Part – I Working with OpenOffice Calc

7.1 Introduction to spreadsheet

Spreadsheet is a very useful office automation tool to organise, analyse and store data in a tabular form. Spreadsheet was developed as computerized equivalent to paper-based accounting worksheets.

Spreadsheet users can adjust any of the stored values and can observe the effects on the calculated values. This is called "What if" analysis. Modern spreadsheet can have multiple interacting sheets and can display data either as text or numerals or in a graphical form.

7.1.1 Evolution of Spreadsheet

Daniel Bricklin and Bob Frankston developed the first spreadsheet called "VisiCalc" in 1979 for Apple II. In 1982, Lotus Corporation introduced "Lotus 1-2-3"; Lotus 1-2-3 was the first to introduce cell names and macros. In 1987, Microsoft Corporation introduced Excel. Excel implemented a Graphical User Interface (GUI) and the ability to point and click using a mouse. There are lots of other spreadsheet applications; Microsoft Excel continues to be the most popular spreadsheet software.

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DO YOU KNOW?

Daniel Singer "Dan" Bricklin The Father of Spreadsheet

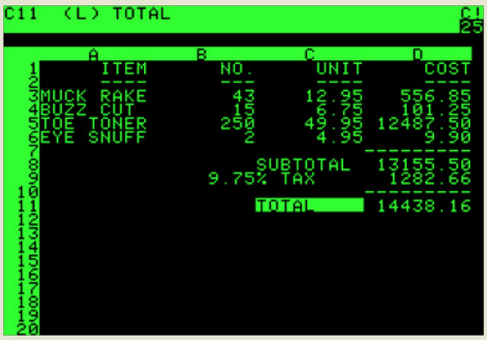
Daniel Singer "Dan" Bricklin (born 16 July 1951), often referred to as "The Father of the Spreadsheet", is the American co-creator, with Bob Frankston, of the VisiCalc spreadsheet. He also founded Software Garden, Inc., of which he is currently President of Trellix Corporation, which is currently owned by Web.com. He currently serves as the Chief Technology Officer of Alpha Software.

OpenOffice Calc is a popular open source spreadsheet application maintained by Apache Foundation. StarOffice calc was the parent application of OpenOffice Calc which was developed by a German Company namely, Star Division in 1985.

7.2 Working with OpenOffice Calc

Calc is the spreadsheet component of OpenOffice. You can enter any kind of data in a spreadsheet and then manipulate this data to produce certain results. Alternatively, you can enter data and then use Calc in a 'What If...' manner by changing some of the data and observing the results without having to retype the entire spreadsheet.

First Spreadsheet



VisiCalc ("Visible Calculator") was the first spreadsheet for personal computers, originally released for the Apple II by VisiCorp. It is considered that VisiCalc turned the microcomputer from a hobby for computer enthusiasts into a serious business tool, prompting IBM to introduce the IBM PC, two years later. It was sold over 700,000 copies in six years, and as many as 1 million copies over its history.

7.2.1 Features of OpenOffice Calc:

- **Connecting with Excel** - Ability to open, edit, and save Microsoft Excel spreadsheets
- **AutoSum** - helps you to add the contents of a cluster of adjacent cells.
- **List AutoFill** - automatically extends cell formatting when a new item is added to the end of a list.
- **AutoFill** - allows you to quickly fill cells with repetitive or sequential data such as chronological dates or numbers, and repeated text. AutoFill can also be used to copy functions. You can also alter text and numbers with this feature.
- **Charts** - helps you in presenting a grvaphical representation of your data in the form of Pie, Bar, Line charts and more.
- **Functions**: which can be used to create formula to perform complex calculations on data
- **Database functions:** to arrange, store, and filter data

7.3 Creating a new worksheet

A new spreadsheet can be created through various methods. From windows, select

Start → All Programs → OpenOffice → OpenOffice Calc (or)

From Star Center (Welcome Screen):

Double-click on ***"OpenOffice" icon*** the desktop

Now, a welcome screen appears as shown in Figure 7.1.

This open screen is called as ***"Star Center"***. Calc is one of the component of OpenOffice. So, it may be invoked from the ***"Star Center"*** by simply clicking on the ***"Spreadsheet" icon***. (or)

A new spreadsheet can also be created by selecting **File → New → Spreadsheet** from any OpenOffice Application. After using any one of the above said methods, OpenOffice Calc window appears as shown in Figure 7.2. The outline of the window is very similar to other application windows of OpenOffice. The main area of the Calc window is called as "Work area" or "Worksheet".

A worksheet is a grid of cells with a programmable calculator attached to each cell. When you open a new spreadsheet, there are three worksheets available by default. You can include more sheets and organize them.

Figure 7.1 Opening Screen (Star Center) of OpenOffice

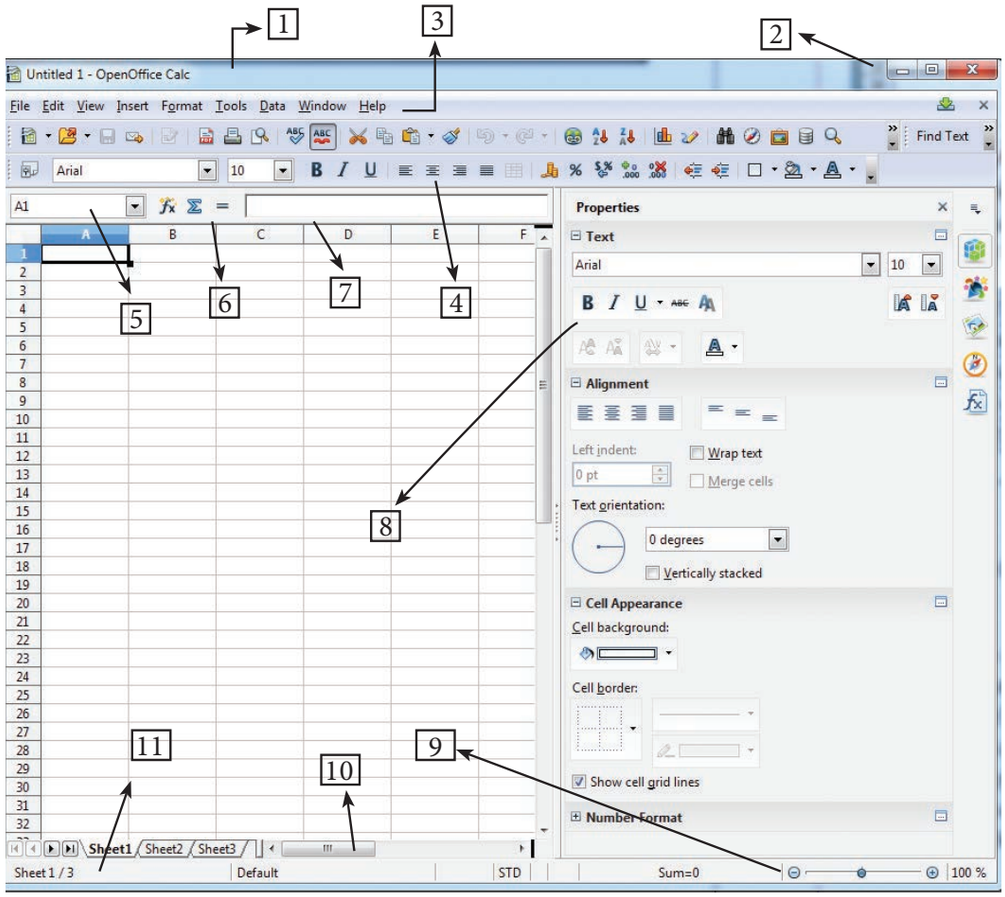


Fig 7.2 OpenOffice Calc Window

1. Title Bar	2. Control Buttons
3. Menu Bar	4. Tools Bar
5. Name Box / Address Box	6. Quick Function Wizard
7. Formula Bar / Input Line	8. Formatting Properties
9. Zoom	10. Scroll bar
	11. Status Bar

7.3.1 Parts of the OpenOffice Calc Window

Appearance of the Calc window is very similar to that of the Writer window. The workspace of writer is a big blank area. But, in calc, the grid of cells is the workspace.

7.3.1.1 Title Bar

Top of the window is called the "Title Bar". It is used to show the name of the file and name of the application. In OpenOffice calc, the default name for the first unsaved worksheet is "Untitled1". When you save the file, Untitled will change to the name in which you saved.

7.3.1.2 Control Buttons:

In the right corner of title bar, (1) minimize, (2) maximize / restore and (3) close control buttons are available.

7.3.1.3 Menu Bar

Below the title bar is menu bar. Most of the menus are very similar to what you learnt in OpenOffice Writer.

File - menu contains the commands of all file management tasks like, Create a new file, Open an existing file, Close the current file, Save a file, Save a file in another name, print file, Export file etc.

Edit - menu contains the editing commands like, cut, copy, paste, Undo, Redo, Fill etc., Most of the menu items are similar to Writer Edit menu. But, for Calc, some special editing options are available under this menu.

View - menu contains the commends which are used to modify the environment of calc.

Insert – menu contains commands for inserting various calc elements such as cells, columns, rows, functions, charts etc.,

Format – menu contains the commands of various text and cell formatting features.

Tools – menu contains various tools and functions such as spell check, protect document, insert pictures, macros, etc.,

Data – menu contains the commands to manipulate data in a spreadsheet such as sort, filter, subtotal, validity etc.,

Window – menu shows display options such as New Window, Close Windows, Split and Freeze.

Help – menu lists in-built help features available with OpenOffice.

7.3.1.4 Tools Bar

Under the menu bar, there are three toolbars available by default. They are:

(1) Standard Toolbar (2) Formatting Toolbar (3) Formula bar

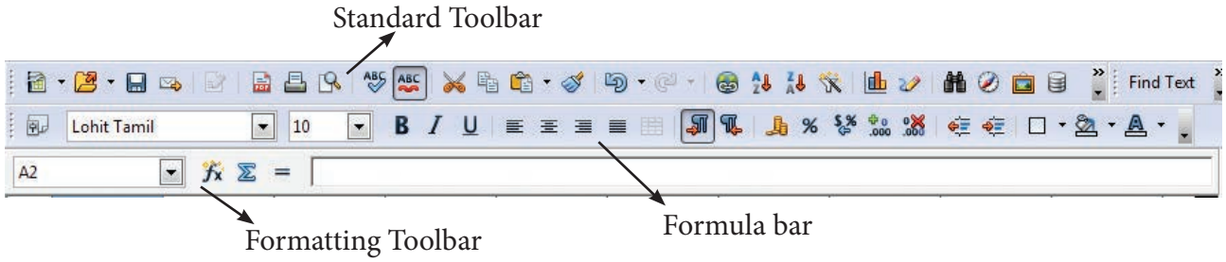


Fig. 7.3 OpenOffice Calc Toolsbar

Standard Toolbar – contains frequently used File, Edit and Data menu commands as icons such as New Open Save, Send, print, print preview, Cut, Copy, Paste, Sorting, inserting chart etc.,

Formatting Toolbar – contains frequently used text and cell formatting commands as such as changing font style, font size, font colour, alignments, cell formatting etc.,

Formula bar – This is a very important element in a spreadsheet. It contains Name box, Function Wizard, Sum button, Function button and Input line (Refer Figure 7.4).

Name box : It display the current cell address

Function Wizard : It is used to insert function

Sum button : It is used to quickly insert sum function.

Input Line : This is used to show the contents of the current cell. It always shows actually what you typed in a cell. It is also used to edit the contents.

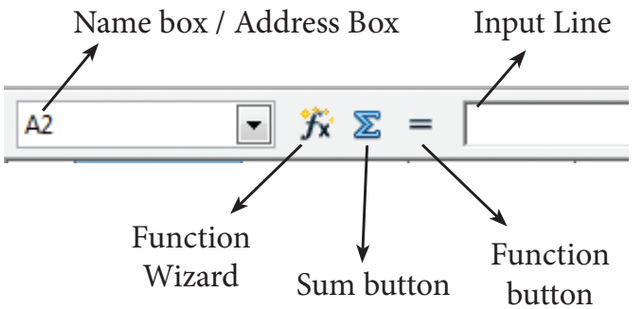


Fig. 7.4 Calc Formula bar

7.3.1.5 Scroll bar

Spreadsheet window also has two sets of scrolling bars (1) Vertical Scrollbar and (2) Horizontal Scrollbar (Refer Figure 7.5)

Vertical Scroll bar : It is used to move the screen up and down.

Horizontal Scroll bar : It is used move the screen left and right.

Scroll buttons : used to move the screen to the relative distance.

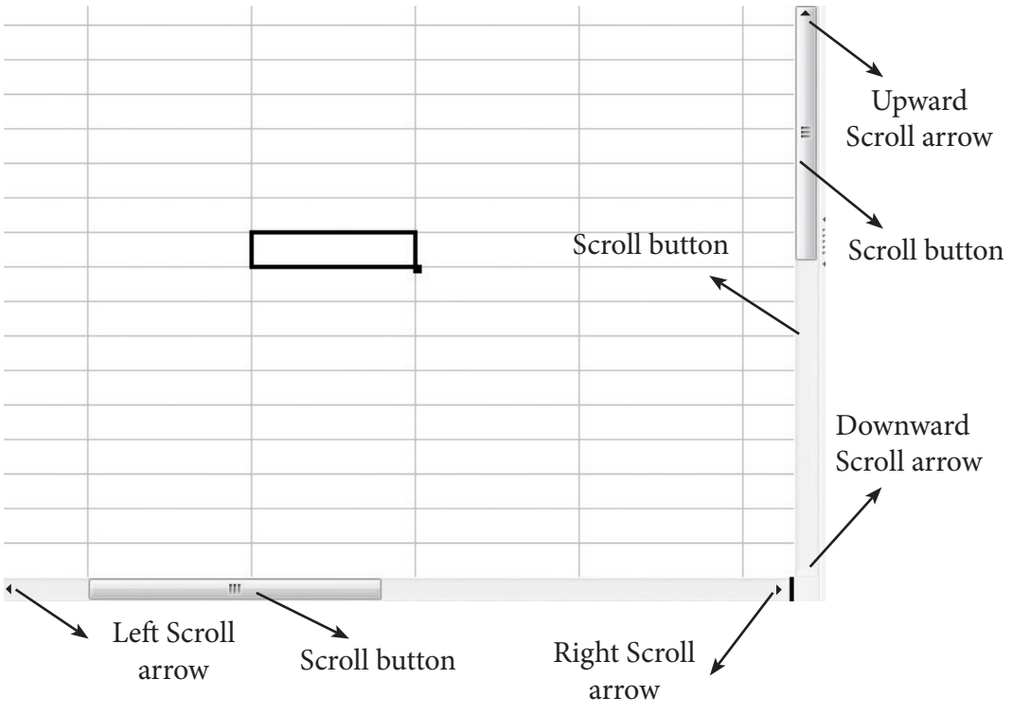


Fig. 7.5 Calc Scrolling bar

7.3.1.6 Row, Column, Cell and Cell Pointer

Below the formula bar contains the worksheet of work area which consit of grid cells The worksheet has number of rows and columns, where each column is labelled as A, B, C, D ….. AA, AB, AC ….. and the rows are numbered from 1, 2, 3 …. (Figure 7.6).

OpenOffice Calc version 4.1.5 contains 1024 columns and 10,48,576 rows. Column heading starts from A and end with AMJ. In the case of Microsoft Excel 2016, there are 16,384 columns (A to XFD) and 10,48,576 rows available.

Cell

Intersection of each row and column makes a box which is called as "Cell". Each cell has its unique address. Cell address is the combination of column heading and row number. For example, the intersection of column B and row 4 makes a cell B4. (Figure 7.7). Every cell is thus identified by its unique cell address.

Cell pointer is a rectangle box which can be moved around the worksheet. The cell in which the cell pointer is currently located is known as **"Active cell".** When you type anycontent, it will appear in the active cell. The address of the active cell is displayed in the Name box / Address box. Active cell's column name and row number will be highlighted. Using this visual clue, one can easily identify an active cell. Moreover, the contents of an active cell will be displayed in the formula bar.

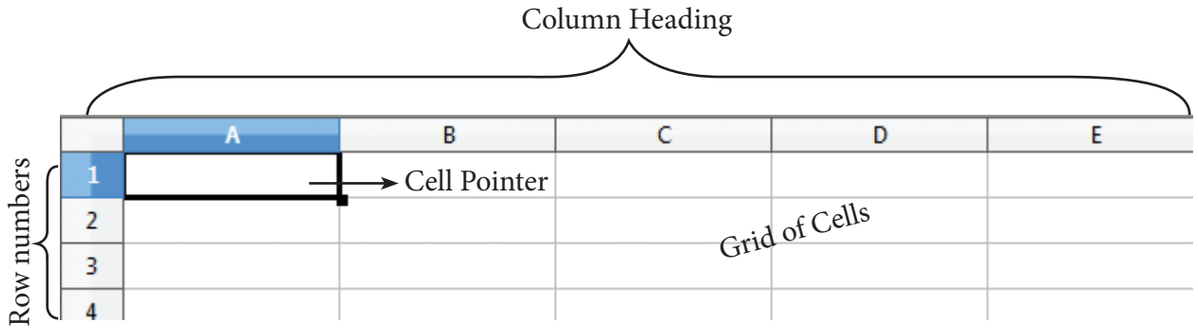


Fig. 7.6 Calc Rows, Columns, Cells

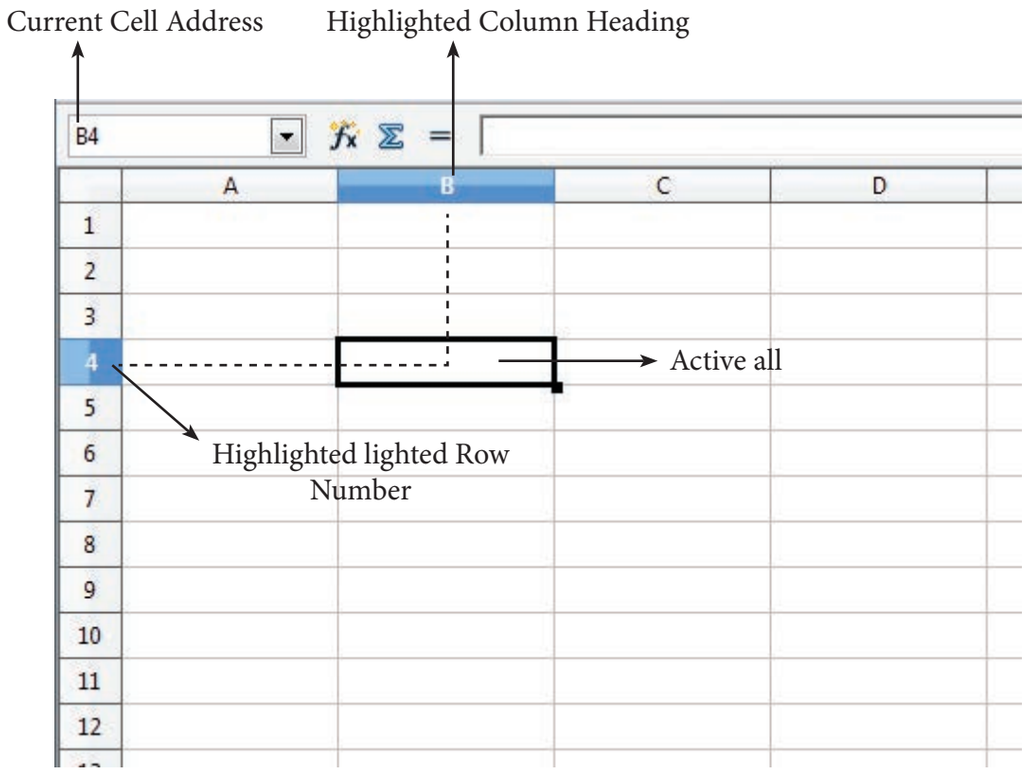


Fig. 7.7 Cells, Rows and Columns

7.3.1.7 Worksheet tabs:

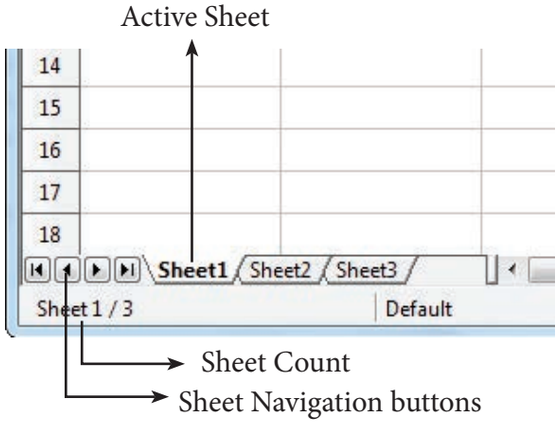
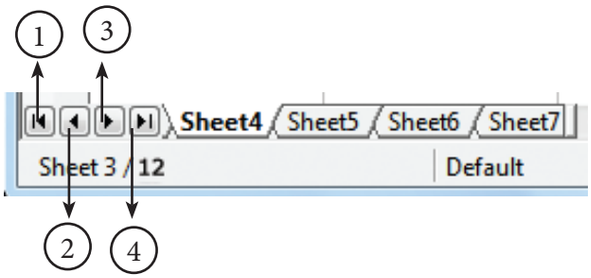


Fig. 7.8 Calc Sheet Tab

At the bottom of the grid of cells are the sheet tabs. By default there are 3 sheets "Sheet1", "Sheet2" and "Sheet3", (Figure 7.8). When you open a new worksheet, sheet1 is the default active sheet. Active sheet tab will appear in white colour. If you click on another sheet, it will become active and its colour will turn white. Multiple sheets can also be selected by clicking the sheet and press the Ctrl button (Ctrl + Click). Selected sheets will turn to white colour.

On the left of the sheet tab, four navigation buttons are used to move between worksheets (Figure 7.9).



(1) Move to the First sheet

(2) Move to the previous sheet

(3) Move to Next sheet

(4) Move to the Last sheet

Fig. 7.9 Calc Sheet tab and Navigation buttons

Left corner of status bar shows the total count of sheets and the present active sheet number. For example, if the status bar shows sheet 3/12; 3 refers to the serial number of the current sheet and 12 refers to the total number of sheets available.

Every sheet name can be renamed. To rename a sheet, just double-click on the sheet, which will show a small box as shown in Figure 7.10.

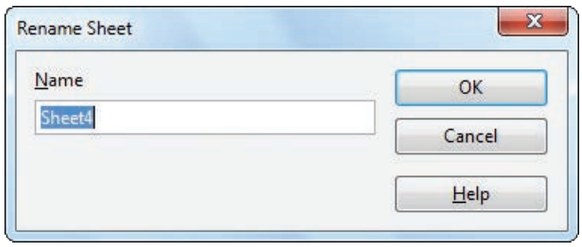


Figure. 7.10 Rename Sheet dialog box

It shows the current name; delete or overwrite the existing name and type a new name; click OK button. New name will be displayed on the sheet.

7.3.1.8 Status bar

Below the sheet tabs and horizontal scrolling bar is the "Status Bar". It shows the current status of the worksheet (Refer Figure 7.11).

Sheets count: Displays current serial number of the sheet / total number of sheets available.

Page Style: Displays the page style of the current sheet. To make changes, just double-click on "Default" and it will show you the "Page Style" dialog box, which is used to change the margin, orientation, paper size, inserting header, footer, border style etc.,

Selection Mode: Displays the selection mode of the current sheet. There are three modes available to select the cells of a worksheet. They are, Standard (STD), Extend (EXT) and Add (ADD).

Unsaved Changes: An asterisk (*) symbol indicates the changes made in the worksheet but not yet saved. If you have saved your changes, it will disappear.

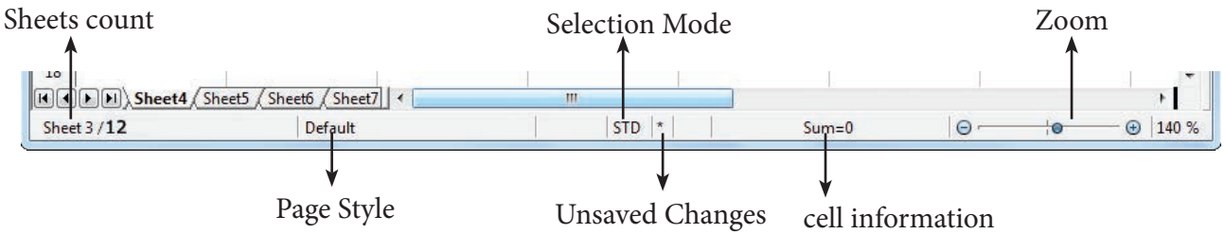


Fig. 7.11 Calc Status bar

7.4 Working with Data

When you open a new spreadsheet, the cell pointer is located in cell A1. So, the Cell A1 is known as **"Home Cell".** Cell pointer can be moved anywhere in the spreadsheet using the direction keys.

"Tab key" is used to move the cell pointer towards the right side or forward direction. **"Shift+Tab"** is used to move backward i.e. from right to left in a row. **"Enter" key** is also used to move the cell pointer. Enter moves the cell pointer to a cell below the current cell i.e. downwards. Four "direction keys" are used to move the cell pointer anywhere in the worksheet.

7.4.1 Entering Data:

Any data can be typed directly in any cell of the worksheet. But, the cell in which you type data should be an active cell. So, move the cell pointer to a particular cell to make it active cell; or click any cell to make it active cell. Then, start typing any data. When you type data, spreadsheet recognises the type of data entered in cells.

Data types:

Data are in different types. Data are made up of alphabets, numbers, Date and time is another data type even though it has numbers and symbols. In general, data types are classified as:

Alphabetic data type – consists of alphabets only **Numeric data type** – consists only of numbers (whole number or fractional numbers) **Alphanumeric data types** – consists of a combination of alphabets and numerals **Date data type** – consists only of date **Time data type** – consists only time

7.4.1.1 Entering Numbers:

Any numeric data can be entered in a spreadsheet. Entered numbers are aligned to the right side within the cell by default. Negative numbers may be entered with a minus sign or within brackets (Refer Figure 7.12). If you enter any number within the bracket, it will be changed as negative number i.e., number prefixed with minus. If any number starts with 0 (zero); Calc will drop the leading zero.

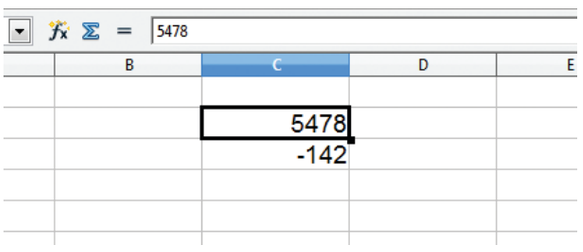


Figure 7.12 Entering data

7.4.1.2 Entering Text:

Unlike numbers, any character can be entered as data in Calc. Entered text will be aligned to the left side within the cell by default. When you enter any numeric value, if it has aligned left, it is understood that the entered content is not a number. If there is any number that starts with a single quote, calc converts that number to text (Refer Figure 7.13).

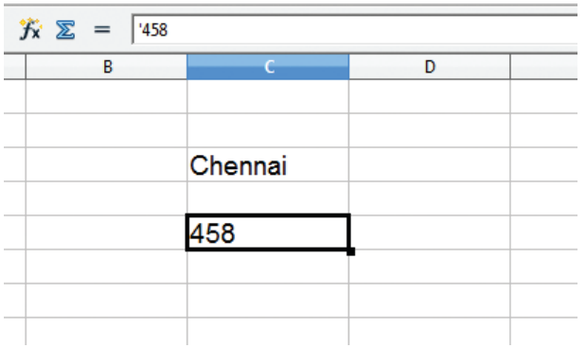


Figure 7.13 Entering Text

7.4.1.3 Entering Date and Time:

Before entering date, ensure the format of your system date. Calc accepts date as per the system date format. If your system has American date format i.e. month-date-year; you should enter dates in Calc spreadsheet as mm/dd/yy. If your system follows the Indian date format, date should be entered as dd/mm/yy form in Calc. Only the correct form of date is accepted by Calc as a date.v

For example: If your system has American Date format, 18th December 2017 should be entered as 12/18/17. As soon as the date is typed in the correct form, the entered date will be aligned on the right side within the cell, and if you place the cell pointer in that cell, the formula bar shows your date as "12/18/2017" (Figure 7.14). This is a visual clue to know whether the date is accepted or not.

A Date format can be changed to any other valid form using "Cell Formatting" dialog box, and it will be discussed later.

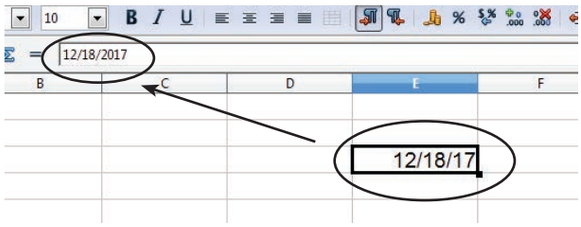


Fig. 7.14 Entering Date

Like dates, for entering time, calc follows the general format HH:MM:SS. where HH, MM and SS represent hours, minutes and seconds respectively.

Different Date Formats

Order styles	Countries
DD/MM/YYYY	Asia (Central, SE, West), Australia, New Zealand, parts of Europe, Latin America, North Africa, India, Indonesia, Bangladesh and Russia
YYYY/MM/DD	Bhutan, Canada, China, Koreas, Taiwan, Hungary, Iran, Japan, Lithuania, Mongolia.
MM/DD/YYYY	United States, Federated States of Micronesia, Marshall Islands
DD/MM/YYYY and MM/DD/YYYY	Malaysia, Nigeria, Philippines, Saudi Arabia, Somalia
DD/MM/YYYY and YYYY/MM/DD	Afghanistan, Albania, Austria, Czech Republic, Germany, Kenya, Macau, Maldives, Montenegro, Namibia, Nepal, Singapore, South Africa, Sri Lanka, Sweden.

7.5 Creating Formulae

After entering the data in worksheet, you can perform calculations on the data in the worksheet. In order to create formulae, you first need to know the syntax that describes the format for specifying a formula.

In Calc, you can enter formulas in two methods, either directly into the cell or at the input line. Formula in Calc may start with equal (=) or plus(+) or minus(–) sign followed by a combination of values, operators and cell references. But, as a general practice, all formulas should start with an equal sign. If any formula starts with a + or –, the values will be considered as positive or negative respectively.

7.5.1 Operators

Operators are symbols for doing some mathematical, statistical and logical calculations. Combination of values, operators and cell references is called as "Expression". Calc supports a variety of operators which are categorized as:

(1) Arithmetic Opertors

2) Relational Operators

(3) Reference Operators

(4) Text Operator

7.5.1.1 Arithmetic Operators

Arithmetic operators are symbols for performing simple arithmetic operations such as addition, subtraction, multiplication, division etc., These operators return a numerical result.

Operator	Name	Value in Column B	Value in Column C	Formula in Column D	Result in Column D Operator
+	Addition	98	25	= B3 + C3	123
-	Subtraction	125	25	= B3 – C3	100
*	Multiplication	25	5	= B3 * C3	125
/	Division	90	10	= B3 / C3	9
^	Exponent	25	2	= B3 ^ C3	625
%	Percent	600		= B3 * 35%	72
Percentage (%) operator shows percentage of the content.					

Table 7.1 List of Arithmetic Operators

Formula bar shows the formula what the user had entered. But, the cell shows the resulted value (Figure 7.15).

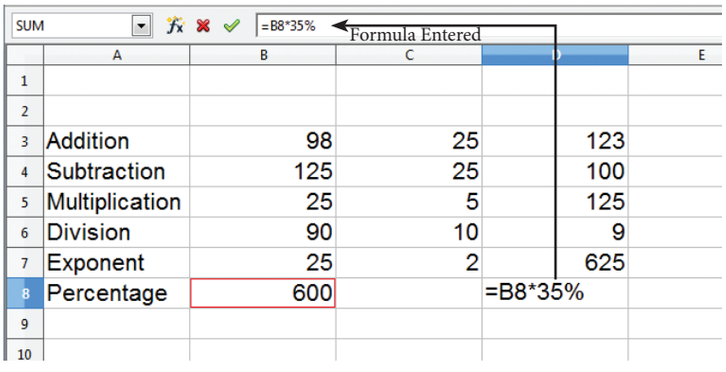


Figure 7.15 Percentage Operator

7.5.1.2 Relational Operators

Relational operators are symbols used for comparing two values such as greater than, less than, equal to etc. The relational operators are also called as ***"Comparative operators".*** These operators return either a True or a False.

Operator	Name	Value in Column B	Value in Column C	Formula in Column D	Result in Column D
>	Greater than	98	100	=B3>C3	FALSE
>=	Greater than or equal to	85	72	=B3>=C3	TRUE
<	Less than	54	24	=B3<C3	FALSE
<=	Less than or equal to	55	55	=B3<=C3	TRUE
=	Equal to	12	12	=B3=C3	TRUE
<>	Not equal to	54	45	=B3<>C3	TRUE

Table 7.2 List of Relational Operators of cells.

7.5.1.3 Reference Operator

Reference operators are used to refer cell ranges. **A continuous group of cells is called as "Range".** There are three types of reference operators that are used to refer cells in calc; they are (1) Range Reference Operator, (2) Range Concatenation (3) Intersection Operator.

Range Reference Operator

Colon (:) is the range reference operator. It is used to group a range of cells. An expression using a range operator has the following syntax:

reference left : reference right

where reference left is the starting cell address of a linear group of cells or upper left corner address of a rectangular group

Reference right is the last cell address of a linear group or lower right corner address of a rectangular group of cell.

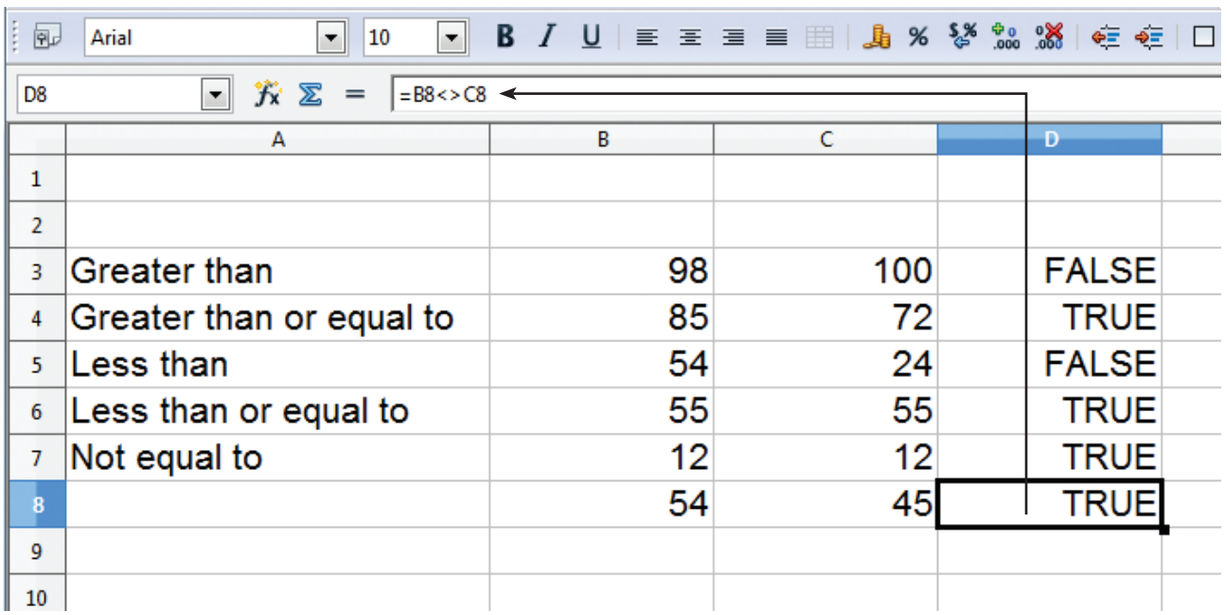


Figure 7.16 Entering Relational Operator

Example:

(i) Linear group of cells A1, A2,A3,A4,A5 is referred as A1:A5

(ii) Rectangular group of cells A2, A3, A4, ….. B2, B3, B4,….D5, D6 is referred as A2:D6 (Refer Figure 7.17)

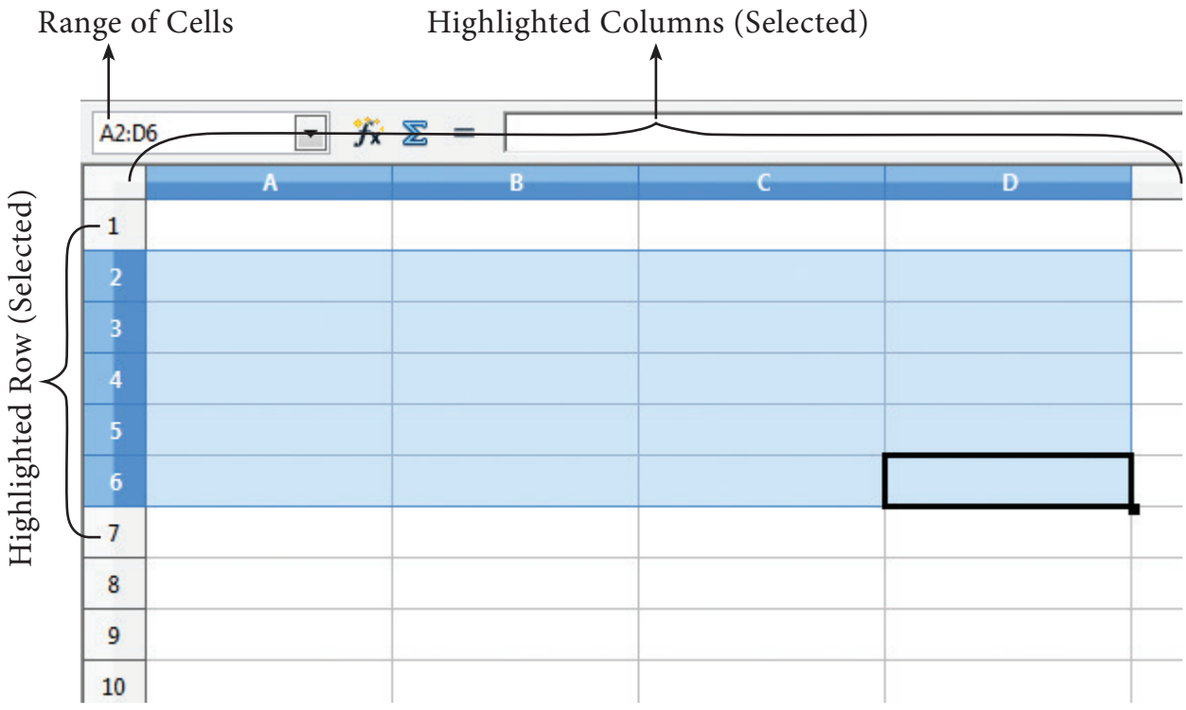


Figure 7.17 Range of selected cells

Name box shows the reference A2:D6 corresponding to the cells included in the drag operation with the mouse to highlight the range.

Reference concatenation operator:

Concatenation means joining together. Tilde (~) symbol is used as a concatenation operator in calc. An expression using a concatenation operator has the following syntax:

reference left ~ reference right

Example:

If you want to find the sum of the values from A1 to A6 and C3 to F3. The formula is **=SUM(A1:A6 ~ C3:F3)**

SUM is a function to find the sum of a group of values.

Intersection Operator:

Intersection operator is used to join two set of groups. It is very similar to Range concatenation operator. The intersection operator is represented by an exclamation

reference left ! reference right

Example: (A2:D3 ! B2:E4)

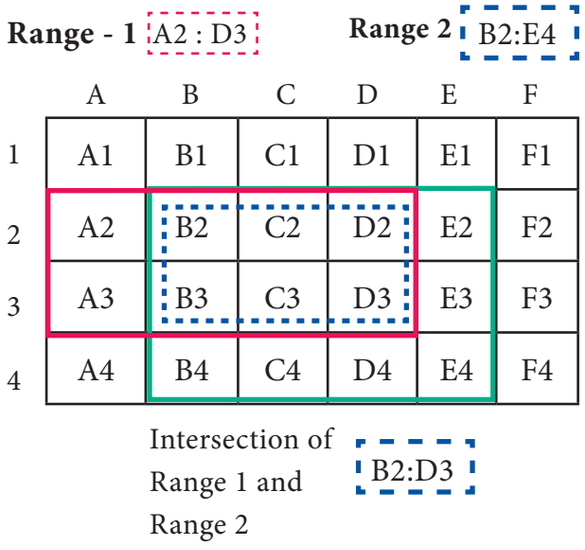


Figure 7.19 Intersection operator

The result of (A2:D3 ! B2:E4) is referred by the range B2:D3, because these cells are both inside A2:D3 and B2:E4 (Refer Figure 7.19 and 7.20).

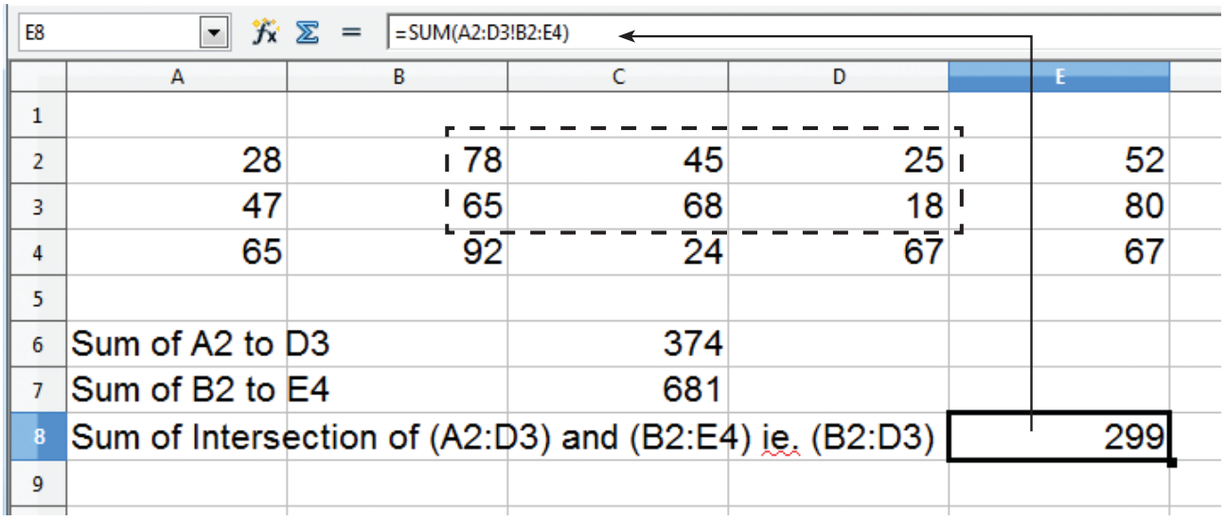


Figure 7.20 Worksheet with Intersection operator

7.5.1.4 Text Operator:

In Calc, "&" is a text operator which is used to combine two or more text. Joining two different texts is also known as "Text Concatenation" (Refer Figure 7.23). An expression using the text operator has the following syntax:

text reference1 & *text reference2*

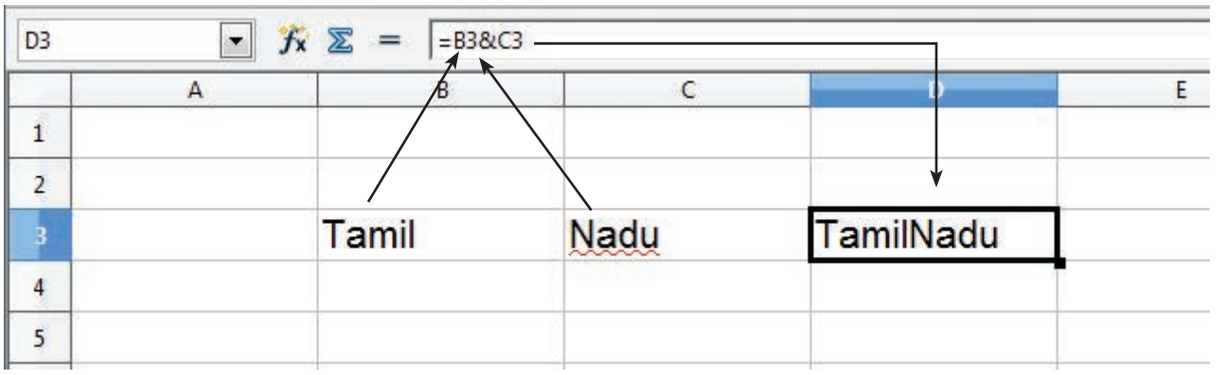


Figure 7.21 Text operator

When arithmetic operators are used in a formula, Calc calculates the results using the rule of precedence followed in Mathematics. The order is:

I. Exponentiation (^)

II. Negation (-)

III. Multiplication and Division (*, /)

IV. Addition and Subtraction (+, -)

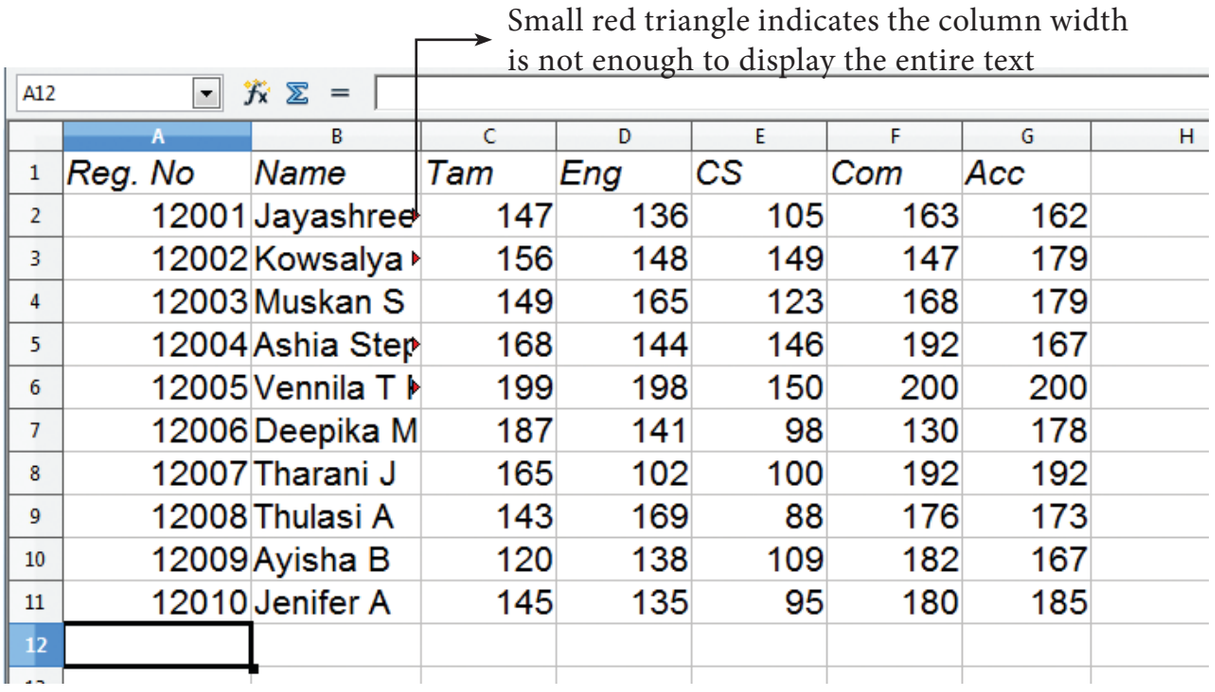
Here is an example to illustrate how to create a formula:

Illustration 1:

Create a Marks worksheet with the following data:

Reg. No	Name	Tam	Eng	CS	Com	Acc
12001	Jayashree J	147	136	105	163	162
12002	Kowsalya T	156	148	149	147	179
12003	Muskan S	149	165	123	168	179
12004	Ashia Stephy R	168	144	146	192	167
12005	Vennila T P	199	198	150	200	200
12006	Deepika M	187	141	98	130	178
12007	Tharani J	165	102	100	192	192
12008	Thulasi A	143	169	88	176	173
12009	Ayisha B	120	138	109	182	167
12010	Jenifer A	145	135	95	180	185

After completing the data entry, your worksheet will look as shown in Figure 7.22.



	A	B	C	D	E	F	G	H
1	Reg. No	Name	Tam	Eng	CS	Com	Acc	
2	12001	Jayashree	147	136	105	163	162	
3	12002	Kowsalya	156	148	149	147	179	
4	12003	Muskan S	149	165	123	168	179	
5	12004	Ashia Step	168	144	146	192	167	
6	12005	Vennila T I	199	198	150	200	200	
7	12006	Deepika M	187	141	98	130	178	
8	12007	Tharani J	165	102	100	192	192	
9	12008	Thulasi A	143	169	88	176	173	
10	12009	Ayisha B	120	138	109	182	167	
11	12010	Jenifer A	145	135	95	180	185	
12								

Figure 7.22 Worksheet Illustration

7.5.2 Construction of formula

To construct a formula, follow the steps below:

- Cell pointer should be in the cell in which you want to display the result.
- Formula should begin with an = sign.
- In a formula, use only cell reference (cell addresses) instead of the actual values within the cells.
- While constructing a formula, ***BODMAS rule*** should be kept in mind.
- General Syntax of constructing a formula is: ***= cell reference1 <operator> cell reference2 <operator> ……***
- Cell references are of two types (i) Relative cell reference (ii) Absolute Cell reference.
- If you refer cell addresses directly while constructing formulae, it is called as "Relative Cell reference".
- Examples of Relative Cell references:

Adding values of A1, B1, C1, D1	=A1+B1+C1+D1
Subtract E4 from H3	= H3 – E4
Multiply A5 and B5	= A5 * B5
Average of G1, G2, G3, G4	=(G1+G2+G3+G4)/4

- In the above table, all cell references are “Relative cell references”.
- While writing a formula, if you use the $ symbol in front of a column name and row number, it will become an “Absolute Cell reference”.
- Examples of Absolute cell references:

Adding values of A1, B1, C1, D1	=$A$1+$B$1+$C$1+$D$1
Subtract E4 from H3	= $H$3 – $E$4
Multiply A5 and B5	= $A$5 * B5
Average of G1, G2, G3, G4	=($G$1+G2+$G$3+G4)/4

- In an expression, all cells need not necessarily be relative or absolute. You can mix both type of references.
- The following section explains the use of relative cell reference. About “Absolute cell reference”, you will be learn later in this chapter.

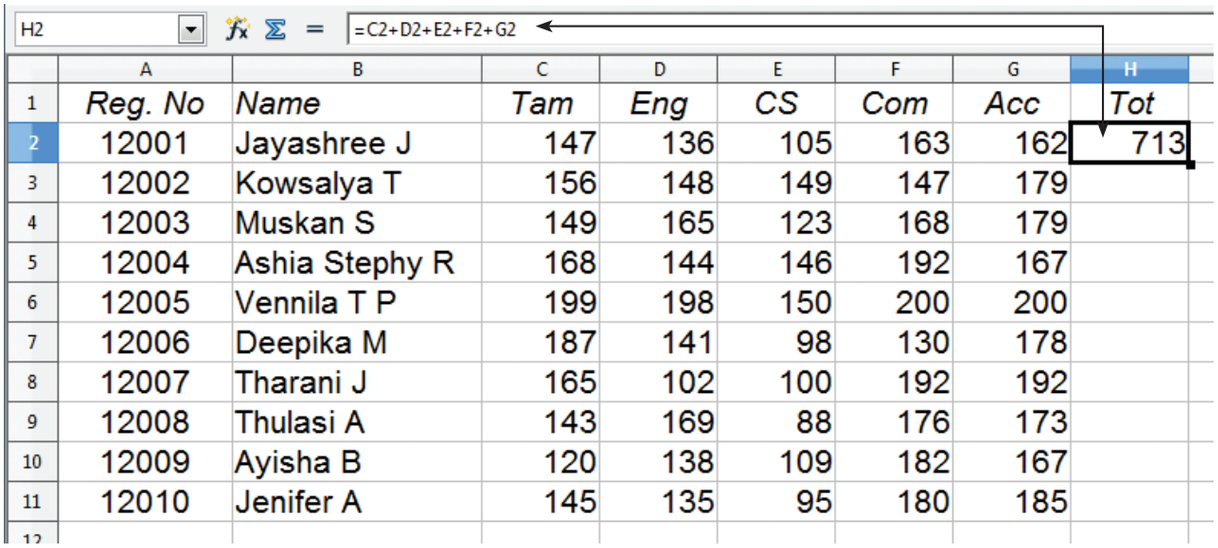
Finding Total to the above Illustration:

- Move the cell pointer to H2 (Total column)
- Type the following formula; after entering the formula, press “Enter” key

  = C2+D2+E2+F2+G2 (Refere Figure 7.25)

- Now, you will get the sum of all the values of C2, D2, E2, F2 and G2
- The above-mentioned formula clearly stated that, how worksheets are working with cells.
- While referring to the cell addresses in a formula, the spreadsheet reads the value inside the cell that you refer. This is a good practice of constructing a formula. Because, if you change any value, the spreadsheet recalculates with that new value.

  After entering a formula the result is display as in Figure 7.23



	A	B	C	D	E	F	G	H
1	Reg. No	Name	Tam	Eng	CS	Com	Acc	Tot
2	12001	Jayashree J	147	136	105	163	162	713
3	12002	Kowsalya T	156	148	149	147	179	
4	12003	Muskan S	149	165	123	168	179	
5	12004	Ashia Stephy R	168	144	146	192	167	
6	12005	Vennila T P	199	198	150	200	200	
7	12006	Deepika M	187	141	98	130	178	
8	12007	Tharani J	165	102	100	192	192	
9	12008	Thulasi A	143	169	88	176	173	
10	12009	Ayisha B	120	138	109	182	167	
11	12010	Jenifer A	145	135	95	180	185	

Figure 7.23 Constructing formula in Worksheet

7.6 Save, Close and Open the Worksheet:

7.6.1 Saving Worksheet

The process of saving a worksheet is very similar to saving a document. Steps to save a worksheet are as follows:

Step 1: File → Save (or) Ctrl + S (or) Click "Save" icon on the standard tool bar.

Step 2: If the spreadsheet has not been saved previously, the Save As dialog box will appear.

Step 3: Type the name in "File Name" list box. OpenOffice Calc Spreadsheets are stored with extension .ods by default.

Step 4: Click "Save" button.

After clicking the save button, the given file name is displayed in the title bar as shown in Figure 7.24

File Extension:

A file extension or file name extension helps to identify the type of file. Following table gives the file extension of commonly used files.

Familiar File Type	Extension
Text Files	.txt
Microsoft Word Documents	.doc / .docx
OpenOffice Documents	.odt
Microsoft Excel	.xls / .xlsx
OpenOffice Calc	.ods
Microsoft PowerPoint	.ppt / .pptx
OpenOffice Impress	.odp
Executable Files / Applications	.exe
Web Pages	.htm / .html
Portable Document Format	.pdf
Photos	.jpg / .jpeg (Joint Photographic Experts Group)
Animated Images	.gif (Graphical Image Format)
Audio	.mp3
Audio / Video	.mp4

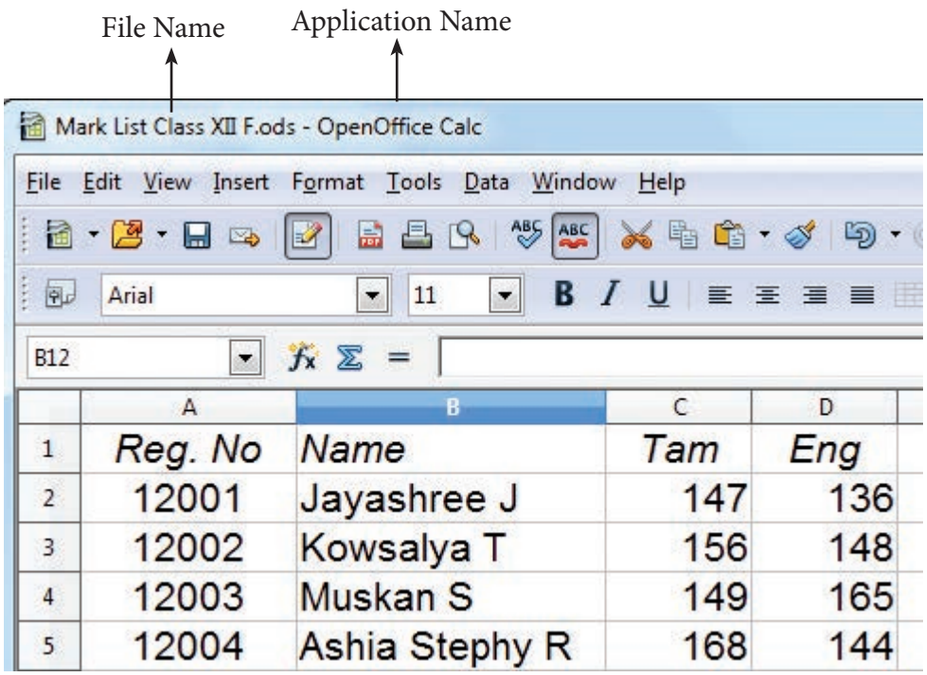


Figure 7.24 Saved Spreadsheet

Note: The saved file is stored in the *"**Document folder**"* by default.

What is save?

Technically saving is a process of transferring or shifting contents from primary memory (RAM) to Secondary storage medium such as Hard disk, Pen drive, memory chip etc.

7.6.2 Auto Save:

The OpenOffice saves a file at regular intervals. This is called as ***"Auto Save"*** feature. The default time interval is 15 minutes. It can be reduced even to one minute. If any unexpected shutdown occurs, this feature will recover your file.

7.6.3 Closing a Worksheet

After saving the worksheet; it remains open. So, you can continue to work with the spreadsheet. When the work is finished, you should save using File → Save (or) Click "Save" icon (or) Ctrl + S and then to close the worksheet using File → Close command (or) Press Ctrl + W.

7.6.4 Opening an existing worksheet

7.6.4.1 Using Open dialog box

To reopen an existing worksheet, the File → Open command (or) "Open" icon (or) Ctrl + O can be used. An Open dialog box appears as shown in Figure 7.25 that is similar to "Save As" dialog box.

The name of the file to be opened can be chosen from the list or folder in which worksheet has been saved.

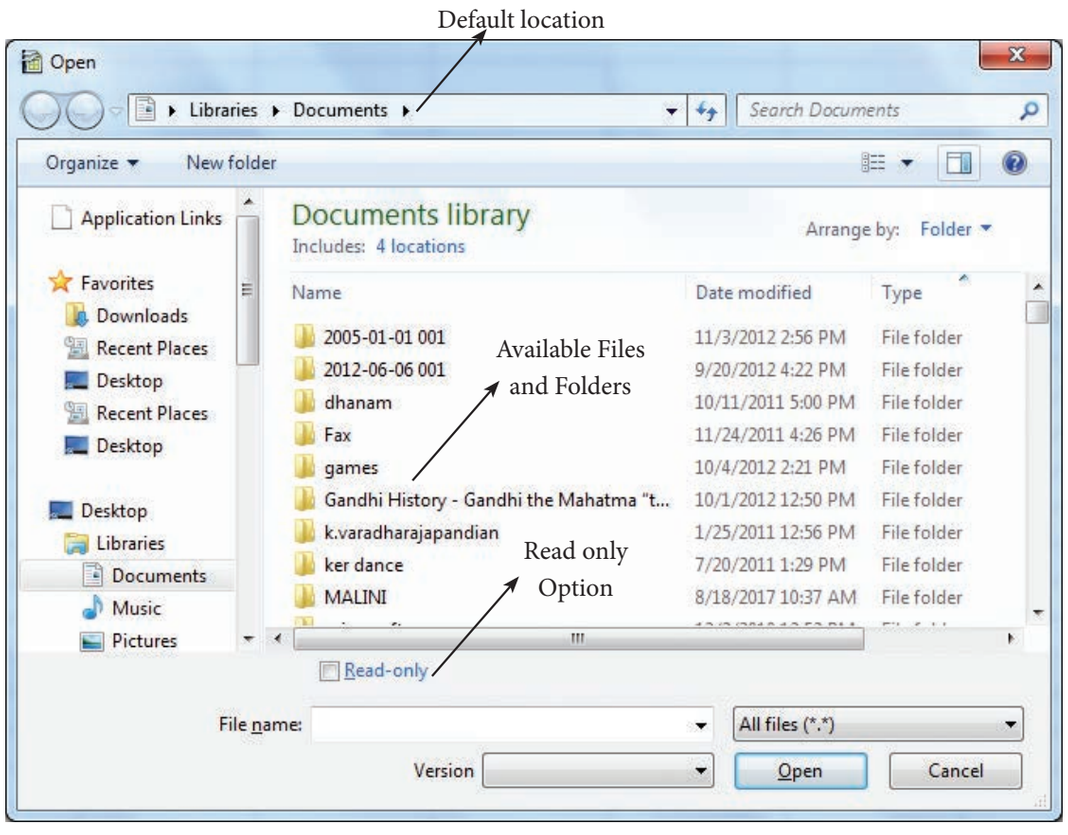


Figure 7.25 Open Dialog box

7.6.4.2 Using Recent documents

OpenOffice keeps a list of recently opened files. **File → Recent Documents** option can be used to open an existing worksheet from the list as shown in Figure 7.26

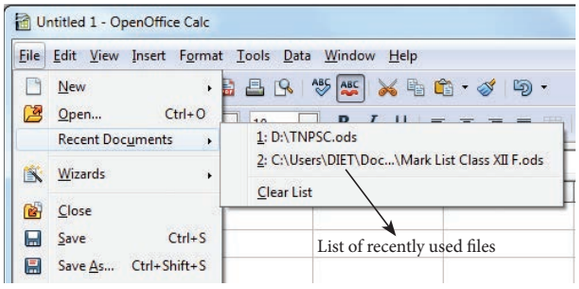


Figure 7.26 List of Recent Documents

7.7 Copy, Cut and Paste

7.7.1 Copy and Paste Data

- Select the cell or cells you want to copy
- Select **Edit → Copy or Click** "**Copy**" icon from the standard toolbar or Press Ctrl + C
- Move the cell pointer to the cell in which you want to paste.
- Select **Edit → Paste or Click** "**Paste**" icon or Press **Ctrl + V**

7.7.2 Cut and Paste Data

- Select the cell or cells you want to cut
- Select **Edit → Cut or Click** "**Cut**" icon from the standard toolbar or Press **Ctrl + X**
- Move the cell pointer to the cell in which you want to paste.
- Select **Edit → Paste or Click "Paste"** icon or Press **Ctrl + V**

7.7.3 Copy and Paste Formula

- The process of Copy and Paste data is used for copying formula.
- When you copy a formula from one cell to another cell, the address of the pasted formula will change according to its row. This is called "Relative Cell Reference" (Refer Figure 7.27).
- Example:

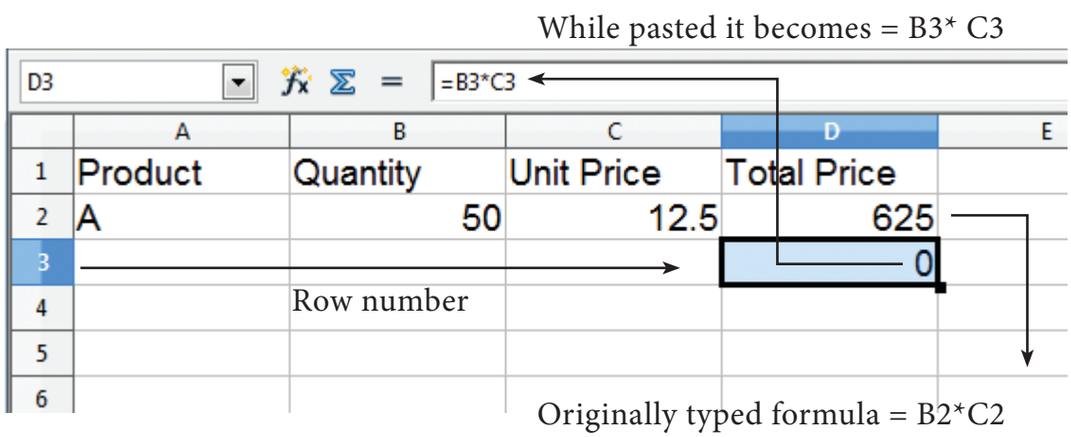


Figure 7.27 Copy and Paste formula to multiple cells

7.7.4 Copy a formula from one cell and paste it in multiple cells:

(For illustration 1 - Refer 7.23)

Step 1: Copy the formula from H2 using **Ctrl + C** or E**dit → Copy (or) click** "**Copy"** icon.

H3:H11 =C11+D11+E11+F11+G11

	A	B	C	D	E	F	G	H
1	*Reg. No*	*Name*	*Tam*	*Eng*	*CS*	*Com*	*Acc*	*Tot*
2	12001	Jayashree J	147	136	105	163	162	713
3	12002	Kowsalya T	156	148	149	147	179	779
4	12003	Muskan S	149	165	123	168	179	784
5	12004	Ashia Stephy R	168	144	146	192	167	817
6	12005	Vennila T P	199	198	150	200	200	947
7	12006	Deepika M	187	141	98	130	178	734
8	12007	Tharani J	165	102	100	192	192	751
9	12008	Thulasi A	143	169	88	176	173	749
10	12009	Ayisha B	120	138	109	182	167	716
11	12010	Jenifer A	145	135	95	180	185	740
12								

Figure 7.28 Copy and Paste forumla to Multiple cells

Step 2: Select all cells (i.e. H3 to H11) in which you want to paste this addition formula.

Step 3: Paste the copied formula using Ctrl + V or Edit → Paste (or) Click "Paste" icon.

Self Practice:

1. Open the spreadsheet which was created in Illustration 1.
2. Add one more column heading "Average" in I1
3. Create a formula to find the average of all marks in I2.
4. Apply the formula to the remaining cells.
5. Save the changes and close the file

7.8 Auto Fill Feature:

You have learnt how to copy and paste a formula from one cell to other cells in the previous section. The process of Copy and paste can be replaced by a click and drag and it is called as "Auto Fill". This is an alternate way to copy and paste.

Auto Fill feature fills the contents from one cell to all the dragged cells. The content may be a data or formula. If you fill a relative formula, all the addresses of filled formulae will be changed.

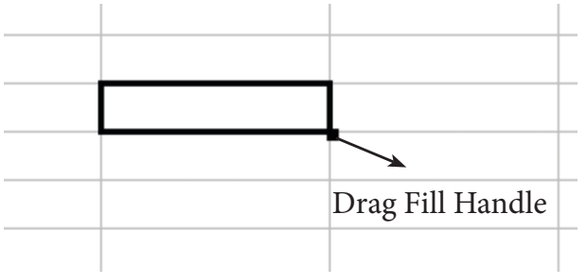


Figure 7.29 Drag fill handle

Cell pointer's "Drag fill handle" is used to auto fill. Just click and drag this handle to fill the contents. It can be dragged towards right or down. Same can be achieved by Edit →Fill → Down (or) Edit → Fill → Right.

7.8.1 Auto Fill Series:

Auto Fill is also used to generate a series of values. For example, if you want to generate 1,2,3……. up to some length; it can be done by a simple click and dragging over.

Generating whole number series: (Refer Figure 7.30)

Step 1:In cell A1, type as 1 (one) and press enter

Step 2:click A1 to place the cell pointer

Step 3:Click "Drag Fill Handle" of cell pointer; now the mouse pointer becomes a small +

Step 4:Drag over the cells; while dragging, the generated values will be displayed.

Step 5:Release the mouse pointer. Selected cells will be filled with series of values.

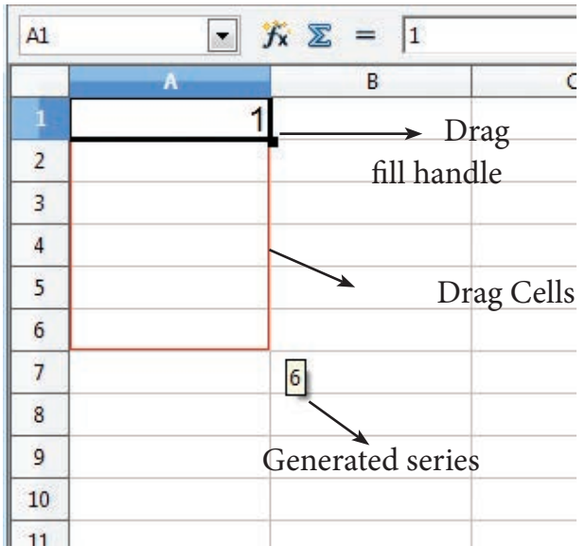


Figure 7.30 AutoFill series

7.8.2 Generating series using command

Edit → Fill → Series Command is used to generate different set of series. Before using this feature, a set of cells should be selected. Using Fill Series feature, you can fill series of values at any direction. (Remember that, auto fill only fills either right or down). Refer Figure 7.31

Direction : Down / Right / Up / Left (Selected cell direction will be default)

Series type :

Linear : To generate a sequence of series (Example 2,4,6,8,10…….)

Growth : To generate multiplication series (Example 2,4,8,16,32,64……)

Date : To generate date series (when you select date as series type; time unit section gets enabled)

AutoFill : To generate a continuous series of values (1,2,3,…….). When you select "AutoFill", Time unit section, End value and Increment text boxes become disabled.

Time Unit: (Enabled only when you select the series type as "Date"

Day	:	To generate date series day-wise
Weekday	:	To generate date series weekday-wise
Month	:	To generate date series month-wise
Year	:	To generate date series year-wise

Start Value:

- Initial value of the series should be typed

End Value:

- End value of the series should be typed
- If you fail to specify the end value, series will be generated upto the selected cells.

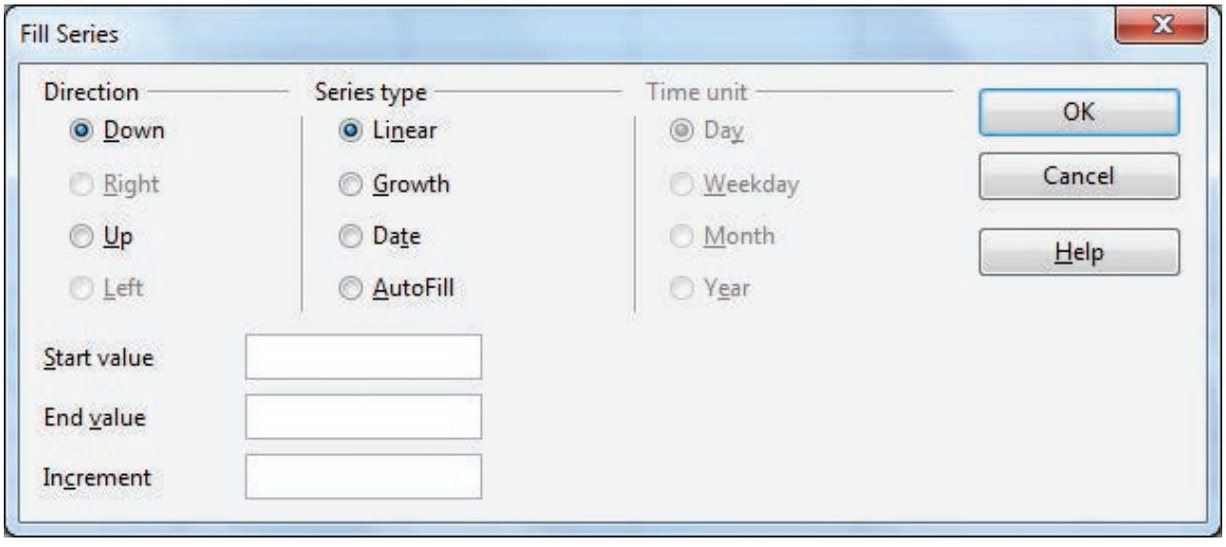


Figure 7.31 Fill series dialog box

- If your selection is less than the specified end value, series will be generated only upto the selected cells.

Increment:

- It is a middle value between the first and second value of your series. So, the next value (Third value) of the series will be generated based on this value.
- If you want to generate a decreasing order series, negative value should be specified as an increment value.

Self Practice:

(i) Generate Even number series from 2 to 20

(ii) Generate a series of 5, 10, 15, 20 ……. upto selected cells.

(iii) Generate a series of 2,4,8,16,…… 2048

(iv) Generate a series of 33, 30, 27 …… upto 3

(v) Assume, today is Friday and generate next 25 Fridays (Date series).

7.8.3 Date Arithmetic:

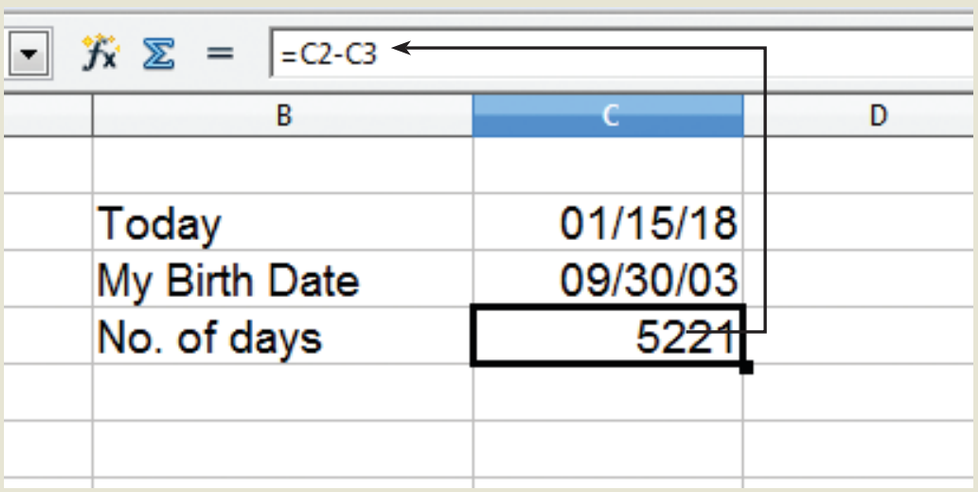
Manual date calculations can be tricky because you have to keep track of the number of days in a month. In spreadsheets, date calculations become very simple. Here you can add a number to a date and arrive at a new date, find the difference between two dates and use a wide variety of function and formats to get what you want.

For example, enter a date 02/26/2018 in a cell, say A2. Suppose you want to calculate the date 80 days after this date. To do so, enter the formula, = A2 + 80, in another cell, say A4.

The date 05/17/18 appears in the cell.

Find out how many days you were born?

- Type today's date in first cell.
- Type your birth date in second cell.
- Type the following formula in third cell = first_cell_reference – second_cell_refernce



Part – II Editing and Formatting Worksheet

7.9 Inserting Columns, Rows and Cells

In Calc, Columns, rows and cells can be inserted individually or in groups.

7.9.1 Inserting a Column:

When you insert a new column, it is inserted to the left of the current column. The location of the cell pointer present, is the Current column. In Calc, you can insert a new column anywhere in the worksheet.

Step 1: Select the column where a new column should be inserted.

Step 2: Right-click on the selected column name that you selected. A pop-up menu appears.

Step 3: click the "Insert Columns" option from the menu.

Now, a new column will be inserted to the left of the current column.

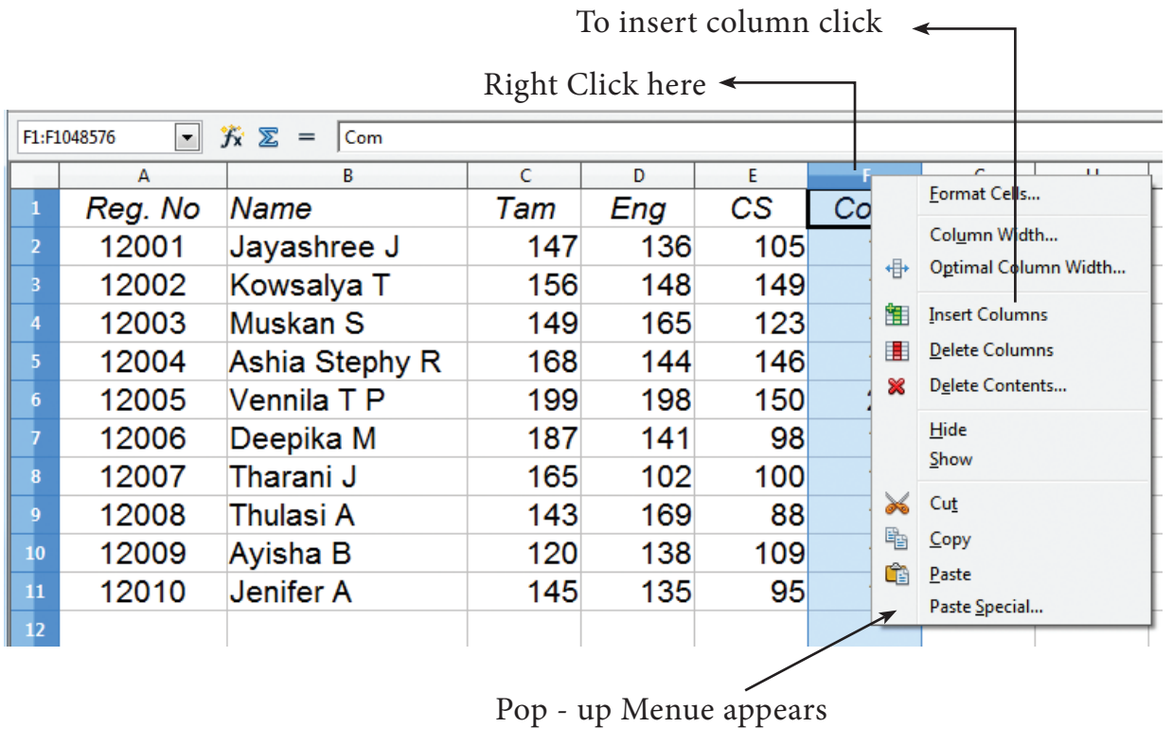


Figure 7.32 Insert Column pop-up menu

A new column can also be inserted using Insert → Columns command. (Refer Figure 7.32)

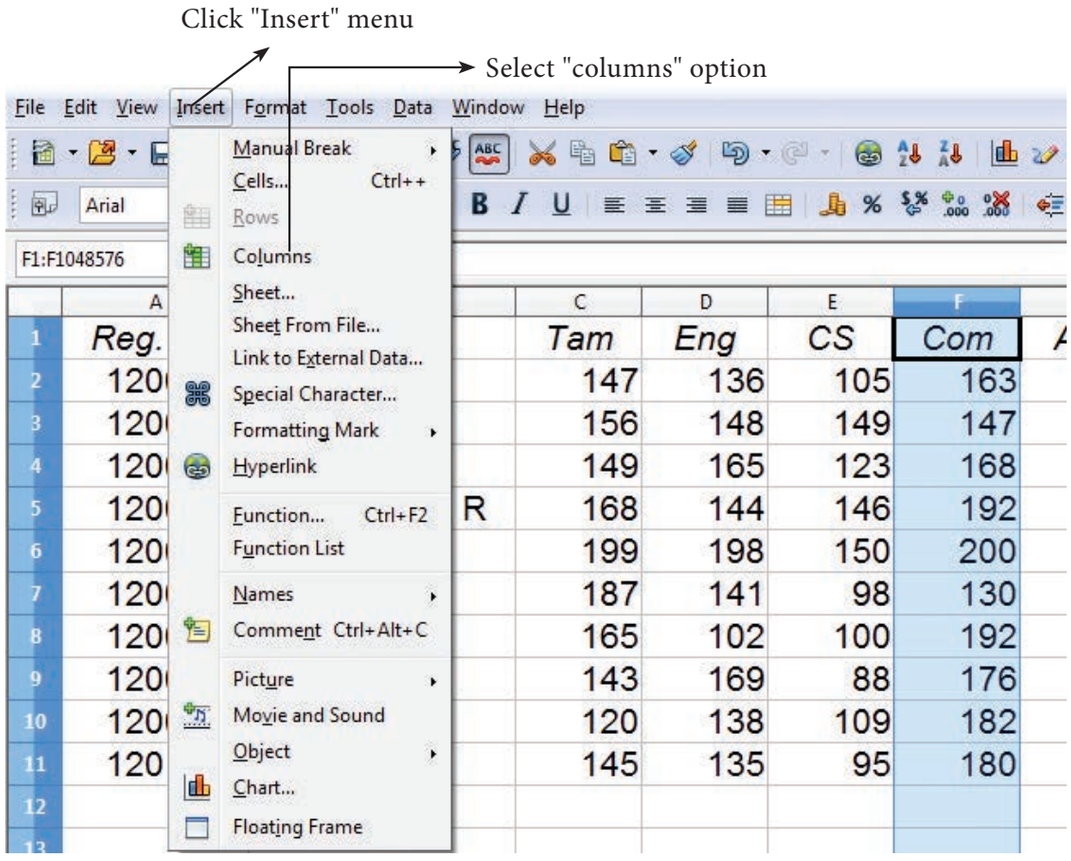


Figure 7.33 Insert Column menu bar

Practical Practice:

1. Open the spreadsheet which was created in Illustration 1.
2. Insert a new column between column E and F
3. Give the heading as "Eco" and Enter the Economics marks for all the students
4. Insert one more column between the columns, Name and Tamil marks.
5. Give the heading as "Date of Birth" and Enter the date of birth for all the students.
6. Save the changes and close the file.

7.9.2 Inserting Rows

When you insert a new row, it is inserted above the current row. The location of the cell pointer present is the current row. In Calc, you can insert a new row anywhere in the worksheet.

Step 1: Select the row where a new row to be inserted.

Step 2: Right-click on the row number, a pop-up menu appears

Step 3: click "Insert Rows" option from the menu.

Now, a new row will be inserted to above the current row.

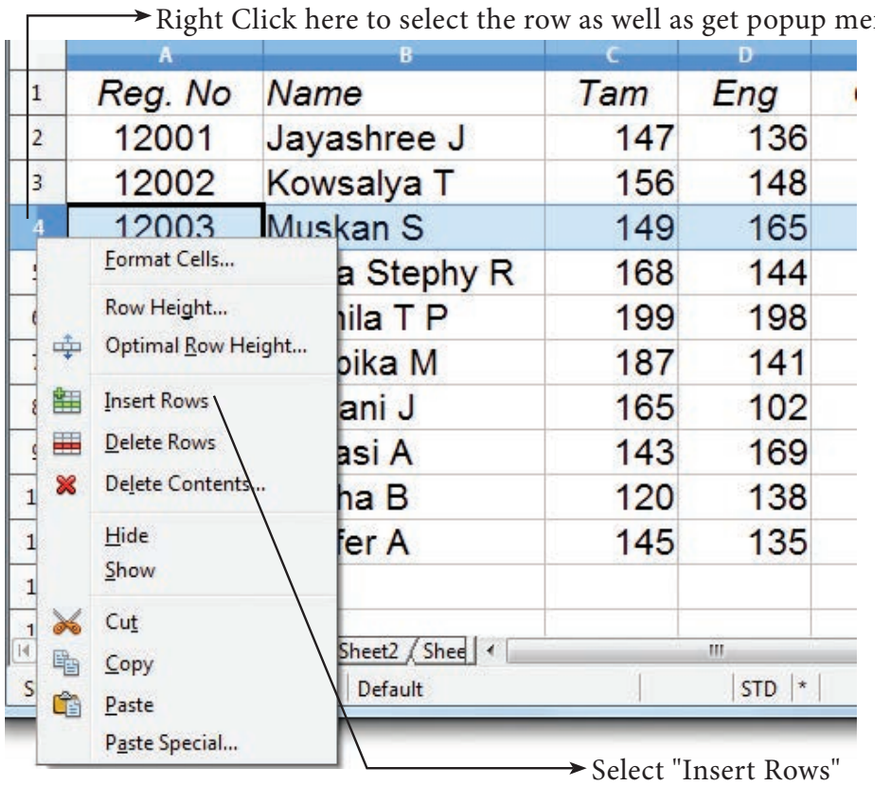


Figure 7.34 Insert Rows popup menu

Insert → Rows command is used to insert a new row. Refer Figure 7.35

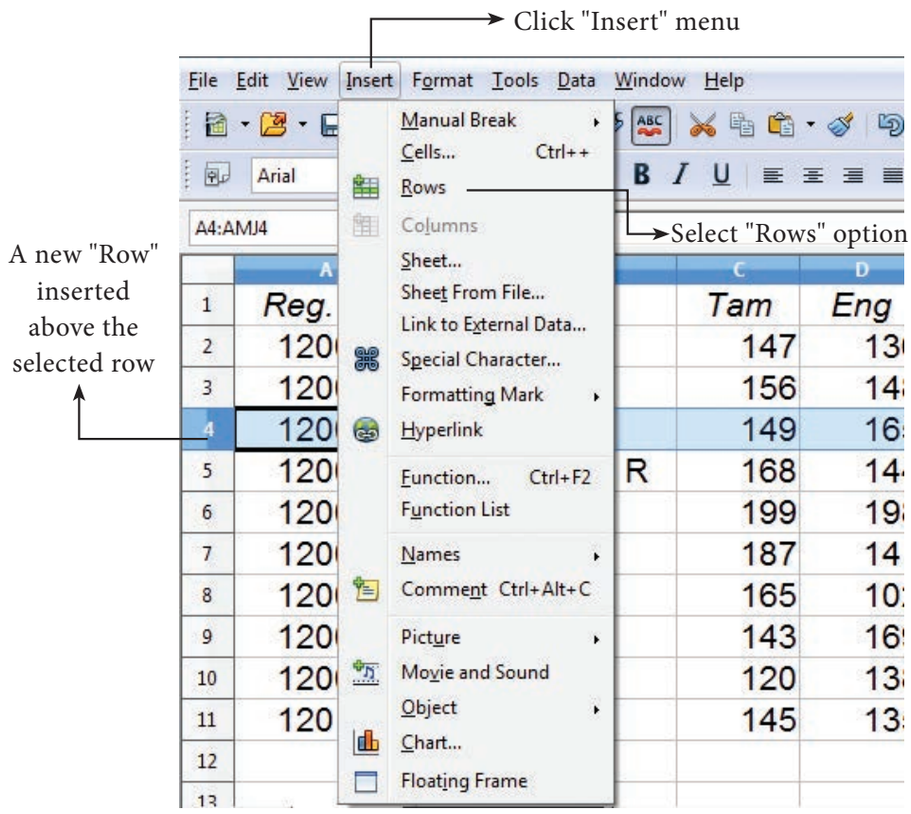


Figure 7.35 Insert Rows menu bar

Self Practice:

1. Open the spreadsheet which was created in Illustration 1.
2. Insert 8 rows one by one, then insert the following student details
3. Save the changes and close the file.

Reg. No	Name	Date of Birth	Tam	Eng	CS	Eco	Com	Acc
12101	Sarika S	26/05/2001	145	135	145	125	180	196
12102	Jewees Celcya J	11/04/2001	102	165	134	95	180	134
12103	Yuvarani T	27/06/1999	172	130	107	155	162	130
12104	Meharunisha I	30/05/2001	132	146	112	185	192	176
12105	Priya W	07/03/2000	130	172	100	92	162	155
12106	Vijaya Vasavi K	03/06/2001	198	175	149	148	158	135
12107	Deepika B	14/03/2001	120	182	103	144	107	186
12108	Viji V	19/04/2001	137	173	128	148	125	177

7.9.3 Inserting Cells

- To insert a new cell between two existing cells, just right-click on any existing cell
- From the pop-up menu, select "Insert" option *Figure 7.36 Insert cells*
- The "Insert Cells" dialog box appear with four options

  i) Shift cells down ii) Shift cells right iii) Entire row iv) Entire Column
- Any one of the four options is selected.
- Selecting "Shift cells down", inserts a new cell in the present location and the existing cells are shifted downwards.
- Selecting "Shift cells right", inserts a new cell in the present location and the existing cells are shifted towards right.
- Selecting the "Entire Row" or "Entire Column" option, inserts a new row or a new column.v

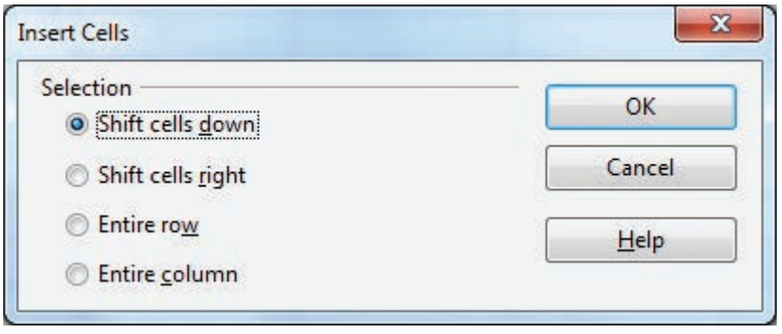


Figure 7.36 Insert cells

7.9.4 Inserting multiple columns or rows

Multiple columns or rows can be inserted at once rather than inserting one at a time.

- Select multiple rows or columns for insertion.
- Follow steps as in 7.9.1 and 7.9.2

7.9.5 Inserting Columns, Rows and Cells using "Insert Cells" Toolbar

- Insert Cells floating toolbar is also used to insert cells, rows and columns
- Click View → Toolbars → Insert Cell
- A tiny floating toolbar appears on the screen with four icons. Using these icons, you can insert cells, rows and columns. Refer Figure 7.37

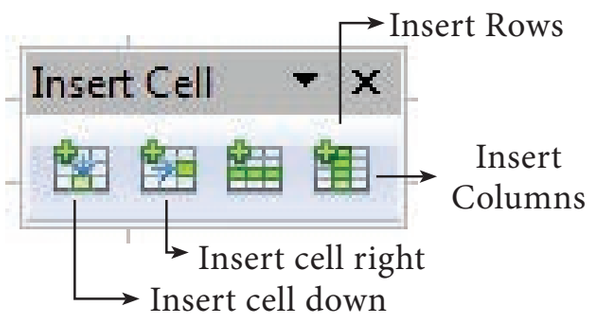


Figure 7.37 Insert cell tool bar

7.10 Deleting columns and rows

A single or multiple columns or rows can be deleted.

Inserting a new Column or row is really possible in a Spreadsheet?

All spreadsheets have some specific number of rows and columns, then how can you insert an additional row or column. Is this possible?

Technically this is NOT POSSIBLE.

Additional column, row or even cell cannot be inserted in any spreadsheet. When you insert a column or row, the contents within the column or row will be shifted to the next column or row. But visually it is felt that a new column or row has been inserted.

7.10.1 Delete single column or row

A single column or row can be deleted by using the mouse:

- Select the column or row to be deleted.
- Choose Edit →Delete Cells from the menu bar.

(Or)

- Right-click on the column or row header.
- Choose Delete Columns or Delete Rows from the pop-up menu.

7.10.2 Delete multiple columns or rows

Multiple columns or rows can be deleted at a time. Refer Figure 7.38

- Select the required columns or rows for deletion.
- Right-click on the selected columns or row.
- Choose Delete Columns or Delete Rows from the pop-up menu or Edit → Delete Cells.

Practical Practice:

1. Open the spreadsheet which was created in Illustration 1.
2. Delete the details of any 3 students. Save the changes and close the file.

Deleting Column or Row is not Possible

Same as inserting column or row, Deleting a column or row is also not possible. No one can delete any column or row in a spreadsheet. When you delete a column or row, all the contents will be removed from the column or row. Actually, this is also another kind of deleting contents from a column or row.

7.11 Formatting Worksheet

Formatting Data in a cell gives additional effect to the text. Additional effect includes changing the font style, font size, automatic wrapping, bold, underline, italic etc. The data in Calc can be formatted in several ways. Using formatting icons can be used.

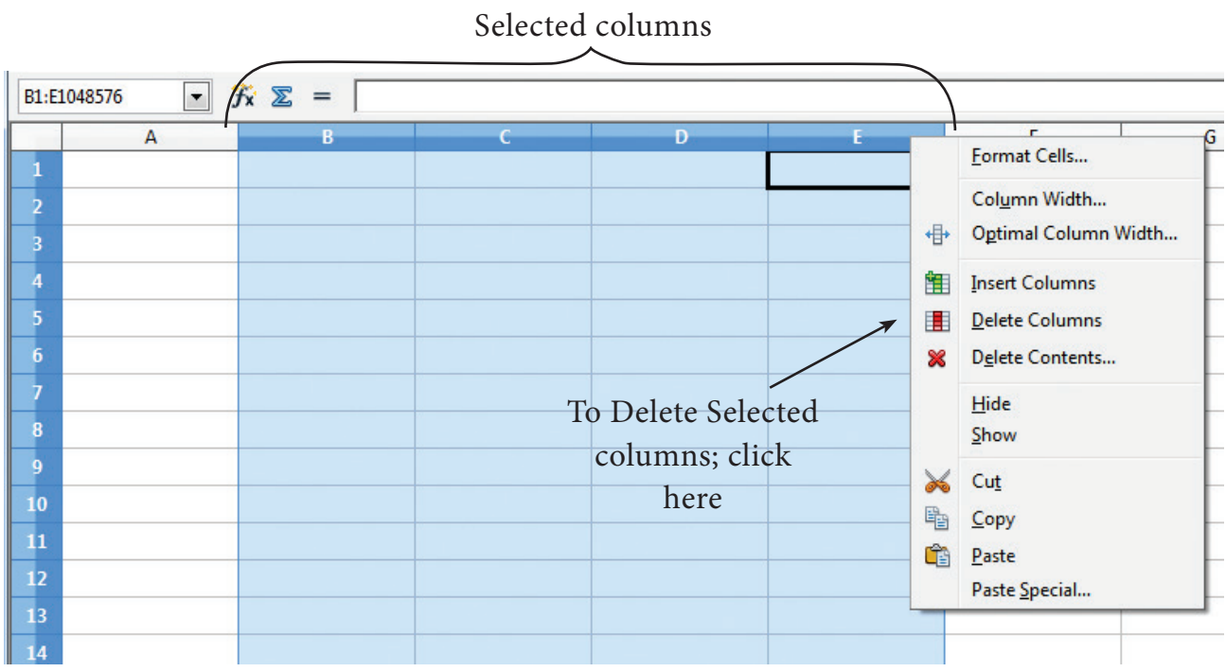


Figure 7.38 Delete multiple columns

7.11.1 Text Formatting

Making the cell contents as bold, italics, underlined, changing font style, size, colour etc., comes under text formatting. All text formatting options are available as icons in Formatting toolbar learnt in OpenOffice Writer. *Figure 7.39(a) Text Formatting Toolbar*

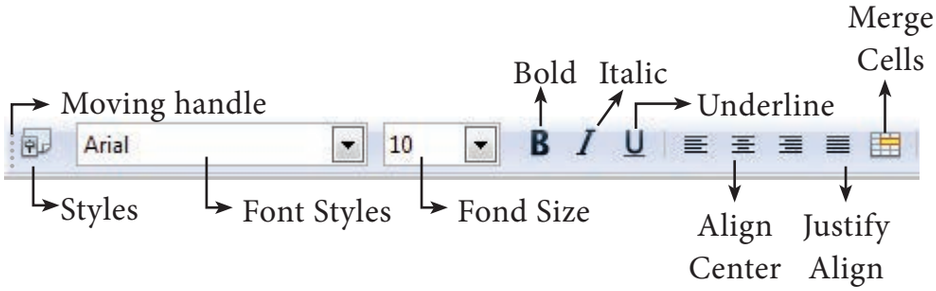


Figure 7.39(a) Text Formatting Toolbar

Formatting Option	Keyboard Shortcut	Description
Font style		Used to change Font style
Font size		Used to change Font size
Bold	Ctrl + B	Used to make the data as Bold
Italic	Ctrl + I	Used to italicize data
Underline	Ctrl + U	Used to underline the data
Left Align	Ctrl + L	Left Align data within a cell
Right Align	Ctrl + R	Right Align data t within a cell
Center Align	Ctrl + E	Center the data within a cell
Justify	Ctrl + J	Align the data evenly both on left and right side of a cell
Merge cell		Makes selected cells as a single cell

7.11.2 Number formatting

Number formatting options are used to visually change the format of a numeric content. These formatting changes are only for visual as, it does not change its original value. For example, To display a number as currency form use Number format: Currency.

Number format: Currency will be used as shown Figure 7.39(b).

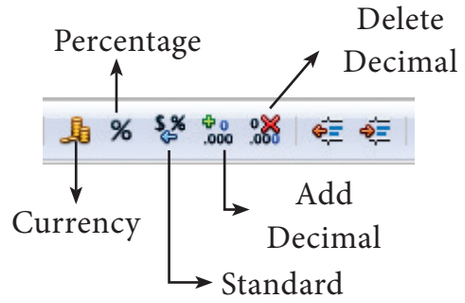


Figure 7.39(b) Formatting toolbar

Number Format	Keyboard Shortcuts
Currency Symbol	*Ctrl+Shift+4*
Percent	*Ctrl+Shift+5*
Standard	*Ctrl+Shift+6*
Add Decimal Place	
Delete Decimal Place	

Practical Practice:

1. Open the spreadsheet which was created in Illustration 1.
2. Align all headings as center and make them bold.
3. Align all Register numbers and marks in center
4. Apply different font styles to the entire worksheet.
5. Save the changes and close the file

Part – III Working with Functions and Chart

7.12 Functions

OpenOffice Calc has more than 350 functions under 11 categories. Functions are predefined formulae already available with Calc. They are used to perform several frequently done calculations. Every function has a unique name and a prototype. Functions are categorized according to their functionality. For example, the functions such as Sum, Average, Sin, Cos etc., are categorized as "Mathematical Functions".

7.12.1 Inserting Functions into Worksheet:

A function can be inserted by (i) Direct Insert Method or (ii) Using Function Wizard method.

7.12.1.1 Direct Insert method:

If you know the function name and its syntax, it can be directly typed in any cell of the worksheet.

For example, SUM is the most frequently used function to add a set of values. The syntax of the SUM ( ) is

= SUM (range 1; range 2; range 3..... range n)

If you want to know the sum of the values in A1, A2, A3, A4 and in A5, Place your cell pointer in A5 and directly type the formulae as follows.

= SUM (A1:A4)

While inserting a function the following points should be kept in mind.

1. A function should begin with an equal sign.
2. Use proper name for the function to be used.
3. Arguments should be given within the brackets as per the syntax. Each function has a unique argument list.
4. Press "Enter" key after typing the function.

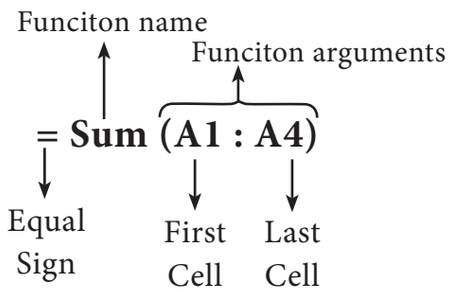


Figure 7.40 Function Syntax

Self Practice:

1. Open the spreadsheet which was created in Illustration 1.
2. Delete all the formula in Total column.
3. Use SUM function to add all the marks of each student.
4. Save the changes and close the file

7.12.1.2 Using Function Wizard method

A function can inserted using Function Wizard in Calc. Function Wizard is a dialog box provides the step-by-step procedure to insert a function. Function wizard can be invoked by clicking the Function Wizard icon on the Formula bar (or) **Insert → Function (or) Ctrl + F2.** Refer Figure 7.41

Function category drop down list box:

Function Wizard has two tabs viz. Functions and Shortcuts. In Functions Tab, the list of categories is available in Category drop down list box. In Calc, the functions are categorized into 11 types. They are,

1. Database
2. Date and Time
3. Financial
4. Information
5. Logical
6. Mathematical
7. Array
8. Statistical
9. Spreadsheet
10. Text
11. Add-in

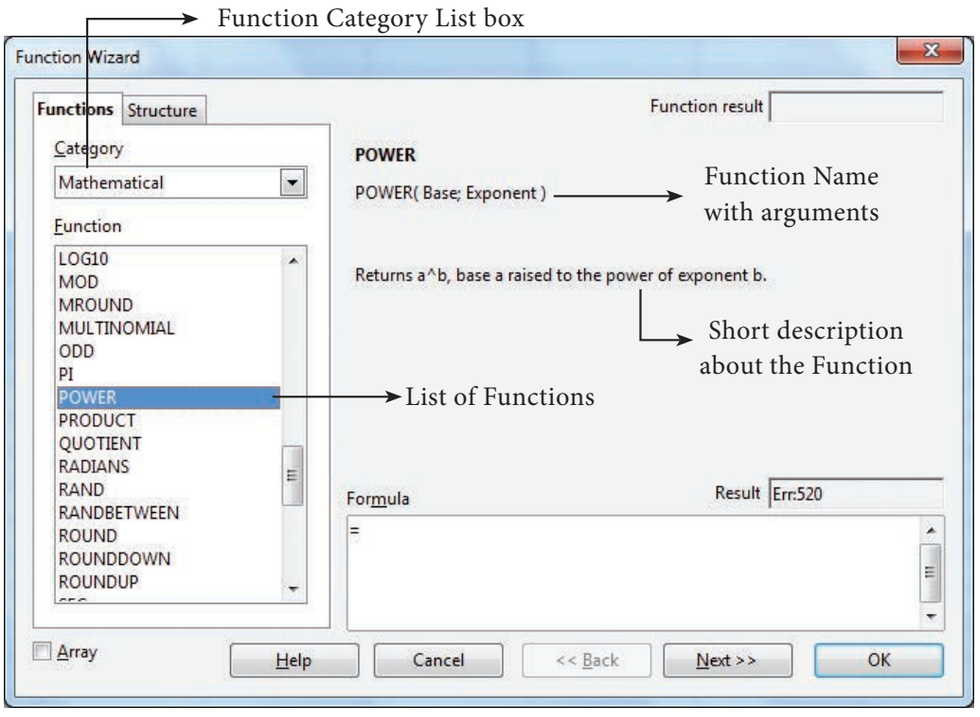


Figure 7.41 Function wizard

If you select any particular category, the Functions list box shows the functions which belongs to the selected category. If "All" is selected under category all functions in calc is displayed in alphabetical order. Refer Figure 7.42

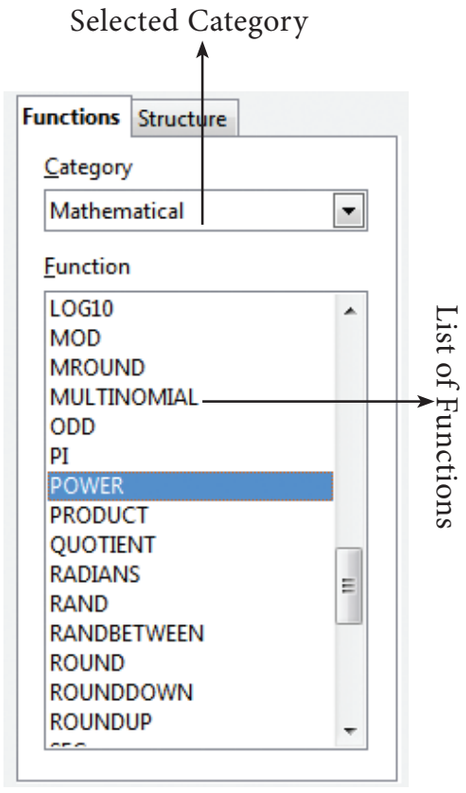


Figure 7.42 Function wizard – Function Category list box

Function Description

When you select a function, the function wizard shows the function name, syntax and a small description about the function on the right side of the dialog box. Refer Figure 7.43

Inserting a function using Function Wizard: (with Cell Reference)

The following steps explains to insert POWER( ) function in a cell.

About POWER ( ) function:

POWER ( ) is a function which is used to calculate power of an exponent value of a number. This function is categorized as a Mathematical function. There are two inputs needed to find the power value of a number. They are, Base value and exponent value. For example, to find the value of 25 to the power of 2 (25^2) where 25 is the base value, 2 is the exponent value.

The syntax of POWER( ) is = **POWER (Base ; Exponent)**

Both Base and Exponent are arguments. In Calc, arguments are separated by a semicolon.

Inserting POWER( ) in a worksheet:

Step 1: In cell A2 type the base value 25

Step 2: In cell B2 type the exponent value 2

Step 3: Move the cell pointer to C2; in which you want display result.

Step 4: Click *fx* icon from Formula bar (or) choose Insert → Functions (or) Press Ctrl + F2.

Step 5: Pull down category list box, Choose "Mathematical"

All function under Mathematical category is displayed in the "Functions" list box

Step 6: Scroll the "Functions" list box and select "POWER( )". The function wizard shows the description about the selected function on the right corner of the dialog box

Step 7: Click "Next" command button. Now, Function wizard appears as shown in the Figure 7.44.

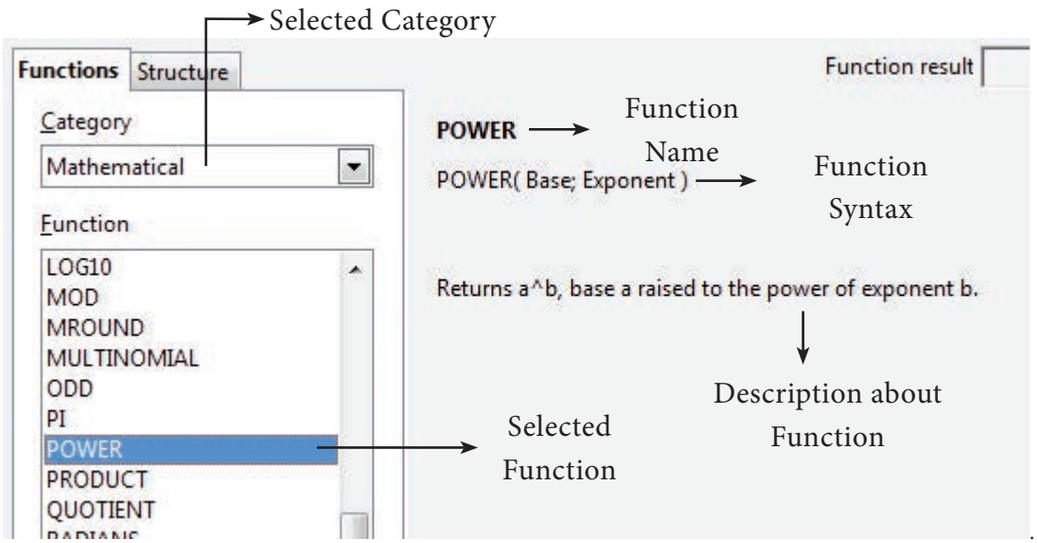


Figure 7.43 Function wizard dialog box

Step 8: Click on the cell which is contains the base value (A2).

Now, the minimized wizard shows the cell address you have selected (A2). Refer Figure 7.45

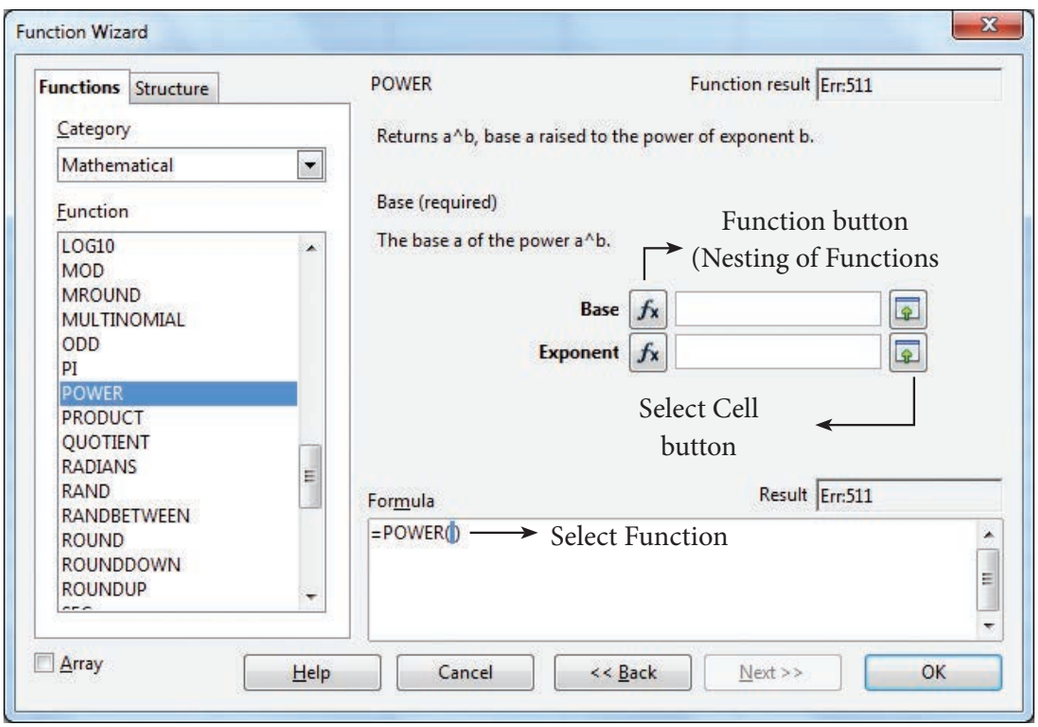


Figure 7.44 Function wizard

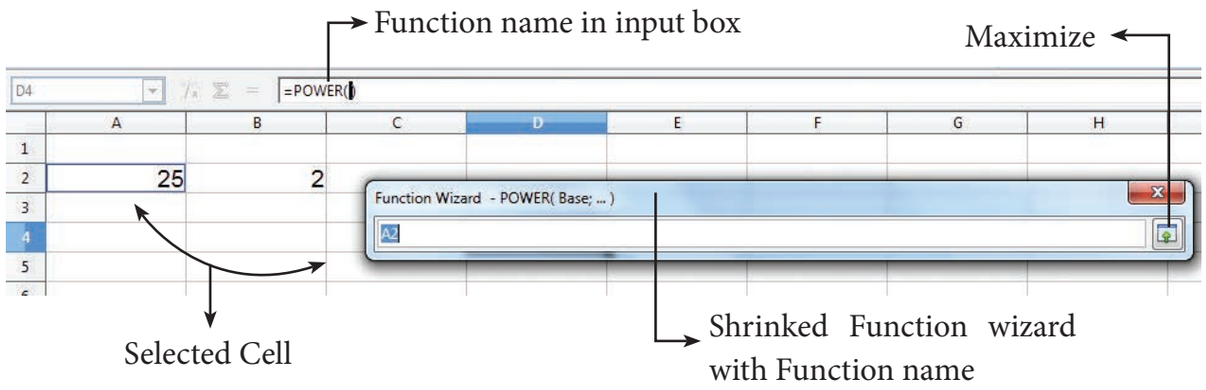


Figure 7.45 Function wizard

Step 9: Click "Maximize" button to display full wizard. Now, Function wizard appears as shown in Figure 7.46

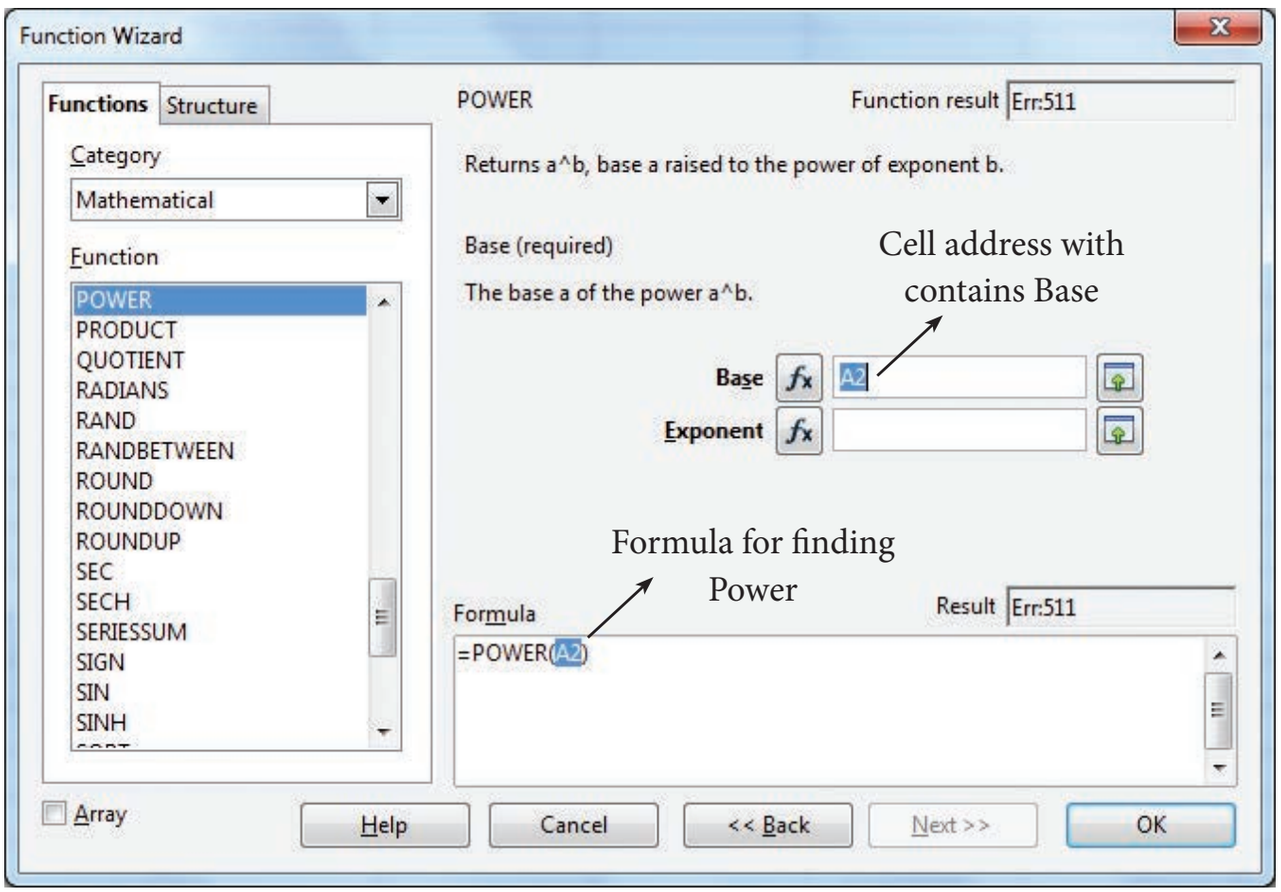


Figure 7.46 Function wizard

Base box shows the cell address which contain base value.

Step 10: Directly type the cell address which contains exponent, in Exponent box; or repeat steps 7, 8 and 9.

After entering Base and Exponent cell references, the function wizard appears as shown in Figure 7.47

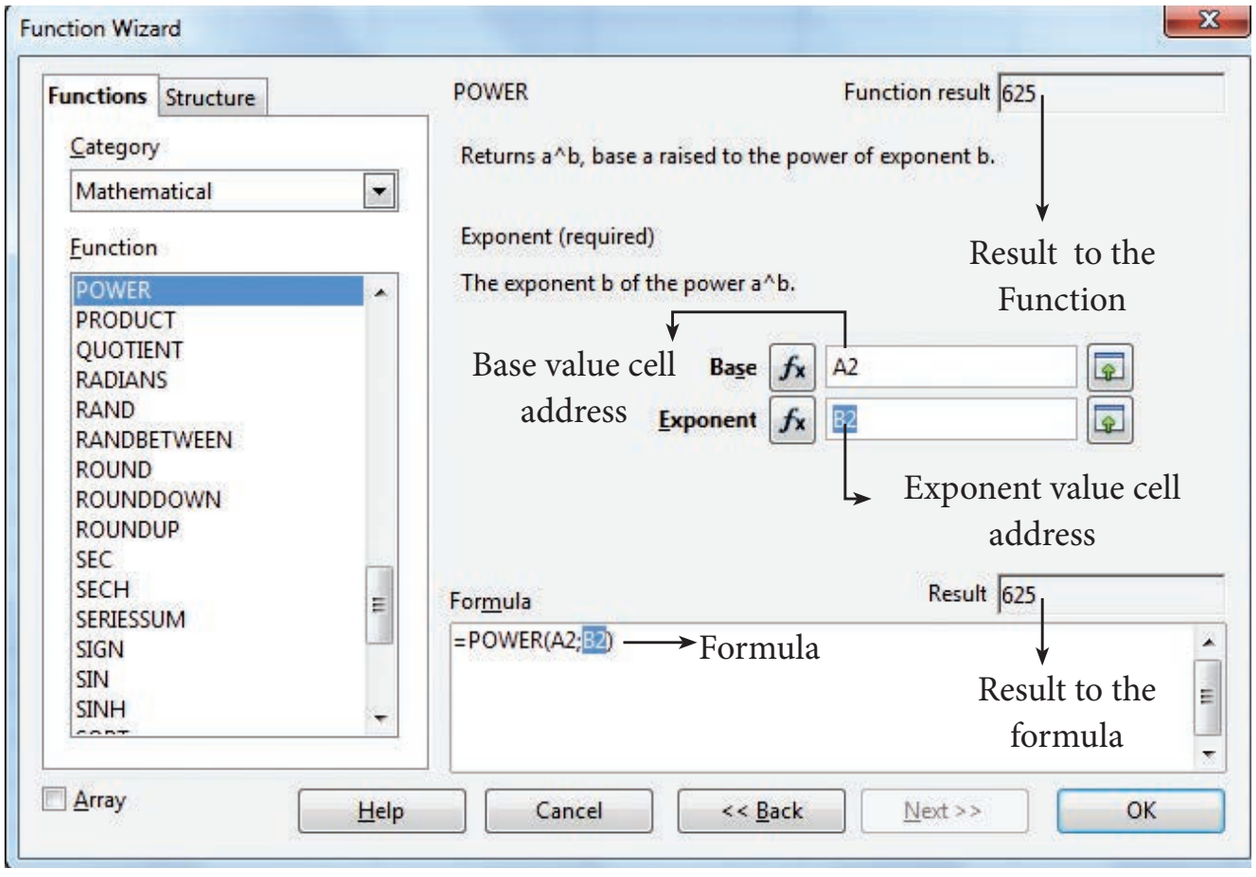


Figure 7.47 Function wizard

The formula box displays the syntax of the function with input values and Result box displays the result value.

Step 11: If the result is correct, click "OK" button else click "Back" button to display the previous page of this wizard.

Inserting a function using Function Wizard: (with direct values)

In the previous example, Cell addresses are used for Base and Exponent values. In Calc, direct values can be used instead of using cell reference (i.e. cell address) to find the same result.

In this case, type base and exponent value instead of cell address. Function wizard displays the result in the current cell. Refer Figure 7.48 shown below.

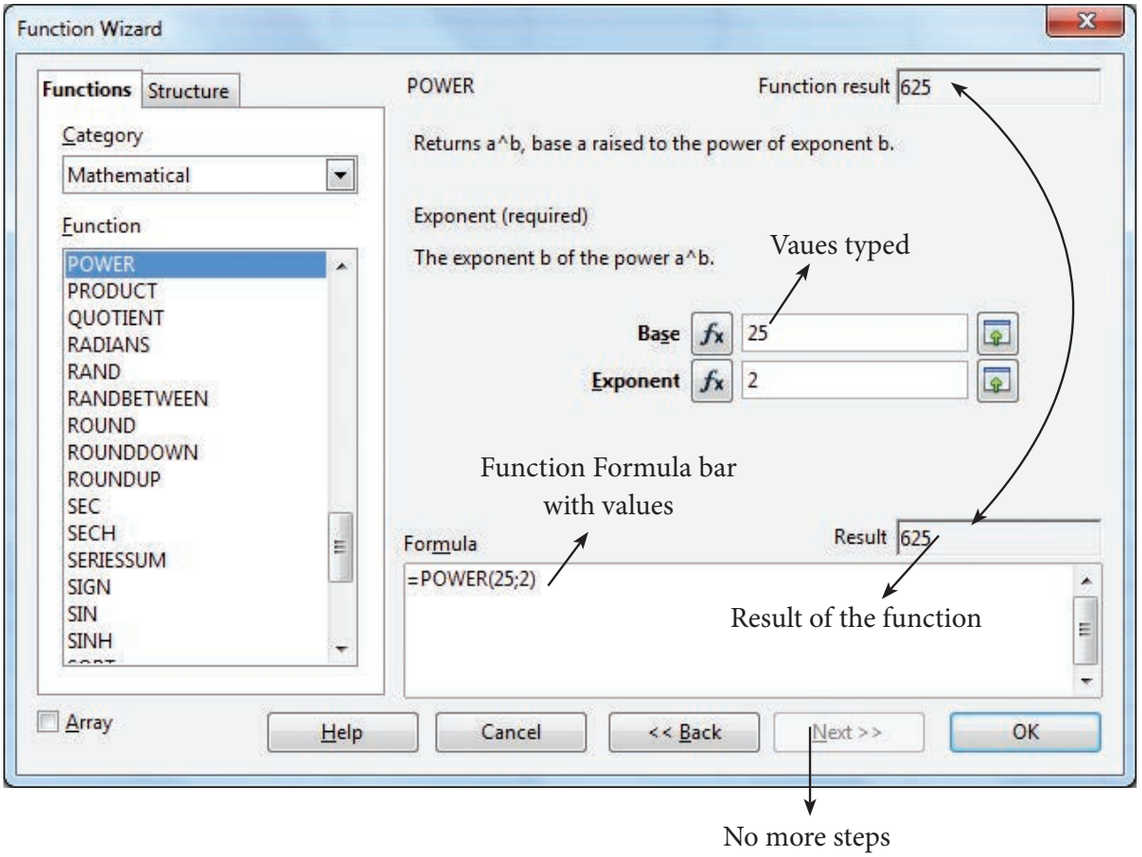


Figure 7.48 Function Wizard (with Direct values)

Self Practice:

1. Open a new worksheet.
2. In cell A1 type as "Value"
3. In cell A2 type as "Square root"
4. In cell B1 type any value
5. In cell B2 insert the function to find the square root of the value in B1
6. After getting square root, change the value in B1, observe changes in result.
7. Use the same function in another sheet directly i.e. without using function wizard.

7.13 Working with Chart

7.13 Working with Chart

One of the most important features of spreadsheet is the ability to create charts based on numeric data. The charts are used to present data in an easy manner. Creating charts is the key factor for the of success of spreadsheet. OpenOffice Calc provides a "chart wizard" to create and manipulate charts.

7.13.1 Chart Wizard

Chart wizard is used to insert charts in Calc. Chart wizard can be invoked by clicking “chart” icon from standard toolbar or choosing Insert → Chart command. A "Chart wizard" appear as shown in Figure 7.49

Chart wizard dialog box has 4 steps viz. (1) Chart type (2) Data Range (3) Data Series and (4) Chart Elements. The “Next” button is used to move from one step to another step.

Step 1: Chart type

The first step of “Chart wizard” is used to select Chart type. All available chart types are listed under the “Choose a chart type” list box. On the right side of the list box shows style of the selected chart; each chart type has different styles.

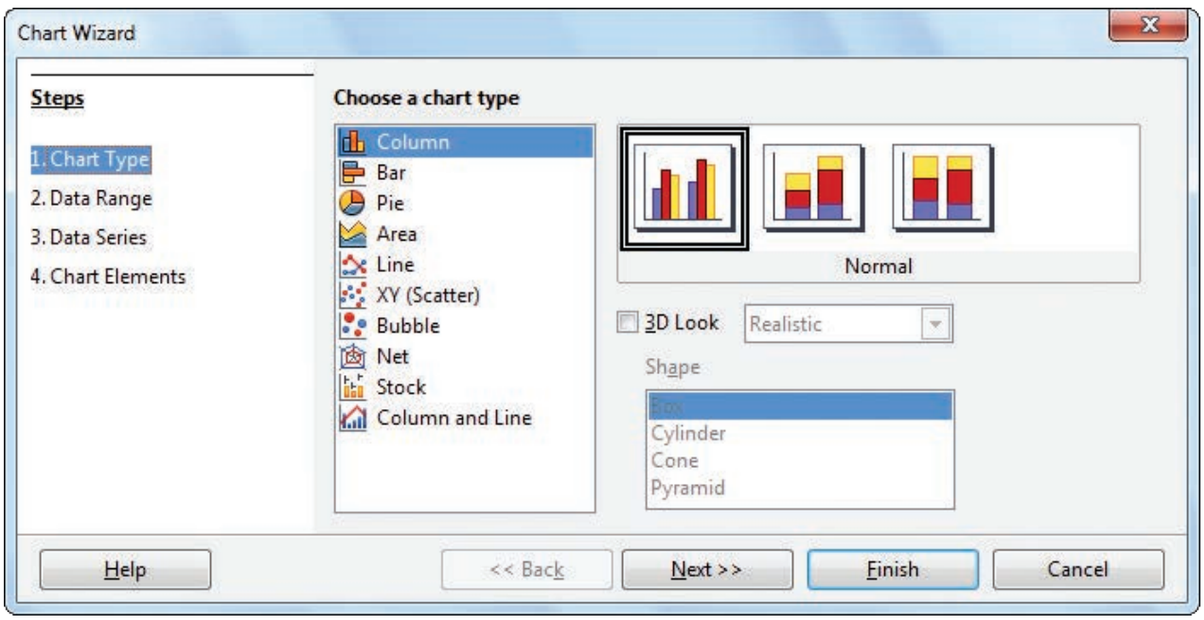


Figure 7.49 Chart Wizard – Step 1: Chart type

For example, Column chart has three styles viz. Normal, Stacked and Percent Stacked. Refer Figure 7.49

"3D Look" check box helps to display the selected chart type in an attractive form. 3D Look is applied only for Column, Bar, Pie and Area chart type. Refer Figure 7.50

Click, “Next” button to move to the second step.

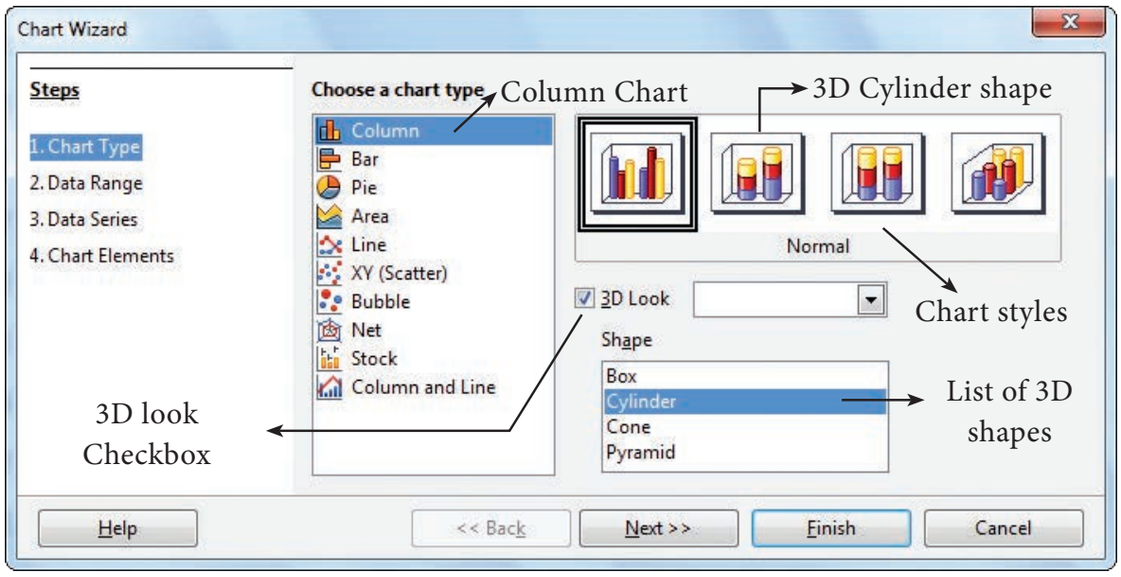


Figure 7.50 Chart Wizard – Step 1: Chart type with 3D Look

Step 2: Data Range

In this step, specify the range of data for which the chart should be created in "Data range" text box or click "Select data range" button which is at the end of the textbox to minimize the wizard.

If the user had selected the data before invoking "chart wizard", the selected range will appear automatically in the textbox as shown in Figure 7.51.

There are two checkboxes used to set the first row or first column or both, as X and Y axis labels to the chart.

Click "Next" button to move to the third step.

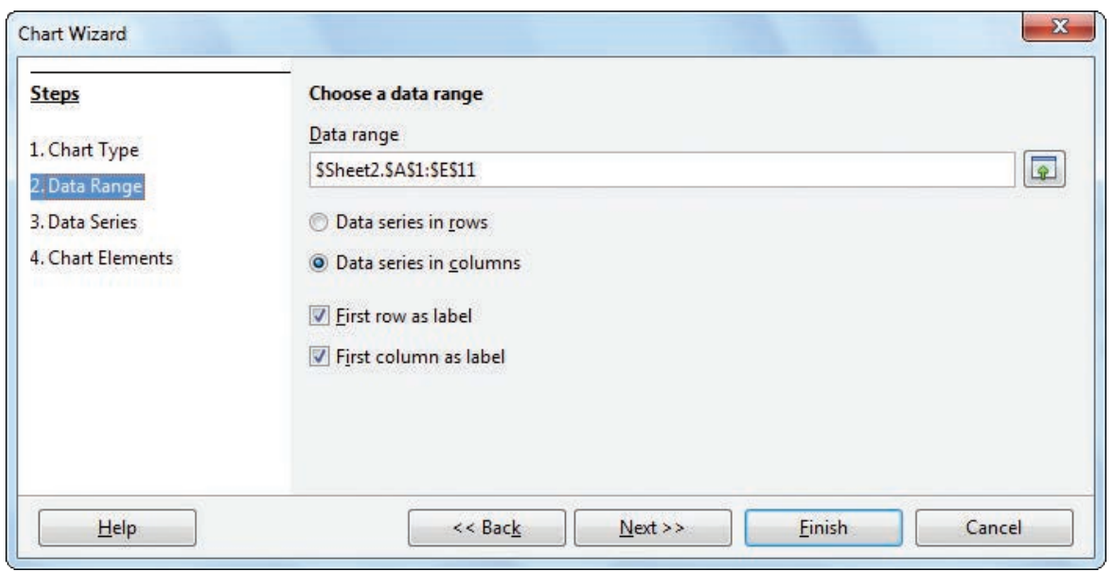


Figure 7.51 Chart Wizard – Step 2: Data Range

Step 3: Data Series

In this step, the user can fine tune the data to be included in the chart. If you don't want to include any column, click the column names listed in "Data Series" box and click on "Remove" button or if you want to add some more columns click "Add" button. Refer Figure 7.52. This is useful only if you have very specific requirements for data in your chart. Otherwise simply click "Next" button to move the last step.

Step 4: Chart Element

This step is used to insert or change titles and legend. In "Title" box, type the title for the chart, to add a subtitle type it in the "Subtitle" box. Refer Figure 7.53. For example, A chart for showing the highest mark holder in you class, you may enter as "Highest Mark holder" as title and "Class XII F" as subtitle.

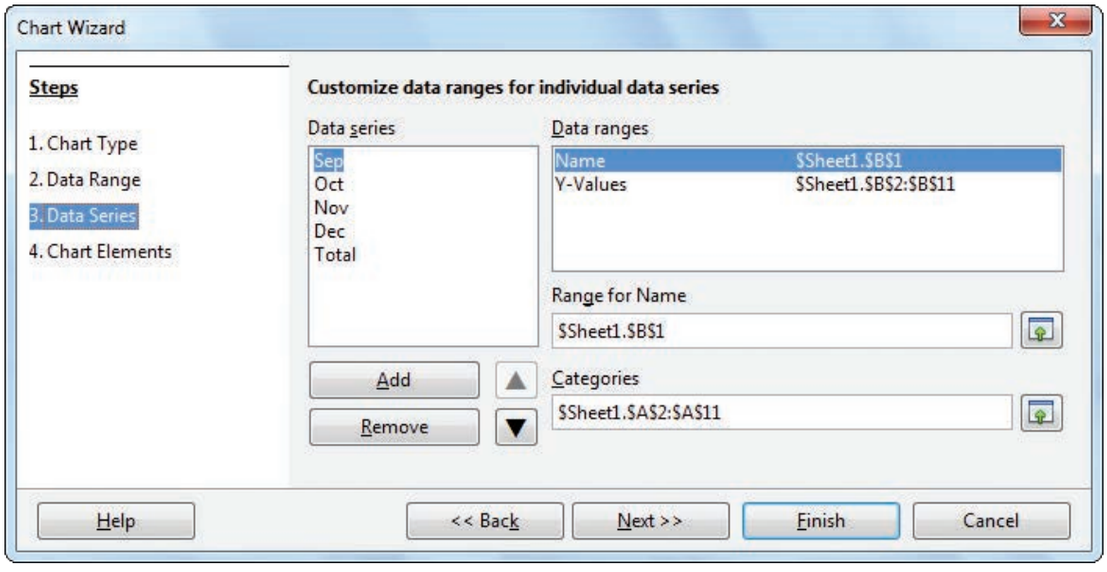


Figure 7.52 Chart Wizard – Step 3: Data Series

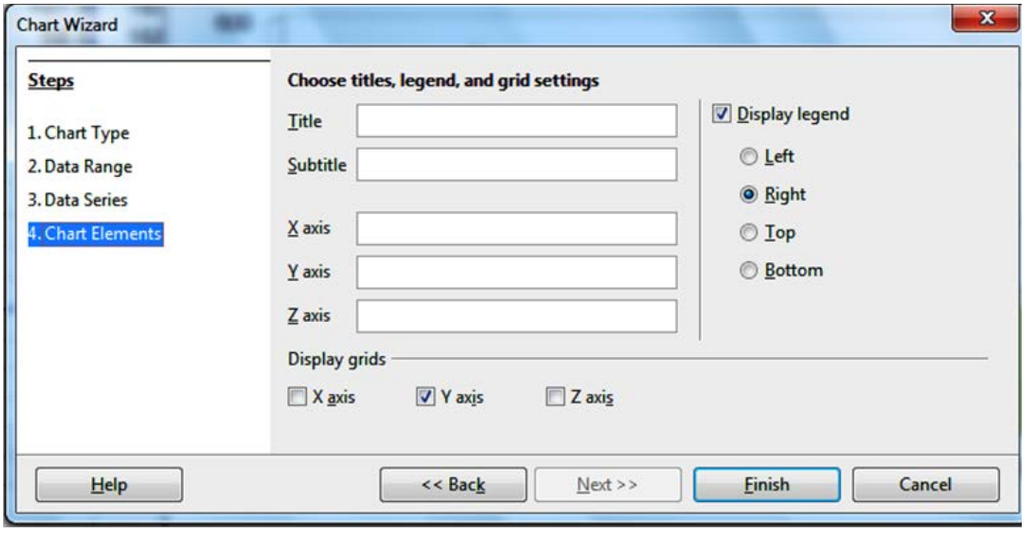


Figure 7.53 Chart Wizard – Step 3: Chart Elements

User can add or modify the labels of X and Y axis.

To create a chart click “Finish” button.

7.13.2 Demo for creating a chart

Type the following data in a new worksheet as in Figure 7.54. The following steps is followed to create a chart for the given data.

Step 1 – Select Data:

- Select the data from A1 to F11.

Step 2 – To open the chart wizard:

- Click “Chart” icon from Standard toolbar (or) choose Insert → Chart.

Step 3 – Selecting Chart type and shape: (Refer Figure 7.55)

	A	B	C	D	E	F	G
1	**District**	**Sep**	**Oct**	**Nov**	**Dec**	**Total**	
2	Chennai	107.5	165.6	224.2	263.7	**761**	
3	Coimbatore	58.6	168.7	234.2	34.1	**495.6**	
4	Cuddalore	108.2	145.4	553.3	345	**1151.9**	
5	Dharmapuri	71.8	108.8	299.2	27.7	**507.5**	
6	Erode	92.7	113.3	343.1	39	**588.1**	
7	Kanchipuram	116.1	192	291.9	260.9	**860.9**	
8	Madurai	153.8	220.3	395.2	140.5	**909.8**	
9	Theni	95.7	167.7	296.5	48.2	**608.1**	
10	Tirunelveli	84.6	111.9	291.7	152.2	**640.4**	
11	Tiruvallur	155.8	133.1	207.2	177.9	**674**	
12							
13							

Figure 7.54 Rainfall (in mm) data of ten districts in 2010

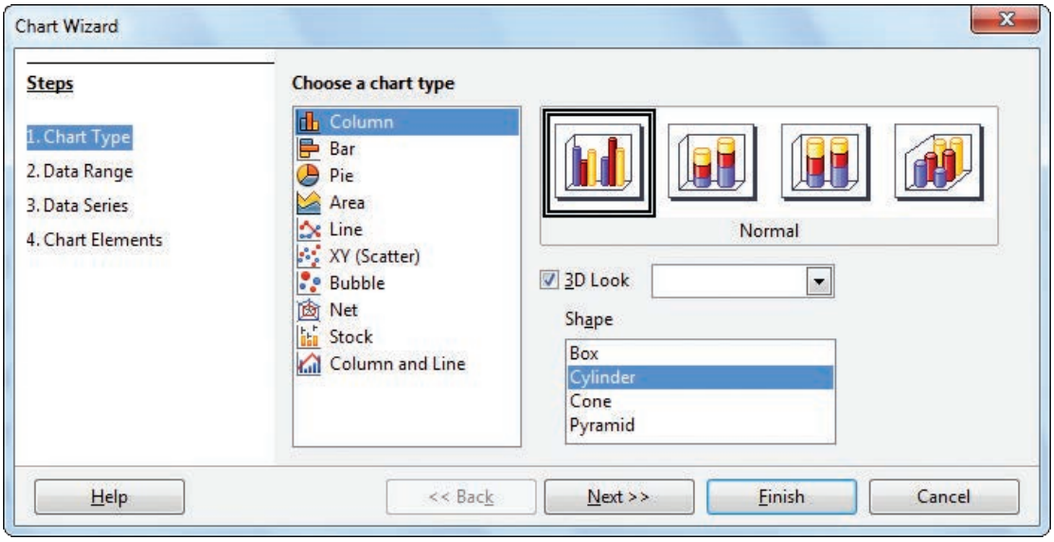


Figure 7.55 Chart Wizard – Step 1 Chart Type

- Select “Chart type” as Column and style as Normal
- Check “3D Look” and click “Cylinder shape”
- Click “Next” button.
- If the user wants change any other type or shape, click on the style image. Preview of the chart displayed on the backgroup of the chart wizard. So, you can view the chart at every stage of design.

Step 4 – Defining Data range: (Refer Figure 7.56)

- In this case, the data has been selected earlier. So, the selected data range is displayed in the “Data range” box.
- Other settings are by default. Click “Next” to move to step 5.

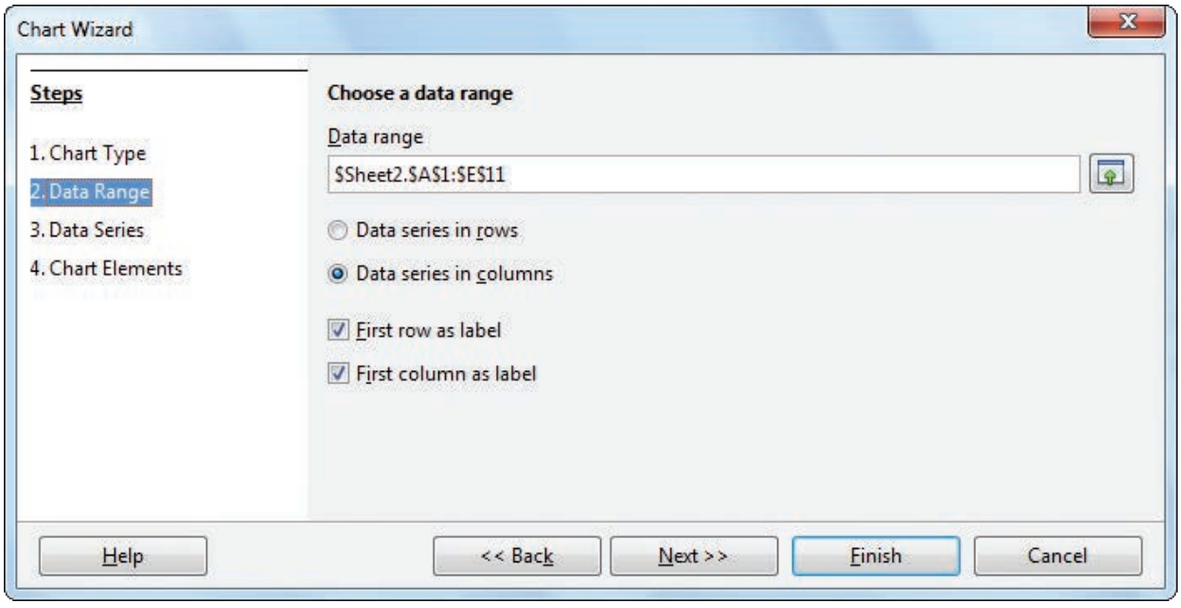


Figure 7.56 Chart Wizard – Step 2 Data Range

Step 5 – Adding or Removing Data series: (Refer Figure 7.57)

- “Data Series” list box shows all the columns to be included in the chart.
- Click on the “Total” in the data series box and click “Remove” button to remove the column.
- If you don’t want to add or remove anyother column click “Next” button to move to the last step.

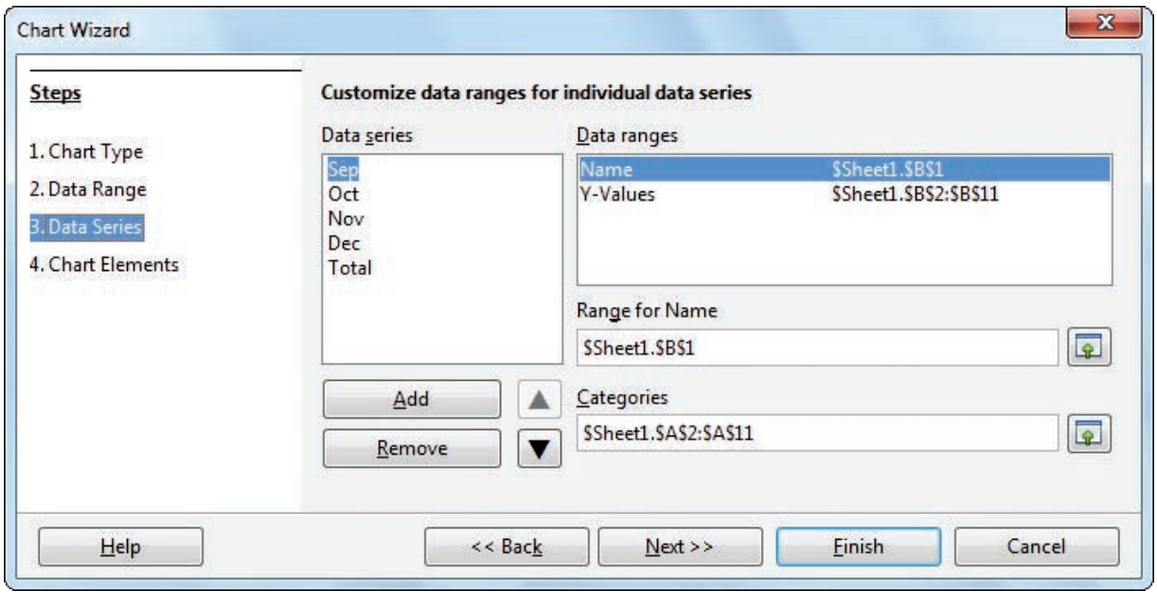


Figure 7.57 Chart Wizard – Step 3 Data Series

Step 6 – Adding Title, Subtitle, Name of X and Y axis: (Refer Figure 7.58)

- Type the title and subtitle of the chart in "Title" and "Subtitle" box
- Type the name of the X and Y-axis in the respective boxes.
- The Display legent text box is selected to the right which is the default.
- Click "Finish" button.

Now the chart will be displayed as in Figure 7.59.

7.13.3 Editing Chart elements:

After inserting a chart any element of the chart can be modified. To modify the element

(i) Double click on the element

(ii) Right click on the selected element

(iii) Select Format from the popup menu.

For example, To change the display pattern of the X-axis, double-click on the X-axis and then right-click on it. A pop-up menu appears as shown in the Figure 7.60.

- In this popup menu, click "Format Axis…" option.

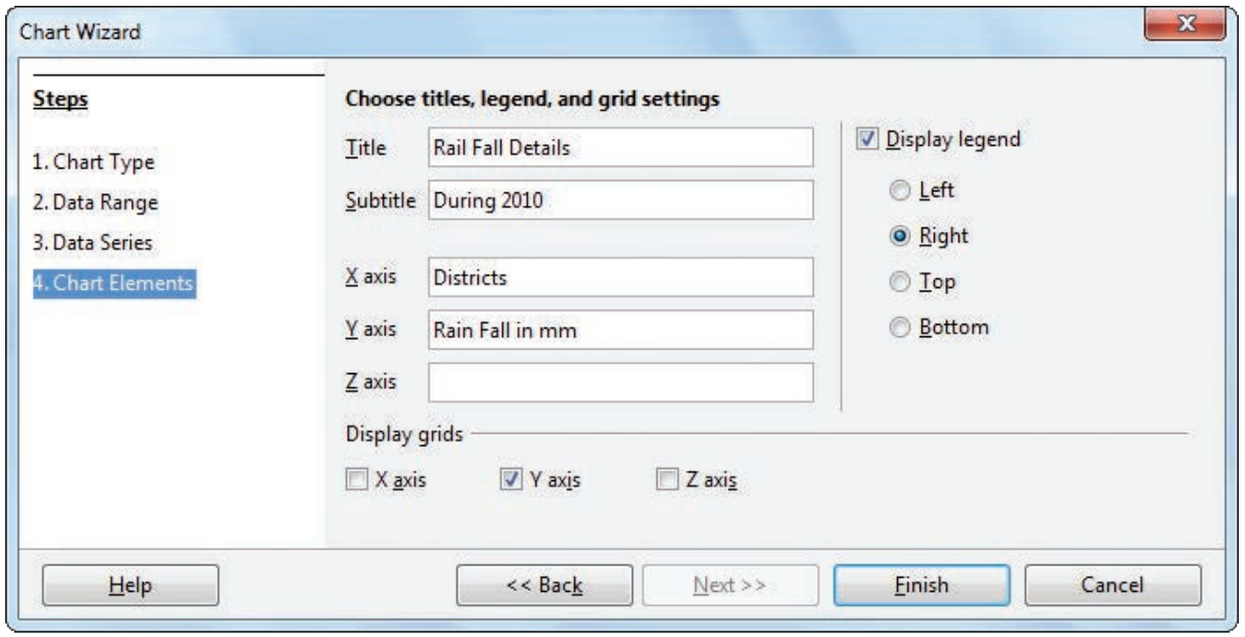


Figure 7.58 Chart Wizard – Step 4 Chart Elements

Now the chart will be displayed as given below

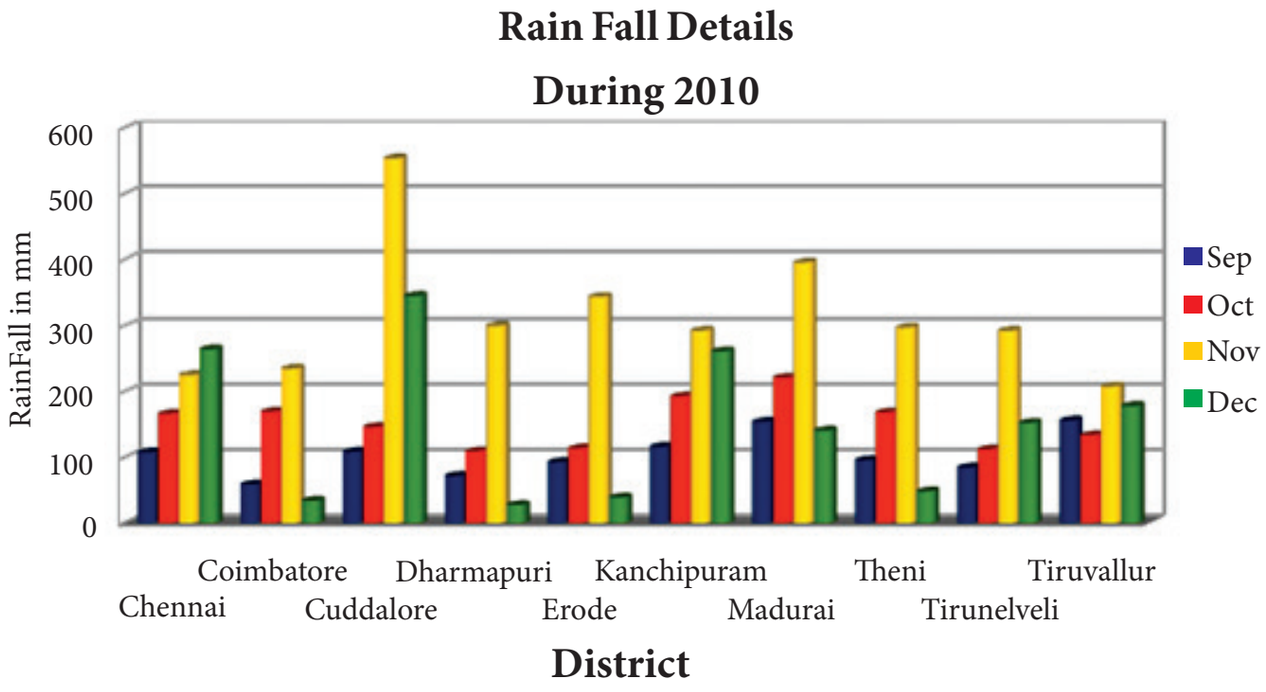


Figure 7.59 Chart

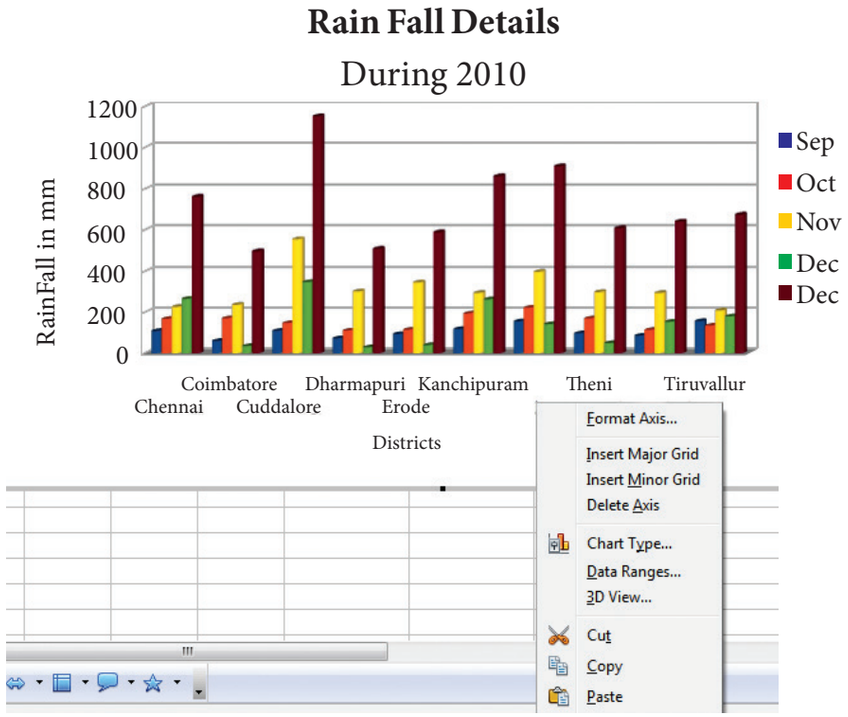


Figure 7.60 Chart element formatting pop-up menu

- Now, a Format Axis dialog box appears as shown in Figure 7.61

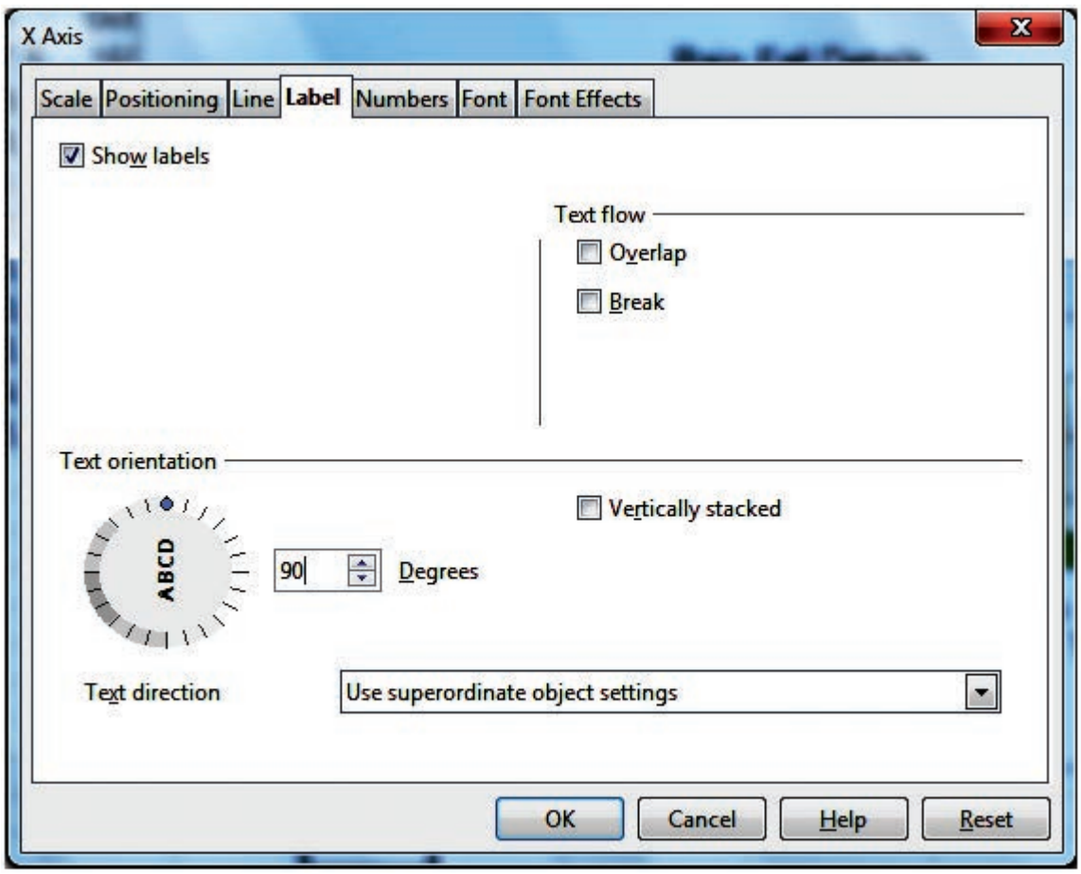


Figure 7.61 Chart Element Properties dialog box

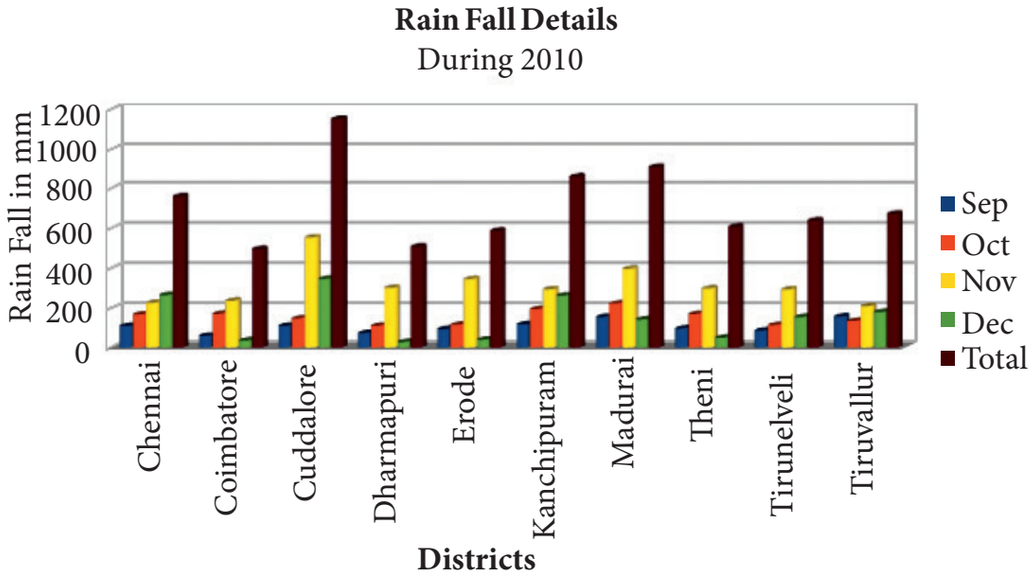


Figure 7.62 Completed Chart

Select "Label" tab.

- In Text Orientation spinbox, type as 90 degree or click and drag the Text direction animated handle.
- Click "OK" button.
- Now, the chart will be as in Figure 7.62

Self Practice:

1. Open the spreadsheet which was created in Illustration 1.
2. Create a column chart with 3D "cone" shape showing the total marks of all students.

7.14 Advanced data analysis tools

A spreadsheet is a "Flat file database". Thus, database operations such as sorting, filtering can be done on spreadsheet. The "Data" menu of OpenOffice calc provides maximum data analysis tools such as sorting, filtering, validity etc., In this part, the sorting and filtering feature is to be learnt.

7.14.1 Database

A database is a repository of collections of related data or facts. It arranges them in a specific structure. The table given below contains details of students in a class.

Sl. No	Class	Group Code	Student Name	Gender	Comm Date of Birth	Date of Birth	Religion
1	XII - F1	302	GANDHIMATHI N	F	SC	02/10/2000	H
2	XII - H2	402	SANDHIYA D	F	SC	19/08/2000	H
3	XII - H2	402	SUMATHI P	F	BC	06/09/1999	H
4	XII - F1	302	JAYASREE J	F	BC	09/06/2001	H
5	XII - H1	402	JOTHIKA A	F	SC	07/04/2001	H
6	XII - H2	402	RAMYA T	F	MBC	23/11/2000	H
7	XII - F1	302	KOWSALYA T	F	SC	14/12/2000	H
8	XII - F1	302	ASHA A P	F	SCA	14/09/2000	H
9	XII - A	102	VENNILA T P	F	BC	14/02/2000	H
10	XII - F2	302	SANGEETHA G	F	MBC	14/01/2000	H

Table 7.14.1 Student Database

The entire collection or related data in one table is referred to as a File or a Table. Each row in a table represents a Record, which is a set of data for each database entry. Each table column represents a Field, which groups each piece or item of data among the records into specific categories. (Refer Figure 7.63)

7.14.2 Sorting:

Sorting is the process of arranging data in ascending or descending order. There are two types of sorting in OpenOffice Calc. They are,

(1) Simple Sorting

(2) Multi Sorting

(3) Sort by selection

(1) Simple Sorting

Arranging data using single column is known as simple sorting. For sorting the data, calc provide two icons on the standard tool bar viz. (1) Sort Ascending (2) Sort Descending.

- Sort Ascending – Arrange data in alphabetical order (A to Z / Small to Large)
- Sort Descending – Arrange data in reverse order (Z to A / Large to Small)

Field

	A	B	C	D	E	F	G	H
1	Sl. No	Class	Group Code	Student Name	Gender	Comm	Date of Birth	Religion
2	1	XII - F1	302	GANDHIMATHI N	F	SC	02/10/2000	H
3	2	XII - H2	402	SANDHIYA D	F	SC	19/08/2000	H
4	3	XII - H2	402	SUMATHI P	F	BC	06/09/1999	H
5	4	XII - F1	302	JAYASREE J	F	BC	09/06/2001	H
6	5	XII - H1	402	JOTHIKA A	F	SC	07/04/2001	H
7	6	XII - H2	402	RAMYA T	F	MBC	23/11/2000	H
8	7	XII - F1	302	KOWSALYA T	F	SC	14/12/2000	H
9	8	XII - F1	302	ASHA A P	F	SCA	14/09/2000	H
10	9	XII - A	102	VENNILA T P	F	BC	14/02/2000	H
11	10	XII - F2	302	SANGEETHA G	F	MBC	14/01/2000	H
12	11	XII - H1	402	BHAVANI K	F	OC	25/11/2000	H
13	12	XII - F1	302	GAJA LAKSHMI S	F	MBC	18/02/2000	H
14	13	XII - H2	402	SAKTHIPRIYA E	F	SC	03/01/2000	H
15	14	XII - H2	402	SANDHIYA SRI M	F	SC	08/04/2001	H
16	15	XII - F1	302	ALFIYA BEE R	F	BCM	29/07/2000	M
17	16	XII - F2	302	VIGNESHWARI P	F	SC	20/07/2000	H
18	17	XII - F2	302	PRIYA W	F	SC	07/03/2000	H
19	18	XII - F1	302	ANJALI S	F	BC	21/02/2000	H
20	19	XII - H2	402	PAVITHRA S	F	SC	28/12/2000	H
21	20	XII - F1	302	KAMALESHWARI V	F	BC	16/02/2000	H

Record

Figure 7.63 Spreadsheet Data Table

Sorting data

Step 1: Place cell pointer in the field (column) to be sorted

Step 2: Click Sort Ascending or Sort Descending icon

OpenOffice Calc, sort the data of selected column and its corresponding values present in other columns are also arranged simultaneously. Refer Figure 7.65

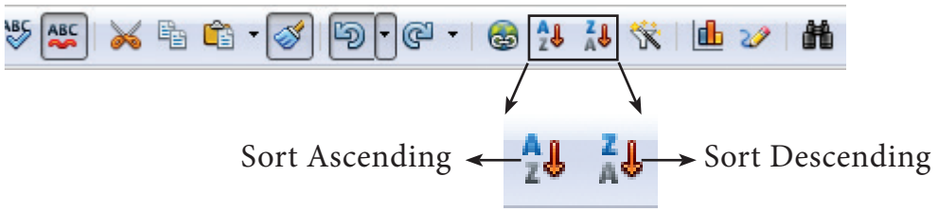
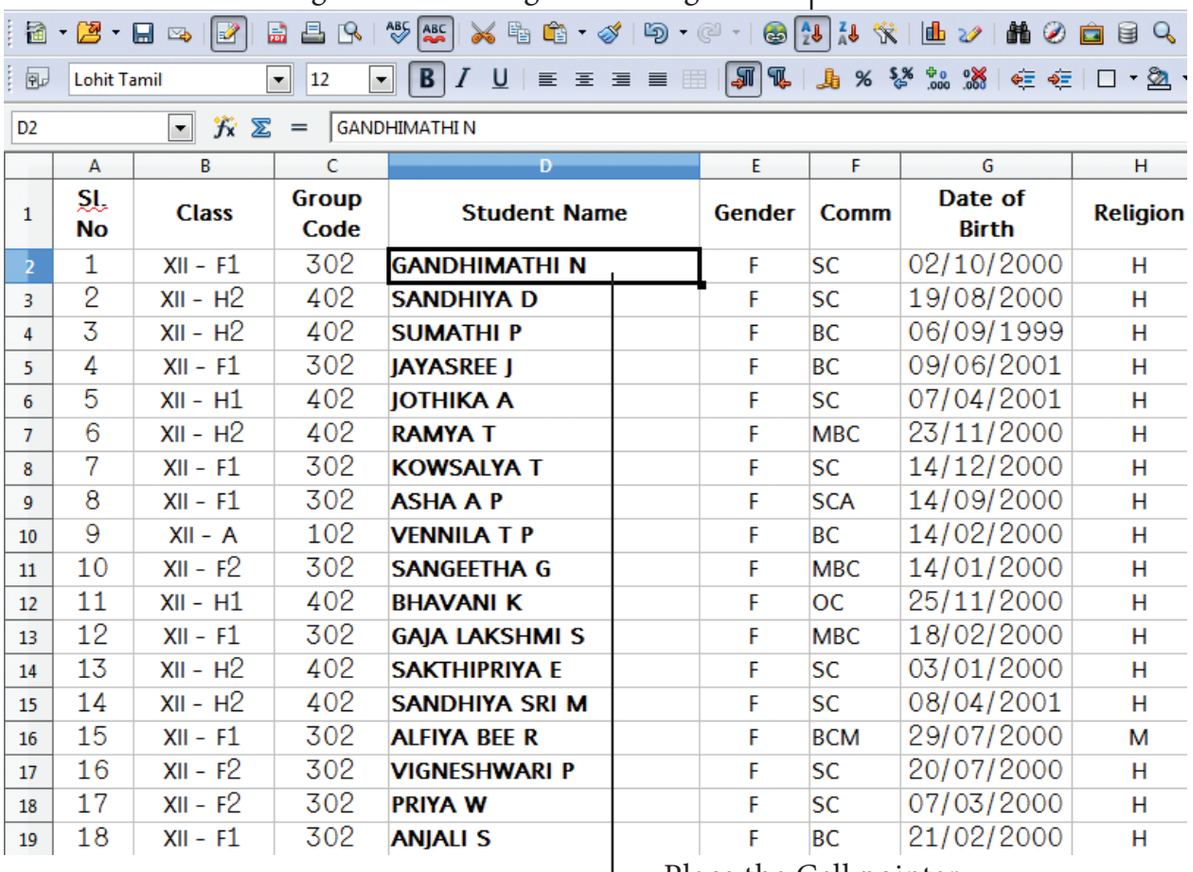


Figure 7.64 Standard Tool Bar with Sort Ascending / Descending

Click "Sort Ascending" icon to arrange ascending order



	A	B	C	D	E	F	G	H
1	Sl. No	Class	Group Code	Student Name	Gender	Comm	Date of Birth	Religion
2	1	XII - F1	302	GANDHIMATHI N	F	SC	02/10/2000	H
3	2	XII - H2	402	SANDHIYA D	F	SC	19/08/2000	H
4	3	XII - H2	402	SUMATHI P	F	BC	06/09/1999	H
5	4	XII - F1	302	JAYASREE J	F	BC	09/06/2001	H
6	5	XII - H1	402	JOTHIKA A	F	SC	07/04/2001	H
7	6	XII - H2	402	RAMYA T	F	MBC	23/11/2000	H
8	7	XII - F1	302	KOWSALYA T	F	SC	14/12/2000	H
9	8	XII - F1	302	ASHA A P	F	SCA	14/09/2000	H
10	9	XII - A	102	VENNILA T P	F	BC	14/02/2000	H
11	10	XII - F2	302	SANGEETHA G	F	MBC	14/01/2000	H
12	11	XII - H1	402	BHAVANI K	F	OC	25/11/2000	H
13	12	XII - F1	302	GAJA LAKSHMI S	F	MBC	18/02/2000	H
14	13	XII - H2	402	SAKTHIPRIYA E	F	SC	03/01/2000	H
15	14	XII - H2	402	SANDHIYA SRI M	F	SC	08/04/2001	H
16	15	XII - F1	302	ALFIYA BEE R	F	BCM	29/07/2000	M
17	16	XII - F2	302	VIGNESHWARI P	F	SC	20/07/2000	H
18	17	XII - F2	302	PRIYA W	F	SC	07/03/2000	H
19	18	XII - F1	302	ANJALI S	F	BC	21/02/2000	H

Place the Cell pointer anywhere in name column

Firgure 7.65 Sort Ascending

(2) Multi Sorting

Sorting data based on more than one field (column) is known as **multi sorting**. For example, the worksheet containing data of 20 students belongs to different groups and classes. To rearrange this data alphabetically by name and group code, multi sorting is used. Refer Figure 7.66.

Multi-sorting data

Step 1: Select **Data → Sort**

	A	B	C	D	E	F	G	H
1	Sl. No	Class	Group Code	Student Name	Gender	Comm	Date of Birth	Religion
2	15	XII - F1	302	ALFIYA BEE R	F	BCM	29/07/2000	M
3	18	XII - F1	302	ANJALI S	F	BC	21/02/2000	H
4	8	XII - F1	302	ASHA A P	F	SCA	14/09/2000	H
5	11	XII - H1	402	BHAVANI K	F	OC	25/11/2000	H
6	12	XII - F1	302	GAJA LAKSHMI S	F	MBC	18/02/2000	H
7	1	XII - F1	302	GANDHIMATHI N	F	SC	02/10/2000	H
8	4	XII - F1	302	JAYASREE J	F	BC	09/06/2001	H
9	5	XII - H1	402	JOTHIKA A	F	SC	07/04/2001	H
10	20	XII - F1	302	KAMALESHWARI V	F	BC	16/02/2000	H
11	7	XII - F1	302	KOWSALYA T	F	SC	14/12/2000	H
12	19	XII - H2	402	PAVITHRA S	F	SC	28/12/2000	H
13	17	XII - F2	302	PRIYA W	F	SC	07/03/2000	H
14	6	XII - H2	402	RAMYA T	F	MBC	23/11/2000	H
15	13	XII - H2	402	SAKTHIPRIYA E	F	SC	03/01/2000	H
16	2	XII - H2	402	SANDHIYA D	F	SC	19/08/2000	H
17	14	XII - H2	402	SANDHIYA SRI M	F	SC	08/04/2001	H
18	10	XII - F2	302	SANGEETHA G	F	MBC	14/01/2000	H
19	3	XII - H2	402	SUMATHI P	F	BC	06/09/1999	H
20	9	XII - A	102	VENNILA T P	F	BC	14/02/2000	H
21	16	XII - F2	302	VIGNESHWARI P	F	SC	20/07/2000	H

Name are arranged in Ascending order According to names, other data also rearranged

Step 2: Sort dialog box appears. (Refer Figure 7.67)

Step 3: Select the field name (Student name) in which you want to sort from the "sort by" dropdown list box and then choose order of sorting i.e. Ascending or Descending. Ascending is the default selection.

Step 4: Select another field name (Group Code) from the "Then by" dropdown list box and choose the order of sorting to this column.

Step 5: Click "OK" button.

In OpenOffice Calc, multi sort can be done only for three fields.

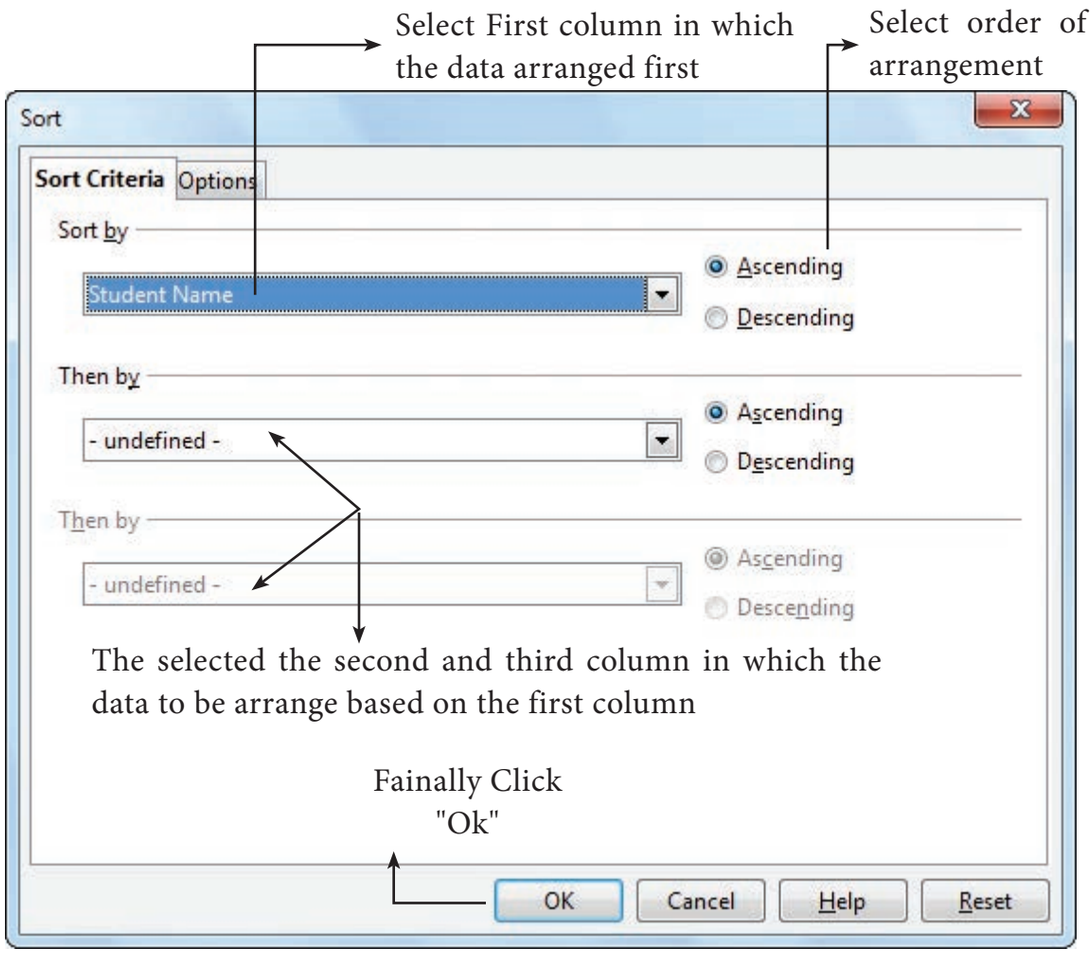


Figure 7.67 Multi-sorting dialog box

(3) Sort by selection

In Calc sorting can be done on selected range. But this kind of sorting is generally not recommended, because the other relevant data are also not sorted. Therefore, OpenOffice Calc displays a warnning message for this type of sorting. Refer Figure 7.68.

Sorting data by selection:

Step 1: Select any particular field in which you want sort.

Step 2: Click required Sort icon from standard tool bar or **Data** → **Sort command**.

Calc, display a **"Sort Range"** warning message as shown in the Figure 7.68

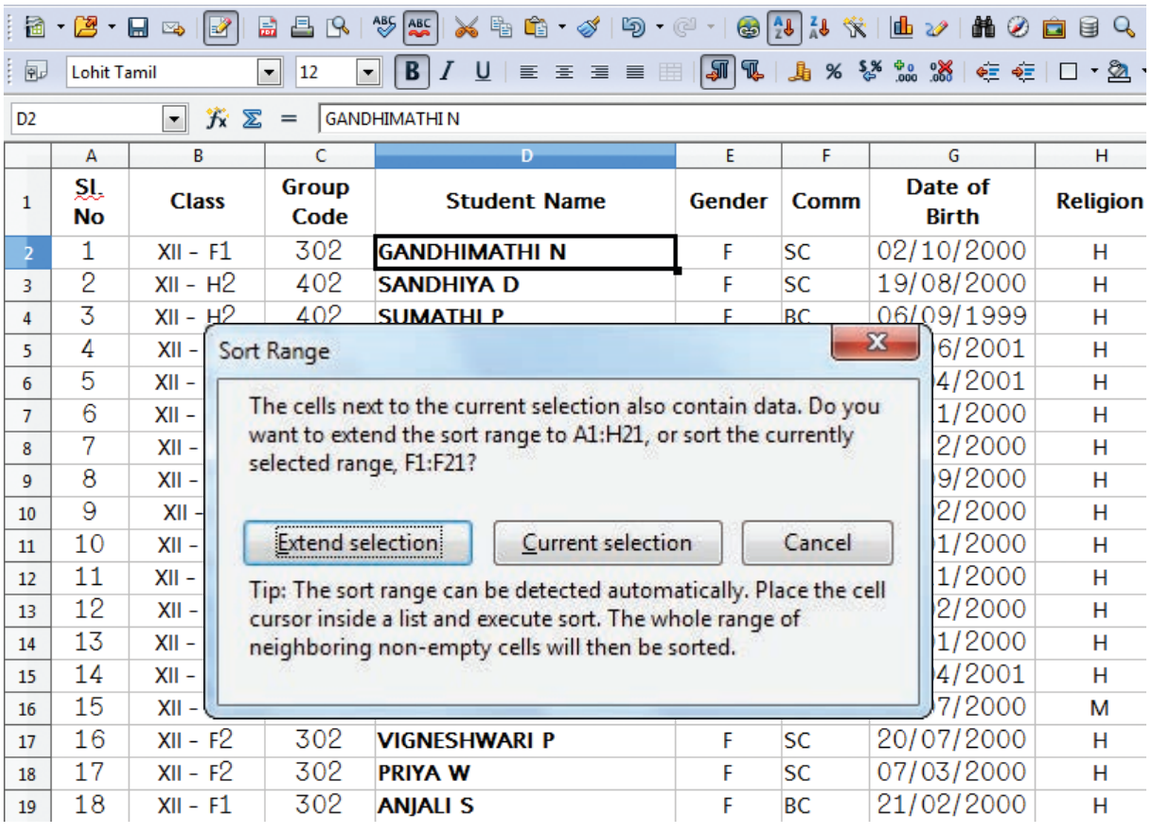
"Sort Range" message box has two options, viz. (1) Extend selection (2) Current selection.

Step 3: "Extend Selection" – Sort all the data based on the selection.

"Current Selection" – Sort only the selected range of data, remaining data are not sorted.

7.14.3 Filtering

Filter is a way of limiting the information that appears on screen. Filters



	A	B	C	D	E	F	G	H
1	Sl. No	Class	Group Code	Student Name	Gender	Comm	Date of Birth	Religion
2	1	XII - F1	302	GANDHIMATHI N	F	SC	02/10/2000	H
3	2	XII - H2	402	SANDHIYA D	F	SC	19/08/2000	H
4	3	XII - H2	402	SUMATHI P	F	BC	06/09/1999	H
5	4	XII -					6/2001	H
6	5	XII -					4/2001	H
7	6	XII -					1/2000	H
8	7	XII -					2/2000	H
9	8	XII -					9/2000	H
10	9	XII -					2/2000	H
11	10	XII -					1/2000	H
12	11	XII -					1/2000	H
13	12	XII -					2/2000	H
14	13	XII -					1/2000	H
15	14	XII -					4/2001	H
16	15	XII -					7/2000	M
17	16	XII - F2	302	VIGNESHWARI P	F	SC	20/07/2000	H
18	17	XII - F2	302	PRIYA W	F	SC	07/03/2000	H
19	18	XII - F1	302	ANJALI S	F	BC	21/02/2000	H

Figure 7.68 Sort by selection

are a feature for displaying and browsing a selected list or subset of data from a worksheet. The visible records satisfy the condition that the user sets. Those that do not satisfy the condition are only hidden, but not removed.

OpenOffice Calc allows three types of filters. They are ***AutoFilter, Standard Filter*** and ***Advanced Filter***.

(1) Auto Filter:

Auto Filter applies a drop-down list box to each field (columns) filled with similar data available in that field. Using the list box item, you can filter the data that matches the criteria of the data concerned.

Using Auto Filter:

- Click Auto Filter icon available on the "Standard tools bar" (or) click **Data → Filter → Auto Filter**

- The list box contains similar data in the fields. Refer Figure 7.69 and 7.70
- Each list box item will be considered as filter criteria.

Drop down list box

	A	B	C	D	E	F	G	H
1	Sl. No	Class	Group Code	Student Name	Gender	Comm	Date of Birth	Religion
2	1	XII - F1	302	GANDHIMATHI N	F	SC	02/10/2000	H
3	2	XII - H2	402	SANDHIYA D	F	SC	19/08/2000	H
4	3	XII - H2	402	SUMATHI P	F	BC	06/09/1999	H
5	4	XII - F1	302	JAYASREE J	F	BC	09/06/2001	H
6	5	XII - H1	402	JOTHIKA A	F	SC	07/04/2001	H
7	6	XII - H2	402	RAMYA T	F	MBC	23/11/2000	H
8	7	XII - F1	302	KOWSALYA T	F	SC	14/12/2000	H
9	8	XII - F1	302	ASHA A P	F	SCA	14/09/2000	H
10	9	XII - A	102	VENNILA T P	F	BC	14/02/2000	H

Figure 7.69 Spreadsheet table with Auto Filter

	A	B	C	D	E	F	G	H
1	Sl. No	Class	Group Code	Student Name	Gender	Comm	Date of Birth	Religion
2	1	XII - F1	All	ANDHIMATHI N	F	SC	02/10/2000	H
3	2	XII - H2	Top 10	ANDHIYA D	F	SC	19/08/2000	H
4	3	XII - H2	Standard Filter...	UMATHI P	F	BC	06/09/1999	H
5	4	XII - F1	102	YASREE J	F	BC	09/06/2001	H
6	5	XII - H1	302	THIKA A	F	SC	07/04/2001	H
7	6	XII - H2	402	AMYA T	F	MBC	23/11/2000	H
8	7	XII - F1		OWSALYA T	F	SC	14/12/2000	H
9	8	XII - F1		SHA A P	F	SCA	14/09/2000	H

Figure 7.70 Auto Filter dropdown list box

- Select the data item from the list box. Now, Calc shows only the records which are satisfy the selected criteria.

Example:

If you want to apply an auto filter to the contents of the table 7.14.1, follow the following two steps

Step 1: Place cell pointer anywhere in the table

Step 2: Click Auto Filter icon available on the "Standard tools bar" (or) Click Data → Filter → Auto Filter

In the above table, if you want to view only the students belongs to the Group code 402;

- Click the dropdown list box's drop arrow (a tiny triangle) to get the filter criteria. (Refer Figure 7.70)

- Select group code 402 from the list
- The spreadsheet displays only the student's details those who are studing in group code 402 (Refer Figure 7.71) and the remaining details are only hidden.

	A	B	C	D	E	F	G	H
1	Sl. No	Class	Group Code	Student Name	Gender	Comm	Date of Birth	Religion
3	2	XII - H2	402	SANDHIYA D	F	SC	19/08/2000	H
4	3	XII - H2	402	SUMATHI P	F	BC	06/09/1999	H
6	5	XII - H1	402	JOTHIKA A	F	SC	07/04/2001	H
7	6	XII - H2	402	RAMYA T	F	MBC	23/11/2000	H
12	11	XII - H1	402	BHAVANI K	F	OC	25/11/2000	H
14	13	XII - H2	402	SAKTHIPRIYA E	F	SC	03/01/2000	H
15	14	XII - H2	402	SANDHIYA SRI M	F	SC	08/04/2001	H
20	19	XII - H2	402	PAVITHRA S	F	SC	28/12/2000	H

Figure 7.71 Filtered details

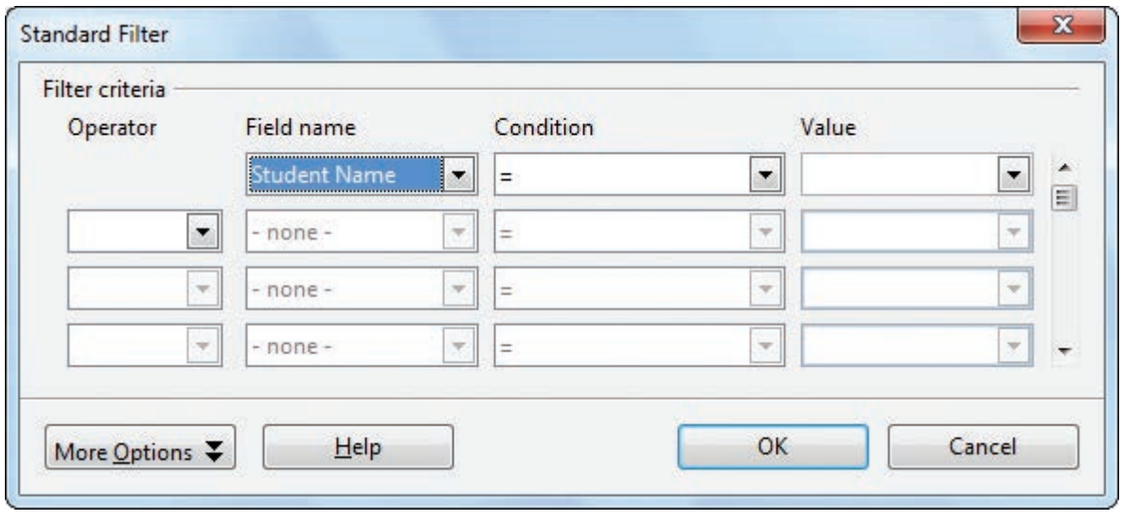


Figure 7.72 Standard Filter dialog box

Removing Auto Filter:

- To remove auto filter, click "Auto filter" icon once again .
- The original table is displayed without filter.

(2) Standard Filter: Auto filter is used only for single criteria on a data, whereas the Standard filter is used for multiple critieria to filter.

Step 1:

- Select Data → Filter → Standard Filter.

- Now, the entire data is selected and "Standard Filter" dialog box dispalys as shown in Figure 7.73.

Step 2:

- Select the column heading from the “Filed name” list box for first criteria.
- Select conditional opeator such as >, <, = etc., from “Condition” list box.
- Type or select the value of critera in the “Value” box.

Step 3:

- Select the one of the logical operator (And / Or) from “Operator” list box to fix second criteria.
- Follow the step 2, for the next criteria.

Step 4:

- Click “OK” to finish.

Example for Standard filter:

If you want to filter the records of “BC” students of group code 402 from the table 7.14.1

Step 1: Select Data →Filter → Standard Filter

- Now, “Standard Filter” dialog box appears as in Figure 7.73

Step 2: In “Standard Filter” dialog box, select the first criteria;

- Select Field name as Group code
- Select Condition as =
- Type or select Value as 402

Step 3: To select the second criteria;

- Select Operator as “AND”
- Select Field name as Class
- Select Condition as =
- Type or select Value as XII- H2

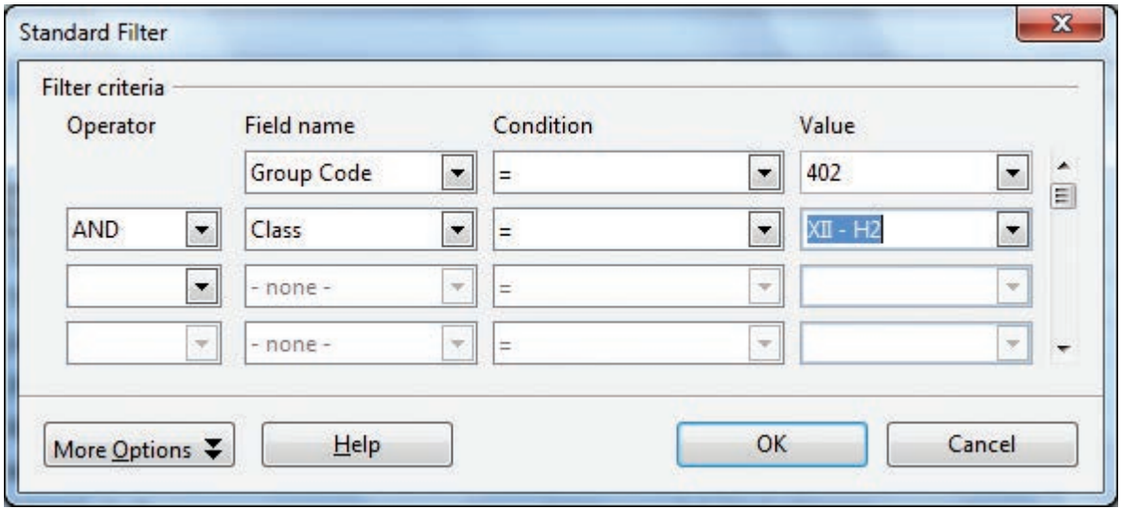


Figure 7.73 Standard Filter

Step 4: Click "OK"

- Now, the table displays only the recods which are match for the given two criteria. Refer Figure 7.74.

Remove Standard Filter:

- Select Data → Filter → Remove Filter

A1:H21 | GANDHIMATHI N

	A	B	C	D	E	F	G	H
1	Sl. No	Class	Group Code	Student Name	Gender	Comm	Date of Birth	Religion
3	2	XII - H2	402	SANDHIYA D	F	SC	19/08/2000	H
4	3	XII - H2	402	SUMATHI P	F	BC	06/09/1999	H
7	6	XII - H2	402	RAMYA T	F	MBC	23/11/2000	H
14	13	XII - H2	402	SAKTHIPRIYA E	F	SC	03/01/2000	H
15	14	XII - H2	402	SANDHIYA SRI M	F	SC	08/04/2001	H
20	19	XII - H2	402	PAVITHRA S	F	SC	28/12/2000	H
22								

Figure 7.74 Class XII student of group 402

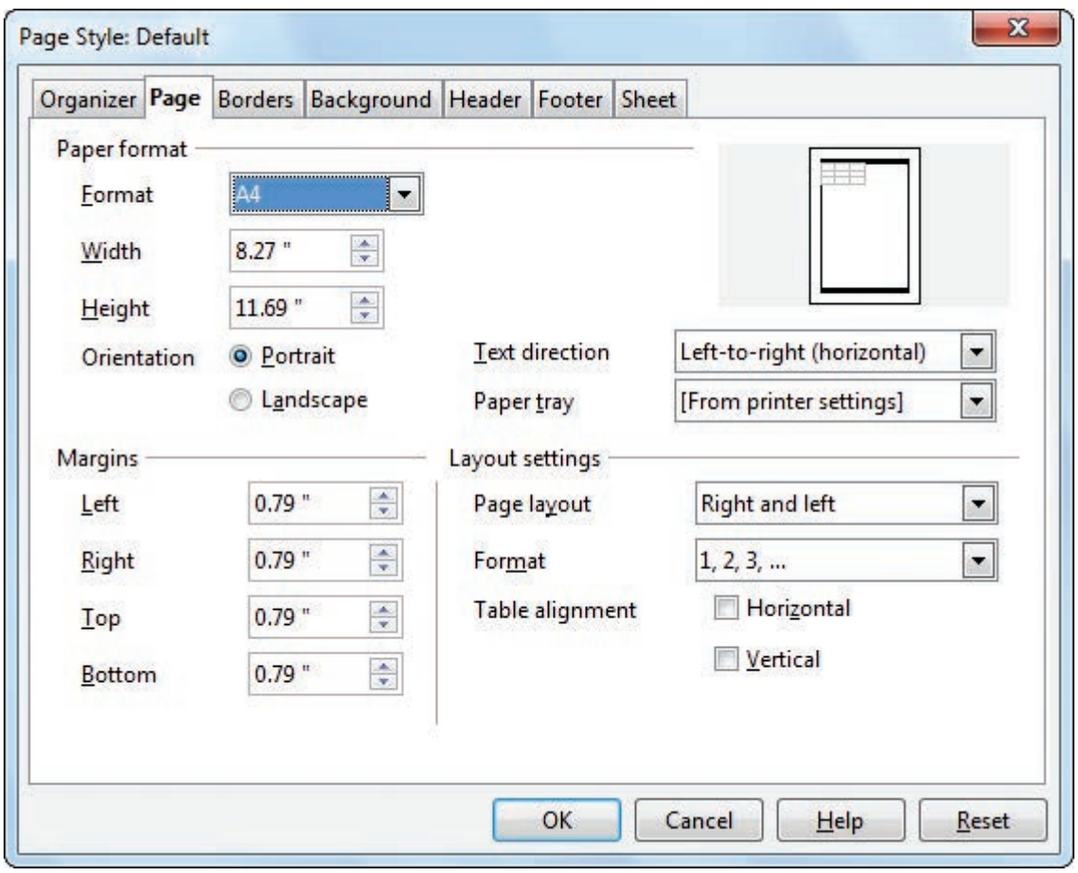


Figure 11.75 Page Style dialogue box

- "Header" tab is used to create header
- "Footer" tab is used to create footer

7.15 Setting the page size, Orientation and Margins

- To set page size, select Format → Page
- Page style dialoge box will appears as shown in figure 7.75.
- "Page" tab is used to change page size, orientation and margin
- "Header" tab is used to create header
- "Footer" tab is used to create footer

Workshop 1

1. Create a worksheet with following data

Emp. No	Name of Emp.	Basic	DA	HRA	CCA	MA	GPF	IT	HF
1001	Manivannan M	25500	25 % of Basic	%15 of Basic and DA	600	300	12 % of Basic	%10 of Gross	250
1002	Kannan K	20200			600	300			250
1003	Gowrishankar N V	24300			600	300			250
1004	Lenin K	23400			600	300			250
1005	Suryanarayanan T	24100			600	300			250
1006	Ramesh K	18500			600	300			250
1007	Govindasami A	13200			600	300			250
1008	Kannan S	20250			600	300			250
1009	Penchil Rao K	28300			600	300			250
1010	Logeswaran M	30200			600	300			250
1011	Arumugam E	12000			600	300			250
1012	Vasu G N	25000			600	300			250

Based on the above data,

(1) Calculate the Gross Salary, Total Deductions and Net Salary

(2) Insert "IT Cess" column and calcualte 3% of cess to all employees

(3) Delete the records of "Govindasami" and "Arumugam".

(4) Insert four new rows and enter the following employee details.

(5) Calculate the Total amount of GPF, IT and Cess

Emp. No	Name of Emp.	Basic	DA	HRA	CCA	MA	GPF	IT	HF
2001	Murali G	24750							
2002	Munirathnam A	23550							
2003	Ramakrishnan V G	25500							
2004	Srinivasan R	27500							

Workshop: 2

1. Create a new worksheet in OpenOffice Calc.

2. Enter the following stock and sales details of "Chennai whole sale Marketing Pvt. Ltd." during the month of Jan-2018.

Code	Product Name	Weight (gm)	Opening stock	Cost price	Sales in units	Rate of Discount	Amount of Discount	Selling price	Amount of Sale	Closing Stock
100	Marie Gold	120	345	15	147	5%				
101	Milk Bikis	85	106	10	63	5%				
102	Dark Fantasy	75	147	25	43	3%				
103	Nutri Choice	250	98	50	12	10%				
104	Lays potato chips	52	172	15	152	4%				
105	Oreo	120	112	25	85	6%				

3. Calculate the following using formula or function

(i) Amount of Discount, Selling price and Amount of sales for each product

(ii) Total amount of discount and Sales of the month

(iii) Closing stock of each product

4. Draw a Pie chart to show the highest selling product.

Workshop: 3

1. Create a worksheet in OpenOffice Calc.

2. Enter the following details of loan sanctioned during the month of January 2018 of "Tamil Finance Corporation".

AC No Emp. No	Name	Amount of Loan	Loan Sanction date	Duration of Loan	Rate of Interest	Interest (Rs)	Total Amount	Due date
2001	Senthil	250000	02/01/2018	120 days	9.5%			
2002	Kumar	175000	15/01/2018	150 days	9.5%			
2003	Ibrahim	550000	16/01/2018	140 days	10.5%			
2004	Valli	375000	21/01/2018	210 days	10%			
2005	Charles	450000	28/01/2018	130 days	10.5%			

3. Create the formula to calculate

(i) Interest, Total amount and due date.

(ii) Grass total of amount of loan, interest and total amount.

4. Insert 5 new rows between Kumar and Ibrahim and include the following details

AC No	Name	Amount of Loan	Loan Sanction date	Duration of Loan	Rate of Interest	Interest (Rs)	Total Amount	Due date
3001	Pari	250000	03/02/2018	125 days	9.5%	5%		
3002	Arul	375000	07/02/2018	155 days	9.5%	5%		
3003	Raman	350000	10/02/2018	130 days	10.5%	3%		
3004	Givind	450000	10/02/2018	100 days	10%	10%		
3005	Zeenath	800000	26/02/2018	90 days	10%	4%		

Points to Remember:

- Spreadsheet is a very useful office automation tool for organization, analysis and storage of data in a tabular form.
- Daniel Bricklin and Bob Frankston developed the first spreadsheet software called "VisiCalc" in 1979 for Apple II.
- OpenOffice Calc is popular open source spreadsheet application software presently maintained by Apache Foundation.
- A worksheet is a grid of cells with a programmable calculator attached to each cell.
- OpenOffice Calc version 4.1.5 contains a total of 1024 columns and 10,48,576 rows.
- Intersection of every row and column makes a box which is called as "Cell".
- Cell pointer is a rectangle element which can be moved around the worksheet.
- The cell in which the cell pointer is currently located is known as "Active cell".
- All formula should start with an equal sign.
- There are four types operators supported by calc.
- The charts are used to present numerical data in an easy manner.

Activity

Student Activity

1. Based on the concept of calculation using formula / functions, make the students to create various worksheet data.
2. Make the students prepare Charts and manipulate data using sorting and filtering features.

Teacher Activity

1. To show the demo of working with spread sheets using simple example in class room.

Evaluation

Part – I

169AQ

Choose the correct answer

1. Which is the first electronic spreadsheet?

   (A)Excel (B) Lotus 1-2-3

   (C) Visicalc (D) OpenOffice Calc

2. Which of the following applications was the parent to OpenOffice Calc?

   (A)Visicalc (B) LibreCalc

   (C) Lotus 123 (D) StarOffice Calc

3. Grid of cells with a programmable calculator:

   (A)Spreadsheet (B) Database

   (C) Word processor (D) Linux

4. A column heading in Calc is represented using

   (A)Number (B) Symbol

   (C) Date (D) Alphabet

5. Which key is used to move the cell pointer in the forward direction within the worksheet?

   (A)Enter (B) Tab

   (C) Shift + Tab (D) Delete

6. A formula in calc may begin with

   (A) = (B) +

   (C) - (D) All the above

7. What will be the result from the following formula (Assume A1=5, B2=2)? + A1^B2

   (A) 7 (B) 25

   (C) 10 (D) 52

8. What will be the result from the following expression (Assume H1=12, H2=12)? = H1<>H2

(A) True (B) False

(C) 24 (D) 1212

9. Which of the following symbol is used to make a cell address as an absolute reference?

(A) + (B) %

(C) & (D) $

10. Which of the following key combinations is used to increase the width of the current column?

(A)Alt + Right arrow (B) Ctrl + Right arrow

(B)Alt + Left arrow (D) Ctrl + Left arrow

Part – II

Very Short Answers

1. What are the types of toolbars available in OpenOffice calc?

2. What is a Cell pointer?

3. Write about the text operator in OpenOffice Calc.

4. Write the general syntax of constructing a formula in Calc.

5. What are the keyboard shortcuts to cut, copy and paste?

6. Can you edit the contents of a cell? If yes, explain any one of the method of editing the cell content.

7. What are the options available in "Insert Cells" dialog box?

8. Match the following

A	B
(a) Cut, Copy and Paste	(1) Absolute Cell
(b) Cell pointer	(2) Status bar
(c) Selection Mode	(3) Standard Toolbar
(d) $A5$	(4) Active cell

9. Define the following (i) Text Operator (ii) Rows and Columns of spreadsheet

10. Differentiate between Copy -Paste and Cut-Paste

Part-III

Short Answers

1. Write a short note on OpenOffice Calc.

2. Write about inserting columns and rows in Calc.

3. Differentiate Deleting data using Backspace and Delete

4. Write any three formatting options.

5. In cell A1=34 A2=65 A3=89 write the forumla to find the average.

Part-IV

Explain in Detail

1. Explain about changing the column width in Calc.

2. Write the steps to generate the following series. 5, 10, 20 ….. 2560

3. Read the following table

	A	B	C	D	E
1	Year	Chennai	Madurai	Tiruchi	Coimbatore
2	2012	1500	1250	1000	500
3	2013	1600	1000	950	350
4	2014	1900	1320	750	300
5	2015	1850	1415	820	200
6	2016	1950	1240	920	250

Above table shows the sales figures for "Air Cooler" sold in four major cities of Tamilnadu from the year 2012 to 2016. Based on this data, write the formula to calculate the following.

(1) Total sales in the year 2015.

(2) Total sales in Coimbatore from 2012 to 2016.

(3) Total sales in Madurai and Tiruchi during 2015 and 2016.

(4) Average sales in Chennai from 2012 to 2016

(5) In 2016, how many "Air Coolers" are sold in Chennai compared to Coimbatore?

GLOSSARY

MCO9N

Spreadsheet	Sheet of paper that shows accounting or other data in rows and columns
What-if analysis	It is a process of changing the values in a cell to see how those changes will affect output.
VisiCalc	The first electronic spreadsheet application
GUI	Graphical User Interface
Excel	Familiar spreadsheet application developed by Microsoft Corporation.
Cell	Intersection of rows and column
Cell Pointer	A rectangular box, highlighting the cell in a spreadsheet.
Active cell	A cell in which the cell pointer is presently locating
Formula	A formula is an expression telling the computer what mathematical operation to perform upon a specific value.
Operator	A symbol that usually represents an action or process
Range	Group / Collection of cells
BODMAS Rule	Order of mathematical calculation: **B**rackets - **O**rders (powers or square roots) - **D**ivision – **M**ultiplication – **A**ddition - **S**ubtraction.
Drag fill handle	A small black box at the bottom right corner of the cell pointer.
Function	Predefined formula / A group of instructions to return a single result or a set of results.
Chart	Graphical representation of data.
Database	A large quantity of indexed digital information.
Flat file database	Single table, non relative database

Annexure 2

Sl. No	Function	Description	Syntax
1	Averageif	Averages the arguments that meet the condition	Average (range; criteria; average_range)
2	Celling	Rounds a number up to the nearest multiple of significance	Celling (number; significance; [mode])
3	Countif	Count the argument which meet the set conditions	Countif (range; criteria)
4	Fact	Calculates the factorial of a number.	Fact (number)
5	Floor	Rounds number down to the nearest multiple of significance	Floor (number1; number2)
6	Product	Multiples the arguments	Product (number1; number2)
7	Quotient	Returns the integers portion of a division	Quotient (numerator; denominator)
8	Round	Rounds a number to a predefined accuracy	Round (number; count)
9	SQRT	Returns the square root of a number	SQRT (number)
10	Sum	Returns the sum of all arguments	Sum (number1; number2;….)
11	Sumif	Totals the arguments that meet the condition	Sumif (range; criteria; sum-range)
12	Sumsq	Returns the sum of the squares of the arguments	Sumsq (number1; number2;…)
13	DB	Returns the real depreciation of an asset for a specified period using the fixed-declining balance method	Db (cost; salvage; life; period;[month])
14	N	Converts a value to a number	N (value)
15	Date	Provides an internal for the date given	Date (year; month; day)

16	Days	Calculates the number of days between two dates	Days (date2; date1)
17	Days360	Calculate the number of days between two dates based on a 360 days year	Days360 (date1; date;[type])
18	Average	Returns the average of a sample	Average (number1; number2;…)
19	Count	Counts how many numbers are in the list of arguments	Count (value1; value2;…)
20	Concatenate	Combines several text items into one	Concatenate (text1; text2;..)
21	Len	Calculates length of a text string	Len (text)
22	Lower	Converts text to lower case	Lower (text)
23	Mid	Returns a partial text strings of a text	Mid (text; start; number)
24	Proper	Capitalizes the first letters in all words	Proper (text)
25	Upper	Converts text to upper case	Upper (text)