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MS-WINDOWS OPERATING SYSTEM.

An operating system is a programme that acts as an intermediator between a user and computer hardware. The purpose of an operating system is to provide an environment in which a user can execute programs in a convenient and efficient manner. The operating system must ensure the correct operation of the computer system. There are several jobs of operating system which is done by our operating system itself, some of them are :-

1. Memory Management.
2. Process Mandgement.
3. Input / Output Management.
4. File Management.
5. Job Scheduling etc.

Windows belonging to the Category of operating system called a Graphic user Interface (GUI). The user interface determines how you interact with your Computer. The hardware part of the interface Consists of our screen, monitor, the Keyboard and the mouse. The Software part of the interface determines what things look like on the screen and how you give Command to your pc to get our work done.

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→ **Booting:-**

When we switch on our Computer it initiates a process called as Booting. Booting is a process in which an operating system is loaded from our Hard-disk into the main memory (RAM).

The first screen which is displayed on our monitor is called a desktop. There are three components on our desktop and these are :-

1. Wallpaper / Background.
2. Icons.
3. Taskbar.

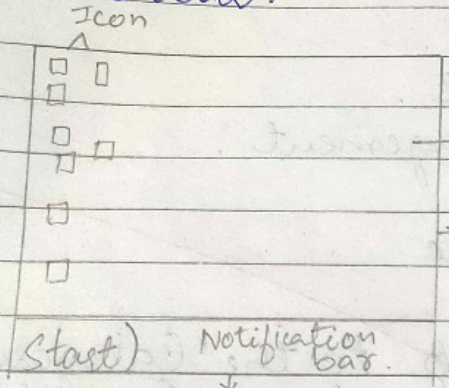

Diagram i

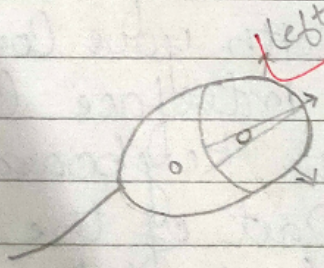

Diagram ii

Normal select	↖
Help select	↖?
Working in background	↖◎
Busy	◎
Precision select	+
Text Select	I
Unavailable	⃠
Move	↔ ↕

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→ How can we change Background of our screen.

Steps:
- Right click on Desktop.
- Choose an appropriate wallpaper which you want to set.
- Then click apply.

In personalise window there are many more operations like desktop Background, window color, sound, screen saver.
In personalise window, we can also change desktop icons and we can change the image of pointer also.

→ How to change the mouse Pointer in personalise window.

Steps:
- Right click on desktop.
- Select personalise option.
- Select change mouse pointer.
- Select appropriate pointer that you want to select.
- Click on apply.

→ How to set screen saver.
- Right click on desktop.
- Select Personalise option.
- Choose any screen saver that you want to set.
- Select the timing.
- Then click on "Apply".

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Icon:

It is the graphical representation of our files / folders / software. By default we have five icons on our desktop.

- Computer
- User files
- Control Panel.
- Network
- Recycle bin.

We can't delete the default icons but we can hide them.

→ How to hide the default icons.

Steps:

- Right click on desktop.
- Select personalise option.
- Untick on the checkbox infront of the icon name that you ceant to hide from desktop.
- Then click "OK" button.

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→ How to change image of icons:

Steps:
- Right click on desktop.
- Select personalise option.
- Click on change desktop icons.
- Click on change icons.
- Choose the appropriate icon you want to set.
- Click on "OK" button.

TASKBAR.

Taskbar is a bar which shows all currently running applications and files. Taskbar has its own settings and using these settings we can hide, unhide, autohide etc of our taskbar.

→ How to create our own folders on desktop.

Steps.
- Right click on desktop.
- Select new option.
- Select folder.
- Give an appropriate name of your folder.
- Then press enter.

We can store as many files as we want to store in that folder particularly. There are two methods to store files in that particular folder.

1. Cut - Copy - Paste.
2. Drag - drop.

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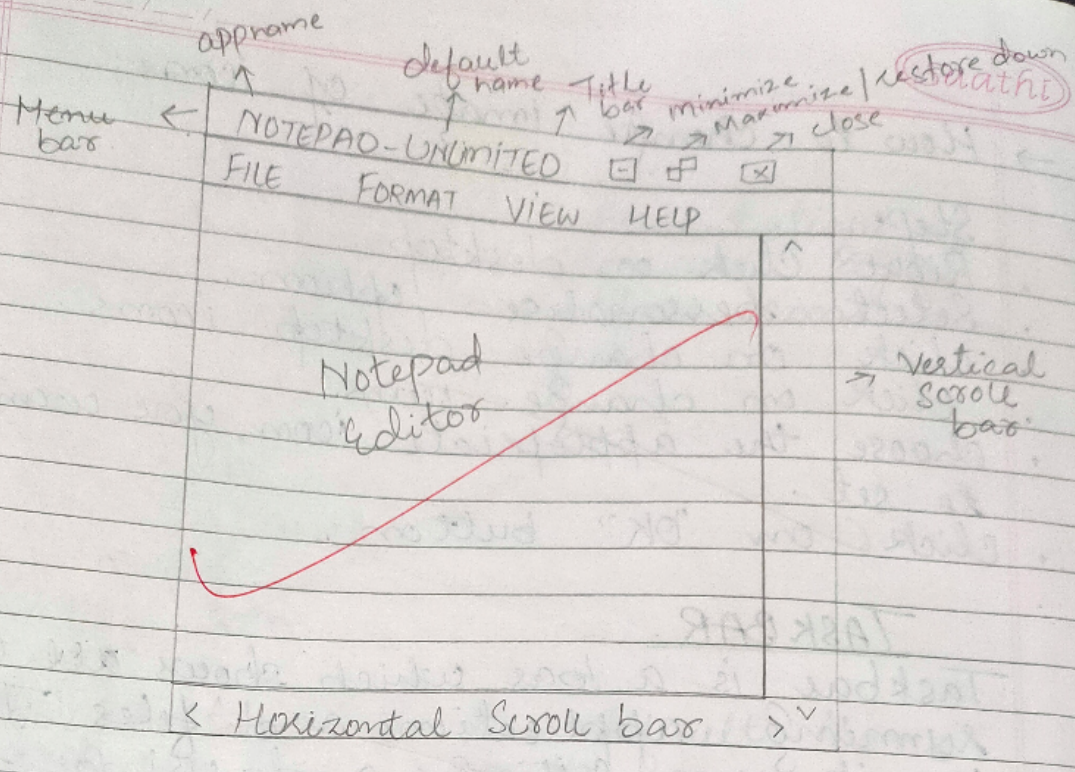

Diagram "ii"

NOTEPAD.

Notepad is a utility software. It is a basic editing software to create files. Notepad is mostly used by beginners in which they can learn how to create, open, save, edit, format etc. It is also called as Text Editor in which we can write html, java, applet programs. In notepad when we want to save any particular file we can save it under a name which should be within a range of 255 characters and the extension of notepad file is "text". Extension is a part of file name through which our

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Computer can recognize their files and the default file's name of notepad is "untitled".

→ How to start / open notepad.

Steps:
- Click on start button.
- Click on all programs.
- Select accessories.
- Then click on notepad application tab.

FILE	EDIT	FORMAT	View	Help
New (ctrl+N)	Undo (ctrl+Z)	Word wrap	Status Bar	View help
Open (ctrl+O)	Cut (ctrl+X)	Font		about Notepad
Save (ctrl+S)	Copy (ctrl+C)			
Save as	Paste (ctrl+V)			
Page Setup	Delete (Del)			
Print (ctrl+P)	Find (ctrl+F)			
Exit	Find next (F3)			
	Replace (ctrl+H)			
	Goto (ctrl+G)			
	Select All (ctrl+A)			
	Time/Date (F5)			

→ How to Create a New File:

Steps:
- Click on File menu.
- Click on new Command.

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→ How to open a file:

Steps.

- Click on File menu
- Click on open Command.

→ How to Save a File:

Steps:

- Click on file menu.
- Click on Save Command.
- Write the name you want to set for the file.
- Click on "Save" option.

SAVE AS:

Creates duplicate file of the existing file, we can also add text, remove text, rename the same file.

FIND:

Through this Command we can find the particular word in the whole document.

REPLACE:

Through this Command we can find words and then replace with another word in the whole document.

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NEW:
This Command is used to create a new document.

OPEN:
It is used to open the previously saved file.

SAVE:
It is used to save a current file at a particular location.

SAVE AS:
Through this Command we can create a Zero copy of our previously saved file by giving it another name.

PAGE SETUP:
Through this Command we can set page margin, Orientation, Size, printer etc.

PRINT:
This Command is used to print our documents.

EXIT:
It is used to close our application.

UNDO:
This Command is used to go back one step.

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CUT:
This is used to cut selected text.

Copy: It is used to copy the selected text.

PASTE:
This Command is used to paste the selected copied / cutted text to another location.

DELETE:
This Command is used to delete the selected text.

Go to:
This Command is used to go to the particular word in the document.

SELECT ALL:
This Command is used to select the whole text in the document.

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MS-OFFICE

MS-office stands for microsoft office. It is a package which was developed by Microsoft. MS-office is a collection of 7-8 applications and all these applications are used in our offices. These applications are:-

1. MS-Word
2. MS-Excel
3. MS-Powerpoint.
4. MS-Access.
5. MS-Outlook.
6. MS-Publishers.
7. MS-One Note.
8. MS-Tools.

MS-WORD

Word processing is the most common app package to create, edit, print and design documents using Computer. To perform word processing, we need a Computer, a special program c/d a word processor and a printer.

A word processor enables us to create a document, store it electronically on a disc, display it on a screen modify it by entering Commands

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and characters from the keyboard and print it on a printer.

The great advantage of word processing Software over using a type writer is that we can make changes out retyping the entire document. In word processing Software, if we make a typing mistake, we simply backup the cursor and correct that mistake using word processing Software, we can also mail it.

Some objects of Word processing Software :-

1. A word processor allows us to function more effectively and efficiently with min. efforts.
2. We can create, open and save documents.
3. Using word processor, we can create and manipulate text.
4. We can also found the text.
5. We can also make tables.

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PURPOSES OF WORD PROCESSING.

Word Processing is restored to for following two purposes.

Text editing (entering and manipulating text) and

Print Formatting (telling the printer how to format the printed copy).

Word processors are used in homes, bussiness, schools and many other places. At home, they can be used to write school reports, letters, resumes, applications, book-writing or the minutes from a meeting. Most word processors for home use are simpler and have fewer features than those designed for business use.

Word processors can take over much of the paper work involved in running a business. They produce reports, letters, brouchers, legal papers and other important documents. A word processor can print a form letter thousands of times, with a different name and address inserted in each copy to make each other letter more personal.

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THE MOST FAMOUS WORD PROCESSOR: MICROSOFT WORD (MS WORD)

Microsoft word for the IBMPCs and apple PCs has been earmarked as one of the most comprehensive word processing programs currently available. It is easy to learn and use, and is a full function word processing system with most type of document editing a clear and explanatory screen display. The product runs on all versions of windows.

The program power in the use of a mouse but is equally functional without it. The mouse facilitates the simultaneous editing of the eight windows which MS office supports.

WINDOW BASED WORD-PROCESSORS.

Lotus's Amipro and
Corel word perfect 9.
Microsoft Wokrs

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FEATURES OF WORD-PROCESSING.

Various features of a word processing system can be broadly categorised in six heads.

1. Text Entry.
2. Text manipulation.
3. Visual display.
4. Printing features.
5. Graphics.
6. Special attributes.

The most common features of a word processor include:
Easy to edit, revise and print formatting and page setup options
Extensive page count.
Easy to save to other formats and use in other steps/types of applications
inserting, pictures, headers and footers.
Automatic spell checking.

The BASIC FUNCTIONS OF WORD PROCESSING SYSTEM.

The basic functions which are available on almost every word processor are word-wrap where a word is automatically sent to next line when the right hand margin is

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encountered; Insert and delete, which allows the adding and removing of text; copy and move - the cut and paste ability for text, rearrangements in sentences paragraphs, pages.
Search and replace functions.
Formatting of text.
Automatic pagination.
Paragraph reinformation
Spell-checking and thesaurus.
The level of sophistication in element, however, varies from product to product.

Apart from these simple and add on features, there are advanced functions that are becoming quite standard on present day systems. Some of the more important features are:

1) Paragraph retrieval where often used phrases, paragraphs, pages of text etc. can be stored and retrieved and inserted with a touch of only a few keys.

2) Document assembly where a discrete set of documents can be amalgamated to compose and entirely new one. This too is

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an automatic function where only the desired documents are specified. and the new one is assembled.

3) Insertion of variable information into a standard text. This is particularly useful if the organization produces a large number of standard form letters where certain fields are variable, such as names, addresses and so on.

4) Other fancier options include:

a) Generation of an index or a table of contents, headers and footings (which include titles the top, page number, chapter section author, etc.

b) Constant information which can be typed in once and printed out on each page at the right place automatically when specified as a header or footer.

c) Automatic hyphenation, spelling error detection, the capability of forcing block of words or text to remain on the same line and / or page.

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d) Global Search and replace (which allows for an automatic replacement of text of variable lengths).

e) Auto renumbering.

Auto file sort and auto file select which can select specific filed from a set of data files with specified data fields. Multiple windows or split screen capability.

Macro facility for storing frequently used keystrokes.

Advantage of Word Processing

Multi-functionary.

The most important advantage of the word-processor is the number of special features available in them. The features such as centering, emboldening, half-space, decimal-alignment, block-indent, right hand justification: besides display, character storage memory etc, are available on word processors.

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High Speed.

With a typewriter, the typist has to watch for the end of the line being typed, and press the carriage return key to start a fresh line, with a word-processor keyboard, the operator need not wait for the line to be filled up, he can simply continue typing at fast speeds; the processor would automatically start a new line when a line is filled up. He may continue typing without worrying about the mistakes, which can be corrected later. Only when a paragraph ends, it's necessary to press the carriage return key. Thus, the speed of typing is decided by the speed of pressing of keys by the operator and not by the speed of printing.

Recycling

After you have made a draft, only mistakes may be corrected to obtain a clean copy. You need retype the whole document. If you are sending identical letter to dozens of different customer than you need only type the name and

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address afresh for each copy. Infact a few names and addresses can also be stored in the memory and used when required so that even typing it names and addresses can be avoided. This 'recycling' facility is very useful.

Better Presentation

It is much easy to produce high quality copies from a word processor. The mistakes committed during high speed typing can be corrected later, but before you print the text on paper. If you want to format your work elaborately, with indents, centered heading etc. then there no need to spend the time in planning out the format before starting acting to type. You can go the margin-settings or line spacing or tab-setting and reformat the entire text and fit everything neatly on one page.

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Better Contents

The importance of written word in bussiness letters, memos, newsletters, reports, Contracts, Catalogs, Vouchers, notices etc. Cannot be overemphasized The choice of words can make difference between a sale or no sale; a negotiated settlement or a Court battle; credit or no credit; clarity or Confusion; Communication or misunderstanding and so on.

Starting MS word:

1) Find the Start button on the desktop and click on it. Once; we've clicked on the Start button, it opens.
2) Click on the All progeams option of the start button to open up a Sub menu on left side of the start menu.
3) Drag the mouse over the Submenus and click on microsoft office.
4) As we click on Microsoft office, Microsoft word can be displayed and click on it.
5) First the MS word logo appears and then MS-word window opens.

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→ We can also open MS word by simply typing word in the search bar of the start button.

Office button	Home	Insert	Pagelayout	References	Mailing	Review	View
New	Clipboard	Cover Page	Themes	Table of contents	Create	Spelling & Grammer	Document
Open	Font	Blank Pag	Margins	Foot notes	Smart mail	Thesaurus	View
Save	Paragraph	Page break	Orientations	Citations	merge	Translate	Rules
Save as	Styles	Table	Size	Biblography	Write &	Word	Guide line.
Print	Editing	Picture	Columns	Captions	Insert	Count	Document Map
Prepare	Find	Clipart	Breaks	Index	fields	Comment	
Send	Replace	Shapes	Line no.	Table of	preview	Tracking	Thumb-nails
Publish	Select	Smart art	Hypenation	authorities	results	changes	Zoom
Close		Charts	Water mark		Finish	Compare	Window
		Hyperlink	Page col.			Protect	Switch window
		book mark	Page borders			Document	Macros
		Cross-ref	paragraph				
		Header	Arrange				
		Footer					
		Page no.					
		Text box					
		Quick part					
		Text					
		Symbols					

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Description of Commands:

- **New :-** This Command is used to create a new document. Under this new Command we have several types of documents that can be created according to our requirements. We have also various types of templates available under this Command. A template is already created and managed structure of a document which is already created by ms-office. Some Commonly used templates are:-

1. Reports
2. Memos
3. Faxes
4. Letters
5. Resumes / Cv's etc.

We can also create our own templates according to our requirements if the template is not already existed. The procedure to create a new template according to our requirements we should follow the following steps:

- Click on office button.
- Click on new Command.
- Select new to blank document.
- Select a radio button called create as template.
- Then press OK.

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- Then create your template according to your wishes.
- Then save this template under a valid file name. We can also use installed templates of our MS office and the procedure of using of these installed templates are:

- Click on office button.
- Select new command.
- Choose option installed templates.
- Select your appropriate template which you want to use.
- Then click OK/Create.

Creating a blank document:-

- Click on office button.
- Select new command.
- Choose blank document.
- Press OK.

→ Save: Used to save a document on a propee location. The shortcut key for saving a file is ctrl+s.

→ Save as: We can create a Xerox copy of our previously saved file and can also change its name etc.

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→ Print: Used to print our document. Its shortcut key is ctrl + P.

→ Clipboard: It is part of memory (RAM). We can store 1-24 cut/copy text to clipboard.

→ Paste: We can paste the selected cut/copy text to the another location. Shortcut key is ctrl + V.

→ Paste special: Used to paste text with format/unformat/picture etc to any location on our document.

→ Format Painter: Copy formatings from one place and apply it to another place. Double click this button to apply the same formating to multiple places in the document.

→ Font: Here we can apply any font to our document/selected text. The default font of MS Word is "Calibry body".

→ Font Size: Here we can change the size of our text characters. The default font size of MS-word is "11" and we increase font size upto "72".

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→ Grow: We can increase the font size above 72.

→ Shrink: We can decrease the font size to 1.

→ Bold / Italic / Underline: Used for formating of our text.

→ Subscript: Create small letter below the text base line. The shortcut key for this command is ctrl + '='.

→ Superscript: Create small letter above the line of text. The shortcut key is ctrl + shift + '+'.

→ Change Case: Change all the selected text to uppercase, lower-case or other common capitalization (sentence case, capitalise each word, toggle case).

→ Clear formations: Clear all formating from the selection leaving plain text.

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Paragraph: We can add bullets in the form of dots, numbers, alphabets etc adjust the text in right, middle, left. We can change only left indent and sort our text and we can also using non-printing characters using "Show-hide" button.

→ **Multilevel list:** We can create multilevel list i.e different bullets of main topic and their subtopics. To change the bullets to subtopic press "tab" and to come back to bullets of main topic press shift + Tab.

→ **Line spacing:** Change the spacing between lines of text and we can also adjust space before and after paragraph.

→ **Styles:** We can use different styles to our headings (selected text). We can use headings of our text and also sub-heading (heading 2) of heading (heading 1).

→ **Find:** To find a particular word in the selected text.

→ **Replace:** We can find words and replace them with other words.

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→ Select: Select text or object in the document that are behind the text and select text with similar formating.

→ Cover page: Add cover page to our document which is fully formated.

→ Page break: Start the next page and the current position.

TABLE: We can insert or draw table into the document. We can also convert existing text into the table. We can select maximum 10 columns and 8 rows in this command. We can also insert excel worksheet through this command.

→ Picture: Insert picture from the file.

→ Clip art: Insert clipart into the document including drawings, movies, sounds or stock photography to illustrate specific concept.

→ Shapes: Insert readymade shapes such as rectangles, circles, arrows, lines, flowcharts etc.

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→ Smart art: Insert a smart art graphic to visually communicate information. Smart graphics range from graphical lists and process diagrams to more complex graphics such as venn diagrams and organisation charts.

→ Chart: Insert a chart to illustrate and compare data. - Bar, pie, line, area etc are some of the available types.

HYPER LINK: Create a link to a webpage, picture, an email address or a program.

* Steps:
- Highlight text that we want to link.
- Click on hyperlink option.
- Choose document with which we want to link.
- Press OK.

To follow the link:
Put the cursor on highlighted or linked text then press Ctrl + Click from mouse.

To remove link:
Right click on the linked text then press remove link.

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BOOK MARK:

Create a bookmark to assign a name to a specific point in a document.

* Steps:
  - Highlight text on which we want to add bookmark.
  - Press bookmark.
  - Add (do not use space between words it won't be added to bookmark, use underscore between words e.g. output devices).

To follow bookmark:
Click on bookmark Command then click on desired bookmark, then click go to.

CROSS-REFERENCE:

Refers to items such as headings, figures and tables by inserting a cross reference.

Cross reference are automatically updated if the content is moved to another locations, by default, cross reference is inserted as hyperlink.

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* Steps :
- First use headings to add text.
- To add another topic use heading again.
- Highlight what we want to link.
- Click on reference type.
- Click on heading.
- Then click on insert and close.

To follow cross-reference.
Put cursor on the referenced text.
Then press ctrl + click.

HEADER: The content in the header will appear at the top of each printed page.

Steps :
- Click on header.
- Choose any format.
- Add text to the header.
- Click on design menu.
- Close header.

Add another header to the same document.
Steps :
- Go to page layout.
- Click on break.
- Click on next page (session break).
- Then double click on header.
- Remove link to previous from design menu.
- Add new text to header and close header.

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FOOTER:

The Content in the footer will appear at the bottom of all the printed pages.
The steps to apply footer are same as header.

PAGE NUMBER:

Insert page numbers into the document. We can add page number at the top, bottom, middle of our page.

TEXT BOX:

Insert preformated text boxes.

→ **QUICK PARTS:**
Insert reusable pieces of content including fields, document properties such as title and author or any preformatted snippets we create.

Word art: Insert decorative text in your document.

Drop Cap: Create a large Capital letter at the beginning of the paragraph.

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Signature line: Insert a signature line that specified/s the individual who must sign.

Inserting a digital signature requires that you obtain a digital ID such as one from a certified microsoft partner.

Object: Insert an embeded object. We can insert paint, excel spreadsheet work etc.

Equation: Insert common mathematical equation or build up your own equation using a library of mater symbols.

Symbol: Insert symbols that are not in your keyboard.

Themes: change the overall design of the entire document including colors, fonts and effects.

PAGE SETUP:

Margins: Select the margin size of the entire document or the current section.

Orientations: 1. Landscape.
2. Portrait.

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Size : Choose paper size for current section.

Columns : Split text into two or more columns.

Breaks : Add page, Section, Column breaks to the document.

Line numbers : Add line no. in the margin.

Hyphenation : Turn on hyphenation which allows word to break lines between the syllables of words.

Water Mark : Insert ghosted text behind the Content of the page.
This is often used to indicate that a document is to be treated specially such as confedential or urgent.

Indent : Adjust both left as well as right indent of the page.

position : Position a selected object on a page.

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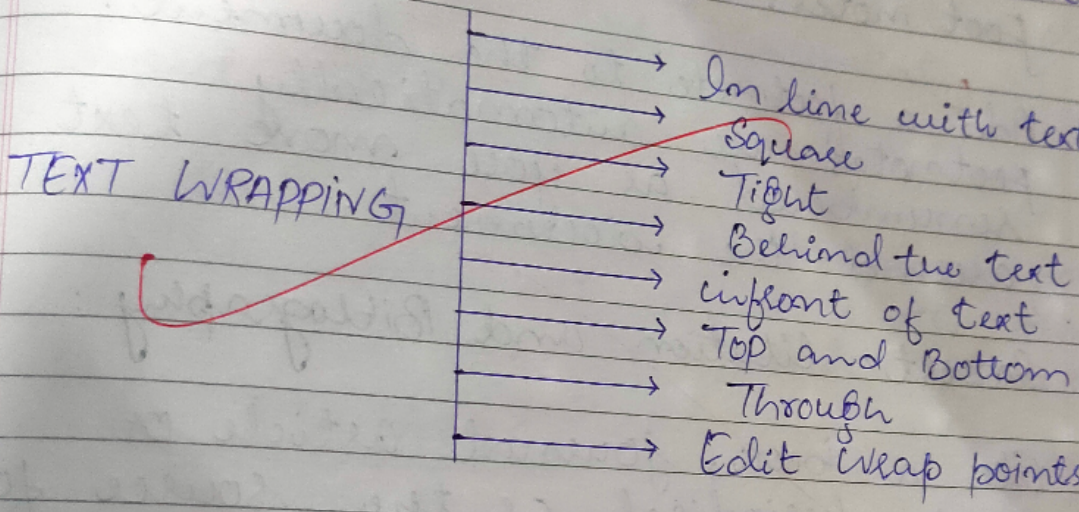
TEXT WRAPPING

Change the way text wraps around the selected object to configure the object so that it moves along with the text around it, select in line with text.



→ Allign: Allign the edges of multiple selected objects.

→ Rotate: Rotate or flip the selected object.

TABLE OF CONTENTS.

Add a table of Contents to the documents. Once you have added a table of Content. Click the add text button to add entries to the table or using headings in the home menu.

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- Update table Contents:

update table of content so that all the enteries refer to the correct page number.

Foot notes:

Add a footnote to the document. Footnotes are automatically renumbered as you move text around the document.

- Insert Citation and Biblography:

Cite a book, journal article or other periodical as the source for a piece of information in the document. Choose from the list of sources you have created or enter information for a new source. Word formats the citation according to the styles you have selected.

Add a biblography which lists all the sources cited in the document.

Insert Caption:

Add a Caption to a picture or the image. Caption is a line of

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. Select recipients then click next.
. Write your letter, email etc.
. Then preview and complete the merge.

SPELLING AND GRAMMAR.

We can check and complete our spelling mistakes grammer → green line spelling → red line.

COMMENTS.

We can add comments to a particular word / selected text.

TRACK CHANGES:

Track all changes made to the document, including insertions, deletions and formating changes. The Shortcut key for this command is ctrl + shift + E.

BALLOONS:

We can choose how to show revisions to the document. We can show revisions as balloons in the margins of the documents or show them directly within the document itself.

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FINAL SHOWING MARKUP:

Choose how to view the proposed changes to the document. Final shows the document with all proposed changes included: Original shows the document before any changes were made. The mark up shows what changes have been proposed.

SHOW MARKUP:

Choose what kind of mark up to show in document. We can hide or show Comments, insertions, and deletions formatting changes and other kinds of markup.

REVIEWING PANE:

Show revisions in a seperate window.

PROTECT DOCUMENT:

Restrict how people can access our document.

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VIEW

Document Views: Allows us to view our document in many ways e.g. full screen reading, Draft, web lay out, outline etc.

Document Map: Open the document map, which allows us to navigate through a structural view of the document.

Thumbnails: Open the thumbnail pane, which you can use to navigate a long document through small pictures of each page.

New window: Open a new window containing a view of the current document.

Arrange all: Tick all open program windows side by side on the screen.

Switch window: Switch to a different currently open windows.

Macros: We can record a macro or access other macro options.

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text that appears below an object to describe it.

Insert table of figures:

A table of figures includes a list of all of the figures, tables or equations in the document.

Insert Index:

An Index is a list of keywords found in the document along with the page numbers, the words appear on.

MAILINGS

Create: We can create and print envelops and labels.

→ Start Mail Merge (Using Wizard).

Steps:

- Click on start mail merge command.
- Click on step by step mail merge wizard.
- Choose document type (letter email etc)
- Then click on next.
- Choose how you want to set up your document then click next.

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To View a macro:
Press Alt + F8. We can add macro by assigning either to button or keyboard.

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MS - EXCEL

MS Excel, the spread sheet program of MS office package is used for programming calculations on our data. If we want to maintain lists of information and summary of the Reports we can use MS Excel rather than any other application of MS office package. MS Excel is an integrated electronic worksheet that is also called spreadsheet. The default name of Excel file is book and the extension of its file is .xls and by default excel gives us 3 sheets in a single workbook and we can get infinity no. of sheets. MS Excel is a programme developed by MS corporation at USA. The MS Excel is similar to the lotus 123, Super Calc, etc.

A worksheet or a spread sheet is an electronic sheet that is used to store the different types of information entered by us.

In todays life everybody wants to compute. Numbers with fall, easy, and under-standable with readibility. So no's play an important role in our daily life. There is a endless list about No's like to set marks, to

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Page No.

Compute Money and expenditure, to compute payroll of an employee etc for the purpose we can use MS Excel.

APPLICATION AREA OF MS EXCEL.

The spread sheet can be used by various categories of people like accounting, finance, professionals, Engineers, Doctors, Insurance, Companies, advertising, agencies, Computer, professionals, Inventories and stock. personal etc. Some major different areas where spread sheet is applicable are discussed in details as under:

1. ACCOUNTING :

In this Area local programmes are widely used to store journal entries, ledgers and trial balance sheet of Company. In order to determine net profit or Net loss.

2. PAYROLL :

This system is used for End of Every month is an organisation, payroll compute the basic pay with other allowance by deducting taxes and other funds

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like Provident fund, CP fund etc.

3. INVENTORY CONTROL:

It is the handling of stock in any manufacturing industry, the raw material, stock.

You can set data, time anywhere on the worksheet in a desired format.

FORMULA USED IN MS EXCEL.

MS excel has several formulas and these formulas are categorised in the four types.

1. NUMERIC FORMULA :-

These formulas are implemented on numeric values.

2. TEXT FORMULA :-

These formulas are implemented on text.

3. BOOLEAN FORMULA:

This formula is used for a Comparison.

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4. TIME AND FORMULA :-

In MS Excel every formula is stored with equal to (=) sign and then formula and opening closing braces.

e.g ; formula ().

NUMERIC FORMULAS :-

1. = Sum (Range) ↵
   E.g ; Sum (A1, A5 BC - C7, F5) ↵
   = Sum (A : A10) ↵

This formula is used to get the sum of cell values.

2. = Product (Range) ↵
   E.g. Product (B1, b7, A4, C7) ↵
   = product (A1 : F1) ↵

This formula is used to get the product of cell values.

3. = Count (Range) ↵
   e.g; Count (A1, A5, A7, A8) ↵
   = Count (B1 : B2) ↵

This formula is used for to Count the No. of filled cells.

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4. =Count blank (Range) ↵
E.g; =Count blank (A1, A2, A3, A4) ↵
This formula is used to count the no. of blank cell.

5. =Min (Range) ↵
E.g; =Min (A2:M11) ↵
It will get the smallest cell value from selected area.

6. =Max (Range) ↵
E.g; =Max (A2, B2, A5) ↵
This formula is used to get the largest cell value from selected Range.

7. =Average (Range) ↵
E.g.; =Average (A1:A10) ↵
This formula is used to get the average value of selected cells.

8. =Mod (Number, Divisor) ↵
E.g; =Mod (18, 3) ↵
This formula is used to get the reminder value.

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9. = fact (Number) ↵
e.g; = fact (15) ↵

This formula is used to get the factorial of any number.

10. = Squrt (Number) ↵
e.g; = Squrt (18) ↵

This formula is used to get the Square root of any number.

11. = Round (Number, no. of decimal place)
e.g; = Round (2,43789,0) ↵

This formula is used to get the Round figure of any Real number.

12. = floor (Number) ↵
e.g; = floor (2.99976391) ↵

This formula is used to get the floor value of any number.

13 = Ceil (Number) ↵
e.g; = Ceil (2.143376) ↵

This formula is used to Count the no. of entered cells, according to Cri...

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14. = Count if (A1 : A20, <= 5) ↵
This formula is used to count the no. of entered cells, according to criteria.

15. = Count A (Range) ↵
E.g; Count A (A1 : A10) ↵
This formula is used to count the Non-Numerical value.

TEXT FORMULA'S :-

1. = Left (text no. of characteristics) ↵
E.g. = left ("Waseem Ahmed", 6) ↵
This formula is used to display left sided characteristics of any word.

2. = Right (text, no. of characteristics) ↵
E.g. = Right (Beigh Waseem, 6) ↵
Output = Waseem

This formula is used to display Right sided chabactess of any word.

3. = Mid (text, Starting no, No. of characteristics) ↵
e.g. = Mid (Waseem Ah. Beigh, 5) ↵
Output = Ah.
This formula is used to show chasacteristics from middle of any word.

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4. =lower (text) ↵
E.g; =lower (A1) ↵
This formula is used to convert upper into lower case.

5. =upper (text) ↵
Eg; =upper (A1) ↵
This formula is used to convert lower case into upper case.

6. =find (find text, within text, starting no) ↵
E.g; =find (@, A5, 1) ↵
This formula is used to find the position of an alphabet with in a text.

7. =Replace (old text, starting no, no. of characteristics new text) ↵
E.g; =Replace (A5, 4, 5, "AFOR") ↵
=Replace ("Afforgan Computer", 10, 9, Institute)
Output = Afforgan institute.

8. =length (text) ↵
Eg =length ("Reigh waseem") ↵

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DATE AND TIME FUNCTION :-

1. = Now ( ) ↵

This function is used to show current data well as time of our system.

2. = Today ( ) ↵

This function is used to show only current data of system.

3. = Day (Today ( )) ↵

This function is used to show day of current data.

4. = Year (Today ( )) ↵

This function is used to show only year of current data.

5. = month (Today ( )) ↵

This function is used to show only month of current data.

6. = Hour (time) ↵

This function is used to show only hours of time.

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7. = Minutes (time) ↵

This function is used to show only minutes of time.

8. = Seconds (time) ↵

This function is used to show only Second of time.

⇒ IF FUNCTION :-

Syntax of If = function.

= If (Con, Exp1, Exp2)

E.g. = If (20 > 10, "Hello" "Hey")

Output : Hello.

⇒ NESTING IF :-

= If (Con, Exp1, If (Con, Exp2) If (Con, Exp1, Exp2)))

E.g. = If (2 > 10 "A", If (8 > 18, "B", If (20 > 18, "C", "D")))

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Cell Addressing And Cell Referencing in MS Excel

1. Absolute Reference :-

It refers to a cell or cells. It is useful when we want to refer data into a specific cell, rather than allowing as reference to change based on Column or Row e.g; If we want to calculate the percentage value absolute. We can make a column, row or cell absolute by placing a dollar sign ($) before the reference.

2. Relative Reference :-

It refers to the cell relative to a give positive. e.g; If we copy a formula that contant cell reference, the cell reference adjust to the new location. e.g; given the contents in the cell A1 and cell A2. Type the formula in cell B and Press enter key. Now try using the Copy, paste option of the edit Menu or use the autofit handle to copy the content of cell B2. The cell B2 will automatically Contain the contents of cell A2.

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3. MIXED REFERENCE:

Combination of absolute and relative reference is called Mixed reference.
e.g; If we remain same, or voice versa then use mixed referencing.

—x—

ASSIGNMENT SOLUTION. (1)

- To get the total marks of students.
  = Sum (I2 : G7)
- To get the percentage of students.
  Write Formula in cell I2
  H2 / 500 × 100.
- To get the result of students according to given Condition.
  Write Formula in cell J2.
  =If (H2 <= 230, "fail", If (and (H2 >= 230, H2 < 300), "C grade", If (and (H2 > 300, H2 <= 350), "B grade", If (and (H2 > 350, H2 <= 425), "A grade", "DISTINCTION"))))
- To get Remarks of students.
  Write Formula in cell K2.
  =If (J2 = "fail", "very poor", If (J2 = "C grade", "poor", If (J2 = "B grade", "Good", If (J2 = 'A grade", "very good", If (J2 = 'DIS", "Excellent")))))

S.NO
1
2
3
4
5
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9
10

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Page No.

ASSIGNMENT NO : 1

Consider the following Worksheet : Marks Card.

S.NO	A	B	C	D	E	F	G	H	I	J	K
1	Roll no	NAME	ENG	URDU	S.ST	SCI	MATHS	Total	%age	Res.	Remarks
2	100	AA	84	89	50	30	70				
3	101	BB	30	34	40	60	34				
4	102	CC	10	100	30	90	35				
5	103	DD	100	50	20	66	28				
6	104	EE	45	60	69	33	30				
7	105	FF	12	77	70	91	99				
8	106	GG	48	88	56	67	60				
9	107	HH	00	99	97	78	92				
10	108	II	90	50	58	56	89				

1. Calculate the total Percentage.

2. Calculate the result:-

   If total <= 230 Result = Fail
   If total >= 230 and <= 300 Result = C grade.
   If total > 300 and <= 350 Result = B grade.
   If total > 350 and <= 425 Result = A grade.
   If total > 425 Result = Distinction.

3. Calculate Remarks:-

   If Result = Fail Remarks = Very poor.
   If Result = C grade = Poor.
   If Result = B grade = Good.
   If Result = A grade = Very Good.
   If Result = Distinction Remarks = Excellent.

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ASSIGNMENT NO. 2

Consider the following Worksheet:

Prepare a mobile BILL.

A	B	C	D	E	F	G	H.
S.NO	NAME	Ph.NO	Calls made	Free calls	Call Am.	Rent	T.Bills
1	AA	-	380				
2	BB	-	440				
3	CC	-	1530				
4	DD	-	80				
5	EE	-	110				
6	FF	-	670				
7	GG	-	930				
8	HH	-	730				
9	II	-	1530				
10	JJ	-	1201				

Conditions.

Calculate Free Calls:

If calls made <= 200, 0

If C.m > 200, cm <= 300, 100.

If C.m > 300, cm <= 450, 200.

If C.m > 450, cm <= 600, 300.

If C.m > 600, 380.

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- To Calculate Free Calls:
  Apply formula in cell E2.
  =If(D2<=200,0,If(and(D2>100,D2<=300),100,If(and(D2>300,D2<=450),200,If(and(D2>450,D2<=600),300,If(D2>600,380)))))

- To Calculate Cell Amount:
  Apply Formula in cell F2.
  =If(D2<=200,"Nil",If(and(D2>200,D2<=300),0.80,If(and(D2>300,D2<=421),1.20,If(and(D2>425,D2<=600),200,If(D2>600,3.00)))))

- To Calculate Rent:
  Apply formula in cell G2.
  =If(D2<200,200,If(and(D2>200,D2<=350),250,If(and(D2>350,D2<=425),300,If(and(D2>425,D2<=600),350,If(D2>600,400)))))

- To Calculate total Bill.
  Apply formula total bill = Call amo + Rent.
  = F2 + G2.

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ASSIGNMENT NO : 3.

PAYROLL OF EMPLOYES.

How to prepare a payroll of an employee

S.NO	A	B	C	D	E	F	G	H	I	J	K
1		NAME	DESIG	BASICPAY	HRA	TA	MA	PF	GPF	G.S	N.S
2		AA	MANAGER	50,000							
3		BB	ASSISTANT.	40,000							
4		CC	CLERK	20,000							
5		DD	ACCOUNTANT.	50,000							
6		EE	DC.	40,000							

CONDITIONS :-

Basic Salary >= 25000.
Basic Salary < 25000 AND Basic Sal >= 15000.
Basic Salary < 15000 AND Basic Sal >= 8000.
Basic Sal < 8000.

ASSIGNMENT SOLUTION.

Apply formula in Cell E2 to Calculate HRA.

=If (D2 >= 25000, 20/100 x D2, If (and (D2<25000, D2 >= 15000), 15/100 x D2, If (and (D2<15000, D2 >= 8000), 10/100 x 12, If (D2 < 8000, 5/100 x D2))))

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- To calculate TA, apply formula in Cell F2:
  = If (F2 >= 25000, 18/100 x F2, If (and (F2 < 25000, F2 >= 15000), 12/1000 x F2, If (and (F2 < 15000, F2 >= 8000), 8/100 x F2, If (F2 < 8000, 3/100 x F2)))) ↲

- To calculate MA, apply formula in cell G2.
  = If (G2 >= 25000, 15 x G2, If (and (G2 < 25000, G2 >= 15000), 8/100 x G2, If (and (G2 < 15000, G2 >= 8000), 6/100 x G2, If (G2 < 8000, 100/100 x G2)))) ↲

- To calculate GPF, Apply formula in cell I2,
  = If (I2 >= 25000, 15 x 52, If (and (I2 < 25000, I2 >= 15000), 10/100 x I2, If (and (I2 < 15000, I2 >= 8000), 5/100 x I2, If (I2 < 8000, 2/100 x I2)))) ↲

- To calculate PF, Apply formula in cell A2:
  = If (H2 >= 25000, 8/100 x H2, If (and (H2 < 25000, H2 >= 15000, 12/100 x H2, If (and (H2 < 15000, H2 >= 8000, 8/100 x H2, If (H2 < 8000, 3/100 x H2)))) ↲

- To calculate Gross Salary, Apply formula in Cell J2.

  = BP + HRA + TA + DA + MA.

- To calculate Net Sal, Apply formula in.

  = Gross Salary = GP fund − PA.

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ASSIGNMENT NO: 04.

Consider the following Worksheet.

Month	Item	Rate	Quantity	Amount
Jan	Com.	2800	5	14000
Feb	Pri	3000	3	9000
Mar	Mouse	8900	4	35600
Apr	Mouse	1200	6	7200
May	Modem	7800	7	54600
June	Com.	5400	5	27000
July	Pri	6500	9	58500.

Create a Pivot Table and Pivot chart.

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Assignment Solution.

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Pivot table is an analysing tool through which we can analyse our data effectively.

- How to make a pivot Table:

Steps to create pivot Table

↓

Go to Insert tab in Menu bar.

↓

click on pivot table.

↓

Select your data which you want to analysis choose location.

Now Select your Columns according to your need.

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ASSIGNMENT NO :05

S.NO	A	B	C	D	E	F
1	NAME	DOB	Excel	word	Total	Percentage
2		1-1-70	34	45		
3		18-6-71	35	23		
4		2-12-72	46	45		
5		19-5-74	23	34		
6		3-11-79	45	46		

Conditions :

1. Set the validation so that

a, Only text is allowed in Name column.

b, Only the data b/w 1-Jan-70 & 31-Dec 89 are allowed in DOB Columns

c, Only the no. b/w 0-50 ps allowed in Excel and word Column.

2. Define a name (Excel) for excel column.

3. Define a name (word) for word Column.

4. Calculate total and percentage Columns.

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Assignment Solution.

- To set validation for Name Column.

↳ Click on data Menu.
↳ Click on data validation.
↳ Select data validation option, then allow only text length.
↳ Set text length in data option.

- To set validation on DOB Column.

↳ Click on data menu.
↳ Click on data validation.
↳ Select data validation option, then select
↳ data in allow option.
↳ Select b/w in data option. Set values b/w 1-Jan-70 to 31-Dec-89.

- To Set Validation on Excel and Word Columns.

↳ Click on data menu.
↳ Click on data validation.
↳ Select data validation option, the select whole no in allow option.
↳ Select b/w in data option and set values b/w 0-50.

- Define name for Excel and word column-
↳ Select data of Excel/word column then click on formula menu.
↳ then click on define name and click OK.
- Total : = Word + Excel ↲.

- Percentage : $\frac{F2}{100} \times 100$ ↲.

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ASSIGNMENT NO. 06.

S.NO	A	B	C	D.
1	Item	Month	Year	Rate.
2	Com	Jan	2000	34500.
3	Pri	Jan	2000	8700.
4	Mouse	Feb	2001	450
5	Pri	Feb	2000	4500
6	Com.	March	2001	43500.

Conditions :-

1. Make a data entry from form above sheet.
2. Sort the data on item and year.
3. Use auto filter to show all items purchased in year 2001.
4. Use auto filter to show only two items of least count.

ASSIGNMENT SOLUTION.

- To make a data entry form:
  - ↳ Go to quick access toolbar and add form Command to it.
  - ↳ Write the header row before using form Command.
  - ↳ Now fill the Content using form Command one by one.

- To Sort the data:
  - ↳ Click on data menu.
  - ↳ Click on Sort option.
  - ↳ Select Column which you want to sort..
  - ↳ Sort data on values and order.
  - ↳ Click OK.

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- Use Auto filter to show items purchased in year 2001.

↳ Click on data menu.
↳ Click on filter option and we get drop down buttons on each column.
↳ Click on dropdown button of column you want to sort.
↳ Now adjust as per our requirements.

- Autofilter to show two items of least count.

↳ Click on data menu.
↳ Click on filter option and we get drop down button.
↳ Click on dropdown button of column you want to sort.
↳ Now select the two items of least count.

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ASSIGNMENT NO. 07.

S.NO	A	B	C	D	E	F	G	H.
1	NAme	Adress	Design	B-pay	TA	DA	HRA	Total
2								
3								
4								
5								

Conditions:

1. Create a validation on name as it should be b/w 5-20 characters.
2. Create a validation on designation to accept design as inspectors, SI, ASI, HAV and Cons. only.
3. Create a validation on basic pay more than 5000.
4. Calculate TA, DA, HRA and total.
5. Calculate the total salary is used inspectors, SI, ASI, HAV and Cons.
6. Calculate the no. of inspectors, SI, ASI, HAV, Cons in your data base.
7. Use advanced filter to filter inspectors, SI, ASI, HAV, Cons in your database seperately to alternative location.

ASSIGNMENT Solution.

- To set a validation: Select cells for validation.
  - ↳ Click on data menue and click data validation.
  - ↳ Then select text length in allow option.
  - ↳ Set b/w in data option and give range click ok.

- To set validation on basic pay:
  - ↳ Select cells for validation

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↳ Click on data Menu, click on data validation then select whole no. in allow and b/w in data option then give range.

. To set validation for design.

↳ Create list of designation and select cells for validation.

↳ Click on data Menu, click data validation.

↳ Select list in alloco option then give source list and OK.

. Calculate TA, DA, HRA and Total.
Already done in Assignment (3) - apply same

. Calculate:

→ No. of ins: Count if (Range, "Ins") ↵
Same for HAV, Cons, SI, ASI,

. Calculate Salary of SI:
Sum if (desg range, SI, total range) ↵

Same for ASI, Cons, Ins, HAV.

. To use Advance filter:

↳ Create Criteria range, then click on advance filter.

↳ Click on Copy to another location.

↳ Give list range, Criteria range and click that cell where we want to show.

↳ Click on OK button.

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ASSIGNMENT NO. 08.

S.No	A	B	C	D	G	F	G	H	I	J	K
1	Roll No	Name	Eng	Urdu	Sci	S.st	Math	total	%age	Res.	Remarks
2	100	AA									
3	101	BB									
4	102	CC									
5	103	DD									
6	104	EE									

Conditions :

1) Calculate the total % age.

2) Calculate the result
   - If total <= 230 Result = fail
   - If total > 230 and <= 300 Result = C grade.
   - If total > 300 and <= 350 Result = B grade.
   - If total > 350 and <= 425 Result = A grade.
   - If total > 425 Result = Distinction.

3) Calculate the Remarks.
   - If Result = Fail, Remarks = very poor.
   - If Result = C grade, Remarks = Poor.
   - If Result = B grade, Remarks = Good.
   - If Result = A grade, Remarks = Very Good
   - If Result = Distinction, Remarks = Excellent.

4) Calculate
   - Total No. of Students that appeared in the examination.
   - Total no. of stu having Dis.
   - Total no. of stu having A Grade.
   - Total no. of stu having B Grade.
   - Total no. of stu having C Grade.
   - Total no. of stu having Fail.

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ASSIGNMENT SOLUTION.

- Total Percentage.

$$\frac{H_2}{500} \times 100.$$

- Result

= If (H2 <= 230, "fail", If (and (H2 > 230, H2 <= 300), "C grade", If (and (H2 > 300, H2 <= 350), "B grade", If (and (H2 > 350, H2 <= 425), "A grade", "Distinction")))) ↲

- Remarks.

If (J2 = "fail", "v. poor", If (J2 = "C grade", "poor", If (J2 = "B grade", "good", If (J2 = "A grade", "v good", "excellent")))) ↲

- Calculate:

I. Total no. of Students that appeared in exam.

= Count (roll no. range) ↲

II. Students having distinctions.

= Count if (result range, "distinction") ↲

iii, Students having A Grade.

= Count if (Result range, "A grade") ↲

↳ Same for B grade, C grade and fail:

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ASSIGNMENT NO: 09

S.NO	A	B	C	D
1	Carbon Contents	Sulpher Contents	Steel	Grade
2	1	2	3	
3	3	2	1	
4	1	4	0	
5	17	14	6	
6	1	7	19	

Conditions:-

1. If Carbon Contents <= 2.7, and Sulpher Contents <= 10 and steel > 6700 then grade is "A" else.

2. If Carbon Contents <= 2.7, and Sulpher Contents > 10 and steel > 6700 then grade is "B" else.

3. If Carbon Contents <= 2.7, and Sulpher Contents <= 10 and steel < 6700 then grade is "C" else.

4. If Carbon Contents >= 2.7, and Sulpher Contents <= 10 and Steel > 6700, then grade is "D" else "E".

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→ To calculate grade.

= if (and) (A2 <= 2.7, B2 <= 10, C2 > 6700), "A grade", if (and (A2 <= 2.7, B2 > 10, C2 > 6700), "B grade", if (and (A2 <= 2.7, B2 <= 10, C2 < 6700), "C grade", if (and (A2 > 2.7, B2 <= 10, C2 > 6700), "D grade", "E grade"))))

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ASSIGNMENT NO. 10:

S.NO	A	B
1	Loan payment	10000
2	Terms in Months	180
3	Interest Rate	7
4.	Payment	?

Conditions :→

1. Enter Formula for calculating Payment as:

$$\frac{\text{Loan amount} \times \text{terms in months} \times \text{Interest Rate}}{100}$$

2. Use goal seek to change the interest rate in cell B3 incrementally until the payment value be equal to 50000.00.

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ASSIGNMENT SOLUTION.

→ Payment.

$$= \frac{B1 \times B2 \times B3}{100} = 126000$$

→ To use goal seek.

- click on data Menu.
- Then click on what if analysis command.
- Then click on goal seek option.
- Set cell → payment cell (B4).
- To value → 50000.
- By changing cell → Interest cell (B_3).
- Then click OK.

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Assignment No 11.

S.No.	A	B	C	D
1	Name	Department	Designation	Salary
2	Ankes	Personal	Assistant	6000.
3	Anu	Personal	Assistant	7000.
4	Anurada	Production	Manager	15000.
5	Raj	Production	Manager	10000.
6	Kumar	Sales	Engineer	9000.
7	Vinay	Sales	Assistant	4000.

Conditions:

a) Use advanced filter to show the employees working in production Department.

b) Use advanced filter to show the employees working in Sales Department.

c) Use advanced filter to show the employees having Designation = Assistant.

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Date ASSIGNMENT SOLUTION.

→ Employees Working in Production department.

. click on data menu.
. Click on advanced filter Command.
. Advanced filter dialog box opens.
→ Action → Copy to another location.
→ List range → Select table (all data base).
→ Criteria range → Select criteria range which we have already created before using advanced filter.
→ Copy to Select cell where you want to copy and click ok.

→ Employees working in Sales department.
obtained using same procedure.

→ Employees having designation = Assistant.

. Click on data menu.
. Click on advanced filter command.
. Create criteria range before clicking on advanced filters.
. Advanced filter dialog box opens.
→ Action → Copy to another location
→ List range → Select whole data base.
→ Criteria range → Select criteria range.
→ Copy to → Select all where you want to copy.
. Click OK.

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ASSIGNMENT NO. 12:

S.NO	A	B	C	D	E	F	G
1	Month	Item	Rate	Quality	Amount	Sales Tax	%age of sales tax
2	Jan	Computee	28000	4			
3	Feb	Printee	65000	3			
4	March	Mouse	320	4			
5	April	Modem	1200	5			
6	May	Printer	4000	3			

Conditions :-

1. Calculate amount Column as rate * Qty.
2. Calculate the sales tax which is based on following rate.
   i) For item named printee 8% of amount.
   ii) For item named Computee 10% of amount.
   iii) For item named else i.e 3% of amount. (for other items).
3. Calculate the grand total for amount and sales tax.
4. Calculate the %age of sales tax each purchase in the % age of sales tax Column.

ASSIGNMENT SOLUTION.

→ Amount
= C2 * D2 ↵

→ Sales tax
= if (B2 = "Computer", 10/100 * B2, if (B2 = "Printer", 8/100 * B2, 3/100 * B2)) ↵

→ Grand total for amount:
= Sum (amount range) ↵

→ Grand total for Sales tax:
= Sum (Sales tax range) ↵

→ % age of Sales tax.
= F2/E2 x 100.

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ASSIGNMENT No 13.

S.No.	A	B	C
1.	Type of Apple	Tehsil	Qty (in boxes).
2.	Delicious	Sopore	3400
3.	American	Baramulla	1000
4.	Hazratbali	Bandipora	500
5.	T2	Anantnag	3500
6.	Golden delicious	Srinagar	2300

Conditions:

1) Sort the above data on Tehsil.

2) Find out the quantity of apples produced in each Tehsil (use Subtotal).

3) Plot the Column Graph representing the tehsil on X-axis and total apples on Y-axis.

4) Use Sum to Calculate the total apples produced in each tehsil.

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ASSIGNMENT SOLUTION

→ To Sort on Tehsil.
- Click on data menu.
- Click on Sort Command.
- Sort by → Column and Select Values then click OK.

→ Sub Total.
- Click on data menu after placing Cursor in datta base.
- Click on subtotal Command.
- In subtotal dialogue box.

→ At each Change in → Tehsil.
→ Use function → Sum.
→ Add Subtotal to → qty.
- Then click ok.

→ Column Graph:-
- Click on Insert menu.
- Click on Column Command.
- Select graph you want to insert.
- Then click OK.

Use Sum if :- (for total)
= Sum if (Tehsil range, "tehsil name", qty range)

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ASSIGNMENT NO 14.

Sr no.	A	B	C	D	E	F	G	H
1	Name	Payscale	DOB	Min basic	Increment	Max basic	NOI	Basic pay
2	AA	2000-100-4000	1-Jan-2000					
3	BB	8000-150-9500	2 Jan 2001					
4	CC	2000-100-4000	1 Mar-97					
5	DD	5500-275-9500	2-dec-96					
6	EE	3000-150-5500	3-jan-00					

Conditions:

1. Write a suitable formula to fillee min-basic column with the basic pay as in pay-scale column.
2. Write a suitable formula to fill increment column with the yeasly increment due as in pay-scale.
3. Write a suitable formula to fill in max-basic column with the max basic pay as in pay scale column.
4. Calculate the column NOI using current data and DOB column.
5. Calculate the basic pay column as min basic + increment * NOI so, that the basic pay doesn't exceed the max. basic pay.

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ASSIGNMENT SOLUTION.

→ Maximum basic.
= Left (B2, 4) ↵

→ Increment :
= Mid (B2, 6, 3) ↵

→ Maximum basic:
= Right (B2, 4) ↵

→ NOI
= 2021 - year (C2 ↵
Put number command at general.

→ Basic pay
= D2 + E2 * G2 ↵
= year ("2/24/2021") - year (DOJ) → if system has not perfect time

= Today ( )
= year (today ()) - year (DOj) - if time of system is right.

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ASSIGNMENT NO 15

S.NO.	A	B	C	D
1	Date	Pay in	Pay out	Balance
2				
3				
4				
5				
6				

Conditions:

1. Type the formula in cell D4 to calculate the balance.
2. Use relative cell addressing copy the formula downwards.
3. Format the cells under column B, C, D.
4. Make the cell format to Currency.
   Make the cell alignment to Centre
   Font to Arial Black.
   Insert virtual data for 5 days.

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Date

ASSIGNMENT SOLUTION.

→ Balance
leave the first row.
Balance = Balance (D3) + B7 - C2.
[Balance = Balance + Pay in - Pay out].

→ Format Cells Under B, C, D:
- Click on home menu.
- Select cells you want to format.
- Format the cells as per you require.

→ Format cells to Currency:
- Select Column B, C, D.
- Click on home menu then go to number Command.
- Select Currency.
- Then click OK.

→ Font to Arial Black.
- Click on home menu.
- Go to font Command.
- Select Arial Black.

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ASSIGNMENT NO 16.

A	B	C	D
S.NO	Item Name	Cost price	Selling Price
1			
2			
3			
4			
5			
6			

Conditions:.

1. Type the formula in cell D2 to calculate Selling price as 10% Profit over cost-price.
2. Use relative cell addressing, copy the formula, downwards.
3. Format the cell under column B, C, D.

a) Make the cell format to Currency.

b) Make the cell alignment to Centre, font to Arial Black.

c) Insert virtual data for 5 days.

d) Save the Worksheet.

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→ Selling price.
$= \frac{10}{100} * C_3$; $C_3 \rightarrow$ Cost price.

→ Format Cells.
- Select cells we want to format.
- Click on home menu.
- Click on bold, Italic, Underline etc.

→ Cells format to Currency.
- Click on home menu.
- Click on no. Command.
- Select Currency then click OK.

→ Save the Worksheet.
- Click on office button.
- Click on Save option.
- Give the name you want to set for your worksheet or simply ctrl + S.

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ASSIGNMENT NO 17.

S.NO.	A	B	C	D
1	Item	Cost/Rate	Category	Selling Price
2				
3				
4				
5				
6				

Conditions

1. Write logical function in cell D2 to calculate on the following basis.

a) If the customer belong to BPL then Calculate Selling price as 10% over Cost price.

b) Else calculate Selling price as 33% profit over Cost price.

2. Calculate total Price Spend on Purchase.

3. Calculate earned profit in Percentage.

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ASSIGNMENT SOLUTION.

→ Selling price.
- if (C2 = "Bpl", 10/100 x B2, 33/100 x B2) ↵

→ Total price spend on purchase.
= Sum (B Range) ↵ ;

→ Earned profit in %age.
= (D2 - B2)/B2 x 100 ↵

Selling price as 10% Profit over Cost price.
= [10/100 x Cost Price] + Cost Price.

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ASSIGNMENT NO. 18.

S.NO	A	B	C	D	E	F	G	H.
1	Roll no	Physics	Maths	Urdu	Eng	chemistry	Total	Result.
2								
3								
4								
5.								

Conditions:

1) Calculate the total column as sum of marks secured in subjects.

a. Calculate result as if total >= 200, then pass else Fail.

b. Use conditions formating to format for column marked result. If result is pass text colour Red, font Cosmy. Sans MS. otherwise blue, font arial.

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ASSIGNMENT SOLUTION.

→ Total
= Sum (B2 : F2) ↵

→ Result
= if (G2 = 200, "Pass", "fail") ↵

→ Conditional Formating.

- click on home menu.
- click on conditional formatings Command.
- click on manage rules.
- click on new rule.
- Format cells that Contain specific text containing Pass / fail.
- Then click format.
- Then format as per need.
- Then click OK 3 times.

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ASSIGNMENT NO 14.

SNO	A Sales Person	B Product	C Region	D Cost/ Unit	E Units Sold	F Sold sale	G Target	H Surplus	I Less Sale	J Penalty on Less Sale	K Comission on sale	L Perks	M Total Perks
1.													
2.	AA	CD-Rom	S	5000	3		20000						
3.	BB	moo.	N	3000	2		7500						
4.	CC	cd-Rom	S	5000	4		70000						
5.	DD	Monitor	S	7000	1		35000						
6.	EE	Floppy	W	1000	6		10000						
7.	FF	Monitor	E	7000	0		14000						

Conditions

1. Product: CD Rom (Monitor 7000, Hard disk 3000, Floppy drive 1000.
   Cost price 5000
2. Surplus Sale: Sale − Target (not less than 0)
3. Penalty: 3% of less Sale.
4. Commission 7.5% of Surplus Sale 5. Perks 25% of Sale.
5. Total Perks: Commission + Perks − Penalty.

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ASSIGNMENT SOLUTION.

- Sale.
  $= D2 \times E2$ ↲

- Surplus Sale.
  $= if\ (F2 > G2,\ F2 - G2,\ 0)$ ↲

- less sale.
  $= if\ (F2 < G2,\ G2 - F2,\ 0)$ ↲

- Commission on Surplus Sale.
  $= \frac{7.5}{100} \times M2$ ↲

- Penalty on less Sale.
  $= \frac{3}{100} \times F2$ ↲

- Perks
  $= \frac{25}{100} \times F2$ ↲

- Total Perks.
  $J2 + L2 - K2$.

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MS-POWERPOINT.

MS-Powerpoint is an application software which is used for presentation. It is also known as "multimedia software". The default name of the MS-Powerpoint is presentation and the extension is .pptx.

A Combination of various slides depicting a graphical and visual interpretation of data, to present information in a more creative and interactive manner is called a Powerpoint presentation or ppt.

→ How to open MS powerpoint on a personal Computer?

Follow the steps below to open MS-Powerpoint in personal Computer.

- Click on the start button.
- Then choose all programs.
- Next step is to select "MS office".
- Under MS office, click on the MS-Powerpoint.
- A blank presentation is open on the screen according to the requirement a person can modify the template

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in a presentation and start using the program.

→ How to create presentation in the MS powerpoint ?

There are mainly three ways to create new presentation.

- Blank and Recent :

Blank and recent creates a blank presentation.

- Installed templates :

Installed templates are the saved presentation, which include different themes and layout that help to do your work quickly and easily.

- Installed Themes :

Installed themes are the set of predesign format of text colours, schemes and graphics effects.

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→ What is a slide show in a powerpoint presentation ?

When all the slides of a ~~pow~~ presentation are set in serious and then presented to a group of people, where each slides appears one after, The other is a set pattern, this is known as a powerpoint slide show.

→ What all elements can be added to a powerpoint slide ?

The following elements can be added to a powerpoint slide.

1. Clip Art.
2. Graphics.
3. Table.
4. photographs.
5. Chart.
6. Media clips.
7. Videos.

All these elements are mainly used to

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Change presentation skills and make the slide more interactive.

- Inserting pictures:

You can make your presentation more interactive by inserting pictures.

- Editing Themes:

Themes are a set of predefined background for your slides.

- Inserting Smart Art.
Smart Art is used to represent text graphically.

- Adding bullets and Numbering.

Bullets are used to present and describe matters in brief, point wise.

- Inserting Tables.
Tables are used for data is to be presented in Rows and columns format.

- Animating Slides (Slide Transition).

Slide transition means to add animation effect to the slide.

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- Animating Text and object (Custom animation).

Custom animation means to add a special visual or sound effect to an object on the slide.

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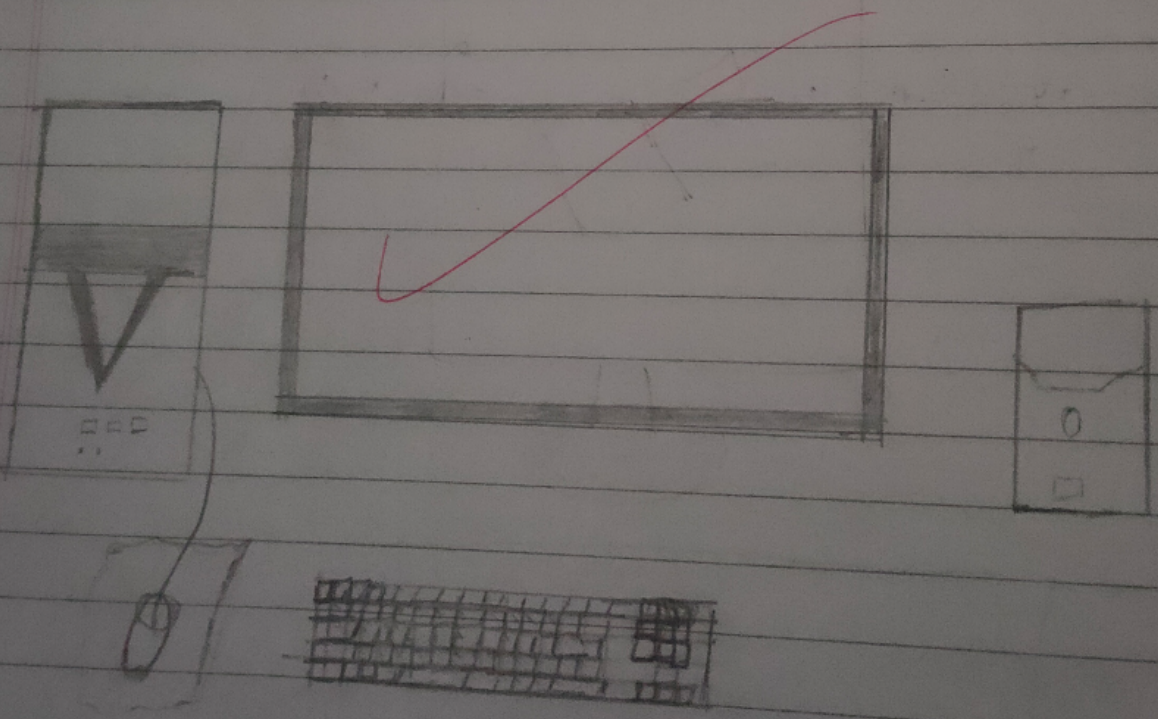
Computer fundamental.

→ What is Computer.

→ Computer is an electronic device that can perform a variety of operations according to set of instructions called programmes. it is used to perform Arthamatic (+, −, ×, ÷) operations as well as logical operations.

The computer word "Compute" which means to calculate so, a computer is normally considered to be a calculating device that can perform arthamatic operations.



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Classification of Computer:

Computer can be classified according to their functionally into three types these are :-

1- Analogs Computer
2- Digital Computer
3- Hybeid Computer.

1- Analog's Computer : it is a that type of Computer which can handle or process Information which is of physical Nature eg Temperature pressure etc these Computers are based on the measuring of analogs or equilent physical values.

2- ~~Hybeid~~ Digital Computer:-
Digital Computers are those Informations which can process Information only in two States (0,1) Digital computers has variety of ranges called micro Computer / mini Computer Super Computer The best example of digital Computer is PC's & laptops -

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→ Hybrid Computers: Hybrid Computers are those Computers that exhibits features of Analog computers & digital Computers i.e the digital computer often Series as of differential Equations.

→ Computer System:-

1- Physical unit (Hardware)

2- Logical (Software)

3- User (we).

if one of them miss it doesn't work.

Physical unit:- Those Components of Computer System which are tangible.

Logical (Software): It is Set of instructions which are given to our Computer System to perform a particular task.

User:- A user is a person who utilizes a Computer or network services.

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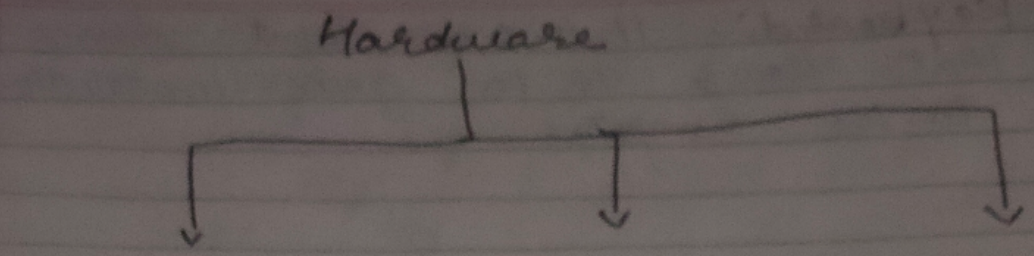

input devices :- These are those devices through which we can provide data to our computer system.

1- Key board
2- Mouse
} primary Input Devices.

3- Scanner

4- Joy stick

5- Light pen

6- OMR (optical Mark Reader)

7- OCR (optical Character Reader)

8- MICR (Magnetic Ink Character Reader)

9- BCR (Bar Code Reader).

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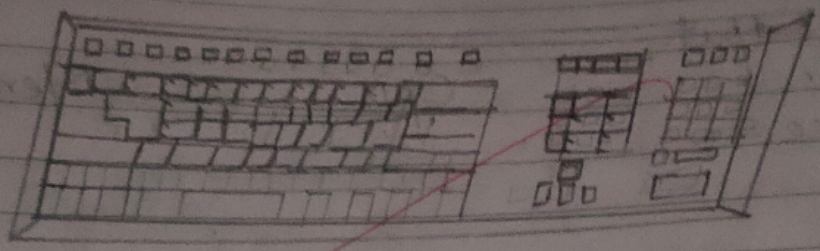
1- Keyboard:- It is an input device that allows us to gave instruction to the Computer.



->

Keyboard Keys: (104 to 107 Keys)

2- function Keys (F1 to F12)

3- Control Keys (Ctrl, Alt, window, esc) etc

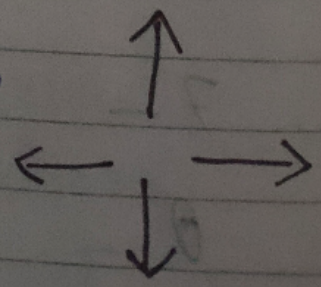
4- Alphabet Keys (A to Z)

5- Number Keys (0 to 9)

6- Navigation Keys -> • Arrow Keys

• insert Key

• Delet Key



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→ Back Space Key
→ Tab Key
→ Caps lock Key
→ Esc Key
→ Shift Key
→ Window Key
→ Num lock Key
→ print Screen.

→ Insert Key :- It is used to insert Text at a particular location.

→ Delet Key :- It will delet the Selected picture, tent as well as Object.-

→ Back space Key :- It will delet a Character -

→ Tab Key :-

→ Esc :- It will close the Current windows.

→ Shift Key :- It is used for Special Symbols

→ Cntrol + Alt :- Shortcut Key.

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8- Window Key: It is used to open main menu / start button.

9- Num Lock: It will lock the numeric keys.

10- Print Screen: It is used to open man for screen shot (window + print screen)

↳ Keyboard is of two types:-

1- plane Keyboard.

2- Multimeda Keyboard.

ASCII: American Standard Code for Information Interchange.

It is represented in 8 bits.

But is the smallest unit of memory.

- 4 Bits = 1 Nibble
- 8 bits = 1 Byte
- 1024 bytes = 1 Kelo Byte
- 1024 KB = 1 MB
- 1024 MB = 1 GB
- 1024 GB = 1 TB
- 1024 TB = 1 PB (Pica byte)
- 1024 PB = 1 ZB (Zeta Byte).

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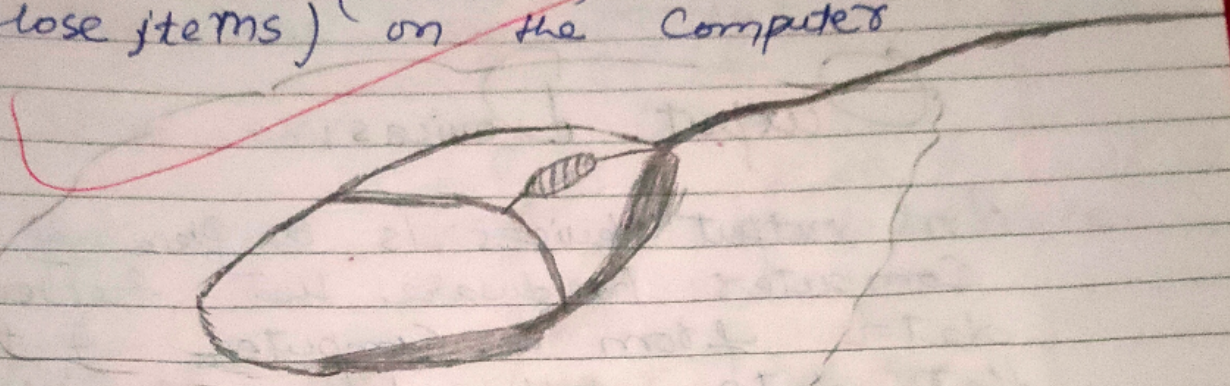
→ Mouse :-
Mouse is an input device developed by "Dogla s Engelbart" in the early 1980 s.

it is also known as pointing device that is mainly used to give instructions (select, move, Scroll, open, close items) on the Computer



→ Scanner :- it is mainly used to Convert hard Copies into Soft copies.

→ Joy stick :- it is mostly used to play games.

→ Light pen :- it is mostly used for drawing purpose (used by Architects).

→ OMR :- It is used to check examination paper -

→ OCR :- It is also a Scanner is used to check application forms

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MICR:- It is also used scanner to validate our Cheques.

BCR:- it is also a scanner used to convert Bar Codes into meaning. ful information.

Output Devices:-

An output devices is a piece of Computer hardware that recieves data from a Computer & translate that data into human readable form

following are output devices

1- printer -
2 - Moniter.

printer:- It is used to print document it is one of the main output device of our system which is used to convert soft copies into hard copies.

(soft. Copies are in 0 & 1 form).

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Impact printer :-
These are those printers in which hammer technology is used -

Disadvantages of impact printer.

→ They were very noisy -
→ Speed was very low -
→ They print only in black & white.

Types of impact printer.

1- DoT - Matrix printer :-
it was present with size 35 (hammer)
→ 7 Columns & 5 rows.

2- Daisy wheel printers :- wheel was used & hammer was used which was behind wheel used for hitting ribbon -

3- Line / chain printer :- All characters was present in chain Every character passed & hammer individually.

eg AAMiR
AAMiR → 1st hit.
A[redacted] → 2nd hit.

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→ Non-impact printers:-
In these printers laser beam technology is used

1- Thermal printer:- in these printers special type of paper is used.

Monitor:-

A display screen to provide output to the user it is where you view the information where you are working.

80 columns & 25 rows · CRT (cathode-Ray tube) the monitor also called as "electronic gun"
Basic Colour = Red, Green, Blue.

C.P.U (Central Processing Unit).

→ it is also called brain of Computer & heart of Computer.

There are 3 types.
1- ALU (Arthematic logical unit)
2- CU (control unit)
3- MU (memory unit).

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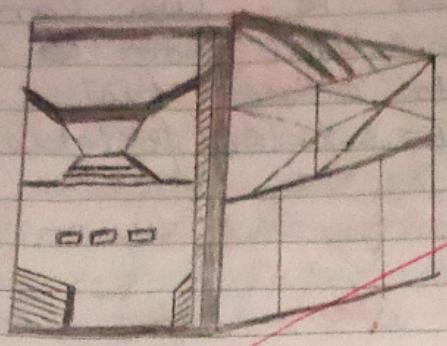

Memory unit

- primary Storage device or internal Storage device
- Secondary Storage device or external Storage devices.

—> primary Storage devices (PSD) are RAM, ROM, Registers, these are called primary because our Computer will not work if one of them are missing.

—> Secondary Storage devices (S,S,D) are magnetic tapes floppy disk hard disk & CD's, These are called Secondary because our Computer will work if one of them are missing.

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→ Primary Storage devices are not Portable devices ie. we can not transfer our data from one Computer to other but Secondary Storage devices are portable -

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Generations Evolution of Computer.

In the begning of many devices have been used in the processing of data- The Mechnical calculating device (ABACUS). was peincipaly used to add & subtract. The french Mathametician produced the pasciline recognised as the first Mechnical calculator but it only capable of performing Calculation like addition & Subtraction Nearly two centuries later all attempts to produce a Calculator performing all arthematic operations producing mathemitical tables failed- then a young genious named "Charles Babbage" & engush mathamatican gave much thought to the design of devices that used the difference between previous values in the table to produce new values Babbage in 1822, Constructed a work model to illustrate the principal the difference engine.

There are five major generations of Computer were developed & many new features were added

1st Generation Computer (1945-1956).

1st generation of Computer were Characterised by the fact that operations instructions were made to order for the specific task for which the computer was to be used each computer had a different Binary code programme called a machine language that told it how to operate this made the computer difficult to programme.

The main features of Computer developed during this generation were:-

1- Vaccum tubes were used in our computer.
2- Due to vaccume tubes the size of our 1st generation computer were very very big.
3- These computer used to dispate lot of heat.
4- Rate of failure of 1st generation computers was more more as vaccum tubes burnt frequently
5- Electric power consumption was very large.
6- The input & ouput was in the form of 0's & 1's.

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2nd II Generation Computers (1956-1964).

→ By 1948, the Invention of transistors greatly changed the Computers development the transistors replaced vaccum tubes in television, radios & Computers. As a Result the size of electronic michinery has been shrinking ever since the transistors was at work in computer by 1956 Coupled with earlier advances in magnetic core memory. Transistors lead to 2nd generation Computers were very small in size as Compared to 1st generation computers.

1- The Technology used in 2nd generation Computer were transisters
2- These Computers used to dissipate lesser heat than 1st generation Computer.
3- Electric power Consumption was lesser
4- Different language were developed which replaced by binary language.

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III 3rd Generation Computer (1964-1971)

Through transistors were clearly an improvement over the vaccum tubes they still generated a great deal of heat which damaged the computer sensitive internal parts the quartz rock eliminated this problem Jack Kilby an engineer with Instruments developed the Integrated Circuits. (IC)

in 1950 the ICs combined three electronic components on to a small silicon disc which was made from quartz Scientists later managed to even fit more even more components on a single chip. Called a Semiconductor. As a result Computer became were small as more components were squeed on to the chip.

Another III developement includes the use of Operating System that allowed the machine to run many different programs at once with a Central programme at that monitored & quadinated the Computer memory.

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The main features of Computer developed during this generation are.

1- In 3rd generation computer IC's were used transistors replaced by IC's.

2- The 3rd generation Computer were more compact as compared to III 3rd generation.

3- These computers used to dispate lesser heat than III generation Computers.

4- failure of IC's were rare.

5- Electric power consumption was far lesser.

6- Different languages were developed like basic, Cobal, Algal, fortan etc.

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IV : Generation Computer (1971-1991).

After the Integrated Circuits large scale integrated could fit 1000s of components on to one chip.

But the 1980's very large scale integration squeezed hundreds of thousands of components into a small chip. Ultra large scale integrated (ULSI) increased that number into the millions of computer components.

The ability to fit so much on to an area about half of size of a US dime helped to diminish the size & price of computer it also sized their power efficiency & reliability.

→ The main features of this computes developed during this generation are as follows.

1- The fourth generation computers were more compact as compared to the III generation computers.
2- These computers used to dispate lesser than III generation of computers

3- failures are rare & negligible

4- Electric power consumption was far lesser.

5. Sophisticated language likely Query language are developed.

V. FIFTH Generation Computer.

Many advances in the Science of Computer design & technologies are comming together to enables the creation of 5th Generation of Computer.

The fifth generation computer system was bin initatives by Japaniese ministry of international trade & industry began in 1982 to create computers using massively parallel computing & logic programming.

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Computer Memory.

→ Computer memory is a primary of unit is capable of storing data & computer of instructions necessary to direct the CPU during processing to solve a given problem The memory consists of chips either on the motherboard or a small circuit board attached to the motherboard. This electronic memory allows the CPU to store & retrieves data very quickly.

There are two types of built in memory permanent or non-permanents.

Rom:-

Rom (Read only memory): Chip always return the data they hold even when the computer is turned off this called non-volatile memory.

RAM:-

→ RAM (RAndom Access memory). Chip do loss their contents when the Computer memory is shut off this called Volatile memory Rom is Generaley. Storage memory.

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then can be read from or written on by the user & is used primarily to store user perograms & data.

There are two types of RAM these are static RAM & Dynamic RAM:.

STATIC RAM:-

This RAM will maintain it's data as long as power is provided is memory chip It doesn't need to be written periodically infact the only time the data on the memory is refreshed or change is when and actually write command exicutes (RAM) is very fast is often used as check memory due to it's speed.

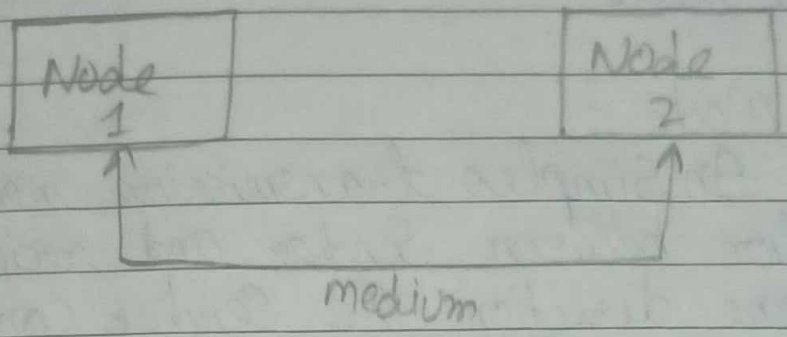
Dynamic RAM:-

Dynamic RAM unlike ram must be continuously refresh in order for it to maintain its data this done by placing the memory on a refresh circuit and rewrite the data several 100 times percent it is used for most system memory chip & small.

Shot on realme 5 Pro

NETWORKING

↳ When two or more than two communication device are interconnected with each other through some medium is said to be a network.



↳ Need of Network.

1. Information Sharing (Data communication).
2. Resource Sharing
   e.g : Web Server
   (Server - highly configured System).

↳ Components of Data Server communication.

- There are five components of Data communication

1. Message : It can be a text, picture, audio, vedio etc.
2. Sender : It can be a mobile phone, laptop, computer, walki-Talki etc.
3. Reciever : It can be a mobile phone, laptop, computer, walki-Talki etc.
4. Medium : It can be a Cable, Radio waves, micro waves etc.
5. Protocal : It is set of rules governed over communication.

↳ Modes of Communication:

There are three modes of communication in networking.

1. Simplex mode
2. Half-duplex mode
3. Full-duplex mode.

↳ Simplex Mode:

In Simplex transmission mode, the communication between Sender and reciever occurs in only one direction. The Sender can only send the data and the reciever can only recieve the data. e.g. radio, Television etc.

↳ Half-duplex Mode:

In half-duplex mode, both devices can transmit signals but one at a time. If node 1 sends data at time and node 2 can only recieve and vice versa.
e.g. walkie-Talkie.

↳ Full-duplex Mode:

In full duplex mode, communication is capable of network data transmission at the same time e.g mobile phones, laptops, Computer etc.

Topologies.

↳ Topology is the geographical representation of our network. There are five types of topologies.

1. Mesh topology.
2. Star topology.
3. Bus topology.
4. Ring topology.
5. Tree topology.

↳1. MESH TOPOLOGY.

In this topology every device is connected to another device with a particular link.

↳ Advantages:

1. If one link becomes unable it does not harm the entire system.
2. It is easy troubleshoot.

↳ Disadvantages:

1. A full mesh network can be very expensive.
2. It is difficult to install and reconfigure.

↳2. STAR Topology.

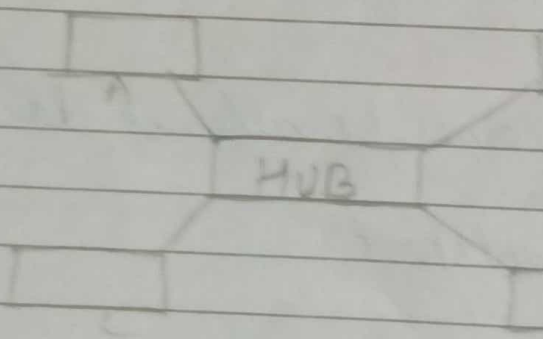
The Star topology with a central device called Hub and the sharing of data is only possible through Hub.

↳ Advantages:

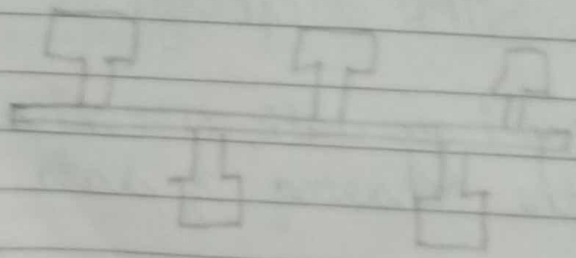
1. It broadcast the message.
2. It is less expensive due to less cabeling.
3. Easy to connect new nodes without effecting rest of nodes.

↳ Disadvantages:

1. In star topology we must required a network device like Hub or Switch etc.
2. If two nodes want to share the data sharing is only possible through.
3. If Hub is failed entire network will be fail.
4. We can't send private data.



↳ Bus Topology.



↳ The bus topology is designed in such a way that all the station are connected through a single cable. Each node is either connected to backbone cable by drop cable or directly connected to the backbone cable. When a node wants send to message over the network.

↳ Advantages:

1. Low cost cable: In bus topology nodes are directly connected to the backbone cable without passing through a Hub or Switch.

2. Moderate data speed: Co-axial or twisted pair cables are mainly used in the link topology that support upto 10 mbps speed.

↳ Disadvantages:

1. There are huge threat of traffic Jam.
2. Attenuation is a loss of signal leads to communication issues. Repeaters are used to regeneration the signal.

↳4. Ring Topology.

A Ring topology is a network topology in which each node connects to exactly two other immediate nodes forming a signals continous path way for signal through each node called as ring topology.

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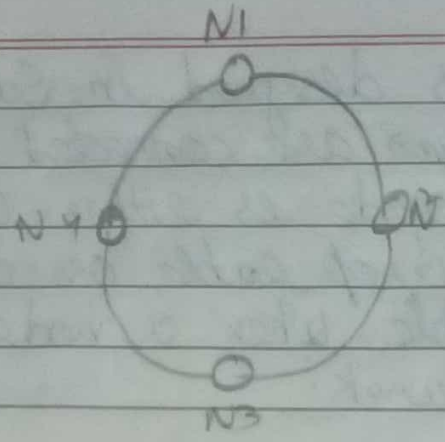

↳ Advantages.

1. All data flows in one direction reducing the chances of packets.
2. A network server is not needed to controls network connectivity b/w each work stations.

↳ Disadvantages.

1. All data being transferred over the network must pass through each work station on the network which can make it slower and dangerous.
2. The entire network will be impacted if one work station shut down.

↳5. TREE Topology

A tree network or star bus network is hybrid network topology in which star network are interconnected via links network.

Tree network are hierarchial in nature and each node can have an arbitary no. of child nodes.

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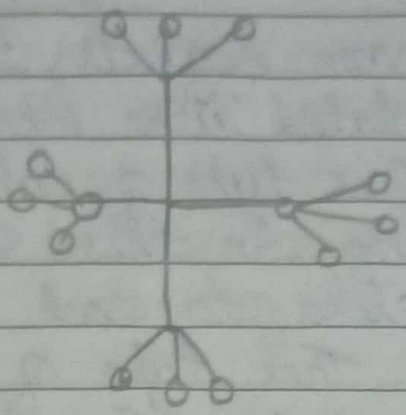


↳ Mediums of Network....

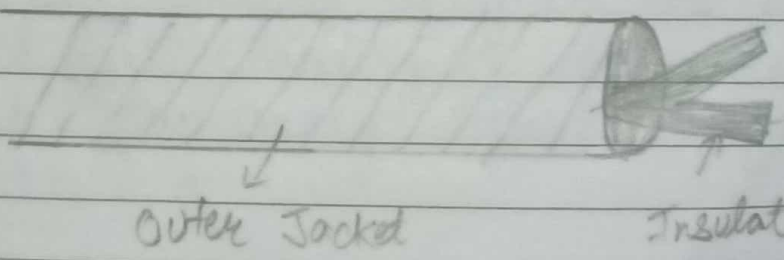
We have two types of medium through which we ca create a network.

1) Guided medium.
2) Un-Guided medium.

GUIDED MEDIUM / Physical / Wired Technolog

↳ These technologies make use of wires and cable. Some commonly used cable are:

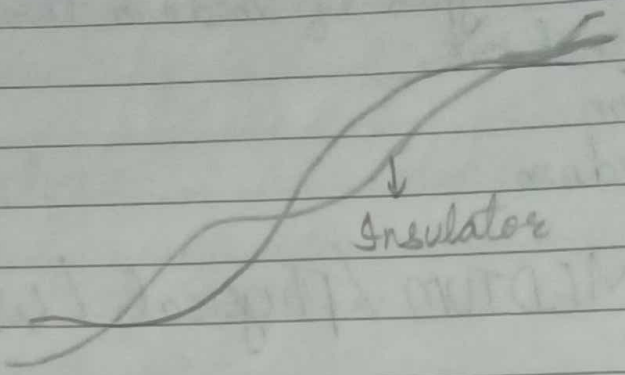
★ Two wire open line: This is the Simplest transmission channel it contains two wires of Copper and each wire is insulated from the other. The Thickness of wire is used for shorter distance (say 50m) The data communication rate be 19200bps (bits per second).



2. Twisted pair cable:

As the name suggests, twisted pair consists of a pair of insulated wire which are twisted together. This type of cable is better than two wired open line. In this sense that both wires are very close to each other and reduces the noise signals. This type of cable can live longer distance in 1 Km. The data transfer can be (1048576 bps to 209715 bps) (ie, 1mb - 7mbps).

Twisted pair cables are widely used in telephone lines



↳ Features:

1. Its installation is very easy.
2. This cable is not very expensive.
3. Noise level is low as compare to 2 wire open line.
4. Transmission rate is very high.
5. Suitable for longer distance.
6. It can accomodate upto 1000 devices.

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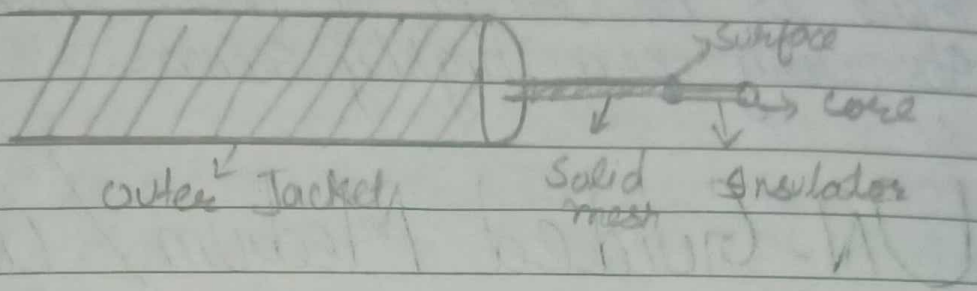
↳ Co-Axial cable:

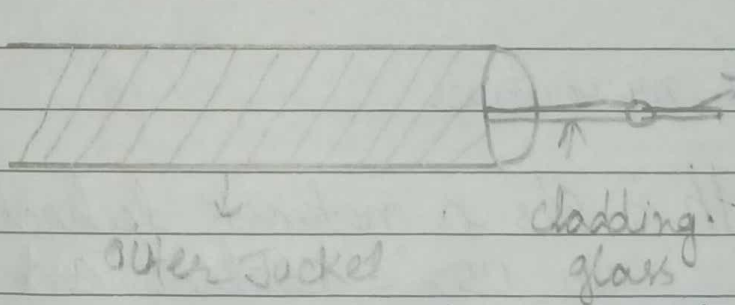
In this cable, there are also 2 conductors runs co-axially inside mesh of outer conductor. The space between two conductors is filled with insulatory. The transmission loss is very less in this cable. It can cover a distance of 1 km can be upto 100 mbps



↳ Features:

1. Its data transmission rate is very high.
2. Noise immunity of co-axial cable is very good.
3. It can occupy longer distance very easily.
4. Its installation is with bit difficult as compare to other cables.

↳ Optical Fibre cable:



The cables are made of plastic or glass fibres. optical fibre cables consists of glass or plastic core covered by a 'cladding' of cover refractive index This cable can carry signal in form of light.

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↳ Features:

1. Its data transmission rate is very high upto 1000 mbps.
2. It can be used for long as well as short distance.
3. There is no concept of noise ever.
4. Its very very highly secure.

UN-Guided Medium / Wireless Technology.

↳ These technology do not make use of wire and cables instead they make use of waves and signals for transmission.

Some commonly used wirely technologies are:

1. Bluetooth.
2. Infrarred.
3. Radio and microwaves.

↳ Bluetooth: Its a network technology that doesn't on user's control and large amount of power. By keeping the transmission power to an extremely low setting (1 milli watt), bluetooth is ideal for mobile battery operated device. Moreover, bluetooth doesnot or the user since, it can automatically select or commune-

cate which other bluetooth devices without any user output. Bluetooth technology on 2 things: A radio frequency technology and the protocol software enabling it to transmit data to other devices.

↳ INFARED Rays: These radiations are electromagnetic radiations whose λ is longer than of visible light. These technology offers several important advantages as a form of wireless communication.

↳ Advantages:

1. Lower power requirement, therefore ideal for laptops, telephones and remotes.
2. Low circuitary cost.
3. Simple circuitary.
4. Its highly secure as compare to bluetooth.
5. Its also portable.
6. Its noise immunity is high.

↳ Disadvantages:

1. It should be line of sight transmitters and recievers must be almost directly aligned.
2. It can be blocked by any common hard material like people, walls, plants etc.
3. It's transmission rate is shorter.

4. It's transmission can be affected by light, weather, Sunlight, rain, dust etc.
5. It's data transmission speed is lower.

Radio AND Microwave Transmission:

↳ Channels transmit the data without using cables The advantages of using such channels lie in their coverage of large geographical areas and cost effectiveness. Freqiencies below 1000 Mz are radio wave frequencies higher frequencies. The data transfer rate of radio freqiences is 100 KBps to 400 KBps. Radio freqiencies require repeaters along the path to Enhance the Signal.

The data transfer rate in microwave Channel is about 1000 MBps. Microwave transmission is extremely used for breadband communication and telephone Services. The range of transmission is however limited to nearly 50-60 Kms to transmit over the long distances microwave Signals are bounced through a chain of towers.

↳ Types of NETWORK.

☆ There are 4 types of network.
1. LAN (Local Area Network.)
2. MAN (Metropolitan Area Network)
3. WAN (Wide Area Network).
4. PAN (Personal Area Network)

↳ LAN : A local area network is a collection of devices connected together in one physical location. Such as building, office or a home. A LAN can be small or large ranging from a home network which one user to an enterprice network with 100's of users and devices in an office or a campus. The range of LAN should be within 1 Km.

↳ WAN : It's a computer network that covers a far wider area than a LAN and a MAN. WAN's covers cities, countries, continents and the whole world. A WAN is formed by linking LAN's together. for e.g. Several major LAN's in a city can connect together forming a WAN. This network use telephone lines, satellite communication micro-wave transmission etc. These transmission medias are linked with routers. A router is a device which interconnects two or more computers network.

↳ MAN : It's computer network usually spanning a big campus or a city which typically connects a few LAN's. A MAN often provides efficient connections to a wide area network optical fibre is mostly used in MAN's. MAN is larger than LAN but smaller than WAN. Cable TV network is a good example of MAN.

Elements OF Network

1. Host : Main computer connected to other computers or terminal to which it provides data or computing services via a network. It is similar to a server in a client server architecture.

2. NODE : In a network, a node is a connection point either a redestribution or an end point for data transmission. In general, a node has programming or inengineered capability to recognise and process or forwards transmission to other nodes. A node can be computer or some other communicating device such as printer, mobile, router and a switch etc.

   Every node has a unique network addresses called Ip address.

3. Client : These devices are typically pc's with network software apps installed that requests and recieve information over the network. Mobile devices as need as desktop, computers can both function as clients.

4. Server : It is typically stored file and database including more complex apps like websites servers devices often features higher powered central processors, more memory and large disk devices that clients.

Networking Addresses.

we have two types of addresses and we use to delva over data in networking and these two addresses are.

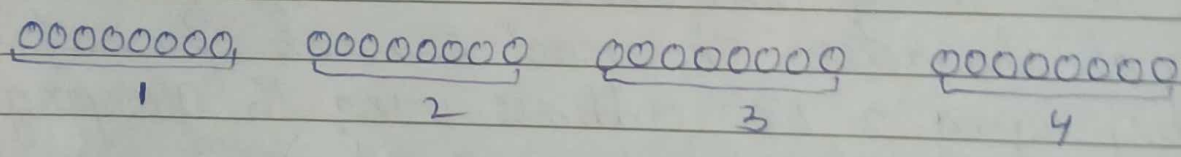
1. Physical Addresses / mac add / Static add
2. Ip addresses / logical add / Dynamic add.

1. MAC Addresses: It stands for media Access control address. And its used when we want to communicate within a network. A media access control address is a unique identifier assigned to a network address in a communication within a network Interface controller (NIC) for use as a network address in a communication with in a network segment.
It's a 48 bits value, consisting of 12 hexa decimal character. The most common format for displaying a mac address using 16 grouping of 2 characters seperated by hypen (-).

2. Ip Addresses: The Ip addresses identifiers a system location on the network in the same way a street address identifies a house in a city. Just as a street address must identify a unique residence an Ip address must globally be unique and have a uniform format. Each Ip address includes a network ID and a Host ID.
The network ID also known as network

address identifies the System that is located at the same physical bounced by Ip router. All the System on the same physical network must have the same network ID. The Host (also known as host address) identifies a work stations, Server router, or other networking device. The address for each host much be unique to the network (ID).

↳ **Ip Address Format:** The 32 bits Ip address format is grouped 8 bits at a time separated by dotes and represented in decimal format. The Ip address is divided into 4 octants and every octants is separated by a dot. The range of octant is 0 to 255. An Ip address is also called Dynamic address because we can change it whenever we need.

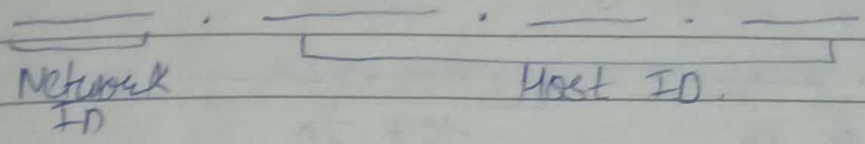


Ip address could be as:

192. 160. 7. 7
132. 0 . 0. 1
0. 0 , 0. 1
1. 0 . 0
2 8 . 7 . 6
5. 6 . 255. 255
220. 7. 60. 45.

Ip address is divided into 5 classes:

1) Class A: Range 1 to 126.

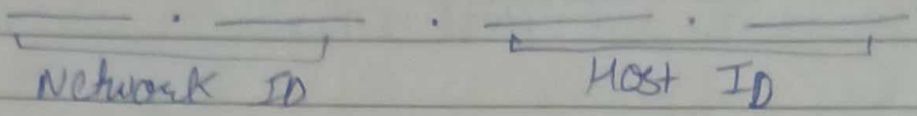


- First network ID of class A is 1.0.0.0
- last network ID of class A is 126.0.0.0.
- Total no. of hosts in a single network of class A category. 1, 6, 7, 7, 7, 2, 14 host.

First Network ID
1.0.0.0
↓ Hosts
1.0.0.1
1.0.0.2
:
1.0.0.255
1.0.1.0
1.0.1.1
:
1.0.1.255
1.0.2.0
1.0.2.1
// //
// //

- Broadcast address of class A is:
  126.255.255.255

↳ Class B : Range (128-191)



- Total no. of networks = 16,384 and total no. of hosts = 65,534.

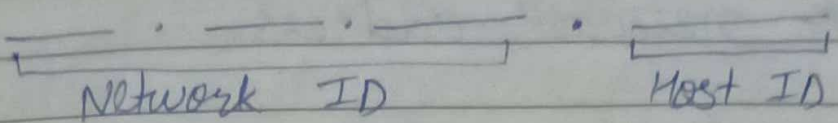
First N/w ID.	Last N/w ID.
128.0.0.0	191.0.0.0.

↓ Hosts.

128.0.0.1
128.0.0.2
- - - - -
- - - -

128.0.1.0
128.0.1.1
128.0.1.2
- - - -
- - - -
128.255.255.254.

↳ Class 'C' : Range (192-223)



- Total no. of networks in class C = 20,971,152
- Total hosts in class C is 254.

First N/w ID	Last N/w ID
192.0.0.0	223.0.0.0.

↳ Networking Devices.

1. Repeater.
2. Router.
3. Bridge.
4. Switch.
5. modem.
6. Server.

↳ Repeater : A repeater is an networking device that can connect two segments of one network. It retain and regenerated the signal to proper amplitude and sends them to the other network.

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2. Bridge : A bridge is a device that connects one LAN to another LAN that uses the same protocol or network address.

3. Router : A router is a networking devices that determines that next network point to which a packet should be forwarded towards its destination the router is connected to atleast 2 different networks and decides which to send each information packet based on its current understanding of the state of the network it is connected to.

4. Switch : It is a networking device which consists of a series of interlinked nodes called Switches. A switch may be a hardware or a Software device capable of creating temporary connections b/w two or more communicating delice.

5. Server : A Server is likely a computer that provides services or resources to other computer connected with it by some networking machines a Specific Server. A computer that is designed for only one Server apps can be divided among Server computers over an extreme range depending upon the work load.

When a Server starts, it opens the door for incoming requests from its client.
It never initates a service until its requested to do so.

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6. Modem: The word modem consists of MO + DEM 'MO' stands for modulator and 'Dem' stands for Demodulator. The conversion of digital signals to analog signals is called modulation and the reverse process is called Demodulation. Modems are connected to both at sending and recieving ends.

Dos (Disk operating System)

↳ Disk operating System : MS dos or pc dos is the powerful operating System. MS-Dos means microsoft Disk operating System. where as Dos means disk operating System for personal computer. Dos is Similar to old operating system mainly CPIM System that is micro computer based oldest System. A Single user operating System dedicated to a Single user and all the resources are available to this user.

- Some commonly used operating System are:

→ Dos.
→ UNIX.
→ LINUX.
→ UBANTU.
→ VISTA.
→ Windows 98.
→ Windows 2003.
→ Windows 7.
→ Windows 11.

The Dos Software is divided into three parts and Stored in three field on a floppy disk. When Dos was launched, at that time harddisks were not available. So floppy disks were used. Therefore this operating System was Stored in floppy disk.

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1> Limitations of Dos:

1. It is a Single user operating System that means we can perform a Single operation at a particular time
2. It provides a character user interface (CUI) to the user it means we can perform all operations / tasks through Commands in Dos.
3. Dos does not Support networking

Q What is command.

A Command is a Small Set of instructions which is given to our computer to perform a particular task. There are 2 types of commands used in Ms-Dos.

1. Internal commands.
2. External commands.

1> Internal commands: Those commands that are automatically loaded in the main memory ( ) when the operating System Dos is loaded into the memory. They are loaded during the booting process. Dos internal commands are permanent part of the resident portion of the memory. Internal Commands are always available for the user and these commands are not seen when user views the directory. DIR Command on the Screen

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↳ Some commonly used Internal commands are:

CLS	Copy. CON
DIR	TYPE
DATE	REN
TIME	DEL
VOLUME	MD (make directory)

2) External commands: These commands are not the permanent part of the main memory to execute or run these commands, an external file is required. The external file used for the execution of external commands are:
1. .EXE 2). COM 3). BAT

The external commands are used for relatively complex job such as copying and entire diskette into another diskette, to sort the disk, to hide / unhide the file and to optimize the memory space. Some commonly used external commands are:

→ EDIT.
→ disk copy.
→ Move
→ Mode
→ Scandisk
→ Find
→ X copy
→ Move.

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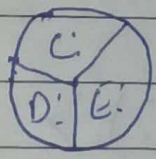
↳ In Dos:

C:\> → C prompt.

C → drive
: → root directory
\ → Separator
> → Status or position.

A: & B: are drive reserved for floppy. Harddisk has partitions according our use its because of one has vir , we can replace it.



partitions

↳ Never store our data in C: because in C: O.S remains their So when we update O.S it deletes all the files from there. Its because operating System is installed in C:, its in trend.

C:\ → drive its indicates O.S has loaded from C drive.
: → root directory. only one folder is here.
\ → Separator. 2 folder / directory.

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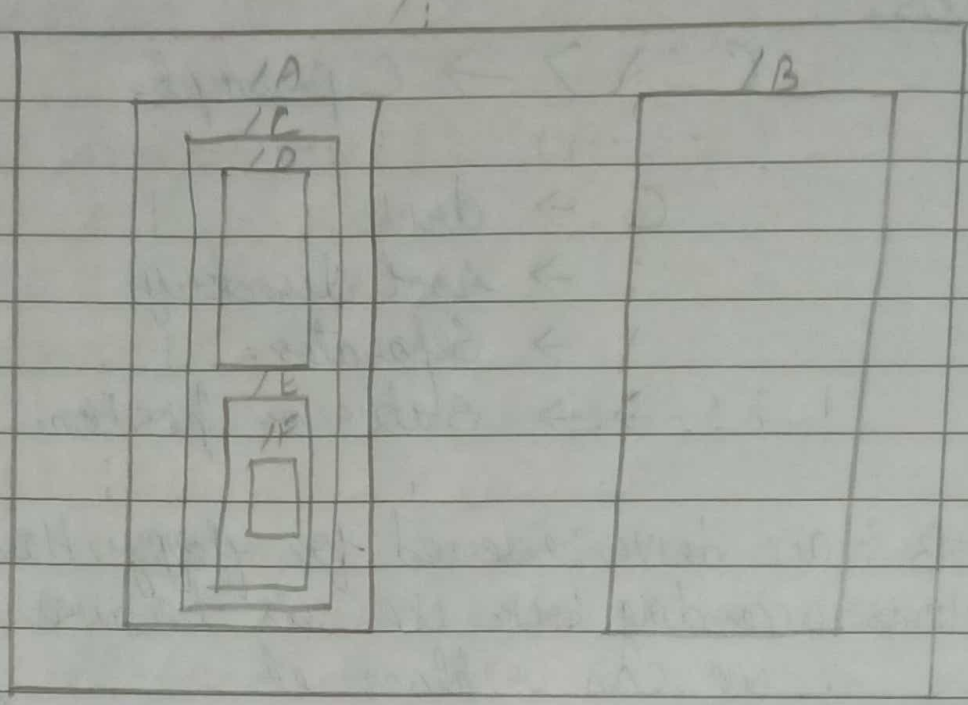
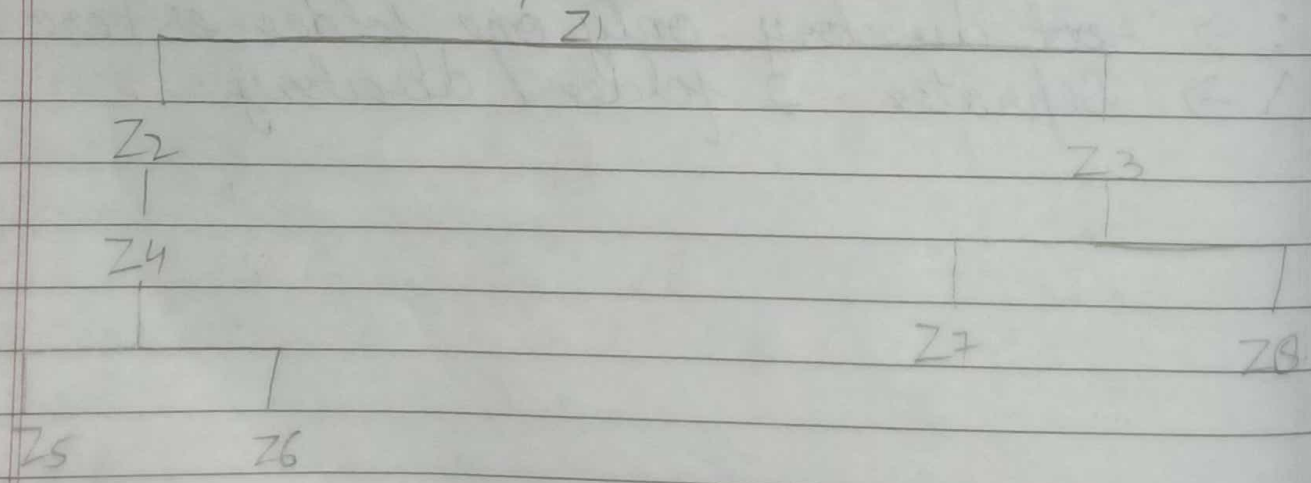


C:\>
C:\A>
C:\A\C>
C:\A\C\D>
C:\A\C\D\E>
C:\B>

Graphical tree



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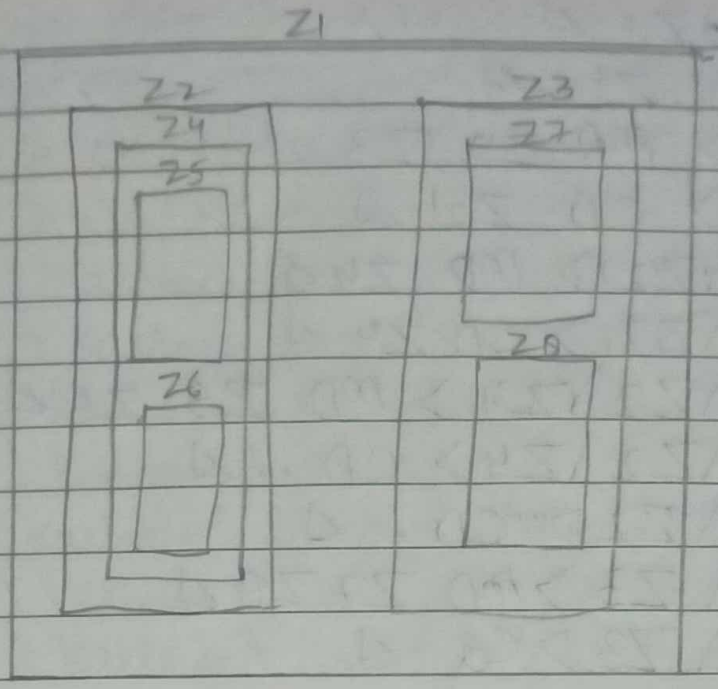
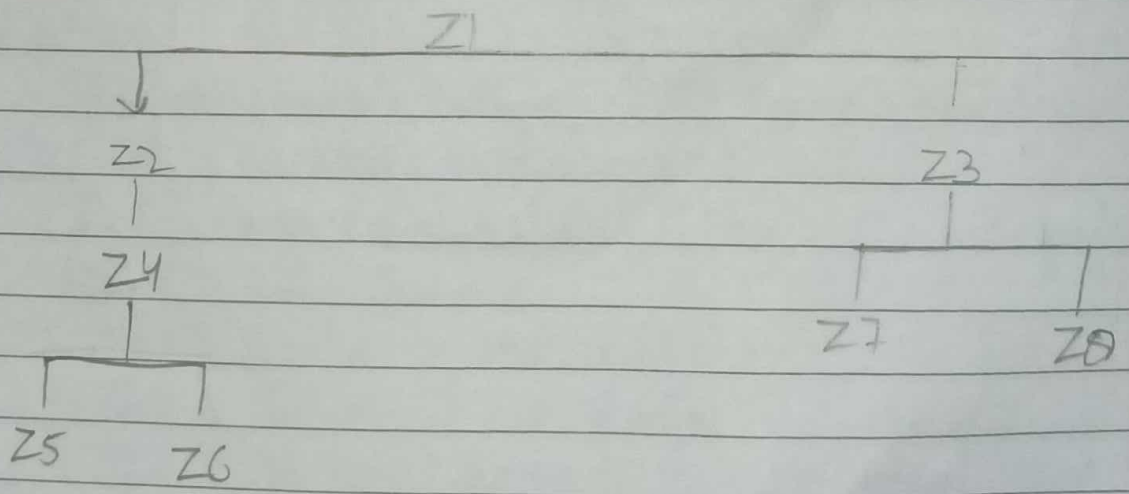


COMMANDS.

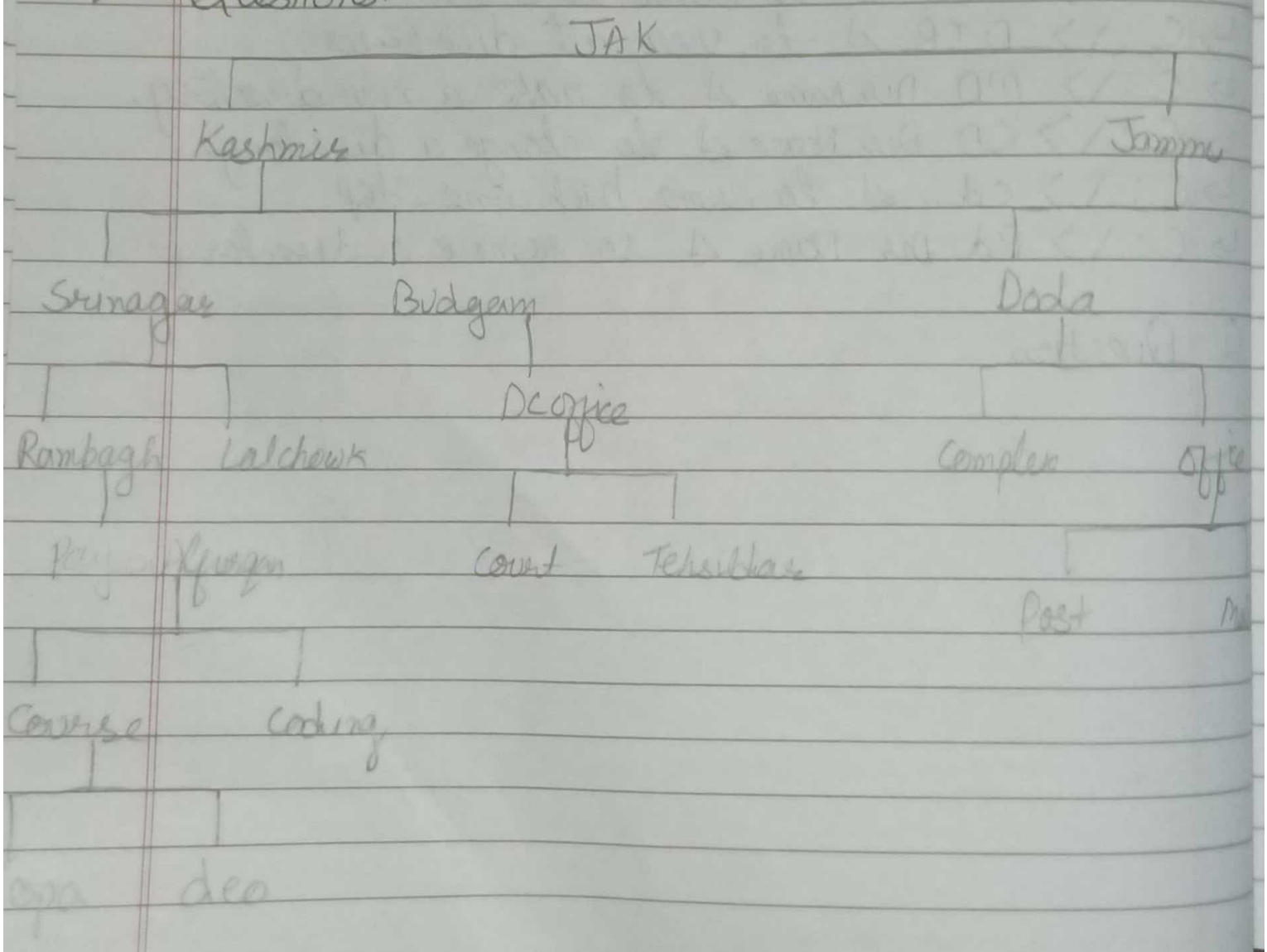
↳ C:\> CLS ↵ to clear a Screen.
↳ C:\> DIR ↵ to view all directories.
↳ C:\> MD Dir Name ↵ to make a new directory.
↳ C:\> CD Dir Name ↵ to change a directory.
↳ C:\> cd.. ↵ to come back one step.
↳ C:\> Rd Dir Name ↵ to remove a directory.

Q Question.



C:\>MD Z1 ↵
C:\>CD Z1 ↵
C:\Z1>MD Z2 Z3 ↵
C:\Z1>CD Z2 ↵
C:\Z1\Z2>MD Z4 ↵
C:\Z1\Z2>CD Z4 ↵
C:\Z1\Z2\Z4>MD Z5 Z6 ↵
C:\Z1\Z2\Z4>CD.. ↵
C:\Z1\Z2>CD.. ↵
C:\Z1\Z3>MD Z7 Z8 ↵
C:\Z1\Z3>Cd.. ↵
C:\Z1>Cd.. ↵
C:\>Tree Z1 ↵

★ Questions.



C:\> md JAK
C:\> cd JAK
C:\JAK> md Jammu Kashmir
C:\JAK> cd Kashmir
C:\JAK\Kashmir> md Srinagar Budgam
C:\JAK\Kashmir> cd Srinagar
C:\JAK\Kashmir\Srinagar> MD Rambagh Lalchowk
C:\JAK\Kashmir\Srinagar
C:\JAK\Kashmir\Srinagar\Rambagh> md Alfurgan
C:\JAK\Kashmir\Srinagar\Rambagh> cd Alfurgan
C:\JAK\Kashmir\Srinagar\Rambagh\Alfurgan> MD course coding.
C:\JAK\Kashmir\Srinagar\Rambagh\Alfurgan> CD course
C:\JAK\Kashmir\Srinagar\Rambagh\Alfurgan\Course\ MD copa deo.
C:\JAK\Kashmir\Srinagar\Rambagh\Alfurgan\cd..
C:\JAK\Kashmir\Srinagar\Rambagh> Cd..
C:\JAK\Kashmir\Srinagar> cd..
C:\JAK\Kashmir> cd budgam.
C:\JAK\Kashmir\budgam> md Dc office.
C:\JAK\Kashmir\budgam> cd Dc office.
C:\JAK\Kashmir\budgam\Dc office> md court tehsildar
C:\JAK\Kashmir\budgam\Dc office> cd..
C:\JAK\Kashmir\budgam> cd..
C:\JAK\Kashmir> Cd..
C:\JAK> cd Jammu.
C:\JAK\Jammu> md doda.
C:\JAK\Jammu> cd doda
C:\JAK\Jammu\doda> md complex office

C:\JAK\Jammu\Doda> cd office.
C:\JAK\Jammu\Doda\office> md post mall
C:\JAK\Jammu\Doda\office> cd..
C:\JAK\Jammu\Doda> cd..
C:\JAK\Jammu> cd..
C:\JAK\cd..
C:\> tree JAK.

COMMANDS FOR FILES

→ C:\> copy Con file Name : to create a file.
→ Ctrl + Z, F6 : to save a file.
→ tree 1f Dir name : to show tree with files.
→ type file name : to view the contents of file.
→ Edit file name : to edit a file name.
→ Ren old file name new file name : to rename file e.g Ren tiger cat ↵
→ attrib +h file name : to hide a file.
→ attrib -h file name : to unhide a file.
→ attrib +r file name : to make a file read only.
→ attrib -r file name : to get to previous setting.
→ Del file name : to delete a file.
→ copy file name C:\ whole path to which we want to take the file.

To copy the file from one directory to another e.g copy tiger C:\Subject\Science\Zoology\tree\applied.

↳ We have two types of wild cards in MS-Dos.

1) ? → It can scan only one character e.g Del file.

2) * : It can scan one or more than one character.

→ Del *.* : Delete all files in that directory

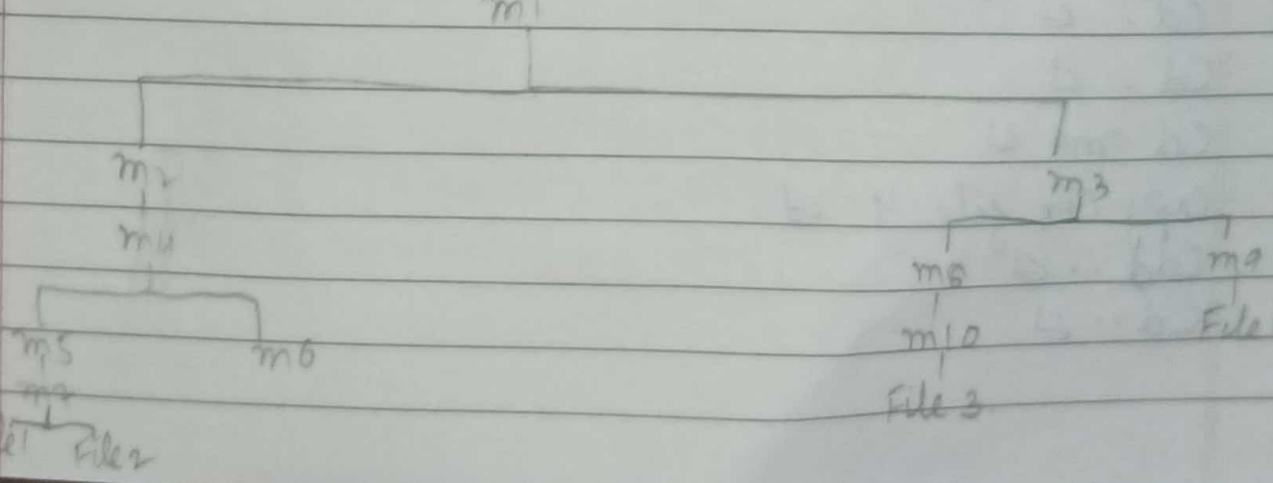
Note: Never use it on root (it will delete all the files in the System).
To take all files of the directory to another location in one go.

↳ X copy directory name.
C:\ the whole path of another location.

e.g C:\Subject\Com...\management\finance\X copy
Stikes C:\Subject\Science\biology\man\boy ↓
to copy here.

BATCH FILES.

The batch files are executed files. The extension of batch file is .bat.



C:\> md batch
C:\> Cd batch
C:\batch > Copy con Alforgan.bat
md m1 ↵
Cd m1 ↵
md m2 m3 ↵
Cd m2 ↵
md m4 ↵
Cd m4 ↵
md m5 m6 ↵
Cd m5 ↵
md m7 ↵
Cd m7 ↵
Copy con file 1 ↵
Copy con file 2 ↵
Cd.. ↵
Cd.. ↵
Cd.. ↵
Cd.. ↵
Cd m3 ↵
md m8 m9 ↵
Cd m8 ↵
md m10 ↵
Cd m10 ↵
Copy con files 3 ↵
Cd.. ↵
Cd.. ↵
Cd m9 ↵
Copy con file 4 ↵
Cdd.. ↵
Cd.. ↵

Cd .. d
Tree 1 P m1 d
Ctr + Z or Fb d.
∴ It shows.
C:\Batch > Alfurqan
↳ It executes.