Unit1 Introduction to EXCEL

1.0 Introduction

MS-Excel is a Windows based application package that can be used to automate tasks such as calculation and analysis of data.

MS-Excel works the way you want i.e. it can be customised. It provides ease of work with the following features:

Tip Wizard - Guides you to work more effectively while you work by displaying various helpful tips and techniques based on what you are doing.

Drag and Drop Feature - It help you to reposition the data and text by simply dragging the data with the help of mouse.

Autofill - It helps you to fill rows or columns with the series of data.

Autosum - **You can add a large range of data by simply selecting a tool button.**

Windows Interface - As Excel is Windows based package therefore the user interface is consistent.

Shortcut Menus - Commands appropriate to the task that you are doing appear by clicking the right mouse button.

Built-in Spell Check - You can maintain a dictionary of the words usually used in your work and spell-check your spreadsheet.

1.1 Objectives

After studying this unit, you will be able to

Discuss the EXCEL basics, start EXCEL, create a workbook
Enter and Edit data in the worksheet of EXCEL
Navigate the worksheet, search, replace and rearrange the cell contents in the worksheet
Get the idea of saving the workbook using a password for protection.

1.2 Excel Basics

Before you start working on the worksheet, the knowledge of the concepts and movement on the workbook is necessary.

1.2.1 To Start Excel

1. Start Windows.
2. Click on the Program Manager icon.
3. In the Program Manager window, click on MS-Office icon.
4. In the MS-Office window, click on MS-Excel icon as shown below:

Microsoft
Excel

1.2.2 Workplace of Excel Spreadsheet:
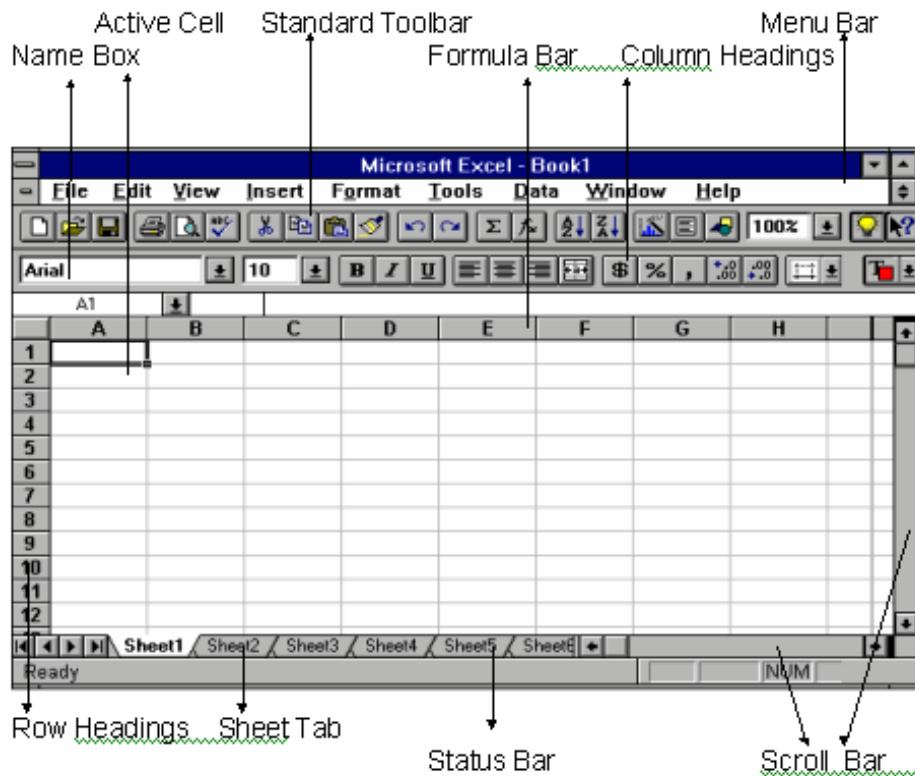
Menu Bar - Different options for selection.

Standard Toolbar - It is displayed by default and provides shortcuts for the common commands used.

Formula Bar - Any text, data or formula that is being keyed-in or edited is displayed in it.

Name Box - Displays the address of the current cell.

Scroll Bars - Used to move up or down in the worksheet using mouse.

Sheet Tab - Displays the name of the current worksheet that can be changed by double clicking on it and giving a new name in the dialogue box.

Status Bar - Left part displays the various messages like Ready mode (when Excel is ready to accept data into the spreadsheet) or Edit mode (while in the editing mode). The right part highlights the status of keys of the keyboard.

Row Headings - They are numbered as 1, 2, 3 .... 16384.

Column Headings - These are addressed as A, B, C,....IV.

Active Cell - Intersection of each row and column is called a cell.

1.3 Worksheets within Workbook

MS-Excel document is called as a Workbook. Each Workbook contains 16 worksheets by default. This number can be changed if required by resetting the default options. Worksheets within Workbooks make it easy to bind files of related information. When a Workbook is opened, all worksheets of that workbook become available to the user automatically.

1.4 Getting started with EXCEL

Firstly, open the workbook to start your work on a worksheet. At times, you might require to insert or delete a worksheet, and cells to be selected.

1.4.1 Create a Workbook

Select the **New..** command from the **File** menu. The Workbook is opened by the default name of BOOK1.

1.4.2. Open a Workbook

To open an existing Workbook, select **Open** option from the **File menu**. Names of the recently used files are listed in the **File menu** and can be selected by merely clicking on the name of the file to be opened.

1.4.3. Find a Workbook

Choose **File -> Open** command. Select **Find File..** option from the dialogue box that is opened. Consequently, another dialogue box is opened in which the details like file name, directory are to be given.

1.4.4. Insert a Worksheet

To insert a Worksheet between two worksheets choose **Worksheet** option from the **Insert** menu.

1.4.5. Delete a Worksheet

To remove a worksheet from the workbook, select **Delete Sheet** from the **Edit** menu. A dialogue box will appear to confirm this action.

1.4.6. Move the Worksheet

To move the worksheet in the same workbook, place the mouse pointer on the sheet tab, press the left mouse button and drag it to the desired position. Release the button.

1.4.7. Selecting Cells

You can select a single cell or a group of cells using mouse or keyboard.

Using Mouse -

Click on the cell with the left mouse button. That cell gets selected and becomes the active cell. Whatever you type goes into this cell. To select a range of cells, click on one cell, hold down the left mouse button and drag the mouse pointer to the last cell of the range you want to select.

Using Keyboard-

To Select	Press
Current Cell	Enter
Entire Column	Ctrl + Spacebar
Entire Row	Shift + Spacebar
Entire Worksheet	Ctrl + Shift + Spacebar
Extend Selection to End of Data Block	End, Shift + Arrow key

1.5 Enter and Edit Data

The various kinds of entries that can be made in a cell are :

Text - First select the cell in which the data has to be entered and type-in the text.

Press ENTER key to finish your entry. The data will be displayed in the active cell as well as in the formula bar. To enter digits as text (calculations cannot be done using these kind of entries) use an apostrophe (') as the first character.

Number - Numbers include digits from 0 to 9 and some special characters like
$$\$ \ \% + - / ( ) , . E e$$

Date and Time - Date and Time entries are interpreted in a special way in Excel. They are represented as numbers for Excel given to each day from 01:01:1900 (serial number 1) to 31:12:2078 (serial number 65380). Although when you type a date in the cell like 01/01/97, it will be displayed as it is.

Example : Type TODAY() in a blank cell and press **ENTER** key.
(This function will display the system date and time)

Data in Series- You can fill a range of cells either with the same value or with the series of values. This can be done using Autofill handle (small square on the bottom-right corner of the active cell)
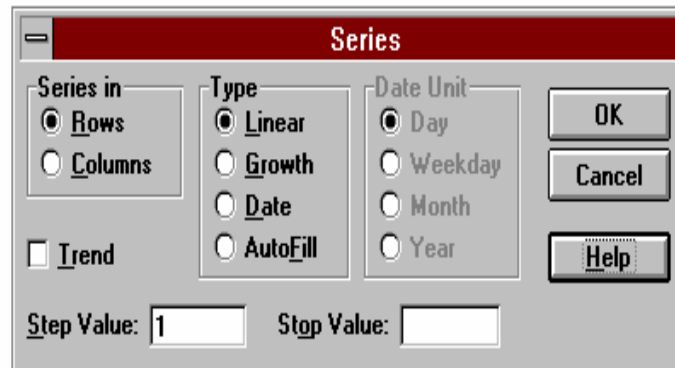

Fill Handle

Drag this handle till the last cell to create a range of cells which are to be filled-in with the values.
Example :

1. Enter MONDAY in cell E20.

2. Drag the Autofill handle till the cell K20.

   (The whole range will be filled with days from MONDAY to SUNDAY.)

To create a series of numbers

Example : Select the cell H20 and enter 1 in it.

                    Select the range from H20 to H11.

Though Excel provides the facility of built-in lists (e.g. MONDAY to SUNDAY) to perform Autofill, the users can also create their own custom lists which are used frequently in your worksheets.

1.5.1.   To Create a Custom List

1. Enter the given list starting from cell L5 to L8

LEFT
RIGHT
UP
DOWN

2. Select this range of cells.

3. Select **Options..** from **Tools** menu.

4. Select Customs tab from the Custom dialogue box.

5. Click on OK.

<center>or</center>

1. Select **Tools -> Options**
2. Click on Custom List tab
3. Type the custom list in the List Entries Box.
4. Click on OK.

Data, if written incorrectly, can be edited by following ways :

1. Select the cell with some value to be edited.
2. Press F2 and using Backspace key erase the previous entry. You can retype the correct data.

or

Simply select the cell and retype the entry.
To bring back the previous entry either click on **Undo** button on Standard Toolbar or choose **Edit -> Undo** option.

or

Pressing Alt + Backspace or ctrl-Z keys can also be used to perform the undo task.

or

To clear the cell entry, select the cell to be cleared and press Delete key.

1.5.2 Cell References

There are 16384 rows and 256 columns in one worksheet. The first cell is labelled as A1 (column as A and row number as 1)or R1C1.

Example :- R3C3 refers to row 3 column 3 and is equivalent to C3. Thus he last cell is labelled as IV16384. This is called the cell address and they reused to identify the cell.
Cell references are given in different ways :

Relative - This refers to the cell relative to the given position.

        Example :   Enter the following values :
                        In cell A3 enter the value 34
                        In cell A4 enter the value 23
                        In cell A5 enter the value 89
                        In cell A6 enter the formula = A3 + A4 + A5
                        Copy this formula to the cell A7, and see the result.

Observe the formula entered in cell A7. It is A4 + A5 + A6. The formula entered in cell A6 means the sum of the values given in the three cell given above the current cell. Therefore when we move down, the relation specified in the formula was copied (i.e. the three values given above the current cell which is A7 now).

Absolute - This refers to the specific cell irrespective of the position of the formula. The '$' sign is used to denote an absolute reference.

Example : In the cell B3 copy the formula A3 + A4 + A5
       Copy this formula to the cell B4.
       We find that the result and the formula remains the same.

Mixed - It is a combination of both relative and mixed references. It has one absolute co-ordinate and one relative co-ordinate. $D1 and D$1 are both examples of mixed references.

1.6 Range Names

A name can be given to a single cell or a range of cells (e.g. B3:F9). The range name can be used in place of these cell references. Also the range specified for a range name can be modified.
To define a name, following points have to be considered :-

1. Name contain only letters from A-Z, or a-z, numbers 1-9, the period (.) and the underscore (_).
2. Maximum length can be upto 255 characters.
3. Name cannot be same as cell reference like F10 or F10.

4. Spaces are not allowed.

Valid Range Names	Invalid Range Names
Months	First Name
Final_year	5 Days
Date_of_join	R5C12
Basic_salary	
Year5	

Ways to create name
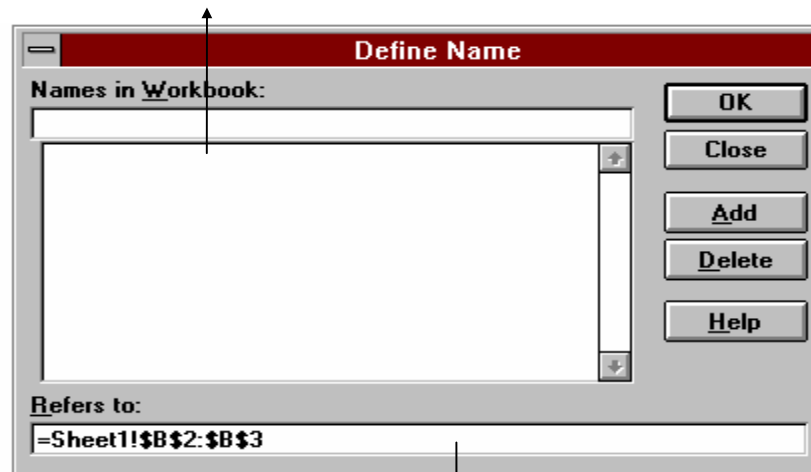
Using Name Box

1. Select the range of cells.
2. Click on Name Box on Formula Bar and type the name.

You'll will be warned if the same name is given which has already been defined.

Using Define Name Dialogue Box

1. Select the range of cells.
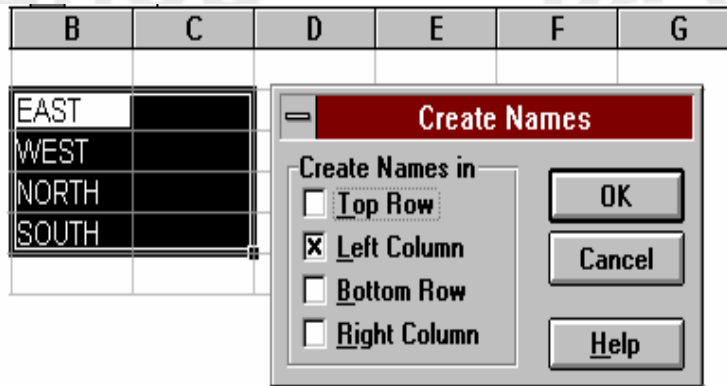2. Choose **Insert -> Name -> Define**.

Specify the Range Name in this text box

Range of cells

Using Create Name Dialogue Box

1. Enter the given data.

2. Select the range B2:C5.
3. Choose **Insert -> Name -> Create**. This will display the **Create Names** dialogue box.
4. Press OK.

1.7 Navigate Worksheet

With Mouse

You can move the mouse pointer to move to any cell of any worksheet of the workbook. This is done through:-

1. Click on up-arrow or down-arrow button on the scroll bar.
2. Click on the sheet tabs.
3. Click on any cell.
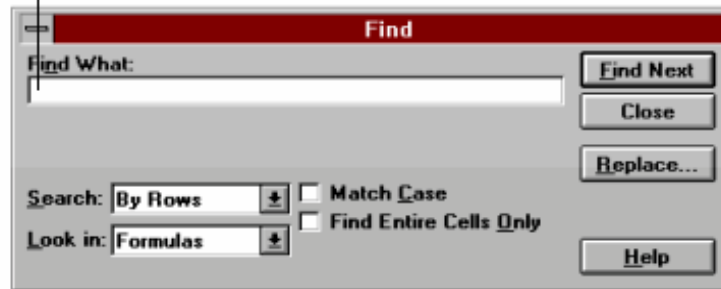4. To move quickly to any cell Choose **Edit -> Goto**.

With keyboard

TO MOVE	KEY PRESSED
Right, Left, Up, Down one cell	Arrow Keys
Up or Down one screen	PgUp or PgDown
Beginning of row	Home key
To cell A1	Ctrl+Home
To lower right corner	Ctrl+End
To last cell in current row	End or Enter key
To lower right corner of window	End (with Scroll Lock on)
To upper left corner of window	Home (with Scroll Lock on)

1.8 Search and Replace Data

To look for the data which is entered by the user, choose **Edit -> Find**.

Data to find

```
┌─────────────────────────────────────────────────────────┐
│ ▬                          Find                          │
├─────────────────────────────────────────────────────────┤
│ Find What:                              ┌──────────────┐ │
│ ┌──────────────────────────────────┐    │  Find Next   │ │
│ │                                  │    └──────────────┘ │
│ └──────────────────────────────────┘    ┌──────────────┐ │
│                                         │    Close     │ │
│                                         └──────────────┘ │
│                                         ┌──────────────┐ │
│                                         │  Replace...  │ │
│ Search: │By Rows    │±│ ☐ Match Case    └──────────────┘ │
│                       ☐ Find Entire Cells Only           │
│ Look in: │Formulas   │±│                 ┌──────────────┐ │
│                                         │    Help      │ │
│                                         └──────────────┘ │
└─────────────────────────────────────────────────────────┘
```

To replace the data, click on **Replace...** button

or

Choose Edit -> Replace.

1.9 Rearrange Cell Contents

Rearranging cell contents includes moving or copying or clearing cell contents. This also involves inserting or deleting rows or columns. This can be done either by cut and paste method or drag and drop method.

1.9.1   Move or Copy Cell Contents -

Drag and Drop method

1. Select the range of cells which are to be moved.
2. Point to the border of range. The mouse pointer will change its shape to an arrow.
3. To move, press the left mouse button, drag it to the new location and release the mouse button.
4. To copy, press the Ctrl key while dragging the contents.

Short-cut menu

1. Press the right mouse button while dragging and dropping cell contents.
2. From the short-cut menu, choose Move to move the contents, or choose Copy to copy the contents.

Cut and Paste Method

1. Select the cell range.
2. Select **Edit -> Cut** (to move the range of cells)
               or
3. Select **Edit -> Copy** (to copy the range of cells)
4. Select the upper left corner of the new location where you want to place the cell contents.
5. Choose **Paste** option from **Edit** menu.

1.9.2   Inserting or Deleting Rows and Columns

Many a times you may require to add a row of data or a column of data which you forgot to enter earlier. Excel provides you the facility to insert rows or columns into the existing worksheet very easily.
One thing which has to be taken care of is that inserting a row of data will shift the rest of the rows down and cause the last row of the worksheet to be removed. Same is the case while we insert a column in the

worksheet, the rest of the columns shift right. This happens because the total number of rows and columns remain the same. If there is any data in the last row or column of the worksheet that will be lost.

To insert cells, rows or columns

1. Select the cell(s) where you want to insert the cell(s), row or column.
2. From the **Insert** menu,
    i.   Choose **Entire Column** to insert the column
    ii. Choose **Entire Row** to insert the row

Choose **Shift Cells Right** or **Shift Cells Down** to insert the cell(s).
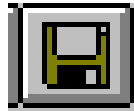
1.10 Save and Protect Workbook

After you finish up your work with the workbook you will require it to be saved so that it can be opened later to resume the work in it.

To give the name and save the workbook -
>   Choose **File -> Save As** command

To simply save the workbook -
>   Choose **File -> Save** command
>
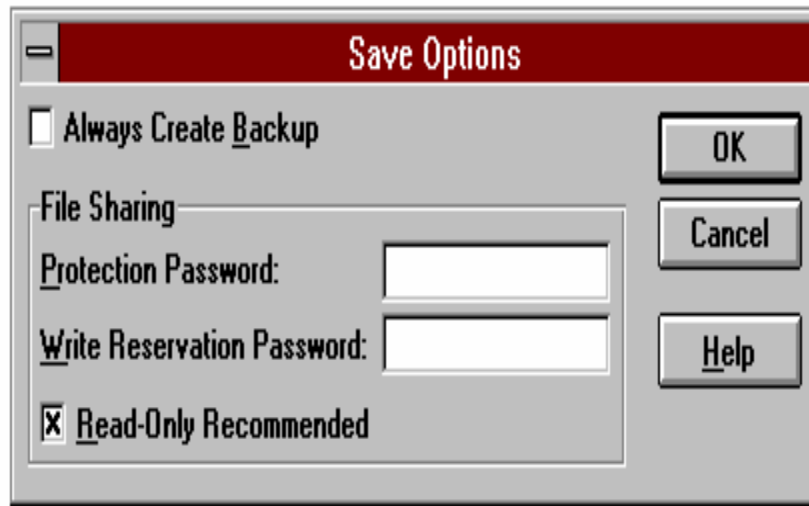>   **or**
>   Click on the Save File Tool button

To protect the Workbook - Your data can be very confidential which has to be saved from unauthorised people.

Click on Options... button from the **File -> Save As** dialogue box.

You can restrict the access of that workbook from other users in 3 different ways:

Protection Password

1. Type the password which will be required to open the workbook. The password can be upto 15 characters long, can include alphabets (upper case or lower case), numbers and special characters. It is case sensitive also.

2. You will be asked to re-enter the same password.

3. Click on OK.

Write Reservation Password

This password will be required when you make changes in the existing workbook and then try to save that workbook. This prevents the unauthorised users to make any modifications in the workbook. The rules to give the password are same as Protection Password.

Read-only Recommended

If this option is checked, the following dialogue box will be displayed every time you try to open the workbook.
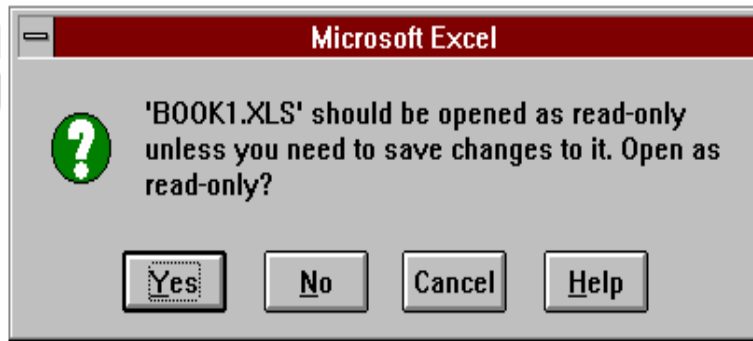
This option is checked if you want to discourage the other users from making any changes by mistake or you want to prevent the changes to be made by more than one users simultaneously (this is possible when more than one users are working on the same workbook).

1.11 Exit EXCEL

When your work is finished and it has been saved properly, to close the file and exit MS-Excel,

1. Choose **File -> Close** command.
2. Choose **File -> Exit**.

If you have not saved your work before closing the file, the dialogue box to save the worksheet is displayed.

1.12 Summary

In this session, you learned

1. What is an Excel workbook and worksheet, and how to work in it.
2. Data is entered in the cells and can be edited, if required.
3. Names can be given to a single cell or a range of cells.
4. You can move in the worksheet either with keyboard, mouse or menu.
5. Data which has been entered can be searched and replaced.
6. The contents of the cell can be copied and moved anywhere in the workbook.
7. The worksheet which has been created can be saved and you can also protect it from unauthorised users by giving passwords.
8. Commands to leave the Excel workplace and come out to Windows shell.

1.13 Exercise

1. What are the different features of Excel that provide the ease of work.
2. Dfferentiate between a Workbook and a Worksheet.
3. What are the different types of data that can be entered in Worksheet cells ?
4. What is Fill-handle and how is it useful ?
5. Explain the three ways of referencing the cells.
6. What are the different ways to name or copy cell contents ?
7. How the access of the Workbook can be restricted from other users ?