Introduction to Spreadsheets

The term 'spreadsheet' is used widely in accounting and business today. 'Spreadsheet' is derived from the word 'spread'. It can be seen in the context of a newspaper or magazine where two facing pages extend or are spread across the centerfold and considered as one.

Earlier, the accounting records were maintained manually on oversized sheets of papers called ledgers. These ledgers were used to record and calculate the monetary transactions of a company. The transaction data used to be arranged in the form of a table with rows and columns. Later on, the need arose to maintain a large number of records, which was difficult to fit onto a page. This led to the concept of spreading the data across pages and thus the concept of spreadsheet came in existence.

IMPORTANT FEATURES OF SPREADSHEETS

Computerised or electronic spreadsheets are of much more recent origin. MS Excel is one of the most professional and advanced spreadsheet software and is used by a large number of people across the world. It allows you to store, organise, calculate, and manipulate the available data in a tabular format, consisting of rows and columns. It provides inbuilt features and data analysis tools that make it easy to work with a large amount of data. It has an additional feature of representing data in the form of a chart that helps you to analyse data quickly.

Let us discuss some important features of MS Excel that are listed below:

Formulas and Functions: Formulas are mathematical expressions that are mainly used for performing simple and complex calculations. Functions are the built-in formulas which are used for calculating percentage, interest, average, etc., in MS Excel.

Formatting Features: These features are used for improving the appearance of data.

Auto Updation of Data: The data is automatically recalculated in the whole worksheet if any change is made in a single cell.

Search and Replace: This feature leads to the fast searching and instant replacing of data.

Auto Fill: This feature helps in entering data in series automatically.

Charts: Data can be viewed in a graphical form such as charts. This helps the users to understand, analyse, and compare data in an effective manner.

Sorting: Data can be arranged (sorted) either in an ascending or a descending order.

These advanced features have made MS Excel the first choice for professionals to quickly perform lengthy and complex accounting and financial tasks, and take immediate decisions.

SOME POPULAR SPREADSHEET SOFTWARE

- Microsoft Excel
- Apache OpenOffice Calc
- Gnumeric
- Google Sheets
- WikiCalc
STARTING MS EXCEL 2010

WINDOWS 7
+ Click on the Start button and then click on All Programs.
+ Select Microsoft Office.
+ Click on Microsoft Excel 2010. The main window of application opens.

WINDOWS 10
+ Click on the Start button.
+ Scroll through the list of application folders and select Microsoft Office.
+ Click on the Microsoft Excel 2010. Or
  Type Excel in the Search bar and select the application.
+ The main window of application opens.

COMPONENTS OF MS EXCEL
When you launch Excel, the following window appears, which is the Excel interface. It consists of the following components:

WORKBOOK
The MS Excel file is referred to as a workbook, in which you work and store your data. It is assigned a temporary name
Book1. A workbook is a collection of one or more worksheets in a single file. Each workbook has a single theme and
contains, at least, one worksheet. The workbook is designed to hold multiple worksheets together in order to organise
and consolidate data efficiently.
WORKSHEET

A worksheet is a grid like area, made up of rows and columns, where you enter data and work with it. In other words, a worksheet is composed of a very large number of cells, which are the basic storage unit for data in a file or workbook. The cells are arranged in a grid pattern using rows and columns. Rows run horizontally from left to right and columns run vertically from top to bottom. When you open an Excel workbook, by default, it consists of three worksheets, with the names Sheet1, Sheet2, and Sheet3. They are displayed as tabs at the bottom of the worksheet just above the Status bar. You can add any number of worksheets in a workbook while working with a large amount of data.

In MS Excel 2010, row numbers range from 1 to 1048576 and columns range from A to XFD (total 16384 columns).

Columns are represented by letters on the top and rows by numbers on the left side of the sheet. The components of a worksheet are:

Cell: A cell is an intersection of a column and row in a worksheet. It is rectangular in shape. Each cell is identified by its column letter and row number, which is known as cell address, for example, A1, G2, etc. The address of the first cell of a worksheet is A1 and last cell is XFD1048576. There are 1,073,741,824 number of cells in a worksheet. A cell is used to store data, such as text, numbers, formulas, functions, etc. A cell can contain up to 32,767 characters. A cell which is selected is called an active cell.

Row: Row is the horizontal arrangement of cells in Excel. Rows have numbers in Excel like 1, 2, 3, .... and so on.

Column: A vertical arrangement of cells in Excel in known as a column. Letters are used to name the columns A, B, C....AA, .... AZ, BA, BB, BC, and so on.

SCROLL BAR

In Excel, there are two scroll bars — horizontal and vertical. You can use these scroll bars to navigate through the content of the Excel worksheets.

ROW HEADER

Each row in Excel is represented by a specific number, which is present on the left hand side of a worksheet. This number is known as a row header. Row headers are numbered from 1 to 1,048,576.

COLUMN HEADER

Letters across the top border of a worksheet represent column headings, starting with A to Z, AA...AZ, BA...BZ, ...XAA...XFD. Every worksheet in Excel contains 16,384 columns.

NAME BOX

The Name box is located above the column heading on the left hand side of the window. The unique cell name/cell reference is displayed in this box. It displays the location of the cell pointer.

FORMULA BAR

The Formula bar is located at the top of the sheet. It is located to the right of the Name box. This bar shows the characters and formulas that you enter in an active cell. It shows the

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Worksheet vs Workbook

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actual content of the cell. In Excel, if a function or formula is written in a cell, the cell displays the result or value, and the formula bar displays the function or formula applied. A formula or function always starts with an equal (=) sign.

**Name Box**

![Name Box and Formula Bar](image)

**Fig. 10.2: Name Box and Formula Bar**

**Sheet Tabs**

Sheet tabs appear at the bottom left of the Excel window, just above the Status bar. Every new workbook which you open contains three blank sheets named Sheet1, Sheet2, and Sheet3. When you click on a particular sheet tab, that worksheet becomes active. You can add more worksheets in a workbook according to your need. You can rename the sheet tabs, insert new sheets, and delete sheets as per your requirement.

**Status Bar**

The Status bar lies at the bottom of the Excel window. It displays information, like Sheet number, active working mode, zoom level, and other important information about the spreadsheet in which you are working.

**Range of Cells**

In general, a range refers to a series of values between two other values. For example, the range between 1 and 5 includes 2, 3, and 4 as well. When referring to a spreadsheet, the range or cell range is a collection of cells within a row or column. A range can be two or more contiguous cells, which are selected or denoted collectively. You can specify a range by writing the starting cell address followed by the ending cell address, both separated by a colon (:). A range can be of three types:

**Column Range**

Column range refers to the range of cells spread across a column. In this type of range, the column letter is constant whereas the row number varies. For example, a column range that includes rows 1 to 5 of column B will be written as B1:B5.

**Row Range**

Row range refers to the range of cells spread across a row. In this type of range, the row number is constant, whereas the column letter varies. For example, a row range that includes columns B to F of row 5 will be written as B5:F5.

**Row and Column Range**

This type of range is in the form of a matrix including multiple rows and columns. For example, a range consisting of all the cells of rows 3 to 10 that lie in column B to F will be written as B3:F10.

**Selecting a Range**

You can select a range of cells either by using a mouse or keyboard.

**Using the Mouse:** Suppose, you want to select a range, A1:F6. Since a range is always in the form of a rectangle, the desired range will have four corners, A1, A6, F1, and F6. Bring the cell pointer to any one corner and drag it diagonally to the opposite corner. You will see that the selected area gets highlighted.
Using the Keyboard: To select a range of cells using a keyboard, follow the steps given below:

1. Select any one cell at the corner of the specific range.
2. While pressing the Shift key, select the number of cells in your range by using the arrow keys.
3. After reaching the destination cell, release the Shift key. The desired range will be selected.

**ASSESSMENT TIME**

**Answer the Following Questions:**

1. What is a spreadsheet?
2. Name three important features of spreadsheets.
3. Mention any four spreadsheet software.
4. Define a workbook.
5. How is a Formula bar different from Name box?
6. Define cell range in MS Excel.

**ACTIVITY ZONE**

1. Open Microsoft Excel. Identify all the components of a worksheet and write down their definitions in the notebook.
2. Click on the cells B20, F9, E1, A24, G13, one after the other and observe the display of cell address in the Name box.
3. Write the cell addresses of the following:
   a. First row and first column
   b. First row and last column
   c. First column and last row
4. Give the range for the following:
   a. All the cells of row 6 from column C to H.
   b. All the cells of column D from rows 3 to 15.
   c. All the cells from column F row 4 to column L row 9.