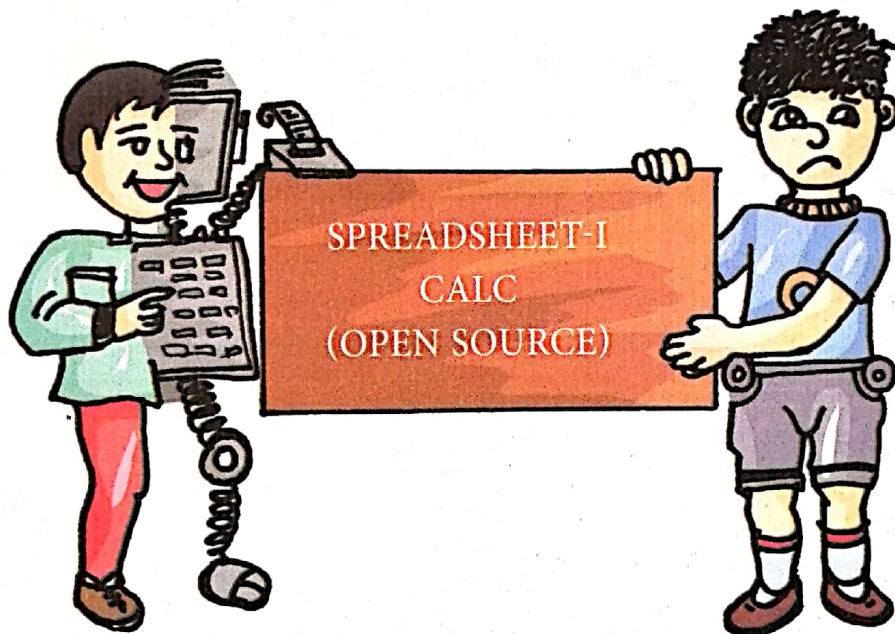


Spreadsheet-I CALC (Open Source)

Learning Objectives :

After the completion of this chapter learners will be able to:

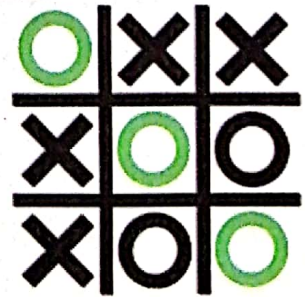
- ☐ understand a spreadsheet,
- ☐ appreciate the use of a spreadsheet,
- ☐ differentiate between workbook and worksheet in OpenOffice Calc,
- ☐ appreciate the concepts of cells, rows and columns,
- ☐ learn to create and save a spreadsheet.



Tobo: Hey! Dobo, Come let's play a game, Tic Tac Toe.

Dobo: What is Tic Tac Toe?

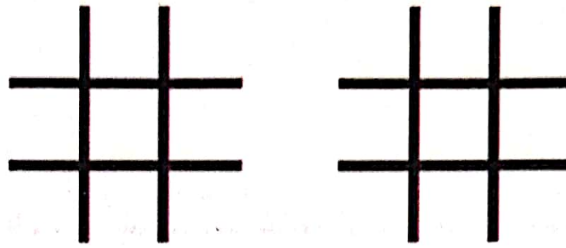
Tobo: Tic Tac Toe is a 3X3 grid fun game for two players X and O.



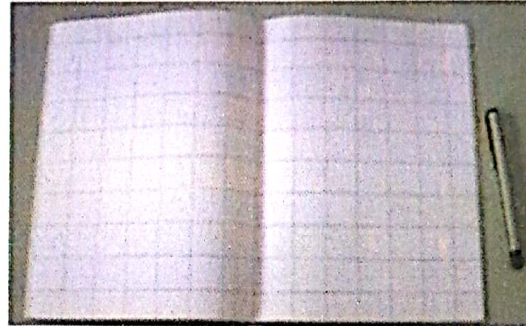
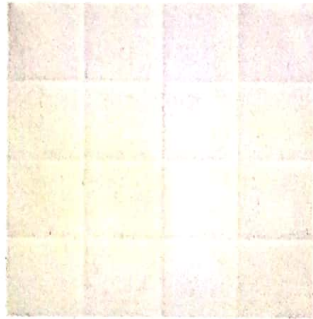
ACTIVITY :



Play the game Tic-Tac-Toe with your friend.



You must have used maths notebook with grids in junior classes for doing mathematical calculations.



TESELLATIONS

ACTIVITY :



1. Take a sheet of paper.
2. Fold it into half.
3. Keep folding it till the paper can be folded comfortably, making hard crease every time.
5. Unfold the paper.
6. You will be able to identify a GRID.
7. Now, count the number of vertical and horizontal lines and the boxes formed.

DO YOU KNOW ?

Tessellation (repeating/tiling) of squares using Paper folding is another example of grid you must have used.



Tobo: Let me show you a grid on computer.

Dobo: Oh yes! I have seen my father working on something similar on his computer.

Tobo: A screen with grids?

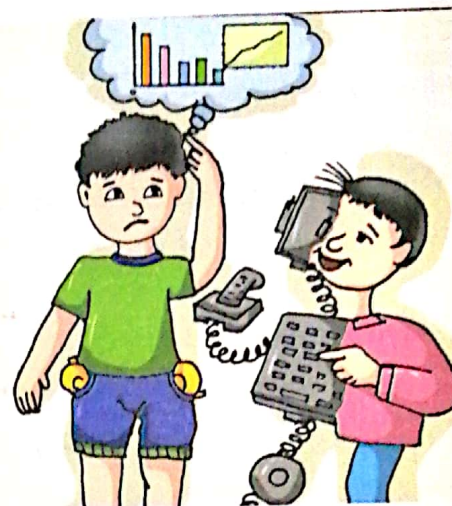
Dobo: Yes!

Tobo: It is called a spreadsheet.

Dobo: What is a spreadsheet?

Tobo: A Computer Software based on the **concept of grids** is called **Spreadsheet**. It is a **grid of rows and columns** like **graph papers** used to **write numbers and make calculations**.

A spreadsheet, when used in computers as application software, is known as Electronic Spreadsheet. **It is an arrangement of data in the form of rows and columns.**



DO YOU KNOW ?





Grid is a pattern of crisscrossed bars, i.e. horizontal and vertical lines.

ACTIVITY :



There are many spreadsheets software(s) available.

Identify the Spreadsheet Software by checking its logo, write the name of the software and the name of company providing this software.

Spreadsheet Software	Name of the Spreadsheet Software	Name of the Company
		
		
		
		



WHY A SPREADSHEET?



Hands On

Explore internet and find out various areas where spreadsheets can be used.

Dobo: Umm... I am still not sure.. Why do we need a spreadsheet?

Tobo: The built-in functions and features of spreadsheets make it easy to use and saves time.

Let me list down the uses of spreadsheets which will help you understand why we need a spreadsheet.

USES OF SPREADSHEET:

- ◆ It is used for both **simple** and **very complex** tasks.
- ◆ Spreadsheet are used to do **financial calculations** such as budgeting and for making accounting easier, to create simple records, generate salary statements, maintain accounts etc.

	B	C	D	E
1	NAME OF THE SCHOOL	ADDRESS1	CITY	PINCODE
2	D A V PUBLIC SCHOOL	DAYANAND VIHAR	DELHI	110022
3	SLS D A V SENIOR SECONDARY PUBLIC SCHOOL	MAUSAM VIHAR	DELHI	110051
4	D A V PUBLIC SCHOOL	PHASE -IV ASHOK VIHAR	DELHI	110052
5	D A V PUBLIC SCHOOL	SANT NAGAR, BURARI	DELHI	110084
6	D A V SENIOR SECONDARY PUBLIC SCHOOL	A- BLOCK, CHANDER NAGAR, JANAK PURI	NEW DELHI	110058
7	D A V PUBLIC SCHOOL	KAILASH HILLS, NEAR C BLOCK MARKET EAST OF KAILASH	NEW DELHI	110065
8	D A V PUBLIC SCHOOL	KHERA KHURD	DELHI	110082
9	DAYANAND MODEL SCHOOL	MANDIR MARG	NEW DELHI	110001
10	D A V PUBLIC SCHOOL	PASCHIM ENCLAVE, MIANIWALI NAGAR, ROHTAK ROAD	DELHI	110087
11	D A V CENTENARY PUBLIC SCHOOL	SAFIABAD ROAD, NARELA	DELHI	110040
12	D A V PUBLIC SCHOOL	PALAM, DWARKA PROJECT	NEW DELHI	110045
13	JHABARI LAL D A V PUBLIC SCHOOL	J BLOCK PASCHIM VIHAR	NEW DELHI	110063
14	D A V PUBLIC SCHOOL	RESERVE BANK ENCLAVE, OUTER RING ROAD PASCHIM VIHAR	NEW DELHI	110063
15	DARBARI LAL D A V MODEL SCHOOL	ND BLOCK, VISHAKHA ENCLAVE, PITAM PURA	DELHI	110088
16	HANSRAJ MODEL SCHOOL	ROAD NO. 73, PUNJABI BAGH	NEW DELHI	110088
17	D A V CENTENARY PUBLIC SCHOOL	ARYA SAMAJ RAILWAY ROAD, SHAKUR BASTI, RANI BAGH	DELHI	110034
18	D A V PUBLIC SCHOOL	B-6, SECTOR 7 ROHINI	DELHI	110085
19	D A V PUBLIC SCHOOL	332-A/1, MANSUKH SINGH MARG, MADANPUR KHADER POCKET E, SARITA VIHAR	NEW DELHI	110044
20	DARBARI LAL D A V MODEL SCHOOL	BN BLOCK SHALIMAR BAGH	DELHI	110088
21	D A V PUBLIC SCHOOL	SECTOR B POCKET 1 VASANT KUNJ	NEW DELHI	110070
22	SURAJ BHAN D A V PUBLIC SCHOOL	F - 10/15 VASANT VIHAR	NEW DELHI	110057
23	NEDA VYASA D A V PUBLIC SCHOOL	O BLOCK VIKAS PURI	NEW DELHI	110018
24	D A V PUBLIC SCHOOL	WEST PATEL NAGAR	NEW DELHI	110003
25	D A V PUBLIC SCHOOL	POCKET C, UG, DDA FLATS EAST LONI ROAD	DELHI	110093
26	ARYA VEDIC PUBLIC SCHOOL	ARAM BAGH ROAD	NEW DELHI	110055
27	D A V PUBLIC SCHOOL	ISHWAR COLONY BAWANA	DELHI	110039
28	D A V PUBLIC SCHOOL	C/O D A V SR SEC SCHOOL DARYA GANJ	NEW DELHI	110002
29	D A V PUBLIC SCHOOL	PUSHPANJALI ENCLAVE OUTER RING ROAD NEAR SARASWATI VIHAR, PITAM PURA	DELHI	110088

Sample list of schools



- ◆ It works like a calculator.
- ◆ It is used for **calculating mathematical formulas** using **built in functions** which help to calculate averages and percentages.
- ◆ It allows **automatic recalculations** in case there are changes in data entered or inputted by the user.
- ◆ Spreadsheet Software also **processes non-numeric data**. It helps in preparing and editing all kinds of lists such as list of friends for Birthday Party, List of Schools, Directory, mother's grocery list etc.
- ◆ Spreadsheet programs are also used to **create graphs and charts** from the data provided within the table to facilitate analysis of data.



ACTIVITY :



Compare and contrast Spreadsheet and Calculator.

Spreadsheet	Calculator



Dobo: Father, today Tobo and I played a game with grids.

Father: Good, which game?

Dobo: **Tic-Tac-Toe**. Tobo also explained about a **spreadsheet software**. I have seen you working on it.

Father: Yes, I do.

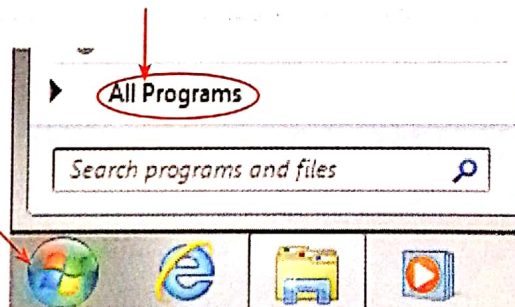
Dobo: I don't know how to open it. Could you please guide me on this?

Father: You know how to use Writer and Impress; I want you to find this on your own. As I told you earlier if you wish to gain knowledge in this subject you must learn to explore things on your own.

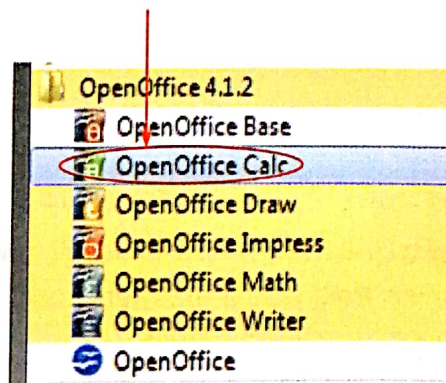
Dobo searched the steps which are listed below.

The steps are as follows:

Step 1: Go to **Start Menu**, Select **All Programs**.



Step 2: Choose **OpenOffice Calc** from the OpenOffice Suit.



OR

Step 1: Double Click the **Openoffice.org** icon available on the desktop

Step 2: Click **Spreadsheet** from the following window



Text Document

Spreadsheet

Presentation

Open...

Drawing

Database

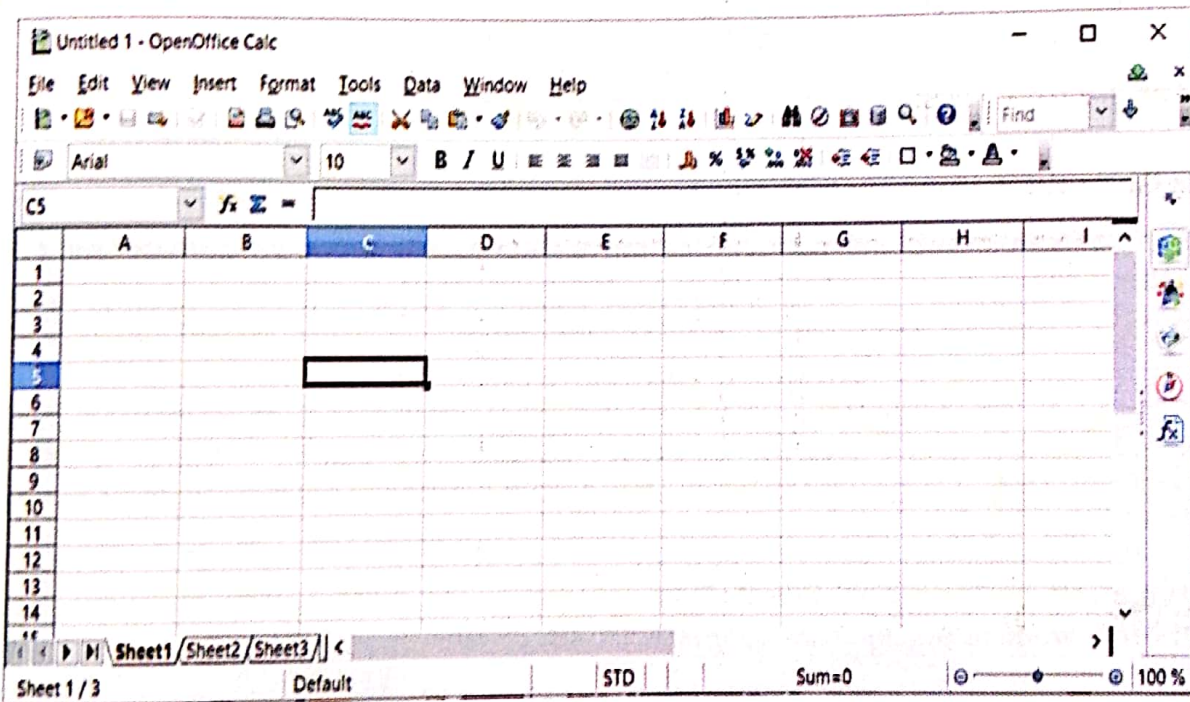
Formula

Templates...

DO YOU KNOW

Open Office Calc, is a free spreadsheet software. It is an application of Apache Open Office suite.

Openoffice.org Calc Window will open as shown below:



Components of Openoffice.org Calc Window

Dobo: It is so easy to open this. What all can we do in this software?

Father: We can **enter data**, **store our numbers** and **lists** using this software and **process the data entered using formulas**, **formatting** etc. It also lets us **create various types of graphs**, **charts and reports**. Would you like to know the different components of OpenOffice.org Calc.

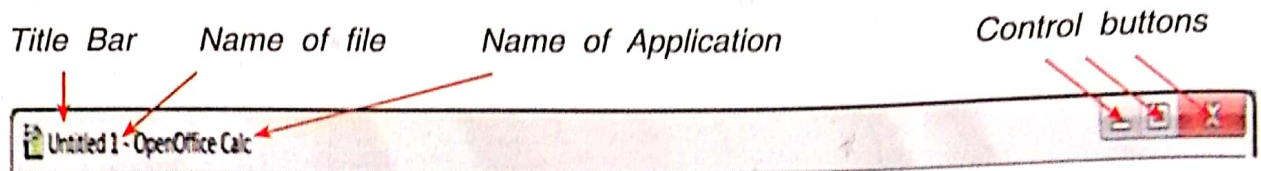


Dobo: Yes, I would love to.

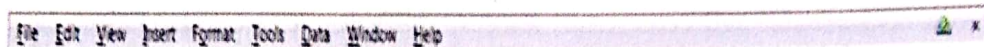
The OpenOffice.org Calc interface is made up of **various elements**:

The elements are as follows:

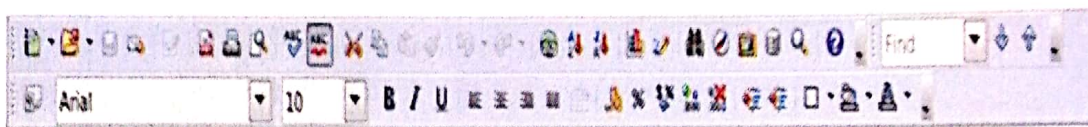
1. **Title Bar** shows the **"Name of the application"** and **"the Name of the file currently open"**. It has **Control Menu Box** on its left and control buttons – **minimize, maximize, restore and close** buttons on its right.



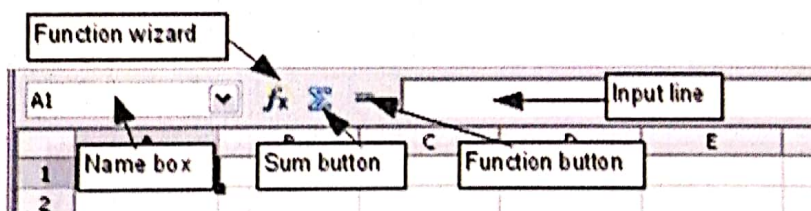
2. **Menu Bar** is the bar which has options like **File, Edit, View** etc.



3. **Toolbars** offers icons for direct access to the main **functions and commands**. The two main toolbars are **Standard and Formatting toolbars**.



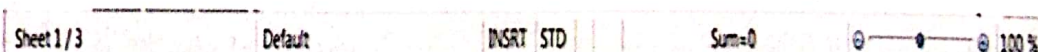
4. **Formula Bar** shows the contents of the selected cell. It allows **data to be entered in the cells**.



5. **Navigation buttons and Sheet Tabs** located at the bottom allow the user to switch between worksheets in a workbook.



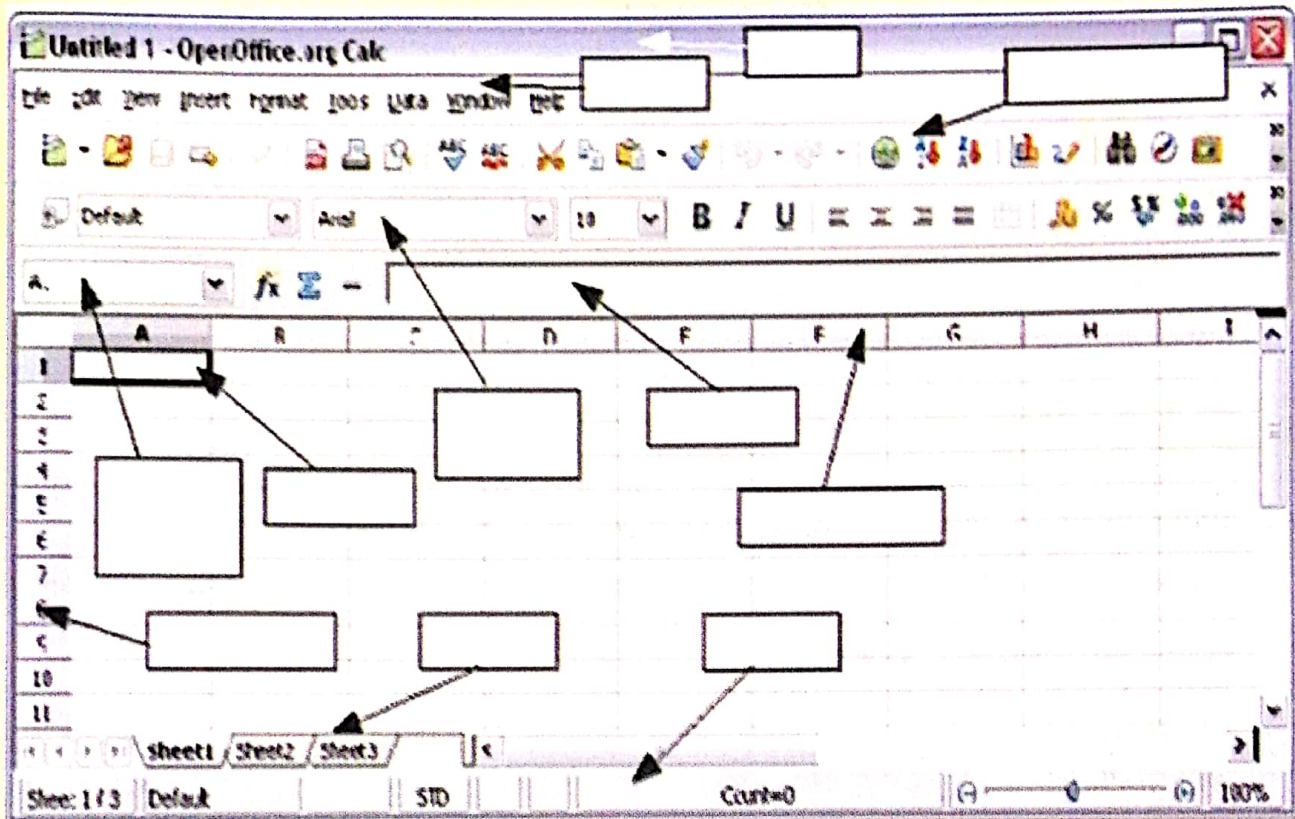
6. **Status Bar** provides information about the spreadsheet and required actions. *It displays the current worksheet, total number of worksheets, current page style, current selection mode and helps to enlarge/reduce the display.*





Hands On

Open the OpenOffice.org Calc Software and explore the components of the Calc Window and write their names in the space provided:



WORKBOOK AND WORKSHEET:

Father: A calc document is called a **workbook**.

Dobo: Like our school book?

Father: Your school book is similar to Calc software.

ANALOGY:

Book= Calc Software

Chapter of book= Workbook in Calc

Sheets of the Chapter = Worksheets in a Workbook

Dobo: What is a Worksheet?

Father: **A worksheet is a single spreadsheet that contains cells organized in rows and columns.**





Hands On

1. Find the default number of Sheets in a workbook?



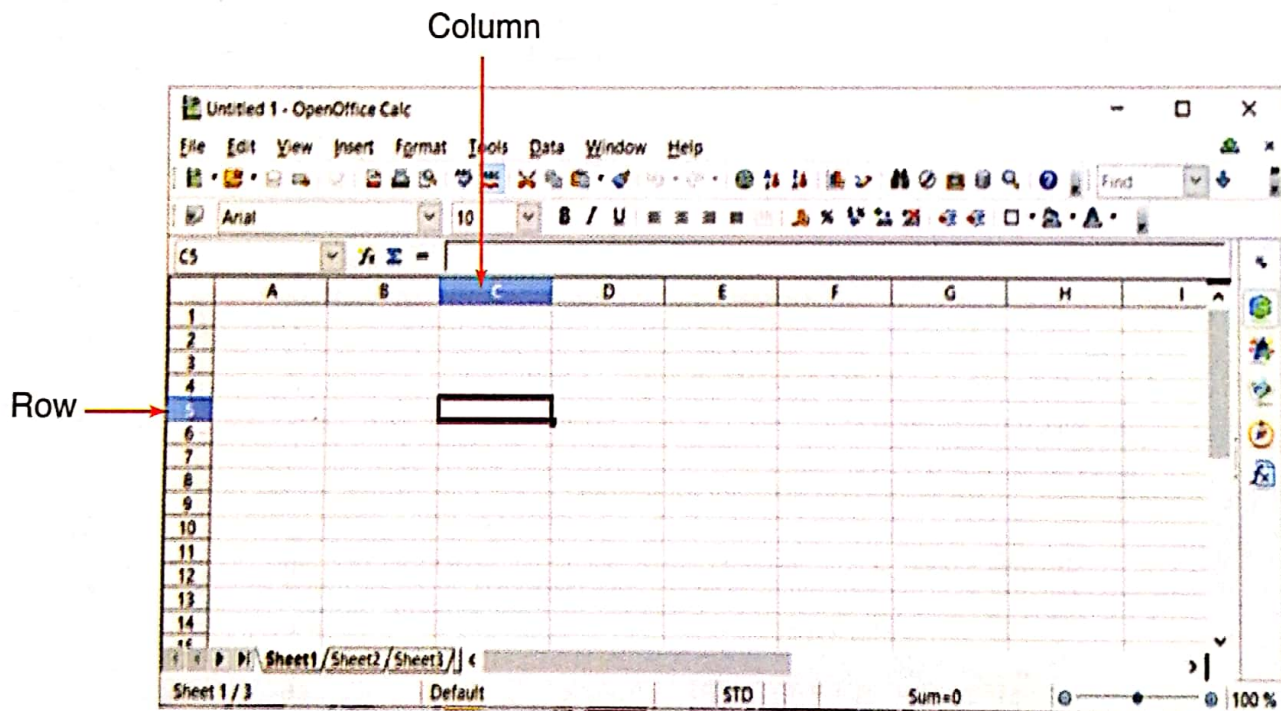
DO YOU KNOW

A spreadsheet workbook is saved with an extension .ods

CONCEPT OF CELL, ROW AND COLUMN:

Dobo: Father, what are these numbers and alphabets in the spreadsheet?

Father: The **numbers** represent the **Rows** while the **Alphabets** represent the **Columns**.



Father: Dobo! Come here and click on the worksheet.

He clicks and finds a **black box!!**

Father: This **black box** indicates an **Active cell**.

ANALOGY: Like cell is the smallest unit of Human Body similarly, it is the smallest unit of Spreadsheet Software (Calc).



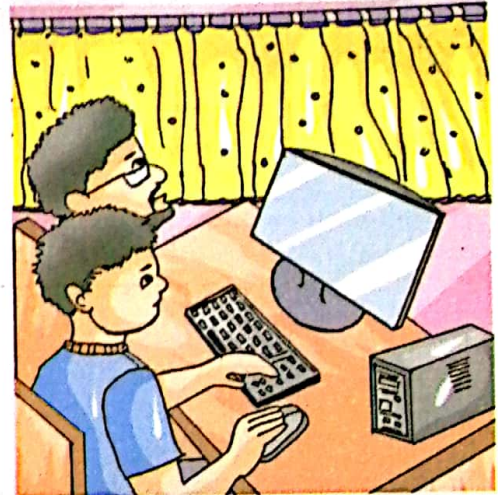
Dobo: What is a Cell?

A Cell is the intersection of a column (Vertical Lines) and row (Horizontal Lines) in the form of a grid.

- ◆ A cell can be considered the **basic element** of a spreadsheet.
- ◆ It can contain **text, numbers, formulas etc.** which make up the data to be displayed and manipulated.

Dobo: What is an Active Cell?

Father: **Active Cell** is a cell with highlighted boundary around it. Only one cell can be active at a time.

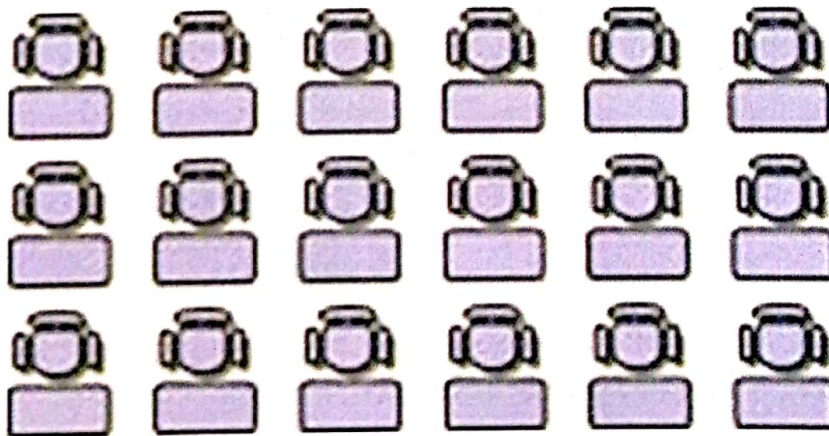


B2			
	A	B	
1			
2			
3			

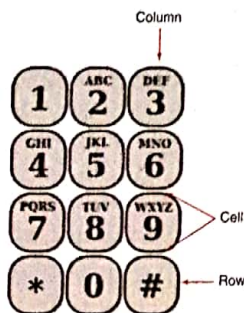
Active Cell

	A	B	C	D	E	F	G	H	I
1									
2						CELL			
3									
4									
5									
6									
7									
8									
9									
10									

EXAMPLE: Consider a Classroom as a worksheet where desks are placed in rows and columns and each desk is a cell



Similarly Keypad of a mobile phone also has numbers arranged in rows and columns and each number acts as a cell



ACTIVITY :



Look around and find out some more examples of things arranged in Rows & Columns.



Hands On

Open Calc and answer the following:

1. Maximum number of rows _____
2. Maximum number of columns _____
3. Maximum number of worksheets _____

Entering Data into the worksheet

Dobo: How can we enter data in the worksheet?

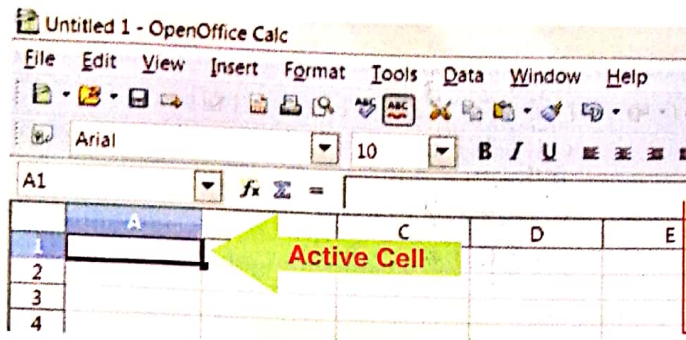
Father: It's very easy.

When a cell is active, anything we type is entered into it.

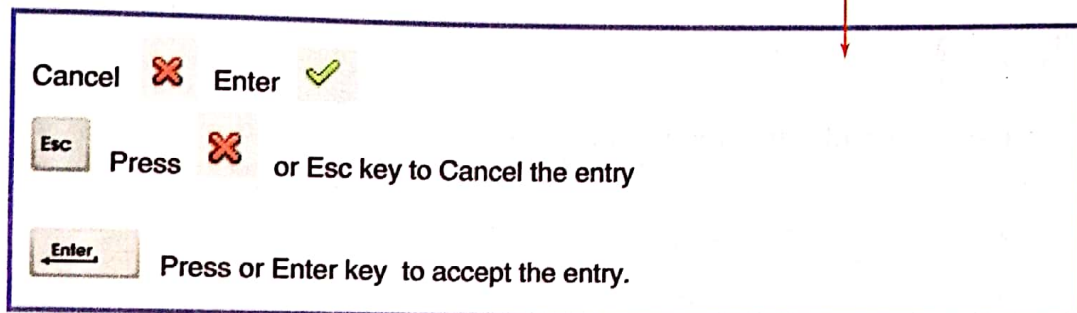


Steps to enter data

Step 1: Click on the **cell A1** (Topmost cell on the left of the spreadsheet).



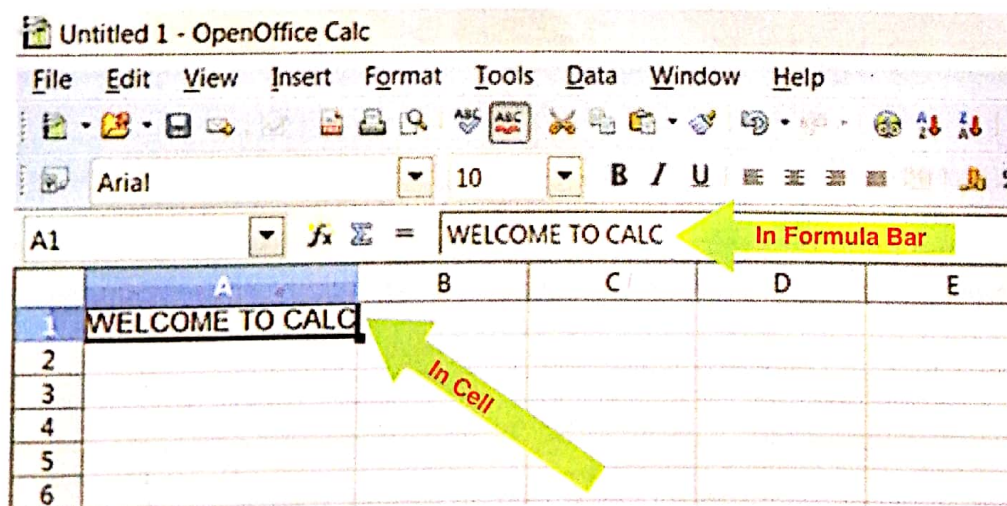
Notice as you enter data in cell A1 in the formula box will get two highlighted buttons.



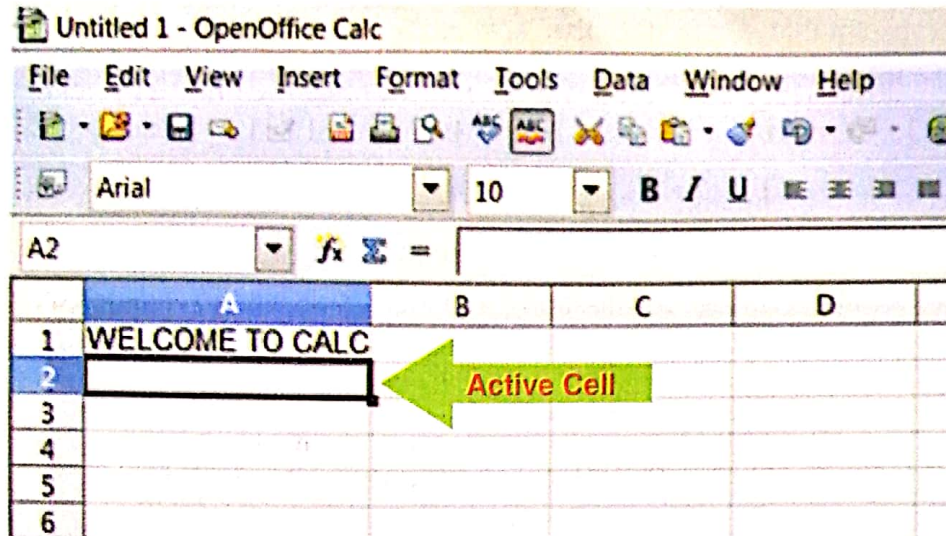
Step 2: Notice the heavy black border around the A1 cell which indicates that it is the active cell. (A is at the top of the first column and 1 is the first row. Both are highlighted. The highlighting also indicates that A1 is the active cell.)

Step 3: Type WELCOME TO CALC and press Enter.

Whatever data is being entered in a cell in a worksheet, it appears **at two places, in the cell and in the Formula Bar**.



Step 4: After pressing Enter, A2 will become the active cell (The words "WELCOME TO CALC" are in A1.)



Father: Different types of data can be entered in a cell.

Dobo: What are the different types of data?

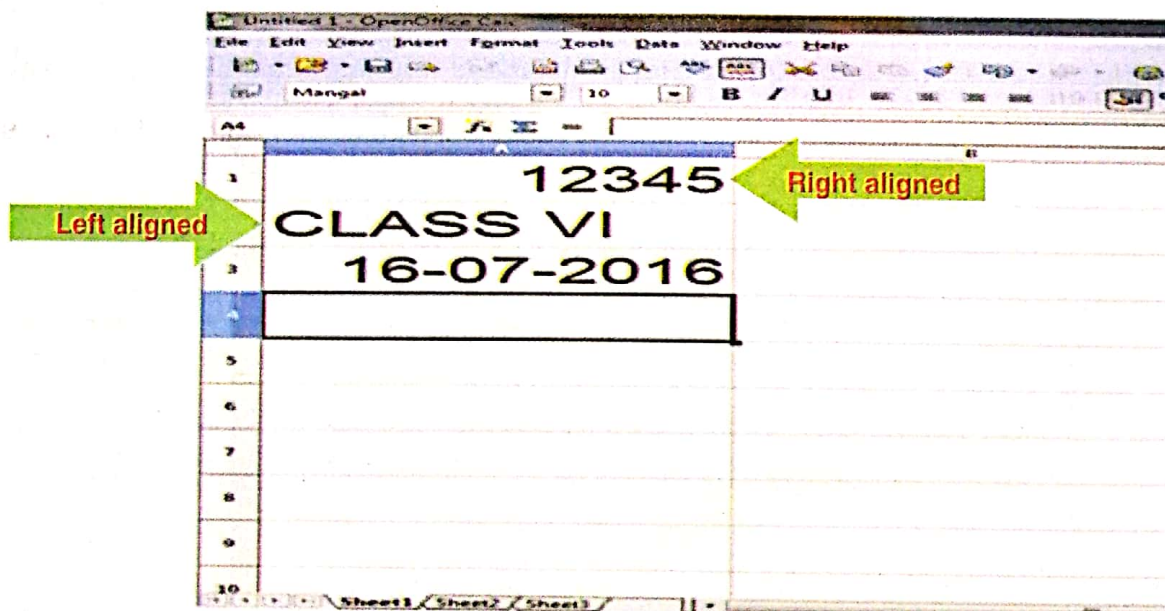
Data can be categorised into various types. These are:

1. Numbers: It comprises of numerical data only comprising of numbers from 0-9.

When numbers are entered in a cell, they are right aligned by default.

2. Text: It comprises of alphanumeric data that may contain a combination of alphabet from A-Z, spaces, digits, special symbols etc.

When text is entered in a cell, it is automatically left aligned.



ALIGNMENT OF DIFFERENT DATA TYPES



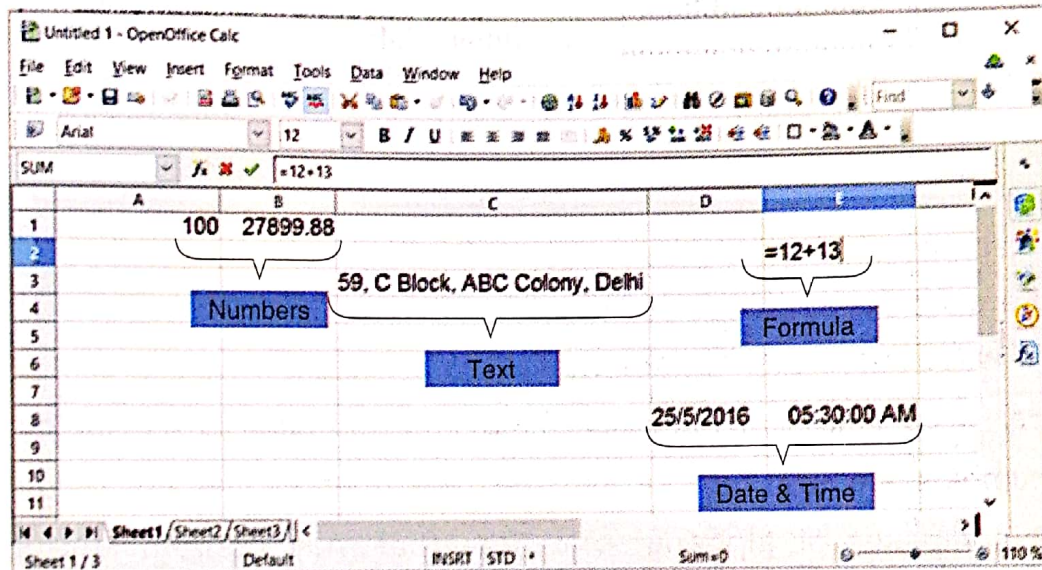
3. **Date & Time:** Date and time are used in worksheets for tracking and calculating the data.

To enter a date in Cell, use the “/” or “-” characters.

4. To enter time, use the “:” (colon). We can also enter date and time in the same cell.

5. **Functions & Formulas:** They define the relationship between cells. They contain values, operators like +,-,/,* and addresses of the cells.

Before entering formula or function in a cell, it must be preceded with “=” sign.



ACTIVITY :



Read the following values and write down the data type and its Alignment in the space provided below:

VALUE	DATA TYPE	ALIGNMENT
5675		
Name		
24-D		
=10+200		
20:00:00		
30.11.2013		
F-Block		



Father: Dobo you have learnt how to enter data in a cell to create a worksheet. Now, let's create a workbook.

CREATING A WORKBOOK:



Hands On

1. Enter your Roll No, Date of birth, Name and Address in different cells and write down the address of the cell in which it is entered along with its data type.

ITEMS	Address of cell / Data Type
Roll no:	
Date of Birth:	
Name:	
Address:	

2. Open "Open Office.org Calc Software" by using any one of the methods mentioned above.

A blank workbook with the title Untitled1 will open.

Enter the following details about any 5 students from your class in the specified cells.

	A	B	C	D	E	F	G
1	S.No.	Name	Father's Name	Date Of Birth	Age	Address	Phone Number
2							
3							
4							
5							



Dobo: Father can I save the workbook?

Father: Yes, it's simple and similar to saving a document in writer.

SAVING A WORKBOOK


A workbook can be saved by using **toolbar button**, **menu option** or **keyboard shortcut**.

Step 1: Click **File** → **Save**

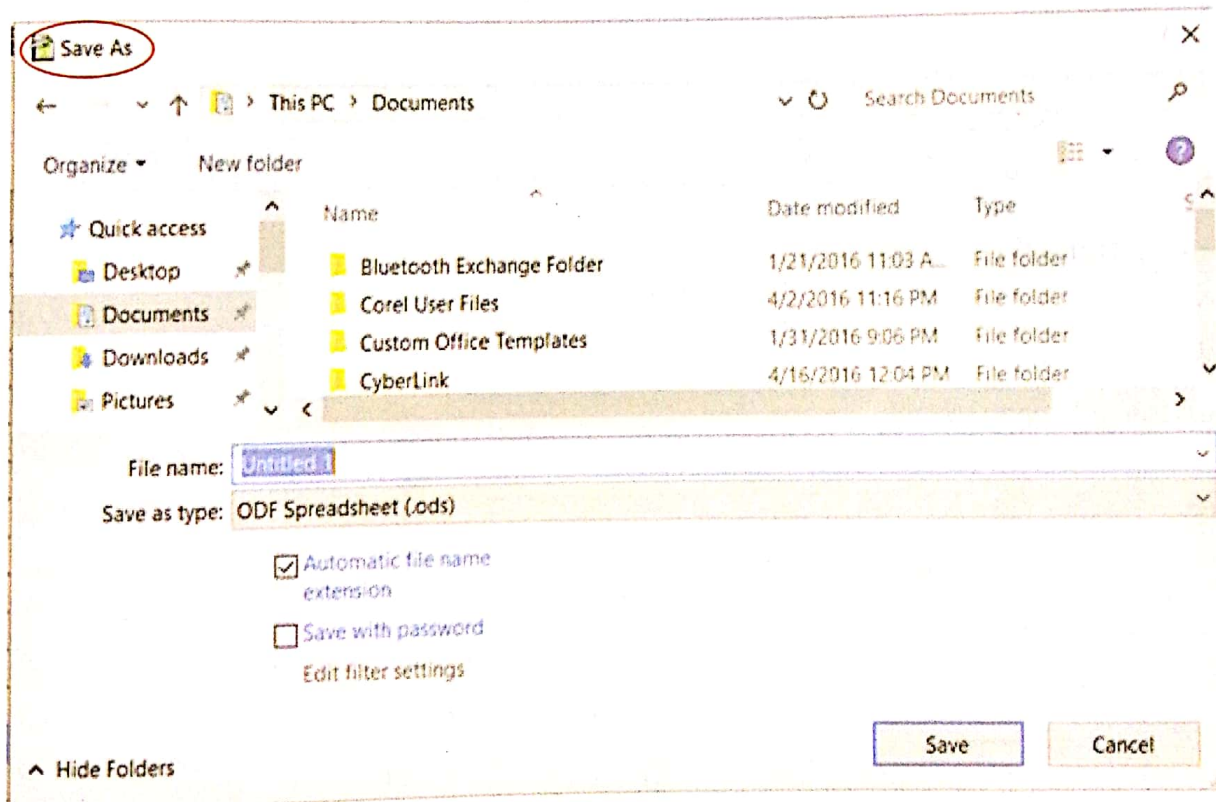
Or

Press **Ctrl +S** from the Keyboard

Or

Click the **Save** button  on the **Standard Toolbar**

Step 2: A **Save As** Dialog Box will appear as shown below



Notice, the default name **Untitled 1** is highlighted in the **File name** box.

1. **Type "Name of the file"** e.g. let's name this file as **"DETAILS OF STUDENTS"** as new filename over the default name which is **untitled1**, choose the desired folder to save your Workbook in there.



2. Click on **Save button**.

ACTIVITY :



Watch the video given below and answer the questions that follow:

<https://www.youtube.com/watch?v=xMlc2Mc9eYc&list=PLbPQdqAj8uvaB3LdaTKnG9W8UDwwSg0lb>

1. Name the Operating Systems on which Calc works. _____
2. We can download OpenOffice, as _____ download from _____ .org
3. _____ is Formula Editor of OpenOffice.
4. Name a software comparable to OpenOffice. _____

Try the following link to explore more about OpenOffice Calc.

OpenOffice Calc 4 Tutorial 1 → Getting Started → Free Download Link → Spreadsheet Software

Assessment Activity

1. Using OpenOffice.org Calc, open a blank workbook.
2. Enter the name of all the family and extended family members, their date of birth, age and cell number as per the table given below. Save the workbook by giving the name "my family".

S.No	Name of the person	Your relation with the person	Date of Birth	Age	Cell Number

