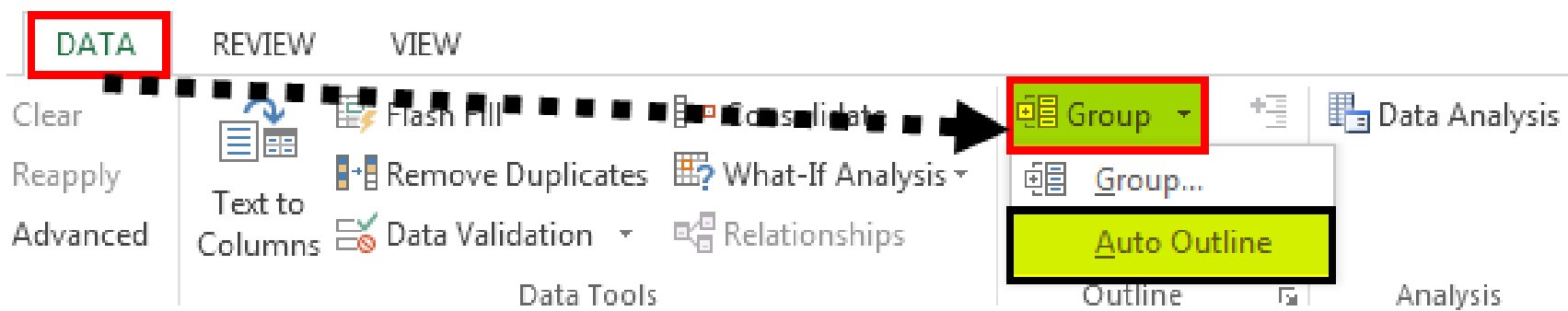


STEPS:

- Enter the records which you want to group.

	A	B	C	D	E	F	G
1	Country	Product	Units Sold	Unit Price	Gross Sales	COGS	Profit
2	Canada	Amarilla	3256	10	32560	2,050	30,510
3	Canada	Amarilla	1520	26	39520	60,379	(20,859)
4	Canada	Amarilla	1699	31	52669	14,728	37,941
5	Canada	Amarilla	3467	12	41604	35,172	6,432
6	Canada	Amarilla	2492	18	44856	9,315	35,541
7	Canada	Carretera	2671	18	48078	27,873	20,205
8	Canada	Carretera	1802	18	32436	19,545	12,891
9	Canada	Carretera	1799	11	19789	31,360	(11,571)
10	Canada	Carretera	2755	30	82650	15,818	66,832
11	Canada	Montana	2124	19	40356	44,047	(3,691)
12	Canada	Montana	1766	17	30022	49,903	(19,881)
13	Canada	Montana	2563	27	69201	101,258	(32,057)
14	France	Amarilla	2450	33	80850	64,222	16,628
15	France	Amarilla	2416	20	48320	84,369	(36,049)
16	France	Carretera	3302	35	115570	5,049	110,521
17	France	Carretera	1512	20	30240	29,272	968
18	France	Carretera	2747	10	27470	6,739	20,731
19	France	Montana	3230	35	113050	140,721	(27,671)
20	France	Montana	2209	27	59643	96,516	(36,873)
21	France	Montana	1796	24	43104	69,975	(26,871)
22	Germany	Amarilla	3001	35	105035	94,790	10,245
23	Germany	Amarilla	3407	28	95396	41,304	54,092
24	Germany	Amarilla	2666	23	61318	48,731	12,587
25	Germany	Carretera	1957	21	41097	32,979	8,118
26	Germany	Carretera	1607	12	19284	12,138	7,146
27	Germany	Carretera	1580	32	50560	31,213	19,347
28	Germany	Carretera	2141	26	55666	4,147	51,519
29							

- Select the rows or columns you wish to group.
- On the Data tab, in the Outline group, click the Group command.



- Then you can see the groups as follows

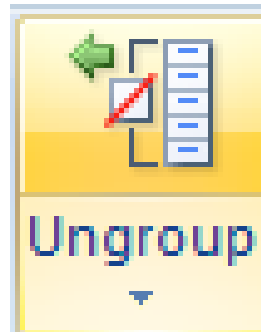
1	2	A	B	C	D	E	F	G
	1	Country	Product	Units Sold	Unit Price	Gross Sales	COGS	Profit
	2	Canada	Amarilla	3256	10	32560	2,050	30,510
	3	Canada	Amarilla	1520	26	39520	60,379	(20,859)
	4	Canada	Amarilla	1699	31	52669	14,728	37,941
	7	Canada	Carretera	2671	18	48078	27,873	20,205
	8	Canada	Carretera	1802	18	32436	19,545	12,891
	9	Canada	Carretera	1799	11	19789	31,360	(11,571)
	10	Canada	Carretera	2755	30	82650	15,818	66,832
	11	Canada	Montana	2124	19	40356	44,047	(3,691)
	12	Canada	Montana	1766	17	30022	49,903	(19,881)
	13	Canada	Montana	2563	27	69201	101,258	(32,057)
-	14	Canada Total		27914	237	533741	411,447	122,294
	15	France	Canada Country Group			80850	64,222	16,628
	16	France			48320	84,369	(36,049)	
	17	France	Carretera	3302	35	115570	5,049	110,521
	20	France	Montana	3230	35	113050	140,721	(27,671)
	21	France	Montana	2209	27	59643	96,516	(36,873)
	22	France	Montana	1796	24	43104	69,975	(26,871)
-	23	France Total		19662	204	518247	496,862	21,385
	24	Germany	France Country Group			105035	94,790	10,245
	25	Germany			95396	41,304	54,092	
	28	Germany	Carretera	1607	12	19284	12,138	7,146
	29	Germany	Carretera	1580	32	50560	31,213	19,347
	30	Germany	Carretera	2141	26	55666	4,147	51,519
-	31	Germany Total		16359	177	428356	265,301	163,055
	32							

1	2	A	B	C	D	E	F	G
+	14	Canada Total		27914	237	533741	411,447	122,294
+	23	France Total		19662	204	518247	496,862	21,385
+	31	Germany Total		16359	177	428356	265,301	163,055
	32							
	33							
	34							
	35							
	36							
	37							
	38							

Click on these PLUS sign to expand and see the breakup

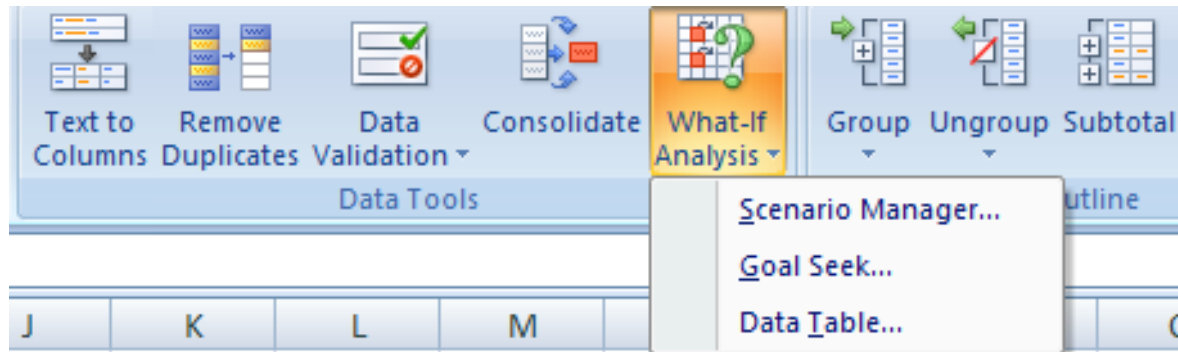
UNGROUP THE DATA :

- To ungroup data in a list in Excel:
- Select the rows or columns you wish to ungroup.
- On the Data tab, in the Outline group, click the Ungroup command.



DATA TAB 5. GOAL SEEK

- **Goal Seek** is Excel's built-in What-If Analysis tool that shows how one value in a formula impacts another.
- More precisely, it determines what value you should enter in an input cell to get the desired result in a formula cell.



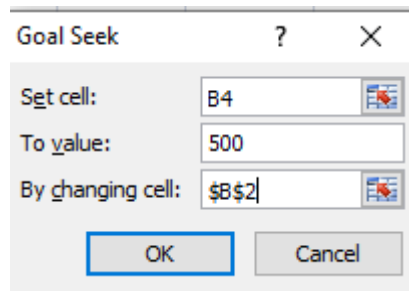
Steps :

- On the **Data** tab, in the **Data Tools** group, click **What-If Analysis**, and then click **Goal Seek**.
- In the **Set cell** box, enter the reference for the cell that contains the formula that you want to resolve.
- In the **To value** box, type the formula result that you want.
- In the **By changing cell** box, enter the reference for the cell that contains the value that you want to adjust.

Step 1 :

	A	B
1	Principle	1500
2	Rate	4
3	Time	5
4	Interest	300

Step 2 : Click on what-if-analysis and then click on goal seek following dialog box will appear



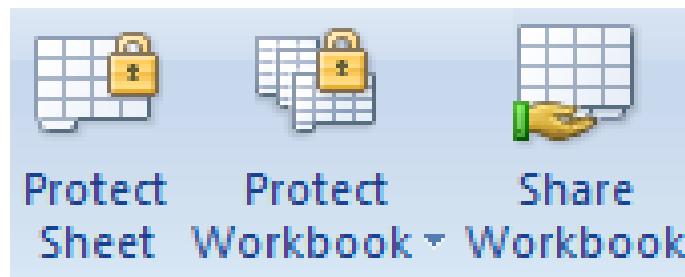
The image shows the 'Goal Seek' dialog box in Microsoft Excel. The title bar reads 'Goal Seek' with a question mark and a close button. The 'Set cell:' field contains 'B4'. The 'To value:' field contains '500'. The 'By changing cell:' field contains '\$B\$2'. At the bottom, there are 'OK' and 'Cancel' buttons.

Step 3 :

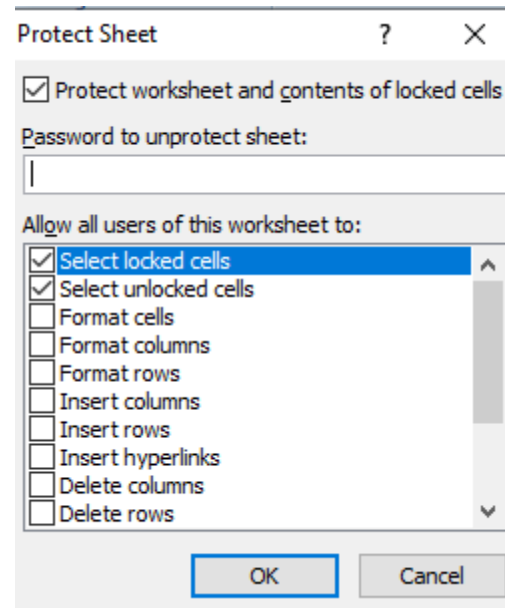
	A	B
1	Principle	1500
2	Rate	6.666667
3	Time	5
4	Interest	500

REVIEW TAB 1. PROTECT SHEET

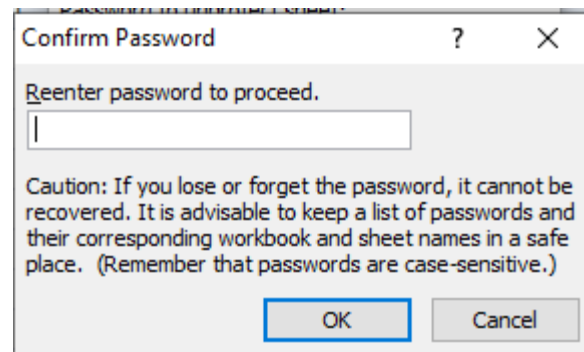
- To prevent other users from viewing hidden worksheets, adding, moving, deleting, or hiding worksheets, and renaming worksheets, you can protect the structure of your Excel worksheet with a password.
- To protect the structure of your worksheet, follow these steps:
- Click **Review > Protect Worksheet.**



- Enter a password in the **Password** box.

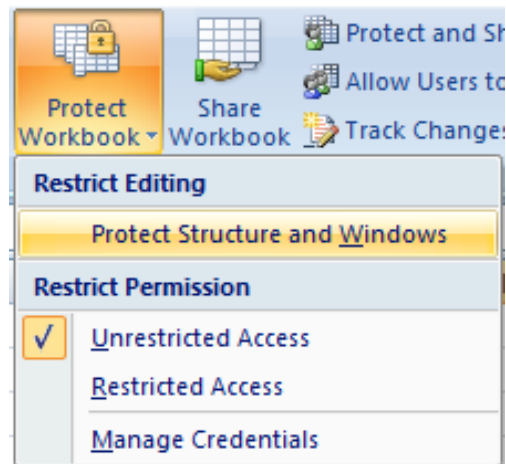


- Select **OK**, re-enter the password to confirm it, and then select **OK** again.

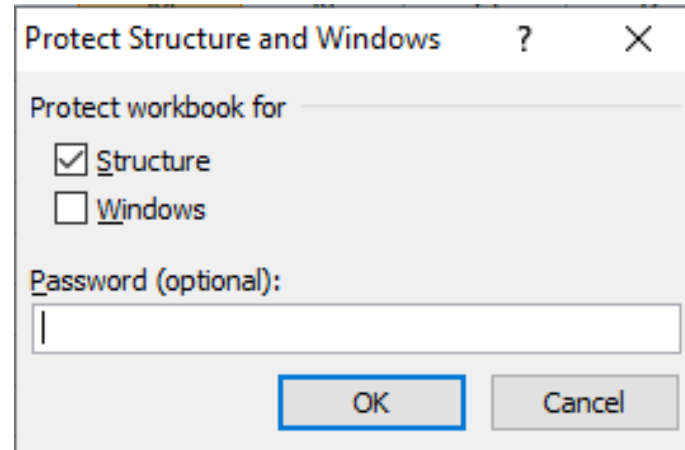


REVIEW TAB 2.PROTECT WORKBOOK

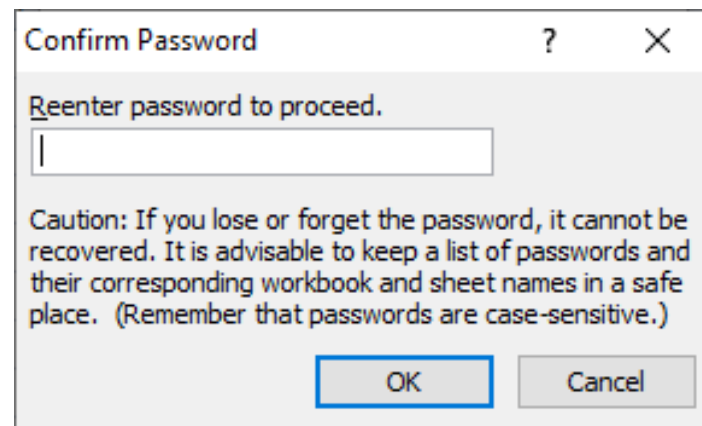
- To prevent other users from viewing hidden worksheets, adding, moving, deleting, or hiding worksheets, and renaming worksheets, you can protect the structure of your Excel workbook with a password.
- To protect the structure of your workbook, follow these steps:
 1. Click **Review > Protect Workbook>Protect Structure and windows**

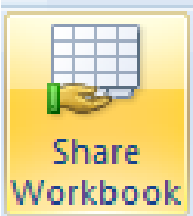


2. Enter a password in the **Password** box.



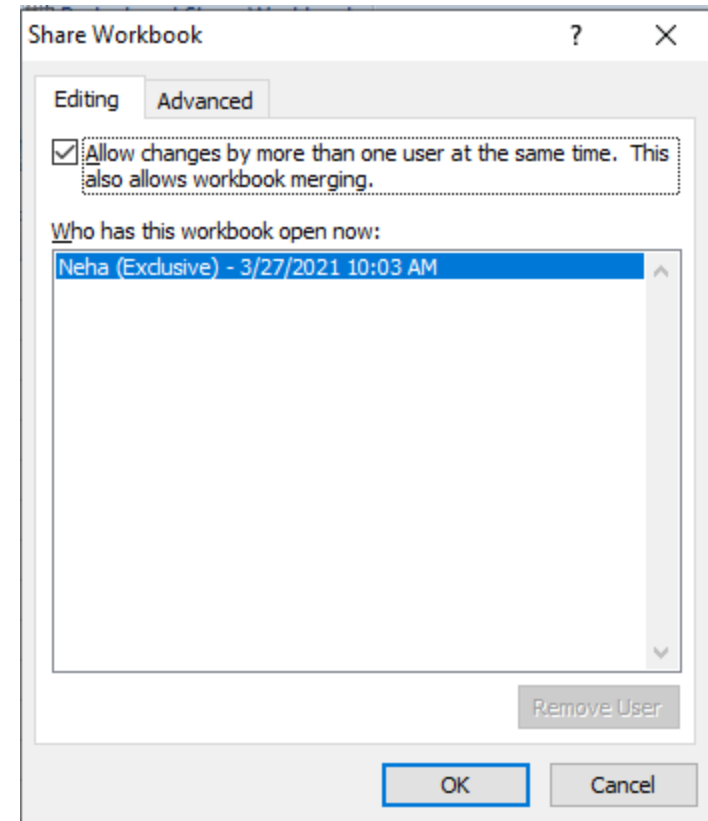
3. Select **OK**, re-enter the password to confirm it, and then select **OK** again.



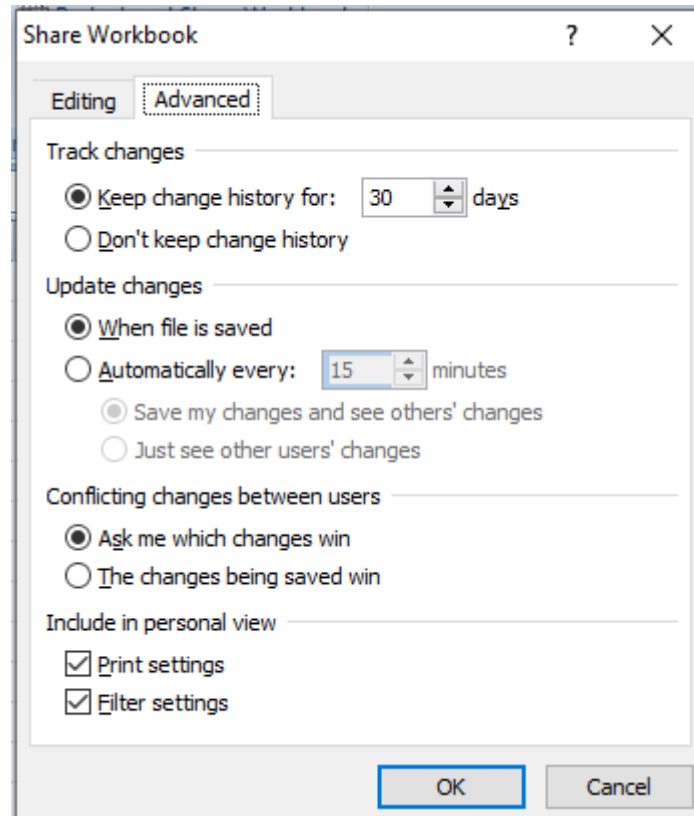


REVIEW TAB 3. SHARE WORKBOOK

- Click the Review tab.
- Click Share Workbook in the Changes group.
- The Share Workbook dialog box will appear, and you select the Allow changes by more than one user at the same time. This also allows workbook merging check box on the Editing tab.



- Optionally, switch to the Advanced tab, select the desired settings for tracking changes, and click OK.



- Save you Excel file to a network location where other people can access it (the fastest way is by using the Ctrl + S shortcut).

VIEW TAB

- Page Breaks : View a preview of where page will break when this document is printed
- Page layout : View the document as it will appear on the printed page.
- Freezing panes : keep a portion of the sheet visible while the rest of the sheet scrolls.
- Split : Split the window into multiple resizable panes containing views of your worksheet.

You can use these features to view multiple distant parts of your worksheet at once.

- Hide : Hide the current window so that it can not be seen.

to bring the window back , click on the unhide button.

UNIT – 3

WORKING WITH MS POWER POINT

1.Introduction to MS power point

- MS PowerPoint is a program that is included in the Microsoft Office suite. It is used to make presentations for personal and professional purposes.
- Microsoft PowerPoint is a powerful presentation software developed by Microsoft. It is a standard component of the company's Microsoft Office suite software, and is bundled together with Word, Excel and other Office productivity tools.
- Microsoft PowerPoint is a software application that is particularly used to present data and information by using text, diagrams with animation, images, and transitional effects, etc in the form of slides. It helps people to better understand the idea or topic in front of the audience practically and easily.

Use of MS Power Point :

1. Power Point in education

- Teachers can use PowerPoint to teach subjects lessons and chapters of any book.
- It gives the opportunity to the teacher to cover a topic in the different t slides. And in each slide, they can manage, highlight, mention, and teach important points that are essential to cover on that topic.
- On the contrary, students can create their own presentations for self-learning or can create for teachers to show them.

2. PowerPoint in business:

- PowerPoint helps people in business to create a plan, structure related to the business or organization.
- In the case of the training team, you create and showcase the methods with the help of diagrams, images, and circles.

3. PowerPoint for job seekers

- Through PowerPoint, job seekers can create digital resumes or multimedia resumes and it will become a unique way of presenting skills and knowledge in front of interviewers.

4. Use PowerPoint to Make Tutorials

- For the purpose of training or educational contexts, PowerPoint can be easily used to create worksheets and tutorials.

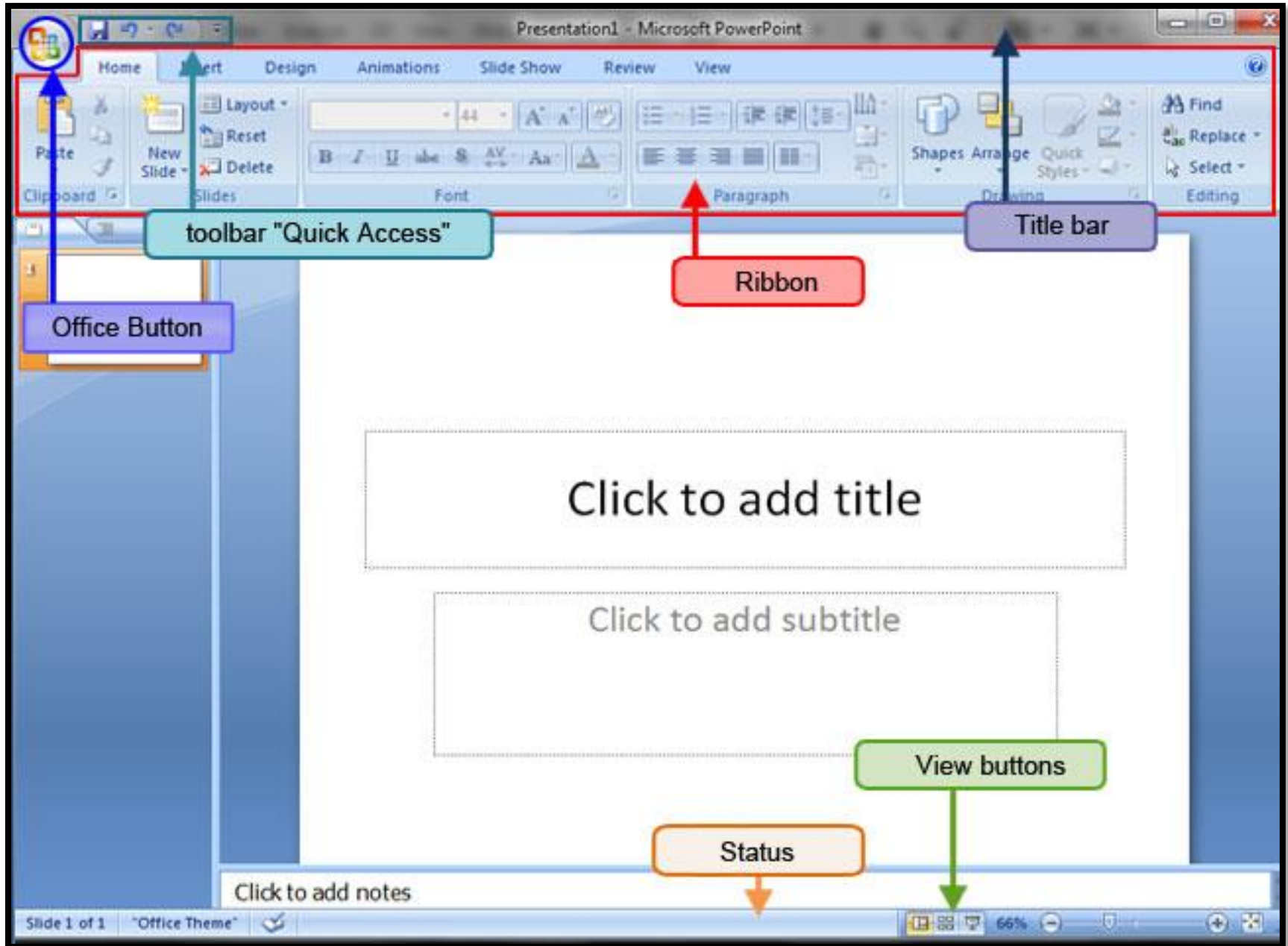
5. Use PowerPoint as a Photo Slide Show

- By using PowerPoint, you can create photo slide shows or digital album for personal promotional uses. For instance, you can create a touching tribute to your family members.

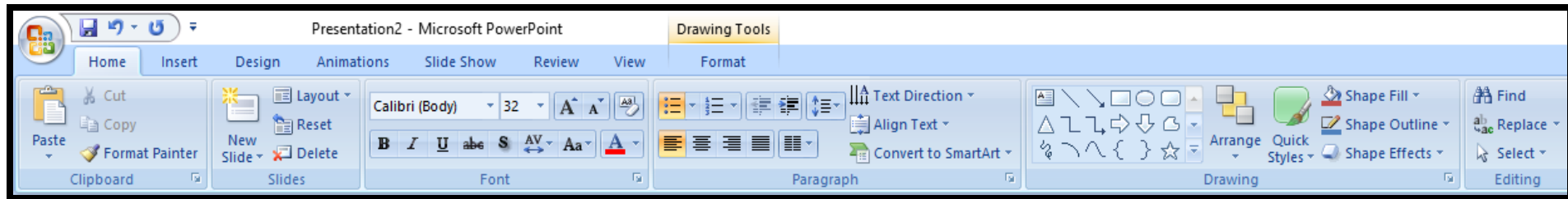
2. The elements of presentations are

- 1. Slides** : Slides are the individual pages of your presentation. Slides can have titles, text, graphs, drawn object, shapes, ClipArt, drawn art etc.
- 2. Handouts** : These are the printed copies of our presentations. They can be one per page or reduced.
You can also print your slides as handouts with two, three, four, six or nine slides on a page that your audience can use for future reference.
- 3. Speaker's Notes** : These provide the presenter with a page which corresponds to each slide and contain a small image of the slide along with additional notes. These are the reminder notes.
- 4. Objects** : These are the individual elements which make up the presentation. These objects can be text, clipart, pictures, charts or other types of graphics .
- 5. Place holder** : These let us to quickly add the type of element we are likely to put in a particular portion of the slide.

Overview of Power Point



3. The Ribbon



The ribbon consists three areas :

- 1. Tabs :** these are at the top of the ribbon eg : Home, Design, Animations etc.
- 2. Groups :** Each tab has its own set of groups – eg : The home tab contains the Clipboard slides, Font, Paragraphs, Drawing and editing group etc.
- 3. Commands :** These are the buttons, Boxes or menus relative to each group for eg : the alignment and bullets and numbering, buttons are in paragraph group. While find and replace are in editing group.

Microsoft Office Button

- Microsoft Office Button is located on the upper-left corner of the PowerPoint window.
- See the image:



Figure : Office button

- **New:** To create a new presentation
- **Open:** To open an existing presentation
- **Save:** To save changes made in the open presentation
- **Save As:** To save the presentation with a specific name to a preferred location in the computer
- **Print:** To print the hard copy of the open presentation
- **Prepare:** To prepare the presentation for distribution
- **Send:** To send the copy of the presentation to others
- **Publish:** To distribute the presentation to others
- **Close:** To close the open presentation

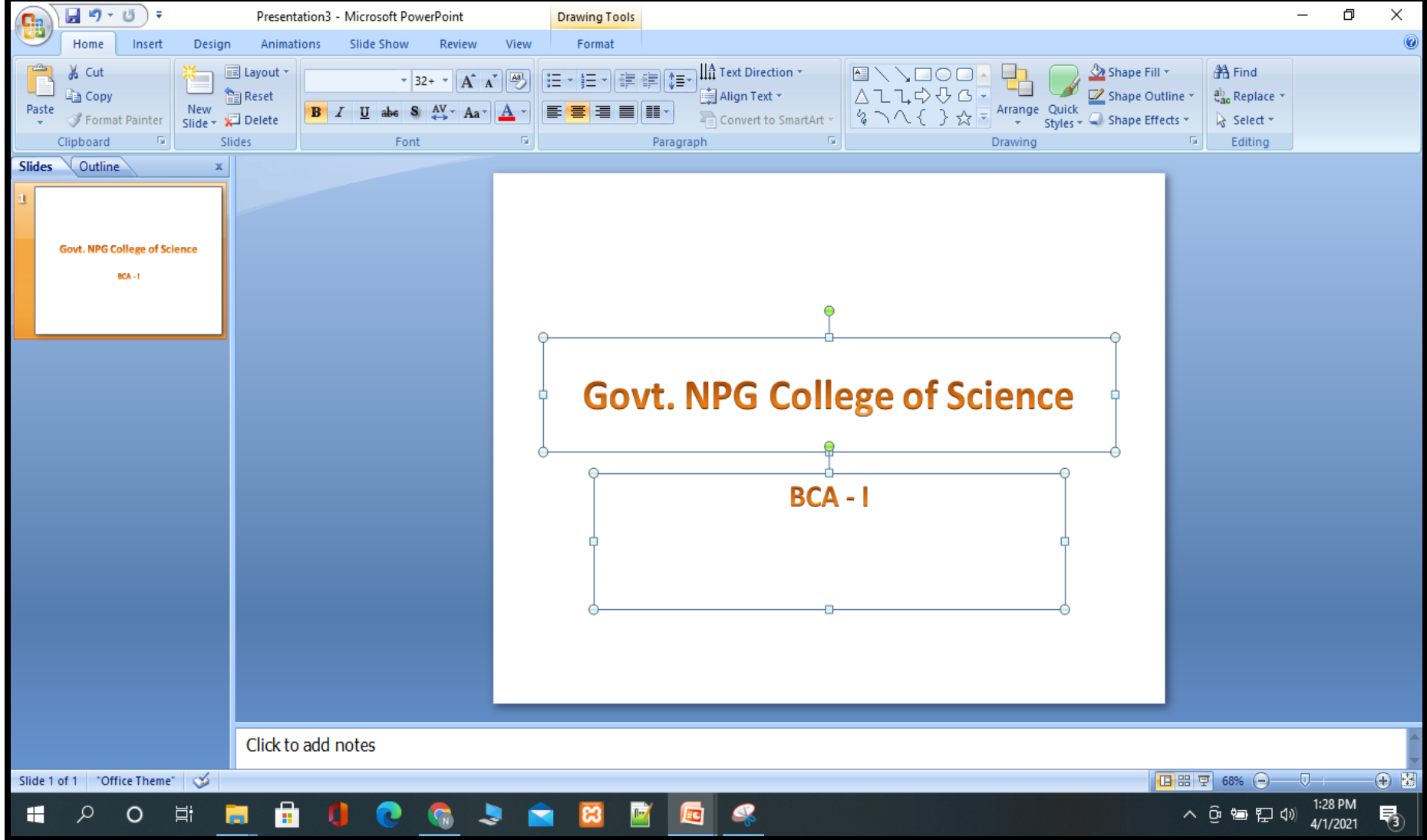
4.Creating a presentation

STEPS :

Step1: Open Microsoft Power point.

Step2: Go to File at the top of the screen and click New. A box that says “Blank/New Presentation” should appear on the right side of your screen.

Step 3: Slide Title/ Subtitle Give any title and subtitle to your ppt on slide1.



Step 4: As per your choice apply different formatting options to format the text and pictures.

Step 5: Add new slide by clicking on new slide on formatting bar or by right clicking and selecting new slide option.

5. Save the Presentation

Step 1 : click on the office button

Step 2 : click on the save button

Step 3 : the following dialog box will appear.

Step 4 : Give the name to your presentation.

Step 5 : click on OK Button

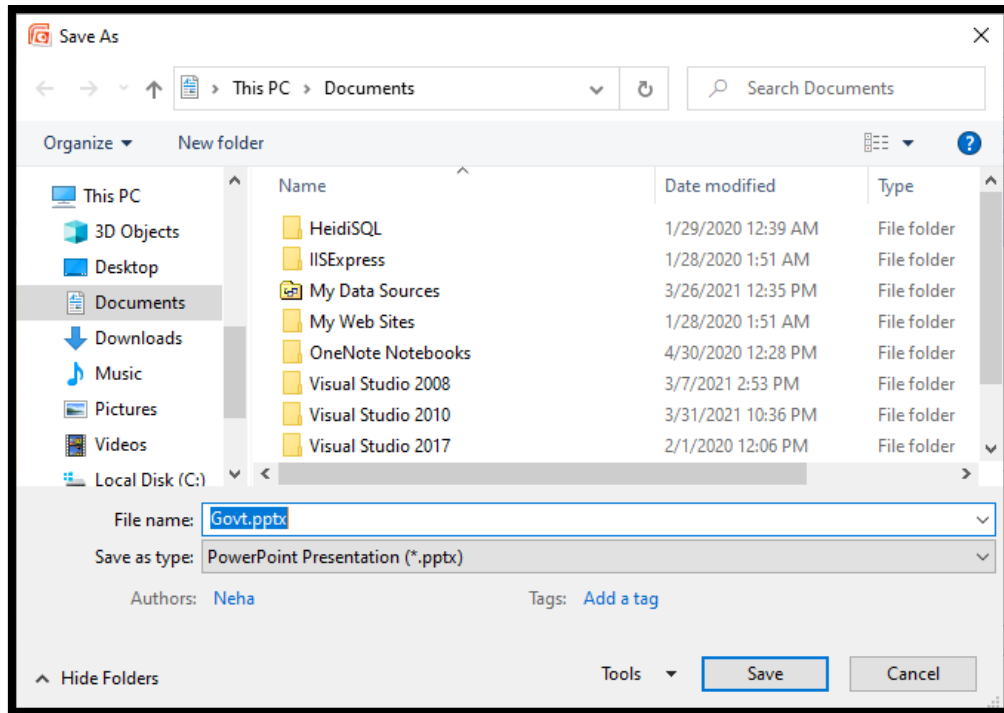


Figure : Step 3,4,5

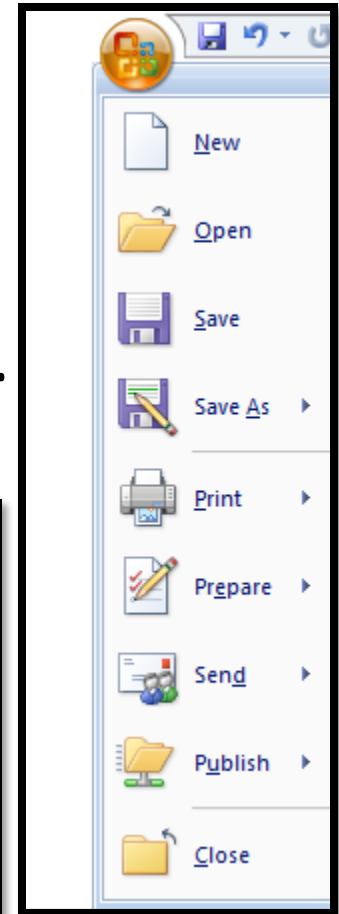


Figure : Step 1, 2

6. Open the Presentation

- **pptx file** extension is a Microsoft PowerPoint **Open XML (PPTX) file** created by Microsoft PowerPoint.

Steps for opening the Presentation :

STEPS :

Step1: Open Microsoft Power point.

Step2: Go to File at the top of the screen and click Open. A box that says “Select the folder” should appear on the right side of your screen.

Step 3: Select the folder than click on “Open”.

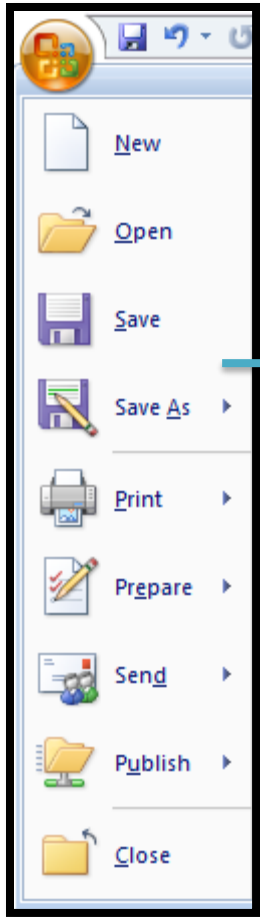


Figure : Click on Open

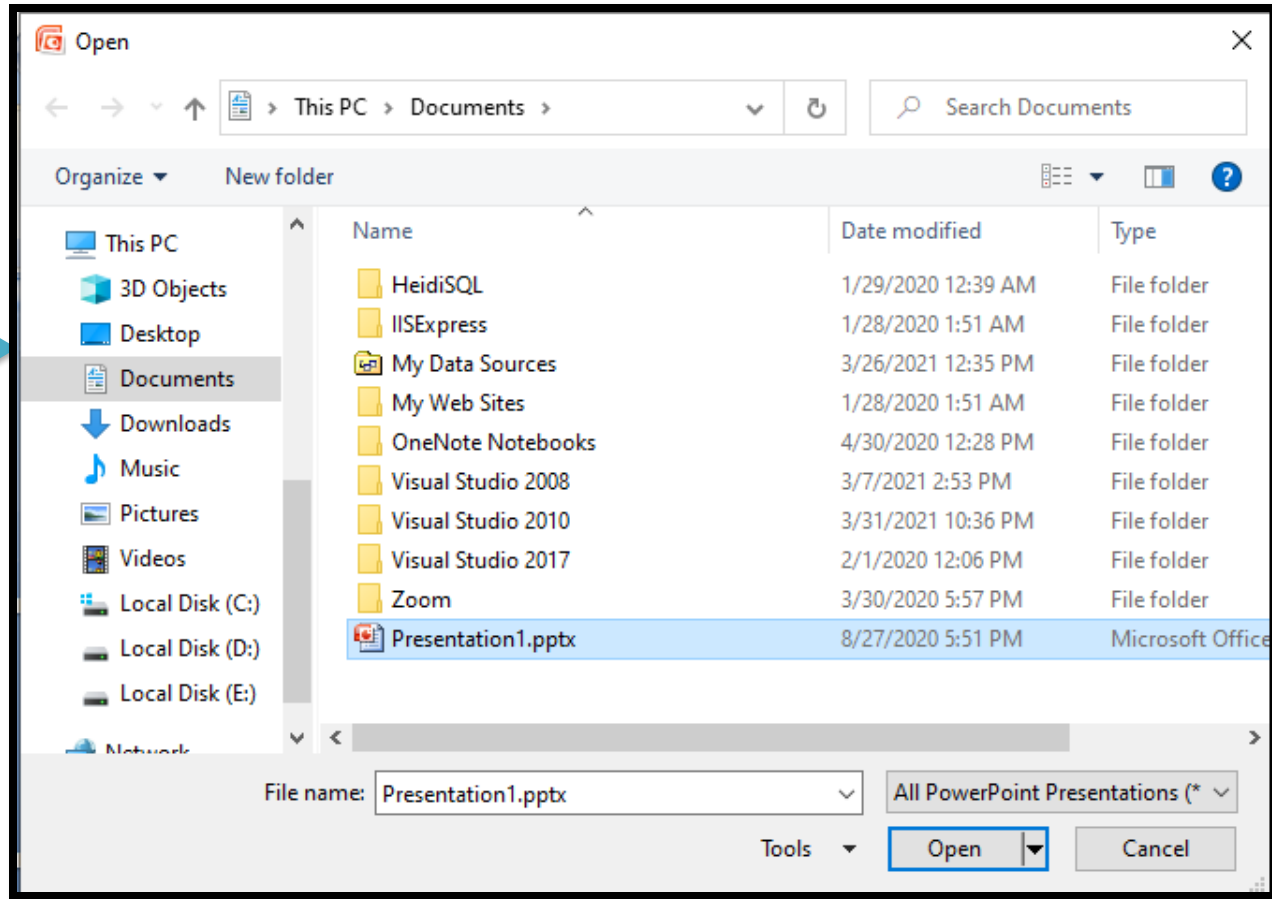


Figure : Select the folder than click on Open

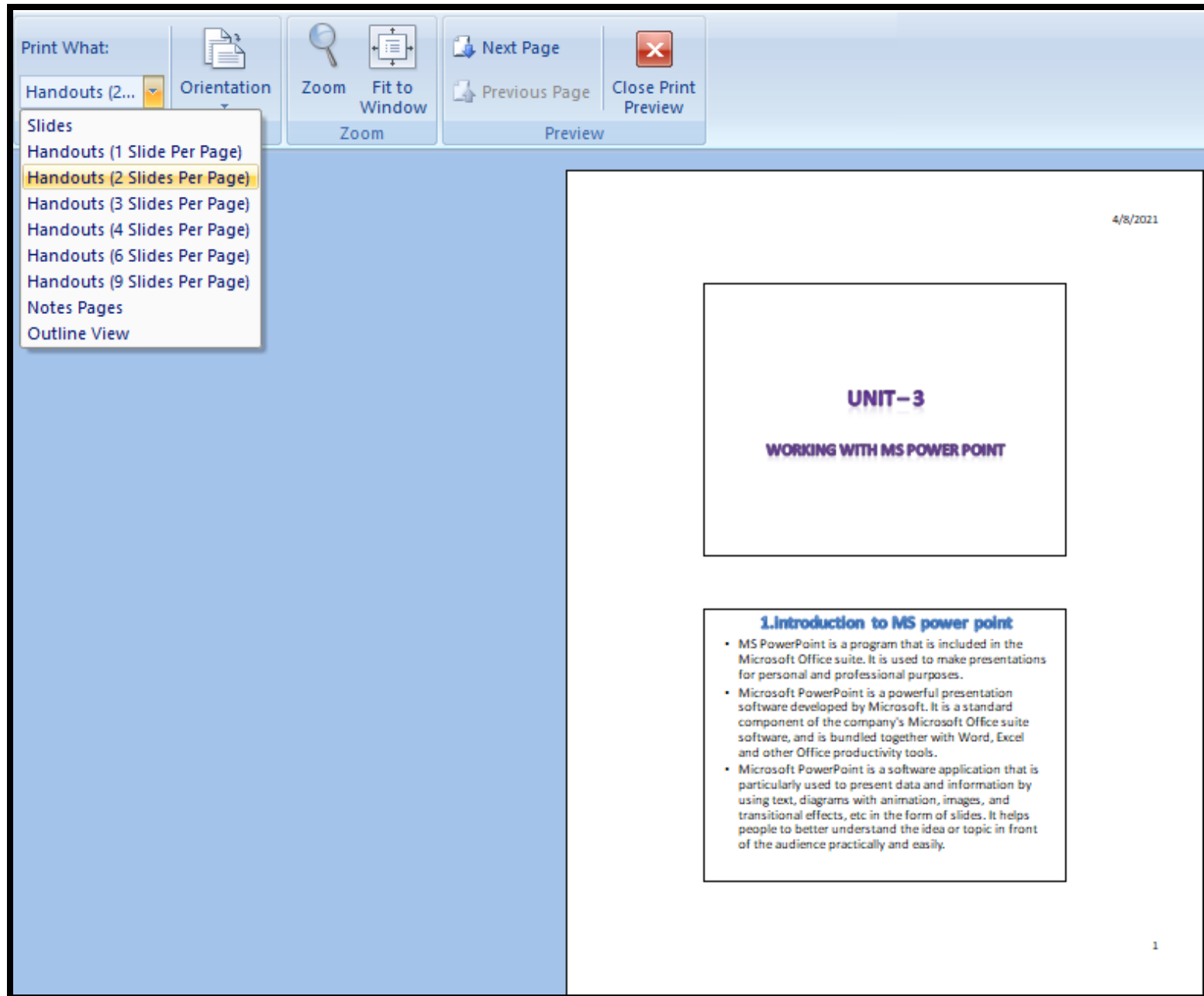
Printing the Presentation

In PowerPoint, you can print your slides, your speaker notes.

Print your presentation :

- Select **File > Print**.
- For **Printer**, select the printer you want to print to.
- Choose a print layout: Under **Settings**, Click on Print then click on “Print Preview” then click on “Handouts”.
- From handouts select how many slides you want in one page.

Example : Here we select 2 Slides Per page



The screenshot displays the Microsoft PowerPoint Print Preview window. The 'Print What' dropdown menu is open, showing the following options:

- Slides
- Handouts (1 Slide Per Page)
- Handouts (2 Slides Per Page)**
- Handouts (3 Slides Per Page)
- Handouts (4 Slides Per Page)
- Handouts (6 Slides Per Page)
- Handouts (9 Slides Per Page)
- Notes Pages
- Outline View

The main preview area shows a slide with the following content:

4/8/2021

UNIT-3

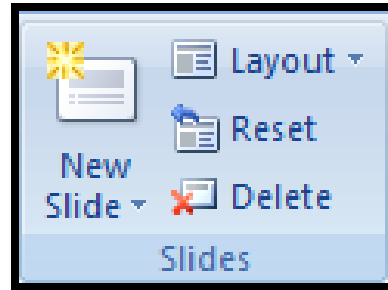
WORKING WITH MS POWER POINT

1.Introduction to MS power point

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1

HOME TAB 1. SLIDES(NEW SLIDE, LAYOUT, RESET, DELETE)



1.New Slide -

- Click this button to insert a new slide into the presentation.
- The slide will be inserted after the current slide with the same format as the current slide.
- Clicking the arrow will display a gallery of different slide layouts. Click any of the slide layouts to insert a new slide into the presentation.

Click to add title

- Click to add text



Figure : Adding New Slide

2. Layouts :

- Layout When this button is clicked, a gallery of different slide layouts will appear.
- Click one of the layouts to apply it to the current slide; the slide where the insertion point is located.

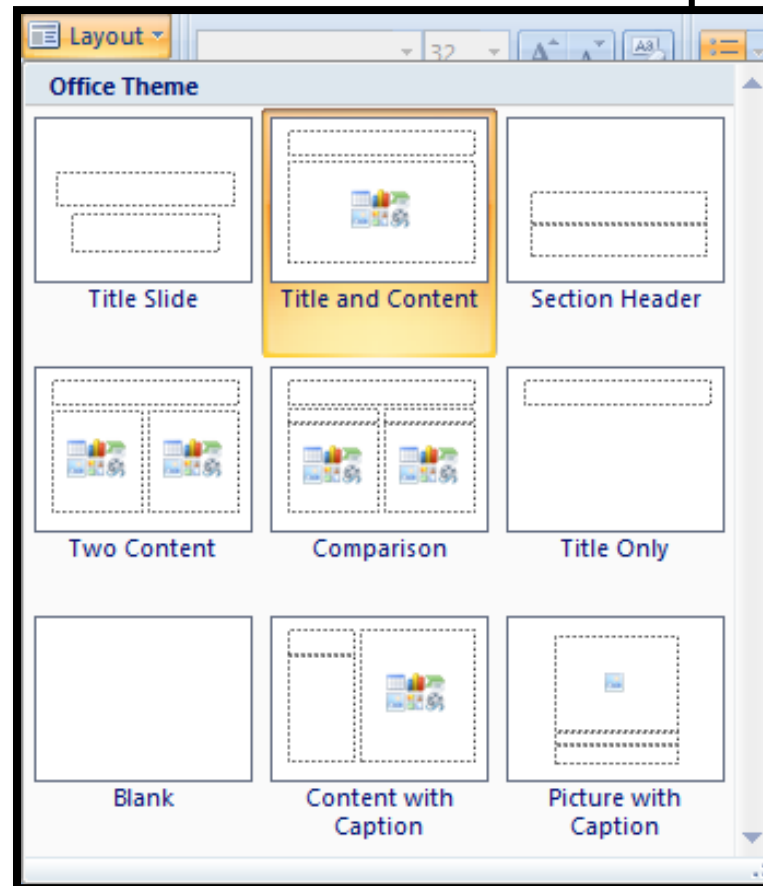


Figure : Different Layout Designs

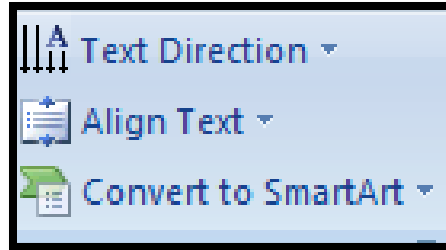
3. Reset :

- This button is used to reset the slide position, size, and formatting to its default value.
- Reset the position, size and formatting of the slide placeholders to their default settings.

4. Delete :

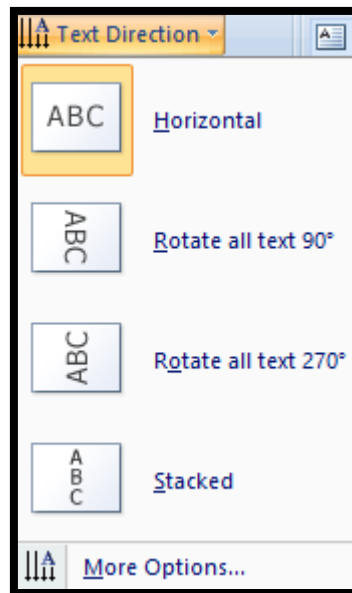
- Removes the slides currently selected.

Home Tab 2. Paragraph (Text Direction, Align Text, Convert to Smart Art)



1. Text Direction :

- To change the orientation of text to vertical or stacked, click this button.
- It is also possible to rotate the text using this button.



2. Align Text :

This button is used to specify how text is aligned vertically in the text box. The default options are top, bottom, and middle.

3. Convert to SmartArt :

- Convert text to the smart graphic to visually communicate information.
- Smart Graphics range from graphical lists and process diagram to more complex graphics, such as Venn diagram and organization charts.

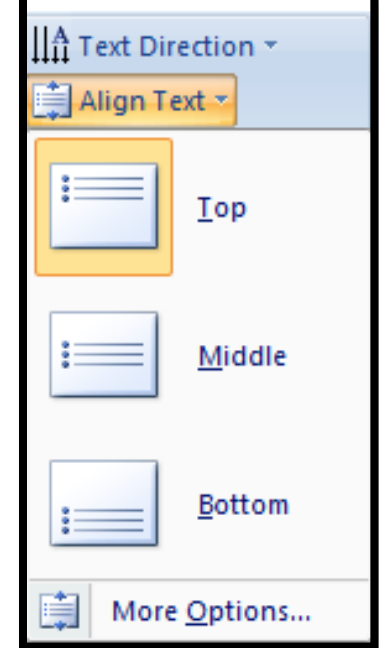


Figure : Align text

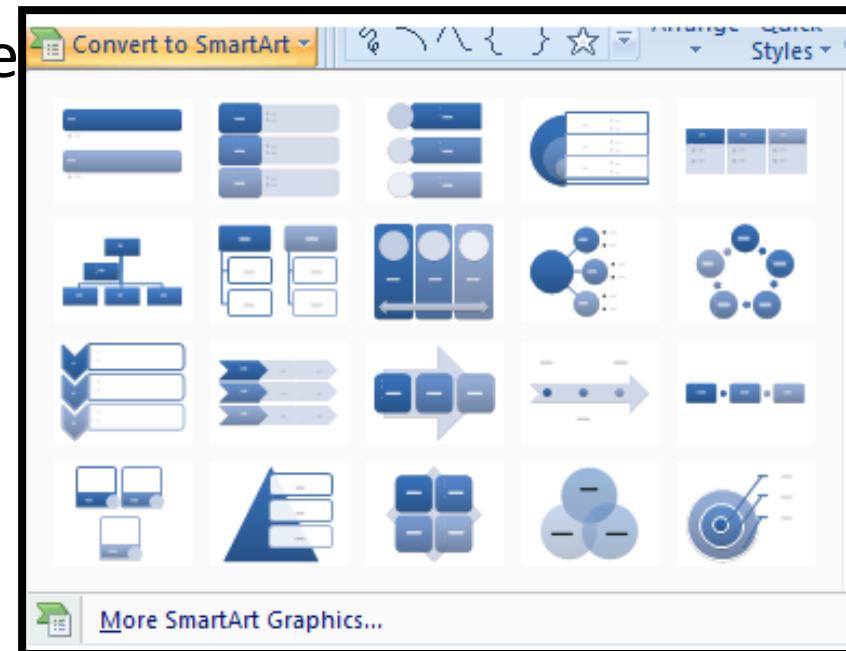


Figure : Convert to Smart Art

Home Tab 3. Drawing Options

- **Drawing**

This area allows you to draw shapes, arrange them, and style them:



- On the left there are **Autoshapes**, starting with **Recently Used Shapes**. This can include a **Text Box**, which is counted as a **Basic Shape**.
- Notice that there are three buttons on the right side of the Autoshapes box. The top two will scroll up and down the list of different shape types. The bottom button will show the whole list of shapes.



Figure : Different types of available shapes

- Next, you can arrange the Shapes
- Choose Quick Styles ("presets") for decorating the shapes:
- And then, finally, on the far right, you can use one of the three buttons for:
- **Shape Fill:** choose a fill color (background color) for a shape;
- **Shape Outline:** choose a color and style for the shape's outline
- **Shape Effects:** choose between the many special and 3-D effects: Shadow, Reflection, Glow, Soft edges, Bevel, or 3-D Rotation. There are also presets for you to choose from.

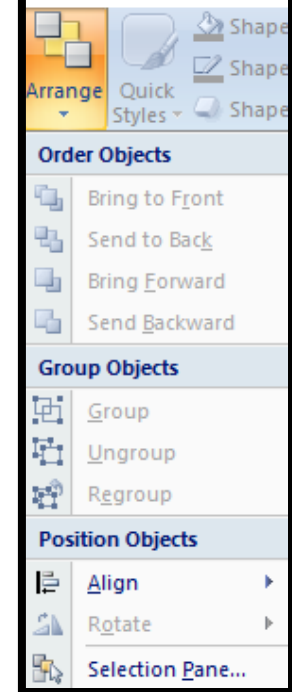
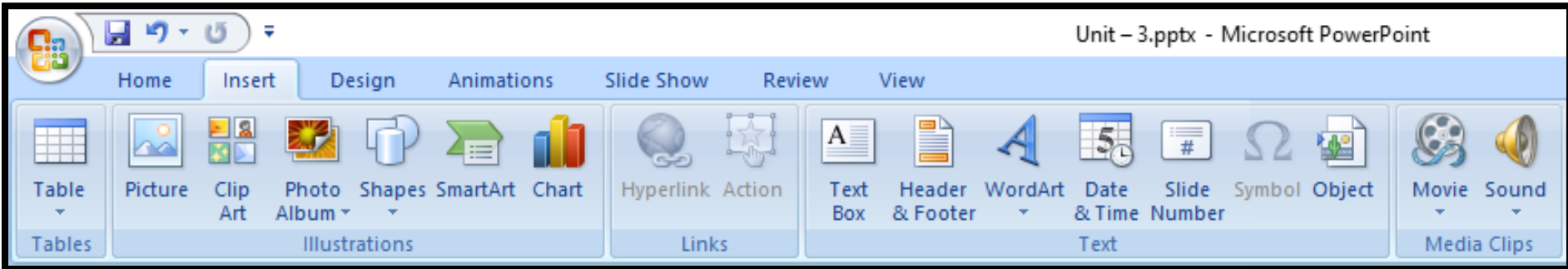


Figure : Arrange Shapes



Figure : Quick Styles

Insert Tab



Introduction :

- The second tab in the Ribbon is the **Insert** tab. This contains the basic set of **Objects** which you can insert into a slide.
- The Insert Tab is used to insert different features such as tables, pictures, clip art, shapes, charts, page numbers, word art, or headers, and footers into a presentation

Insert Tab 1.Tables Group

1. Tables :

- This button is used to insert a table into a slide. A list will appear with a grid that can be used to create the table.
- Additional options for creating a table, such as drawing a table, are also listed.
- If you click on the Tables button, this menu will appear:

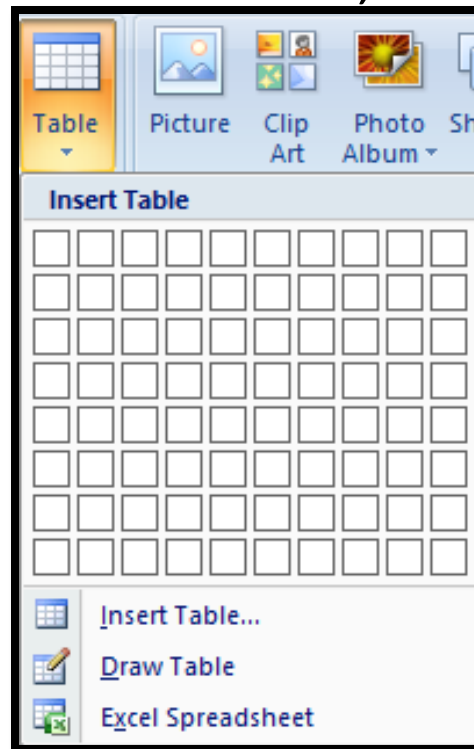
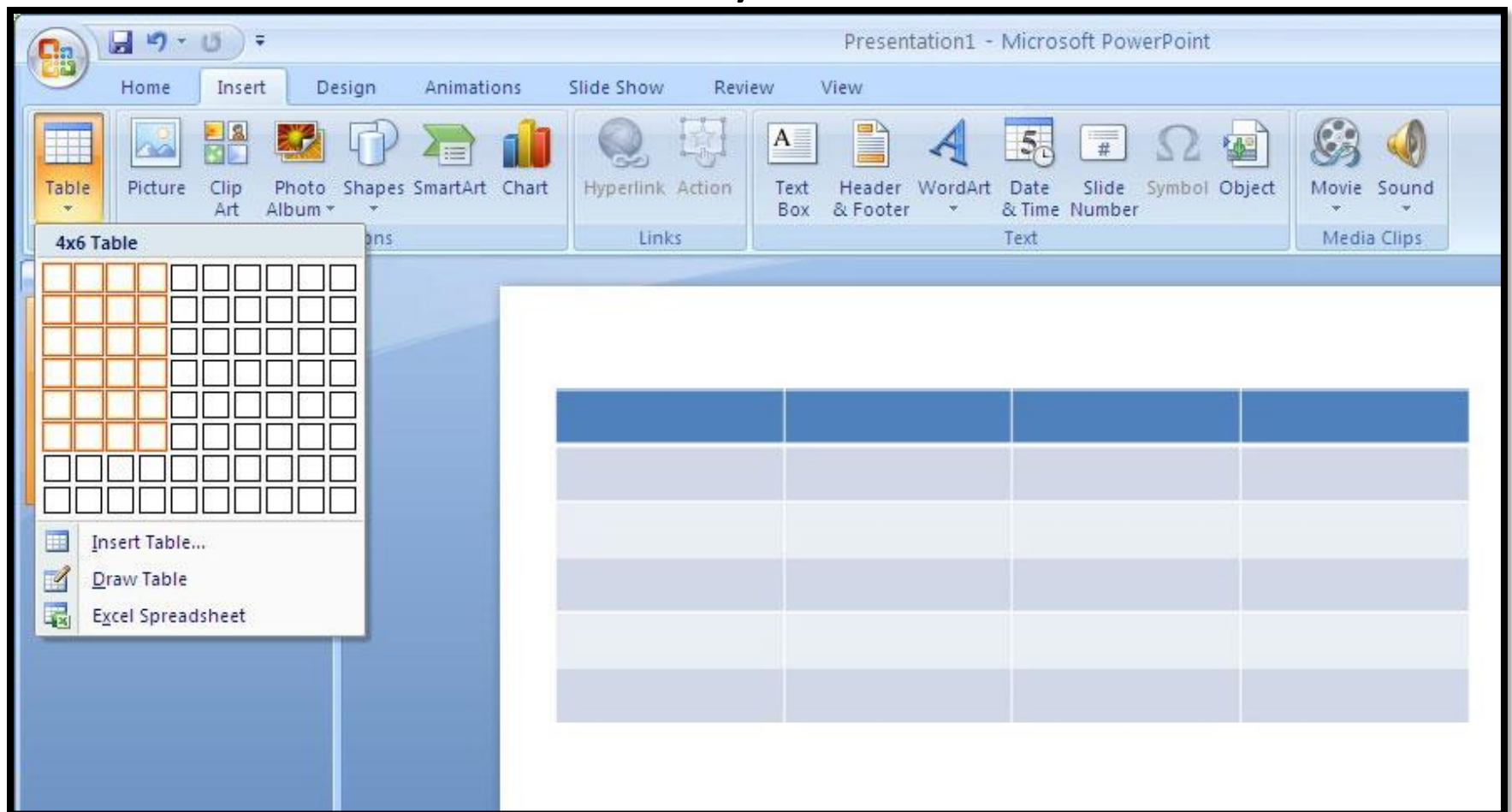


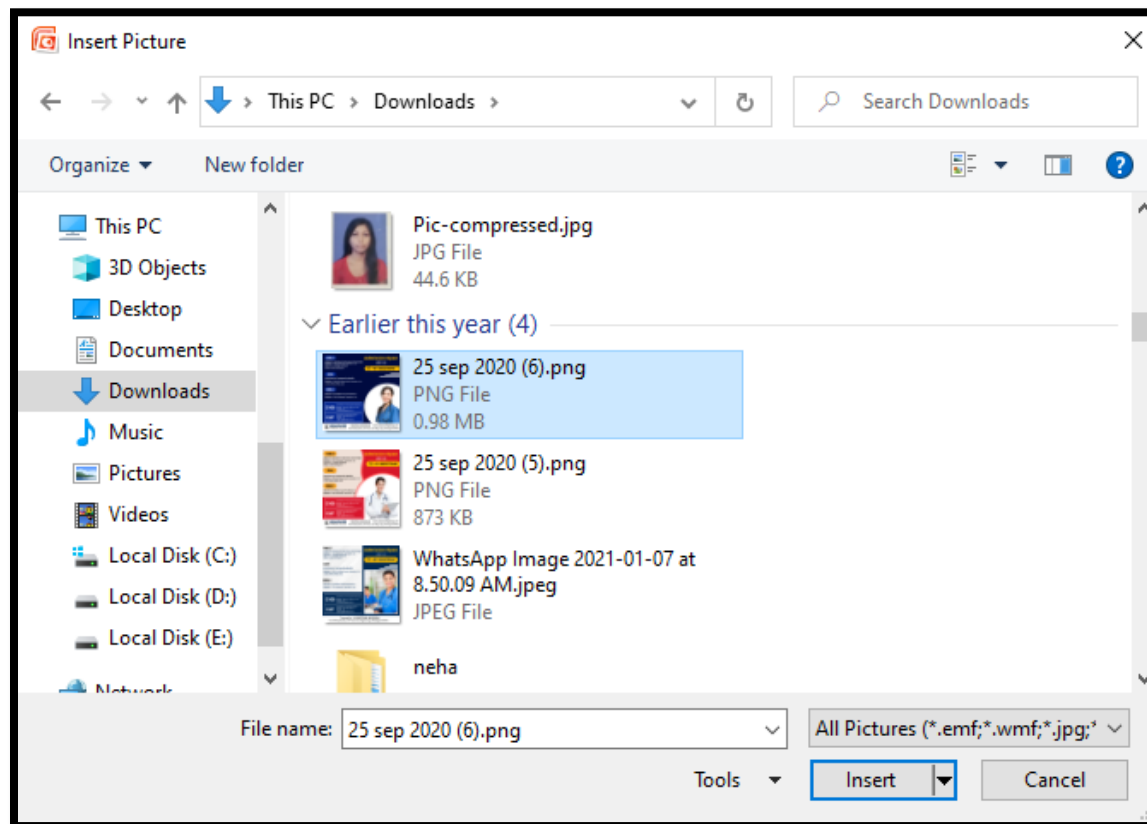
Figure : Inserting table

- You can select the number of columns and rows by dragging the mouse over the grid. Notice that while you drag the mouse, the table dynamically draws itself in the slide, giving you a preview of what the table will look like when you decide on a size:



Insert Tab 2. Illustration Group(Picture, ClipArt, Photo Album, Shapes, Smart Art, Chart)

1. Picture : Pictures To insert a picture from a file into the document, click this button. The Insert Picture dialog box will appear. This dialog box is used to select the picture.



2. **Clip Art** : Displays the Clip Art Task Pane.

To use clip art's gallery , Follow these steps:

- Select desired slide.
- Click on “Insert menu”. A Ribbon is open.
- Point to the “Clip Art” Command in the illustrations group.
- Click on clip art Option .”Insert clip art ” dialog box will appear.
- Search the clip art that you want to insert and click on the image of the clip art .

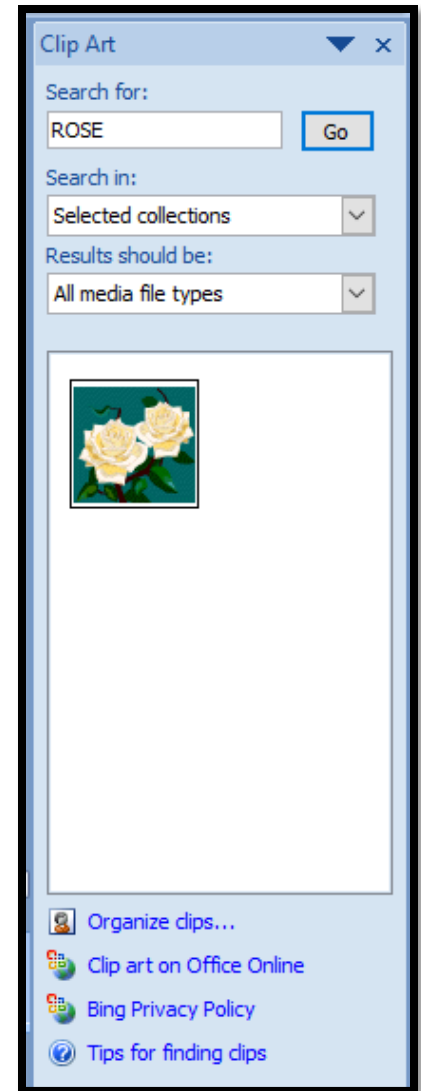


Figure : Clip Art

3. Photo Album : To create a presentation based on a set of pictures, click this button. Options can be set for how the pictures display on the slide. Also, captions may be added to each picture



Steps :

- Click on insert tab.
- Click on “Photo album” Present in In illustration Group, The drop down will appear.
- Click on New Photo album.
- The dialog box will appear for selecting and inserting the images.
- Then click on create button.

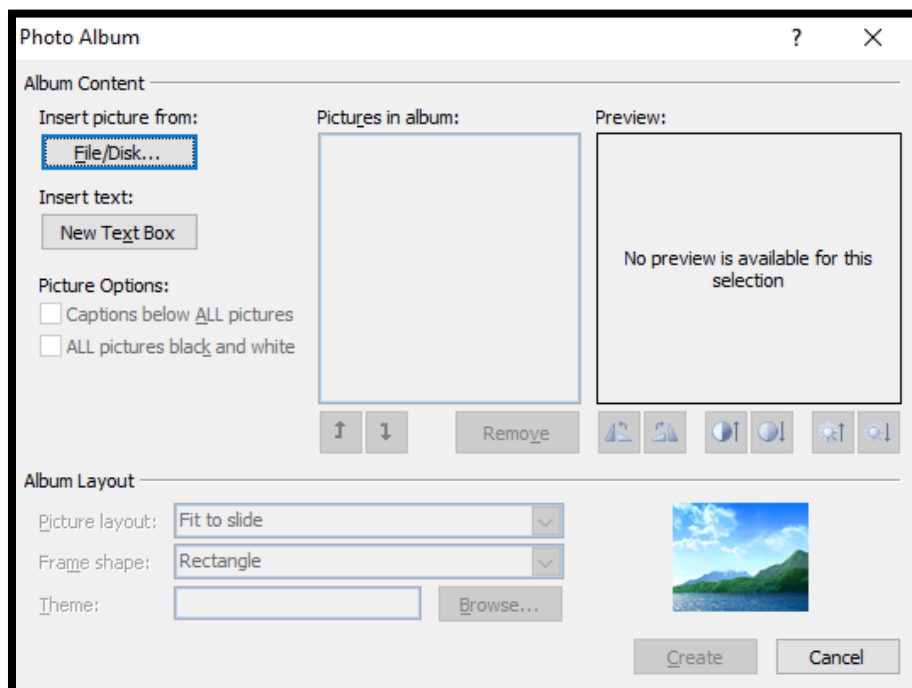


Figure : Inserting the Picture

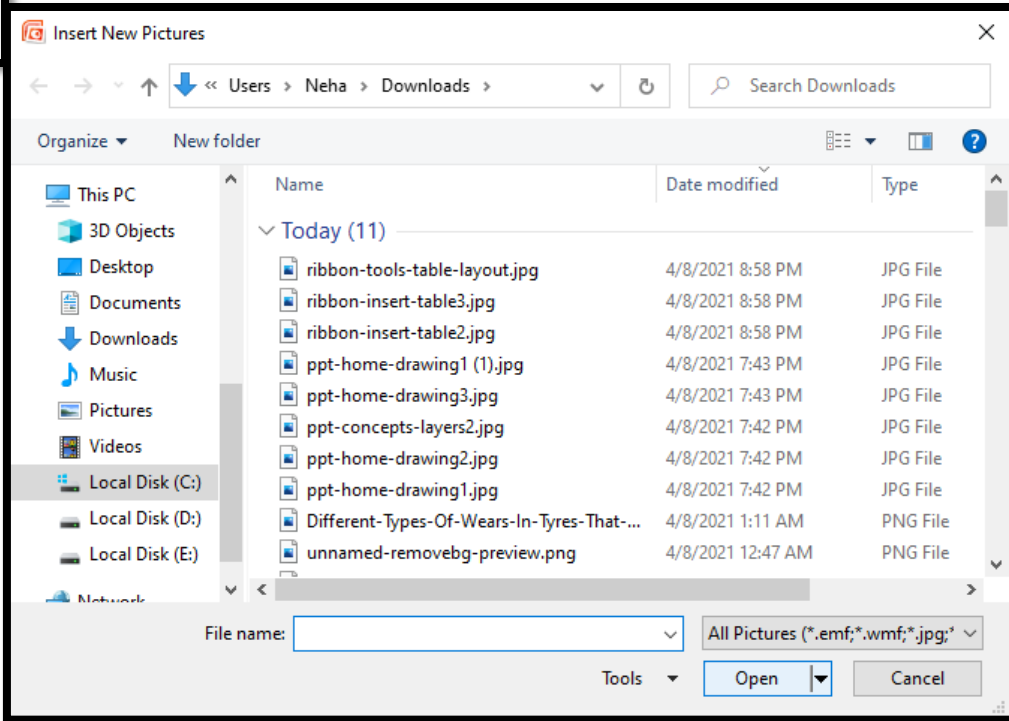


Figure : Selecting the image

4. Shapes:

- add any of more than 100 pre-made shapes.
- This button is used to insert different shapes into a slide.
- A gallery of different kinds of shapes will appear when the button is clicked. To insert a shape, click the desired shape and then draw the shape in the slide..

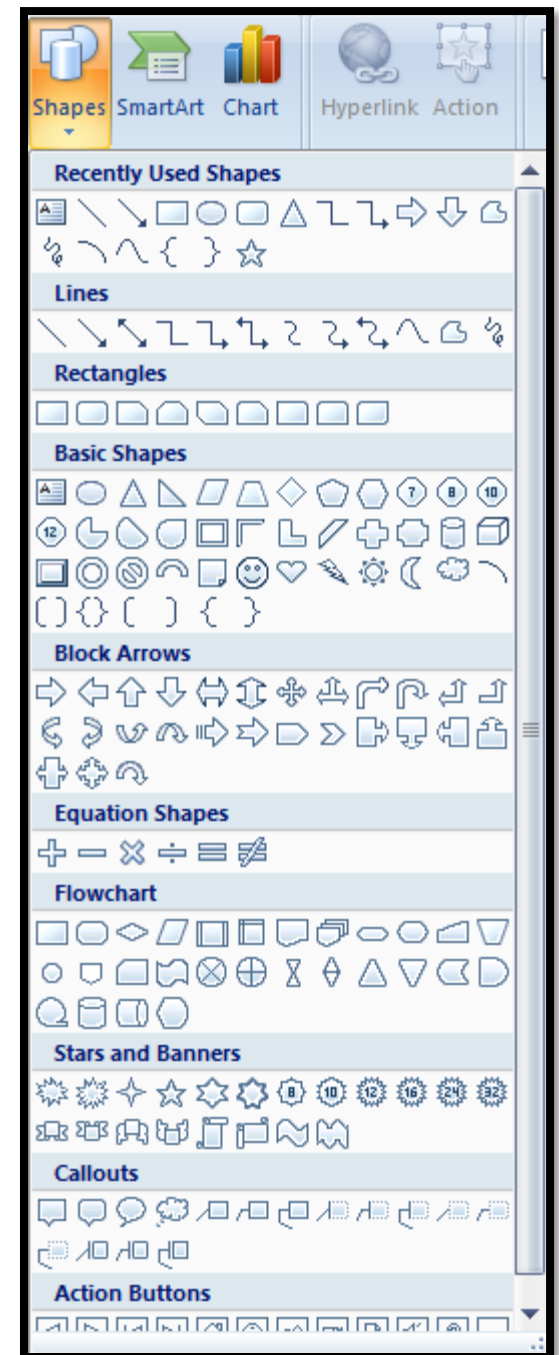


Figure : different Shapes

5. Smart Art :

- To insert a Smart Art graphic into a slide, click this button. Smart Art graphics are objects such as Venn diagrams and organizational charts.
- When the button is clicked, a gallery of different categories and shapes will be display.
- **SmartArt** is a system which allows you to quickly crate visual charts. Click on this, and you get a dialog box:

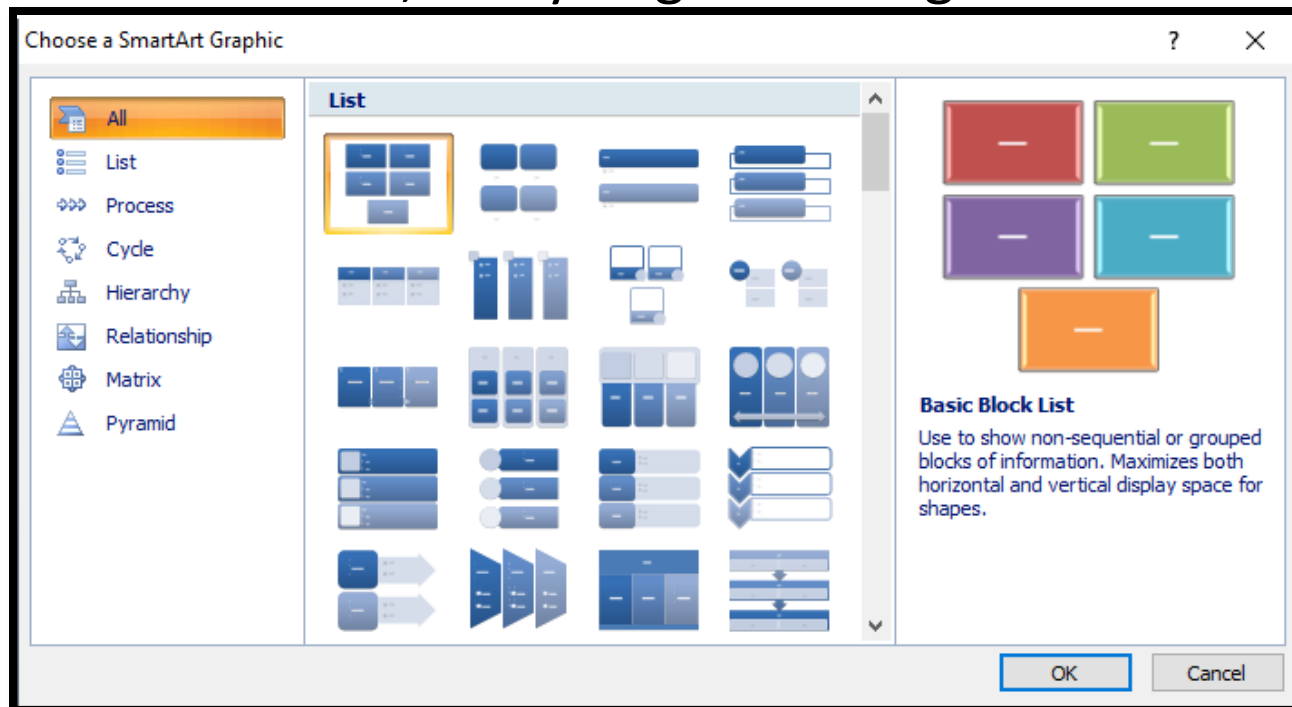


Figure : Choosing the SmartArt Graphic

6. Chart :

- Click this button to display the Insert Chart dialog box. This will display a gallery of different types of charts that can be created in a Power Point Presentation.

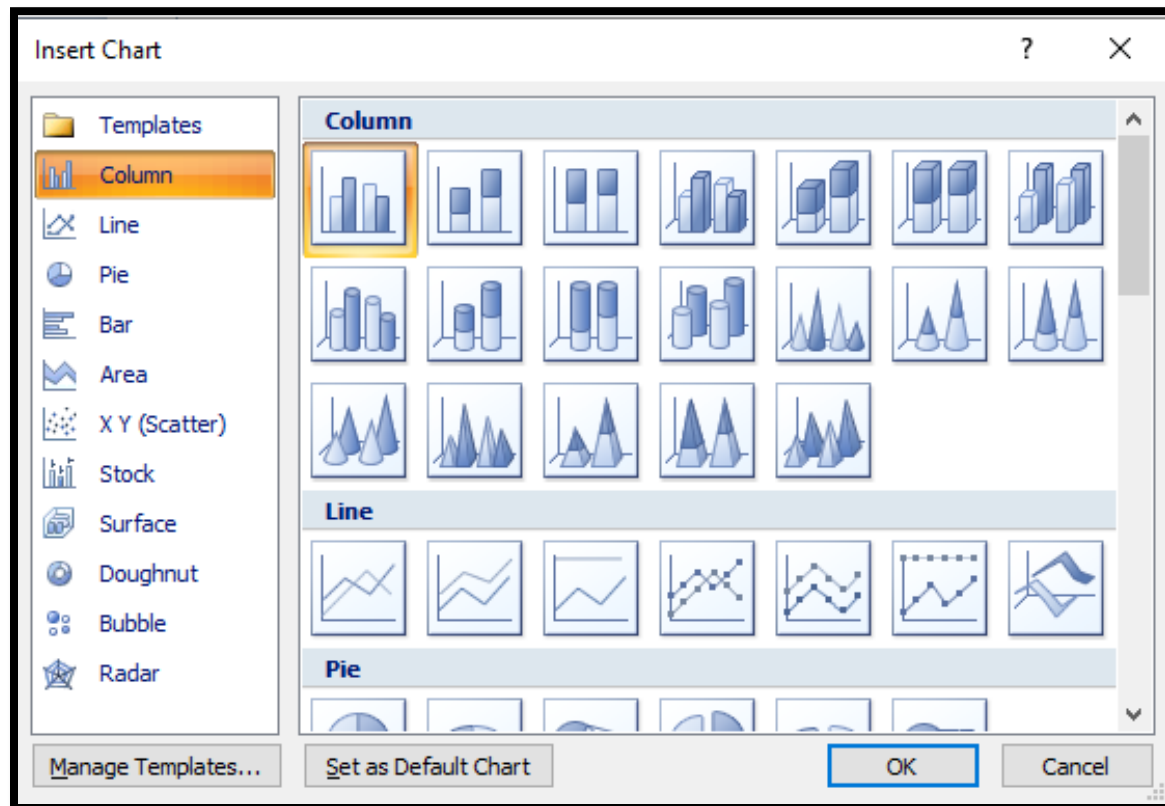


Figure : Inserting the chart

How to Insert Chart :

- Select the Insert tab
- In Illustrations group click on Chart command
- An Insert Chart dialogue box appears
- Select the desired Chart style and click Ok
- Chart will be added to slide and an Excel worksheet appears on right side of the slide

The image shows two windows side-by-side. The left window is Microsoft PowerPoint, titled 'Market PP', with the 'Insert' tab selected. The 'Illustrations' group contains the 'Chart' button. A slide is shown with a bar chart. A red box highlights the chart area, and a red arrow points to it with the text 'Placeholder Data'. The right window is Microsoft Excel, titled 'Chart in Mic...', with the 'Formulas' tab selected. The data range A1:E5 is highlighted with a red box. A red arrow points to this range with the text 'Placeholder Data'. Below the data range, there is a note: 'To resize chart data range, drag lower right'.

	A	B	C	D	E
1		Series 1	Series 2	Series 3	
2	Category 1	4.3	2.4	2	
3	Category 2	2.5	4.4	2	
4	Category 3	3.5	1.8	3	
5	Category 4	4.5	2.8	5	
6					
7					
8					
9					
10					

How to Enter Chart Data :

- We can't enter data directly in charts. To enter data in chart we have to type it in excel spreadsheet that appears when you add Chart or click Edit Chart option.
- The data that you enter in spreadsheet automatically appears in the Chart. Select the cell of spreadsheet and type the data it will appear in the slide. Repeat the process to enter the entire data.

The image shows two side-by-side screenshots. The left screenshot shows a presentation slide with a grouped bar chart. The chart has three series: Team A (blue), Team B (green), and Team C (red). The x-axis is labeled '1 Quarter Sales', '2 Quarter Sales', '3 Quarter Sales', and '4 Quarter Sales'. The y-axis ranges from 0 to 50. A red arrow points to the chart with the text 'Chart Data Appears in Slide'. Below the chart is a text box that says 'Click to add notes'. The right screenshot shows an Excel spreadsheet with the following data:

	A	B	C	D	E
1		Team A	Team B	Team C	
2	1 Quarter Sales	40	20	28	
3	2 Quarter Sales	20	40	20	
4	3 Quarter Sales	30	10	35	
5	4 Quarter Sales	40	24	45	
6					
7					
8					
9					
10					

A red arrow points to the data range (B2:D5) with the text 'Chart Data Entered'. Below the arrow is the text 'To resize chart data range, drag lower'. The spreadsheet title is 'Sheet1'.

INSERT TAB 2. LINKS GROUP (HYPERLINK, ACTION)



1. Hyperlink :

- With the help of this option, we can link any other file in our file. Which will open when clicked with the mouse during the slide show.
- To insert a link to items such as a Web page, another document, or an email address, click this button. The Hyperlink dialog box will display where the link can be specified. It is also possible to create a new document, worksheet, or presentation while creating a link to the item

Steps To create a hyperlink :

- Enter some text which you want to make hyperlink.
- Select the text and then click on “Hyperlink button” in Links Group. The dialog box will appear.
- Select the file that you want to attach. and then click on “OK”.

Here Is The Link

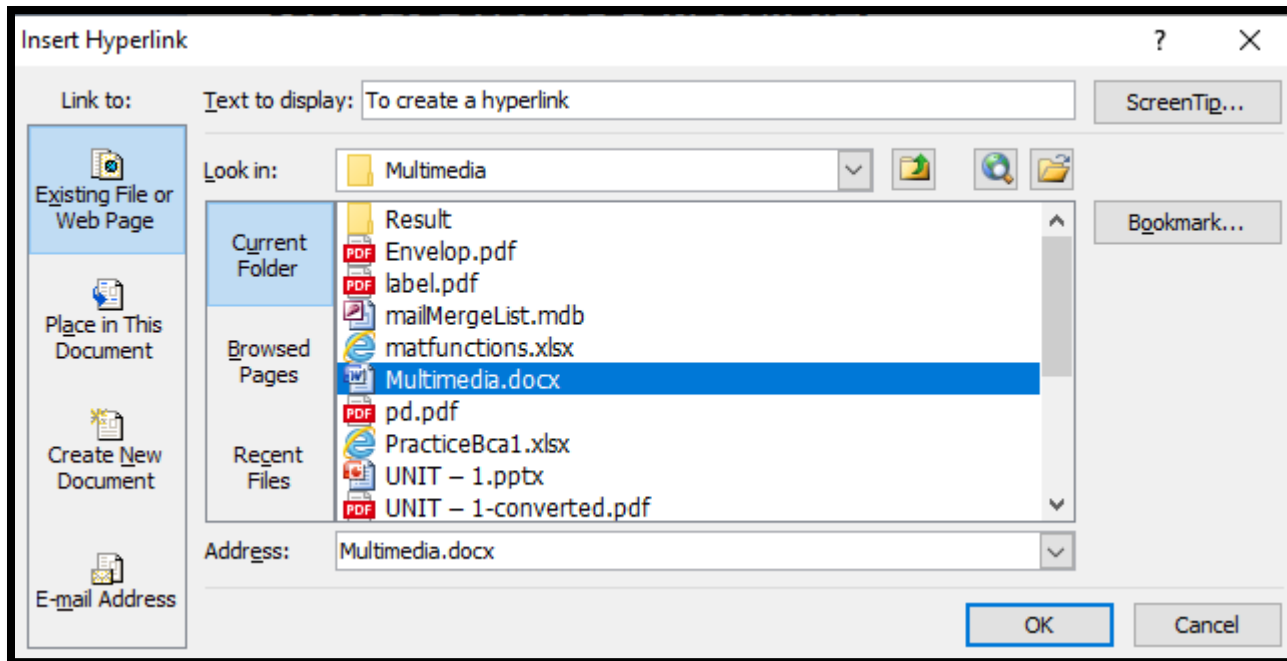


Figure : Selecting the file to attach in hyperlink

2. Action :

- When some type of actions such as creating a hyperlink to an object or inserting a sound is to be specified, click this button.
- The Action Settings dialog box will appear. In this dialog box, it is possible to create hyperlinks to other files, other PowerPoint presentations, to the first or last slide in the presentation, or too many other areas.
- It is also possible to apply a sound to the selected object.
- With this option, you select a shape and apply the action to the shape that the action shows during the slide show such as next slide, previous slide, end show, etc.

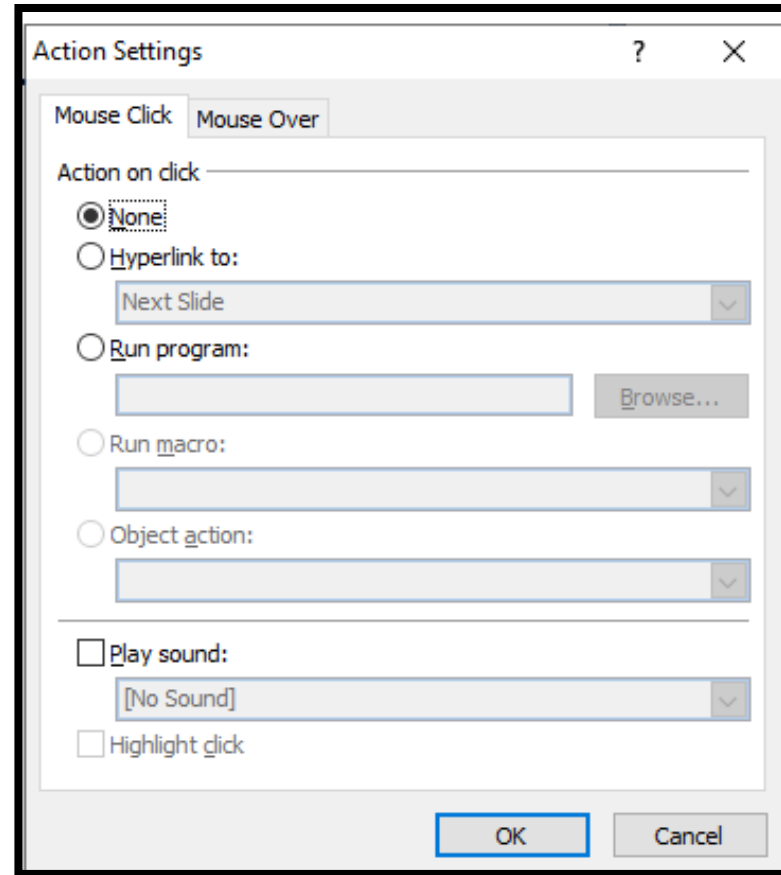
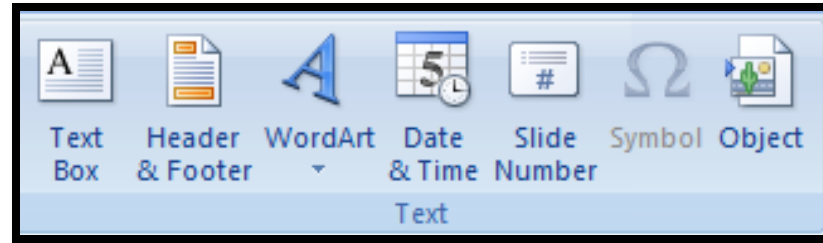


Figure : Setting the action of the object

Insert Tab 3. Text Group (Text Box, Word Art, Object)



1. Text Box :

- Inserts a textbox that can be positioned anywhere on the page.
- Text boxes are used to highlight text within a presentation.
- With this option, a box can be created in the slide in which text can be written.



Figure :Inserting text box

2. Word Art :

- Insert decorative text in your Document.
- The drop-down gives you a choice of Word Art styles to insert.
- When the button is clicked, a gallery of Word Art styles will be displayed. Click one of the styles to apply it to the Text.

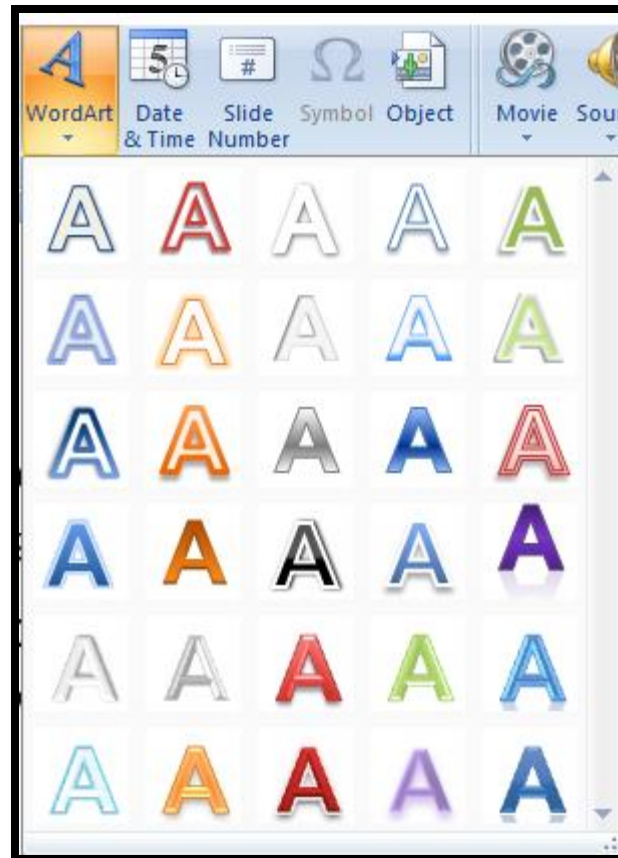


Figure : Word Art Styles

3. Object :

- Use this button to insert an object such as an Excel Worksheet or an Excel Chart into the presentation.
- By this option we can add other program's file like Word, Excel, PowerPoint, Photoshop etc. Or we can Insert already created file of other program then MS PowerPoint.

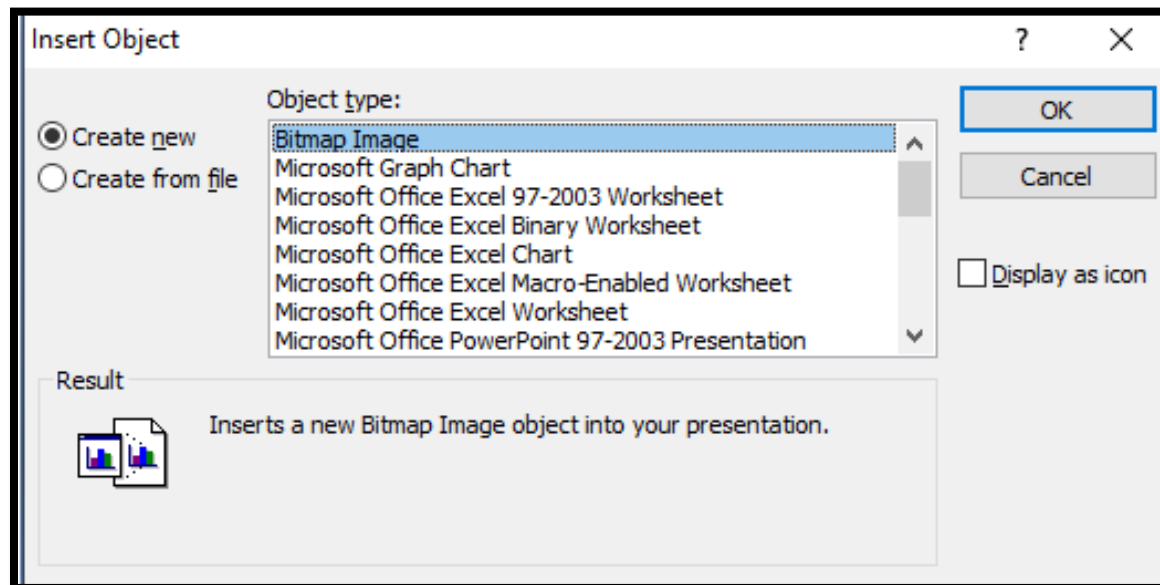
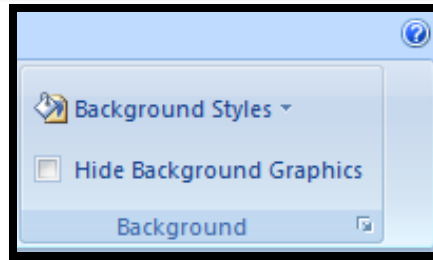
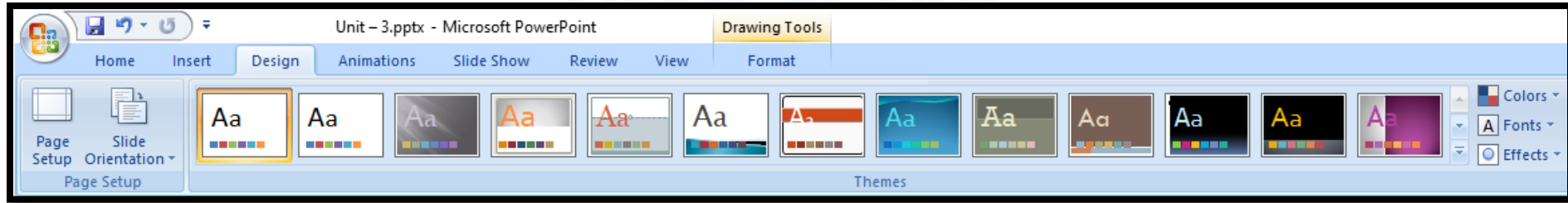


Figure : Selecting the Object

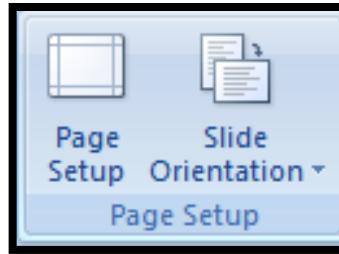
DESIGN TAB



Introduction :

- ❑ This tab is used to apply a design to a PowerPoint presentation.
- ❑ It is also possible to make changes to the slide size, slide background, and other design attributes.

Design Tab 1. Page Setup Group (Page setup, Slide Orientation)



1. Page Setup :

- This allows you to change basic page elements including slide sizes, orientation, and slide numbering.
- It also Provides the features of changing the height and width of the slide.
- Click on the Page Setup command the following dialog box will appear for all the settings :

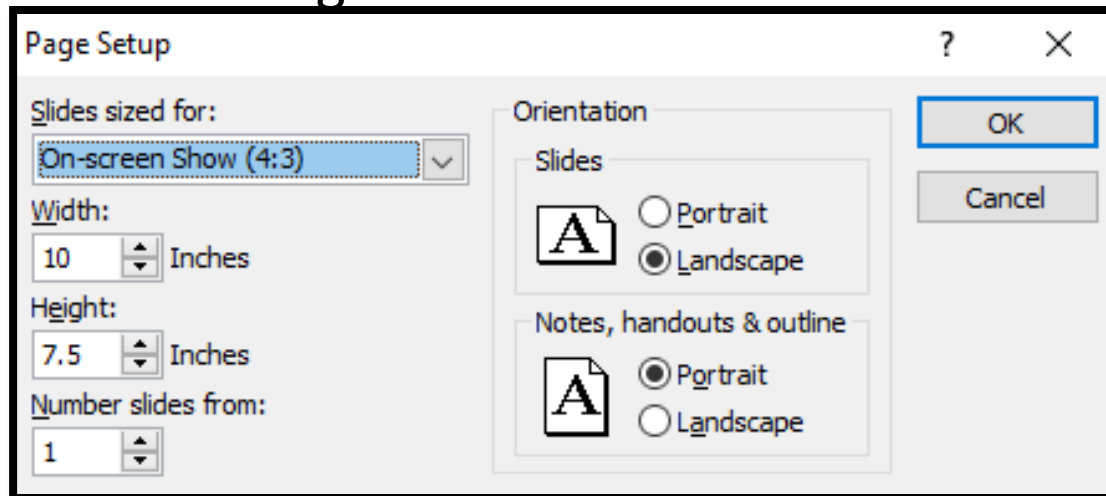


Figure : Page Setup

2. Slide Orientation :

- The second button simply allows you to change the slide orientation quickly--from horizontal to vertical ("landscape" to "portrait").

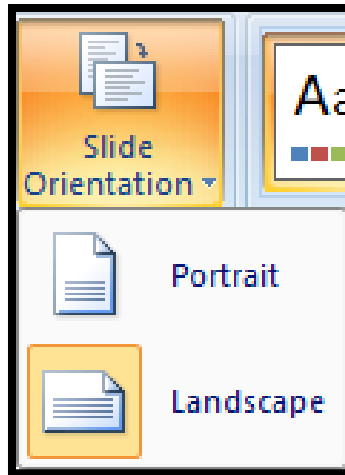
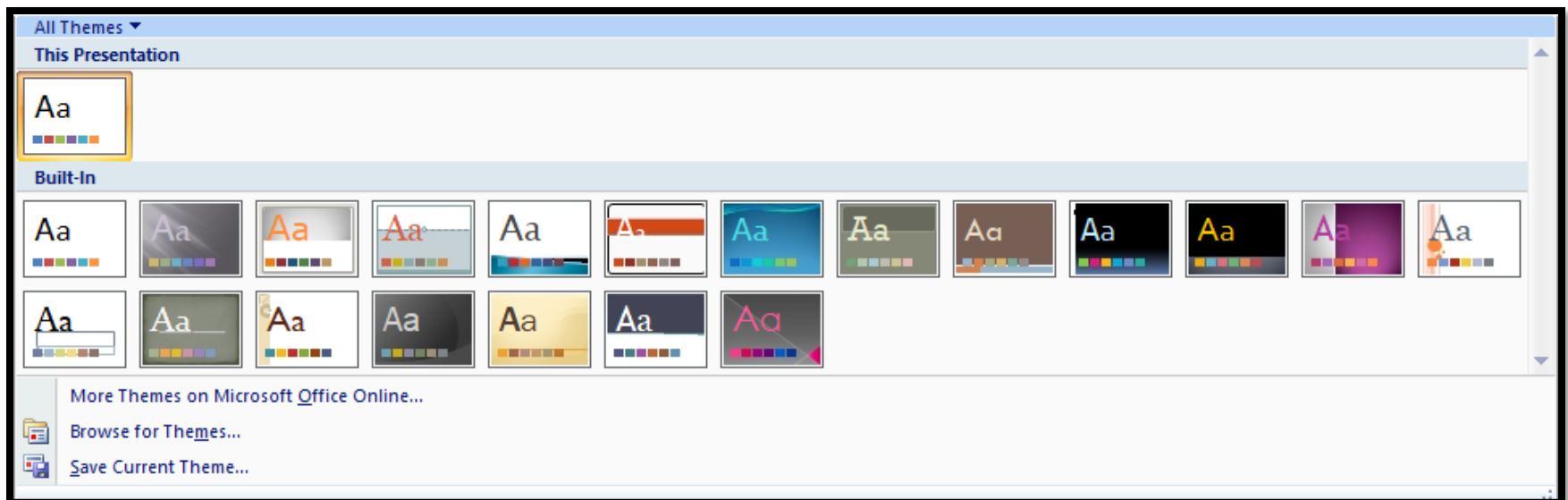


Figure : Slide Orientation

Design Tab 2. Themes Group

- Here you can choose the overall appearance for your entire slide show.
- Themes are an easy way to design a whole slide show. Every slide in the presentation will change to match the background, font, colors, and effects chosen for each theme.
- The good point about themes is that they are easy and quick and make your presentation look nice.
- Move the mouse pointer over each of the designs to see a Live Preview. Click the design to apply it to the presentation.
- To access additional themes, click the arrows at the end of the Styles Gallery. To display all the designs, click the More button in the lower right corner of the gallery.



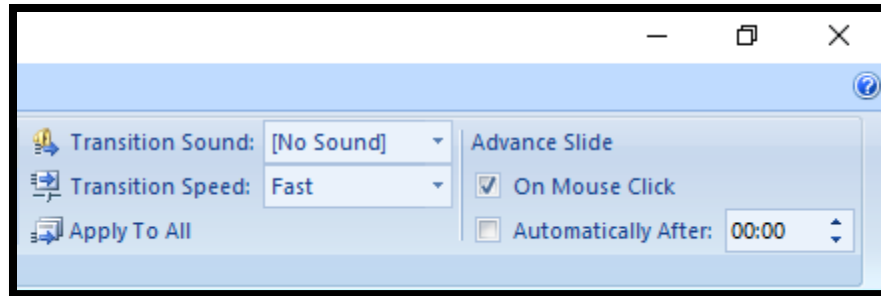
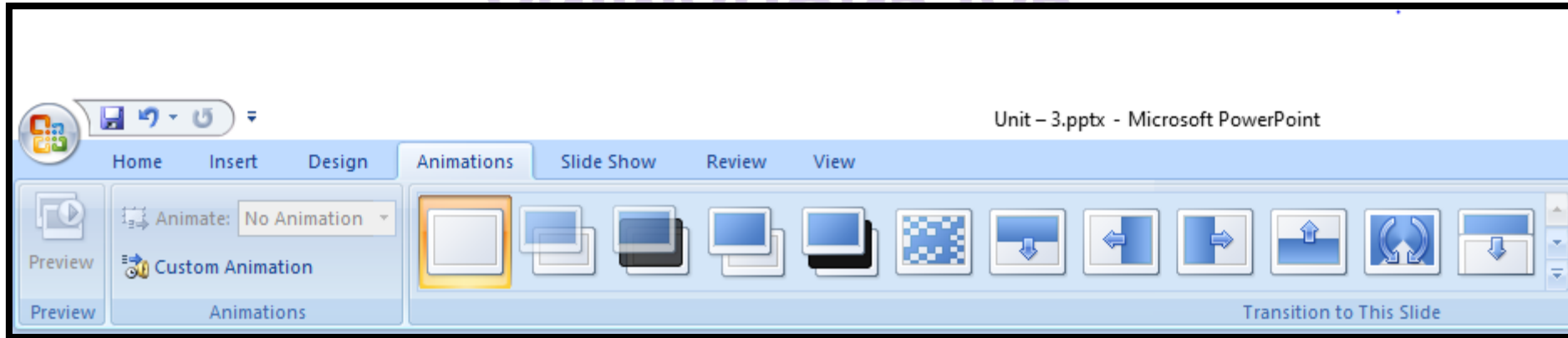
Design Tab 3. Background Group (Background styles, Format Background)

- Clicking on "Background styles" lets you choose quickly from the styles below:
- If you click on "Format Background," you can choose far more detail about the slide background.



Figure : Different Background Styles

ANIMATIONS TAB



Introduction :

- Animation can help make a PowerPoint presentation more dynamic, and help make information more memorable.
- This tab can be used to set animations for the PowerPoint presentation. Animations determine how the bullets, pictures, images, and other objects will enter the slide during a presentation.

Animation Tab 1. Animations Group (Custom Animations)

- There are several animation effects you can choose from, and they are organized into four types.
- **Steps :**
 - i) In Normal view, display the slide that has the text or objects we want to animate.
 - ii) Select the object we want to animate.
 - iii) On the slide show menu , click custom animations.
 - iv) It Gives us various option present in add effect button.
 - v) Choose the effect from the drop down that you want.

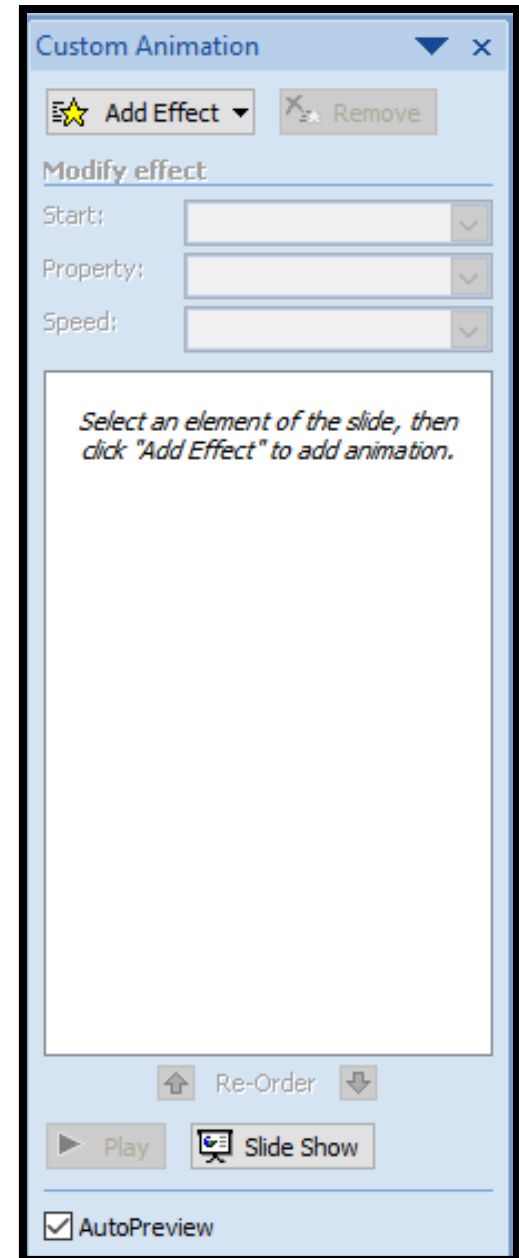


Figure : Custom Animations

1. Entrance: These control how the object enters the slide. For example, with the **Bounce** animation the object will "fall" onto the slide and then bounce several times.

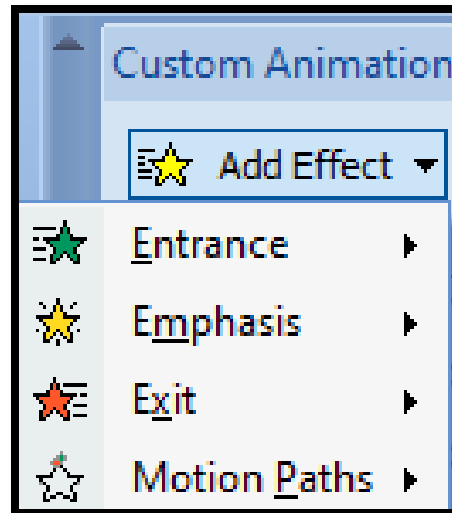


Figure : Types of animations

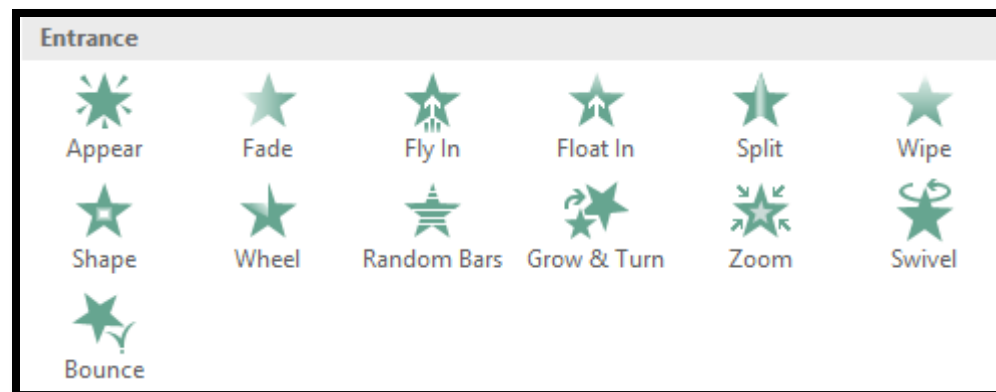


Figure : Entrance Effects

2. Emphasis: These animations occur while the object is on the slide, often triggered by a **mouse click**. For example, you can set an object to **spin** when you click the mouse.

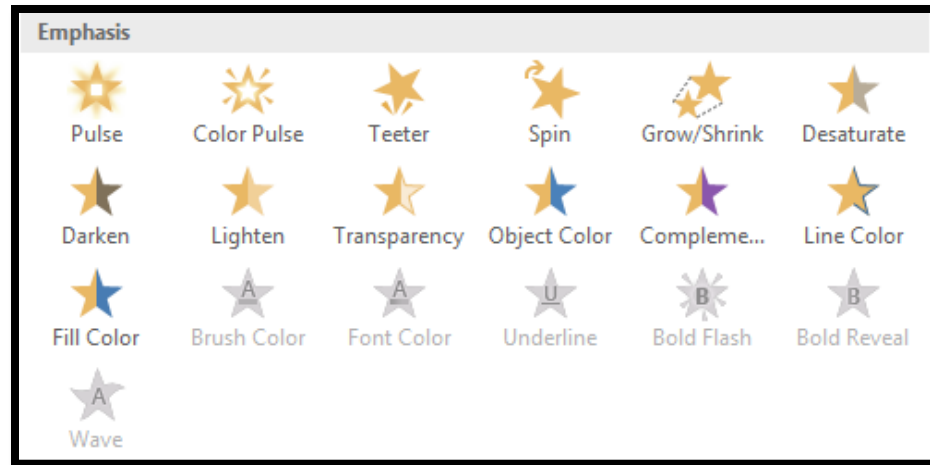


Figure : Emphasis Effects

3. Exit: These control how the object exits the slide. For example, with the **Fade** animation the object will simply fade away.

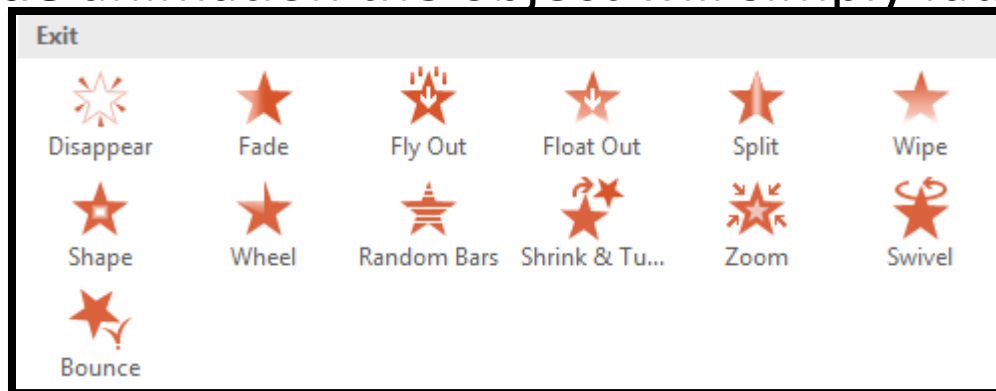
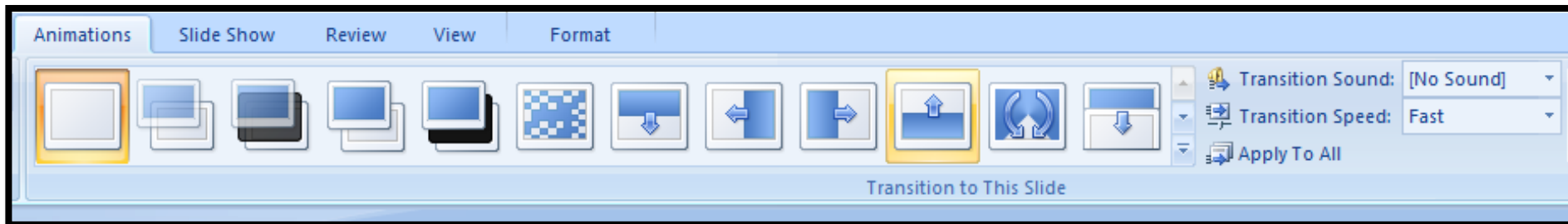


Figure : Exit Effects

Animations Tab 2. Transition to this slide (Apply slide transition, setting transition speed and sound)



Add transition between slides :

- Select the slide to which you want to apply the effect
- Select the Animation tab
- In Transition to This Slide group you will see the transition effects
- Click the drop-down arrow to see menu of transition effects
- Select the desired transition effect
- Click Apply To All to apply the effect to all slides

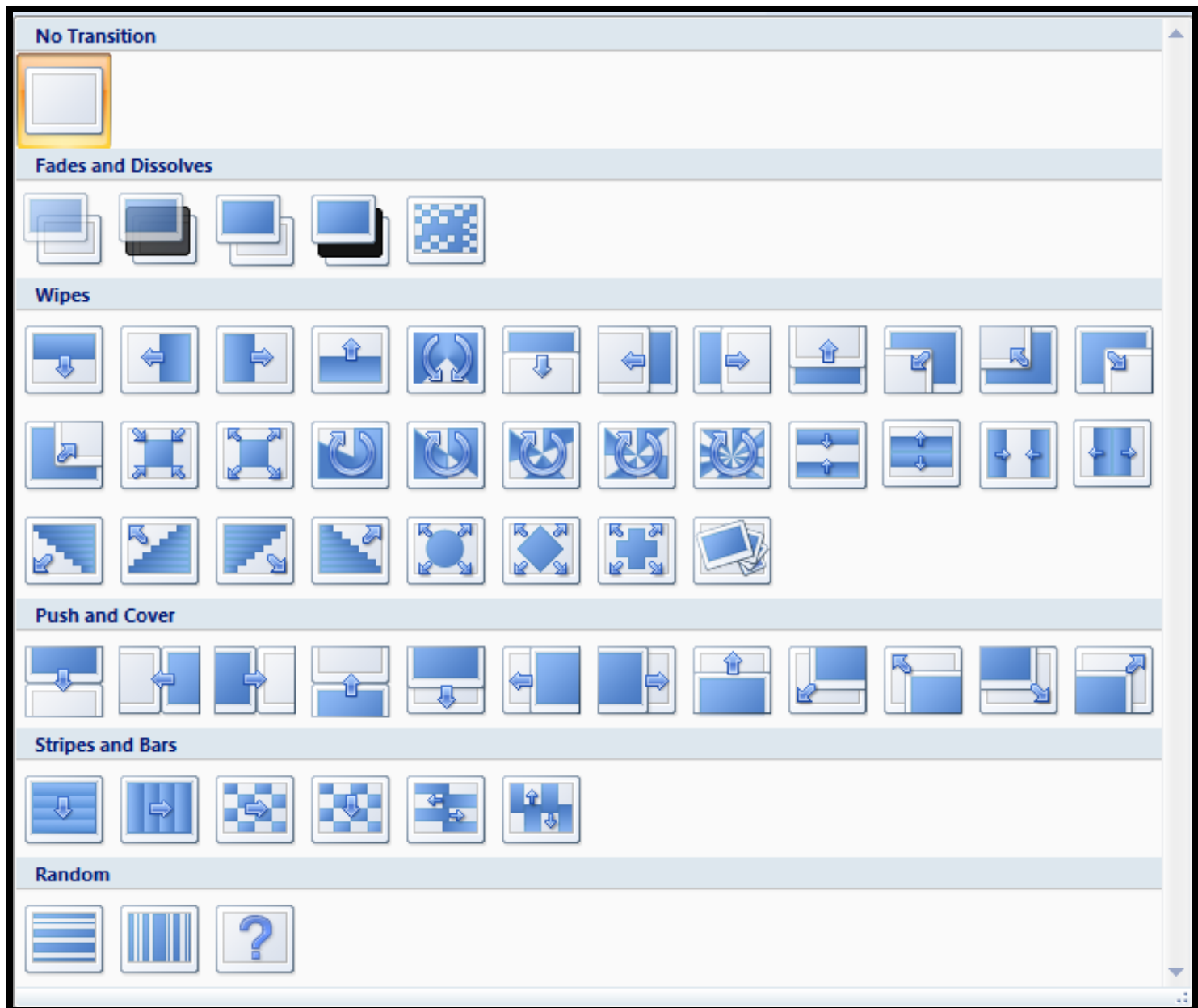
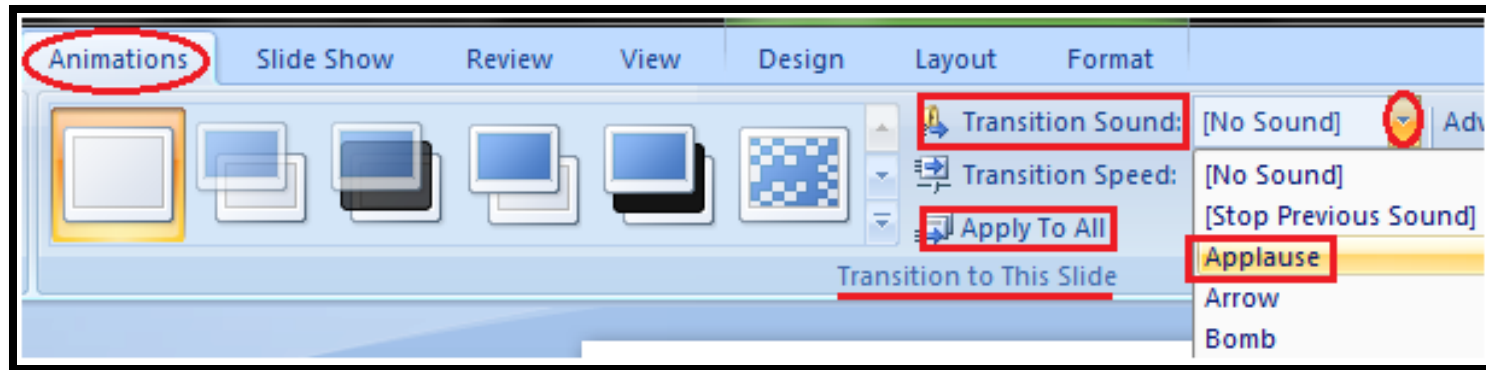


Figure : Different Slide transition

ii) Setting transition speed and sound :

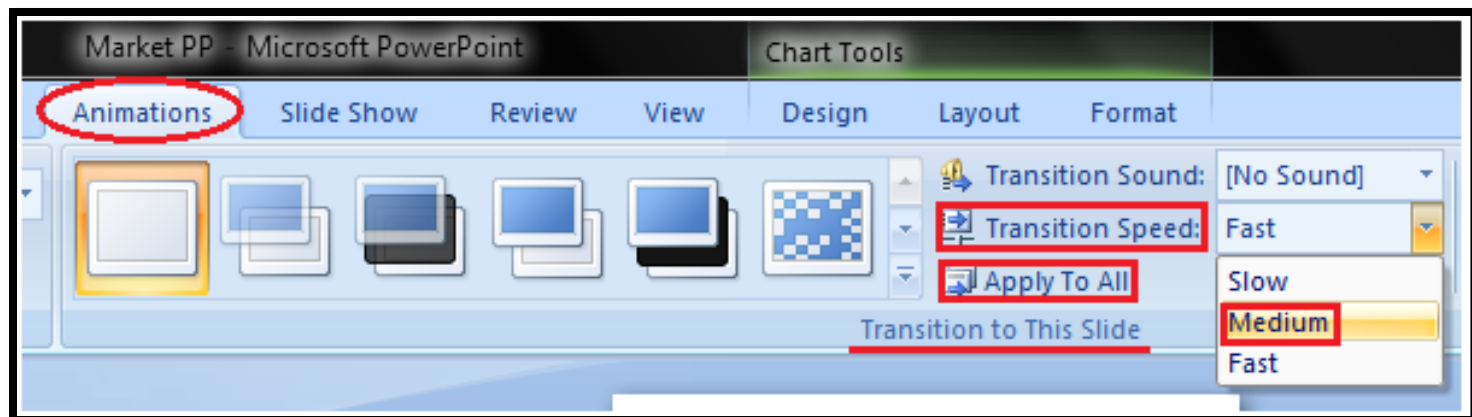
How to Set Slide Transition Sound

- Select the slide to which you want to add the transition sound
- Select the Animation tab
- In Transition to This Slide group click the drop-down arrow next to Transition Sound option
- A list of different transition sounds appears
- Select the desired transition sound
- Click Apply To All to apply the effect to all slides



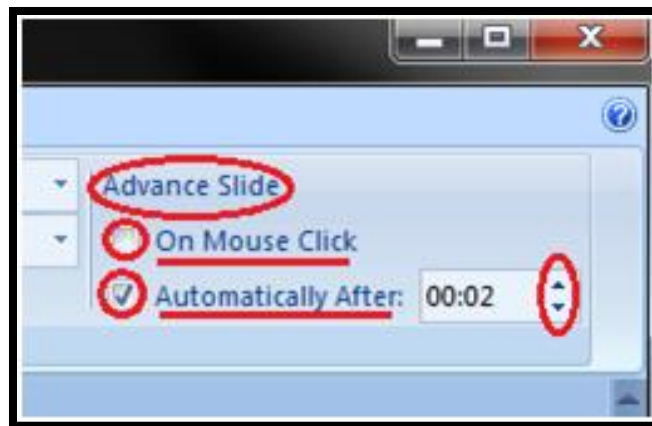
How to Set Slide Transition Speed :

- Select the slide
- Select the Animation tab
- In Transition to This Slide group click the drop-down arrow next to Transition Speed option
- It will display three options for transition speed
- Select the desired transition speed
- Click Apply To All to apply the same transition speed to all slides

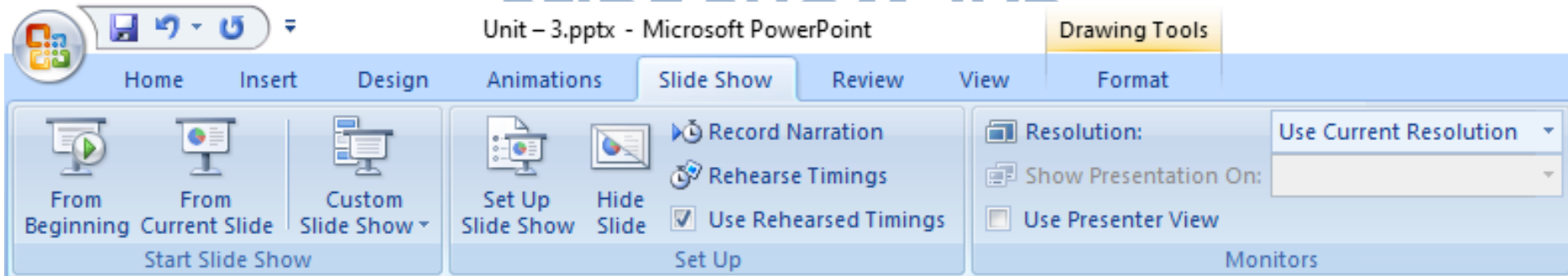


Animation on rehears timing

- Select the slide
- Select the Animations tab
- In Transition to This Slide group locate the Advance Slide section
- It shows two options; On Mouse Click and Automatically After
- Enter the desired time for the selected slide in Automatically After option
- Select the next slide and choose the desired time
- Click Apply To All If you want to apply the same timing to all slides

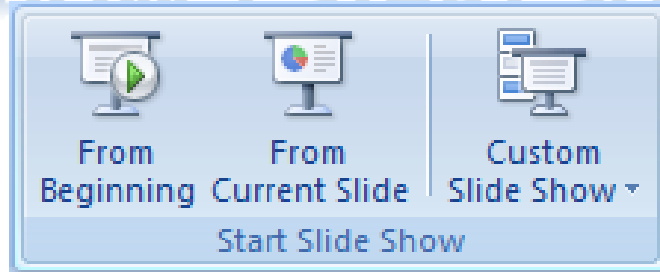


SLIDE SHOW TAB



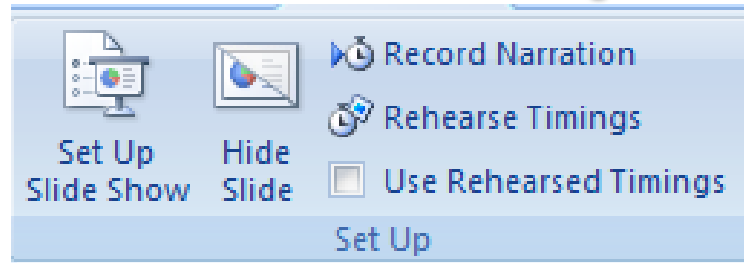
- This tab provides options for presenting the Slide Show to the audience. Narration for the show can be recorded.
- Decisions can be made as to where to start the presentation. In addition, custom shows can be created.
- This contains tools that control how the slide show is presented.

SLIDE SHOW 1.START SLIDE SHOW



- i) **From Beginning (F5)** : Click this button to start the slide show at the first slide. This will start the show at the beginning.
- ii) **From Current Slide (Shift+F5)** : This option is used to start the presentation from the active slide in the slideshow.
- iii) **Custom Slide Show** : Using this option we can select some slides from the presentation and run it separately. Using this option, we select the desired slide from the presentation and make a set and save it by giving a name. Which can be run separately.

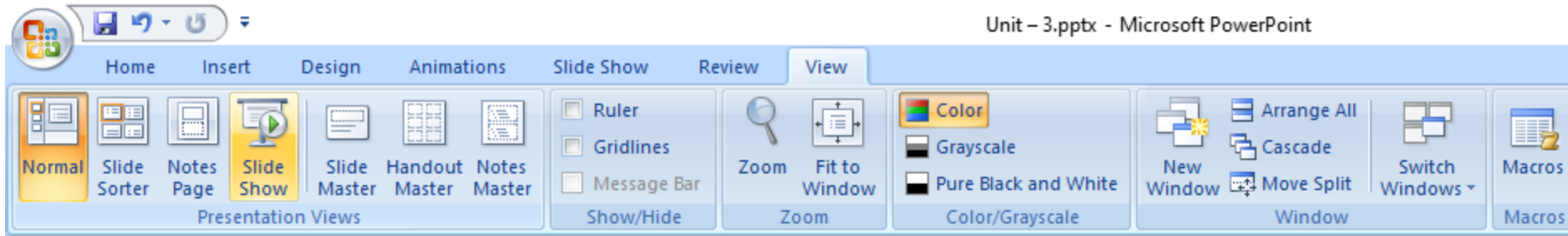
Slide Show 2.Set Up Group



- i) **Set Up Slide Show** : In this option, we do some setup related to slides such as which slide to show from the presentation - Like All, some special series or custom slides.
- ii) **Hide Slide** : With this option we hide the active slide. ie the hidden slide will not be visible in the slideshow.
- iii) **Record Narration** : To record a narration to go with the slides in the presentation, click this button. The Record Narration dialog box will display where the options for recording can be set
- iv) **Rehearse Timings** : On clicking this option, the timer runs along with the slideshow, after the slideshow finished, it tells how much time the presentation has been taken. So you can rehearse with the presentation from the timer.
- v) **Use Rehearsed Timings** :Click the check box for this option if the timings that were set up will be used during the presentation.



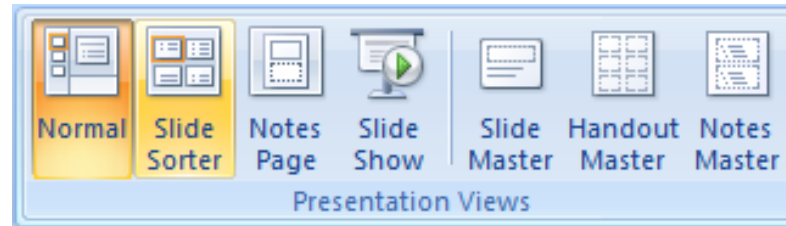
VIEW TAB



- When working with PowerPoint, this tab is used to view the presentation in different formats, it is also used to view more than one PowerPoint window at a time, or to decide whether to display the ruler within the window.



View Tab 1.Presentation Views



- i) **Normal** : Display the presentation in the normal working view. This is the default view for all PowerPoint presentations. In this view, the slide pane and thumbnails of the slides will be displayed.
- ii) **Slide Sorter** :It is used to easily Rearrange the slide. To view the slides as thumbnails, click this button. The slides will appear in columns and rows. This format makes it easy to rearrange the slides.
- iii) **Notes Page** : Display the presentation in notes view for editing the speaker notes. This view focuses on the Notes area.
- iv) **Slide Show** : This starts the slide show.



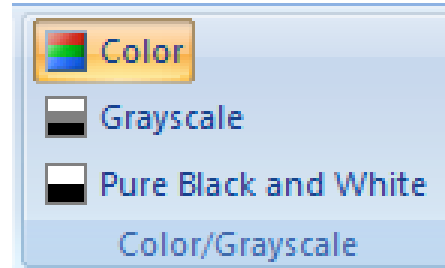
v) Slide Master : Displays the slide master letting you change the design and layout of the master slides. When you open the Slide Master, it will show you a slide with many pre-set text and media placeholders. These are intended to make it easier for you to add a commonly-used slide element or style.

vi) Handout Master : Open handout master view to change the design and layout of Printed handouts.

vii) Notes Master : This button is used to change the way the notes page is displayed and printed.



View Tab 2. Color / Grayscale Group



- i) **Color** : To view the presentation in color, choose this option. This is the default option for viewing presentations.
- ii) **Grayscale** : This button is used to view the presentation in grayscale. Gray-scale shows the presentation in black and white with gray tones.
- iii) **Pure Black and White** : When this option is chosen, the presentation will be shown in black and white without any gray tones.



View Tab 3. Window Group

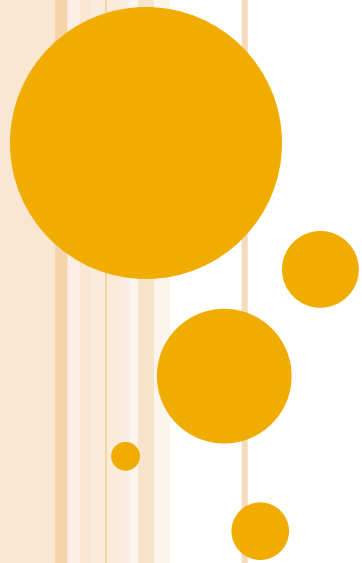


- i) **New Window** : To open a new PowerPoint window, click this button. A new window will open with the same presentation. The presentation will have a number after the name.
- ii) **Arrange All** : Click this button to tile the open windows on the screen side-by-side.
- iii) **Cascade** : Use this button to tile the open windows so that they overlap vertically on the screen.
- iv) **Move Split** : This option is used to move the splitters that separate the different sections of the window.
- v) **Switch Windows** : Click this button to switch from one window to another window. A list of the open windows will display when the button is clicked.




UNIT - 4

WORKING WITH MS ACCESS



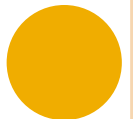
TOPIC :FRONT-END AND BACK-END OF APPLICATION

Front End Development:

- The part of a website that the user interacts with directly is termed the front end. It is also referred to as the 'client side' of the application.
 - It includes everything that users experience directly: text colors and styles, images, graphs and tables, buttons, colors, and navigation menu. HTML, CSS, and JavaScript are the languages used for Front End development.
 - The structure, design, behavior, and content of everything seen on browser screens when websites, web applications, or mobile apps are opened up, is implemented by front End developers.
- 

Front end Languages: The front end portion is built by using some languages which are discussed below:

- **HTML:** HTML stands for Hypertext Markup Language. It is used to design the front-end portion of web pages using a markup language. HTML is the combination of Hypertext and Markup language. Hypertext defines the link between the web pages. The markup language is used to define the text documentation within the tag which defines the structure of web pages.
- **CSS:** Cascading Style Sheets fondly referred to as CSS is a simply designed language intended to simplify the process of making web pages presentable. CSS allows you to apply styles to web pages. More importantly, CSS enables you to do this independent of the HTML that makes up each web page.
- **JavaScript:** JavaScript is a famous scripting language used to create magic on the sites to make the site interactive for the user. It is used to enhancing the functionality of a website to running cool games and web-based software.



Backend Development:

- Backend is the server-side of the website. It stores and arranges data, and also makes sure everything on the client-side of the website works fine.
- It is the part of the website that you cannot see and interact with. It is the portion of software that does not come in direct contact with the users.
- The parts and characteristics developed by backend designers are indirectly accessed by users through a front-end application.
- Activities, like writing APIs, creating libraries, and working with system components without user interfaces or even systems of scientific programming, are also included in the backend.



Back end Languages: The back end portion is built by using some languages which are discussed below:

- **PHP:** PHP is a server-side scripting language designed specifically for web development. Since PHP code executed on the server-side, so it is called a server-side scripting language.
- **C++:** It is a general-purpose programming language and widely used nowadays for competitive programming. It is also used as a backend language.
- **Java:** Java is one of the most popular and widely used programming languages and platforms. It is highly scalable. Java components are easily available.
- **Python:** Python is a programming language that lets you work quickly and integrate systems more efficiently.
- **JavaScript:** JavaScript can be used as both (front end and back end) programming languages.



Figure : Front-end and Back-end




TOPIC : INTRODUCTION TO DBMS

What is Database?

- The database is a collection of inter-related data which is used to retrieve, insert and delete the data efficiently. It is also used to organize the data in the form of a table, schema, views, and reports, etc.
- **For example:** The college Database organizes the data about the admin, staff, students and faculty etc.
- Using the database, you can easily retrieve, insert, and delete the information.

What is Database Management System?

- Database management system is a software which is used to manage the database. For example: MySQL, Oracle, etc are a very popular commercial database which is used in different applications.
 - DBMS provides an interface to perform various operations like database creation, storing data in it, updating data, creating a table in the database and a lot more.
 - It provides protection and security to the database. In the case of multiple users, it also maintains data consistency.
- 

Advantages of DBMS:

- **Controls database redundancy:** It can control data redundancy because it stores all the data in one single database file and that recorded data is placed in the database.
- **Data sharing:** In DBMS, the authorized users of an organization can share the data among multiple users.
- **Easily Maintenance:** It can be easily maintainable due to the centralized nature of the database system.
- **Reduce time:** It reduces development time and maintenance need.
- **Backup:** It provides backup and recovery subsystems which create automatic backup of data from hardware and software failures and restores the data if required.
- **multiple user interface:** It provides different types of user interfaces like graphical user interfaces, application program interfaces

Disadvantages of DBMS:

- **Cost of Hardware and Software:** It requires a high speed of data processor and large memory size to run DBMS software.
- **Size:** It occupies a large space of disks and large memory to run them efficiently.
- **Complexity:** Database system creates additional complexity and requirements.
- **Higher impact of failure:** Failure is highly impacted the database because in most of the organization, all the data stored in a single database and if the database is damaged due to electric failure or database corruption then the data may be lost forever.



Features of DBMS



Topic : Introduction to MS Access

- MS Access is a Database Management system which was launched by Microsoft.
- It is a part of the Microsoft Office suite and stores data in its own format.
- Microsoft Access is a Database Management System (DBMS) from Microsoft that combines the relational Microsoft Jet Database Engine with a graphical user interface and software development tools.
- It is a member of the Microsoft Office suite of applications, included in the professional and higher editions.



- Microsoft Access stores information which is called a database. To use MS Access, you will need to follow these four steps –
- **Database Creation** – Create your Microsoft Access database and specify what kind of data you will be storing.
- **Data Input** – After your database is created, the data of every business day can be entered into the Access database.
- **Query** – This is a fancy term to basically describe the process of retrieving information from the database.
- **Report** (optional) – Information from the database is organized in a nice presentation that can be printed in an Access Report.



Overview of ms access

The screenshot shows the Microsoft Access interface in Design view for a table named 'tblEmployees'. The ribbon is set to 'Table Tools - Design'. The left pane shows a list of database objects, including tables, queries, forms, and reports. The main area displays the table's structure with columns for Field Name, Data Type, and Description. The 'tblEmployees' table has fields: ID (AutoNumber), FirstName (Text), LastName (Text), and HireDate (Date/Time). The 'ID' field is marked as the Primary Key. The bottom pane shows the Field Properties for the selected field.

Change Table View (points to the View button)

List of Tables (points to the Tables list in the left pane)

TableTools Tab (points to the Design ribbon)

Primary Key (points to the ID field)

Table Fields (points to the Field Name column)

Data Type (points to the Data Type column)

Field Properties (points to the bottom pane)

Field Name	Data Type	Description
ID	AutoNumber	
FirstName	Text	
LastName	Text	
HireDate	Date/Time	

Field Properties	
Format	
Input Mask	
Caption	
Default Value	
Validation Rule	
Validation Text	
Required	No
Indexed	No
IME Mode	No Control
IME Sentence Mode	None
Smart Tags	
Text Align	General
Show Date Picker	For dates

Database terminology :

Components of
MS-Access

- 1 Tables
- 2 Relationships
- 3 Queries
- 4 Forms
- 5 Reports
- 6 Macros
- 7 Modules



❖ **Tables**

It is the main component of the MS Access software. In the MS Access database, tables are mainly used for storing the data or information in the form of rows and columns.

The Access tables which contain the data or information look similar to the tables in MS Excel or MS Word.

Whenever, you create a new database in MS Access, firstly, you have to create a table in that database. You can also relate a specific table to other tables, and easily define the primary key in that table.

❖ **Relationships**

Relationships are the links or connections, which are formed between the one or more tables in the database. There exist following four types of relationships:

- ❖ One-to-One Relationship
- ❖ One-to-Many Relationship
- ❖ Many-to-One Relationship
- ❖ Many-to-Many Relationship

❖ **Queries**

Queries are the commands, which are used to retrieve the data or information from the database. It also allows you to insert the information in the MS Access database.

❖ **Forms**

It is an object or a component, which helps the users for entering the data in the table of any database by an interface. Any user can easily display the data of the database.

❖ **Reports**

When the users inserted the data in the database, then they can easily view their information in an organized manner by running the reports. Unlike forms, the reports cannot be edited.

❖ **Macros**

Macros are used for performing the repetitive tasks on reports and forms in the MS Access database. It also allows the user for adding functionalities to forms, controls, and reports.

❖ **Modules**

Modules are used to perform the automating routine operations and user-defined functions which are written in VBA. Any user can easily use these modules from anywhere in the MS Access database.

Versions of Microsoft Access



TOPIC :LAUNCH THE MICROSOFT ACCESS

- You can easily launch the MS-Access application in your Windows 10 system by following the given steps:
- Step 1: Click on the Search box in the toolbar.
- Step 2: After clicking, type the MS Access. Then, it will show you the icon of MS Access with the installed version of Microsoft office in your system. Select and click the icon.
- Step 3: After clicking, an application window of MS Access will appear on your computer screen. The following screenshot displays the window of MS Access 2007.

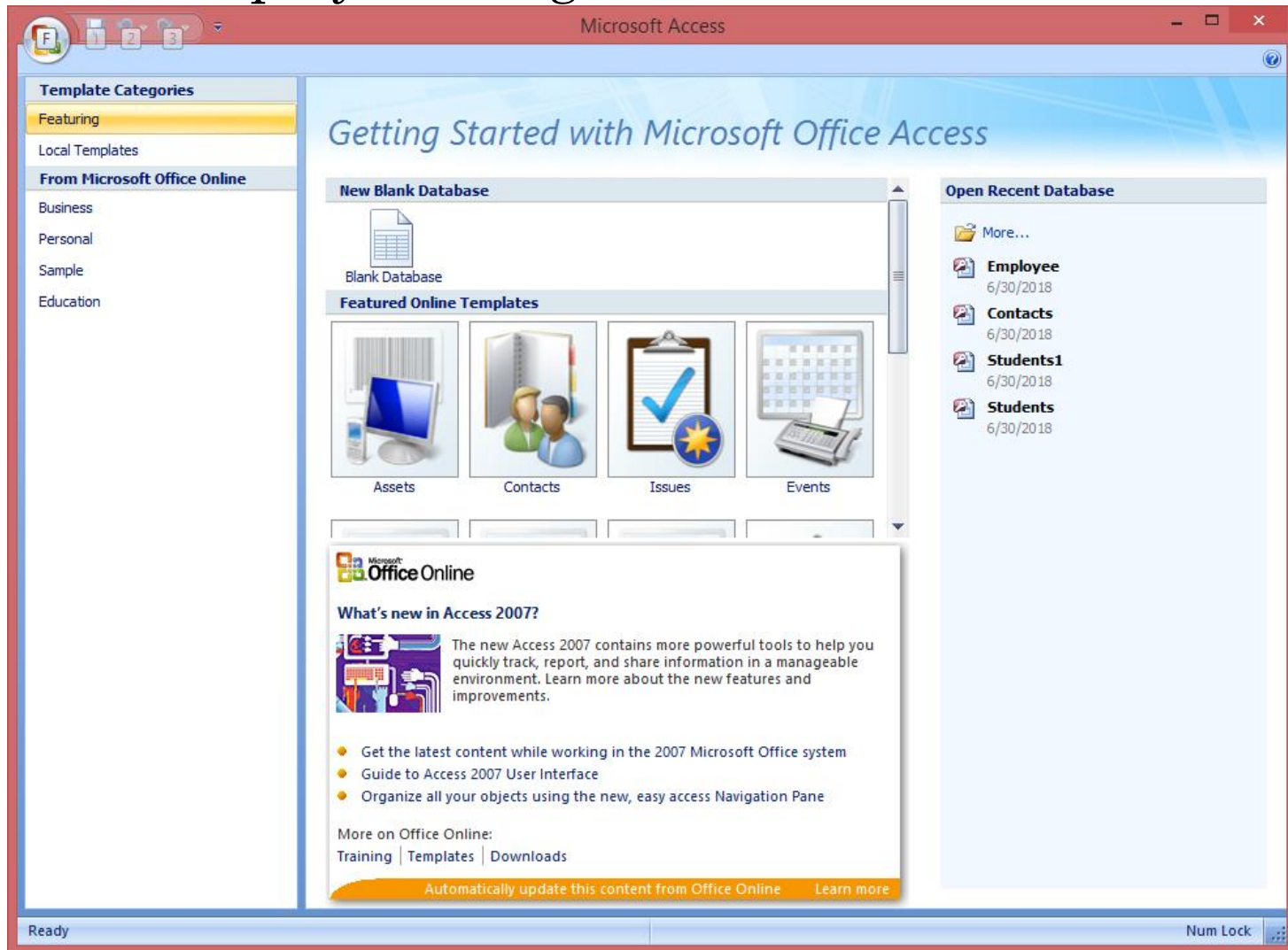




Figure : Getting Started with ms Access

TOPIC : CREATE A DATABASE

- In this section, we select the **Blank Database** option for storing the data. After clicking the option, the following screen will display which gives the default name of the file.



- If you are satisfied with the default file name, click on the **Create** button, otherwise change the name of a file, and then click on **Create Button**.

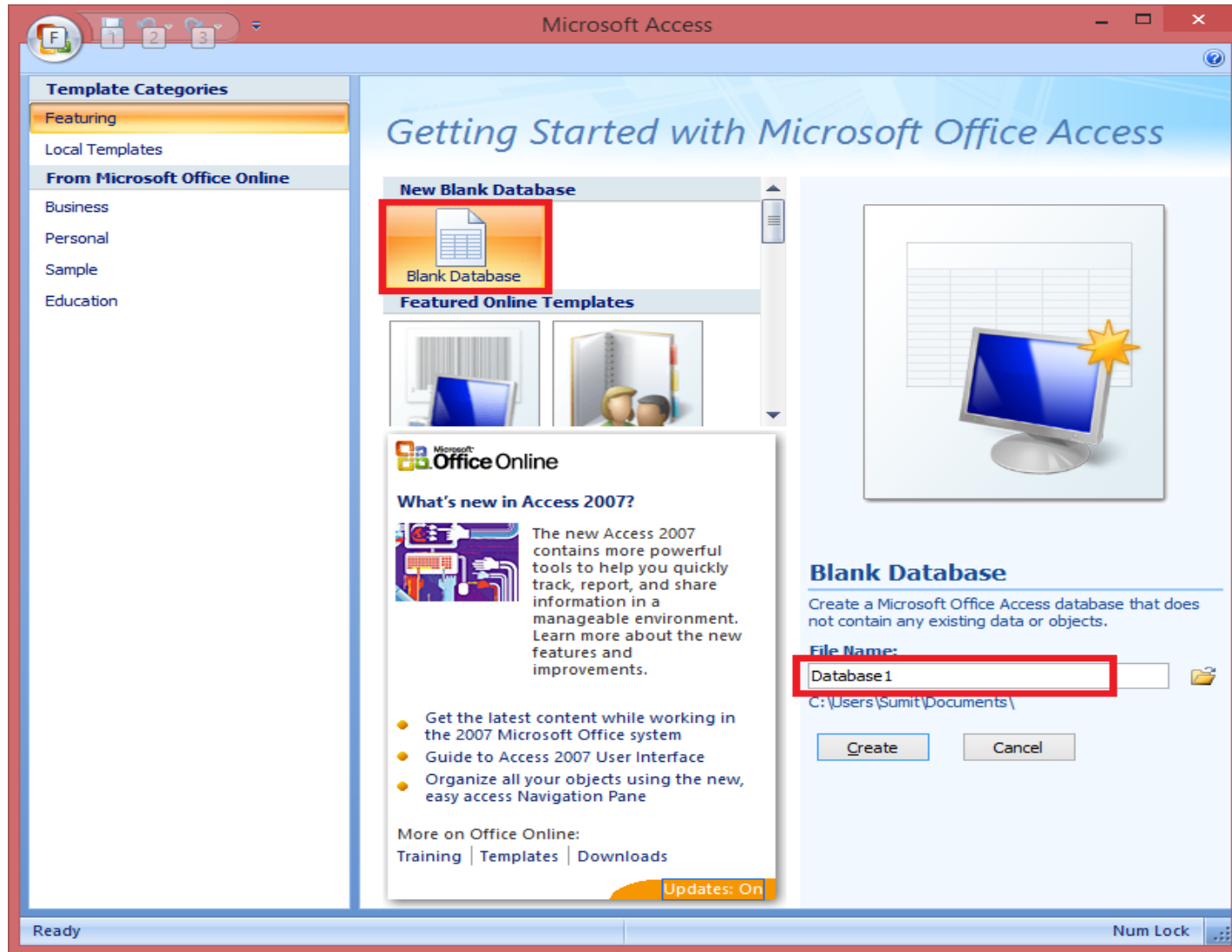
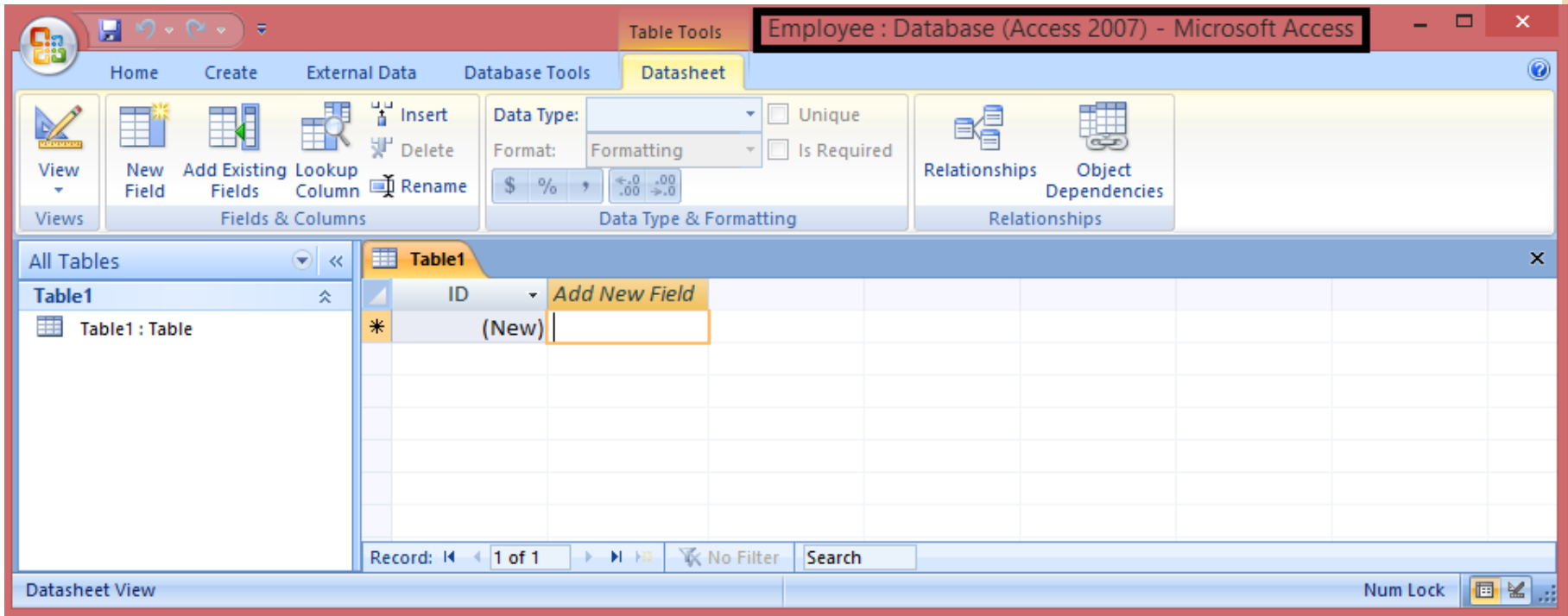


Figure : Naming the database

○ We give the name of a file as **Employee** as shown in the above screenshot and then click the **Create** button. After clicking, the following screen will display, which shows that the new database is created with the given name in the MS Access:



TOPIC : CREATE A TABLE

○Steps :

- i) Click the create button on the Ribbon.
- ii) Click on the table from the tables group.
- iii) Click Ok.

The screenshot shows the Microsoft Access 2007 ribbon with the 'Create' tab selected. The 'Table' button is highlighted, and a tooltip is displayed over it. The tooltip text reads: 'Create a new blank table. You can define the fields directly in the new table, or open the table in Design view. Press F1 for more help.' Below the ribbon, the 'Table1' table is being created, and the 'Add New Field' button is visible. The background shows a grid with the first row containing 'ID' and '(New)'.

BCAAccess : Database (Access 2007) - Microsoft Access

Table Tools

Home Create External Data Database Tools Datasheet

Table Table Templates SharePoint Lists Table Design

Form Split Form Multiple Items More Forms Form Design

Report Labels Blank Report Report Wizard Report Design

Query Wizard Query Design Macro

Table

Create a new blank table. You can define the fields directly in the new table, or open the table in Design view.

Press F1 for more help.

Table1

Table1 : Table

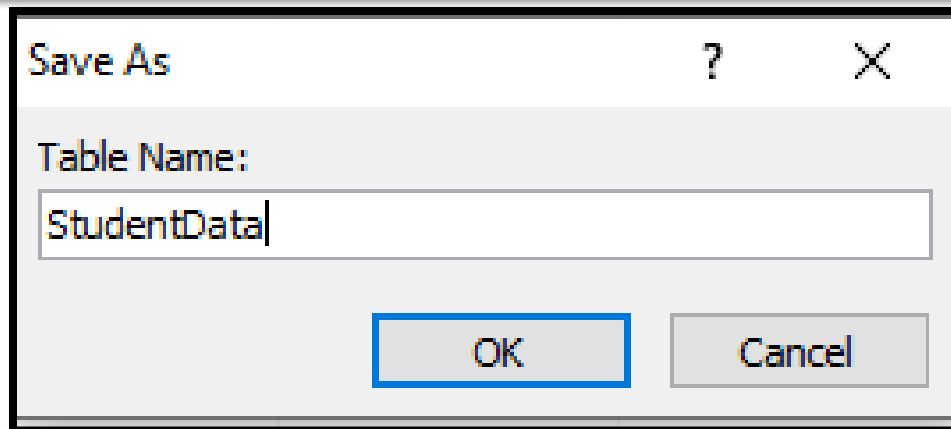
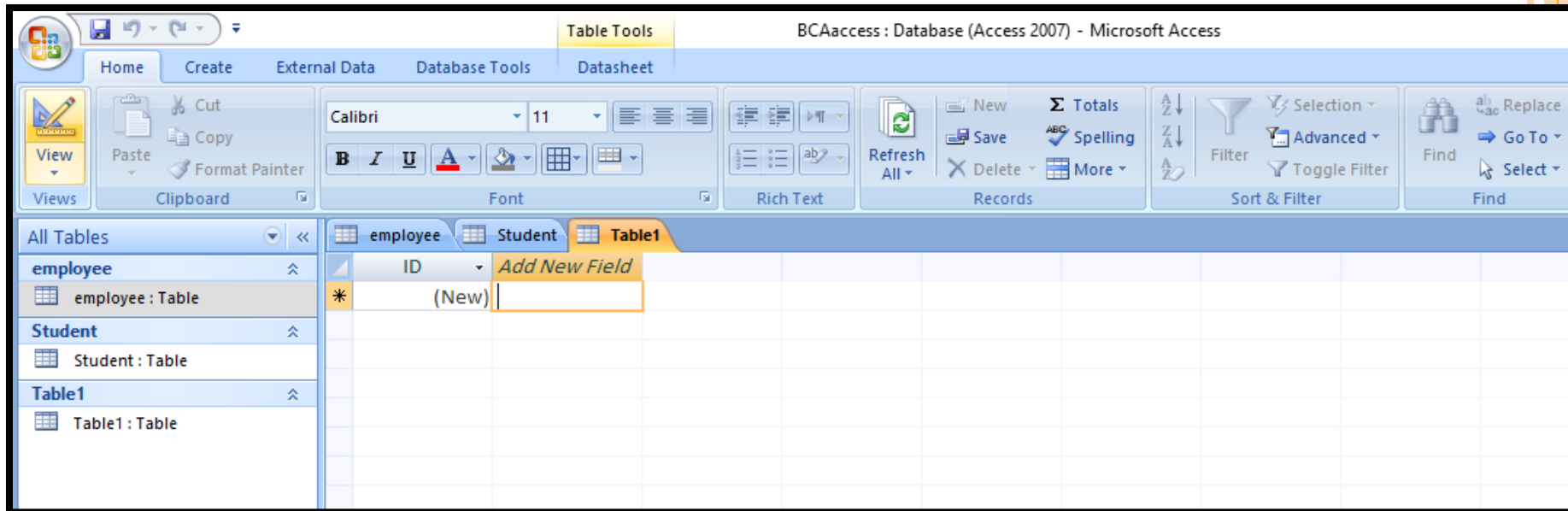
employee Student Table1

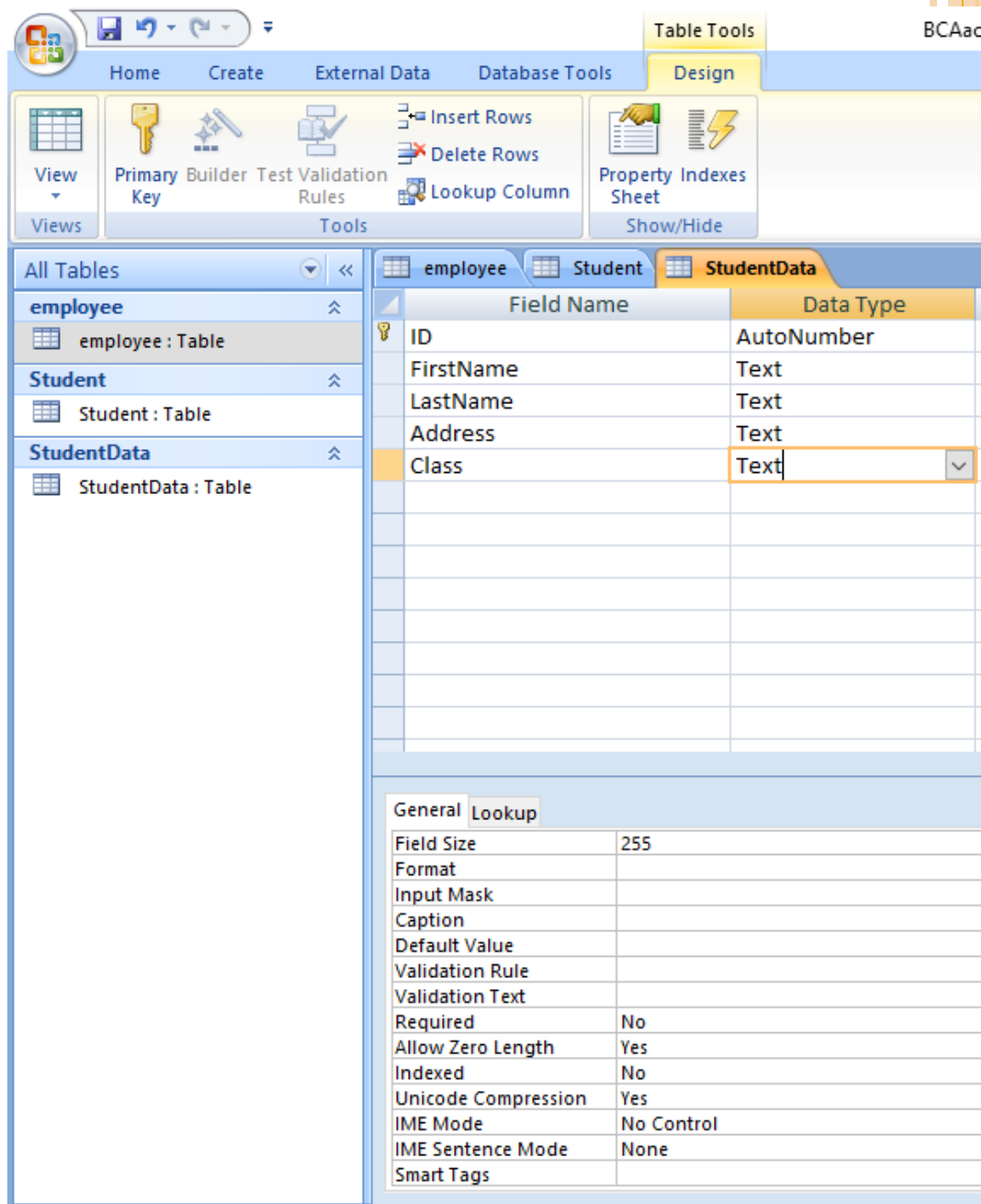
ID Add New Field

(New)

iv) Click on the Home tab than click on view command from the Views tab.

v) A dialog box appear. Give the name of your table.





Step 1: Firstly, you have to type the name of a field in the first column. Then, press the **Tab** button.

Step 2: Then, you have to choose or select the data type for the field from the drop-down list. Again, you have to press the **Tab** button. We select the **Text** data type.

Step 3: You have to repeat all the above three steps until all the fields are entered in the table. When all the fields are entered in the table, and then click on the **Save** button on **Quick Access Toolbar**.

ADDING THE DATA INTO TABLE

- Once you have entered the fields and set the data types it is now time to enter the records in a table.
- To enter the data in a table:
 1. Make sure you are in datasheet view.
 2. Enter the data into the table by pressing the tab key move from one cell to another.
 3. When you have completed the record , press enter.

BCAAccess : Database (Access 2007) - Microsoft Access

ID	FirstName	LastName	Address	Class	Add New Field
1	Raj	Sharma	Raipur	BCA	
2	Rahul	Vishwakarma	Durg	BSC	
3	Nisha	Chouhan	Bhilai	B.com	
4	Ranya	Jaisawal	Durg	B.com	
(New)					

Topic : Data Types In MS Access

- Every field in a table has properties and these properties define the field's characteristics and behavior. The most important property for a field is its data type. A field's data type determines what kind of data it can store. MS Access supports different types of data, each with a specific purpose.
- The data type determines the kind of the values that users can store in any given field.
- Each field can store data consisting of only a single data type.



DATA TYPES :

Type of Data	Description	Size
Short Text	Text or combinations of text and numbers, including numbers that do not require calculating (e.g. phone numbers).	Up to 255 characters.
Long Text	Lengthy text or combinations of text and numbers.	Up to 63, 999 characters.
Number	Numeric data used in mathematical calculations.	1, 2, 4, or 8 bytes (16 bytes if set to Replication ID).
Date/Time	Date and time values for the years 100 through 9999.	8 bytes
Currency	Currency values and numeric data used in mathematical calculations involving data with one to four decimal places.	8 bytes
AutoNumber	A unique sequential (incremented by 1) number or random number assigned by Microsoft Access whenever a new record is added to a table.	4 bytes (16 bytes if set to Replication ID).
Yes/No	Yes and No values and fields that contain only one of two values (Yes/No, True/False, or On/Off).	1 bit.

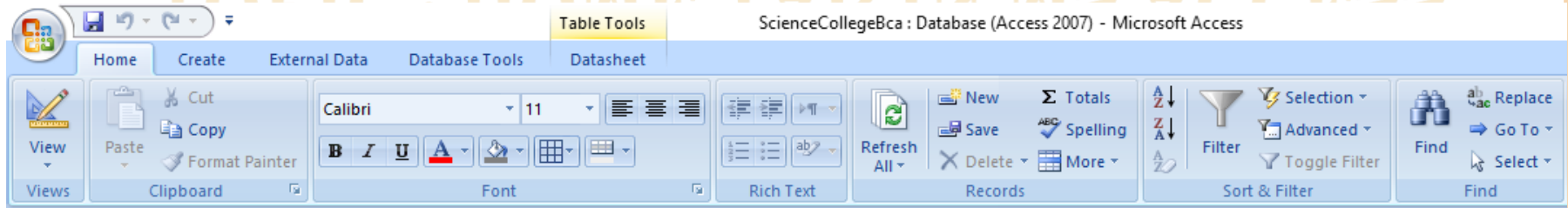


- If you use previous versions of Access, you will notice a difference for two of those data types.
- In Access 2013, we now have two data types — short text and long text. In previous versions of Access these data types were called text and memo.
- The text field is referred to as short text and your memo field is now called long text.

Attachment	Files, such as digital photos. Multiple files can be attached per record. This data type is not available in earlier versions of Access.	Up to about 2 GB.
OLE objects	OLE objects can store pictures, audio, video, or other BLOBs (Binary Large Objects)	Up to about 2 GB.
Hyperlink	Text or combinations of text and numbers stored as text and used as a hyperlink address.	Up to 8,192 (each part of a Hyperlink data type can contain up to 2048 characters).
Lookup Wizard	<p>The Lookup Wizard entry in the Data Type column in the Design view is not actually a data type. When you choose this entry, a wizard starts to help you define either a simple or complex lookup field.</p> <p>A simple lookup field uses the contents of another table or a value list to validate the contents of a single value per row. A complex lookup field allows you to store multiple values of the same data type in each row.</p>	Dependent on the data type of the lookup field.



TOPIC : HOME TAB IN MS ACCESS



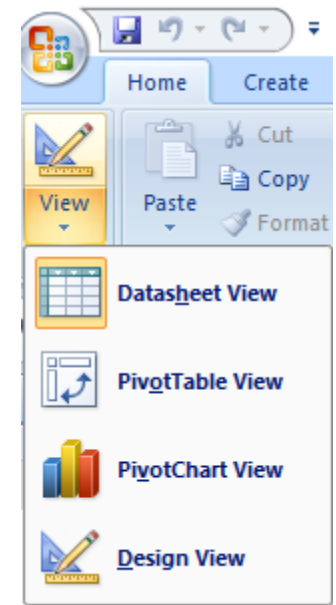
- The **Home Tab** is used to perform common **Access** tasks such as changing views when working with Tables, Reports, Queries, and Forms.
- It is also possible to change Font attributes, save records, add new records, delete records, sort and filter records, check spelling, and find and/or replace data in a record.
- The Home Tab displays the most commonly used commands. In Access these include Copy, **Cut**, and **Paste**, **Bold**, Italic, Underscore etc.



Home Tab 1. Views Group

Click the list arrow for this button to select from four different views while working with the table.

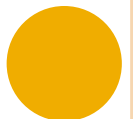
1. Datasheet View : A datasheet is a useful way of viewing data in Access. Most importantly, datasheet view allows a user to view many table records at the same time. In datasheet view, information is displayed in rows and columns—similar to a spreadsheet. Records are displayed as rows, so each row is an individual record. Within each row, columns represent fields within the record.



After Selecting the datasheet view, it shows the data in the following format

The screenshot displays the Microsoft Access 2007 interface. The title bar reads "ScienceCollegeBca : Database (Access 2007) - Microsoft Access". The ribbon is set to "Table Tools" > "Datasheet". A "Security Warning" banner is visible, stating "Certain content in the database has been disabled". The "All Tables" pane on the left shows the "Student" table selected. The main area displays the "Student" table in Datasheet view with the following data:

ID	StudentName	Class	Address	Add New Field
1	Neeta	BSC	Raipur	
2	Divya	BCA	Durg	
3	Sheetal	BCA	Raipur	
*	(New)			



2. Pivot Table View :

- A PivotTable is an interactive table that quickly combines and compares large amounts of data.
- You can rotate its rows and columns to see different summaries of the source data, and you can display the details for areas of interest.
- Use a PivotTable when you want to analyze related totals, especially when you have a long list of figures to sum and you want to compare several facts about each figure.
- You can use the **Access pivot table** to make a list of unique values because it summarizes data that can be used to find unique value in a field. It's a good way to take a quick overview of all the values appearing in the field and other inconsistencies.



STEPS TO CREATE PIVOT TABLE :

- Step 1 : Create a Database Named it as “Emp”.
- Step 2 : Create a Table Named it as “Employee”.
- Step 3 : Design the Following Table.

Field Name	Data Type
ID	AutoNumber
FirstName	Text
LastName	Text
DOB	Date/Time
Salary	Currency
Female	Yes/No
State	Text

- Step 4 : Add The Following data into the table



Emp : Database (Access 2007) - Microsoft Access

Table Tools

Home Create External Data Database Tools Datasheet

View Paste Copy Format Painter

Clipboard

Font

Rich Text

Records

Sort & Filter

Find

Security Warning Certain content in the database has been disabled Options...

All Tables Employee

Employee	ID	FirstName	LastName	DOB	Salary	Female	State	Add New Field
Employee : Table	1	Raj	Sharma	4/15/1999	\$500.00	<input type="checkbox"/>	Chhattisgarh	
	2	Sushma	Singh	3/30/1997	\$200.00	<input checked="" type="checkbox"/>	Madhya Pradesh	
	3	Preeti	Chouhan	7/7/1998	\$250.00	<input checked="" type="checkbox"/>	Delhi	
	4	Radha	Sharma	8/6/2000	\$320.00	<input checked="" type="checkbox"/>	Delhi	
	5	Ayush	Sharma	6/3/1999	\$300.00	<input type="checkbox"/>	Chhattisgarh	
	6	Shrishti	Tiwari	6/2/1998	\$400.00	<input checked="" type="checkbox"/>	Madhya Pradesh	
	7	Ajay	Singh	7/1/1997	\$430.00	<input type="checkbox"/>	Delhi	
	*	(New)				<input type="checkbox"/>		

Step 5 : Then Click on View Tab And Select the Pivot Table.

Home Create

View

Field List

Datasheet View

PivotTable View

PivotChart View

Design View



Step 6 : Drag the Fields that you want , the Following Pivot table is generated

The screenshot shows the Microsoft Access interface with the PivotTable Tools ribbon active. The PivotTable is based on the 'Employee' table and is configured with 'State' as the filter field and 'Salary' as the column field. The PivotTable Field List task pane is open, showing the available fields for the pivot table.

State	Salary
Chhattisgarh	\$500.00
	\$300.00
Delhi	\$250.00
	\$320.00
	\$430.00
Madhya Pradesh	\$200.00
	\$400.00
Grand Total	

PivotTable Field List

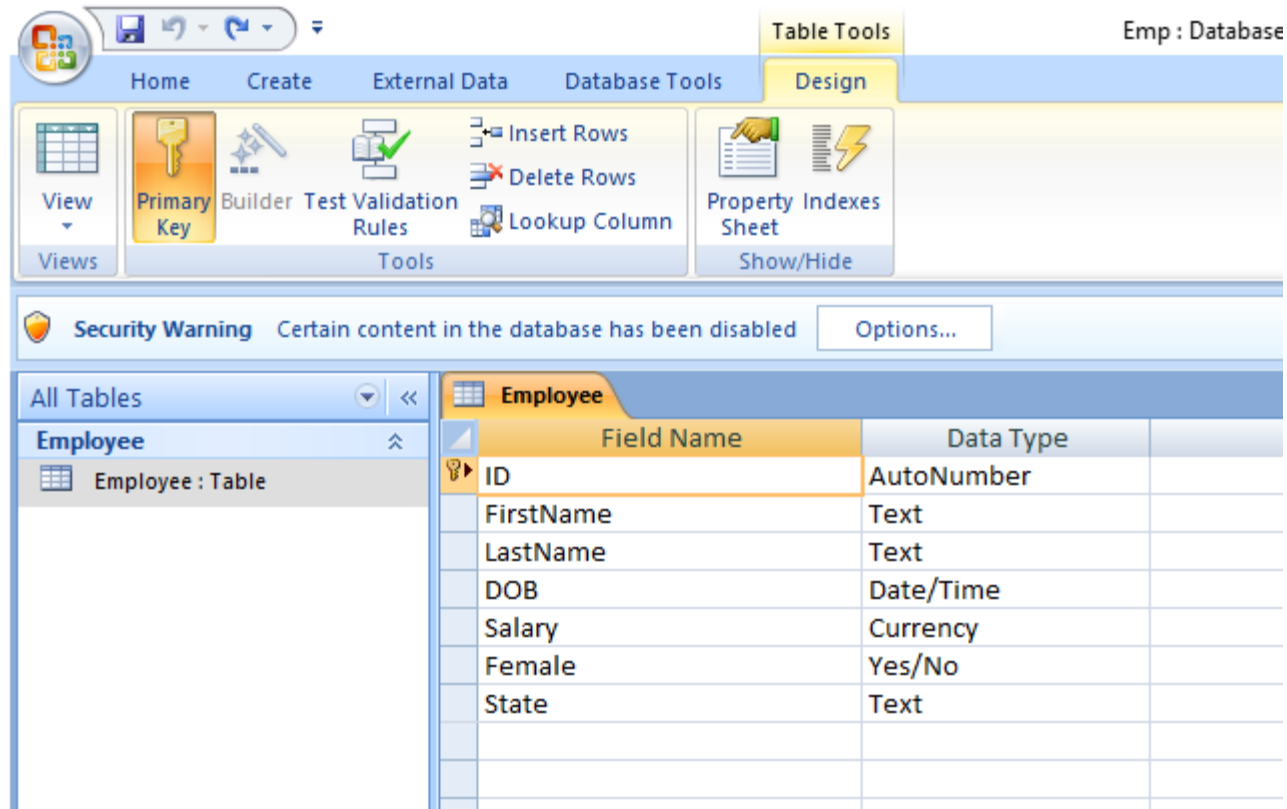
Drag items to the PivotTable list

- Employee
 - ID
 - FirstName
 - LastName
 - DOB
 - DOB By Week
 - DOB By Month
 - Salary
 - Female
 - State

Add to Row Area

3. Design View :

- Click on View to see Four options, Datasheet View ,Design View, Pivot Chart, and Pivot table. Select Design View.

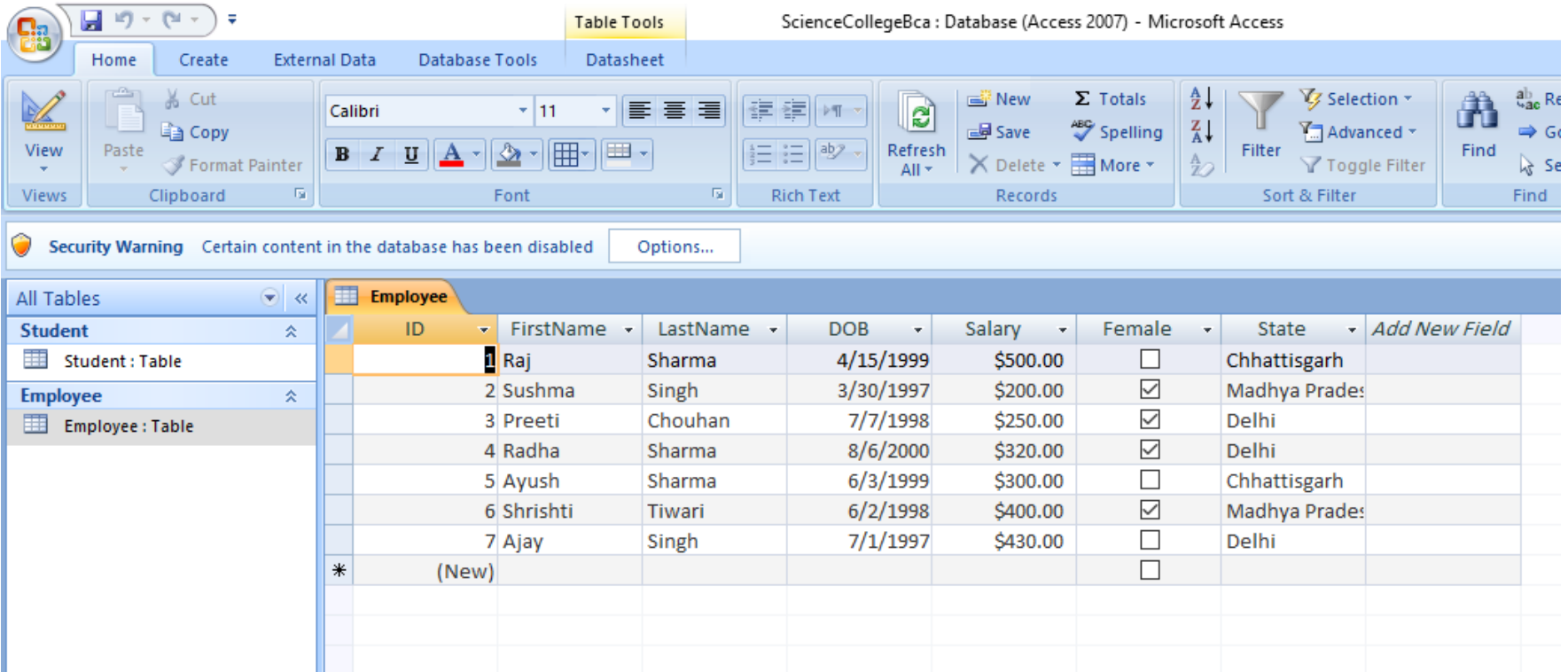


- Here you can Design your table and define the data types of all the fields.

4. Pivot Chart :

How to create Pivot chart?

Step 1 : Create A Table into your data base and fill the following data.

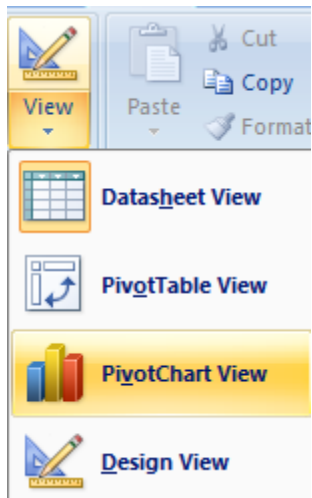


The screenshot shows the Microsoft Access interface for a database named 'ScienceCollegeBca : Database (Access 2007) - Microsoft Access'. The 'Table Tools' ribbon is active, showing various options like Home, Create, External Data, Database Tools, and Datasheet. The 'Employee' table is selected in the 'All Tables' pane. The table data is as follows:

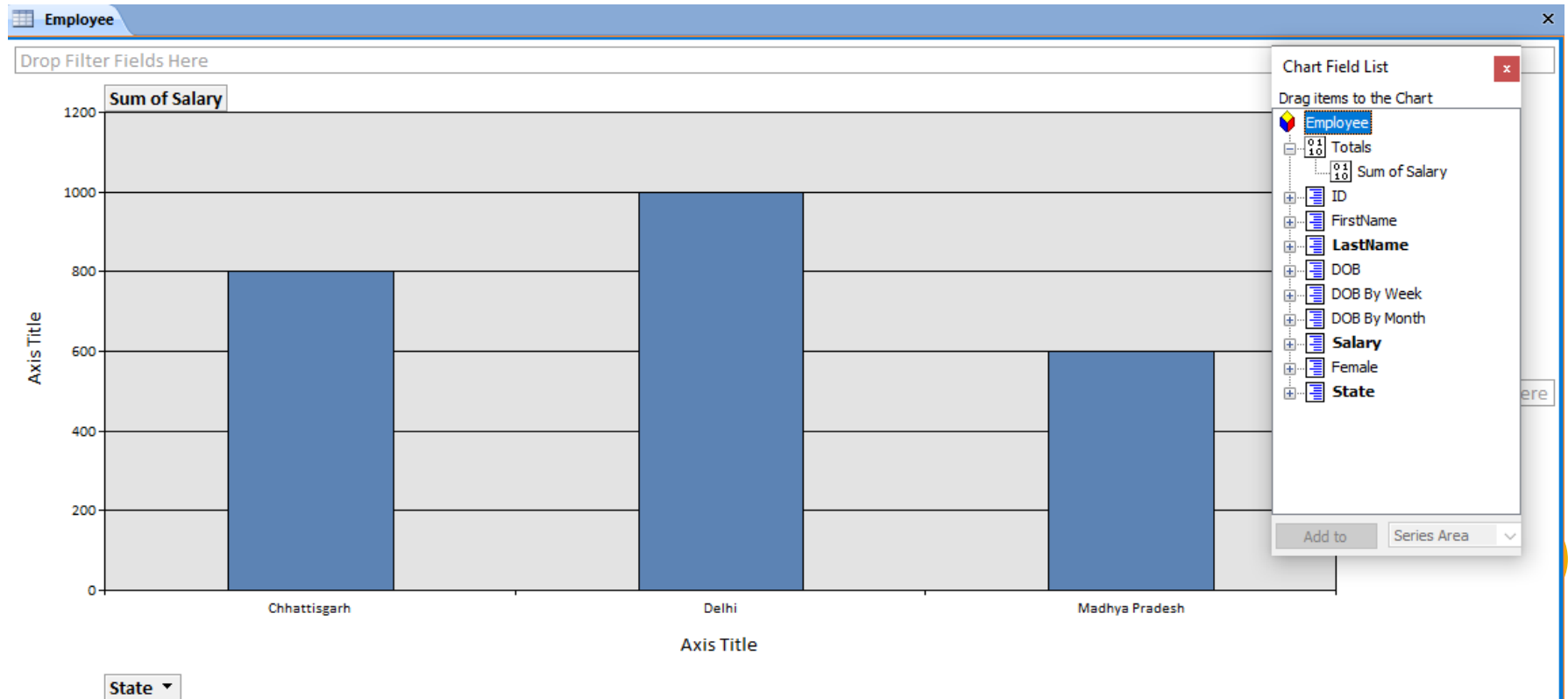
ID	FirstName	LastName	DOB	Salary	Female	State	Add New Field
1	Raj	Sharma	4/15/1999	\$500.00	<input type="checkbox"/>	Chhattisgarh	
2	Sushma	Singh	3/30/1997	\$200.00	<input checked="" type="checkbox"/>	Madhya Pradesh	
3	Preeti	Chouhan	7/7/1998	\$250.00	<input checked="" type="checkbox"/>	Delhi	
4	Radha	Sharma	8/6/2000	\$320.00	<input checked="" type="checkbox"/>	Delhi	
5	Ayush	Sharma	6/3/1999	\$300.00	<input type="checkbox"/>	Chhattisgarh	
6	Shrishti	Tiwari	6/2/1998	\$400.00	<input checked="" type="checkbox"/>	Madhya Pradesh	
7	Ajay	Singh	7/1/1997	\$430.00	<input type="checkbox"/>	Delhi	
*	(New)				<input type="checkbox"/>		

Step 2 : Choose the Pivot chart from the view tab.





Step 3 : Select the Fields that you want to add and create the chart.



Topic : SORT AND FILTER IN MS ACCESS

- Sorting is of two types :
 1. Sort ascending and descending
 2. Sorting on more than one fields

- Filtering is of two types :
 1. Common Filter
 2. Filter by Selection



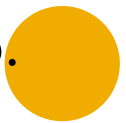
Sort a Table

- By sorting, you can put a column of information in alphabetical, numerical, or date order.
- You can sort in ascending order (alphabetical from A to Z, lowest number to highest number, earliest date to latest date) or descending order (alphabetical from Z to A, highest number to lowest number, latest date to earliest date).

Steps :

- Click the column label for the column you want to sort.
- Activate the Home tab.
- Click the Ascending or Descending button in the Sort & Filter group. Access sorts the column in ascending or descending order.

To remove a sort:

- Activate the Home tab.
 - Click the Clear All Sorts button in the Sort & Filter group. Access clears all of the sorts you have applied.
- 

EXAMPLE OF SORTING :

The screenshot shows the Microsoft Access interface with the 'Table Tools' ribbon active. The 'Sort & Filter' group contains options for sorting. The 'date' column in the 'Table1' table is highlighted with a red box, indicating it is selected for sorting.

No	date	product	address
6	11/19/2016	DataNumen Outlook Express Repair	test6@datanumen.com
5	11/20/2016	DataNumen Outlook Drive Recovery	test5@datanumen.com
4	11/18/2016	DataNumen Outlook Repair	test4@datanumen.com
3	11/17/2016	DataNumen Word Repair	test3@datanumen.com
2	11/16/2016	DataNumen Excel Repair	test2@datanumen.com
1	11/15/2016	DataNumen Access Repair	test1@datanumen.com

AFTER THE SORTING :

The screenshot shows the Microsoft Access interface after sorting the table by date. The 'date' column is highlighted with a red box. Red circles with numbers 1, 2, and 3 highlight the 'Home' tab, the 'Ascending' button, and the 'date' column respectively.

No	date	product	address
1	11/15/2016	DataNumen Access Repair	test1@datanumen.com
2	11/16/2016	DataNumen Excel Repair	test2@datanumen.com
3	11/17/2016	DataNumen Word Repair	test3@datanumen.com
4	11/18/2016	DataNumen Outlook Repair	test4@datanumen.com
6	11/19/2016	DataNumen Outlook Express Repair	test6@datanumen.com
5	11/20/2016	DataNumen Outlook Drive Recovery	test5@datanumen.com

Filtering Records :

- Filters are used to allow you to narrow down your search to limited records in the table. Once you apply filters, you will see data that you want to see. Using filters you can direct the application to present you with particular tables and keep the rest away, thus not showing you the ones you do not want to see. The steps for applying filters to records are as follows:
- Go to the field you want to filter, and press the drop down arrow.
- A drop down menu containing check lists will show. The selected items will appear in the filtered results.



BEFORE FILTER

No	date	product	address
1	11/15/2016	DataNumen Access Repair	
2	11/16/2016	DataNumen Excel Repair	
3	11/17/2016	DataNumen Word Repair	
4	11/18/2016	DataNumen Outlook Repair	
6	11/19/2016	DataNumen Outlook Express Repair	
5	11/20/2016	DataNumen Outlook Drive Recovery	

Filter menu options:

- Sort A to Z
- Sort Z to A
- Clear filter from product
- Text Filters
 - (Select All)
 - (Blanks)
 - DataNumen Access Repair
 - DataNumen Excel Repair
 - DataNumen Outlook Drive Recove
 - DataNumen Outlook Express Repa
 - DataNumen Outlook Repair
 - DataNumen Word Repair

AFTER FILTER :

No	date	product	address
3	11/17/2016	DataNumen Word Repair	test3@datanumen.com
4	11/18/2016	DataNumen Outlook Repair	test4@datanumen.com
6	11/19/2016	DataNumen Outlook Express Repair	test6@datanumen.com
5	11/20/2016	DataNumen Outlook Drive Recovery	test5@datanumen.com



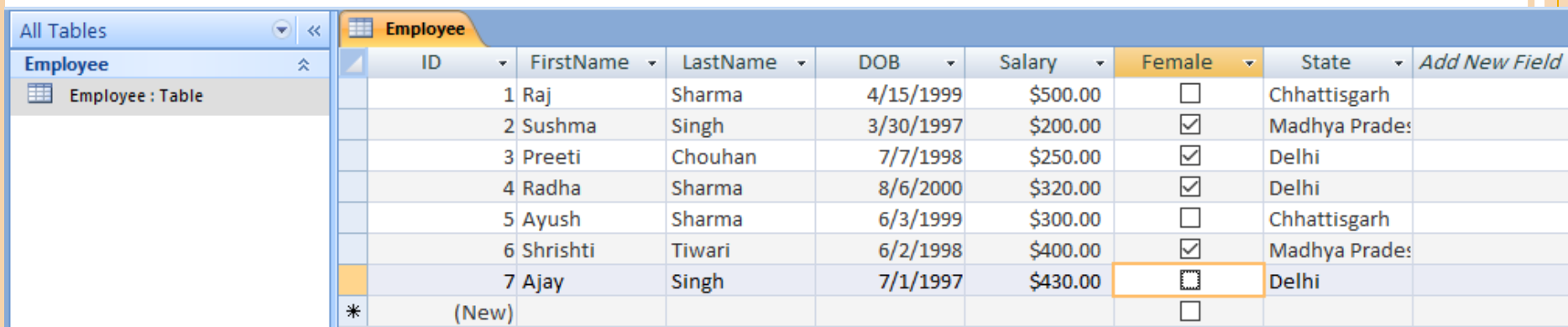
TOPIC : REPORTS IN MS ACCESS

- Reports offer a way to view, format, and summarize the information in your Microsoft Access database. For example, you can create a simple report of phone numbers for all your contacts.
- Reports organize and summarize data for viewing online or for printing. A detail report displays all of the selected records. You can include summary data such as totals, counts, and percentages in a detail report. A summary report does not list the selected records but instead summarizes the data and presents totals, counts, percentages, or other summary data only.
- A report consists of information that is pulled from tables or queries, as well as information that is stored with the report design, such as labels, headings, and graphics.



HOW TO CREATE A REPORT IN MS ACCESS


- **To use the Report button:**
- Open the Navigation pane.
- Click the table or query on which you want to base your report.
- Activate the Create tab.
- Click the Report button in the Reports group.
Access creates your report and displays your report in Layout view. You can modify the report.



The screenshot shows the Microsoft Access interface with the 'Employee' table selected in the Navigation pane. The table is displayed in Datasheet view, showing columns for ID, FirstName, LastName, DOB, Salary, Female, State, and Add New Field. The data rows are as follows:

ID	FirstName	LastName	DOB	Salary	Female	State	Add New Field
1	Raj	Sharma	4/15/1999	\$500.00	<input type="checkbox"/>	Chhattisgarh	
2	Sushma	Singh	3/30/1997	\$200.00	<input checked="" type="checkbox"/>	Madhya Pradesh	
3	Preeti	Chouhan	7/7/1998	\$250.00	<input checked="" type="checkbox"/>	Delhi	
4	Radha	Sharma	8/6/2000	\$320.00	<input checked="" type="checkbox"/>	Delhi	
5	Ayush	Sharma	6/3/1999	\$300.00	<input type="checkbox"/>	Chhattisgarh	
6	Shrishti	Tiwari	6/2/1998	\$400.00	<input checked="" type="checkbox"/>	Madhya Pradesh	
7	Ajay	Singh	7/1/1997	\$430.00	<input type="checkbox"/>	Delhi	
*	(New)				<input type="checkbox"/>		

REPORT VIEW

All Tables		Employee	Employee			
Employee						
Employee : Table						
			<h2>Employee</h2>	Sunday, April 25, 2021 9:49:15 PM		
ID	FirstName	LastName	DOB	Salary	Female	State
1	Raj	Sharma	4/15/1999	\$500.00	<input type="checkbox"/>	Chhattisgarh
2	Sushma	Singh	3/30/1997	\$200.00	<input checked="" type="checkbox"/>	Madhya Pradesh
3	Preeti	Chouhan	7/7/1998	\$250.00	<input checked="" type="checkbox"/>	Delhi
4	Radha	Sharma	8/6/2000	\$320.00	<input checked="" type="checkbox"/>	Delhi
5	Ayush	Sharma	6/3/1999	\$300.00	<input type="checkbox"/>	Chhattisgarh
6	Shrishti	Tiwari	6/2/1998	\$400.00	<input checked="" type="checkbox"/>	Madhya Pradesh
7	Ajay	Singh	7/1/1997	\$430.00	<input type="checkbox"/>	Delhi
				\$2,400.00		
Page 1 of 1						



Sections of a Report	
Report Header	Appears at the top of the first page and displays the report title.
Page Header	Appears at the top of every page and displays the headings (field labels) for each column.
Page Footer	Appears at the bottom of every page and displays the page number and total number of pages.
Detail Section	Appears between the page header and page footer and displays the records from the table or query.
Report Footer	This section is optional. Appears on the last page of the report and displays summary information such as grand totals.



Section Names of Report

Employee Salaries			Tuesday, March 10, 2009
			1:10:31 PM
Last Name	First Name	Salary	
Applebee	Joe	75,000.00	
French	Tim	30,000.00	
Jordan	Siegel	Ben	20,000.00
Selge	Johnson	Mitchell	77,000.00
Logan	Norton	Tom	77,000.00
Cortez	Sanchez	Barbara	98,000.00
Freedman	Williams	Linda	78,000.00
Siegel	Jones	Pamela	32,000.00
Johnson	Franklin	Janet	45,000.00
Norton	Thompson	Philip	106,000.00
Sanchez	Siegel	Joy	75,000.00
Williams	Taylor	George	150,000.00
Jones	Nixon	Len	65,000.00
Franklin	Cortez	Alice	32,000.00
Thompson	Hope	Mark	98,000.00
Siegel	Lights	Barry	102,000.00
Taylor	Mack	Jordan	134,000.00
Nixon	Franklin	Britney	103,000.00
	Caitlin	Sheryl	111,000.00
	John	Franklin	42,000.00
			25
			Page 1 of 1

Report Header

Page Header

Detail Section

Report Footer

Page Footer

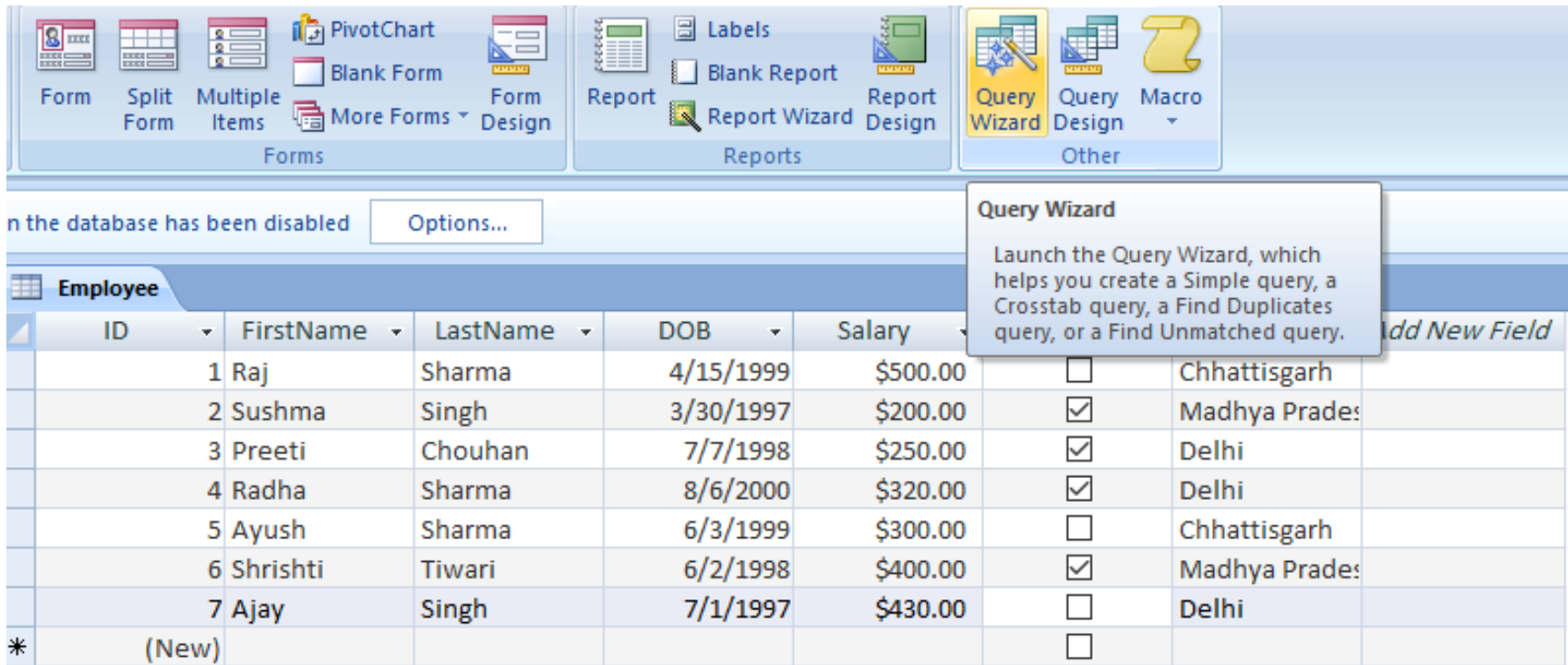
TOPIC : QUERY WIZARD

- A query is a request for data results, and for action on data. You can use a query to answer a simple question, to perform calculations, to combine data from different tables, or even to add, change, or delete table data.
- As tables grow in size they can have hundreds of thousands of records, which makes it impossible for the user to pick out specific records from that table.
- With a query you can apply a filter to the table's data, so that you only get the information that you want.
- Queries that you use to retrieve data from a table or to make calculations are called select queries.
- Queries that add, change, or delete data are called action queries.



HOW TO CREATE A QUERY USING QUERY WIZARD?

Step1 : Create the Following table then goto the Create Ribbon and Click on Query wizard.

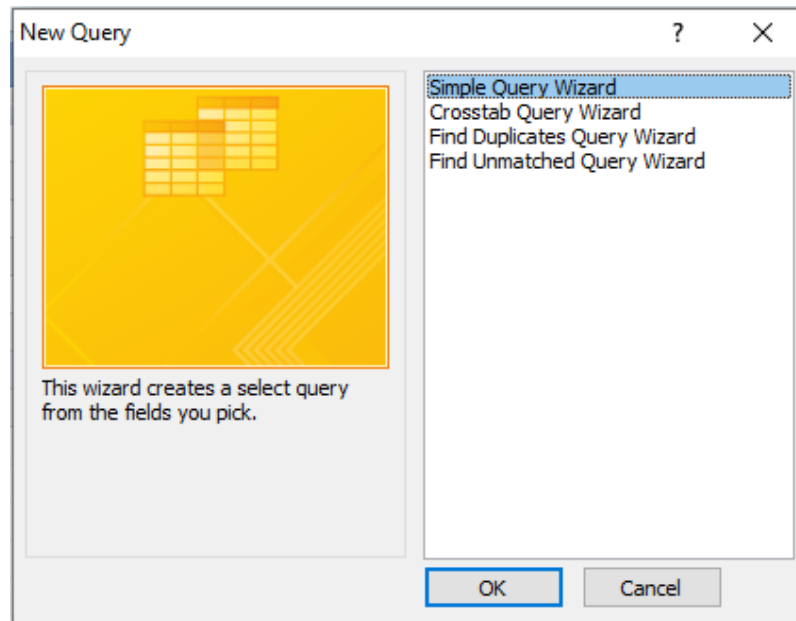


The screenshot shows the Microsoft Access interface. The ribbon is set to 'Create', and the 'Query Wizard' button is highlighted. A tooltip for the 'Query Wizard' button is visible, stating: 'Launch the Query Wizard, which helps you create a Simple query, a Crosstab query, a Find Duplicates query, or a Find Unmatched query.'

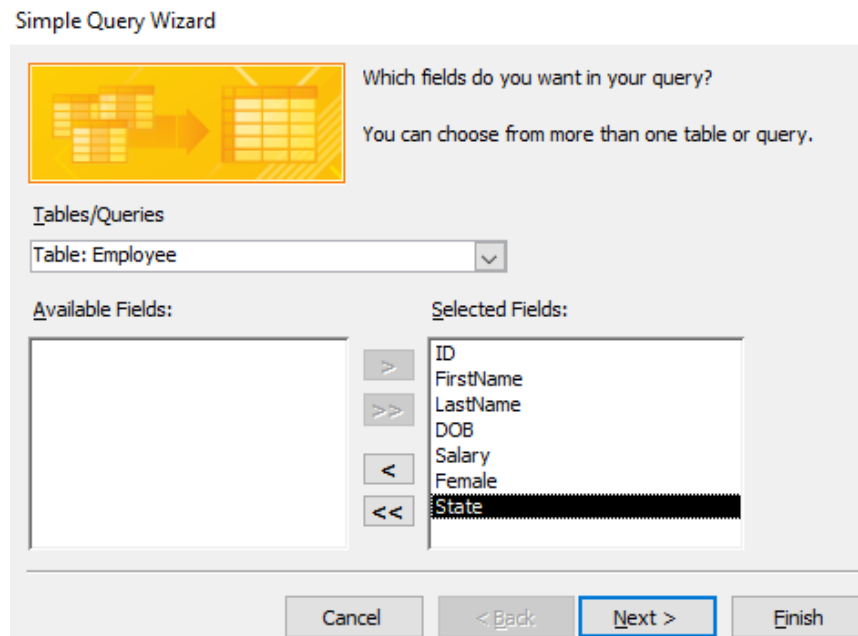
Below the ribbon, a table named 'Employee' is displayed. The table has the following columns: ID, FirstName, LastName, DOB, Salary, and a column for state (partially visible as 'Chhattisgarh', 'Madhya Prades', 'Delhi'). The data rows are as follows:

ID	FirstName	LastName	DOB	Salary	State
1	Raj	Sharma	4/15/1999	\$500.00	Chhattisgarh
2	Sushma	Singh	3/30/1997	\$200.00	Madhya Prades
3	Preeti	Chouhan	7/7/1998	\$250.00	Delhi
4	Radha	Sharma	8/6/2000	\$320.00	Delhi
5	Ayush	Sharma	6/3/1999	\$300.00	Chhattisgarh
6	Shrishti	Tiwari	6/2/1998	\$400.00	Madhya Prades
7	Ajay	Singh	7/1/1997	\$430.00	Delhi
*	(New)				

Step2 : A Dialog box will appear Click on simple query and then click on OK



Step 3 : A dialog box will appear, From here select all the Fields and then Click on the next button.



Step 3 : Select detail and Click on Next Button.

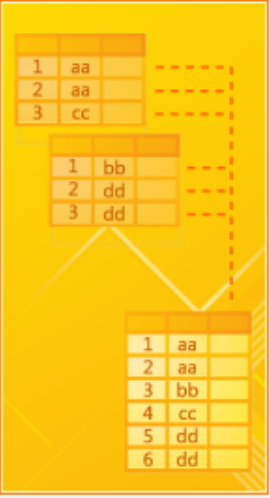
Simple Query Wizard

Would you like a detail or summary query?

Detail (shows every field of every record)

Summary

Summary Options ...



Cancel < Back **Next >** Finish

The diagram shows a source table with 6 rows (1-6) and 2 columns (aa, dd). A summary table with 3 rows (1-3) and 2 columns (bb, dd) is shown below it, with dashed lines indicating that rows 1, 2, and 3 of the summary table correspond to rows 1, 2, and 3 of the source table. A detail table with 6 rows (1-6) and 2 columns (aa, dd) is shown to the right, with dashed lines indicating that rows 1-3 of the detail table correspond to rows 1-3 of the source table, and rows 4-6 correspond to rows 4-6 of the source table.

Step 4 : Select Modify the query and Click on Finish Button.

Simple Query Wizard

What title do you want for your query?

Employee Query


That's all the information the wizard needs to create your query.

Do you want to open the query or modify the query's design?

Open the query to view information.

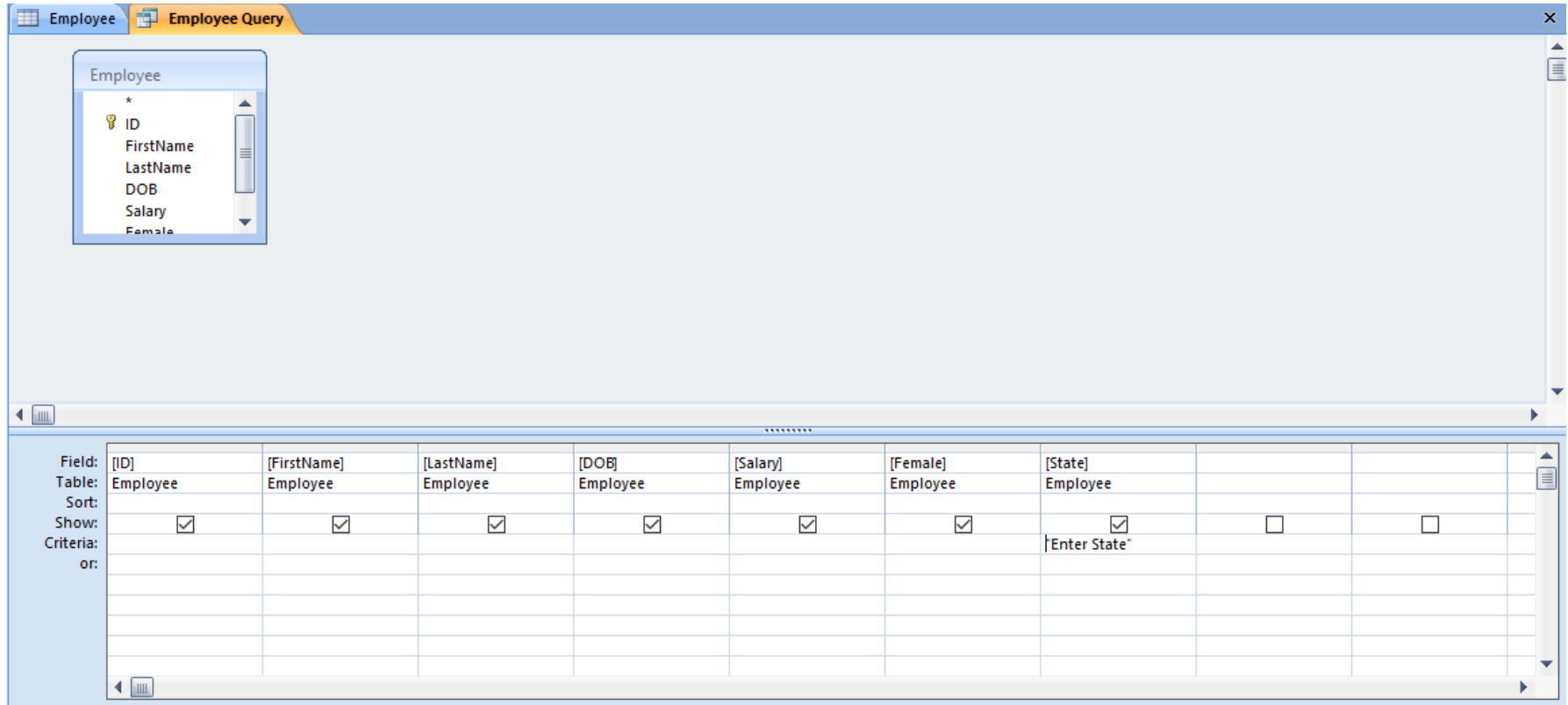
Modify the query design.

Cancel < Back **Next >** **Finish**

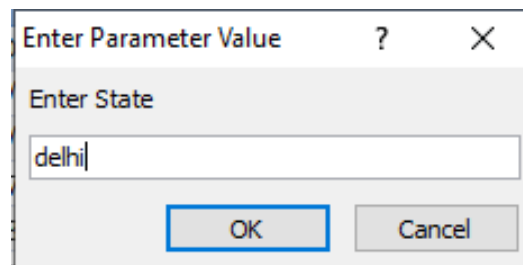


The diagram shows a query design grid with a checkmark in the top right corner. The grid is partially obscured by a yellow background with a grid pattern.

Step 5 : The Following Design will appear. Set the criteria for the state as “Enter State”.



Step 6 : save and Close the Query wizard and run the query Following output will be displayed



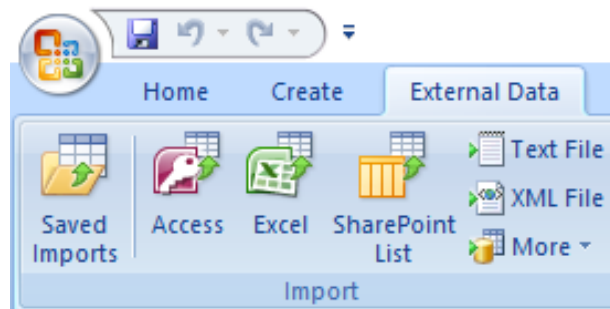
Step 7 : As we enter the criteria “Delhi” the following table is appeared.

ID	FirstName	LastName	DOB	Salary	Female	State
3	Preeti	Chouhan	7/7/1998	\$250.00	<input checked="" type="checkbox"/>	Delhi
4	Radha	Sharma	8/6/2000	\$320.00	<input checked="" type="checkbox"/>	Delhi
7	Ajay	Singh	7/1/1997	\$430.00	<input type="checkbox"/>	Delhi



TOPIC : DATA IMPORT IN MS ACCESS

- To understand what kind of data you can import in the Access data, let us open your database and go to the External Data tab.



- In the import & Link group, you can see the different kind of options available for data import in Access. Following are the most commonly used data import formats.
 1. Microsoft Office Excel
 2. Microsoft Office Access
 3. Text files (delimited or fixed-width)
 4. XML Files



STEPS TO IMPORT DATA FROM MS EXCEL :

- Step 1 : Create the Following table in Microsoft Excel.

	A	B	C	D	E	F
1	Id	Name	Class	Address	Contact	
2	1	Ankita	BCA	Bhilai	9867554637	
3	2	Shraddha	BSC	Durg	9876345269	
4	3	Jyoti	B.COM	Durg	9875410987	
5	4	Ashok	BA	Bilaspur	9877899877	
6	5	Raj	DCA	Raipur	9898987676	
7	6	Kinshu	PGDCA	Raipur	9876786545	
8	7	Prateek	MBA	Durg	9876543256	
9	8	Aditya	BBA	Bhilai	9879000766	
10	9	Ravi	BCA	Durg	9878787878	
11	10	Sheetal	BCA	Raipur	9543434343	
12						

- Step 2 : Close the Excel File and Open the Microsoft Access.
- Step 3 : Click on Excel Icon In External data Tab.



Step 4 : Browse the Location of the excel file, Then Click on OK button.

Get External Data - Excel Spreadsheet

Select the source and destination of the data

Specify the source of the data.

File name:

Specify how and where you want to store the data in the current database.

Import the source data into a new table in the current database.
If the specified table does not exist, Access will create it. If the specified table already exists, Access might overwrite its contents with the imported data. Changes made to the source data will not be reflected in the database.

Append a copy of the records to the table:
If the specified table exists, Access will add the records to the table. If the table does not exist, Access will create it. Changes made to the source data will not be reflected in the database.

Link to the data source by creating a linked table.
Access will create a table that will maintain a link to the source data in Excel. Changes made to the source data in Excel will be reflected in the linked table. However, the source data cannot be changed from within Access.

Step 5 : click on the next button in following Window.

Import Spreadsheet Wizard

Your spreadsheet file contains more than one worksheet or range. Which worksheet or range would you like?

Show Worksheets Show Named Ranges

Sheet1
Sheet2
Sheet3
Sheet4
Sheet5
Sheet6

Sample data for worksheet 'Sheet1'.

1	Id	Name	Class	Address	Contact
2	1	Ankita	BCA	Bhilai	9867554637
3	2	Shraddha	BSC	Durg	9876345269
4	3	Jyoti	B.COM	Durg	9875410987
5	4	Ashok	BA	Bilaspur	9877899877
6	5	Raj	DCA	Raipur	9898987676
7	6	Kinshu	PGDCA	Raipur	9876786545
8	7	Prateek	MBA	Durg	9876543256
9	8	Aditya	BBA	Bhilai	9879000766
10	9	Ravi	BCA	Durg	9878787878
11	10	Sheetal	BCA	Raipur	9543434343



Step 6 : Set the data types for every Field and then click on next button.

You can specify information about each of the fields you are importing. Select fields in the area below. You can then modify field information in the 'Field Options' area.

Field Options

Field Name: Name Data Type: Text

Indexed: No Do not import field (Skip)

Id	Name	Class	Address	Contact
1	Ankita	BCA	Bhilai	9867554637
2	Shraddha	BSC	Durg	9876345269
3	Jyoti	B.COM	Durg	9875410987
4	Ashok	BA	Bilaspur	9877899877
5	Raj	DCA	Raipur	9898987676
6	Kinshu	PGDCA	Raipur	9876786545
7	Prateek	MBA	Durg	9876543256
8	Aditya	BBA	Bhilai	9879000766
9	Ravi	BCA	Durg	9878787878
10	Sheetal	BCA	Raipur	9543434343

Buttons: Cancel, < Back, Next >, Finish

Step 7 : Add the primary key to your table and then click on Next button.

Microsoft Access recommends that you define a primary key for your new table. A primary key is used to uniquely identify each record in your table. It allows you to retrieve data more quickly.

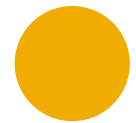
Let Access add primary key.

Choose my own primary key. Id

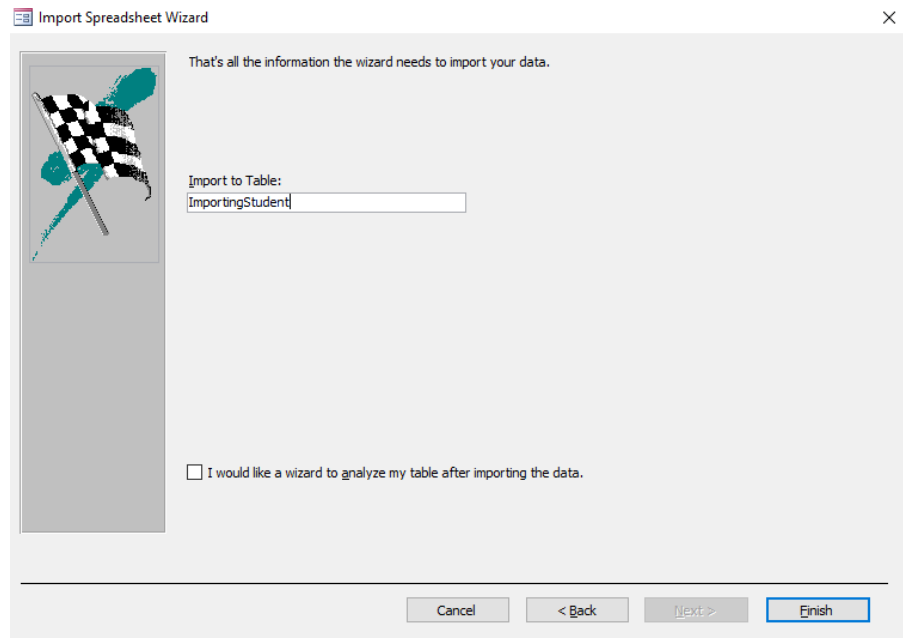
No primary key.

Id	Name	Class	Address	Contact
1	Ankita	BCA	Bhilai	9867554637
2	Shraddha	BSC	Durg	9876345269
3	Jyoti	B.COM	Durg	9875410987
4	Ashok	BA	Bilaspur	9877899877
5	Raj	DCA	Raipur	9898987676
6	Kinshu	PGDCA	Raipur	9876786545
7	Prateek	MBA	Durg	9876543256
8	Aditya	BBA	Bhilai	9879000766
9	Ravi	BCA	Durg	9878787878
10	Sheetal	BCA	Raipur	9543434343

Buttons: Cancel, < Back, Next >, Finish

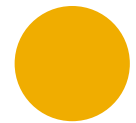


- Step 8 : Give the table name and click on the finish button a ImportingStudent.



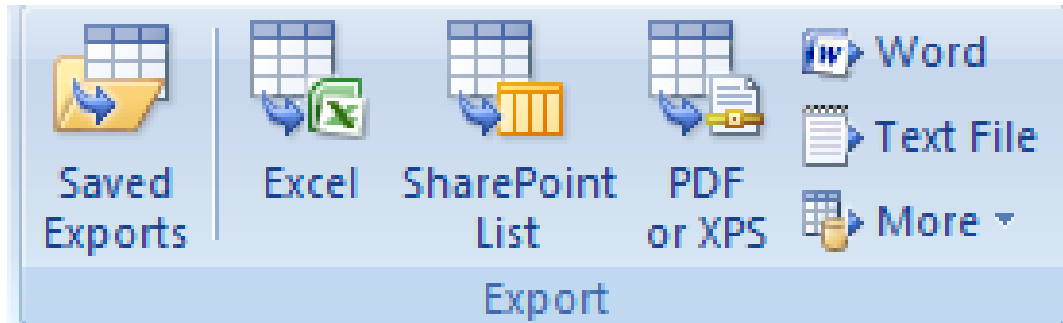
- Step 9 : The following table will appear on your access screen.

StudentDetails Employee ImportingStudent						
	Id	Name	Class	Address	Contact	Add New Field
	1	Ankita	BCA	Bhilai	9867554637	
	2	Shraddha	BSC	Durg	9876345269	
	3	Jyoti	B.COM	Durg	9875410987	
	4	Ashok	BA	Bilaspur	9877899877	
	5	Raj	DCA	Raipur	9898987676	
	6	Kinshu	PGDCA	Raipur	9876786545	
	7	Prateek	MBA	Durg	9876543256	
	8	Aditya	BBA	Bhilai	9879000766	
	9	Ravi	BCA	Durg	9878787878	
	10	Sheetal	BCA	Raipur	9543434343	
*						



TOPIC : EXPORTING DATA FROM ACCESS TO EXCEL AND WORD

- Microsoft Access is an efficient program for creating and maintaining databases. You can use Excel spreadsheets to manipulate and assess the data that is kept in an Access table.
- Microsoft has made it simple for the Office applications to collaborate with each other to do various things. Exporting your data from Microsoft Access to be analyzed in Excel takes only a few minutes.

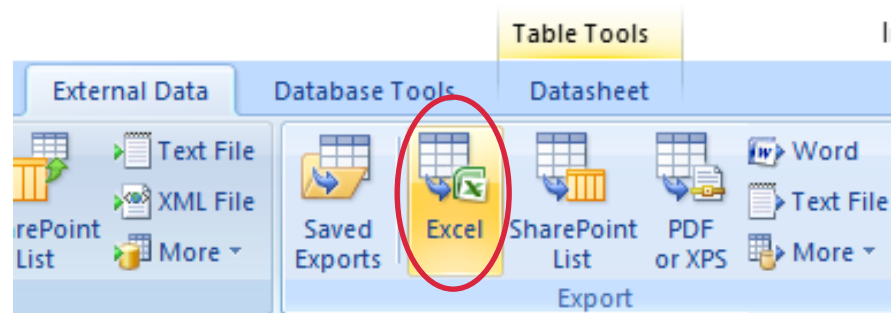


STEPS HOW TO EXPORT DATA FROM MS ACCESS TO EXCEL

- Step 1 : Create the following table in your MS Access database.

ID	FirstName	LastName	DOB	Salary	Female	State
1	Raj	Sharma	4/15/1999	\$500.00	<input type="checkbox"/>	Chhattisgarh
2	Sushma	Singh	3/30/1997	\$200.00	<input checked="" type="checkbox"/>	Madhya Pradesh
3	Preeti	Chouhan	7/7/1998	\$250.00	<input checked="" type="checkbox"/>	Delhi
4	Radha	Sharma	8/6/2000	\$320.00	<input checked="" type="checkbox"/>	Delhi
5	Ayush	Sharma	6/3/1999	\$300.00	<input type="checkbox"/>	Chhattisgarh
6	Shrishti	Tiwari	6/2/1998	\$400.00	<input checked="" type="checkbox"/>	Madhya Pradesh
7	Ajay	Singh	7/1/1997	\$430.00	<input type="checkbox"/>	Delhi

- Click on the Excel button which is present in Export Group in Export tab.



○ Step 3 : Select the location of the file and then click on “OK” Button

Export - Excel Spreadsheet

Select the destination for the data you want to export

Specify the destination file name and format.

File name: C:\Users\Neha\Documents\Employee.xlsx Browse...

File format: Excel Workbook (*.xlsx)

Specify export options.

- Export data with formatting and layout.**
Select this option to preserve most formatting and layout information when exporting a table, query, form, or report.
- Open the destination file after the export operation is complete.**
Select this option to view the results of the export operation. This option is available only when you export formatted data.
- Export only the selected records.**
Select this option to export only the selected records. This option is only available when you export formatted data and have records selected.

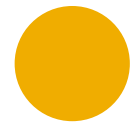
OK Cancel



Step 4 : Go to the location of the file and open the excel file.

The screenshot shows the Microsoft Excel interface with the following data in the spreadsheet:

	A	B	C	D	E	F	G	H	I	J	K	L
1	Id	Name	Class	Address	Contact							
2	1	Ankita	BCA	Bhilai	9867554637							
3	2	Shraddha	BSC	Durg	9876345269							
4	3	Jyoti	B.COM	Durg	9875410987							
5	4	Ashok	BA	Bilaspur	9877899877							
6	5	Raj	DCA	Raipur	9898987676							
7	6	Kinshu	PGDCA	Raipur	9876786545							
8	7	Prateek	MBA	Durg	9876543256							
9	8	Aditya	BBA	Bhilai	9879000766							
10	9	Ravi	BCA	Durg	9878787878							
11	10	Sheetal	BCA	Raipur	9543434343							
12												

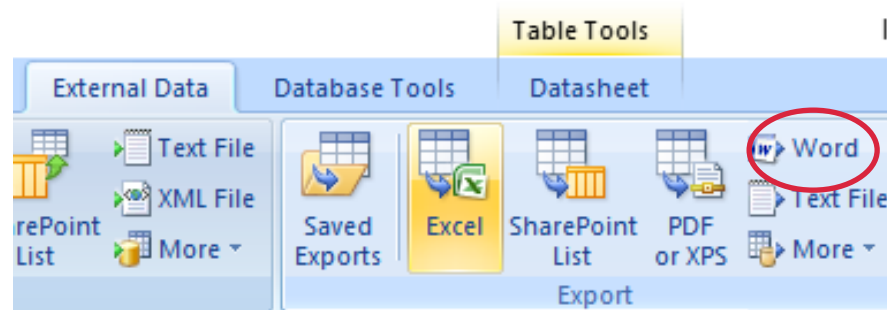


STEPS HOW TO EXPORT DATA FROM MS ACCESS TO WORD

- Step 1 : Create the following table in your MS Access database.

ID	FirstName	LastName	DOB	Salary	Female	State
1	Raj	Sharma	4/15/1999	\$500.00	<input type="checkbox"/>	Chhattisgarh
2	Sushma	Singh	3/30/1997	\$200.00	<input checked="" type="checkbox"/>	Madhya Pradesh
3	Preeti	Chouhan	7/7/1998	\$250.00	<input checked="" type="checkbox"/>	Delhi
4	Radha	Sharma	8/6/2000	\$320.00	<input checked="" type="checkbox"/>	Delhi
5	Ayush	Sharma	6/3/1999	\$300.00	<input type="checkbox"/>	Chhattisgarh
6	Shrishti	Tiwari	6/2/1998	\$400.00	<input checked="" type="checkbox"/>	Madhya Pradesh
7	Ajay	Singh	7/1/1997	\$430.00	<input type="checkbox"/>	Delhi

- Click on the Word button which is present in Export Group in Export tab.



Step 3 : Select the location of the file and then click on “OK” Button

Export - RTF File

Select the destination for the data you want to export

Specify the destination file name and format.

File name:

Specify export options.

- Export data with formatting and layout.**
Select this option to preserve most formatting and layout information when exporting a table, query, form, or report.
- Open the destination file after the export operation is complete.**
Select this option to view the results of the export operation. This option is available only when you export formatted data.
- Export only the selected records.**
Select this option to export only the selected records. This option is only available when you export formatted data and have records selected.

- Step 4 : Go to the location of the file and open the word file.

D	FirstName	LastName	DOB	Salary	Female	State
1	Raj	Sharma	4/15/1999	\$500.00	No	Chhattisgarh
2	Sushma	Singh	3/30/1997	\$200.00	Yes	Madhya Pradesh
3	Preeti	Chouhan	7/7/1998	\$250.00	Yes	Delhi
4	Radha	Sharma	8/6/2000	\$320.00	Yes	Delhi
5	Ayush	Sharma	6/3/1999	\$300.00	No	Chhattisgarh
6	Shrishti	Tiwari	6/2/1998	\$400.00	Yes	Madhya Pradesh
7	Ajay	Singh	7/1/1997	\$430.00	No	Delhi



TOPIC : FORM WIZARD

Creating a Form using a form Wizard: A form is a database object that is used to enter or display data in a database.

To Create form using the wizard follow the following steps :

- Navigate to the table you want to base the form on.
- Click Create on the ribbon.
- Click Forms.
- You are able to navigate using the navigation arrow at the bottom of the form



FORM DESIGN :

The screenshot shows an Access form titled "Employee" in form view. The form has a blue header with a ribbon containing "ImportData", "Employee", and "Employee" tabs. The form fields are:

- ID: A text box with a "New" button.
- FirstName: A text box.
- LastName: A text box.
- DOB: A text box.
- Salary: A text box.
- Female: A checkbox.
- State: A text box.

To enter the record on the Form :

- Click the View button on the ribbon to switch from layout view To form view.
- Enter the data for each field in the record, Pressing the enter key to move to the end field.
- Press enter after you have entered data for the last field, This will send the record to the table.

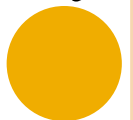
TOPIC : RELATIONSHIP IN MICROSOFT ACCESS :

- One of the goals of good database design is to remove data redundancy.
- To achieve that goal, you divide your data into many subject-based tables so that each fact is represented only once.
- To do this, all the common fields which are related to each other are placed in one table.
- To do this step correctly, you must first understand the relationship between your tables, and then specify these relationships in your Access database.

Why Create Table Relationships?

- MS Access uses table relationships to join tables when you need to use them in a database object. There are several reasons why you should create table relationships before you create other database objects, such as forms, queries, macros, and reports.

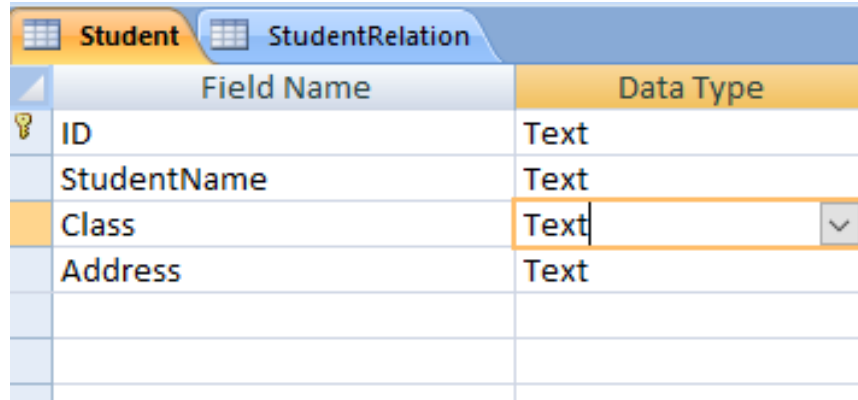
- When you design a form or report, MS Access uses the information it gathers from the table relationships you have already defined to present you with informed choices and to prepopulate property settings with appropriate default values.
- When you design a database, you divide your information into tables, each of which has a primary key and then add foreign keys to related tables that reference those primary keys.
- These foreign **key-primary key pairings** form the basis for table relationships and multi-table queries.
- To work with records from more than one table, you often must create a query that joins the tables.
- The query works by matching the values in the primary key field of the first table with a foreign key field in the second table.



- Table relationships : In access we store data in multiple tables and then use relationships to join the tables.

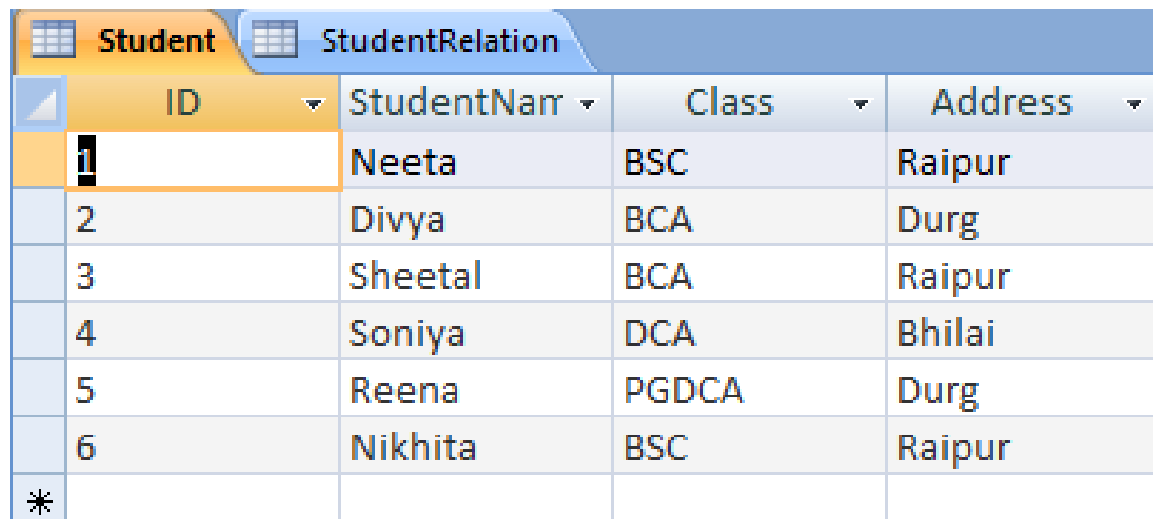
Create a relationship in an access desktop database :

Step 1 : Create a Table with following data types of the field.



Field Name	Data Type
ID	Text
StudentName	Text
Class	Text
Address	Text

Step 2 : enter the following data in the table.



ID	StudentName	Class	Address
1	Neeta	BSC	Raipur
2	Divya	BCA	Durg
3	Sheetal	BCA	Raipur
4	Soniya	DCA	Bhilai
5	Reena	PGDCA	Durg
6	Nikhita	BSC	Raipur
*			



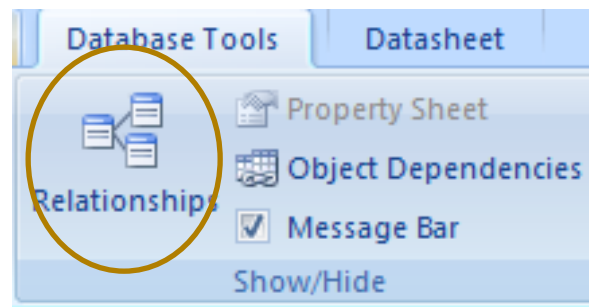
Step 3 : Create a 2nd table with the following fields and data types.

Field Name	Data Type
ID	Text
Contact	Text
FatherName	Text
MotherName	Text

Step 4 : Enter the following data into the table.

ID	Contact	FatherName	MotherName
1	8675876478	Nisha sharma	Mohan Sharma
2	8575857885	Divya Shukla	Ram Shukla
3	6574675678	Rashmi Mathur	Ravi Mathur
4	9878698578	Shilpa Gupta	Rohan Gupta
5	9789898989	Sonali Mishra	Sushil Mishra
6	6878787564	Sharda Mishra	Shashwat Mish

Step 5 : Go to the database tools and then click on relationship button



Step 6 : Select the common field from both the tables and then click on OK button.

Table/Query:	Related Table/Query:
Student	StudentRelation
ID	ID

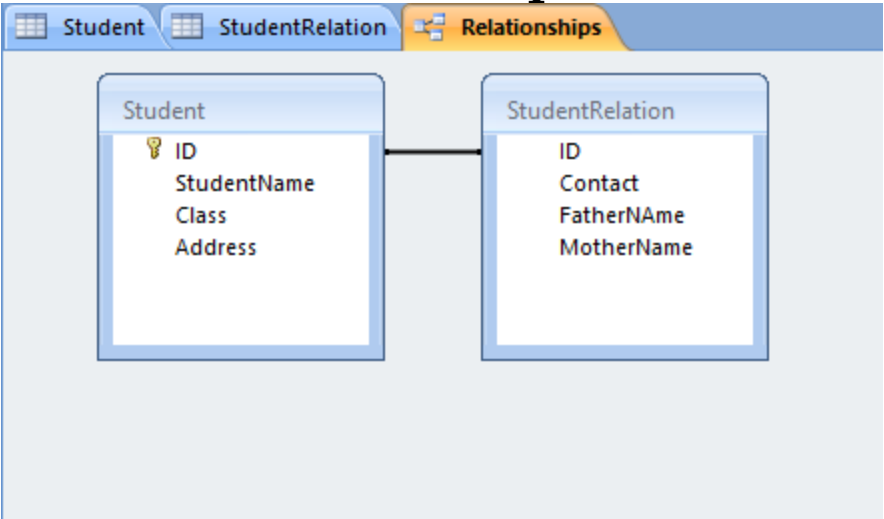
Enforce Referential Integrity

Cascade Update Related Fields

Cascade Delete Related Records

Relationship Type: One-To-Many

Step 7 : the following relationship will generated, after creating the relationship save the relationship.



TOPIC : KEY ATTRIBUTE

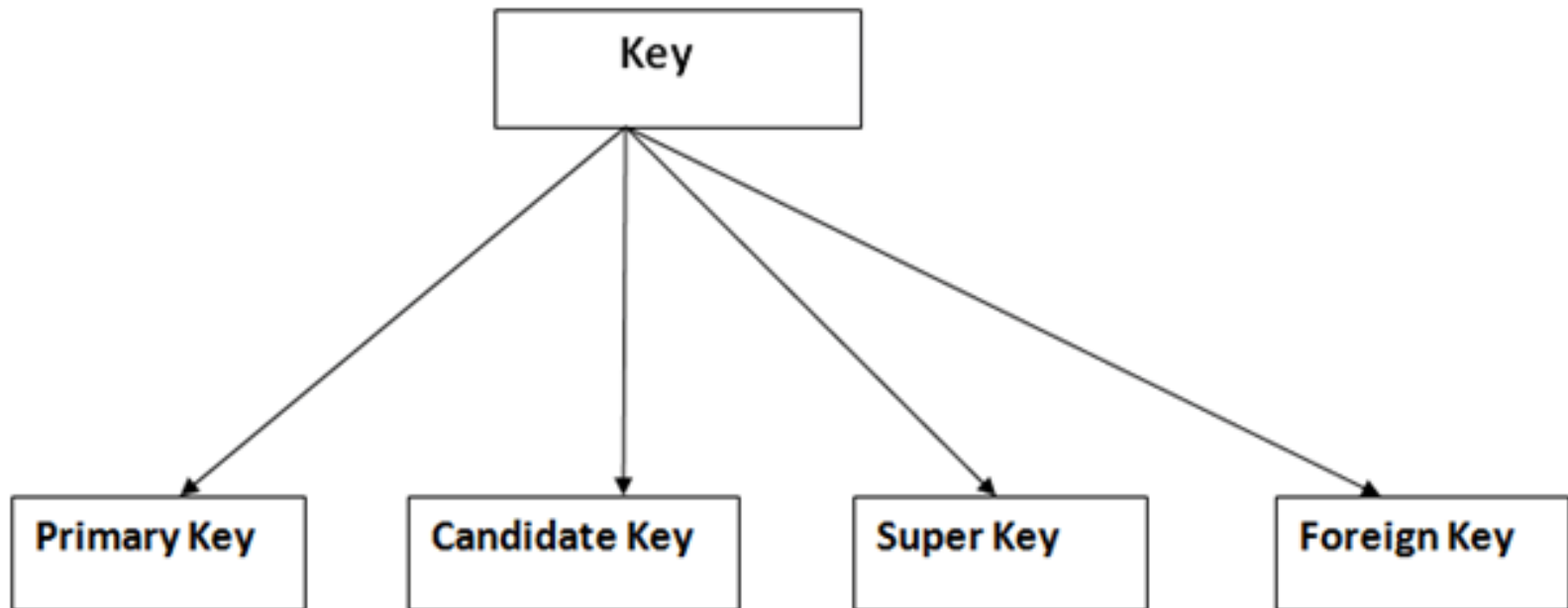
What are Keys in DBMS?

- **KEYS in DBMS** is an attribute or set of attributes which helps you to identify a row(tuple) in a relation(table). They allow you to find the relation between two tables.
- Keys help you uniquely identify a row in a table by a combination of one or more columns in that table. Key is also helpful for finding unique record or row from the table. Database key is also helpful for finding unique record or row from the table.
- **Why we need a Key?**

Here are some reasons for using any Database key in the DBMS system.

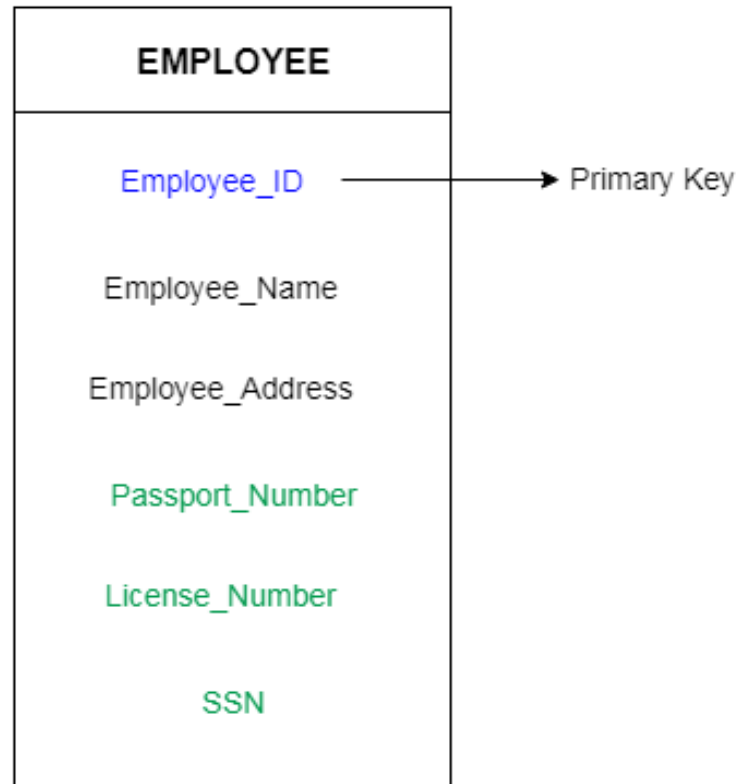
- Keys help you to identify any row of data in a table. In a real-world application, a table could contain thousands of records. Moreover, the records could be duplicated. Keys ensure that you can uniquely identify a table record despite these challenges.
- Allows you to establish a relationship between and identify the relation between tables
- Help you to enforce identity and integrity in the relationship.

TYPES OF KEY:



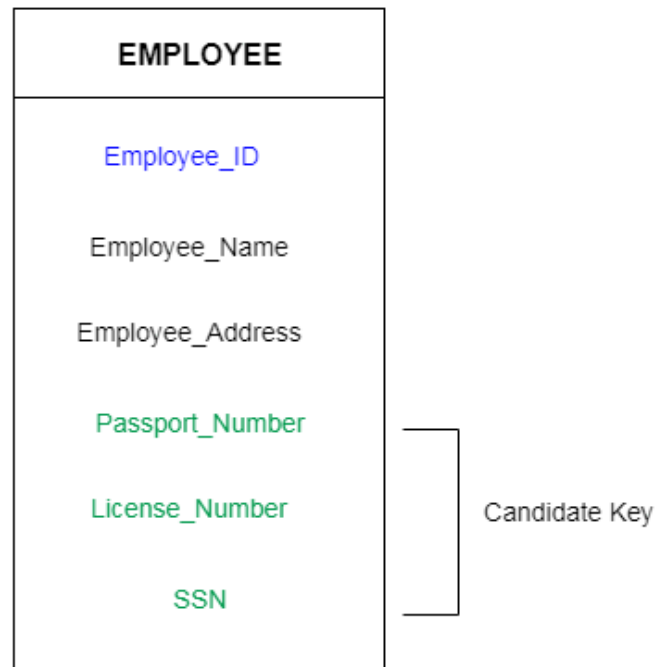
1. Primary key

- It is the first key which is used to identify one and only one instance of an entity uniquely. An entity can contain multiple keys as we saw in PERSON table. The key which is most suitable from those lists become a primary key.
- In the EMPLOYEE table, ID can be primary key since it is unique for each employee. In the EMPLOYEE table, we can even select License_Number and Passport_Number as primary key since they are also unique.



2. Candidate key

- A candidate key is an attribute or set of an attribute which can uniquely identify a tuple.
- The remaining attributes except for primary key are considered as a candidate key. The candidate keys are as strong as the primary key.
- **For example:** In the EMPLOYEE table, id is best suited for the primary key. Rest of the attributes like SSN, Passport_Number, and License_Number, etc. are considered as a candidate key.



3. Super key :

- Super key is a set of an attribute which can uniquely identify a tuple. Super key is a superset of a candidate key.
- A superkey is a group of single or multiple keys which identifies rows in a table. A Super key may have additional attributes that are not needed for unique identification.
- **Example:**

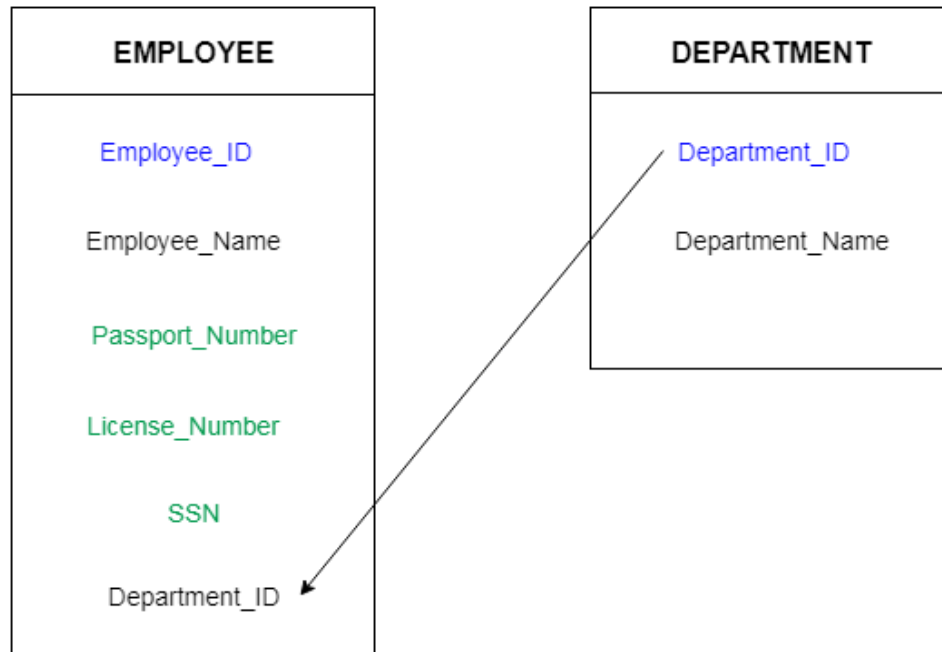
EmpSSN	EmpNum	Empname
9812345098	AB05	Shown
9876512345	AB06	Roslyn
199937890	AB07	James

- In the above-given example, EmpSSN and EmpNum name are superkeys.



4. Foreign key

- Foreign keys are the column of the table which is used to point to the primary key of another table.
- In a company, every employee works in a specific department, and employee and department are two different entities. So we can't store the information of the department in the employee table. That's why we link these two tables through the primary key of one table.
- We add the primary key of the DEPARTMENT table, Department_Id as a new attribute in the EMPLOYEE table.
- Now in the EMPLOYEE table, Department_Id is the foreign key, and both the tables are related.



Unit - 5

Animation and Graphics

WHAT IS MULTIMEDIA ?

- Multimedia is an interactive media and provides multiple ways to represent information to the user in a powerful manner. It provides an interaction between users and digital information.
- It is a medium of communication. Some of the sectors where multimedia is used extensively are education, training, reference material, business presentations, advertising and documentaries.
- The information presented through multimedia has better quality and capability, as it can be understood easily.

Literal Meaning of Multimedia

- **Multi** – it means more than one
- **Medium** – it is singular and it means intermediary or mean
- **Media** – it is plural and it means conveying the information
- Likewise, Multimedia is the field of Computer Science that integrates different forms of information and represents in the form of audio, video, and animation along with the traditional media, i.e., text, graphics/drawings, images, etc.

Definition of Multimedia

- By definition Multimedia is a representation of information in an attractive and interactive manner with the use of a combination of text, audio, video, graphics and animation.
- In other words we can say that Multimedia is a computerized method of presenting information combining textual data, audio, visuals (video), graphics and animations.
- For examples: E-Mail, Yahoo Messenger, Video Conferencing, and Multimedia Message Service (MMS).

Elements Of Multimedia

Text

Audio

Animation

Video

Images

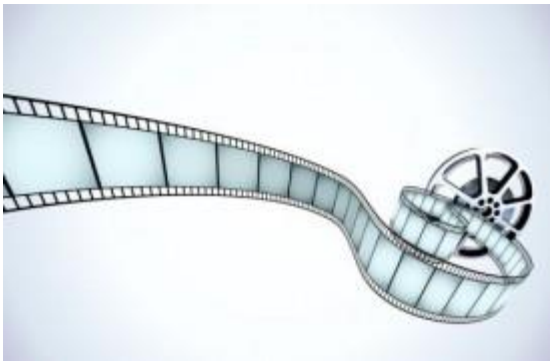
TEXT :

- A broad term for something that contains words to express something.
 - Text is the most basic element of multimedia.
 - A good choice of words could help convey the intended message to the users (keywords).
 - Used in contents, menus, navigational buttons
 - It contains alphanumeric and some other special characters.
- Keyboard is usually used for input of text; however, there are some internal (inbuilt) features to include such text.



ANIMATION

- Computer animation is a modern technology, which helps in creating, developing, sequencing, and displaying a set of images (technically known as 'frames'). Animation gives visual effects or motion very similar to that of a video file (see image given below).
- The illusion of motion created by the consecutive display of images of static elements.
- In multimedia, animation is used to further enhance / enriched the experience of the user to further understand the information conveyed to them.



GRAPHICS (Image)

- Any two-dimensional figure or illustration
- Could be produced manually (by drawing, painting, carving, etc.) or by computer graphics technology.
- Used in multimedia to show more clearly what a particular information is all about (diagrams, picture).



There are two types of Graphics:

- **Bitmap images**- Bitmap images are real images that can be captured from devices such as digital cameras or scanners. Generally bitmap images are not editable. Bitmap images require a large amount of memory.
- **Vector Graphics**- Vector graphics are drawn on the computer and only require a small amount of memory. These graphics are editable.

Audio

- A multimedia application may require the use of speech, music and sound effects. These are called audio or sound element of multimedia. Speech is also a perfect way for teaching.
- Audio are of analog and digital types. Analog audio or sound refers to the original sound signal. Computer stores the sound in digital form. Therefore, the sound used in multimedia application is digital audio.



Video

- This technology records, synthesizes, and displays images (known as frames) in such sequences (at a fixed speed) that makes the creation appear as moving; this is how we see a completely developed video. In order to watch a video without any interruption, video device must display 25 to 30 frames/second.
- Is the technology of capturing, recording, processing, transmitting, and reconstructing moving pictures.
- Video is more towards photo realistic image sequence or live recording as in comparison to animation.



Multimedia Application

- Let us now see the different fields where multimedia is applied. The fields are described in brief below –
1. Presentation :
 - With the help of multimedia, presentation can be made effective.
 2. E-books :
 - Today, books are digitized and easily available on the Internet.
 3. Digital Library :
 - The need to be physically present at a library is no more necessary. Libraries can be accessed from the Internet also. Digitization has helped libraries to come to this level of development.
 4. E-learning :
 - Today, most of the institutions (public as well as private both) are using such technology to education people.

5. Movie making

- Most of the special effects that we see in any movie, is only because of multimedia technology.

6. Video games

- Video games are one of the most interesting creations of multimedia technology. Video games fascinate not only the children but adults too.

7. Animated films

- Along with video games, animated film is another great source of entertainment for children.

8. Multimedia conferencing

- People can arrange personal as well as business meetings online with the help of multimedia conferencing technology.

9. E-shopping

- Multimedia technology has created a virtual arena for the e-commerce.

Real Life Places Where Multimedia is used :

Following are the common areas of applications of multimedia.

- **Multimedia in Business-** Multimedia can be used in many applications in a business. The multimedia technology along with communication technology has opened the door for information of global work groups. Today the team members may be working anywhere and can work for various companies. Thus the work place will become global. The multimedia network should support the following facilities:
 - Voice Mail
 - Electronic Mail
 - Multimedia based FAX
 - Office Needs
 - Employee Training
 - Sales and Other types of Group Presentation
 - Records Management
- **Multimedia in Marketing and Advertising-** By using multimedia marketing of new products can be greatly enhanced. Multimedia boost communication on an affordable cost opened the way for the marketing and advertising personnel. Presentation that have flying banners, video transitions, animations, and sound effects are some of the elements used in composing a multimedia based advertisement to appeal to the consumer in a way never used before and promote the sale of the products.

- **Multimedia in Entertainment-** By using multimedia marketing of new products can be greatly enhanced. Multimedia boost communication on an affordable cost opened the way for the marketing and advertising personnel. Presentation that have flying banners, video transitions, animations, and sound effects are some of the elements used in composing a multimedia based advertisement to appeal to the consumer in a way never used before and promote the sale of the products.
- **Multimedia in Education-** Many computer games with focus on education are now available. Consider an example of an educational game which plays various rhymes for kids. The child can paint the pictures, increase reduce size of various objects etc apart from just playing the rhymes. Several other multimedia packages are available in the market which provide a lot of detailed information and playing capabilities to kids.

- **Multimedia in Hospital-** Multimedia best use in hospitals is for real time monitoring of conditions of patients in critical illness or accident. The conditions are displayed continuously on a computer screen and can alert the doctor/nurse on duty if any changes are observed on the screen. Multimedia makes it possible to consult a surgeon or an expert who can watch an ongoing surgery live on his PC monitor and give online advice at any crucial juncture.
- In hospitals multimedia can also be used to diagnose an illness with CD-ROMs/ Cassettes/ DVDs full of multimedia based information about various diseases and their treatment. Some hospitals extensively use multimedia presentations in training their junior staff of doctors and nurses. Multimedia displays are now extensively used during critical surgeries.

Communication Technology and Multimedia Services-

- The advancement of high computing abilities, communication ways and relevant standards has started the beginning of an era where you will be provided with multimedia facilities at home. These services may include:
 - Basic Television Services
 - Interactive entertainment
 - Digital Audio
 - Video on demand
 - Home shopping
 - Financial Transactions
 - Interactive multiplayer or single player games
 - Digital multimedia libraries
 - E-Newspapers, e-magazines

Topic : What is Animation?

- **Animation** is the process of designing, drawing, making layouts and preparation of photographic sequences which are integrated in the multimedia and gaming products.
- Animation involves the exploitation and management of still images to generate the illusion of movement. A person who creates animations is called animator.
- **Animation** is a method of photographing successive drawings, models, or even puppets, to create an illusion of movement in a sequence. Because our eyes can only retain an image for approx. $1/10$ of a second, when multiple images appear in fast succession, the brain blends them into a single moving image.
- In traditional animation, pictures are drawn or painted on transparent celluloid sheets to be photographed. Early cartoons are examples of this, but today, most animated movies are made with computer-generated imagery or CGI.

Types of animation :

The Animation is basically of 5 Types

1. Traditional Animation
2. 2D Animation
3. 3D Animation
4. Motion Graphics
5. Stop Motion

1. Traditional Animation

- Traditional animation can also be referred to as cell animation.
- This type of animation requires the animator to draw every single frame by hand to create an animated scene.
- This is usually done on a light table that allows the artists to see the previous drawing through the top layer of paper.
- Well-known companies like Disney are known for using this type of animation. Traditional animation is still done today on computers with special tablets.



2. 2D Animation

- 2D animation is also referred as two dimensional animation. It provides the dynamic activeness for static image.
- These Program are directed by Vector or Bitmap images.
- Dynamic working of animation is set by viewer by putting a series of frame. To smoothly run of an animation we need to set the frame at 15 frames/Per sec.
- It gives more flexibility to beginners in animation because they don't have to rely so heavily on drawing skills.

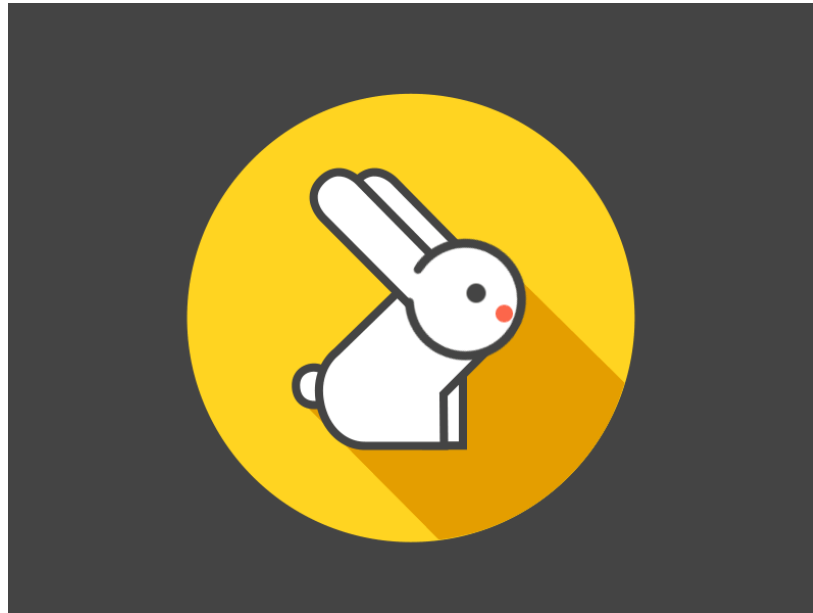
3. 3D animation

- 3D animation is also known as computer animation and it is currently the most commonly used form of animation.
- The process of 3D animation is very different from the traditional style but they both require the artist to share the same principles of movement and composition in animation.
- 3D animation has less to do with drawing and more to do with moving a character in a program.
- The National Science Foundation emphasizes how heavily 3D animators must rely on physics to create realistic animations. The animator creates keyframes or specific movements and lets the computer fill in the rest.



4. Motion Graphics

- Unlike the previously mentioned types of animation, motion graphics are not driven by characters or storylines. This art form focuses on the ability to move graphic elements, shapes, and text. This process is commonly used for things like television promotions, explainer videos, and animated logos.



5. Stop Motion

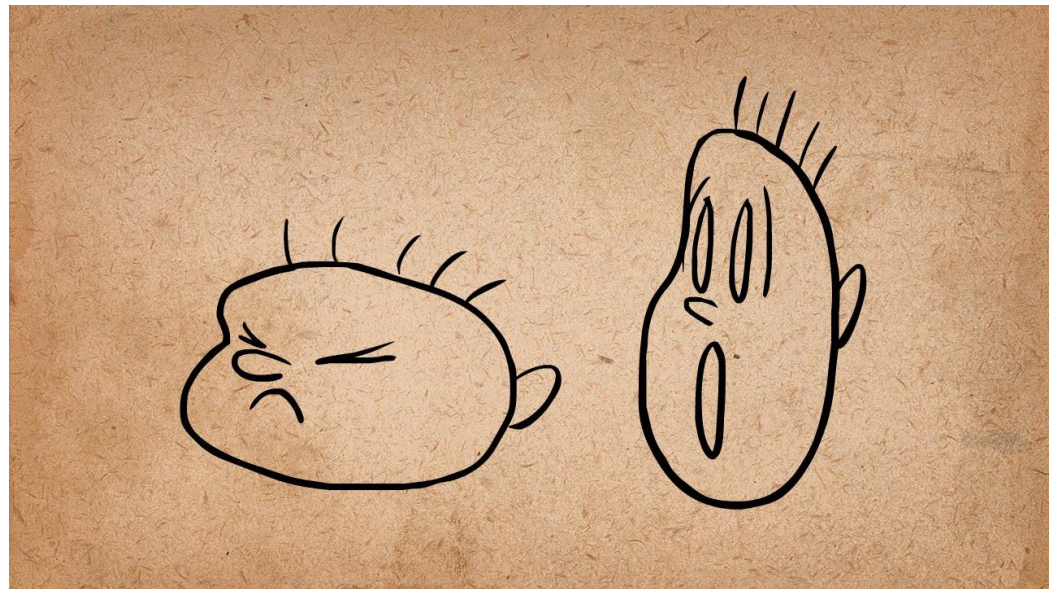
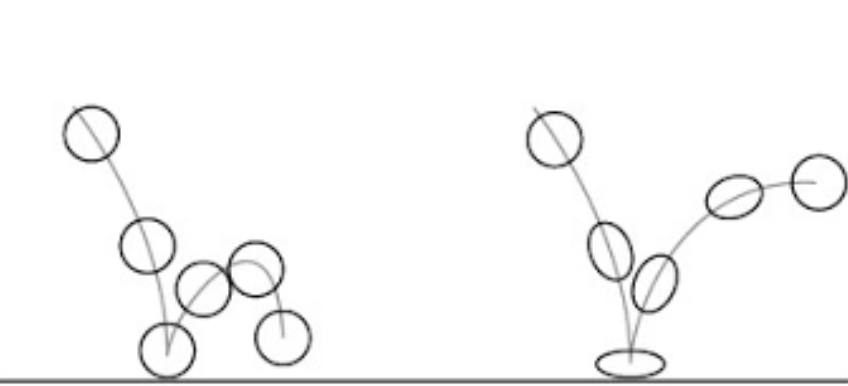
- Stop motion animation is very similar to traditional animation because it combines a series of still images that are slightly different to show movement.
- The largest difference is that stop motion uses photography and captures real objects. With stop motion, the artists take a photo of an object or scene and slightly moves the objects before taking another photo.
- The artist repeats this process until the scene is completed and uses each photo as a frame in the animation. It's similar to a flipbook with photos.



Principles of animation :

01. Squash and stretch :

The squash and stretch principle is considered the most important of the 12 principles of animation. When applied, it gives your animated characters and objects the illusion of gravity, weight, mass and flexibility. Think about how a bouncing rubber ball may react when tossed into the air: the ball stretches when it travels up and down and squishes when it hits the ground.



02. Anticipation

- Anticipation helps to prepare the viewer for what's about to happen. When applied, it has the effect of making the object's action more realistic.
- Consider how it might look if you were to jump in the air without bending your knees, or perhaps to throw a ball without first pulling your arm back. It would appear very unnatural (it may not even be possible to jump without bending your knees!). In the same way, animating movements without a flicker of anticipation will also make your motion seem awkward, stale and lifeless.



anticipation



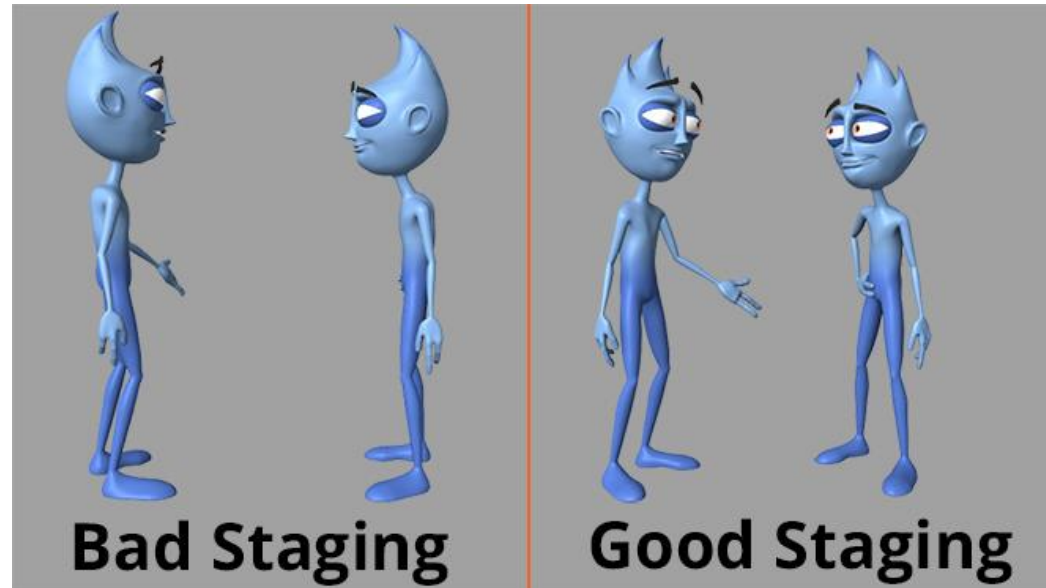
action



reaction

03. Staging :

- Staging in animation is a lot like composition in artwork. What we mean by that is, you should use motion to guide the viewer's eye and draw attention to what's important within the scene.
- Keep the focus on what's important within the scene, and keep the motion of everything else of non-importance to a minimum.

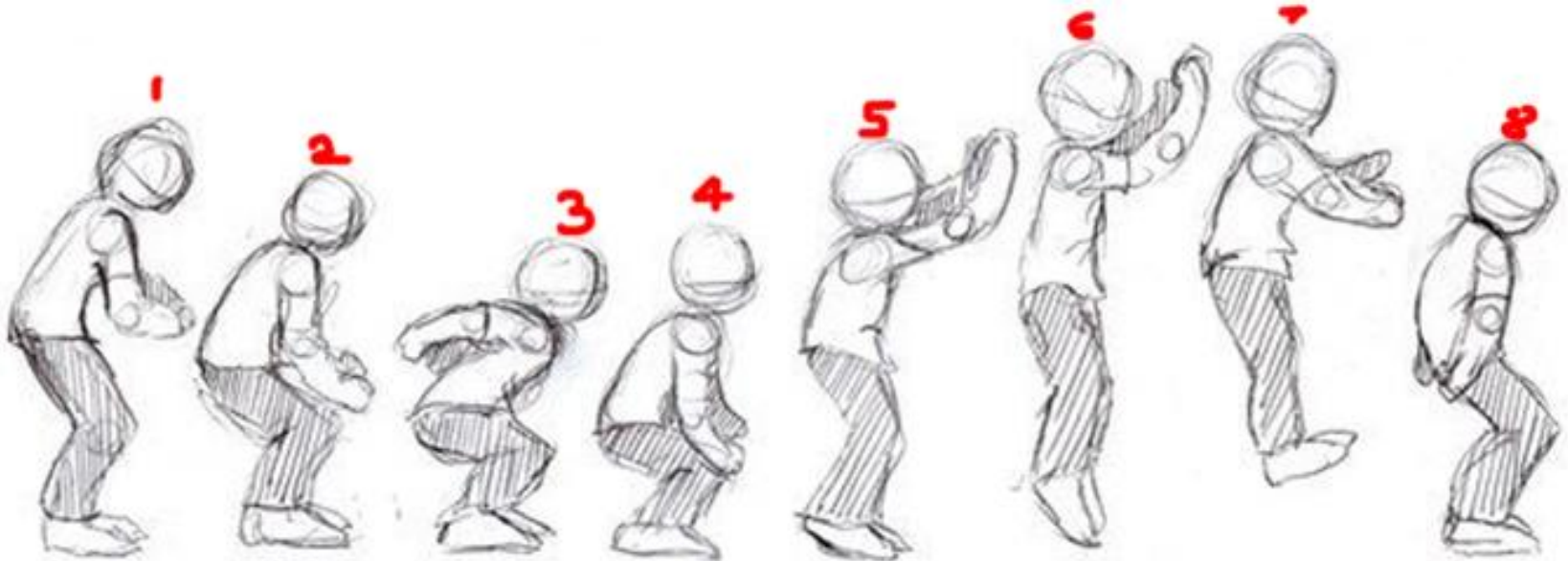


Bad Staging

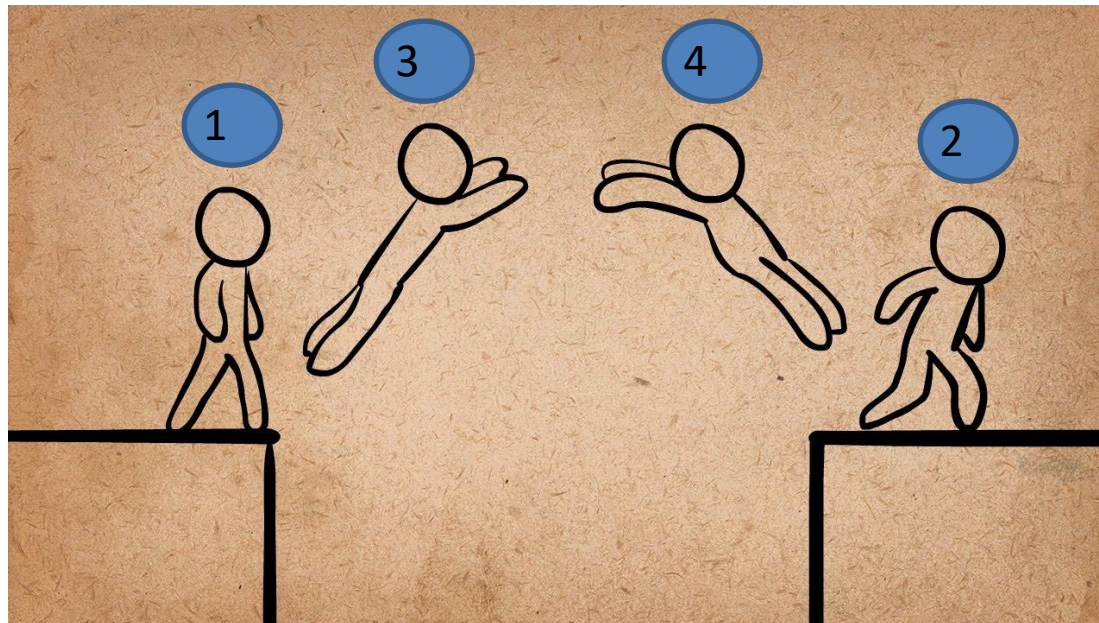
Good Staging

04. Straight ahead action and pose to pose

- There are two ways to handle drawing animation: straight ahead and pose to pose. Each has its own benefits, and the two approaches are often combined.
- **Straight Ahead** : Straight ahead action involves drawing frame-by-frame from start to finish. If you're looking for fluid, realistic movements, straight ahead action is your best bet.

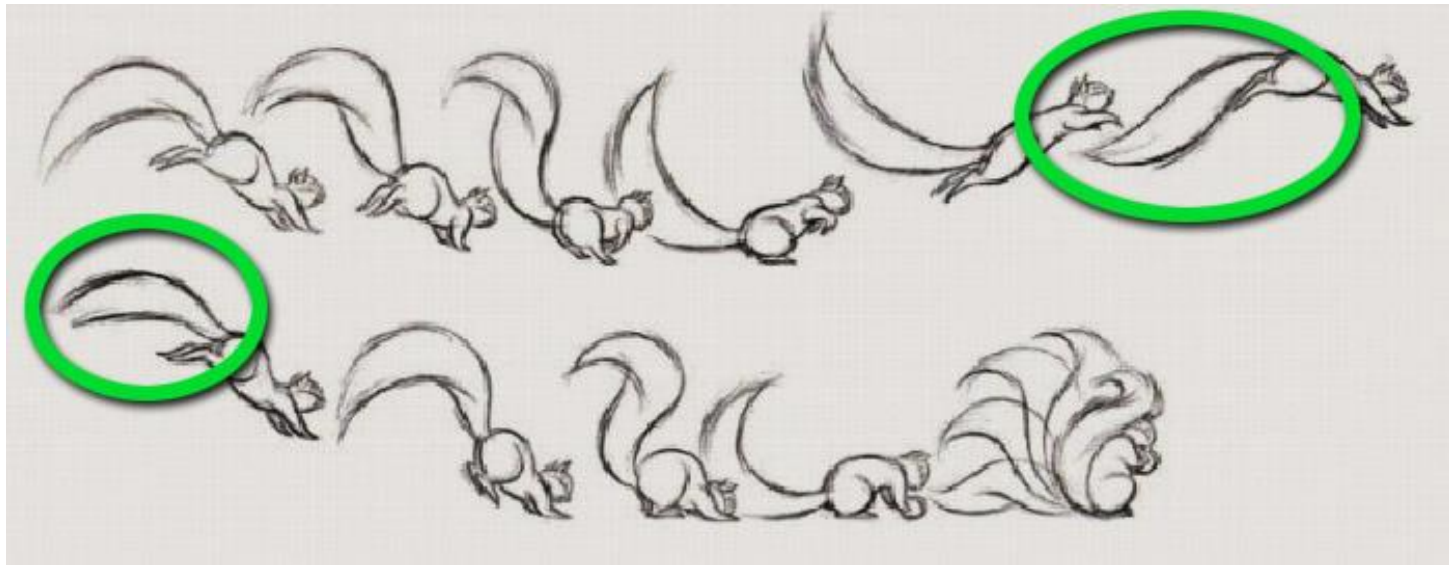


- **Pose to Pose** :With the pose to pose technique, you draw the beginning frame, the end frame, and a few key frames in-between. Then you go back and complete the rest. This technique gives you a bit more control within the scene and allows you to increase the dramatic effect of the motion.



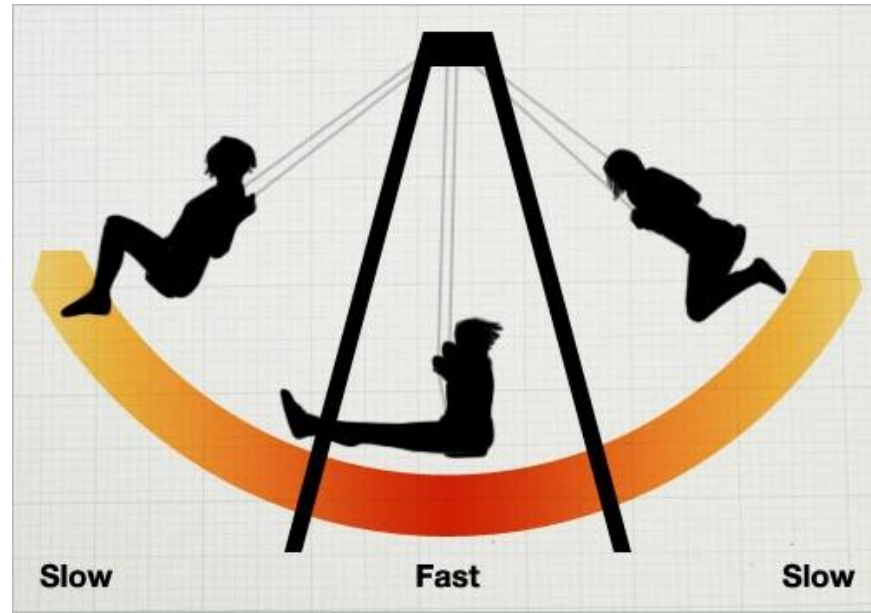
05. Follow through and overlapping action :

- When objects come to a standstill after being in motion, different parts of the object will stop at different rates. Similarly, not everything on an object will move at the same rate. This forms the essence of the fifth of Disney's principles of animation.
- If your character is running across the scene, their arms and legs may be moving at a different rate from their head. This is overlapping action. Likewise, when they stop running, their hair will likely continue to move for a few frames before coming to rest – this is follow through. These are important principles to understand if you want your animation to flow realistically.



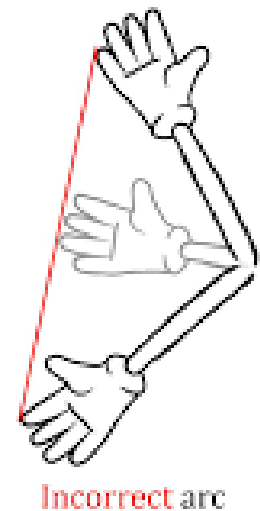
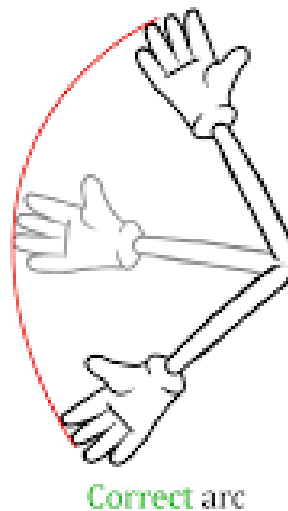
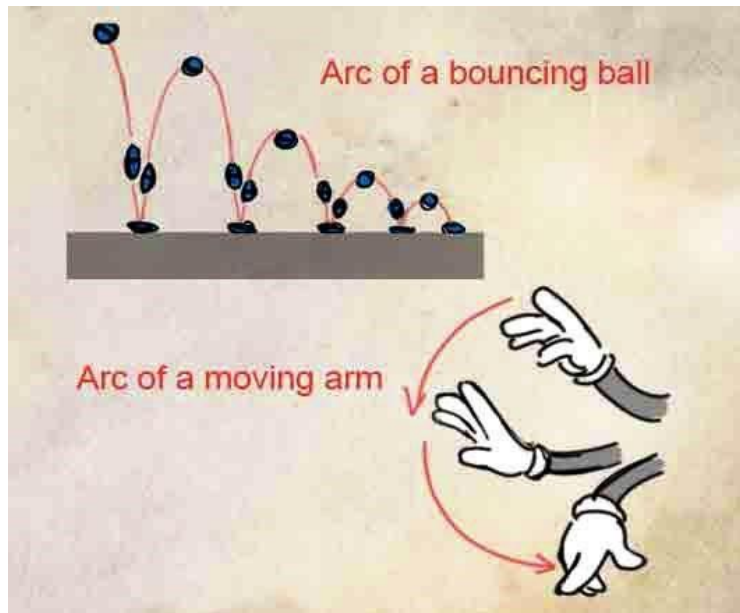
06. Slow in and slow out

- The best way to understand slow in and slow out is to think about how a car starts up and stops. It will start moving slowly, before gaining momentum and speeding up. The reverse will happen when the car brakes. In animation, this effect is achieved by adding more frames at the beginning and end of an action sequence. Apply this principle to give your objects more life.



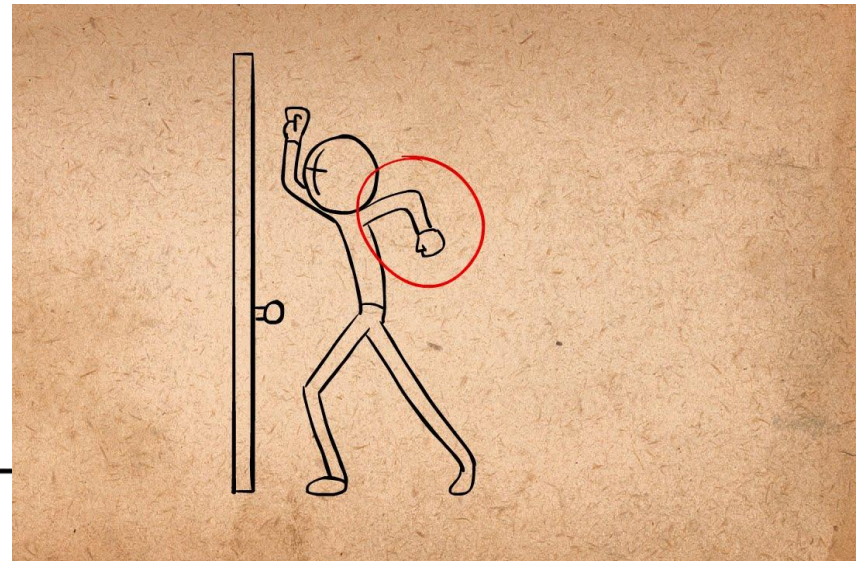
07. Arc

- When working in animation, it's best to stick with the laws of physics. Most objects follow an arc or a path when they're moving, and your animations should reflect that arc. For example, when you toss a ball into the air, it follows a natural arc as the effects of the Earth's gravity act upon it.



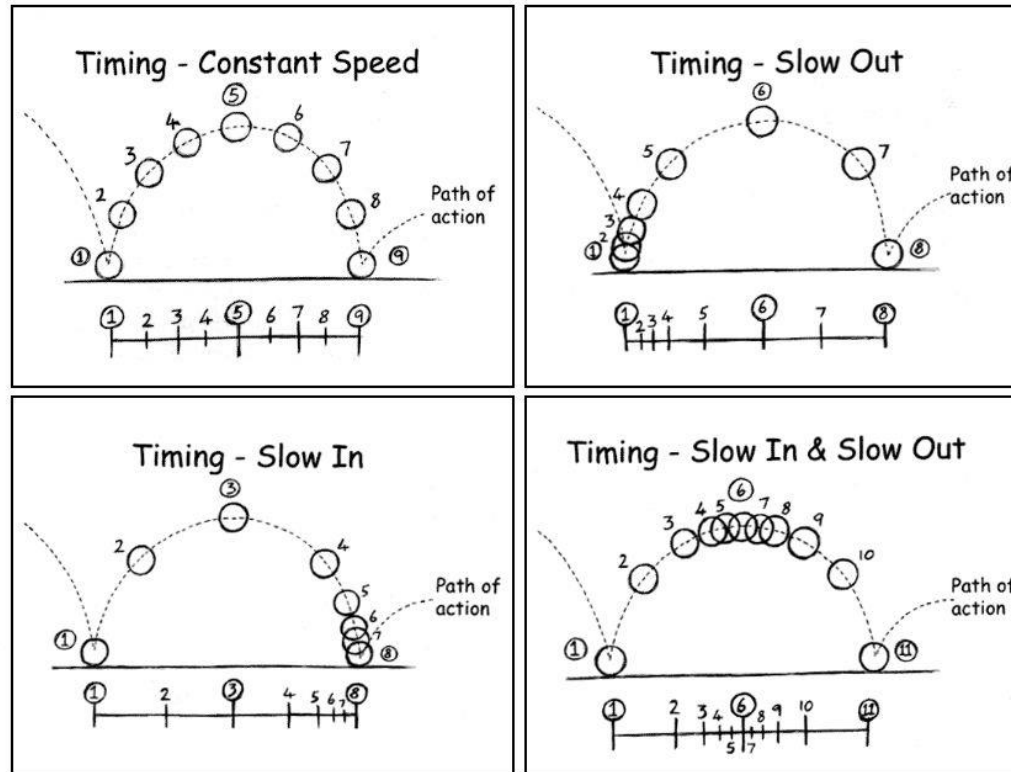
08. Secondary action

- Secondary actions are used to support or emphasize the main action going on within a scene. Adding secondary actions help add more dimension to your characters and objects.
- For instance, the subtle movement of your character's hair as they walk, or perhaps a facial expression or a secondary object reacting to the first. Whatever the case may be, this secondary action should not distract from the primary one.



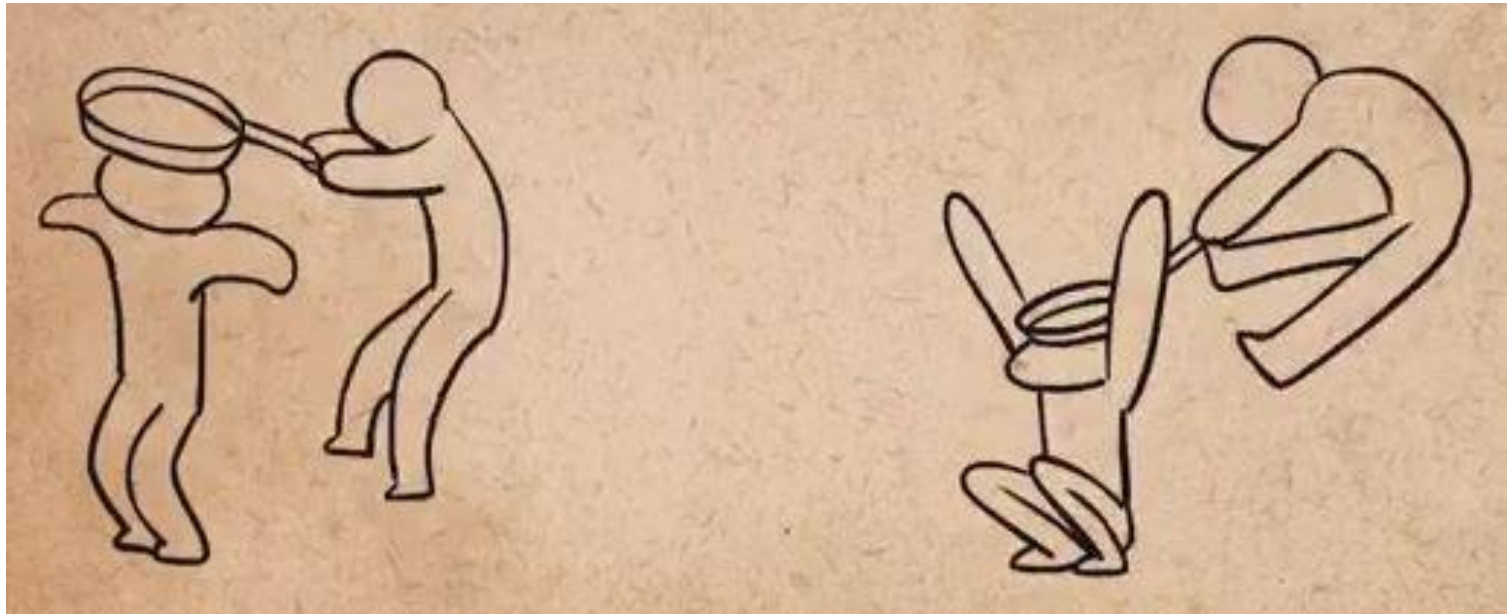
09. Timing

- For this principle of animation we need to look to the laws of physics again, and apply what we see in the natural world to our animations. In this case, the focus is on timing.
- If you move an object more quickly or slowly than it would naturally move in the real world, the effect won't be believable. Using the correct timing allows you to control the mood and the reaction of your characters and objects.



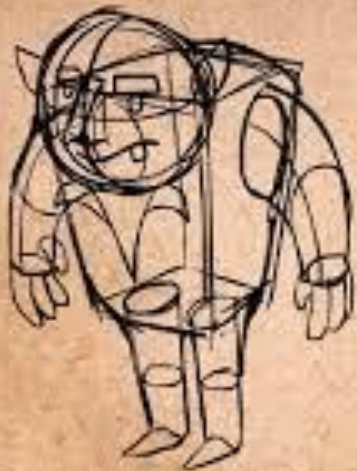
10. Exaggeration :

- Too much realism can ruin an animation, making it appear static and boring. Instead, add some exaggeration to your characters and objects to make them more dynamic. Find ways to push the limits just beyond what's possible, and your animations will pop.



11. Solid drawing

- You need to understand the basics of drawing. This includes knowing how to draw in three-dimensional space and understanding form and anatomy, weight and volume, and lights and shadows.
- While you can push the limits here, too, it's important to remain consistent. If your world has wonky doors and a warped perspective, keep that perspective throughout the entire animation. Otherwise, things will fall apart.



12. Appeal

- Your characters, objects, and the world in which they live need to appeal to the viewer. This includes having an easy-to-read design, solid drawing, and a personality. There is no formula for getting this right, but it starts with strong character development and being able to tell your story through the art of animation.



Hardware and software requirements for Animations :

Hardware resources requirements for animations :

- Hardware requirements same for both 2D and 3D animations but software resources are different.

Component	Recommended	Minimum
CPU (no Celeron)	Intel Core i7 or AMD Ryzen 7	Intel Core i5 or AMD Ryzen 5
RAM	32Gb	16Gb
Hard Disk	1Tb or better SSD	512Gb or better SSD
Display	17"	15.6"
Video RAM	NVIDIA GeForce RTX	NVIDIA GeForce GTX
Operating System	Windows 10	Windows 10

Software Requirements :

2D animations software :

1. Flash
2. Pencil2D
3. Synfig Studio
4. CrazyTalk Animator
5. Blender 2D Animation
6. CrazyTalk Animator 3
7. Digicel Flipbook
8. Opentoonz
9. CelAction 2D
10. Moho Pro
11. Animaker
12. PicsArt
13. Draw Cartoons 2 Pro
14. FlipaClip
15. Stop Motion Studio
16. RoughAnimator

3D animation software :

1. Beginner : If you want something for nothing, there are a few freeware versions of 3D package available.
 - i) 3D Canvas
 - ii) XARA 3D
 - iii) Adobe Dimension
2. Intermediate : If you want a good quality of your 3d animation, than you have to use following.
 - i) Strata 3D Pixel
 - ii) Blender
 - iii) Coral's bryce 3D
3. Advanced : If you want to generate high level 3D application than you have to use.
 - i) newtek's lightwave 3D
 - ii) Softimages x SI
 - iii) Alian's MAYA 3D
 - iv) Discrete's 3Ds max and houdine

Different File Format

1. .MPEG – Moving Pictures Experts Group
2. .GIF – Graphics Interchange Format
3. .JPEG – Joint Photographic experts group
4. .MP4
5. .TIFF – Tagged Image file format
6. .FLV – Flash Video File

1. .MPEG – Moving Pictures Experts Group

- An MPEG file is a video file that uses a digital video format standardized by the Moving Picture Experts Group (MPEG). It contains video and audio that are compressed using MPEG-1 or MPEG-2 compression. MPEG files are typically used to share videos over the Internet.
- **MPEG-1** – Audio/video standards designed for digital storage media (such as an MP3 file)
- **MPEG-2** – Standards for digital television and DVD video
- **MPEG-4** – Multimedia standards for the computers, mobile devices, and the web
- **MPEG-7** – Standards for the description and search of multimedia content
- **MPEG-MAR** – A mixed reality and augmented reality reference model
- **MPEG-DASH** – Standards that provide solutions for streaming multimedia data over HTTP (such as servers and CDNs)

- Using MPEG compression, the file size of a multimedia file can be significantly reduced with little noticeable loss in quality.
- This makes transferring files over the Internet more efficient, which helps conserve Internet bandwidth.
- MPEG compression is so ubiquitous that the term "MPEG" is commonly used to refer to a video file saved in an MPEG file format rather than the organization itself. These files usually have a ".mpg" or ".mpeg" file extension.

.MP4 FILE FORMAT

- An MP4 file is a multimedia file commonly used to store a movie or video clip. It may also contain subtitles or images.
- MP4 is short for MPEG-4 Part 14, which is a container format based on the QuickTime File Format (QTFF) used by .MOV and .QT files.
- MP4 files use MPEG-4 compression, a standard developed by the Moving Picture Experts Group (MPEG).
- This format includes separate compression for audio and video tracks. Video is compressed with MPEG-4 video encoding and audio is compressed using AAC compression, which is the same type of audio compression used in .AAC files.

.GIF File Extension (Graphical Interchange Format File)

- **Developer** : CompuServe
- **Category** : Raster Image Files
- **Format** : Binary
- A GIF file is an image file saved in the Graphical Interchange Format (GIF). It may contain up to 256 indexed colors with a color palette that may be a predefined set of colors or may be adapted to the colors in the image.
- GIF files are saved in a lossless format, meaning the clarity of the image is not compromised with GIF compression.
- GIFs are a common format for web graphics, especially small images and images that contain text, such as navigation buttons. However, JPEG (.JPG) images are better for showing photos because they are not limited in the number of colors they can display.
- GIF images can also be animated and saved as "animated GIFs," which are often used to display basic animations on websites.

.JPEG File Extension

(Joint Photographic Experts Group)

- **Developer** : Joint Photographic Experts Group
- **Category** : Raster Image Files
- **Format** : Binary
- A JPEG file is an image saved in a compressed graphic format standardized by the Joint Photographic Experts Group (JPEG).
- It supports up to 24-bit color and is compressed using lossy compression, which may noticeably reduce the image quality if high amounts of compression are used.
- JPEG files are commonly used for storing digital photos and web graphics.

- In the early 1980s, no technology existed that allowed users to easily compress and share digital images with one another.
- In 1982, the JPEG workgroup began designing a compression standard that could be used to reduce image files' size, making them easier to share, while retaining as much of their quality as possible.
- In 1992, the workgroup created the JPEG file format.
- JPEG files are images created using a lossy compression algorithm, which actually destroys some data contained within the original image file. However, this data loss is mostly unnoticeable to the human eye.

.TIF File Extension(Tagged Image File)

- **Developer** : Adobe Systems
- **Category** : Raster Image Files
- **Format** : Text and Binary
- A TIF file contains an image saved in the Tagged Image File Format (TIFF), a high-quality graphics format. It is often used for storing images with many colors, typically digital photos, and includes support for layers and multiple pages.
- The TIFF format was created in the mid-1980s to be a universal image format for different computer platforms and document scanners.
- The format became popular among professionals in the publishing industry, including photographers and graphic artists. The popularity of the format was partially due to its ability to be edited and re-saved without losing image quality.
- TIF files can be saved in an uncompressed (lossless) format or may incorporate .JPEG (lossy) compression.
- They may also use LZW lossless compression, which reduces the TIF file size but does not reduce the quality of the image.

.FLV File Extension

- **Developer** : Adobe Systems
- **Category** : Video Files
- **Format** : Binary
- An FLV file is a video file saved in the Adobe Flash Video (FLV) container format.
- It stores a short header, synchronized audio and video data streams (encoded the same way as streams in the standard Flash .SWF format), and metadata packets.
- The FLV format was introduced with the release of Adobe Flash Player 7 in 2003. It is primarily utilized by Adobe Flash Player for delivering video content, such as movies and TV shows, online.
- However, FLV is an open format that is also supported by various non-Adobe/Macromedia programs.