Microsoft Excel





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Introduction to MS-Excel

Contents :

- 1.1 Introduction
- 1.2 Benefits of M.S Excel
- 1.3 Applications of M.S Excel
- 1.4 Starting M.S Excel
- 1.5 Components of a spreadsheet
- 1.6 Creating a workbook
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- 1.16 Closing a worksheet

1.1 Introduction: Microsoft Excel is the most popular windows based software for mathematical calculation. It is a spreadsheet program that is used to create and manage business transections that deal with accounting.

1.2 Benefits of Spreadsheet

- Excel is the best package to do calculations and update data.
- It will calculate large amount of data/values easily.
- You can sort the data easily.
- You can arrange the data either in increasing or decreasing order.
- Spreadsheets have built-in formulas, autometic formating and graphing capabilities
- You can format data in Excel . Excel change the appearance of data in a presentable manner.

1.3 Application of M.S Excel

- Creating reports in offices, Banks, Railway Station, Hospitals.
- Creating Charts and Tables in companies to know about the changing trends and do the comparative study of data available.
- Creating mark sheet in schools & colleges.

1.4 Starting MS-Excel

To start Ms-Excel select Start \rightarrow Programs \rightarrow Microsoft Excel.

This opens a blank Worksheet as shown.





6

1.5 Ms-Excel Parts

Workbook:

An Ms-Excel document is also known as a workbook.

Worksheet:

Each workbook contains multiple pages called worksheets (by defalt 3). The active worksheet, is the worksheet in use Each worksheet in Ms-Excel is made up of rows and columns.

Spreadsheet:

Spreadsheet is a sheet which is spread in such a way that it divides itself into various horozontal rows and vertical colums.

Speadsheet also refers to an application software Ms-Excel which allows you to work with numbers and text, including mathematical calculations and graphing operations

- 1 A spreadsheet consists of rows and columns in which you can enter data.
- 2 Rows are the horizontal cells which can contain any information.
- 3 Columns are vertical cells which can also contain information.
- 4 You can add as many worksheets as you want to create, within the limits of your computers memory resources.
- 5 The Spreadsheet that is currently in use is highlighted in bold letters.
- 6 The tab scrolling buttons to the left of the sheet tabs let you move through the sheets quickly.
- 7 To select a sheet, click its tab.
- 8 To give a name to a worksheet, right click on the sheet and select the rename option double-click its tab and type the new name.

.1. Title Bar:

It is at the top of the screen & displays the name of the workbook

🔀 Microsoft Excel - Book1

2. Menu Bar: It displayes the name of main menus and gives access to various commands through excel.

3. Standard Toolbar:

Displays icons for the editing commands like cut,copy,paste etc.

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4. Formatting Toolbar: Displayes the common formatting tools.

5. Name Box:

It shows the address of the selected cell.

6. Comman Heading Area:

It is the place by clicking on which the whole sheet gets slected.

7. Formula Bar:

Is divided into Three partsName Box\ Reference Area ; shows the address of the current cell

Button Box Gives you 3 buttons.....1.Tick- To accept an entry

2. Cross to reject an entry 3. Fx to enter a formula



8. Row Header:

Shows the row number by clicking on which complete row can be selected.

fx =E9+E10

9. Rows:

The rows are identified by numbers, labeled down the left side of the work sheet in the heading area. Each worksheet has a total of 65,536 rows.

10. Sheet Tab:

Shows the name of the sheets in a worksheet



- 8 ×

11. Status Bar:

Gives you the information about the status\ mode of the cell and the keyboard.Cell Mode (left pane)

Spreadsheet [Sulphur.gsh]	Server Ready.	[114, 4]	Row: 1 Column: 1	<c> //</c>	
		- · · · · · · · · · · · · · · · · · · ·		1/1	1

Three modes are available on status bar

- **1 Ready** Shows that cell is ready. Now you can type data.
- 2 Enter shows that cell is ready to accept the data and you can make the entry final.
- **3** Edit available when the cell 1s in edit mode. Allows you to change the contents. Cell can be brought in edit mode by pressing F2 key also.

Keyboard Mode (Right Pane)

- a Extend Mode You can extend the selection using navigation keys F8 key is used
- **b** Add Mode You van add the selection means multiple selections can be done Shift+F8 is used
 - Other Status Information about keyboard like num lock caps lock key is on/off etc, etc.....

12. Cell pointer:

A cell pointer is a highlighted cell boundary that specifies which cell is active at that moment.

13.Cell:

С

A cell is the smallest unit of a worksheet, formed by the intersection of arrow and a column. Each cell has a unique address formed by the combination of a column letter and a row number. For example, where row 5 is intersected by the column A, the cell so formed has the



address A5.

14 Column Header :

Shows the column name by clicking on which complete column can be selected.

15. Columns:

The columns are identified by letters, labeled across the top of the sheet in the heading area. Each worksheet has a total of 256 columns. The columns are labeled as A,B,C,.....

1.7 Creating a New Workbook

A workbook in Excel can be creating using the following ways.

- Using Task Pane
- Using Standard Toolbar
- Using Short-cut keys

Steps to create a file using Task Pane

• Select New from File menu. The New Workbook task pane appears.

• Click Blank Workbook under New.

To create a file using Standard toolbar-

Select **New** on the **Standard Toolbar.**

To create a file using the shortcut keys-

Press **Ctrl** +**N** from the keyboard.

Task Pane

🔹 🕅 New Workbook 🛛 🔻 🗙
Open a workbook
🗃 Workbooks
New
🗋 Blank Workbook
New from existing workbook
📓 Choose workbook
New from template
General Templates
👰 Templates on my Web Sites
🕙 Templates on Microsoft.com
📸 Add Network Place
🕜 Microsoft Excel Help
Show at startup

Task Pane

1.8 Opening a Workbook

Select File, Menu and click on Open option Or, click choose workbook.... Under New from existing workbook. After that Open dialog box appears.

- In the Look in list, click on the drive, folder, or Internet location that contains the file you want to open.
- In the folder list, locate and select the folder that contains the file
- Click open.

1.9 Moving or Copying Sheets

Moving or Copying Sheets to another workbook

It is possible to move or copy sheets from one work book to another, but at times calculation and data are not transferred accurately so the process should be undertaken with care.

Open the workbook and select the sheets you want to move or copy. If you want to select a single sheet, just click the sheet. If you want to select more than one adjacent sheets, click the first sheet tab, hold down SHIFT key and then click next and so on. If you want to select sheets randomly, click the first sheet tab, hold down CTRL key and select others.

- Select Edit Menu and click on Move or Copy Sheet
- In the **To book box**, click the workbook to receive the sheets.
- To move or copy the selected sheets to a new workbook, click New Book.
- In the **Before Sheet Box,** click the sheet before which you want to insert the moved or copied sheets.
- To copy the sheets instead of moving them, select the **Create a Copy** check box.

Move or Copy	? 🔀
Move selected sheets	
<u>T</u> o book:	
Book1	•
<u>B</u> efore sheet:	
Sheet1 Sheet2 Sheet3 (move to end)	
□ <u>C</u> reate a copy	
СК	Cancel
Move or Copy di	alog box.

Moving or Copying Sheets to Current workbook

To move sheets within the current workbook, drag the selected sheets along the row of sheet tabs.

To copy sheets, hold down CTRL, and then drag the sheets; release the mouse button before releasing the CTRL key

1.10 Inserting a Sheet.

Maximum 225 sheets can be inserted in a Ms Excel workbook

- Select sheet before which you want to insert a sheet. (For e.g to Insert a sheet between sheet1 and sheet2, select sheet2)
- From the **Insert menu** select **Worksheet** option.

Insert... Delete Rename Move or Copy... Select All Sheets Tab Color... View Code Pop-up Menu

1.11 Renaming a Sheet

Double click on the **Sheet Tab** for which you want to rename or right click on the sheet tab select the **Rename** option from the **Pop-up menu.**

1.12 Protecting a Workbook or Worksheet

Sometimes you may need that nobody should make any changes in your workbook. To do so, Excel provides option to protect your workbook.

Follow these steps.

• Select Tools Menu and choose Protect sheet option.

Protection •	ê.	Protect Sheet
Online Collaboration	7	
Formula Auditing	•	Protect <u>W</u> orkbook
Tools on the We <u>b</u>	2	Protect and Share Workbook
<u>C</u> ustomize		
Options		

Protecting Workbook

- In the Protect Sheet dialog box .Enter the password
- Click OK

Decoverd to uppr		
Eass word to unpr	otect sheet:	

Allow all users of I	this worksheet to:	
Select locked	cells	
Select unlocke	ed cells	
Format cells		
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Insert hyperli		
Delete column	is	

Entering Password

- The dialog box appears which prompts you to **Re-Enter** the **Password** for confirmation
- Type the password and click OK
- The worksheet is protected. Now one can view the worksheet but cannot modify its contents.

Protect Sheet	\frown	<u>?</u> ×
🛛 🖥 🔽 Protect worksheet a	nd <u>c</u> ontents of locke	ed cells
Confirm Password	-haati	
Reenter password to proce	eed.	

Caution: If you lose or forg recovered. It is advisable t their corresponding workbo place. (Remember that pay	get the password, it o keep a list of pass ook and sheet name sswords are casa-se	cannot be words and s in a safe ensitive.)
	0%	Cancel
	/./	

Re-Entering Password

1.13 Saving a File

To save a file do the following:

- Select **File menu** and then click on **Save As**. Save dialog box appears as shown in figure
- Type the file name of your choice in the File name text box
- Click Ok

Saving a File in another format

To save a file in another format, do this

• Select File menu and click on Save As...

- After that **Save As** dialog box appears.
- Enter a new name for the file in the File name text box.
- Click the **Save as type** drop-down list, and select the file format that you want the file to be saved in.

Save in:	My Doct	uments	-	- 🗈 🔯 🗙 📸 = To	ooļs -
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		Web Page Web Archive XML Spreadsheet Template		2	

Saving a file to a different Format

1.14 Opening a file as a copy

To open a file as a copy

Select File menu click on and Open option

- In the look in list, click the drive, folder that contains the file you want to open.
- In the folder list, locate and select the folder that contains the file.
- Select the file you want to open a copy of. Click the arrow next to the open button, and then click Open as Copy.

When you open a file as a copy, a new copy of the file is created in the folder that contains the original file.

Opening a file as read-only

- Select File menu and click on Open option
- In the Look in list, locate and open the folder that contains the file

Select the file you want to open a copy of. click the arrow next to the **Open** button, and then click open as read-only.

1.15 Copying a File

To create a copy of the file, the steps mentioned are usually followed

- Select File menu and click on Open option. Or press Ctrl+ O together
- In the Look in box, click the drive or folder that contains the file you want to copy
- Right- click the file you want to copy, and then click on **Copy** from **Pop up menu**
- Now, in the **Look in** box, click the drive or folder you want to copy the file to.
- Right-click in the folder list (make sure a file is not selected), and then click on **Faste** from the **Pop- up menu.**

You can copy a file in one more way. To copy in another way do the following:

- Open the file you want to create a copy
- Click File and select Save As
- Type the new name of the file in the File Name text box
- Click Save.

1.16 Renaming a File

To rename a file, do the following:

- Select File menu and click on Open option
- In the look in box, click the driver or folder that contains the file you want to rename
- Right-click the file you want to rename, and then click **Rename** on the shortcut menu. Or press **F2** key
- Type the new name, and press Enter.

1.17 Closing a File

To close a file, follow the steps as below:

- Select File menu and then click on Close option
- Or, click **Close** from the application window.

Or, press ALT+ F4 together from the keyboard.

Self-Assessment Questions

- 1 Describe Benefits of Ms-Excel.
- 2 Parts of an Ms-Excel Window.
- 3 Explain moving or copying sheets.
- 4 Explain the different methods of saving the file.

Enter the Data in Ms-Excel Sheet

5 Renaming and closing a file

Lab Session

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2. Create yourself 2 to 4 Excel Data Sheets inserting your own data.







Entering and Editing data in MS- Excel

Contents :

- 2.1 Introduction
- 2.2 Keyboard Shortcuts in MS-Excel
- 2.3 Editing Data
- 2.4 Deleting Rows, Columns and cells
- 2.5 Resizing Rows, Columns and cells
- 2.6 Copying and Moving Data
- 2.7 Hiding and Unhiding Rows & Columns
- 2.8 Auto fill Pre-Defined Series
- 2.9 Highlighting Gridlines
- 2.10 Selection Techinique

2.1 Introduction

You can enter text, a number, images, fill colour, or a formula into each cell in a worksheet.

Four types of data can be entered in excel :-

- 1. Numeric (Value Entry) : The entry that consists of only numbers.
 - → Along with the number it may consists of some symbols like Decimal (.), Comma (,), Percentage (%), Currency (\$) etc.

→ Value Entry is right aligned (By default)

2. Formula Entry

It is an entry that start with

- a) = b) + c) @ symbol
 - → In-built formula can start with '=' or '@' or '+' symbol.
 - → User defined formulas can start with '+' or '=' symbol.

3. Text (label Entry)

All the entries other than value entry and formula entry is called as Text\ Label entry.

It may consist of

- 1. alphabets
- 2. numerals

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- 3. special symbols and combination of all these.
- 4. All the text entries are left aligned (by default).

4. Images

Image files like JPEG, PNG..... can be inserted in a cell.

2.2 Keyboard Shortcuts in MS-Excel

For entering the data in the M.S Excel sheet, use the following keys.

Command	Function
Right arrow /	
Tab Key	To move one column right
Left arrow Key	To move one column left
Up arrow Key	To move one row up.
Down arrow	
Key/Enter	To move one row down
Page Up	To move one up
Page Down	To move one screen down
Ctrl +Home	To move to the first cell of the row.
Ctrl+ End	To move to the last used cell of Spreadsheet.

2.3 Editing Data

The easiest way to change the text or number in a cell is to click the cell and then type right over the contents. If you do not want to replace the data, but simply need to corect some part of it, move your cursor to the location in formula bar, where you want to make changes.

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1. Inserting More Cells

If you want to insert cell before B3

Select cell B3.

Choose Cell option from Insert menu.

Blank cell will be inserted between cell B2 and B3.



2. Inserting Rows

- 1. Select Row 2 by clicking on row header.
- 2. Select Row option from Insert menu.
- 3. A blank Row is inserted above the Row 2.



Inserting Rows

3. Inserting Columns

- 1. Select Column B by clicking on Column header.
- 2. Select Column option from Insert menu.
- 3. A blank Column is inserted between column A and column B.



Inserting Columns

2.4. Deleting Rows, Columns and Cells

1. Deleting Rows

- 1. Select the Row 3 by clicking on row header. Press shift key and select Row 4,5.
- 2. Select Delete option from Edit menu.
- 3. All the three rows are deleted.

2. Deleting Columns

- 1. Select the **Column** B by clicking on **Column header**. Press **Shift key** and select Columns C,D,E.
- 2. Select **Delete** option from **Edit menu.**
- 3. All the four Columns are deleted.

3. Deleting Cells

Select the Cells to be deleted and from the edit Menu, select Delete option. Cells will be deleted. Or right click the cell and chose delete from the shortcut menu.

2.5 Resizing Rows, Columns and Cells

1. Changing Row Height

Ms-Excel adjust row height automatically if you enter taller or wider characters.

Manually change the row height: Position the mouse pointer on the bottom edge of the gray row and drag up or down to change row height.

To change the height of several rows, the steps are:

- 1) Select the rows
- 2) Click on the Format menu and choose the Row option. Then select the Height option from the Submenu
- 3) The Row Height dialog box is displayed.

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Increasing Row Height

- 4) Enter the new row height.
- 5) And click on the OK button You will find the changed row height in the selected rows.

Row Height	Ţ.
<u>R</u> ow height:	6
ОК	Cancel

2. Changing Column Width

- 1. Select the Columns A and B by dragging.
- 2. From the format menu choose the column option.
- 3. Select the width option from the submenu.

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Increasing Column Width



Entering new Column Width

4. Enter the new column width 16 in column width text box

2.6 Copying and Moving Data

- 1. Data in Ms-Excel can be Copied using two methods
 - (a) Drag and Drop Method
 - (b) Copy and Paste Method

(a) Drag and Drop Method

- 1. Select the Range of cells to be copied
- 2. Position the mouse pointer at the lower border of the selected range.
- 3. Hold down the Ctrl key. You will notice that the mouse pointer changes to an **arrow with plus sign**.
- 4. Keeping the left mouse button pressed, drag the border to target location.
- 5. Data from the selected cells is copied to the new location.

(b) Copy and Paste Method

- 1. Select the Range of data to be copied.
- 2. Choose copy from the Edit menu or Shortcut menu.
- 3. Click on the cell to which you want to copy data
- 4. Select Paste from the Edit menu or Shortcut menu.

5. The data from the selected cells is copied to new location

2. Moving Cell Contents :-

(a) Drag and Drop Method

Select the Range of data to be moved

Take the mouse pointer to any place at the boundary of the border. When the cursor changes from the (+) to the arrow sign click and hold the left mouse button pressed, drag the data to the new location.

When data has reached the desired location release the mouse button.

The selected data is moved to the new location.

(b) Cut and Paste Method

- 1. Select the range of data to be moved.
- 2. Select the Edit menu, and click on Cut option
- 3. Click on the cell where the contents are to be pasted
- 4. From the Edit menu select Paste option.

2.7 Hiding and Unhiding Rows/Columns

- 1) To hide a particular row/column
- 2) Select the cells from the row /column
- 3) From the Format menu click row/column and click on Hide option.

To unhide a particular row/column

Position mouse pointer at the row/column split bolded bar, when the mouse pointer changes to hollow arrow, drag it.

Or

- 1) Select the hide cells range from rows/columns.
- 2) From the Format menu click row/column and click on Unhide option.

Note: We cannot hide or unhide a row and a column simultaneously.

2.8 Auto Fill Pre-defined Series of Text

You can also generate a pre-defined series of dates, weekdays or month names. The step are:

- 1. Type the first value of the series. For example, type 'January' in cell A1.Select this cell.
- 2. Click the Auto Fill handle and drag it to enclose the area you want to fill with the series.
- 3. Release the mouse button. The enclosed cells with the grey border are filled with the series

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Generating Fill Series

Fill Series Data

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The Series Dialog Box

The Series dialog offers further options for generating a series.

The steps to generate a Series are:

- 1. Enter the initial values.
- 2. Select the range of cells that need to be filled up.
- 3. Select the Fill option from the Edit menu
- 4. Select the Series option from the Fill submenu. The series dialog box is displayed .

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Fill Series Option

5 Select the appropriate options and click the OK button.



The series dialog box offers the following options:

Series in: Rows or columns

Excel will guess the correct orientation, depending upon the range selected. If you have selected a single cell, you must indicate in which direction you want the series to be placed across a row or down a column

Type Linear

This option creates a straight linear progression, starting at the current value of the cell and incrementing each cell in the range by the number entered in the step value.

For example, if you have entered 6 in the first cell and number entered in the step value is 10, the numbers will increment by 10, i.e.6,16,26,36 and so on.

Type Growth

This option will grow the data by the numbers entered in the step value box using simple multiplication. If you start with a value of 1 and grow the data by a step value of 5, the series will be 1,5,25,125,625 and so on.

Type Date

This allows you enter a series of dates a specific number of days apart, ie. if you enter 03-09-2010 in the first cell and choose Monthly, the date series will read 03-09-2010, 03-10-2010, 03-11-2010, and so on.

Type AutoFill

This option allows you to enter a series of numbers and have excel determine the relationship between them in order to fill the remaining cells in the series. For example, if you enter 5 in the first cell and 10 in the next, excel will fill the remaining cells with 15, 20, 25, and so on.

Step Value

The step value is the increment value for a linear series or data series and multiplication rate for a growth series.

Stop Value

Stop value is the maximum value for the series.

2.9 Highlighting Gridlines

Gridlines are the lines which are present on the Ms-Excel sheet. By default they are not printed on the paper.

1. To Print the Gridlines

- 1) Select File menu and click on Page Setup.
- 2) Select the Sheet tab.
- 3) Then click Gridlines check box.
- 4) Click Ok.

2. Hiding the Gridlines

- 1. Select the sheets on which you want to hide the gridlines.
- 2. On the Tools menu, click Options

3. Then click the **View** tab under Windows options. Then clear the **Gridlines** checkbox.

2.10 Selection Technique

Selection can be done using Mouse and keyboard. We shall discuss Continuous Selection and Non Continuous Selection in each way.

Using Mouse:-

(a) Continuous Selection

Range

- 1) Drag the mouse over the cells
- 2) Select the first cell of Range then pressing Shift key, click on the last cell.

Column

Single click on the Column Heading

Drag the mouse over the column headings for multiple columns

Row

Single click on the row heading

Drag the mouse over row headings for Multiple Selection.

Worksheet

Single click on the common heading area (i.e. Intersection are of row heading column heading)

(b) Non continous Selection

Range

Select a range of cells holding down CTRL key and then select another range.

Row\Column

Select a row\ column

Hold down Ctrl key and again select another row\ column

Using keyboard

(a) Continuous Selection

Range

Shift key + Arrow keys

Column

For single Column Ctrl + Spacebar

For single row, Shift + Spacebar

For multiple rows, Select any cells of the row and press Ctrl+Spacebar

Whole Worksheet

Ctrl +A

Or ctrl +shift+ spacebar

(b) Non Continuous Selection

For this we have to bring the keyboard into add mode.

Add mode can be done by pressing shift+F8

Select the first range

Press Shift + F8 key to send the Keyboard to add mode

Now use arrow Key to move the cell pointer

Again use Shift + Arrow key for next range selection

(c) Extended Mode Selection

Selection is done, Using navigation keys.

Press F8 Key for extend selection

The Keyboard will go to Extended mode.

Use Navigation Keys (arrows Keys) to extend the Selection

To cancel it, press Esc key

Self-Assessment Question

- 1 Write the short cut keys for entering data in MS-Excel sheet.
- 2 Explain different ways of selecting rows and columns.
- 3 Explain two methods of copying data in Excel Sheets.
- 4 Write the steps to increse the row height and column width.
- 5 Explain Fill Series in detail.
- 6 Explain selection technique using keyboard.

Lab Session

- A Generate the table of 8 upto 10 multiples using Fill Series.
- B Fill January to December using Fill Series.
- C Make the following series 23333,27333.....upto 103333.
- D Change column width using format menu




Formatting Data in MS-Excel

Objective :

- u Explaning the ways of making Ms-Excel Sheet more presentable
- u Discussing the technique Data Validation

Contents :

- 3.1 Introduction
- 3.2 Formatting Text
- **3.3 Font Formatting**
- 3.4 Formating Borders
- 3.5 Changing cell color and Pattern
- 3.6 Auto Format
- 3.7 Data Validation
- 3.8 Conditional Formatting
- 3.9 Data, Time and Number Formatting

3.1 Introduction

We can use formating to improve the appearance of our worksheet. It would be easier for us to locate the information we need. So, formating is the process of determining presentation of data in worksheet.

3.2 Formatting Text

Formatting text involves changing the alignment of text, font styles, font sizes, font color, rotation. By default Ms-Excel applies the appropriate horizontal alignment to each of the **data types:** number, date, text, formula or time.

1. Setting alignment using Fromat menu

- 1 Select the range of cells.
- 2 From the **Format menu** choose select option. The **Format cell** dialog box appears.
- 3 Click on the Alignment tab, the options under alignment tab are shown.
- 4 Apply the formatting on the cells using different formatting options according to your requirement.

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Format Cells - Alignment Tab

3.2.2 Using Formatting Toolbar

Merge and Center: This option helps you to combine the cells selected and bring the text written in the leftmost

cell in the center. If there is any text in the cells except the left most cell it will be lost after the cells are merged.

3.3 Font Formatting

- 1) Select the cells
- 2) The Format Cells dialog box appears
- 3) Click on the Font tab
- 4) Make the appropriate changes and click on the OK button.

Arial	Regular 10
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Arial	Bold Italic
Indenina:	<u>C</u> olor:
None	Automatic <u>Normal font</u>
Effects	Preview
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Format Cells -Font Tab

3.4 Border Formatting

- 1) Select the **Format menu.** Click on the Cells option The Format Cells dialog box is displayed.
- 2) Click on the **Border tab** The set of options under Border will be displayed in the same dialog box.
- 3) Make your choices in the **Border and Style group boxes.** Then click on the Ok button Borders in the chosen style will appear around the cells



Note: Select the color before selecting the Border Style. Clicking twice on a button will remove the border.

3.5 Changing Cell Color and Pattern

- 1) Select the relevant range of cells
- 2) Select the **Cells** option from the **Format menu**. The Format cells dialog box is displayed.
- 3) Click the **Patterns tab.**
- 4) Select a pattern from the **Pattern Drep-down list**. The sample box indicates how the pattern will look with the currently selected color.
- 5) Click on the **OK** button.

The selected background Pattern is applied (or changed) in the cells



Format Cells - Pattern Tab

Ð	Ехс	el								
1	2 3		A	В	С	D	E	F	G	H
		1	Roll No.	Rames .	English	Hindi	Sanskrit	Maths	Science	Social
Г	•	2		Auu	81	89	56	86	56	98
		3	103	Rava	67	49	78	76	85	90
	•	4			30	56	99	100	91	67
	•	5		Kanal	89	67	75	56	78	76
	•	6			67	78	90	78	71	56
	•	7	101	Poola	34	30	56	89	90	94
	•	8		Richa	86	86	34	79	4	87
	•	9	1111	Priva	90	56	90	34	80	21
		10	101	Pleet	87	65	34	56	95	32
		11	112		45	56	90	100	42	31
	•	12	1497	Rai	85	43	45	23	65	97
		13		Penchi	65	34	45	89	61	45
		14	108	Ruichika	78	20	37	20	35	45
	•	15	105	Avai	56	31	32	45	20	20
		40			а <i>т</i>		77	40	75	E.A.

Cells with Pattern

3.6 Auto Formai

Auto Format are predefined format features for setting font style, borders, patterns, colors as you choose. Auto Format can automatically format a range of cells as you choose one from many formatting styles.

Applying Autoformat

- 1 Select the range of cells
- 2 From the Format menu choose Autoformat option.(Autoformat dialog box appears which will show samples of many predesigned formats.
- 3 Click a format which you want to apply
- 4. Click OK Button.



Auto Format dialog box

		A	В	С	D	E	F	G	Н
~	1	Roll No	Names	English	Hindi	Sanskrit	Maths	Science	Social
	2	107	Saloni	45	32	<u>37</u>	<u>10</u>	<u>25</u>	54
	3	i26	Avni	56	<u>31</u>	<u>32</u>	45	<u>20</u>	<u>20</u>
	4	108	Ruichika	78	<u>20</u>	<u>37</u>	<u>20</u>	<u>35</u>	45
	5	113	Prachi	65	<u>34</u>	45	89	61	45
	6	102	Rai	85	43	45	<u>23</u>	65	97
	7	112	Sangeeta	45	56	90	100	42	<u>31</u>
	8	105	Preeti	87	65	<u>34</u>	56	95	<u>32</u>
	9	104	Priya	90	56	90	<u>34</u>	80	<u>21</u>
	10	110	Richa	86	86	<u>34</u>	79	<u>4</u>	87
	11	101	Pooja	<u>34</u>	<u>30</u>	56	89	90	94
	12	114	Abhishek	67	78	90	78	71	56
	13	109	Kamal	89	67	75	56	78	76
	14	115	Chavi	<u>30</u>	56	99	100	91	67
	15	103	Ravu	67	49	78	76	85	90
	16	111	Anu	81	89	56	86	56	98

Table with a Auto Format design

3.7 Data Validation

This option of Excel defines the valid data for individual cells or cell ranges.

Steps to validate data.

1. Select the cell range from (C2:H16) in the Student Result database.

		Α	В	С	D	E	F	Ģ	Н
	1	Roll No	Names	English	Hindi	Sanskrit	Maths	Science	Social
	2	107	Saloni						
	3	106	Avni						
	4	108	Ruichika						
	5	113	Prachi						
	6	102	Rai						
	7	112	Sangaeta	1					
	8	105	Preeti						
	9	104	Rriya						
	10	110	Richa	$\land \checkmark$					
	11	101	Pooja						
	12	114	Abhishek						
	13	109	Kamal						
1	14	115	Chavi						
	15	103	Ravu						
	16	111	Ang						
	. –				~	<u> </u>	1	1	

Selecting Cell Ranges

2) From the **Data menu**, select **Validation** option. Data Validation dialog box appears. Select the **Settings tab**. In the allow box select **Whole number.**

3. In the Data drop down list, select between and enter 0 in the Minimum and 101 in the Maxmum boxes, respectively.

	?
Settings Input Message Error Alert	
Validation criteria	
Allow:	
Whole number	📝 Jynore <u>b</u> lank
Data:	
between 💌	
Minimum:	
0	
Maximum:	
101	
Apply these chappes to all other cell	Is with the same settings
Clear Ait	OK Cancel
	or wisiddiion
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ataValidation	?
ata Validation Setting: Input Message Frror Alerc	?
ata Validation Setting: Input Message From Alerc	ed
ata Validation Setting: Input Message Image: Error Alerc Image: Show input message when cell is selected when cell is selected when cell is selected.	ed
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ataValidation Setting: Input Message Show input message when cell is selected, when cell is selected, show this input message Title: Input Message Input Message Input message: The value should be between 0 to 101	ed sage:

Type of Values to be entered

- 4. Select the Input Message tab.
- 5. Select the check box so that a tick mark appears in the check box. In the title box,type "Input Value" and in the Input Message box, type."The value should be entered between 0 and 100"
- 6. Select the Error Alert tab.
- 7. Select Stop from the Style drop down list. In the Title box type the "Error" and in Error message box type the message,""Cannot enter value more then 100".

Settings Input	Message [Error Alart]	
I Show error ale	rt s/ter invalid data is entered	
When user enters	Title:	
Stop		
()	Error message:	
63	Cannot enter value more then 100	
	Ť.	5

Error Message

8. Click **Ok** to close. In any one the cells from the selected range enter the number outside this range, and check whether a error message generates or not.

3.8 Conditional Formatting

This option of Excel formats the cells according to a given criteria.

Steps to apply Conditional Formatting

Select the cells C2 toH16 in the Students Database.

	Α	В	С	D	Ĕ	F	G	Н
1	Roll No	Names	English	Hindi	Sanskrit	Maths	Science	Social
2	107	Saloni						
3	106	Avni						
4	108	Ruichika						
5	113	Prachi						
6	102	Rai						
7	112	Sangeeta						
8	105	Preeti						
9	104	Priya						
10	110	Richa						
11	191	Pooja						
12	114	Abhishek						
13	109	Kamal						
14	115	Chavi						
15	103	Ravu						
16	111	Anu.			$\langle \rangle$			

Selecting Cell Ranges

Select Conditional Formatting from the Format menu.

'Conditional Formatting' dialog box opens.

For Condition 1 select Cell value is from the drop down list .In the next box, select between and next enter 0 in and in the last box enter 39.

Condition <u>1</u>		
Cell Value Is 💌 between	▼ 0 si and	39 📑
Preview of format to use when condition is true:	<u>AaBbCcYyZz</u>	Eormat
0	Add >>	

Click the **Format button**, In the dialog box select **Red** color and single from the drop down list.

Conditional Formatting		?
Condition <u>1</u> Cell Value Is 💌 between		3
Preview of format to use when condition is true:	AaBbCcYy_z	Eormat
Condition 2 Cell Value Is 💌 between		
Preview of format to use when condition is true:	AaBbCcYyZz	Format
2	Add >> Qelete OK	Cancel

Click on Add button to add second condition.

Condition 2

Select Cell Value Is from the drop down list and between from the Second box. Type 85 and 100 in the next two boxes. Click on the Format button and choose Green Color and Bold Style. Now enter the following data in your Ms-Excel sheet and observe the effects of conditional formatting.

[A	В	С	D	E	F	G	Н
	1	Roll No	Names	English	Hindi	Sanskrit	Maths	Science	Social
1	2	107	Saloni	45	32	37	10	25	54
Ч	3	106	Avni	56	31	32	45	20	20
	4	108	Puichika	78	20	37	20	35	45
	5	113	Prechi	65	34	45	89	61	45
	6	102	Rai	85	43	45	23	65	97
	7	112	Sangeeta	45	56	90	100	42	31
	8	105	Preeti	87	65	34	56	95	32
	9	104	Priya	90	56	90	34	80	21
	10	110	Richa	86	86	34	79	4	87
	11	101	Pooja	34	30	56	89	90	94
	12	114	Abhishek	67	78	90	78	71	56
	13	109	Kamal	89	67	75	56	78	76
	14	115	Chavi	30	56	99	100	91	67
	15	103	Ravu	67	49	78	76	85	90
	16	111	Anu	81	89	56	86	56	98

Student database Data

3.9 Formatting Numbers, Data and Time

- 1 Select the range of cells
- 2 Select Format menu, and click on Cells option
- 3 The Format Cells dialog box appears. Select the Number tab

ategory: General	31.00
Currency Accounting	Decintal places: 2
Date Time	□ Use 1000 Separator (,)
Percentage Fraction	Negative numbers:
Scientific	-1234.10
Text Special Custom	(1234.10) (1234.10) (1234.10)
umber is used for g	eneral display of pumbers - Currency and Accounting
fter specialized form	latting for monetary value.

Format Cell Dialog Box.

- 4 Identify the required category for example, Number choose the number of decimal places you want, you can decide to use a thousands separator for larger numbers and you can decide how you want negative numbers to be represented.
- 5 After setting various options according to your requirements, click on the OK button
- 6 The data will now appear as given below.

U	nit	3
-		-

			_					
	A	В	С	D	E	F	G	Н
1	Roll No	Names	English	Hindi	Sanskrit	Maths	Science	Social
2	107	Saloni	45.00	32.00	37.00	10.00	25.00	54.00
3	106	Avni	56.00	31.00	32.00	45.00	20.00	20.00
4	108	Ruichika	78.00	20.00	37.00	20.00	35.00	45.00
5	113	Prachi	65.00	34.00	45.00	89.00	61.00	45.00
6	102	Rai	85.00	43.00	45.00	23.00	65.00	97.00
7	112	Sangeeta	45.00	56.00	90.00	100.00	42.00	31.00
8	105	Preeti	87.00	65.00	34.00	56.00	95.00	32.00
9	104	Priya	90.00	56.00	90.00	34.00	80.00	21.00
10	110	Richa	86.00	86.00	34.00	79.00	4.00	87.00
11	101	Pooja	34.00	30.00	56.00	89.00	90.00	94.00
12	114	Abhishek	67.00	78.00	96.62	78.00	71.00	56.00
13	109	Kamal	89.00	67.00	75.00	56.00	78.00	76.00
14	115	Chavi	30.00	56.00	99.00	100.00	91.00	67.00
15	103	Ravu	67.00	49.00	78.00	76.00	85.00	90.00
16	111	Anu	81.00	89.00	56.00	86.00	56.00	98.00

Numbers after applying Format

7 For removing the number formatting applied, choose **General** option from the **Category** dialog box.

|--|

Format Cells

8. Similarly you can format date and time by choosing the same under **Category** in the **Format Cells** dialog box, and selecting a suitable type.

- 1 Explain Formatting Text in detail
- 2 What is Data Validation.
- 3 Explain Conditional Formatting.
- 4 Explain Auto Formating

Lab Session

Generate given Tables

		A	В	С	D	E	F	G	Н
	1	S No	Name	Class	English	Hindi	History	Pol Sc	Ecnomics
	2	1	Sanjeev M	BA	67	58	46	65	39
	3	2	Arun Bedi	BA	56	73	48	37	51
	4	3	Jatin	BA	58	43	55	53	62
	5	4	Tejali	BA	42	56	73	71	63
	6	5	Sudhir	BA	62	38	64	51	47
\sim	7	6	Harsh Kun	BA	45	48	65	37	52
	8	7	Sunita	BA	56	25	46	51	47
	9	8	Babita Kur	BA	52	65	25	65	45
	10	9	Sonia	BA	82	45	65	75	24
	11	10	Ravinder	BA	65	56	42	61	44
	12	11	Roopa	БА	48	56	25	54	61
	13	12	Anita	AB	67	75	55	44	61
	14	13	Harjinder K	BA	35	45	65	75	85
	15	14	Kulbir	BA	56	34	28	67	45
	16				-				
	17								

- 1. Show Font Formating
- 2. Do Bold, Italics, Enlarge Font using format menu.
- 3. How to Do Data Validation.





Functions in MS-Excel

Contents :

- 4.1 Functions
- 4.2 Mathematical and Statistical Functions
- 4.3 Adding Comments
- Date and Time Functions 4.4
- 4.5 **Text Function**
- **Logical Functions 4.6**
- 4.7 **Financial Functions**
- **Reference Operators** 4.8
- 4.9 AutoSum
- 4.10 Calulating Subtotals
- 4.11 **Cell Referencing**

It allows users to create custom formulas to perform calculations on their data. Excel also contains built-in formulas called functions that make it easy to perform common calculations on data. By using functions, you can quickly and easily make many useful calculations, such as finding an average, the highest number, the lowest number, and a count of the number of items in a list

The type of function is categorized below :

Some of impotant categories are as follows :

- 1) Mathematical
- 2) Statistical
- 3) Text\String
- 4) Logical
- 5) Information
- 6) Financial, etc...

Every function in Excel must be defined in the following manner.

- 1) place '=' sign
- 2) followed by function name
- 3) followed by parenthesis ()
- 4) Function may or not accept arguments
- 5) If function accepts any arguments, they must be given within parenthesis
- 6) If function can accept multiple arguments, they must be separated by comma(,).
- 7) The arguments $\$ parameters passed to the function can be....
 - Constant Cell Address A range A function Or a combination of all these

Unit 4

Here is an example of a function:

=SUM(2,13,A1,B2:C7)

In this function:

- The equal sign begins the function.
- SUM is the name of the function.
- 2, 13, A1, and B2:C7 are the arguments.
- Parentheses enclose the arguments.
- Commas separate the arguments.

After you type the first letter of a function name, the AutoComplete list appears. You can double-click on an item in the AutoComplete list to complete your entry quickly. Excel will complete the function name and enter the first parenthesis.

EXERCISE 1

Functions

The SUM function adds argument values.

•	<u>F</u> ile <u>E</u> dit	<u>V</u> iew	Inseat	F <u>o</u> rmat	<u>T</u> ools		C8	•	fx =SUM(C1:C	:7)
Ľ	📽 🖪 🔒	18. 8	0.	r 🕺 🕅	b 🖻 -		Α	В	С	
Ari	al		- 10	B	IU	1			25	
	SUM	- × -	/ fx =	SUM(C1	:C7)	2			65	
_	A	В		C	D	3			24	
1			\setminus	6	5	4			32	
3				2	4	5			46	
4			/ /	3	2	6			97	
5				4	6	7			22	
7				2	2	8			311	
8			=SU	IM(C1:C7)	9				-
9			1							

Fig Ex-12



Open Microsoft Excel.

Type 25 in cell C1, Press Enter, Type 65 in cell C2, Press Enter. Type 24 in cell C3, Press Enter. Type 32 in cell C4, Press Enter. Type 46 in cell C5, Press Enter. Type 97 in cell C6, Press Enter. Type 22 in cell C7, Press Enter. Type =SUM(B1:B3) in cell C8. Press Enter. as shown in Fig Ex-12 The sum of cells B1 to B3, which is 311, appears. as shown in fig Ex-13.

4.2 Mathematical and Statistical Functions

Sum() - It calculates the sum of given range.

Inserting Function.

- 1 Select cell I 2
- 2 Choose Function option from the Insert menu
- 3 Choose Maths & Trig from Category and then select Sum from the list of functions as shown below.

	SUM	- X	v :	$f_{\mathbf{x}} =$								
	A	В		С	D	E		F	G	Н		1
1	S No	Name		Class	English	Hindi		History	Pol Sc	Ecnomics		
2	1	Sanjee	M N	BA	67		58	46	65	33	=	
3	2	Arun B	edi	BA	.56		73	48	37	51		
4	3	Ja Inser	Fui	nction					8	62		
5	4	Te		- E						63		
6	5	S Sear	n to	r a function:	-					11		
7	6	H Ty	pe a	brief descript	tion of what	you want	to d	o and then	Go	52		
8	7	S Cli	k Go	» / / /						47		
9	8	B Or	self.c	ct a category:	Math & Trig	1				45		
10	9	S			Most Recen	ntly Used		-		24		
11	10	R Self.c	tar	unction:	All					44		
12	11	R SL	STO	TAL	Financial Date & Time					▲ 61		
13	12	A			Matter & Tric	8				61		
14	13	H SL	MPR	ODUCT	Statistical					85		
15	14	K SL	MEQ	2	Look p & R	eference				45		
16		ISL	MX2	54Y2	Text					-		
17			C.T.D.	umber)	Logical			\wedge				
18		AD	5/ (II	the above lute	Information	umbor a			n cian			
19		Re	ums	s the absolute	value of a fi	under, a		be without it	s sign.			
20												
21							-		12 1 2 1 1	_		
22		Help	on th	his function.				OK	Cancel			
23			_				23					

4 After selecting the function Sum,the following Figure appears.

JM	Expand/ Co
Number1	button.
Number2	👱 = number
ds all the numbers in a range of cells.	=
dds all the numbers in a range of cells. Number1: number1,number2, are ignored in cells, i	= , are 1 to 30 numbers to sum, Logical values and text ncluded if typed as arguments,
dds all the numbers in a range of cells. Number 1: number 1, number 2, are ignored in cells, i ormula result =	= . are 1 to 30 numbers to sum. Logical values and text ncluded if typed as arguments.

Function argument dialog box

-	٨	D	C	D	E	E	C	Ц	L. L.
	A	D	U	U	E	Г	G	п	
1	S No	Name	Class	English	Hindi	History	Pol Sc	Ecnomics	
2	1	Sanjeev M	BA	67	58	46	65	39	(D2:H2)
3	2	Arun Bedi	BA	56	73	48	.37	51	
4	Function Arguments								
5	D2:	H2					/	-	
6	<u> </u>	Juann		UZ	ਹ	04	JI	41	
7	6	Harsh Kun	BA	46	48	65	37	52	
8	7	Sunita	BA	56	25	46	51	47	
9	8	Babita Kur	BA	52	65	25	65	45	
10	9	Sonia	BA	82	45	65	75	24	
11	10	Ravinder	BA	35	56	42	61	44	
12	11	Roopa	BA	48	56	25	54	61	
13	12	Anita	BA	67	75	55	44	61	
14	13	Harjinder H	BA	35	45	65	75	85	
15	14	Kulbir	EA	56	34	28	67	45	
16									

5 Click on the Expand/Collapse button. The following Figure apears.



Select the range from C2 -H2.

Fig-15 Selecting thre Rsnge

7 Now again click on the collapse button the following Figure appears. Showing the sum of the range(275)



SU/4 ▼ X √ 1/2 = SUM(02:H2)

Sum of given Range

	12	•	<i>f</i> ∗ =SUM(I	D2:H2)					
	Α	В	С	D	E	F	G	Н	- I
1	S No	Name	Class	English	Hindi	History	Pol Sc	Ecnomics	
2	1	Sanjeev M	BA	67	58	46	65	39	275
3	2	Arun Bedi	BA	56	73	48	37	51	Ĭ
4	3	Jatin	BA	68	43	55	53	62	
5	4	Tejali	BA	42	56	73	71	63	
6	5	Sudhir	BA	62	38	64	51	47	
7	6	Harsh Kun	BA	46	48	65	37	52	
8	7	Sunita	BA	56	25	46	51	47	
9	8	Babita Kur	BA	52	65	25	65	45	
10	9	Sonia	BA	82	45	65	75	24	
11	10	Ravinder	BA	65	56	42	61	44	
12	11	Roopa	BA	48	56	25	54	61	
13	12	Anita	BA	67	75	55	44	61	
14	13	Harjinder k	BA	35	45	65	75	85	
15	14	Kulbir	BA	56	34	28	67	45	
16									***************************************

8 Drag the Auto Fill Handel as shown in the Figure.

Calculating the sum for all students

9 The total of all the students appear in Column I.

	12	-	fx =SUM(I	D2:H2)					
	Α	В	С	D	E	F	G	Н	
1	S No	Name	Class	English	Hindi	History	Pol Sc	Ecnomics	
2		Sanjeev M	BA	67	58	46	65	39	275
3	2	Arun Bedi	BA	56	73	48	37	51	265
4	3	Jatin	BA	68	43	55	53	62	281
5	4	Tejali	BA	42	56	73	71	63	305
6	5	Sudhir	BA	62	38	64	51	47	262
7	6	Harsh Kun	BA	46	48	65	37	52	248
8	7	Sunita	BA	56	25	46	51	47	225
9	8	Babita Kur	BA	52	65	25	65	45	252
10	9	Sonia	BA	82	45	65	75	24	291
11	10	Ravinder	BA	65	56	42	61	44	268
12	11	Roopa	BA	48	56	25	54	61	244
13	12	Anita	BA	67	75	55	44	61	302
14	13	Harjinder k	BA	35	45	65	75	85	305
15	14	Kulbir	BA	56	34	28	67	45	230
40									

Calculated Sum

Unit 4

Entering Functions by Typing

Finding the Percentage of the Students. (600 are the Total Numbers)

1 Type the formula = (I 2 *100/600) in cell J 2 and press enter.

	SUM	- X V	<i>f</i> _x = <mark>12</mark> *100	/600						
	Α	В	С	D	E	F	G	Н		J
1	S No	Name	Class	English	Hindi	History	Pol Sc	Ecnomics	Total	Percent
2	1	Sanjeev M	BA	67	58	46	65	39	275	*100/600
3	2	Arun Bedi	BA	56	73	48	37	51	265	
4	3	Jatin	BA	68	43	65	53	62	281	
5	4	Tejali	BA	42	56	73	71	63	305	
6	5	Sudhir	BA	62	38	64	51	47	262	
7	6	Harsh Kun	BA	46	48	65	37	52	248	
8	7	Sunita	BA	56	25	46	51	47	225	
9	8	Babita Kur	BA	52	65	25	65	45	252	
10	9	Sonia	BA	82	45	65	75	24.	291	
11	10	Ravinder	BA	65	56	42	61	44	268	
12	11	Roopa	BA	48	56	25	54	61	244	
13	12	Anita	BA	67	75	55	44	61	302	
14	13	Harjinder K	AB	35	45	65	75	85	305	
15	14	Kulbir	BA	56	34	28	67	45	230	
16										
17				$\overline{}$						

8 Drag the autofill handel to calculate the percentage of students

	H20	•	7							
	Α	В	С	D	E	F	G	Н		J
1	S No	Name	Class	English	Hindi	History	Pol Sc	Ecnomics	Total	Percent
2	1	Sanjeev M	6A	67	58	46	65	39	275	45.83333
3	2	Arun Bedi	BA	56	73	48	37	51	265	44.16667
4	3	Jatin	6A	68	43	55	53	62	281	46.83333
5	4	Tejali	BA	42	56	73	71	63	305	50.83333
6	5	Sudhir	BA	62	38	64	51	47	262	43.66667
7	6	Harsh Kun	BA	46	48	65	37	52	248	41.33333
8	7	Sunita	BA	56	25	46	51	47	225	37.5
9	8	Babita Kur	BA	52	65	25	65	45	252	42
10	9	Sonia	BA	82	45	65	75	24	291	48.5
11	10	Ravinder	BA	65	56	42	61	44	268	44.66667
12	11	Roopa	BA	48	56	25	54	61	244	40.66667
13	12	Anita	BA	67	75	55	44	61	302	50.33333
14	13	Harjinder K	BA	35	45	65	75	85	305	50.83333
15	14	Kulbir	BA	56	34	28	67	45	230	38.33333
40										

Calculated Percentage of all students

4.3 Adding comments

Type the heading **Eligibilty** in column K. To show the meaning or purpose of Eligibility, we should add comments. It is a remark that we attach to a cell to provide information about the cell's contents. You can provide context to your data by inserting comments in Excel cells.

Comments are shown by a small red triangle in the upper right corner of the cell to which they are attached & provide extra information about cells. The steps to add comments to the cell are:

- Select the cell to which you want to add a note
- From the Insert menu, choose Comment option to display a comment.



Adding Comments

- Type your note into the comment box
- Click in another cell to continue working

7	K	L	M	N	0					
Percent	Eligibility	Eligibilit	y:-Shows	aggregate						
45.83333		marks o	of History 8	Pol Sc or	1 B					
44.16607		the bas	is of which	student	will					
46.03333		be allow	be allowed to chose for the							
50.83333		subject. The aggriate should be								
43.66667		more u	ian 120 an	a maiviau 50	ai					
41.33333			liore chair.							
37.5		Önnennennen			Ö					
42										
48.5										
44.66667										
40.66667										
50.33333										
50.83333										
38.33333										

Adding Comment Text

To read a comment, move the mouse pointer over the cell. The comment box will be displayed.

To edit a comment, right-click in the cell that contains it and choose Edit comment it will display the comment box with the text ready for editing. You can also resize or move the comment box.

To resize a comment box, click on the sizing handles and drag inwards or outwards To move a comment box, move the pointer to one of its side borders. When the mouse pointer changes to four-sided arrow. Then click and drag the comment to the cell where you want it to be appear.

To delete a comment, For this right-click in the cell that contained it and choose Delete Comment from the Context menu

Inserting Sumif Functions

Sumif() Finds out the total of cells on certain given criteria.

Syntax : sumif(range,criteria,[sum_range]

1. Select cell K2, Click Function from Insert Menu.

Insent Funetion		
Search for a function:		
rype a brief description of what y click Go	ou want to do and then	50
Or select a gategory: Most P.ece.	tly Used 👻	I
Sext a function:		
HYPERLINK COUN; MAX		
SUNTF PMT STDEV		
SUMIF(rai, ne, criter,, sum_ra Adds the cells s, necified by a given	nge) condition or crite.ıa.	
	<u> </u>	1

2. Give the range in which marks of History and Pol Sc are only included.

3. Give the criteria as ">75" means, add only the marks which are greater

Range F2:G2	= {46,65}
Criteria ">50"	* = ">50"
Sum_range	= reference
	= 65
Adds the cells specified by a given condition	n or criteria.
Adds the cells specified by a given condition	n or criteria.
Adds the cells specified by a given condition Criteria is the condition or criter that defines which cells	n or criteria. ria in the form of a number, expression, or text will be added.
Adds the cells specified by a given condition Criteria is the condition or criter that defines which cells Formula result = 65	n or criteria. ria in the form of a number, expression, or text will be added.

Giving function argument

	F21	•	fx								
	Α	В	С	D	E	F	G	Н		J	K
1	S No	Name	Class	English	Hindi	History	Pol Sc	Ecnomics	Total	Percent	Eligibility
2	1	Sanjeev M	BA	67	58	46	65	39	275	45.83333	65
3	2	Arun Bedi	BA	56	73	48	37	51	265	44.16667	0
4	3	Jatin	BA	68	43	55	53	62	281	46.83333	108
5	4	Tejali	BA	42	56	73	71	63	305	50.83333	144
6	5	Sudhir	BA	62	38	64	51	47	262	43.66667	115
7	6	Harsh Kun	BA	46	48	65	37	52	248	41.33333	65
8	7	Sunita	BA	56	25	46	51	47	225	37.5	51
9	8	Babita Kur	BA	52	65	25	65	45	252	42	65
10	9	Sonia	BA	82	45	65	75	24	291	48.5	140
11	10	Ravinder	BA	65	56	42	61		268	44.66667	61
12	11	Roopa	BA	48	56	25	54	61	244	40.66667	54
13	12	Anita	BA	67	75	55	44	61	302	50.33333	55
14	13	Harjinder k	BA	35	45	65	75	85	305	50.83333	140
15	14	Kulbir	BA	56	34	28	67	45	230	38.33333	67
40											

Sumif Result

S. no 2 gets the total 0 because the marks of both the subjects are less then 50. Total of S. no 7 is 51 because only Pol Sc marks are added as the maks of History do not fullfill the criteria. The marks are less then 50. Similarly for S. no 12 only History marks comes as total, because the marks of Pol Sc do not fulfills the criteria.

Use More Functions :

Average() Calculates the average value in cells .

Syntax : Average(number1,[number2],...)

Steps: 1. Click the cell where you want to place the average function.

- 2. Type = and then type the word average and type (.
- 3. Drag across the cells whose values you want to average and press Ent.

	SUMIF ▼ X √ f =Average(D2:D15)										
	Α	В	С	D	E	F					
1	S No	Name	Class	English	Hindi	History I					
2	1	Sanjeev Mehra	BA	67	58	46					
3	2	Arun Bedi	BA	56	73	48					
4	3	Jatin	BA	68	43	55					
5	4	Tejali	BA	42	56	73					
6	5	Sudhir	BA	62	38	64					
7	6	Harsh Kumar	BA	46	48	65					
8	7	Sunita	BA	56	25	46					
9	8	Babita Kumari	BA	52	65	25					
10	9	Sonia	BA	82	45	65					
11	10	Ravinder	BA	65	56	42					
12	11	Roopa	BA	48	56	25					
13	12	Anita	BA	67	75	55					
14	13	Harjinder Kaur	BA	35	45	65					
15	14	Kulbir	BA	56	34	28					
16		Average Num		=Average(D2:D15)						
17		-									

 ${\bf Max}$ () Finds out the greatest number among a given range of numbers of selected cells.

	SUMIF	▼ X √ fx =	Max(E2:E1	5)			
	A	В	С	D	E	F	Γ
1	S No	Name	Class	English	Hindi	History	Ī
2	1	Sanjeev Mehra	BA	67	58	46	
3	2	Arun Bedi	BA	56	73	48	
4	3	Jatin	BA	68	43	55	
5	4	Tejali	BA	42	56	73	
6	5	Sudhir	BA	62.	38	64	
7	6	Harsh Kumar	BA	46	48	65	
8	7	Sunita	BA	56	25	46	
9	8	Babita Kumari	BA	52	65	25	
10	9	Sonia	BA	82	45	65	ł
11	10	Ravinder	BA	65	56	42	
12	11	Roopa	BA	48	56	25	
13	12	Anita	BA	67	75	55	
14	13	Harjinder Kaur	BA	35	45	65	
15	14	Kulbir	BA	56	34	28	
16		Average Num		57.28571			
17		Maximum Marks Obtained In Hindi	\land		=Max(E2:1		
40							

Syntax : Max(number1,[number2],...)

Min () Finds out the smallest number among a given range of numbers.

Syntax : Min(number1,[number2],...)

CountIf() Counts the number of cells within a range on the basis of a given criteria.

Syntax : Countif(range,criteria)

	A	В	С	D	E	F	G
1	S No	Name	Class	English	Hindi	History	Pol Sc
2	1	Sanje ev Mehra	BA	67	58	46	65
3	2	Arun Bedi	BA	56	73	48	37
4	3	Jatin	BA	68	43	55	53
5	4	Teiali	BA	42	56	73	71
6	5	Sudhir	BA	62	38	64	51
7	6	Harsh Kumar	BA	46	48	65	37
8	7	Sunita	BA	56	25	46	51
9	8	Babita Kumari	BA	52	65	25	65
10	9	Sonia	BA	82	45	65	75
11	10	Ravinder	BA	65	56	42	61
12	11	Roopa	BA	48	56	25	54
13	12	Anita	BA	67	75	55	44
14	13	Harjinder Kaur	BA	35	45	65	75
15	14	Kulbir	BA	56	34	28	67
16		Average Num		57.28571			
17		Maximum Marks Obtained In Hindi			75		
18		Number of Students,who got less than 50 in Hindi			=countif(E	2:E15,"<50	")

	G21	•	fx		,			
	A	В	C	D	E	F	G	Н
1	S No	Name	Class	English	Hindi	History	Pol Sc	Ecnomics ⁻
2	1	Sanjeev M	BA	67	58	46	65	39
3	2	Arun Bedi	BA	56	73	48	37	51
4	3	Jatin	BA	68	43	55	53	62
5	4	Tejali	BA	42	56	73	71	63
6	5	Sudhir	BA	62	38	64	51	47
7	6	Harsh Kun	BA	46	48	65	37	52
8	7	Sunita	BA	56	25	46	51	47
9	8	Babita Kur	BA	52	65	25	65	45
10	9	Sonia	BA	82	45	65	75	24
11	10	Ravinder	BA	65	56	42	61	44
12	11	Roopa	BA	48	56	25	54	61
13	12	Anita	BA	67	75	55	44	61
14	13	Harjinder k	BA	35	45	65	75	85
15	14	Kulbir	BA	56	34	28	67	45
16		Average N	um	57.28571	51.21423	50.14286	57.57143	51.85714
		Maximum						
		Marks						
17		Obtained		53	75	73	75	85
		Number of Students, who got less than)
18		50		4	7	7	3	7

Result of Functions Applied to all

ABS()

Converts the integer value to real number i.e. removes its sign.

Syntax : ABS(number)

number is the integer which is to be convert to real number.

Example

Abs(16) – returns 16 Abs(-16) – returns 16

Ceiling()

Excel's Ceiling function rounds the specified number away from zero to the nearest multiple of the specified significance. It is closely related to the Floor function and frequently used on dollar amounts to prevent inconvenient pricing.

Syntax : Ceiling(number, significance)

number is the numeric value or reference to a cell containing numeric value.

significance is the number to the multiple of which the number is to be rounded.

Example

CEILING(148.02,0.5) – returns 148.5 CEILING(148.99,0.5) – returns 149 CEILING(141.99,5) – returns 145 CEILING(-142.99,5) – returns -145 CEILING(142.99,5) – returns 145

Even() Rounds up the given number to the nearest even integer.

Syntax : Even(number)

Number is the value you want to round to near even integer.

Example

EVEN(16.1) – returns 16 EVEN(three) – returns #NAME? error EVEN(15) – returns 16 EVEN(14.2) – returns 14 EVEN(-15) – returns -16

Exp() Returns e raised to power of that number. The value of scientific constant E is 2.71828182845904

Syntax : Exp(number)

Number is the power raised to the constant e.

Example

Exp(1) - returns 2.718281828

Exp(-1) - returns 0.367879441

Exp(2) - returns 7.389056099

Exp(3) - returns 20.08553692

Fact() Returns the factorial of the provided number.

Syntax : Fact(number)

Where number is the positive value, the factorial of which is to be calculated.

Example

Int()

Round down a number to the nearest integer value.

Syntax : Int(number)

number is the real number which you want to round down.

Example

```
Int(4.9) – returns 4
```

Int(-4.9) – returns -5

Mod()

Result is the remainder after the division of the number by the divisor.

```
Syntax : Mod (number, divisor)
```

number is the value which is divided by the divisor.

Example

```
MOD(19,4) - returns 3
MOD(-17,4) - returns 1
MOD(19,-4) - returns -3
MOD(-17,0) - returns #DIV/0! error
```

Power()

It shows the power raised to the given number.

Syntax : Power(number,power)

Number is the base number

Power is the exponent raised to the power of the number.

Example

POWER(3,4) – returns 81 POWER(-3,4) – returns -81 POWER(4,3) – returns 64

4.4 DATE AND TIME FUNCTIONS

DAY()

The day function returns the day of a date in the form of a serial number.

Syntax :DAY(serial_number)

date is the date the day of which is required in the form of a serial number.

Examples:

DAY("15-oct") equals to 15

DAY("12-oct-1980") equals to 12

DAY("9/23/2010") equals to 23

DATE()

The date function converts a serial number to a particular date.

Syntax :DATE(year, month, day)

Year – The year argument represents the year and is of four digits.

Month – The month argument represents the month of year.

Day – The day argument represents the day of the month.

Examples:

DATE(2006, 12, 8) -- returns 12/8/2006

DATE(2011, 11, 7) - returns 11/7/2011

NOW()

Displays the current system date and time.

Syntax :NOW()

Example:

NOW() returns 7/11/2011 10:50

TODAY()

Displays the current system date.

Syntax :TODAY()

Examples: TODAY() – returns 7/11/2011

4.5 TEXT FUNCTION

LEFT()

This function is used to show specified number of characters from the *leftmost* portion of a string.

Syntax :LEFT(text, [num_char])

Text is the text string from which the characters are to be extracted.

num_char specifies the number of characters to be extracted

from the left of the text string.

Examples

LEFT("veinstitution",5) – returns "veins"

LEFT("my classes",4) - returns "my c"

If the number of characters is not specified then default is assumed to be 1.

For example:

LEFT ("veinstitution") - returns "v"

LEFT ("hello") - returns "h"

RIGHT()

This function is used to show specified number of characters from the *rightmost* portion of a string.

Syntax :RIGHT(text, [num_char])

Text is the text string from which the characters are to be extracted.

num_char specifies the number of characters to be extracted

from the right of the text string.

Examples:

RIGHT("veinstitution",3) - returns "ion"

RIGHT("veinstitution",4) - returns "tion"

If the number of characters is not specified then default is assumed to be 1 For example:

RIGHT("veinstitution") - returns "n"

RIGHT("college") - returns "e"

LEN()

The LEN function tells that you how many characters long a string is i.e. the length of the string provided in numbers (ie number of characters).

Syntax :LEN(text)

Examples:

LEN("Excel") – returns 5

LEN("Veinstitution") – returns 13

LEN("How are you") – returns 11 space- 1 char, you- 3 char) (How- 3char, Space- 1char, are- 3char,

DOLLAR()

The DOLLAR function converts a number to text using currency format and rounds the decimals to the specified place.

Syntax :DOLLAR(number, [decimals])

number is a number, a formula evaluating to number or a reference to a cell containing a number.

decimal is the number of digits to the right of the decimal point to which the user wants to round of the number. If it is omitted it is assumed to be 2 by default.

Examples:

DOLLAR(2568.239,2) – returns \$2,568.24 or Rs. 2,568.24 DOLLAR(-2568.239,-2) – returns (\$2,600) or (Rs 2,600) DOLLAR(2568.239) – returns \$2,568.24 or Rs. 2,568.24

CONCATENATE()

This function joins two or more strings.

Syntax :CONCATENATE(text1, text2,...)

Upto 30 text items (typed in cells) may be joined as single string.

Examples:

If text1 is "My name is" and text2 is "Jatin" is written in cell C2 then CONCATENATE("My name is ",C2) – returns "My name is Jatin"

TRIM()

The TRIM function removes the extra leading, trailing and in between spaces from the text, except the single spaces between the words.

Syntax : TRIM(text)

Text is the text from which the spaces are to be removed.

Examples:

TRIM(" My name is Jatin ") - returns "My name is Jatin"

MID()

The MID function is used to extract a particular number of characters from a string.

Syntax : MID(text, start_num, num_chars)

text is the string that you wish to extract from.

start_position indicates the position in the string that you will begin extracting from. The first position in the string is 1.

number_of_characters indicates the number of characters that you wish to extract.

Examples

1. MID(A1,2,3) - returns ish

	A3	.	/≱ =M!D(A	1,2,3)
	Α	В	2	Ū (
1	vishal	education	institution	
2	dera baba	nanak		
3	ish			
Λ				

2. MID(A2,3,4) – returns ra b

	B3	•	fx	=MID(A	2,3,4)
	Α	В		С	D
1	vishal	education	in	stitution	
2	dera baba	nanak			
3	ish	ra b	l		
4	ucat		ns	stit	
-					

3. MID(B1,3,4) – returns ucat

		A4	•	<i>f</i> ∗ = MID(E	31,3,4)
		Α	В	С	D
	1	vishal	education	institution	
	2	dera baba	nanak		
	3	ish	ra b		
	4	ucat		nstit	
l	5				

4. MID(C1,2,5) – returns nstit

=				_	
	C4	•	fx =MID(C	1,2,5)	
	Α	B	С	D	
1	vishal	education	institution		
2	dera baba	nanak			
3	ish	ra b			
4	ucat		nstit		
5					

LOWER()

Converts the string to lower case.

Syntax :LOWER(text)

text is the string or cell add which is to be converted to lowercase.

Examples

LOWER("INSTITUTION") – returns institution LOWER("VeINstiTUtiON") – returns veinstitution

UPPER()

Converts the string to upper case.

Syntax :UPPER(text)

text is the string (Cell Add) which is to be converted to uppercase.

Examples

UPPER("institution") - returns INSTITUTION

UPPER("VeINstiTUtiON") - returns VEINSTITUTION

REPLACE()

Replaces a text or a portion of text with another text.

Syntax :REPLACE(old_text,start_num,char_num,new_text)

old_text is the string or reference to a cell containing a string in which replacement is to be done.

start_num is the position in the old_text starting from which the text is replaced.

char_num is the number of characters that are replaced.

new_text is the new string which is placed in the position of char_num number of characters in the old text.

Examples

REPLACE("my help is Jatin",4,4,"name") – returns "my name is Jatin".



4.6 LOGICAL FUNCTIONS

IF() Excel's IF function is one of simplest and most useful spreadsheet functions. It can fill cell fields for you based on evaluating a condition.

If the condition is true one value is returned otherwise the other value is returned.

Syntax :IF(logical_test, value_if_true, [value_if_false])

The wizard-like function requires you to fill 3 data elements:

Function Arguments	-?				
[F					
Logical_test	🔤 = logical				
Value_if_true	🔁 = any				
Value_if_false	🔂 = any				
Logical_test is any value or expre	ession that can be evaluated to TRUE or FALSE.				
Formula result =					
Help on this function	OK Cancel				
logical_test is the condition which evaluates to true or false.

value_if_true is the value which is returned if logical_test returns TRUE.
value_if_false is the value which is returned if logical_test returns FALSE.
Examples:

In a discount on purchase worksheet B2 contains total purchases in different months. If the purchase is of more than or equal to Rs.10000 then discount rate is 10% else it is 0. For this the formula is: =IF(B2>=10000,10%,0)



4.7FINANCIAL FUNCTIONS

PMT() The PMT function calculates the payment for a loan on the basis of fixed interest rate and constant installments.

RECE	🔁 = number
Nper	💽 = number
Pv	🛃 = number
Fv	🛃 = number
Туре	💽 = number
Calculates the payment for a loan ba Rate is the interest rat quarterly paymer	= sed on constant payments and a constant interest rat e per period for the loan. For example, use 6%/4 for tts at 6% APR.

Syntax :PMT(rate, nper, pv, [fv], [type])

Rate is the rate of interest for the loan.

Nper is the total number of installments for the loan.

Pv is short form for present value, or the total amount that is left now for payment, also called principal.

Fv is short form for future value, or the cash balance you want to keep after the final payment is made. If it is left blank it will be assumed as 0.

Type it indicates wether payments are due. It is the number 0(zero) or 1.

Set type equal to	if payments are due
0 or omitted	at the end of the period
1	at the beginning of the period

Examples

the following formula returns the monthly payment on a 20,000 loan at an annual rate of 10 percent that must be paid of in 10 months.

=PMT(10%/12,10,20000,0,1) - returns (Rs. 2,075.51)

	Rate 10%/12	= 0.008333333
	Nper 10	= 10
	Pv 20000	= 20000
	FV	💽 = number
	Type 1	<u> </u>
Calculates	the payment for a loan based	= -2075.511689 on constant payments and a constant interest r
	Type is a logical value: pay the end of the period	rment at the beginning of the period = 1; payme t = 0 or omitted.

4.8 REFERENCE OPERATORS

OPERATOR MEANING

: (colon) Range operator, which produces one reference to all the cells between two references, including the two references (B5:B15)

, (comma) Union operator, which combines multiple references into one reference (SUM(B5:B15,D5:D15))

(space) Intersection operator, which produces on reference to cells common to the two references (B7:D7 C6:C8)

4.9 AUTOSUM

This function is used to calculate the total of a specified range.

You can insert a sum for a range of cells automatically by using autosum. Select the cell, where you want to insert the sum and click autosum.

8	<u>F</u> ile <u>E</u> dit	<u>V</u> iew Inse	ert F <u>o</u> rm	z⁄c <u>T</u> ools <u>D</u>	<u>)</u> ata <u>W</u> indow	<u>H</u> elp	
D	🖻 🖩 🔮) 🔁 🖾 🖸	X 🍄 🐰	🖻 🛍 • ≶	1 0 • 01 •	🍓 互 - 👌	Z 🛍 4
Ari	al	•	10 -	B I <u>U</u>	≦ ≡ ≡ ₫	₽ % <u>.</u>	<u>*.0</u> .00 ∰
	B2	► fs	5000			AutoS	um
	A	В	С	D	E	F	G
1	Month	Purchase					
2	Jan	5000					
3	Feb	15000					
4	Mar	20090					
5	Apr	6000					
6	May	20000					
7	Jun	5000					
8	Jul	10000					
9	Aug	12000					
10	Sep	16000					
11	Oct	40000					
12	Nov	10000					
13	Dec	6000					
14		167000					
45							

You shell get the sum of selected cells as shown in the figure.

4.10 Calculating Sub-Totals

Calculates the sub totals and grand total values for the labled columns you select. Microsoft Excel inserts and lables the containing totals rows and outlines the list.

1 Enter the following data in the Excel Sheet

	A	В	С	D	E
1	Mark Lis	t For the Ye	ar 2010,	2011	
2	Name: Ja	atin Bedi , R	oll No. 4	5 Class	s 12th
3					
4	Exams	Subjects	Max. Marks	Min. Marks	Marks Obtained
5	Quaterly	English	50	20	25
6	Half Yearly	English	50	20	28
7	Final	English	100	40	65
8	Quaterly	Hindi	50	20	18
9	Half Yearly	Hindi	50	20	/ / 24
10	Final	Hindi	100	40	38
11	Quaterly	History	50	20	32
12	Half Yearly	History	50	20	46
13	Final	History	100	40	82
14	Quaterly	Pol Sc	50	20	25
15	Half Yearly	Pol Sc	50	20	36
16	Final	Pol Sc	100	40	65
17	Quaterly	Ecnomics	50	20	35
18	Halt Yearly	Echomics	50	20	37
19	Final	Ecnomics	100	40	72
20					

2 Select the data as shown in the Fig bellow.

	A4 🗸	f∗ Exanta			
	A	В	С	D	E
1	Mark List	t For the Ye	ar 2010-	2011	
2	Name: Ja	tin Bedi , R	oll No. 4	5 Class	5 12th
3					
4	Exams	Subjects	Max. Marks	Min. Marks	Marks Obtained
5	Quaterly	English	50	20	25
6	Half Yearly	English	50	20	28
7	Final	English	100	40	65
8	Quaterly	Hindi	50	20	18
9	Half Yearly	Hindi	50	20	24
10	Final	Hindi	100	40	38
11	Quaterly	History	50	20	32
12	Half Yearly	History	50	20	46
13	Final	History	100	40	82
14	Quaterly	Pol Sc	50	20	25
15	Half Yearly	Pol Sc	50	20	36
16	Final	Pol Sc	100	40	65
17	Quaterly	Ecnomics	50	20	35
18	Half Yearly	Ecnomics	50	20	37
19	Final	Ecnomics	100	40	72

	5 Ope		and sele		ub Iotais as shown .
	<u>F</u> ile <u>E</u> dit <u>V</u> i	iew <u>I</u> nsert F <u>o</u> rm	nat <u>T</u> ools	Data	a <u>W</u> indow <u>H</u> elp
D	🖻 🔒 🔒 🐔	a 🖾 💝 🛛 🛪	B 🔒 -	₹↓	Sort
Ari	al	- 10 -	BIU		<u>F</u> ilter
	A4 👻	<i>f</i> ∗ Exams			Form
	А	В	С		Su <u>b</u> totals
1	Mark List	t For the Ye	ar 2010		Validation
2	Name: Ja	tin Bedi , R	oll No. 4		Ţable
3					Text to Columns
4	Exams	Subjects	Max. Mark		
5	Quaterly	English	5		Consolidate
6	Half Yearly	English	5		Group and Outline
7	Final	English	10	ित्र	DivetTable and DivetChart Depart
8	Quaterly	Hindi	5	LAS.	Protrade and Protenant report
9	Half Yearly	Hindi 🔨	5		Import External Data
10	Final	Hindi	10	*	Refresh Data
11	Quaterly	History	5		20 32

3 Open Data Menu and select Sub Totals as shown :

- 4 Do the settings as shown in the Figure given below
 - & 5 Click on Ok.

Subjects Use function: Sum Add subtotal to: Max. Marks Min. Marks Min. Marks Min. Marks Min. Marks Min. Marks Min. Marks Support Subtotals Page break between groups Summary below data	At each change in:		
Use function: Sum Add subtotal to: Max. Marks Min. Marks Min. Marks Marks Obtained Replace gurrent subtotals Page break between groups Summary below data	Subjects		-
Sum Add subtotal to: Max. Marks Min. Marks Marks Obtained Replace gurrent subtotals Page break between groups Summary below data	Use function:	×	-
Add subtotal to: Max. Marks Min. Marks Marks Obtained ✓ Replace current subtotals Page break between groups ✓ Summary below data	Sun		-
Max. Marks Min. Marks Marks Obtained Replace current subtotals Page break between groups Summary below data	Add subtotal to:	_	
Min. Marks Marks Obtained Replace current subtotals Page break between groups Summary below data	Max. Marks	2	ন
 Replace current subtotals Page break between groups Summary below data 	Min. Marks		-
 Replace current subtotals Page break between groups Summary below data 	p		_
Page break between groups Summary below data	Replace current s	subtotals	
Summary below data	Page break betwe	een groups	
	Summary below d	lata	

The subtoatals of each	Subjects	is displayed	with its	gand	total	as	in	the
Figure shown bellow.								

1 2 3		А	В		С	D	E
	1	Mark List	t For the Ye	ar 2	010-	2011	
	2	Name: Ja	tin Bedi , R	oll N	lo. 4	5 Class	5 12th
	3						
	4	Exams	Subjects	Max.	Marks	Min. Marks	Marks Obtained
ΓΓ・Ι	5	Quaterly	English		50	20	25
	6	Half Yearly	English		50	20	28
	7	Final	English		100	40	65
Ē	8		English Total				118
[.]	9	Quaterly	Hindi		50	20	18
	10	Half Yearly	Hindi		50	20	24
	11	Final	Hindi		100	40	38
Ē	12		Hindi Total				80
[.	13	Quaterly	History		50	20	32
	14	Half Yearly	History		50	20	46
	15	Final	History		100	4 0	82
Ē	16		History Total				160
[.	17	Quaterly	Pol Sc		50	20	25
	18	Half Yez/ly	Pol Sc		50	20	36
	19	Final	Pol Sc		100	40	65
Ē	20		Pol Sc Total				126
[.	21	Quaterly	Ecnemics		50	20	35
	22	Half Yearly	Ecnomics		50	20	37
	23	Final	Ecnonics		100	40	72
<u> </u>	24		Ecnomics Total				144
-	25		Grand Tota!				628
	26						

4.11 CELL REFERENCING

The cell addresses used in the formulae are called cell references. Use of cell reference in a formula is called cell referencing.

There are three types of cell referencing:-

1.) Relative referencing. 2.) Absolute referencing. 3.) Mixed referencing

RELATIVE REFERENCING

When a formula is copied or moved to other cells using autofill handle the references changes automatically. This is known as Relative referencing. Let's see it practically.

Add the following data in an excel sheet.

	B17	-	f _×				
	Α	В	С	D	E	F	G
1	Product	Price	Fright	Expence	Total Cost	Rate	Net Rate
2	Purse	100	5	10			
3	Сар	120	5	10			
4	Belt	120	5	10			
5	Shoes	200	5	20			
6	T Shirt	150	5	10			
7	Cappri	150	5	10			
8							
9							
10							
11		Profit Marg	jin 10%				
12		Sur Charge	eon each ur	nit Rs 5			
13							

1.) Enter the formula

=B2 +	C2+D2 in ce	ell E2.
-------	-------------	---------

					U		
	PMT	- × 🗸	fx =B2+C2	2+D2			
	A	B	С	D	5	F	G
1	Product	Price	Fright	Expence	Total Cost	Rate	Net Rate
2	Purse	100	5	10	=B2+C2+5	2	
3	Сар	120	5	10			
4	Belt	120	5	10			
5	Shoes	200	5	20			
6	T Shirt	150	5	10			
7	Cappri	150	5	10			
8							
9							
10							
11		Profit Marg	jin 10%				
12		Sur Charge					
13							
4.4							

Formula Relative Referencing

2) Drag the autofill handle from E2:E7

	E2	•	<i>f</i> ∗ =B2+C2	2+D2			
	Α	В	С	D	E	F	G
1	Product	Price	Fright	Expence	Total Cost	Rate	Net Rate
2	Purse	100	5	10	115		
3	Сар	120	5	10	135		
4	Belt	120	5	10	135		
5	Shoes	200	5	20	225		
6	T Shirt	150	5	10	165		
7	Cappri	150	5	10	165		
8							
9							
10							
11		Profit Marg	jin 10%				
12		Sur Charge	eon each ui	nit Rs 5			
13							



Conclusion: The cell references in the formula changes automatically

```
in E3 \rightarrow =B3 + C3+D3, E4 \rightarrow =B4 + C4+D4
```

```
E5 \rightarrow =B5+C5+D5, E6 \rightarrow =B6+C6+D6, E7 \rightarrow =B7+C7+D7
```

ABSOLUTE REFERENCING

When we want to keep a cell reference fixed in a formula we use a \$ sign before the column name and the row number.

Example

In the above table

1.) For calculating the amount after profit margin, type the formula

=E2 +E2*\$E\$11 in F2

	F2	•	f∗ =52+E2*\$	6E\$11			
	A	В	С	D	E	F	G
1	Product	Price	Fright	Expence	Total Cost	Rate	Net Rate
2	Purse	/100	5	10	115	126.5	
3	Сар	120	5	10	135		
4	Belt	120	5	10	135		
5	Shoes	200	5	20	225		
6	T Shirt	150	5	10	165		
7	Cappri	150	5	10	165		
8							
9							
10							
11		Profit Marg	jin 10%		10%		
12		Sur Charge	eon each unit	RS	5		
13							

2.) Drag the autofill handle from F2:F7.

	F2	-	fr =E2+E2*\$	SE\$11			
	Α	B	C	D	E	F	G
1	Product	Price	Fright	Expence	Total Cost	Rate	Net Rate
2	Purse	100	5	10	115	126.5	
3	Сар	120	5	10	135	148.5	
4	Belt	120	5	10	135	148.5	
5	Shoes	200	5	20	225	247.5	
6	T Shirt	150	5	10	165	181.5	
7	Cappri	150	5	10	165	181.5	
8							
9							
10							
11		Profit Marg	jin 10%		10%		
12	Figure 1 1 5 Shoes 2 6 T Shirt 1 7 Cappri 1 8 9 1 9 10 1 11 Profit M 12 12 Sur Cha		eon each unit	RS	5		
40	1	1			l .		

Result

Conclusion: The cell references of E2 changes automatically but not E11.

MIXED REFERENCING

This is a combination of Relative referencing and Absolute referencing. When in a formula we want to keep either the column name or the row number fixed we use Mixed Referencing. A \$ sign is used before the column name or the row number which is to be kept fixed.

Example

1.) For calculating net amount after adding the service tax, type the formula =F2+E\$12 in G2

	PMI	- × v	7× =F2+E\$12									
	Α	В	С	D	E	F	Gi					
1	Product	Price	Fright	Expence	Total Cost	Rate	<u>Met</u> Rate					
2	Purse	100	5	10	115	/ 126.5	I=F2+E\$12					
3	Сар	120	5	10	135	148.5						
4	Belt	120	5	10	135	148.5						
5	Shoes	200	5	20	225	247.5						
6	T Shirt	150	5	10	165	181.5						
7	Cappri	150	5	10	165	181.5						
8												
9												
10												
11		Profit Marg	yin 10%		10%	_						
12		Sur Charge	eon each unit	RS	5							

Formula for Mixed Referencing

2.) Drag the autofill handle of G2:G7

	G2	•		<i>f</i> ∗ =F2+E\$12	2			
	A	.9		С	D	E	F	G
1	Produci	Price		Fright	Expence	Total Cost	Rate	Net Rate
2	Purse		00	5	10	115	126.5	131.5
3	Сар		120	5	10	135	148.5	153.5
4	Belt		120	5	10	135	148.5	153.5
5	Shoes		200	5	20	225	247.5	252.5
6	T Shirt		150	5	10	165	181.5	186.5
7	Cappri		150	5	10	165	181.5	186.5
8								
9								
10								
11		Profit	Marg	jin 10%		10%		
12		Sur Cl	harge	eon each unit	RS	5		
4.0								

Conclusion: The cell references in F2 changes automatically but in E12 remains fix.

Self-Assessment Question

- 1. What is Function, write categories of Function.
- 2. What is Sumif Function, write Syntax of Average, Max, Min.
- 3. Explain Date and Time Function.
- 4. Explain Calculating Sub-Totals.
- 5. What is Cell Referancing and Explain Absoulte Refrencing.

Lab Session

C21

1. Generate given Excel Sheet and Fill Total, Percentage & Average.

	021	•	<i>jx</i>									
	Α	В	С	D	E	7	G	Н		J	K	Ī
1	S No	Name	Class	English	Hindi	History	Pol Sc	Ecnomics	Total	Percent	Average	Ι
2	1	Sanjeev M	BA	67	35	46	85	39				T
3	2	Arun Bedi	BA	56	54	48	37	54				
4	3	Jatin	BA	68	54	55	53	62				
5	4	Tejali	BA	42	56	42	54	63				
6	5	Sudhir	BA	62	45	64	51	47				
7	6	Harsh Kun	BA	75	48	65	37	52				
8	7	Sunita	BA	56	25	46	51	47				
9	8	Babita Kur	BA	\$2	36	36	<u> </u>	45				
10	9	Sonia	BA	82	45	65	75	41				
11	10	Ravinder	BA	65	48	42	61	44				
12	11	Roopa	EA	64	56	33	54	61				
13	12	Anita	BA	56	42	55	75	51				
4	13	Harjinder k	BA	35	43	65	54	75				
15	14	Kulbir	BA	65	43	28	34	45				

2. Generate table & Calculate Sub-Total

	Ä	В	С	D	E
1	Mark Lis	For the Ye	ar 2010-	2011	
2	Name: Ja	tin Bedi , R	oll No. 4	5 Class	s 12th
3					
4	Exams	Subjects	Max. Marks	Min. Marks	Marks Obtained
5	Quaterly	English	50	20	25
6	Half Yearly	English	50	20	28
7	Final	English	100	40	65
8	Quaterly	Hindi	50	20	18
9	Half Yearly	Hindi	50	20	24
10	Final	Hindi	100	40	38
11	Quaterly	History	50	20	32
12	Half Yearly	History	50	20	46
13	Final	History	100	40	82
14	Quaterly	Pol Sc	50	20	25
15	Half Yearly	Pol Sc	50	20	36
16	Final	Pol Sc	100	40	65
17	Quaterly	Ecnomics	50	20	35
18	Half Yearly	Ecnomics	50	20	37
19	Final	Ecnomics	100	40	72
20					







Contents :

- 5.1 Sorting
- 5.2 Filters
- 5.3 Pivot Table and Charts
- 5.4 Inserting Charts
- 5.5 Forms

5.1 Sorting

Sorting is the process of arranging the data in ascending or descending order on the basis of single or multiple field.

Steps to apply sorting

1 Select the data as shown in given Figure.

🕙 File Edit View Insert Format Tools Data Window Help

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Ari	al	-	10 - 1	B <i>I</i> <u>U</u>		5	%, .00	.00 €≣ €	🗐 - 🦉
	A1	•	f∗ SNo						
	Α	В	С	D	E	F	G	Н	I
1	S No	Name	Class	English	Hindi	History	Pol Sc	Ecnomics	Total
2	1	Sanjeev Mehra	BA	67	35	46	85	39	272
3	2	Arun Bedi	BA	55	54	48	37	51	246
4	3	Jatin	BA	68	54	55	53	62	292
5	4	Tejali	BA	42	55	42	54	63	257
6	5	Sudhir	BA	62	45	64	- 51	47	269
7	6	Snatan	BA	75	48	65	37	52	277
8	7	Sunita	BA	56	25	46	51	47	225
9	8	Anita	BA.	62	36	36	42	45	221
10	9	Sonia	BA	82	45	65	75	41	308
11	10	Ravinder <	BA	65	48	42	61	44	260
12	11	Roopa	BA	F.4	56	33	54	61	268
13	12	Anita	BA	56	42	55	75	51	279
14	13	Harjinder Keur	BA	35	43	65	54	75	272
15	14	Madhay	BA	65	43	28	34	45	215

2. Click on Sort option from Data Menu and choose the option acording to you.

Sort by	
English	Ascending
	O Descending
Then by	
Hindi	▼
1	C Descending
Then by	
Ecnomics	
) <u>Schonnes</u>	C Descending
My list has	
• Header row	C No header row

3. Click OK.

	Α	B	С	D	E	F	G	Н	I
1	S No	Name	Class	English	Hindi	History	Pol Sc	Ecnomics	Total
2	13	Harjinder Kaur	BA	35	43	65	54	75	272
3	4	Tejali	BA	42	56	42	54	63	257
4	7	Sunita	BA	56	25	46	51	47	225
5	12	Anita	BA	56	42	55	75	51	279
6	2	Arun Bedi	BA	56	54	48	37	51	246
7	8	Anita	BA	62	36	36	42	45	221
8	5	Sudhir	BA	62	45	64	51	47	269
9	11	Roopa	BA	64	56	33	54	61	268
10	14	Madhav	BA	65	43	28	34	45	215
11	10	Ravinder	BA	65	48	42	61	44	260
12	1	Sanjeev Mehra	BA	67	35	46	85	39	272
13	3	Jatin	BA	68	54	55	53	62	292
14	6	Snatan	BA	75	48	65	37	52	277
15	9	Sonia	BA	82	45	65	75	/ 41	308
16				\square					

Result of Sort Option

In this multiple sorting example, we have sorted the following data (marks of English subject., marks of Hindi subject and marks of Ecnomics subject) in assending order. With the same order of periority.

Note: This is a multiple sorting. If the data was sorted only on the basis of English only, then the next two options would be left blank, it would be known as simple sorting.

5.2 Filters

Display of records on the basis of certain criteria is known as Filtering.

Steps to apply Filter

- 1 Select the column headings.Click on the **Filter** option from the **Data** menu and select **Auto Filter** from **Sub-Menu**
- 2 Click on the arrow displyed in the column fields as shown in the figures given bellow.

	<u>F</u> ile	<u>E</u> dit <u>V</u> iew In	sert F <u>o</u> rma	at <u>T</u> ools	Data	Winde	ow <u>H</u> elp					
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	A1	+	f∗ SNo			Su <u>b</u> total	s				Show All	
	Α	В	С	D		Va <u>l</u> idatio	on				Advanced Filter	
1	<u>s</u> 1-	Name 🗸	Class 🔻	English -		Text to (olumns			lotal 🔻		
2	13	Harjinder Kaur	BA	35		T <u>e</u> xt to t	-orunnis			5	272	
3	4	Tejali	BA	42	17	PivotTak	ole and Pive	otChart Report	6 1		257	
4	7	Sunita	BA	56		Import F	vternal Dat	3		2	225	
5	12	Anita	BA	56		importe	Section Date				279	
6	2	Arun Bedi	BA	56	1	<u>R</u> efresh I	Data				246	
7	8	Anita	BA	62	_		*			5	221	
8	5	Sudhir	BA	62	2	45	64	51	47	7	269	
9	11	Roopa	BA	64	1	56	33	54	61	1	268	
10	14	Madhav	BA	65	5	43	23	34	45	5	215	
11	10	Ravinder	BA	65	5	48	42	61	1	+	260	
12	1	Sanjeev Mehra	BA	67	7	35	46	85	39)	272	
13	3	Jatin	BA	68	3	54	55	53	62	2	292	
14	6	Snatan	BA	75	5	48	65	37	52	2	277	
15	9	Sonia	BA	82	2	45	65	75	4	1	308	
16				$\left \right\rangle$					7	T		

3 From the drop list choose "Custon" option.

	A	В 🤇	С		D	E		
1	▼1 2	Name 🔪 👻	Class	/-	English 👻	Hindi	•	I
2	13	Harjinder Kaur	BA	(All))	4	43	
3	4	Tejali	BA	(То	p 10)	!	56	
4	Ĩ,	Sunita	BA	35	stommy	1	25	
5	12	Anita	BA	42		4	42	
G	2	Arun Bedi	BA	56		!	54	
7	8	Anita	BA	64			36	
8	5	Sudhir	BA	65		4	45	
9	11	Roopa	BA	67			56	
10	14	Madhav	BA	75		4	43	
11	10	Ravinder	BA	82		4	48	
12	1	Sanjeev Mehra	BA		67		35	
13	3	Jatin	BA		68		54	
14	6	Snatan	BA		75	4	48	
15	9	Sonia	BA		82	4	45	

4 On clicking the Custom option the following Figure appears .

is greater than		• 40	•
(• And	⊂ <u>o</u> r		
is less than		• 60	•

5 Make the settings as shown in the above figure.

										_								
8	<u>F</u> ile	<u>E</u> dit	<u>V</u> iew	Įns	ert F	orna	t <u>T</u> ool	s	<u>D</u> ata <u>N</u>	Nin	dow <u>H</u>	elp						
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	A1	\geq	•	1	≨ SN	0												
	Α		В		$\langle c \rangle$		D		E		F		(3	Н		1	
1	<u>▼12</u>	Name			Class		English	•	Hindi	•	History	▼	Pol S	ic 🔻	Ecnomi	▼	Total	•
3	4	Tejali		\neg	BA	>		42		56		42		- 54	Ļ	63		257
4	7	Sunita	а		BA			56		25		46		51		47		225
5	12	Anita			BA			56		42		55		- 75	5	51		279
6	2	Arun	Bedi		BA			56		54		48		37	/	51		246
16																		

Filtered Data

Note: To remove the filter ,we have to click on the Auto Filter option again.

5.3 Pivot Table and Charts

The main objective of these two data base objects is to help in comparative study of data and analyzing it from different views.

Steps to create Pivot Chart and Table

1. Select the data as show in (Fig 5.6)

8	<u>F</u> ile	<u>E</u> dit <u>V</u> iew <u>Ins</u>	ert F <u>o</u> rma	t <u>T</u> ools	<u>D</u> ata <u>W</u> in	dow <u>H</u> elp			
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	Α	В	С	D	Ε	7	G	-ik)	
1	S No	Name	Class	English <	Hinds	History	Pol Sc	Ecnomics	Tctal
2	13	Harjinder Kaur	BA	35	43	65	54	75	272
3	4	Tejali	BA	42	56	42	54	63	257
4	7	Sunita	BA	56	25	46	51	47	225
5	12	Anita	BA	56	42	55	75	- 51	279
6	2	Arun Bedi	BA	56	54	48	37	51	246
7	8	Anita	5A	62	36	36	42	45	221
8	5	Sudhir	BA	62	45	64	51	47	269
9	11	Roopa 🧹	5A	54	56	33	54	61	268
10	14	Madhav	BA	65	43	28	34	45	215
11	10	Ravinder	BA	65	48	42	61	44	260
12	1	Sanjeev Mehra	BÀ	67	35	46	85	39	272
13	3	Jatin	BA	68	54	55	53	62	292
14	6	Snatan	BA	75	48	65	37	52	277
15	9	Sonia	BA	82	45	65	75	41	308

2. Select the option Pivot Table and Pivot Chat Report Pivot T from the Data menu.

	File	Edn View In:	ser: F <u>o</u> rma	at <u>T</u> ools	Dat	a <u>W</u> indow	/ <u>H</u> elp			
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Ari	al A1		10 -	B / U		<u>F</u> ilter Su <u>b</u> totals			•	≡ ⊞ • <u>8</u>
	A	В	C	D		Validation.				1
1	S No	Name	Class	English		Text to Co	lumns			Total
2	13	Harjinder Kaur Teiali	BA	35	₩	PivotTable	and PivotCh	art Report		272
4	7	Sunita	BA	50		Import Ext	ernal <u>D</u> ata		•	225
5	12	Anita Arun Bedi	BA	50	2	<u>R</u> efresh Da	ta			279
7	8	Anita	BA	62	1				;	221
8	5	Sudhir	BA	62	2	45	64	51	47	269
9	11	Roopa	BA	64	L	56	33	54	61	268
10	14	Madhav	BA	65	5	43	28	34	45	215
11	10	Ravinder	BA	65	5	48	42	61	44	260
12	1	Sanjeev Mehra	BA	67	7	35	46	85	39	272
13	3	Jatin	BA	68	3	54	55	53	62	292
14	6	Snatan	BA	75	5	48	65	37	52	277
15	9	Sonia	BA	82	2	45	65	75	41	308

PivotTable and PivotChart	Wizard - Step 1 of 3
	Microsoft Excel list or database
	O External data source
	C Multiple consolidation ranges
	C Another PivotTable report or PivotChart report
	What kind of report do you want to create? PivotTable PivotChart report (with PivotTable report)
2	Carcel < Back Next > Finish

3. Select the option Pivot Chart Report (With Pivot Table Report) .

Click on next button.

You will see the given Figure

Where is	the data that you	want to use?		
<u>R</u> ange:	\$A\$1:\$I\$15		3	Browse
0	Cancel	< Back	Nexts	Finish

4. Click on next button.



- Pivot Table Wizard (Step 3)
- 5. Click on Finish button.
- 6. Select Name from Pivot Table Field List -, select Categoey Axis and click on the Add to button, as shown in Figure bellow.

Image: State of the state o	2	Drop Page Figlids Here	
0	1 - 0.9 - 0.8 - 0.7 - 0.5 - 0.4 - 0.3 - 0.2 - 0.1 -	Drop Sata Items Here	PivotTable Field List × Drag items to the PivotTable report Image: Series 1 PivotTable PivotTable
1 Drop Category Fields Here	0 -	1 Drop Category Fields Here	

Adding Fields to chart (Step 1)





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To show the data of selected Students, click the arrow on the Name field and remove the selection for students not required .



	A	В	C	D	E	F	G
1		Drop	o Page Fi	elds Here			
2	2						
3	3	7	S No 🔻				
4	Name	🗸 Data 🗸 🗸	3	4	5	11	Grand Total
5	Jatin	Sum of English	68				68
6	5	Sum of Hindi	54				54
7	,	Sum of History	55				55
8	3	Sum of Pol Sc	53				53
9)	Sum of Ecnomics	62				62
1	0 Roopa	Sum of English				<u>6</u> 4	64
1	1	Sum of Hindi				56	56
1	2	Sum of History				33	/ 33
1	3	Sum of Pol Sc				54	54
14	4	Sum of Echomics				61	61
1	5 Sudhir	Sum of English			62		62
1	6	Sum of Hindi			45		45
1	7	Sum of History			64		64
1	8	Sum of Pol Sc			51		51
1	9	Sum of Ecnomics			47		47
2	0 Tejali	Sum of English		/ 42			42
2	1	Sum of Nindi		56			56
2	2	Sum of History		42			42
2	3	Sum of Pol Sc	\sim	54			54
2	4	Sum of Ecnomics		63			63
2	5 Total Sum of E	English	68	42	62	64	236
2	6 Total Sum of H	lindi	54	56	45	56	211
2	7 Total Sum of h	listory	55	42	64	33	194
2	8 Total Sum of E	Pol Sc	53	54	51	54	212

10. The following Pivot Table is itself created when you create the chart, click on the repective worksheet to see the Table.

Pivot Table

Note:

Drag and Drop method is also used to add fields to the chart area

62

63

61

233

47

29 Total Sum of Ecnomics

Example 2

Select the same data as selected for the previous example and create another pivot table.

Now first add all the subjects fields to the data area. Then add Name to the Category Axis and serial no to Series Axis.

A different output can be produced using the same data.

From which comprative study of all students marks in required subject can be done by selecting required subjects from data field.

8	<u>F</u> ile <u>E</u> dit <u>V</u> ie	ew <u>I</u> nsert F <u>o</u> rmat	<u>T</u> oo!s	<u>D</u> ata <u>W</u>	indow <u>H</u>	<u>H</u> elp	
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2							
3			S No 🔻				
4	Name 🔪 🗖	Data	3	4	5	11	Grand Total
5	Jatin	Sum of English	68				68
6		Sum of Hindi	54				54
7		Sum of Ecnomics	62				62
8	Roopa	Sum of English	~			64	64
9		Sum of Hindi				56	56
10		Sum of Ecnomics				61	61
11	Sudhir	Sum of English			62		62
12		Sum of Hindi			45		45
13		Sum of Ecnomics			47		47
14	Tejali	Sum of English		42			42
15		Sum of Hindi		56			56
16		Sum of Ecnomics		63			63
17	Total Sum of E	nglish	68	42	62	64	236
18	Total Sum of H	indi	54	56	45	56	211
19	Total Sum of E	cnomics	62	63	47	61	233
00							

Pivot Table



5.4 Inserting Charts

1 Take the same data as previous. Click on the **Chart** option from the **Insert** menu. Select the **Column Chart** from chart type. Click



Chart Wizard(Step 1)

2 Select Column from the dialog box. Click on Next.



Chart Wizard(Step 2)



nities Axes Gridlines hart <u>ti</u> tle:	Legend Data Labels Data Table
Marks	Marks
ategory (X) axis:	30 80
Subjects	
alue (Y) axis:	a 30 History 30 Pol Sc
Marks	
econd category (X) axis:	
	Sanjekuvata spilettirren men Seriel anderskildt ji it skiler Michiler di Kumark andri Kasa
econd value (Y) axis:	1 2 3 4 5 6 7 8 9 10 11 12 13 14 Subjects
J	

3 Fill the fields as shown in the Figure

Chart Wizard(Step 3)

4 Select the "As new sheet" and then click on Function

Chart Wizard	- Step 4 of 4 - Chart	Location		-? <mark>-</mark> X
	• As new sheet:	Chart2		
	C As <u>o</u> bject in:	Book2		•
2	Cancel	< <u>B</u> ack	Next >	<u>F</u> inish

Chart Wizard(Step 4)



Formatting Chart

1 Right click on white area of the chart and click on Format Chart Area option.



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2 Set the options shown in the (Fig 5.21) according to the requirments.



3 To format the axis tides right click on it ,and click on the option Format Axis title.





5.5 Forms Formating Chart Axis (Step 5)

Forms provides a easy way of entering and manipulating data as well as Viewing data .A single record can be viewed using forms at a time.

Enter the follwing data in an excel sheet and select the data .

٩	<u>F</u> ile Edit	<u>V</u> iew <u>I</u>	nsen' F <u>o</u> rm	at <u>T</u> ools	<u>D</u> ata <u>W</u> ir	ndow <u>H</u> elp	0			
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	A1	-	fx Roll No							
	Α	В	C.	D	E	F	G	Н		J
1	Roll No	Name	English	Hindi	History	Pol Sc	Ecnomics			
2	-									

1 Select the Form option from the Data menu

F <u>o</u> rmat <u>T</u> ools	Data	<u>W</u> indow	<u>H</u> elp
2 🕺 🛍 🛍 -	₽↓	<u>S</u> ort	
- B Z U		<u>F</u> ilter	•
oll No		F <u>o</u> rm	
) D		Su <u>b</u> totals	7
sh Hindi		Validation	
		<u>T</u> able	

	A	В	С	D	E	F	G
1	Roll No	Name	English	Hindi	History	Pol Sc	Ecnomics
2	2	(Perel-2		No.		~	
3		BOOK2			8		
4		Roll No:	101		New Recor	rd	
5			-		Maur	1	
6		Name:	Anju		INE <u>W</u>		
7		English:	65		Delete		
8	0			=			
9		Hindi:	85		Restore		
10		History	76				
11				_	Find Prev		
12		Pol Sc:	72				
13		Ecnomic	s: 82		Find Next	t	
14					Criteria		
15					Griteria		
16					c.	1	
17					Ciose		1.
18							
19							
20							

2 A Form appears as

Forms for entering data

- 3 Enter data into the sheet through the form.Use the tab keys to move to the new fields.
- 4 After entering the first record. click on new to enter new records. else click on **Close** button

	A1	-		f∡ Roll No				
	A	3		С	D	E	F	G
1	Roll No	Name		English	Hindi	History	Pol Sc	Ecnomics
2	101	Anju		65	85	76	72	82
3			0.01-2			2		
4			UKZ				~	
5		R	oll No:	S. 1	-	New Recor	d	
6				-	_	New	1	
7		N	<u>a</u> me:	1		140.00		
8		E	nglish:	12		Delete		
9								
10		н	indi:	1		Restore		
11		н	istory	:				
12		_		· · · · · · · · · · · · · · · · · · ·	_	Find Prev		
13		P	ol Sc:	1		Circl No. 4		
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15	1					Criteria	1	-
16								
17						Close	1	
18						Ciose		
19								
20					-			
21			-		1	1		

Sheet after entering a single record

Self-Assessment Questions

- 1. Explain Sorting.
- 2. Explain Forms.
- 2. Write the steps for inserting charts.

Lab session:

Create your own database and enter values to it.

Create a Pivot Table and Chart.

Apply Filters to view only the students who are failing in any of the subjects





Contents :

- 6.1 Custom List
- 6.2 Paste Special
- 6.3 Goal Seek
- 6.4 Freezing windows
- 6.5 Splitting
- 6.6 **Printing Worksheet**

6.1 Creating Custom lists

This feature allows you to create your own custom list of names or text. After you have created a custom list, you can use it to fill a range of cells. The steps to creating a custom list are:

• Select Tools menu .Select Options



- The **Options** dialog box is displayed
- Select the Custom Lists tab



• Select NEWLIST in the Custom Lists box

- Click in the List entries box and type each item that you want in your list. For example, you could create a list of the Subjects "CTT", "OPA", "DTP", "DCA", "PGDCA", "BCA", "MCA".
- Click on the Add button to include the list in the Custom Lists box.

Options		\square		?
Color International View Calculation Edit	Save Gene	Error Checking	Spelling Custom Lists	Security Chart
Custom lists:	List ent	sies:		
NEW LIST Mon, Tue, Wed, Thu, Fri, Sat, S Monday, Tuesday, Wednesday, Jan, Feb, Mar, Apr, May, Jun, J January, February, March, April Mon, Tue, Wed, Thu, Fri, Sat, S Monday, Tuesday, Wednesday, Jan, Feb, Mar, Apr, May, Jun, J January, February, March, April	CTT OPA DTP DCA PGDCA BCA MCA		*	Delete
Press Enter to separate list ent Import list from cella:	tries.		<u> </u>	Import
			ок	Import Cancel

Adding Custom List

• Click on the **OK** button

Write the first item of the list "CTT" in cell A1 and then drag using Autofill handel.



You can also create a list from text in the cells. The steps are :

- 1. Enter the text, say, a list of Different Courses In Vishal Education Institution (ie. ETT,OPA,DTP,DCA,PGDCA,BCA,MCA) in your worksheet. Enter the data in the desired order.
- 2. Select the range of cells containing the list
- 3. Select **Options** from the **Tools** menu.
- 4. Click the Custom Lists tab
- 5. Select the first item in the Custom Lists box, i.e., NEW LIST
- 6. The selected range appears in the **Import list** from cells box. If the range is incorrect, you can change it or select a new range
- 7. Click the Import button and the list will be added to the list entries box. The list also appears in custom list box to the left.
- 8. Click on the **Ok** button
? 🗙

Ctrl+Z Ctrl+Y

Ctrl+X

Ctrl+C

Ctrl+V

Ctrl+F

Ctrl+H

Ctrl+G

٠ Þ

C Validation

6.2 Paste Special

Choose Paste Special from Edit Menu.

Allows to paste the data at the target place with some choices or conditions as we want to apply,like :Paste Special operation allows you to

Add

Subtract

Multiply

Divided

Source values.

Allows to copy only Column w

	3 DTP	C Er/rmulas	C All except bord	ers
	4 PCA	C Values	C Column widths	
	5 PGDCA	C Formats	C Formulas and n	umber formats
	6 BCA	C Comments	C Values and num	ber formats
	7 MCA 8	Operation		
	9	(• None	C Multiply	
	10	C Add	C Divide	
	11	C Subtract		
	12	1		
	13	Skip blanks	Transpos :	
	14			
<u>} </u>	15	Paste Link	OK	Cancel
riðth	16			
	;7		1//1	

Paste Special

· [All

Value of the formula instead of formula itself Validation rules.

Formats, etc...... Skip Blanks Allows you to paste the source data at the target but skip over writing the blank cells at the target .

Transpose It allows you to convert the row data into column data and Vice-Versa Edit View Insert File Format T

			2 1	Undo Clear	Ctrl
Steps	to apply	Arial	U	Can't <u>R</u> epeat	Ctrl
			A1 🐰	Cu <u>t</u>	Ctrl
•	Select the data you want to copy		A Ba	Copy	Ctrl
		1 0	TT 😭	Office Clipboar	rd
•	Select Edit menu and click on	2 C 3 E		Paste	Ctrl
	Copy option	4 E	CA	Paste Special	
	copy option	5 F	GD	Paste as <u>Hyper</u>	link
•	Go to the target place	6 E	ICA ICA	Fill	
	<u> </u>	8		Clear	
•	Select Edit menu and click on	9		Delete	
	Desta Special antion	11		Delete Sheet	
	Paste Special option	12		Move or Copy	Sheet
_	Chasses the required antion	13		Eind	Ctrl
•	Choose the required option.	14	8948	<u>r</u> inu	Cui
		15		Replace	Ctrl-

16

17

18 19

20

Click on **OK** button.



<u>Go To...</u>

Links...

Object

6.3 Goal Seek

Adjusts the value in a specified cell that until a **formula** is dependent on that cell **reaches** a target value.

A person takes a loan of Rs 50000 and is required to pay it five equal installments Payment per insatlment is =(B1/B2)

Select Goal Seek from the Tools Menu

Using the gaol seek calculated the number of insallements, if the amount per installment is changed to 5000.

	PMT ▼ X √ f×	= <mark>B1/</mark> B2	P	<u>F</u> ile	<u>E</u> dit	View	Insert	F <u>o</u> r	mat
	А	В		2	-	🔁 🖌	5 🗟	ABC	<u>ж</u> е
1	Total Loan	50000		<u> </u>		_		7 -	1 _
2	No Of Instalment	5	Arı	al			- 20	•	B
3	Amount Per Instalment	= <u>B1/B2</u>		B12		•	f _x		
4		Ī				A		В	;
			1	Total	Loan			5	0000
			2	No O	f Instal	ment			5
			3	Amo	unt Per	Instalı	ment	1	0000
			4	//					

Result of Application Formula

Unit 6

	83	-	fx	=B1/B2
		A		В
1	Tetai Loa	n		50000
2	No Ot Ins	talment	t	5
3	Amount F	Per Inst	alment	10000
4				
5	Goal Seek			
6	Set cell.		P2	
7	Sercen.		100	
8	To <u>v</u> alue:		5000	
9	By changin	ng cell:	\$8\$2	1
10				
11		0	ĸ	Cancel
12		Loo		

Seek dialog box

Set cell = B3 (Containing the installement amount)

To Value = 5000 ----- (The new installement value)

By Changing cell = B2.

(B2 is the New number of installment which are to be calculated)



Goal Seek Solution

6.4 Freezing Spreadsheet Titles

This feature is very helpful with large spreadsheet. You can freeze columns, Rows or Both so that the frozen titles remain fixed as you scroll through the sheet.

- 1. Select the Cells to freez.
- 2. Select the Windows menu and click on Freeze Panes option
- 3. Notice that a line appears on the document indicating Frozen area
- 4. As you scroll downwards, the frozen part stays stationary on the screen while the rest of the text moves
- 5. To Un-Frozen the cells Select the Windows menu and click on UNFreeze Papes option

	<u>File</u> <u>E</u> dit	<u>V</u> iew <u>I</u> n	isert F <u>o</u> rm	rzic <u>T</u> ools	Data Win	dow <u>H</u> elp						
D	🖻 🖪 🔒	8	🗟 🌮 🐰	h h		<u>H</u> ide	Z	1 10 18	100%	• 🛛 🗸		
Ari	ial		· 10 ·	BIU		Unhide	+.0 .00	.00 t# f	F .	ð - A -	•	
	A1	•	f* SNo			Ereeze Paries			1			
	A	В	C	D	E 🗸	1 Buok2		Н	1	J	K	Τ
1	S No	Name	Class	English i	lindi	2 Pook1	E	Ecnomics	Total	Percent	Average	
2	1	Sanjeev M	BA	67		ZOUKI	85	39				
3	2	Arun Bedi	BA	56	54	40		51				
4	3	Jatin	BA	68	54	55	53	62				
5	4	Teiali	BA	42	56	42	54	63				
6	5	Sudhir	BA	62	45	64	51	47				Τ
7	6	Harsh Kun	BA	75	48	65	37	52				
8	7	Sunita	BA	56	25	46	51	47				T
9	8	Babita Kur	BA	62	36	36	42	45				T
10	9	Sonia	BA	82	45	65	75	41				T
11	10	Ravinder	BA	65	48	42	61	44				
12	11	Roopa	BA	64	56	33	54	61				
13	12	Anita	BA	56	42	55	75	51				
14	13	Harjinder H	BA	35	43	65	54	75				T
15	14	Kulbir	BA	65	43	28	34	45				T
16												Ť

Freezing Panes

Splitting a window

Excel provides a way to view two different parts in a worksheet at the same time by splitting a worksheet window into two panes. This feature is useful if you need to refer to one part of a worksheet while entering or checking data in another part.

Each pane has its own scroll bars so that you can move around in it independently. There are two split bars- Horizontal and vertical that split your window into four panes.

Steps to apply

- 1 Click on the desired cell,
- 2 Select the Windows menu and click on Split .
- 3 The window will be divided into four parts
- 4 To remove any bar, place the pointer on it and double click it
- 5 Click on any cell of one window and scroll downwards.
- 6 You will notice that it is affecting only one window without touching the other one.

An	al		- 16 -	B / U		E E S	16 , .00	. 00 ¶≡ 1	F 🖽 🕶 🕯	🤊 - <u>A</u>	-
	H2	-	fx 35			<u> </u>					
	A	B	С	D	E	<u>.</u>	G	н		J	K
1	S No	Name	Class	English	Hindi	Estory	Pol Sc	Ecnomics	Total	Percent	Average
2	1	Sanjeev M	BA	67	35	46	85	39	272	54.4	5
3	2	Arun Bedi	BA	56	54	48	37	51	246	49.2	5
4	3	Jatin	BA	68	54	55	53	62	292	58.4	6
5	4	Tejali	BA	42	56	42	54	63	257	51.4	49
6	5	Sudhir	ЬА	62	45	64	51	47	269	53.8	53.5
7	6	Harsh Kun	BA	75	48	65	37	52	277	55.4	61.9
8	7	Sunita	br.	56	25	46	51	47	225	45	40.5
9	8	Babita Kur	BA	62	36	36	42	45	221	44.2	4
10	9	Sonia	BA	82	45	65	75	41	308	61.6	63.
11	10	Ravinder	BA	65	48	42	61	44	260	52	56.
12	11	Roopa	BA	64	56	33	54	61	268	53.6	6
13	12	Anita	BA	56	42	55	75	51	279	55.8	4
14	13	Harjinder k	BA	35	43	65	54	75	272	54.4	3
15	14	Kulbir	BA	65	43	28	34	45	215	43	54
16	15	Harinder	BA	63	85	54	45	65	312	62.4	74
17	16	Balwinder	BA	52	65	65	66	56	304	60.8	58.
18	17	Meena	BA	65	24	85	26	68	268	53.6	44.
19	18	Rinka	BA	45	65	64	35	64	273	54.6	5
20	19	Mukesh	BA	28	78	25	45	85	261	52.2	53
21	20	Jaswinder	BA	68	62	64	25	46	265	53	6
22	21	Heera	BA	65	92	34	48	75	314	62.8	78.
23	22	Om Parka	BA	26	35	65	65	56	247	49.4	30.5
24											
25											
26											
27											
28											

6.6 Printing of Worksheets

Page Setup

Ms-Excel offers different options for setting up worksheets to print

like: Margins, fonts, headers, footers and titles.

Steps to apply

Select File menu and choose Page Setup option. A following dialog box appears.

Orientation			Print
A [•] Portrait	C Landsca	ħ.e	Print Pravie
Scaling			Options
Paper si <u>v</u> e: A4			 -]
Print guality: 600 dpi			-

Page Stepup dialog box

Page tab has the following options.

Orientation:

Select Portrait for tall printout and Landscape for wide Printout

Scaling- Adjust to:

It allows to enlarge or reduce the printed Worksheet without changing the size of the on screen display.

Scaling Fit to:

It fits a worksheet on to a specific number of pages, based on how many pages wide and how many pages tall the worksheet to be printed. If this option is selected, then Excel ignores page breaks, if any and fit the entire worksheet or print area to the specified number of pages.

Paper Size-

Select the required paper size from the drop list

Print Quality –

Select the required resolution(dpi) from list.

First Page Number

It helps to begin numbering at specified page number.

Margins Tab

Top, Pottom, Left, Right- in these options set margins (from the edge).

Center on page it allows you to see center the print area vertically or horizontally between margins.

Header/Footer Tab

Header are printed at the top of every page and footers at the end of every page. Headers are mostly used for company names and report titles and footers are commonly used for page numbers and print out dates/times

To create custom Headers\Footers:

- Click on the **Custom Header** and customize **headers/footers**. A dialog box appears with three text boxes as shown below
- Left Selection allows setting a header/footer to the left of the page
- **Center Selection** allows setting a header/footer to the center of the page
- **Right Selection** allows setting a header/footer to the right of the page

More Features of MS-Excel

Page Setup	2 3	54.4 51			
Page Margins Header/Footer Sheet		49.2 00 <u>co 4</u> <u>c1</u> Header			? x
Header: (none)	Print Print Preview Options	To format text: select the te To insert a page number, dat insertion point in the edit To insert picture: press the In cursor in the edit box and	xt, then choose the font button. e, time, file path, filename, or tab i box, then choose the appropriate i sert Picture button. To format you press the Format Picture button.	name: position the button. ur picture, place the	OK Cancel
Custom Header Eooter: (none)		Left section:		Right section:	
			•	+	T
OK	Cancel	53 65 62.8 70.5			

- Click on specific section where the header/footer has to be entered
- Type text into any of these three sections and click OK

Sheet Tab

Print Area – Select the area of worksheet you desire to print

Print Titles- Select or type rows/columns to print on every page

Gridlines- Clicking on this option turns the gridlines on\off

Black and white- It prints all pages in black and white.

Comments – This option allows printing cell comments either in place or at each end of sheet

Draft Quality option does not permit printing of , gridlines, graphics and many types of cell formatting.

Rows and Column Headings- This includes rows and Columns on the printed page.

Page order- In this option select page order for multiple page worksheets

Unit 6

Print Preview.

Before we actually go for printing the worksheet, we first need to see the latest setting on the screen itself. This is possible through Print Preview. Print Previewing allows us to see the entire page or all the pages of the worksheet before printing. It gives us a complete idea as to where and how the text will be printed. For this, under take the following steps

Select File menu and click on Print Preview option The following box appears

Microsoft Excel - Book2									
Next Previous Zoom	Prin <u>t</u> <u>S</u> e	tup Marg	gins Page	Break Pre <u>v</u> iev	<u>C</u> lore	<u>h</u> ide			
				\wedge				\nearrow	
S No	Nama	Class	English	Hindi	History	Pol Sc	Ecnomi	letoT an	
0110	1 Sanieev M	BA	Cirginan S	7 3	15	46	85	39	272
	2 Arun Bedi	SA	5	6 6	4	48	37	51	246
	3 Jatin	BA	6	B 5	4	55	53	62	292
	4 Tejali	BA	4	2 5	6	42	54	63	257
	5 Sudhir	BA	6	2 4	5	o4	51	47	269
	6 Harsh Kun	r BA	7	5 4	9	65	37	52	277
	7 Sunita	BA	5	5 2	25	46	51	47	225
	3 Babita Kur	BA	S.	? / ?	o	36	42	45	221
	9 Sonia	BA	8	2 4	5	65	75	41	308
\sim	10 Ravindar	BA	6	5 4	8	42	61	44	260
	11 Roopa	BA	6	4 5	6	33	54	61	268
	12 Anita	BA	5	5 4	2	55	75	51	279
	13 Harjinder H	BA	3	5 4	3	65	54	75	272
	14 Kulbir	BA	6	5 4	3	28	34	45	215
	15 Harinder	BA	6	3 8	15	54	45	65	312
	16 Balwinder	BA	5	2 6	5	65	66	56	304
	17 Meena	EA	6	5 2	24	85	26	68	268
	18 Rinka	BA	4	5 6	5	64	35	64	273
	19 Mukesh	BA	2	B 7	8	25	45	85	261
2	20 Jaswinder	BA	6	8 6	2	64	25	46	265
2	21 Heera	BA	6	5 9	2	34	48	75	314
2	22 Om Parka	8 BA	2	5 3	15	65	65	56	247

If the layout of the worksheet looks as per your requirments, click Print or else make necessary changes and then click Print

Printing Worksheets

- 1. Turn your printer ON
- 2. Select **Print** option from the **File menu**. A dialog box will be displayed
- 3 In that box select Printer, Page Range, Print What etc.
- 4 Click on **OK.**

Drinter			
Name:	HP PSC 1400 series	-	Properties
Status: Type:	Printing; 1 document(s) waiting HP PSC 1400 series		Fin <u>d</u> Printer
Where: Comment:	USB002		🔲 Print to file
Print range • <u>A</u> ll • Page(s)	From: To:	Copies Number of <u>c</u> opies:	1
Print vinat C Selectio C Active s	n C Entire workbook heet(s)		☑ C <u>o</u> llate
Pi evie <u>w</u>		ок	Cancel

You can also change prining options from the properties of the printer.

Profile:	s v 🖓	Output Method: 🖓 Print
	Page Size:	A4 Match Page Size
	Copies: Orientation	1 (1 to 999) A) Portrait A) Landscape
	Page Layout:	1 Page per Sheet
A4 (Scaling: Auto)	Scaling:	100 🚔 % [25 to 200]
View Settings	Watermark:	CONFIDENTIAL Edit Watermark
	Custom Paper Size	Page Options Restore Defaults

Self-Assessment Questions

- 1) Write the steps for creating a custom list of Names.
- 2) Write a short note on freezing and splitting.
- 3) Write a short note on Paste Special.

Lab session • Create the following Custom List

- "computer" "lap-top" "supply", "mother board", "ram", "bois"," keyboard", "mouse", "monitor"
- A person takes a loan of 10000 and pay 5 equal instalments. Use Goal Seek option to calculate if instalment is going to change to 1000.

	Α	E	С	D	E	F	G	Н		J	K
1	S No	Name	Class	English	Hindi	History	Fol Sc	Ecnomics	Total	Percent	Average
2	1	Sanjeev M	BA	67	35	4.0	85	39	272	54.4	51
3	2	Arur, Bedi	BA	56	54	48	37	51	246	49.2	55
4	3	Jatin	BA	68	54	55	53	62	292	58.4	61
5	4	Tejali	BA	42	56	42	54	63	257	51.4	49
6	5	Sudhir	BA	62	45	64	51	47	269	53.8	53.5
7	6	Harsh Kun	BA	75	48	65	37	52	277	55.4	61.5
8	7	Sunita	БA	56	25	46	51	47	225	45	40.5
9	8	Babita Kur	BA	62	36	36	42	45	221	44.2	49
10	9	Sonia	BA	82	45	65	75	41	308	61.6	63.5
11	10	Ravinder	BA	65	48	42	61	44	260	52	56.5
12	11	Roopa	34	64	56	33	54	61	268	53.6	60
13	12	Anita	BA	56	42	55	75	51	279	55.8	49
14	13	Harjinder K	BA	35	43	65	54	75	272	54.4	39
15	14	Kulbir	BA	65	43	28	34	45	215	43	54
16	15	Harinder	BA	63	85	54	45	65	312	62.4	74
17	16	Balwinder	BA	52	65	65	66	56	304	60.8	58.5
18	17	Meena	BA	65	24	85	26	68	268	53.6	44.5
19	18	Rinka	BA	45	65	64	35	64	273	54.6	55
20	19	Mukesh	BA	28	78	25	45	85	261	52.2	53
21	20	Jaswinder	BA	68	62	64	25	46	265	53	65
22	21	Heera	BA	65	92	34	48	75	314	62.8	78.5
23	22	Om Parka	BA	26	35	65	65	56	247	49.4	30.5
-											

• Freeze Titles of worksheet given bellow.

• Select the range of cells from B1to B16 and G1 to G16. Print the selected range.

