Computer Fundamentals and PC Software

SEMESTER-I

MASTER OF COMPUTER APPLICATION /

MASTER OF SCIENCE IN INFORMATION TECHNOLOGY

BLOCK-2

KRISHNA KANTA HANDIQUI STATE OPEN UNIVERSITY

Subject Experts

Prof. Anjana Kakati Mahanta, Gauhati University

Prof. (Retd.) Pranhari Talukdar, Gauhati University

Dr. Jyotiprakash Goswami, Assam Engineering College

Prof. Sikhar Kumar Sarma, Cotton University

Course Coordinators

Dr. Sanjib Kr Kalita, KKHSOU

Dr. Tapashi Kashyap Das, KKHSOU

Sruti Sruba Bharali, KKHSOU

SLM Preparation Team

UNITS	CONTRIBUTORS
9, 13, 14, 15	Pritam Medhi, Project Assistant, Gauhati University
10	Binod Deka, KKHSOU
11, 12	Dr. Tapashi Kashyap Das, KKHSOU

Editorial Team

Content :	Dr. Sanjib Kr Kalita, KKHSOU
Language :	Prof. Robin Goswami, Retd. Professor, Cotton College
Structue, Format & Graphics:	Sruti Sruba Bharali, KKHSOU

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Headquarters : Patgaon, Rani Gate, Guwahati - 781017
City Office : Housefed Complex, Dispur, Guwahati-781 006; Web: www.kkhsou.in

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MASTER OF COMPUTER APPLICATION /

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Computer Fundamentals and PC Software

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BLOCK INTRODUCTION

This is the *Second Block* of the course '***Computer Fundamentals and PC Software*'.** After completing this block, which consists of seven units, you will get a detailed overview of the Windows and LINUX operating system. Applications like Microsoft Word, Excel and Powerpoint are discussed in this block.

This block comprises of the following seven units :

Unit - 9 introduces you to the MS Windows operating system. Different components of the Windows OS are discussed in this unit.

Unit - 10 introduces you to the LINUX operating system. Different components of the LINUX OS are discussed in this unit.

Unit - 11 deals with the introductory concepts of Microsoft Word. Different aspects of Word like working with paragraphs, bullets and numbering are discussed in this unit.

Unit - 12 concentrates on the concepts on page setup and working with tables. Inserting header, footer, pictures and documents are discussed in this unit.

Unit - 13 introduces you to Microsoft Excel. Different aspects of Excel like working with workbook, cells and fonts are discussed in this unit.

Unit - 14 concentrates on functions in Excel. Working with formulas and functions are discussed in this unit.

Unit - 15 introduces concepts on Microsoft PowerPoint. Creating slides, working with slides, application of themes, text and graphics are discussed in this unit.

The structure of Block 2 is as follows :

UNIT 9 : MS Windows Operating System

UNIT 10 : LINUX Operating System

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UNIT 12 : Microsoft Word II

UNIT 13 : Microsoft Excel

UNIT 14 : Functions in Excel

UNIT 15 : Microsoft PowerPoint

UNIT 9 : MS WINDOWS OPERATING SYSTEM

UNIT STRUCTURE

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9.4 Exploring Components of Windows

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- 9.4.3 Working with Windows
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9.5 Customizing the Desktop

9.6 Files and Folders

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9.1 LEARNING OBJECTIVES

After going through this unit, you will be able to:

- describe the features of Windows 7
- explore the components of Windows 7
- customize your Windows working environment
- work with files and folders to suit your needs.

9.2 INTRODUCTION

Windows 7 is the most common and widely used version of Operating System to have evolved in the Microsoft Windows Operating Systems family, and is the best-reviewed and technically better than the earlier versions of Windows. Hence Windows 7 has proved to be the most

universally accepted operating system so far. Unlike its predecessor Windows Vista, which introduced a large number of new features, Windows 7 was intended to be a more focused, incremental upgrade to the Windows line, with the goal of being compatible with applications and hardware with which Windows Vista was already compatible. Windows 7 is technically an evolution of Windows Vista in terms of stability and security, maintaining everything that was good about Vista. Some of the improved features of Windows 7 that make this version more superior to Vista are: ***greater speed, less hardware requirements*** and its ***user-friendliness***.

In this unit, we will discuss about the features that are new in Windows 7 making it a better and more accepted operating system than the earlier versions. The different components of Windows 7 like the desktop, icons, menus etc that are somewhat more improved will also be discussed. And lastly, the technique of customizing the desktop to suit our usage needs will also be covered.

9.3 FEATURES OF WINDOWS 7

The Windows 7 operating system is more stable, intuitive and easy to use than any previous version. Here, we look at some of the most compelling overall end-user features that will make a difference on the desktop. Some are small, and some are major, but taken all together it makes for the most exciting upgrade for Windows users since the arrival of Windows XP.

1. **Speed :** Even aside from incompatibilities and other issues that many people had with Windows Vista, one of the most straightforward was speed as it just felt too sluggish compared to XP, even on good hardware. Windows 7 brings a more responsive and sprightly feel, and Microsoft has spent a lot of time and effort getting the Start Menu response just right. Microsoft has also recognized the need for improved desktop responsiveness, which gives the impression that the computer is responding to the user and that they are in control. One can

also expect faster boot times, and the boot sequence is now not only prettier than it was with Vista, but it is speedier too.

2. **Compatibility :** In simple terms, compatibility on Windows 7 is far better than it was with Vista. Many programs that individuals and companies used on Windows XP did not work immediately and required updates, but with Windows 7 almost all applications that work on Vista should still run. In essence, Windows Vista has done most of the hard work for Windows 7 in this respect.
3. **Lower hardware requirements :** Windows Vista gained a reputation for making even the best hardware look rather ordinary. Windows 7, however, runs well on lower end hardware, making the transition from Window XP less painful.
4. **Search and organization :** Search is vastly improved in Windows 7. We type a search term in the window (***the window right above the Start key when we click on it***), and get a list of all results. What is great is that the results are not just presented as one huge list, but are grouped into categories like Programs, Music and Documents. It makes finding files a lot easier. Search is also lightning-fast with no more waiting, like in Vista or XP.
5. **TaskBar/Start menu :** At first glance, the task bar looks like nothing much has changed since Windows Vista. In fact, that is not the case and it is a lot more powerful. Microsoft is now making best use of its aero technology. By default, taskbar icons are now larger and items are grouped together and are not labeled with clumsy text. If we have multiple **Word/ Windows Explorer** windows open then we will see a stack appear on the task bar. When we hover over the application, each window will be visible in a thumbnail. If we hover over each thumbnail it will become visible, while all other open windows temporarily disappear. We can close each document or Window down from the thumbnail directly or click on it to bring it to the front.

6. **Aero-shake :** The favorite new visual feature of Windows 7 is called '**Aero Shake'**. In this case, we have a multitude of Windows open but we want to focus on just a single Window, all we have to do is grab it by the title bar (at the top) and shake with the mouse. This minimizes all the other Windows leaving just the one we grabbed on the desktop.
7. **Stacking :** Another great touch is Stacking, whereby we may simply drag a Window to the sides of the screen and it will stick automatically to the side filling half the screen, thus making it quick and easy to view documents side by side. If we move to the top, it will maximize to the whole screen.
8. **Action Center :** The User Account Control (UAC) was one of the headline annoyances in Windows Vista. In a reaction to malware problems, the Windows designers introduced the UAC, a dialogue box that popped up every time any changes were made to Windows when installing apps. It proved quite annoying, especially to power users who tended to turn it off straight away, thereby negating any benefit it might have. In Windows 7, a slider has been added, enabling users to tone down its nagging factor, making them less likely to turn it off completely.
9. **Touch :** The most whizz-bang visual feature in Windows 7 is its touch capability. This of course will only be available to those with a touch enabled PC, but for those suitably equipped it will provide a new way of interacting with their PC. The video will let them open applications from the taskbar, scroll up and down by flicking, and zoom and rotate pictures by holding and turning.
10. **Gadgets :** Windows Vista introduced Gadgets and a sidebar which provides the ability to anchor Gadgets to the side of the user's desktop. In Windows 7, the sidebar has been removed, while gadgets can still be placed on the desktop. Windows 7 adds a Windows Media Center gadget to the default collection while removing the Contacts and Notes gadgets. Managing gadgets is more closely integrated with Windows Explorer, but

the gadgets themselves continue to operate in a separate *sidebar.exe* process. The Desktop context menu includes a new "**Gadgets**" menu option to access the gadget gallery, and a "**View**" sub-menu option to show or hide gadgets. Hiding gadgets results in the *sidebar.exe* process being unloaded, which Microsoft says is a power-saving practice.

9.4 EXPLORING WINDOWS

The Windows system is made up of several parts that function separately in their own unique way. These parts or components provide the users many utilities, using which the users can perform several tasks in a very user-friendly manner.

The Windows system consists of several separate components like the desktop, which is the very first thing we get to see on starting Windows. It consists of a taskbar which is used to launch and monitor applications, a start button that is visible at all times in the lower left-hand corner of the screen, a Start Menu that serves as the central launching point for applications, providing a customizable, nested list of programs for the user to launch, as well as a list of most recently opened documents, a way to find files and get help, and access to the system settings. Files in the Windows system provide a very easy and safe way to store different kinds of information related to different application. These files can be saved and stored and can later be also edited or deleted. The help and support system in Windows is also a very interesting feature that provides easy assistance to users who are in need of help while working with the Windows system. In the later sub-sections we will get to know about these components of Windows, and discuss in detail the different features and functionalities of these components.

9.4.1 The Desktop

The desktop is the main screen area that we get to see after turning on a computer and logging on to Windows as shown in

Figure 9.1. The desktop serves as a surface for work, with open programs or folders appearing on the desktop. We can also put things on the desktop, such as files and folders, and arrange them accordingly. The desktop is sometimes defined more broadly to include the taskbar which sits at the bottom of the screen. The taskbar shows us the running programs and allows switching between them. It also contains the Start button, which allows us to access programs, folders, and computer settings.



Fiure 9.1 : The Desktop



CHECK YOUR PROGRESS

Q.1. State whether the following statements are True or False.

(i) The Windows 7 operating system is more stable, intuitive and easy to use.

(ii) The desktop serves as a surface for work.

(iii) The taskbar shows us the running programs and allows switching between them.

(iv) The Start button does not allow us to access programs, folders, and computer settings.

(v) In Windows 7, the sidebar has been removed, while gadgets can still be placed on the desktop.

9.4.2 The Icons

Icons are small pictures representing files, folders, programs, and other items of a computer. These icons give quick access to frequently used programs, files and folders. When we first start Windows, we can see at least one icon on the desktop: the Recycle Bin. Some examples of desktop icons are shown below.



When we double-click an icon, the corresponding window of that icon opens. We can also add, remove, rename and move icons on the desktop according to our needs. Common desktop icons include My Computer, the user's personal folder, the Recycle Bin, and Control Panel.

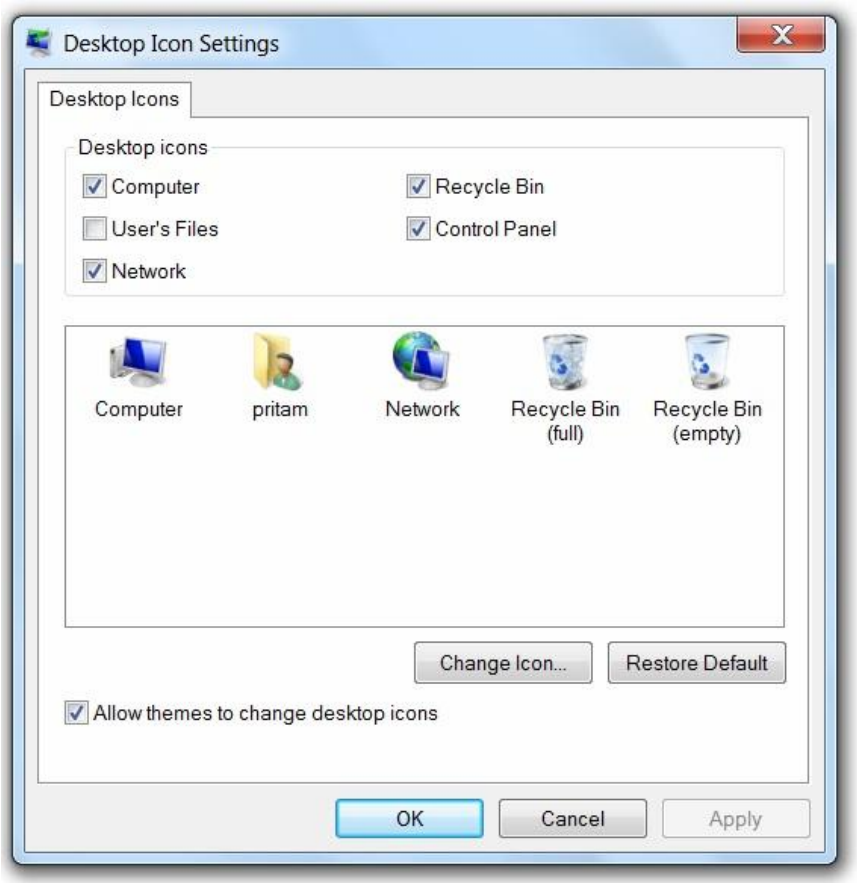


Figure 9.2 : The Desktop icon settings dialog box

- **Adding or Removing desktop icons**
  1. Firstly we right-click on empty area of the desktop, and then click **Personalize**.
  2. In the left pane, we click **Change desktop icons** which opens the **Desktop icon settings** dialog box as in **Figure 9.2**
  3. Under **Desktop icons**, we select the check box for each icon that we want to add to the desktop, or clear the check box for each icon that we want to remove from the desktop, and then click **OK**.

To remove an icon from the desktop we may right-click the icon, and then click **Delete**. In case the icon is a shortcut, only the shortcut is removed but the original item is not deleted.

- **Renaming icons** – A desktop icon can be easily renamed by the following steps:
  1. Firstly we right-click the icon on the desktop
  2. Then from the pop-up menu we select the rename option
  3. We then enter a new name for the icon

  OR

  1. We first select the icon to be renamed
  2. Then we press the **F2** key
  3. Finally we enter a new name for the icon
- **Moving icons :** Icons on the desktop are stacked in columns on the left side of the desktop. But if desired such an arrangement can be changed by moving an icon by dragging it to a new place on the desktop. To do so we follow these steps:
  1. Firstly we select the item to be moved
  2. Pressing and holding the left mouse button, we move the icon to the desired destination
  3. As soon as the destination is reached we release the mouse button
- **Arranging icons :** Windows can also arrange our icons automatically. To do so we follow these steps:
  1. Firstly we right-click an empty area of the desktop

2. We then select **View** and click on **Auto arrange icons**
3. Windows automatically stacks our icons in the upper-left corner and locks them in place

In order to unlock the icons to move them again, we may click **Auto arrange icons** again, clearing the check mark next to it.

- **Moving multiple icons :** In order to move or delete a bunch of icons at once, we must first select all of them. To do so we follow these steps:
  1. At first we click an empty area of the desktop and drag the mouse.
  2. We surround the icons that we want to select with the rectangle that appears.
  3. When the desired icons are surrounded we release the mouse button.
  4. Now we can drag the icons as a group or delete them.

9.4.3 Working with Windows

While working in the Windows environment, we perform many tasks like creating different application files, editing them, managing them and many other tasks that require us to constantly use a number of windows that are related to the currently used processes. In such a situation we need to '**move**', '**minimize'**, '**maximize**', '**restore**', '**resize**', '**close**' and perform other tasks related to separate windows. In this section we will be discussing these in detail, as to how to control separate windows according to our needs.

When we open a program, file, or folder, it appears on the screen in a frame called a window. These windows are of two types as shown below–

1. **Program application window :** These **windows** are associated with application programs and their look and feel may vary across different application software. **Figure 9.3** shows the window of MS Excel 2007 which is a MS Office application program window.

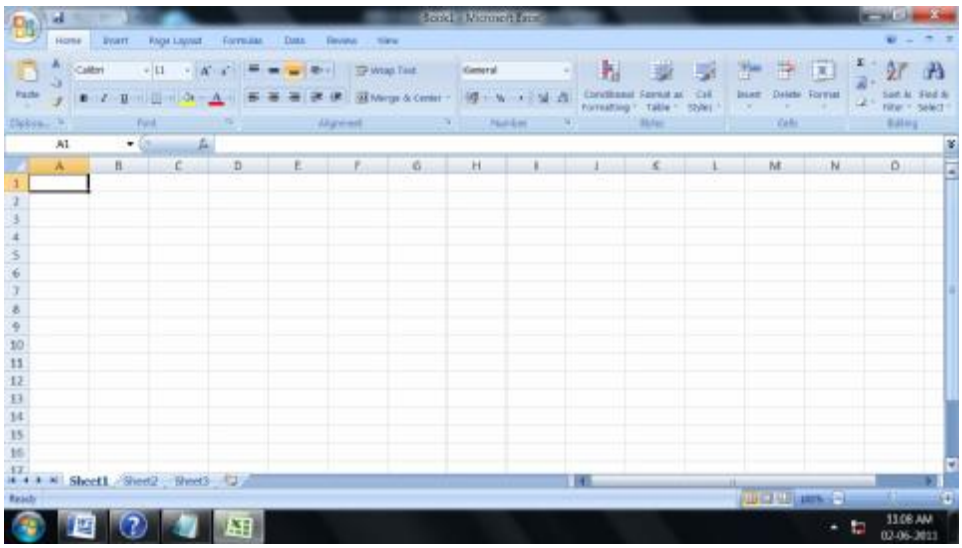


Figure 9.3 : A program application window

2. **Folder window :** These windows are viewed when we browse through the different folders in a hierarchical order to work with different files and folders. A typical folder window is shown in **Figure 9.4** below.

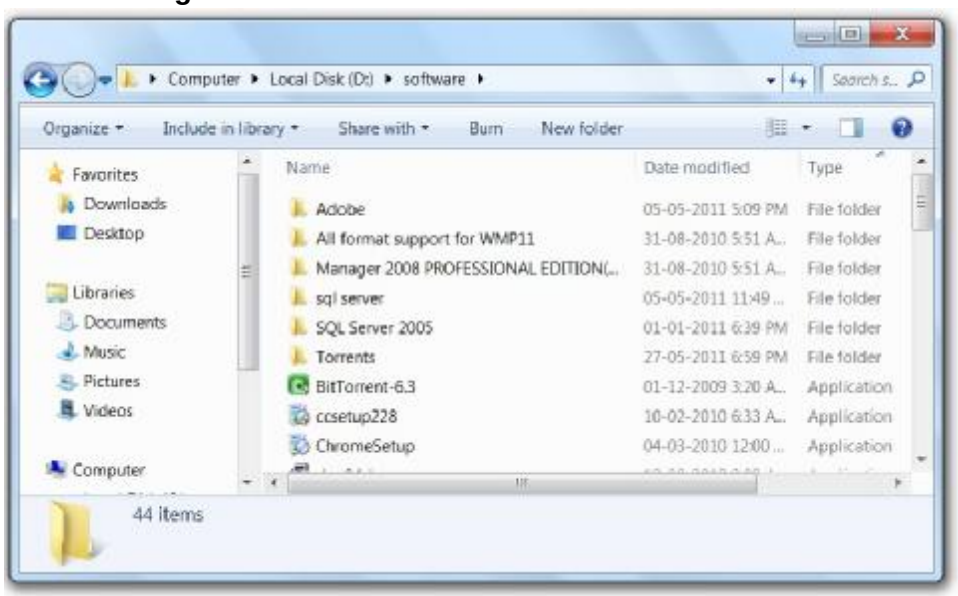


Figure 9.4 : A folder window

Although program application windows and folder windows are used for different purposes, there are some features that are common between both the types.

- **Minimizing a window :** A window can be minimized by doing any one of the following :

- Ø By clicking the minimize button. 
- Ø With the keyboard shortcut **Alt** + (**space**) + **n**

On minimizing a window it disappears from the desktop and is visible only as a button on the taskbar as shown below.



MS Word as a Taskbar button

- **Restoring a window :** A window can be restored by doing any one of the following:
  - Ø By clicking the restore button. 
  - Ø By the keyboard shortcut + ↓
  - Ø By the keyboard shortcut **Alt** + (**space**) + **R**
  - Ø By dragging the window down from the top of the screen
  - Ø By double-clicking the title bar

On restoring a window its size decreases from all the four sides but it does not get minimized.

- **Maximizing a window :** A window can be maximized by doing any one of the following:
  - Ø By clicking the restore button. 
  - Ø By the keyboard shortcut + ↑
  - Ø By double-clicking the title bar
  - Ø By the keyboard shortcut **Alt** + (**space**) + **X**
  - Ø By dragging the window up against the top of the screen

On maximizing a window it gets maximized to its full size covering the entire desktop.

- **Moving a window :** A window can be moved only when it is in a restored position by doing any one of the following:
  - Ø By clicking on the title bar of the window and dragging it to the position we want.
  - Ø By the keyboard shortcut **Alt** + (**space**) + **M.** We have to then use the arrow keys to position the window accordingly, and finally we press the **Enter** key when positioning is done.

- **Resizing a window** – A restored window can be resized by following these steps:
  1. Firstly we point to any of the window's borders or corners.
  2. When the mouse pointer changes to a two-headed arrow, we drag the border or corner to shrink or enlarge the window.

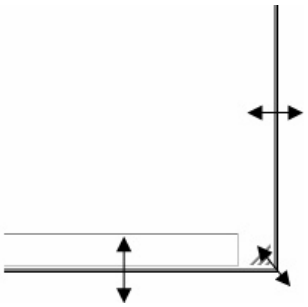


Figure 9.5 : Resizing a window

- **Closing a window :** A window can be closed by doing any one of the following:
  - By clicking the close button located in the upper-right corner
  - By pressing **Alt** + **F4**
  - By double-clicking the upper-left corner of the window
  - By using the keyboard shortcut **Alt** + (**space**) + **C**
  - By right-clicking the window's taskbar button, and then choosing **Close**
  - By right-clicking the title bar and choosing **Close**
  - By choosing **File** > **Close**

9.4.4 The Start Menu and Taskbar

The START menu : The Start menu as in **Figure 9.6** is the first doorway to a computer's programs, files folders, settings etc. In other words, it provides the users an entry-point wherefrom they can START using a computer and access all its resources. We can use the Start menu to perform many activities like start different programs, open commonly used folders, search for files, control computer settings, get help with the Windows operating system, turn off the computer, log off or switch user accounts etc.

- To open the Start menu, we may do any one of the following:
  - Click the Start button  in the lower-left corner of the screen.

    OR
  - Press the Windows logo key on the keyboard

The Start menu is split down the middle into two columns :

1. **Left** column (white) : At the top and above the thin divider line is the **pinned items** list, which the user can modify. It lists programs, folders, documents and everything else that we need to open quickly. This list never changes unless we change it. Below the fine line is the standard Window's **most frequently used programs** list. This list is automatically computed by Windows and may change from day to day. At the very bottom is the **All Programs** list which includes a list of all the installed programs in the computer, plus the **search box**.
2. **Right** column (dark) : In general, the right side of the **Start menu** lists important places on the computer namely folders like documents, pictures and music or special windows like network, control panel, and computer.

At the bottom is the **Shut down** button, which turns the PC off. The button next to it offers several variation of '**off**' like '**log-off**', '**lock**', '**restart**', '**sleep**' and '**hibernate**'.

Search box : The search operation can find files, folders, programs and all sorts of documents that are in the computer. The moment we start typing in the **Search** box, we trigger Window's very fast computer search function. It also finds anything in the **Start menu**, thus making it a very quick way to pull up something without clicking through a bunch of sub-menus.



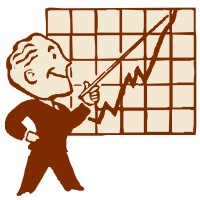
Figure 9.6 : The Start menu

The Taskbar : The long horizontal bar that we can see at the bottom of the computer screen is the taskbar. It is divided into three main sections as illustrated in **Figure 9.7**.

1. The START button is at the extreme left of the taskbar and opens the Start menu.
2. The middle part contains the icons of the programs that are currently open. These icons make it easier to switch from one program to another.
3. The notification area at the extreme right includes a clock and icons (small pictures) that communicate the status of certain programs and computer settings.



Figure 9.7 : The Taskbar



CHECK YOUR PROGRESS

Q.2. Fill in the blanks.

(i) _____ give quick access to frequently used programs, files, and folders.

(ii) When we _____ an icon, the corresponding window of that icon opens.

(iii) _____ can also arrange our icons automatically.

(iv) On _____ a window it disappears from the desktop and is visible only as a button on the _____.

(v) A window can be restored by double-clicking the _____.

Q.3. State whether the following statements are True or False.

(i) A window can be minimized by clicking the maximize button.

(ii) A window can be moved only when it is in a restored position.

(iii) We can open the start menu by clicking the start button.

(iv) The Start menu is split down the middle into three columns.

(v) The START button is at the extreme left of the taskbar.

9.4.5 Quitting Windows

After finishing our work on a computer, it is important to turn it off in a proper manner. Shutting down a computer in a recommended way saves energy and also helps to keep the computer more secure by making sure that our data is saved. If this is not done, all the

unsaved data will be lost forever. Therefore it is very important to shut down a computer in a proper manner.

- **To quit windows we should follow these steps –**
  1. Firstly, we need to save all the unsaved data
  2. Then we click the **Start** button
  3. The start menu opens up which includes the **Shut down** button
  4. When we click the **Shut down** button, we exit Windows and after sometime the entire computer comes to a halt, indicating that Windows was shut down successfully.

The button ▶ next to the **Shut down** button offers several variation of '**off**' like '**log-off**', '**lock**', '**restart**', '**sleep**' and '**hibernate**'.



Figure 9.8 : Quitting Windows

Log-off : When we log off from Windows, all the running programs are closed, but the computer is not turned off. After logging off, another user can log on without restarting the computer. Also

we do not need to worry about losing our information if another user turns off the computer.

- **To do so we follow these steps :**

1. We click the **Start** button 
2. Then point to the arrow ▶ next to the **Start** button
3. From the menu we select the **Log off** option

Lock : This command locks the computer and hides the screen from view. By doing so we can protect our computer from any unauthorized use, because after locking a computer it can later be accessed only by providing the correct password by the person who provided it for locking the computer.

- **To do so we follow these steps :**

1. First we click the Start button 
2. Then we point to the arrow ▶ next to the **Start** button
3. From the menu, we select the **Lock** option

Switch user : This command comes into play when we have multiple accounts and need to switch users. When we select **Switch user**, somebody else can log into the computer using their respective name and password. Even though users switch their accounts, all their respective settings and open files remain intact and in the same position where they had left before switching their accounts.

- **To do so we follow these steps :**

1. We click the **Start** button 
2. Then we point to the arrow ▶ next to the **Start** button
3. From the menu we select the **Switch user** option

Restart : This command quits all open programs, and then quits and restarts Windows again automatically.

- **To do so we follow these steps :**

- First we click the **Start** button 
- Then we point to the arrow ▶ next to the **Start** button
- From the menu we select the **Restart** option

Sleep : Sometimes instead of shutting down the computer we can put it to the sleep mode, whereby the computer goes to sleep and the display turns off, and often the computer's fan stops. A light on the outside of the computer case blinks or turns yellow to indicate that the computer is asleep. The whole process takes only a few seconds.

Windows will remember what the computer was doing before going to sleep, there is no need to close our programs and files before the computer is set to sleep. But it is always recommended to save our work before putting the computer into any low-power mode. Later, when we turn on the computer (and enter a password, if required), the screen will look exactly as it did when the computer was turned off. To wake the computer, we may press the power button.

- **To do so we follow these steps :**

1. Firstly we click the Start button 
2. Point to the arrow ▸ next to the Start button
3. From the menu select the Sleep option

9.5 CUSTOMIZING THE DESKTOP

We have already come across the concept of the desktop, the different components that constitute the desktop and the ways to use those components. In this section we will be dealing with some of the issues that relate to customizing the desktop. The desktop is the work area on a computer screen, similar to the top of an actual desk. The desktop contains the Recycle Bin and icons (shortcuts to programs, files, folders, and various types of documents such as letters, reports, or pictures) that we can arrange just like arranging real objects on a desk.

- **Customizing the desktop theme :** The Desktop theme is a combination of pictures, colors, and sounds on our computer which includes a desktop background, a screen saver, a window border color, and a sound scheme. Windows 7 comes with several themes that we may choose from.

These are –

- An Aero theme to personalize the computer
- The Windows 7 Basic theme.
- A High Contrast theme.

- **To choose a Windows theme we do the following –**

1. Firstly we right-click a blank spot on the desktop
2. From the pop-up menu, we click on **Personalize** which opens the **Personalize** control panel as in **Figure 9.9**
3. There we find several pre-built themes to choose from
4. Clicking on any of those themes applies that theme to the desktop world instantly

We may also change a theme's pictures, color, and sounds individually to create a customized theme by doing the following –

1. We first open the **Personalize** window of **Figure 9.9**
2. Then we select the theme that we want to customize
3. We do one or more of the following

- To change the background, we click **Desktop Background** and select the check box for the image that we want to use, and finally click **Save changes**.
- To change the color of window borders, we click **Window Color** and click the color we want to use. We may adjust the **intensity**, and then click **Save changes**.
- To change the sounds for the theme, we click **Sounds** and change sounds in the **Program Events** list under the **Sounds** tabs. Finally we click **OK**.
- To add or change a screen saver, we click **Screen Saver**. Then we click an item in the Screen saver list and change any settings that we want, and finally click **OK**.

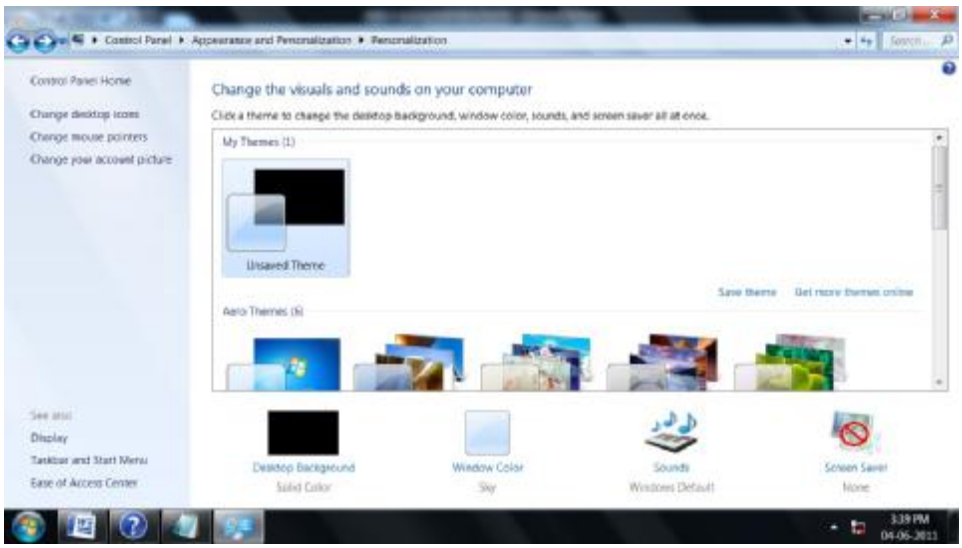


Figure 9.9 : The Personalize window

- **Customizing the desktop background (**wallpaper**) :** The desktop background (wallpaper) can be set as any picture, or we can display a slide show of pictures. To change the desktop background we do the following:
  1. We open the **Personalize** window of **Figure 9.9**
  2. Then we click on **Desktop Background** which opens the window as in **Figure 9.10**
  3. We click the picture or color we want as our desktop background. If the picture we want is not in the list of desktop background pictures, we may click an item in the **Picture location** list to see other categories, or click **Browse** to search for the picture on the computer. On finding the picture, we double-click it to apply it as the desktop background.
  4. Under **Picture position**, we click the arrow and choose whether to crop the picture to fill the screen, fit the picture to the screen, stretch the picture to fit the screen, tile the picture, or center the picture on the screen, and then click **Save changes**.



Figure 9.10 : Desktop Background

Customizing the Start menu : If we customize the Start menu according to our needs, it becomes easier for us to find our favourite programs and folders.

- **Pin a program icon to the Start menu :** When we use a program very often, it can be useful to create a shortcut to it by pinning the program icon to the Start menu. These program icons appear on the left side of the Start menu.

  To do so we do the following :

  - We right-click the program icon that we want to pin to the Start menu
  - Then click **Pin to Start Menu**.

  (**Tip**: *To unpin a program icon, right-click it and click Unpin from Start Menu*)

- **Remove a program icon from the Start menu :** When we remove a program icon from the Start menu, it does not remove it from the All Programs list or uninstalls the program.

  To do so we do the following :

  1. First we click the **Start** button
  2. Then we right-click the program icon we want to remove from the Start menu
  3. Finally we click **Remove from this list**

- **Move the Start button :** The **Start** button is located on the extreme left of the taskbar. Though we cannot remove the Start button from the taskbar, we can of course move the taskbar — and the Start button along with it.

  To do so we follow these steps :

  1. Firstly we right-click on empty space on the taskbar. In case **Lock the taskbar** has a check mark beside it, we uncheck it.
  2. Then we click an empty space on the taskbar, and holding down the mouse button we drag the taskbar to one of the four edges of the desktop. When the taskbar is where we want it, we release the mouse button.

9.6 FILES AND FOLDERS

Files : Files in a computer are items containing varied sorts of information. Files can be of various types - e.g. text files, music files, video files, image files, sound files etc. Files are represented by icons, thus making it easy to recognize a type of file by looking at its icon. A file icon often represents the application program that can open the file. The following are some common file icons:



Folders : A folder acts as a container that can be used to store files. Folders in a computer are used to store files in an organized way. When there are too many files of different types all related to different purposes, folders can be of big help in organizing those files. This can be achieved by having different folders to store different types of files.

Folders may also store other folders, and in such cases a folder located inside a folder is called a subfolder. We may keep on creating many such subfolders, each holding many files and additional subfolders. Following are two folder icons.



- **The parts of a window :** Every time we open a folder, we see it in a window having various parts which help us to navigate around Windows or work with files and folders. Here is a typical window with each of its parts described below:

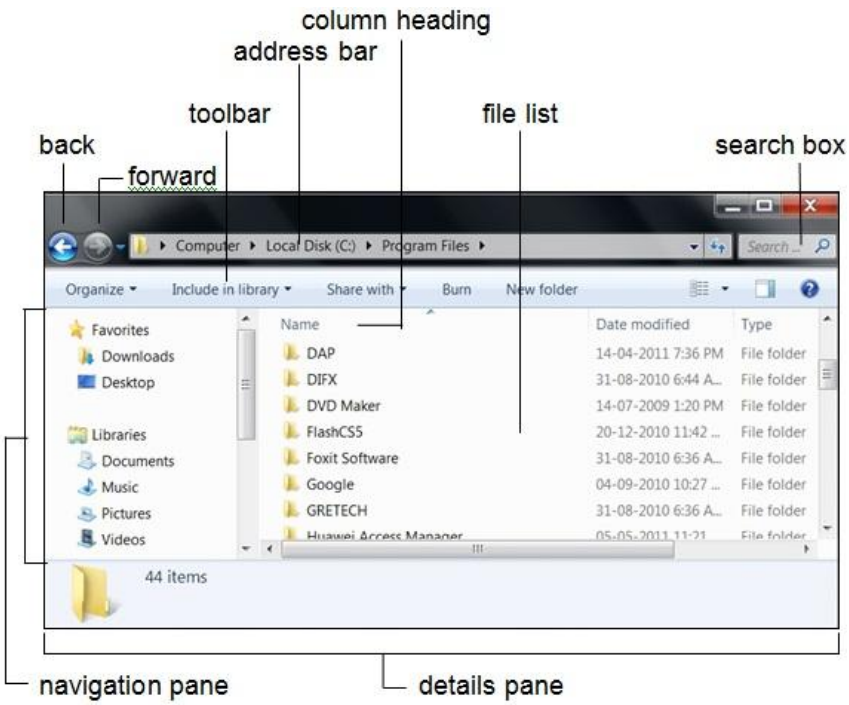


Figure 9.11 : Windows Files and Folders Explorer

Navigation pane : We can use this pane to access libraries, folders, saved searches, and the hard disks. The **Favorites** section is used to open the commonly used folders and searches. The **Libraries** section can be used to access our libraries. The **Computer** folder also enables us to browse folders and subfolders.

Back and Forward button : These two buttons are used to navigate other folders or libraries without closing the current window. If we use the address bar to change folders, we can use the Back button to return to the previous folder.

Toolbar : The toolbar is used for some common tasks, like changing the appearance of files and folders, burning CDs, or starting a slide show. The buttons of the toolbar change to show only the tasks that are relevant. That is, a toolbar for a picture file would be different from the toolbar of a music file.

Address bar : This is used to navigate to a different folder or library or to go back to a previous one.

Column headings : We use these to change the organization of files in the file list. We may click the left side of a column heading to change the order in which the files and folders are displayed, or click the right side to filter the files in different ways.

File list : The file list displays the contents of the current folder or library. In case we type in the search box to find a file, only the files that match the current view will appear.

Search box : We type a word or phrase in the search box to search an item in the current folder or library. As we begin typing the first letter, the searching process begins — that is typing "A" will display all files with names starting with the letter A in the file list.

Details pane : The details pane is used to see the most common properties associated with the selected file, like the author, the modification date, and other descriptive tags added to the file.

- **Viewing and arranging files and folders :** We can change the appearance of files in a window when we open a folder or libraries that contain them. For example, we can use the Views button I in the toolbar to switch between larger or smaller icons, or a view that shows different information about each file. Clicking the left side of the **Views** button changes the display of files and folders by cycling through five different views :
  - **Large Icons**
  - **List**
  - **Details**, shows several columns of information about the file
  - **Tiles**
  - **Content**, shows some of the content from within the file.

On clicking the arrow on the right side of the **Views** button, we see the **Figure 9.12**. Moving the slider up or down changes the size of the file and folder icons.

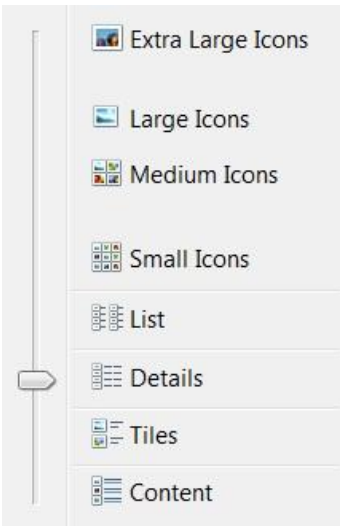


Figure 9.12 : The views options

- **The search box :** The search box located at the top of every window is used to search for a file.

  To do so we follow these steps :

  1. We open the folder or library that is the starting point for the search.
  2. Then click the search box
  3. As we type the name in the search box, it filters the current view based on the typed text.

  Files are displayed as search results if our search term matches the file name, tags or other properties, or even the text inside a text document.

- **Copying and moving files and folders**

  While working with several files and folders, we may sometimes need to copy and move them between different locations.

  To do so we follow these steps :

  1. Firstly we select the file to be copied. To select multiple files we use **Shift + Arrow** keys OR **Ctrl + click**.
  2. We right-click on them and choose **Cut/Copy**, or press **Ctrl + C** to copy, **Ctrl + X** to cut

OR

From the **Organize** button we select **Cut/Copy**

3. Open the destination where the file/folder has to be **Pasted**
4. **Right-click** and choose **Paste**

   OR

   From the **Organize** button select **Paste**

   OR

   Press **Ctrl + V**



CHECK YOUR PROGRESS

4. Fill in the blanks.
   (i) Shutting down a computer in a recommended way saves _____.
   (ii) When we log off from Windows, all the running programs are _____, but the computer is not turned _____.
   (iii) The _____ command comes into play when we have multiple accounts and need to switch users.
   (iv) The Desktop _____ is a combination of pictures, colors, and sounds.
   (v) The desktop _____ can be set as any picture.
   (vi) When we use a program very often, it can be useful to create a shortcut to it by pinning the program icon to the _____.
5. State whether the following statements are True or False
   (i) When we remove a program icon from the Start menu, it removes it from the All Programs list.
   (ii) We can remove the Start button from the taskbar.
   (iii) Folders in a computer are used to store files in an organized way.
   (iv) Folders cannot store other folders.

(v) Address bar is used to navigate to a different folder.

(vi) The details pane is used to see the most common properties associated with the selected file.



9.7 LET US SUM UP

- Windows 7 is technically an ***evolution*** of Windows Vista in terms of stability and security.
- The hardware requirements of Windows 7 are ***lower*** than that of Windows Vista.
- The ***desktop*** is the first thing that we get to see when we start Windows.
- ***Icons*** are small pictures that represent files, folder and programs.
- ***Folder application windows*** are used to view and browse through folders.
- The ***start menu*** is the first gateway to a computer's programs, files, folders etc.
- The ***search operation*** can find files, folders, programs and all sorts of documents that are in the computer.
- The ***restart command*** quits all open programs, and then quits and restarts Windows again automatically.
- We can ***customize*** the look and feel of the desktop according to our preferences.
- ***Files*** in a computer are items containing varied sorts of information.
- A ***folder*** acts as a container that can be used to store files.



9.8 FURTHER READING

- Pogue, D. Windows 7. The Missing Manual. 2010.



9.9 ANSWERS TO CHECK YOUR PROGRESS

Ans. to Q. No. 1 : (i) true, (ii) true, (iii) true, (iv) false, (v) true.

Ans. to Q. No. 2 : (i) Icons, (ii) double-click, (iii) windows, (iv) minimizing, taskbar, (v) title bar.

Ans. to Q. No. 3 : (i) false, (ii) true, (iii) true, (iv) false, (v) true.

Ans. to Q. No. 4 : (i) energy, (ii) closed, off, (iii) switch user, (iv) theme, (v) background, (vi) start menu

Ans. to Q. No. 5 : (i) false, (ii) false, (iii) true, (iv) false, (v) true, (vi) true



9.10 MODEL QUESTIONS

Q1. Explain any five features of Windows 7.

Q2. What are Windows components? Give examples.

Q3. What are icons? What are the steps of moving icons?

Q4. Explain briefly the types of Windows. How do we close, minimize, move and resize a window?

Q5. What is the Windows 7 Start menu? Explain its parts.

Q6. How do we restart, log-off and lock a computer.

Q7. How can we customize the start menu?

Q8. Describe the different parts of the Window Explorer.

****

UNIT 10 : LINUX OPERATING SYSTEM

UNIT STRUCTURE

10.1 Learning Objectives

10.2 Introduction

10.3 Open Source and Free Software

10.4 Advantages of Linux

10.5 Disadvantages of Linux

10.6 Linux Booting Process

10.7 Linux Filesystem Hierarchy

10.8 Main Components of Linux Operating System

10.9 Concept of Path

10.10 Basic Linux Commmand

10.11 File Permission

10.12 Text Editor vi

10.13 Let Us Sum Up

10.14 Further Reading

10.15 Answers to Check Your Progress

10.16 Model Questions

10.1 LEARNING OBJECTIVES

After going through this unit, you will be able to :

- understand the advantages and disadvantages of Linux
- discuss the booting process of Linux
- describe about Linux file system hierarchy
- describe various Linux commands.

10.2 INTRODUCTION

In the previous unit, we have discussed the Windows operating system. In this unit we are going to discuss the Linux operating system. Windows operating system is not free and we need to buy it in order to use. In addition, Windows hides the detailed working of the Operating System

from the user and it will not allow the users to see or modify the source code. But in case of Linux Operating system it is completly free and the source code is available for free to use or modify. The advantages of linux operating system are: Better Security, Freedom to use, Multitasking, Flexibility, Stability etc.

In the following section we are going to discuss about the open source and free software as well as concepts on path and various Linux commands.

10.3 OPEN SOURCE AND FREE SOFTWARE

Free software is the software that can be used,modified or studied without restriction. It is generally available without charge, but it can also have a fee, such as in the form of distribution medium like CD or DVD etc.

The free software movement was conceived in 1983 by Richard Stallman to satisfy the need for and to give the benefit of software freedom to computer users.The definition, written by Richard Stallman, is still maintained today and it states that software is free software if the software have the following four freedoms:

- To run the program for any purpose.
- To study how the program works, and change it to make it do what you wish.
- To redistribute copies so you can help your neighbor.
- To improve the program, and release modified versions to the public, so that the whole community benefits.

Free Software and Open Source have more or less the same aims but differ in their philosophy and values. The fundamental difference between the two movements is in their values, their ways of looking at the world as mentioned by GNU Foundations.

For the Open Source movement, non-free software is a suboptimal solution. For the Free Software movement, non-free software is a social problem and free software is the solution.

Open-source software is computer software that is available in source code form provided under a software license that permits users to study, change, improve and also to distribute the software.

10.4 ADVANTAGES OF LINUX

There are various advantage of Linux operating system as described below:

Cost : Linux is completely free Operating System and we can modify or re-disrtibute the source code without any restrictions. Windows on the other hand, is not free and we have to pay for using it.

Multi User interface : Linux is multi user system i.e. more than one user can interact with the Linux system.

Security : The security aspect of Linux is much stronger than that of Windows.

10.5 DISADVANTAGES OF LINUX

Understanding : It is not so easy to understand the Linux operating clearly. We have to give much care while learning the Linux system.

Alternative Software : There are still some applications that exist on Windows that have no equivalent Linux application.

Compatibility : Though the kernel contributors and maintainers work hard at keeping the kernel up to date to make it compatable with all hardware, sometimes we can not find third party applications.

10.6 LINUX BOOTING PROCESS

Booting is a bootstrapping process that starts operating systems when the user turns on a computer system. Before going to the booting process of linux lets take a look at the general booting process of a machine.

Booting Sequence :

a. Turn On the PC

b. CPU jump to address of BIOS

c. BIOS runs POST (Power-On Self Test)

d. Find bootable devices

e. Loads and execute boot sector from MBR(Master Boot Record)

f. Load the OS to RAM

BIOS (Basic Input Output System) refers to the software code run by a computer when first powered on. Master Boot Record, a small program that is executed when a computer boots up and typically, the MBR resides on the first sector of the hard disk.The main function of POST is to check whether all the hardware component are working properly or not and report the errors if any to the users.

After the POST operation as described above, BIOS loads and execute the partition boot code from the designated boot device which contains phase 1 of a Linux boot loader. Phase 1 loads Phase 2 boot loader. The boot loader often presents the user with a menu of possible boot options. It then loads the operating system. Then it calls the start_kernel() which performs the memory management, device initialization etc and start the init process. The init process starts all the non-operating system services and provides the user with a login screen.

In summary,

– BIOS loads the Phase1 boot loader
– Phase 1 boot loader start Phase 2 boot loader
– Then start-kernel() function is called
– Init process starts
– Init starts all non-operating system services and presents users with login screen.

10.7 LINUX FILESYSTEM HIERARCHY

An interesting thing about Linux is that everything is treated as either a file or directory. Even the hardware is considered as a file which is stored in the /dev directory. Linux dosen't use drive letters to distinguish between different partitions and devices. The "root" is denoted as.

Drives in linux are “mounted” to the specific directories(e.g /mnt/ pen_drive, you need to create **pen_drive** directory) where their data can then be accessed. So, for instance, if you need to use your thumbdrive, you would plug it into your computer and then mount it using the “mount” command, which specifies the path to the device.

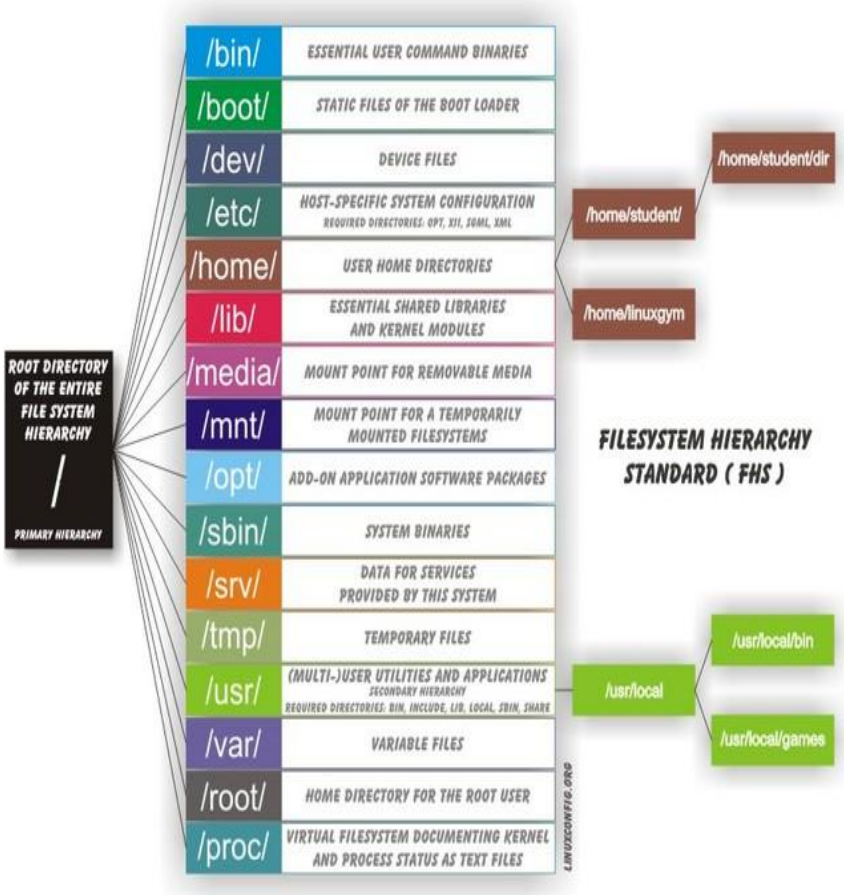


Figure 10.1: Root directory

The image above shows the linux filesystem hierarchy and is described in brief below:

/

this is the root folder, all other folders come under root. We can consider it as C: drive in Windows context.

/bin

this folder contains all the user-essential binaries programs .e.g cp, ls etc.

/boot

It contains configuration files and other necessary files that are needed by the bootloader

/dev

This folder contains device files.

/etc

This folder contains all the configuration files used by the system.

/home

This contains the home folders of all the normal users on the system.

/lib

It contains software libraries

/media

This is a mount point for removable devices

/mnt

This is a temporary mount point

/opt

This folder contains add on software

/sbin

This folder contains binaries that can only be run as the root user

/tmp

This folder contains temporary files that are erased upon reboot

/usr

This folder and its subfolders contains user installed programs and utilities and libraries

/var

This folder contains files that change a lot. e.g contains log files.

/root

This folder contians the root user's files

/proc

This folder contains information about the Linux kernel and hardware that is updated in realtime.

Linux supports numerous file system types as described below in brief:

Ext2 : It uses the concepts of blocks, inodes and directories.

Ext3 : It is the enhanced version of ext2 file system with journalling capabilities. Journalling allows fast file system recovery.

Sysfs : It is a ram-based filesystem initially based on ramfs. It is used to exporting kernel objects so that end user can use it easily.

Procfs : The proc file system acts as an interface to internal data structures in the kernel. It can be used to obtain information about the system and to change certain kernel parameters at runtime using sysctl command.

10.8 MAIN COMPONENTS OF LINUX OPERATING SYSTEM

The Linux operating system is made up of three parts: the kernel, the shell and the programs.

The kernel : The kernel is the hub of Linux operating system. We can consider it as a bridge between applications and the actual data processing done at the hardware level.

The main function of kernel includes memory management, device management, process management etc.

The Shell : It acts as an interface between the user and the kernel. Shell is also known as command line interpreter. When the user types the command, shell executes the command according to the order of the command.

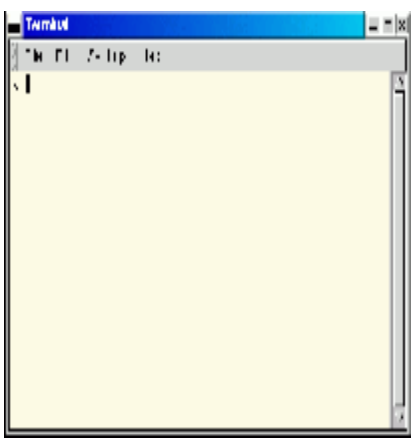


Figure 10.2: The Terminal

Programs : This are the program used for general application like copying file using **cp**,creating directory **mkdir.** The shell provides the interface for such program.

10.9 CONCEPT OF PATH

In Linux, all file systems (Hard Disks, CD-ROMs, Floppy Disks, ZIP drives, network mounts, etc…) are “mounted” onto one logical tree. The top of the hierarchy is traditionally called **root** which is represented by a **/** (**slash**). In Linux, everything is treated as a file. A directory is a file. It is a file that contains a list of files and information belonging to those files. This would include details like who “owns” (created) the file, how long it is, and who can use it. Since a directory is simply a list of files, it can contain any file in it, including other directories.

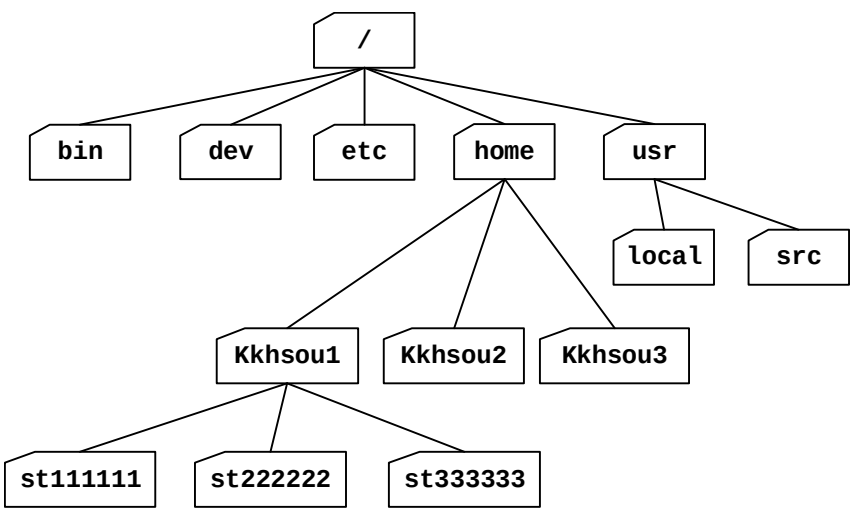


Figure 10.3 : Part of file-system tree

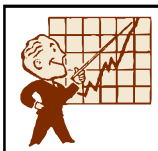
You can specify a file or directory by its path name. There are two ways of expressing the path name: Full (absolute) path name or Relative path name. The full path name starts with the root. /, and follows the branches of the file system, each separated by /, until you reach the desired file.

However, a relative path name specifies the path relative to your current working directory. Relative path names are more convenient because they are shorter, but must be used with care. They never begin with / (slash). There are two special directory entries:

- the current directory
- the parent directory

As an example, (Using figure 10.3) assume that your current working directory (your current position in the file system) is **kkhsou1**:

1. A file named "**test.txt**" is placed inside the directory "**st111111**".
   The absolute (full) name is : ***/home/kkhsou1/st111111/test.txt***
   The relative name is : ***st111111/test.txt*** OR ***./st111111/test.txt***
2. A directory named "**DEC**" is placed inside the directory "**kkhsou2**".
   The absolute (full) name is : **/home/kkhsou2/DEC**
   The relative name is : **../kkhsou2/DEC**
3. A file named "**csh**" is placed inside the directory "**bin**".
   The absolute (full) name is : **/bin/csh**
   The relative name is : **../../bin/csh**
4. A directory named "**st123456**" is placed inside the directory "**kkhsou1**".
   The absolute (full) name is : **/home/kkhsou1/st123456**
   The relative name is : **st123456** OR **./st123456**



CHECK YOUR PROGRESS

1. Write the purpose of the following directory in LINUX:
   /var
   /tmp
   /proc

2. Mention the main component of LINUX.

3. Write the two the advantage of Linux.

10.10 BASIC LINUX COMMANDS

Directory Handling Command :

1. ls (list) :

ls command is used to lists the contents of the current working directory. To list the hidden files we can use:

ls -a

The output of the above command will show all the files which name starts with dot(.). In Linux, hidden file names are prefixed with dots(.).

Some other options along with its functions are given below .

Options	Purpose
ls -x	get multi-columnar output.
-r	list files and sub-directories in reverse order
-t	list files and sub-directories with time order.
-a	list all files, including the normally hidden files
-c	list files by inode modification time.
-i	list the inode for each file.
-l	display permission, owner, size, modification, time ect along with file and directory names.
-h	display names of hidden files
-q	display filenames having non-printable character.

2. mkdir (make directory) :

This command is used to create the directory. For example, to create a directory **data** we can use as **:**

Syntax : **mkdir data**

3. pwd (print working directory) :

To find out the absolute pathname of the currently working directory use the following command:

Syntax : **pwd**

4. cp (copy)

Syntax : **cp file1 file2**

It makes a copy of file1 in the current working directory and calls it file 2**.**

5. rm (remove), rmdir (remove directory) :

Syntax : **rm test.c**

rmdir software

rm command is used to delete a file (here test.c) and rmdir is used to delete a directory (here software).

6. cd :

Syntax : **cd test** (where soft is a directory)

This command is used to change the directory.

Other Commands :

1. cat (concatenate)

Syntax : **cat hosts**

The command cat can be used to display the contents of a file on the screen.

2. less :

Syntax : **less text1.txt**

The command **less** writes the contents of a file onto the screen one page at a time.

3. head :

Syntax : **head -N kkhsou.txt**

The head command writes the first N lines of a file to the screen.

4. **tail :**

Syntax : **tail -N science.txt**

The tail command writes the last N lines of a file to the screen.

5. grep :

Syntax : **grep kkhsou text1.txt**

It searches files for specified words or patterns. For example the above command searches the word ‘kkhsou’ in ‘text1.txt’ files.

6. **wc (word count) :**

Syntax : **wc -w text1.txt**

wc -l text1.txt

wc command with -w is used to count number of words in a particular file. Also with –l option in wc can be used to count the number of lines in a particular file.

7. who :

Syntax : **who**

madhu tyy01 03:45

The **who** command can also tell you who is logged in at the terminal you're using.

8. date :

date

Tue Nov 4 13:39:24 EST 1997

This command is used to display the current date and time of the system.

9. cal :

This command is used to see the calendar of any specific month, or a complete year. If we wish to see the calendar for the month of December of the current year, we can provide this as applying the following cal command:

cal dec

December 2008

Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	10	11	2	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

10. echo :

This command is used to display a message on the screen or to display the content of a variable. For example,

echo “Well Come to KKHSOU”

To display the content of a variable, we can also use echo command. time.

x = 30

echo $x

11. passwd :

The **passwd** command is used to change passwords. Changing password for sysadmin.

passwd sysadmin

(current) UNIX password:

Enter new UNIX password:

Retype new UNIX password:

12. REDIRECTION : We use the > symbol to redirect the output of a command. For example, to create a file **kkhsou.txt** with a list of student name we can use the following command:

cat > kkhsou.txt

(Then type the student name :)

Jitu

Gunajit

Sonabar

^D (Control D to stop)

The output of the above command is the successful creation of the file **kkhsou.txt** with contents having student name as typed above.

If we use the **>>** as:

cat >> kkhsou.txt

(and then type the name)

mukalmua

nalbari

^D (Control D to stop)

Then the content typed later is appended to the file **kkhsou.txt**. So we can say >> appends standard output to a file.

In the previous section, we have described the redirection of the output of a command to file. We can use '<' to redirect the input to a command. For example, if the file **kkhsou.txt** contains the following content:

c

b

a

the output of the command: **sort < kkhsou.txt** will be:

a

b

c

10.11 FILE PERMISSION

There are three types of file access: Read, Write and Execute. Each file belongs to a specific user and group. Access to the files is controlled by User, Group, and Other. The term, 'other', is used to refer to someone who is not the user (owner) of the file, nor is the person a member of the group the file belongs to.

There are 10 characters that are shown on the left that indicate type and permissions of the file. File permissions are shown according to the following syntax example : **d rwe rwe rwe**

There are a total of 10 characters in all Linux files as seen in the above example. The first character indicates the type of file, and the next three indicate Read, Write, and Execute permission for each of the three user types, User, Group and Other.

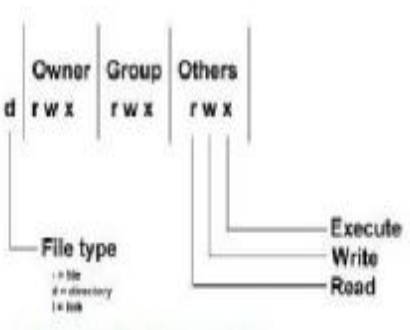


Figure 10.4 File permission

Type as '**ls -l**' in the terminal you can see like :

```
drwxrwxrwx   4   debajit   grp1   122    Dec  1  18:02   kkhsou
-rw-rw-rw-   1   debajit   grp1   1873   Aug 21 08:34    test
-rw-rw-rw-   1   debajit   grp1   1234   Sep 14 11:13    data
```

last modification date

Size in bytes

file name

File's Group

File's Owner

Links

Fie type and permission field

Type field : The first character in the field indicates a file type of one of the following:

d = directory

l = symbolic link

s = socket

p = named pipe

– = regular file

c = character (unbuffered) device file special

b = block (buffered) device file special

Links : The number of directory entries that refer to the file. In this example the number is 4.

Let us discuss **chmod** command which is used to change the permission of a file or directory.

chmod : In order to change these default permissions and set your own, **chmod** command is used. Only the owner of a file can change the permission on that file.

The syntax of chmod is:

chmod category operation permission filename

Here the argument *category* specifies the user's access. The argument *operation* specifies whether the permission is to be granted or denied. The argument *permission* specifies the type of permission.

The different values for these arguments are listed in the following table :

Table 10.1 : Values of chmod argument

Category	Operation	Permission
u (owner)	+ (assign)	r (read)
g (group)	– (deny)	w (write)
o (other)	= (absolute assignment)	x (execute)
a (all)		

In the first argument we supply one or more of a (all), u (owner), g (group) and o(other). Then we specify whether we are adding right (+) or taking them away (-). Finally we specify one or more od r (read), w (write) and x (execute) permissions.

The file permissions bits include an execute permission bit for file owner, group and other. When the execute bit for the owner is set to "s" the set user ID bit is set. This causes any persons or processes that run the file to have access to system resources as though they are the owner of the file.

Changing Ownership : There are two commands that can be used to change the ownership of a file or directory. These are:

(**a) chown**

(b) chgrp

For example, to grant the ownership of a file test1 to John, we can use:

$ chown john test1

The command **chgrp** changes the group ownership of the file. This command, like chown, can only used by the owner of the file, irrespective of whether the user belongs to the same group or not.

Examples :

chmod +s kkhsou.txt

sets the user ID bit on the file "kkhsou.txt". The command:

chmod g+s kkhsou.txt

sets the group ID bit on the file "kkhsou.txt".

chmod u+x kkhsou.doc

Gives the user execute permission on kkhsou.doc .

chmod +x kkhsou.doc

Gives everyone execute permission on kkhsou.doc.

chmod ugo +x kkhsou.doc

Gives execute permission to user, group and other.

chmod 400 kkhsou.doc

Gives the user read permission, and removes all other permission.

Permission can also be denoted by numbers as described below:

Read permission : 4

Write permission : 2

Execute permission :1

chmod 764 kkhsou.doc

Gives user full access(4+2+1=7), Group Read and Write access(4+2=6), and other Read access(4).

chmod 751 kkhsou.doc

Gives user full access(4+2+1=7), Group Read and Execute permission(4+1=5), and other, Execute permission(1).

10.12 TEXT EDITOR vi:

The **vi** editor is a screen-based editor and it is one of the most powerful text editor available in almost all UNIX and LINUX systems. The **vi** editor has powerful features to aid programmers, but many new users avoid using the different features that overwhelm them. Operating **vi** editor is entirely different from that of any modern simplified editor that you are familiar with. This editor has remarkable editing capabilities. It is rather a very simple editor, if all the elementary **vi** commands are at your finger tips.

LINUX features a number of vi editors, of which **vim** (vi improved) is the most common. Apart from vim, there are **xvi**, **nvi** and **elvis** which have certain exclusive functios not found in the Berkeley version.

Three Modes : The three modes of vi editor are:

(a) Command Mode

(b) Input Mode

(c) Ex Mode

Command Mode : Command Mode is the mode where you will be giving commands to the vi editor. When you invoke vi, this is the mode where you will be placed initially.

Input Mode : When you give the commands i, I, a , A, R, s, S, or O then you get shifted to the input mode of vi editor. It is also known as insert mode or editing mode. In this mode you can add text to the file. For example, when you want to insert text at the current cursor position, give i in the command mode, you will now get placed in the input mode and you can perform the intended mode. For example, if you type ‘a’ here it will not be interpreted as an ‘append’ command, but as character ‘a’ to be inserted in the file.To move back to command mode press Esc key.

Ex Mode : Ex mode of vi editor enable us to give commands at the command line. To move to the ex mode, press ':'(colon) if we are in command mode. If we are in the input mode, first press Esc key and then press':' to move to the Ex mode. The cursor moves to the bottom of the vi screen and we can provide the ex mode commands here. Some impotant and common ex mode commands are given below:

Command	Used to
w	save the change we have made to the file
q	quit vi without saving changes
wq	save and quit
q!	force quit if'q' does nor work

Ex mode is named after the ex line-editor of UNIX or LINUX. The commands we give the ex mode are actually the ex line-editor's commands.

Invoking vi Editor :

$ vi test1

The file 'test1" will get opened in vi editor. If the file does not exist, vi will create a new file with that name. In either case we will see a screen full of the tilde'~' which indicates empty lines.

Remember that vi editor opens in the command mode. That means we are now in the command mode. Let us started by inserting some text in our file "test1". For that we will have to switch to the 'input mode' . We can see that to insert text 'i' command is used. Press 'i' and type the text.

Saving Text and Quitting *vi* Editor : Having inserted the text, we now need to save these changes. To save the changes first press Esc key to move to command mode. Now press ':' to move to ex mode. Note that now the cursor has moved to the end of the screen. Type 'w' to save changes. If we want to quit vi type 'q'. We can also save and quit vi in one go by giving the command 'wq'.

Note : We can also save the file in the command mode by presenting Z (uppercase) twice, i.e ZZ.

When we quit vi, a note at the bottom of the screen indicates the name, number of lines and number of character in the file.

Editing File in *vi* : We can invoke the vi editor again, by typing vi test1 at the command prompt. We can see the text we have typed followed by multiple empty lines, each starting with a '~' sign. The cursor appears at the beginning of the first line of the file. Let us first learn how we can move this cursor to a particular line or character.

Adding Text : Let us now append some text to the file. For this, first move cursor to the last line of the file. Pressing 'G'(uppercase) will move the cursor to the beginning of the last line in the file. Additionally, you can precede 'G' with the line number where we want the cursor to move. For example, to move to 6th line then we type '6G'.

We can move to the beginning of a file by pressing '1G'. Now press 'o' to open a new line below this last line. By pressing 'o' we are in the 'input mode'.

Inserting Text in The Middle : If we missed any character(s) while typing, then move the cursor to that particular line or word. Press Esc key to move to the 'command mode'. Now press 'i' to insert the character(s) before the current cursor position or press 'a' to insert the character (s) after the current cursor position. 'A' will append text at the end of current line.

Replacing Text : Text character can be replaced with the 'r', 'R', 's' and 'S' commands. Before we use these commands, we need to switch to the command mode, if we are currently in the insert mode.

First move the cursor to the character which we want to replace. Pressing 'r' followed by a character replaces the existing character with the character given after 'r'.

To replace more than one character use 'R' followed by the characters. The existing text will get overwritten with these characters.The replacment of text with 'R' command is limited to the current line only.

To replace a character with multiple characters without overwriting the subsequent text, use 's' followed by the characters. 'S'(uppercase) replaces the entire line irrespective of the cursor position. That means, it deletes the current line completely and makes it ready for a new line of text. Pressing 'R', 's' and 'S' shifts you to the 'input mode'. Press Esc key to move back to the command mode.

Deleting Text : To delete a character, first move the cursor to that particular character position. Press 'x' to delete a single character. We can also precede 'x' with the number of characters we want to delete. For example, '4x' will delete four characters. Note that the rest of the line gets adjusted automatically.

If we go on deleting all the characters in the current line, the characters to the left of the current line starts getting deleted, instead of that in the next line.

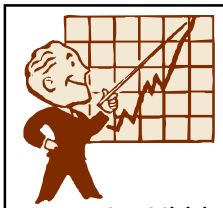
Note : To delete the current line press 'dd' . To delete more than one line use '#dd', where # represents the number of lines we want ot delete.

'X' (uppercase) is used to delete a character to the left of current cursor position. To understand it better, it can be said that 'x' functions like the delete key and 'X' functions like the backspace key.

Undoing and Repeating Commands : The repeat command (a dot(.)) can be used to repeat the most recent command. For example, if we have recently given the 'a' command and appended one character, we can repeat the whole process again by pressing a (.) dot. We will have the character inserted two times.

The undo (u) command can be used to recover from the most recently committed mistake. For example, press u and we will see that the second character we have inserted has disappeared.

You need to rememeber to press Esc key to switch to command mode if you are not in it already and then use :wq to save the file and quit vi.



CHECK YOUR PROGRESS

4. Hidden files in LINUX can be listed using

   a. ls -t b. ls -h c. ls -a d. none of the above.

5. In LINUX, the command to delete all files started with sg and ending with hj is

   a. rm sg*hj b. rm sg?hj

   c. rm -prefix sg -suffix hj c. none of the above.

6. The LINUX command **rm -r project** will
   a. delete the file project from the current directory.
   b. delete all the files from the directory project and all its subdirectories.
   c. recursively delete the directory project and all its subdirectories.
   d. None of the above.
7. UNIX can have
   a. one file system only.
   b. n file systems, if it had n hard disks.
   c. any number of file systems depending upon the number of partitions.
   d. none of the above.
8. The UNIX command “ls | more” displays a list of
   a. files in the current directory one line at a time.
   b. files in the current directory one screen time
   c. all the files in the current directory and then wait for the next command
   d. none of the above.
9. The UNIX ,full pathname originates from
   a. your home directory b. the root directory
   c. your working directory d. none of the above.
10. The chmod command in UNIX
    a. change the current execution status from user mode to kernel.
    b. makes the file hidden so that it cannot be seen using the ls command.
    c. changes the access permissions of a fileor directory.
    d. none of the above.
11. Which out of the following commands would you use to change your password in UNIX system.
    a. pass b. passwd
    c. chpass d. setpass

12. The execute permission to a file allows a user to
    a. execute the file b. edit the file
    c. list the contents of the file d. none of the above.
13. The chown command in UNIX changes the
    a. home directory of a user
    b. access permissions of a file or directory
    c. priority of a process.
    d. none of the above.
14. Find out the TRUE and FALSE statements
    i. The command pwd shows the name of the current directory.
    ii. UNIX makes a distinction between the text files and the binary files.
    iii. The command mv file1 file2 renames file1 as file2.
    iv. The more command appends new lines to a file.
    v. A binary file is also known as an ASCII file.
    vi. The command rm * removes all files from the current directory.
    vii. A file having protection 466 cannot be used by anybody other than the owner.
    viii. Only the super user can view the passwordof a user in the file /etc/passwd file.
    ix. chmod u-x gives the user permission for execution.
    x. ls command is used to list the files and directories.



10.13 LET US SUM UP

- **Linux Command :** A command given to UNIX or LINUX is a series of characters that one type. These characters consist of words separated by white spaces. The first word is the command itself and the rest are the command's arguments. The arguments provide information that the command may need for its execution.

- **Internal commands :** Internal commands are such programs that are built-in into the operating system and reside in the memory along with the kernel.
- **External commands :** External commands are not built in into the operating system, but loaded from other program files.
- To create a new directory, use the mkdir command.
- You can change the working directory using the **cd** command
- The command **rmdir** followed by the directory name which is to be removed is used for deleting a directory.
- To list the names of the files and the sub -directories of the current directory, **ls** command is used. its function is equivalent to the **DIR** command in MS-DOS.
- To find which directory you're currently in, use the **pwd** (print work ing directory) command.
- To create a file, type the command **cat** at the shell prompt, followed by a > character and the filename.
- A file can be shifted or moved from one directory to another by using the **mv** command.
- The command **cp** is used to copy a file into another. MS-DOS equivalent for cp is ths COPY command.
- **more** command allows us to view the output one screen at a time.
- The **who** command can also tell you who is logged in at the terminal you're using.
- The **passwd** command is used to change passwords
- File and directory permissions fall into three main divisions. These are Read permission (r)**,** Write permission (w), Execute permission (x)
- In order to change these default permissions and set your own, **chmod** command is used.
- There are two commands that can be used to change the own - ership of a file or directory. These are:

  (**a) chown**

  (b) chgrp



10.14 FURTHER READING

- Das, S. (1993). UNIX System V. 4: Concepts and Applications. Tata McGraw-Hill.
- Operating System Design and Implementation, Andrew S. Tanenbaum, Albert S. Woodhull, Prentice - Hall India.



10.15 ANSWERS TO CHECK YOUR PROGRESS

Ans. to Q. No. 1 : /var: this folder contains those file that change frequently.
/tmp : contains temporary files that are erased upon reboot.
/proc: This folder contains information about the Linux kernel and hardware that is updated in realtim

Ans. to Q. No. 2 : Main components are Kernel, Shell and programs

Ans. to Q. No. 3 : Free Cost, Multi User Interface Supported and Good Security,

Ans. to Q. No. 4 : (c)

Ans. to Q. No. 5 : (a)

Ans. to Q. No. 6 : (c)

Ans. to Q. No. 7 : (c)

Ans. to Q. No. 8 : (b)

Ans. to Q. No. 9 : (b)

Ans. to Q. No. 10 : (c)

Ans. to Q. No. 11 : (b)

Ans. to Q. No. 12 : (a)

Ans. to Q. No. 13 : (d)

Ans. to Q. No. 14 : i. (T), ii. (F), iii. (T), iv. (F), v. (F), vi. (T), vii. (F), viii. (F), ix. (F), x. (T).



10.16 MODEL QUESTIONS

Q1. What is the difference between **cp** and **mv** commands? Explain with an example.

Q2. Distinguish between:

(a) **cat** and **more** commands

(b) **tail** and **head** command

Q3. List out the different options and significance of **ls**.

Q4. A file has got a protection 756 (octal). What protections does it really have ?

Q5. Explain how you can implement the cut, copy and paste operations in vi .

Q6. Give the syntax for opening a file in vi editor. Also explain the different options.

Q7. How can you access ex commands in vi?

Q8. Explain the booting process of Linux?

Q9. What do you mean by Open Source and Free Software?

Q10. Write two advantages of Linux?

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UNIT 11 : MICROSOFT WORD-PART I

UNIT STRUCTURE

11.1 Learning Objectives

11.2 Introduction

11.3 Starting MS Word

11.4 Document Window and its Components

- 11.4.1 The Title Bar
- 11.4.2 The Menu Bar
- 11.4.3 The Ruler
- 11.4.4 The Status Bar
- 11.4.5 The Text Area
- 11.4.6 The Toolbars

11.5 Document View

11.6 Creating a New Document

11.7 Saving a Document

11.8 Opening an Existing Document

11.9 Exiting MS-Word

11.10 Working with Text

- 11.10.1 Erasing Text
- 11.10.2 Inserting Text
- 11.10.3 Overtyping Text
- 11.10.4 Highlighting Text
- 11.10.5 Formatting Text

11.11 Working with Paragraph

11.12 Adding Bullets and Numbers

11.13 Find and Replace Option

11.14 Cut, Copy and Paste

11.15 Let Us Sum Up

11.16 Further Reading

11.17 Answers to Check Your Progress

11.18 Model Questions

11.1 LEARNING OBJECTIVES

After going through this unit, you will be able to:

- create, save and print Word documents
- view an existing document
- open and close a new document
- learn about different bars of document window
- learn about formatting text
- work with paragraph
- include bullets and numbering
- learn about copy, cut, and paste
- find and replace words.

11.2 INTRODUCTION

Word Processor is a software package that enables us to create, edit, print and save documents for future retrieval and reference. Creating a document means typing by using a keyboard and saving it. Editing a document involves correcting the spelling mistakes, if any, deleting or moving words sentences or paragraphs.

In this unit, we will learn about one of the most commonly used word processing software, Microsoft Word which works in Windows operating system. Microsoft Word also known as MS-Word was developed by *Microsoft*. Microsoft introduced MS-Word in *Microsoft Office Program* along with other application programs. There are different versions of Microsoft Office like MS-Office. This unit will introduce learners with the basics of MS-Word 2003. Microsoft Word is a powerful tool which helps us to create documents like application forms, office letter, reports, resume writing, etc. With this unit, learners will also be acquainted with the method of inserting hyperlink, images, tables etc. to make their documents more attractive and understandable.

11.3 STARTING MS-WORD

While working in MS-Word, we can use a mouse. One can also work, to some extent, through the keyboard. The use of mouse is slightly simpler as it is fully menu driven.

There are two ways to open MS-Word.

1. We can start Microsoft-Word by clicking left mouse button on **Start** → **Programs** → **Microsoft Word** as shown in the following screenshort:



Figure 11.1: Way to open MS Word through Programs

2. If a shortcut of MS-Word already exists in the desktop, the Double click on the Microsoft Word icon on the desktop.



Figure 11.2 : MS-Word 2003 shortcut icon

11.4 DOCUMENT WINDOW AND ITS COMPONENTS

When we start MS-Word, a new document window appears on the screen as shown in Figure11.3. There are many components of Document Window. Some of them are: title bar, menu bar, ruler bar, status bar, toolbars, text area etc.

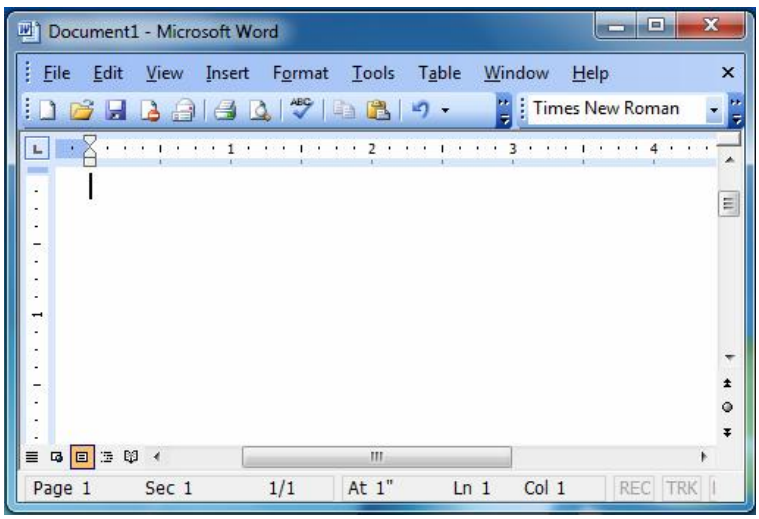


Figure 11.3 : Document Window

11.4.1 The Title Bar

The Title bar displays a number of items about the currently active document. It displays the title of the document on which we are currently working. In Word names the first new document opened *is named as "Document1"*. As we open additional new documents, Word names them sequentially. When we save our document, we can assign the document a new name. Title bar also contains ***Minimize*** button, ***Maximize/Restore*** button, and ***Close*** button.



Figure 11.4 : The Title Bar

11.4.2 The Menu Bar

The Menu bar is generally found directly below the Title bar. The Menu bar displays the menu. Menu bar consists of nine drop-down

menues. Those are: *File*, *Edit*, *View*, *Insert*, *Format*, *Tools*, *Table*, *Window*, and *Help*. With the help of these menu's, different functions can be performed like use styling of text, insert picture, save our document etc. We can point with the mouse to a menu option and click the left mouse button to open a drop-down menu. We can then use the left and right arrow keys on the keyboard connected to or computer to move left and right across the Menu bar options. We can use the up and down arrow keys to move up and down the drop-down menu.



Figure 11.5 : The Menu Bar

A right arrow after a menu item signifies additional options as shown in the following screenshot (Fig.11.6); if we select that menu item, another submenu appears.

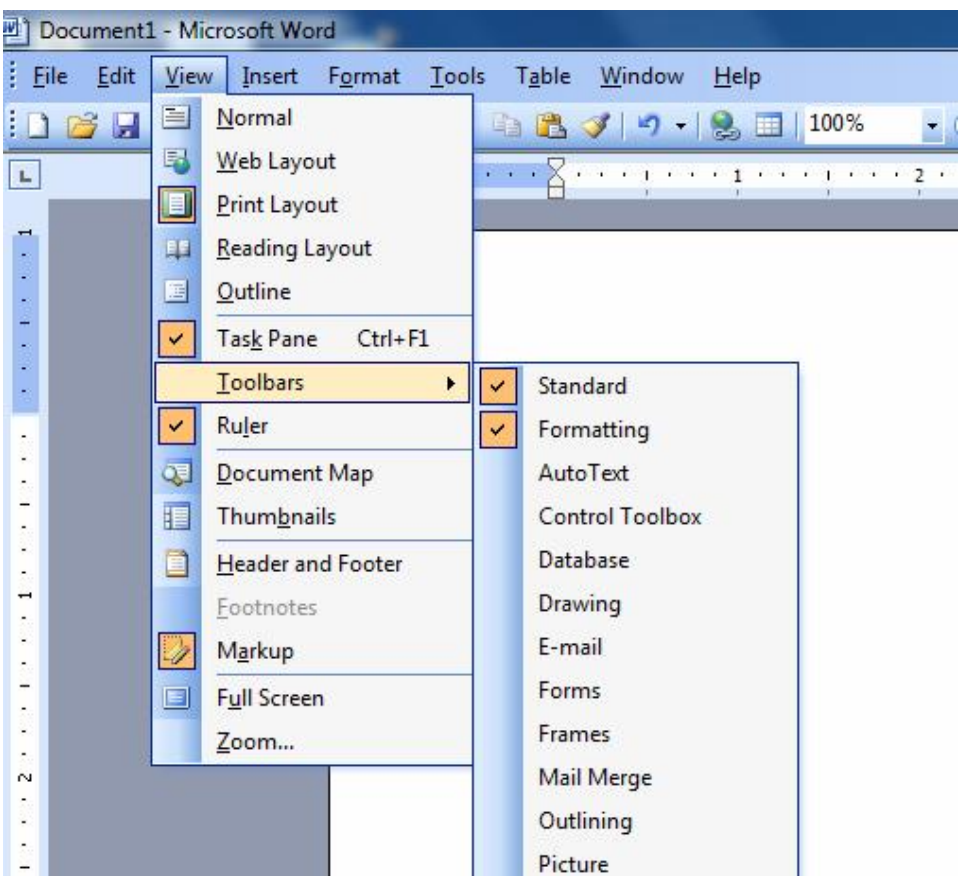


Figure 11.6 : The View menu showing right arrow & submenu

11.4.3 The Ruler

Ruler allows us to format the vertical alignment of text in a document. If the ruler is not visible, we can select the *Ruler* option from the *View* menu to display the ruler.



Figure 11.7 : Ruler Bar

11.4.4 The Status Bar

Status bar shows the information about the current document on which we are working. It provides information like page number, line number, the number of words in our document etc. It appears at the very bottom of the document window.

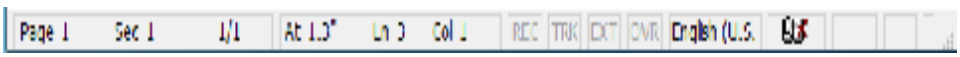


Figure 11.8 : The Status Bar

11.4.5 The Text Area

The text area also known as workplace is the area in the document window where we enter the text. In Fig.11.3, the cursor, the vertical and horizontal scroll bar are labelled. The cursor marks the insertion point. As we type, our text displays at the cursor location. The vertical and horizontal scroll bars enable us to move up, down, and across our window simply by dragging the icon located on the scroll bar. We will not be able to see a horizontal scroll bar if the width of our document fits in our screen. To move up and down our document, we can click and drag the vertical scroll bar up and down. Again, to move back and forth across our document, we can click and drag the horizontal scroll bar back and forth.

11.4.6 The Toolbars

Toolbar contain buttons, drop-down menus and other controls. These are just the shortcuts to the menu items in the ***Menu*** bar. The

most commonly used toolbars are :

- ***standard toolbar***
- ***formatting toolbar***

If our document window is not showing the toolbars as shown below (Fig. 11.9) then we can view them by clicking the ***View*** menu and then selecting the *Standard* and *Formatting* options from the *Toolbars* submenu. This process is shown in Fig. 11.10.

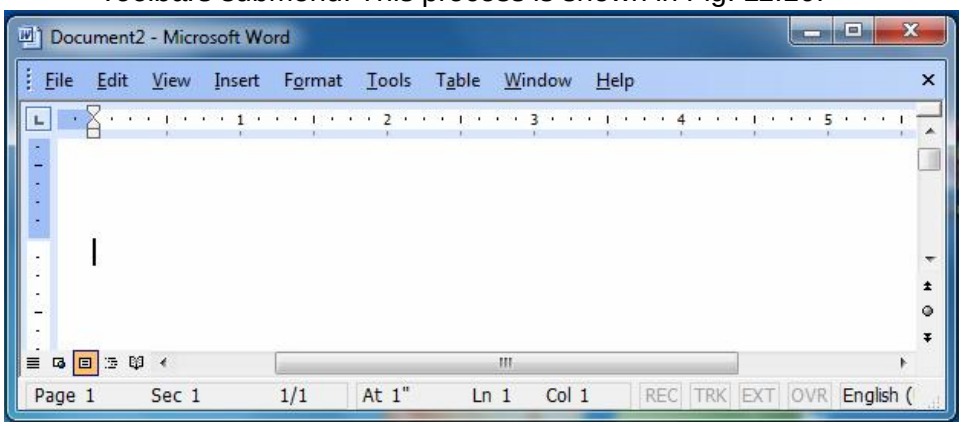


Figure 11.9 : Document window without showing the toolbars

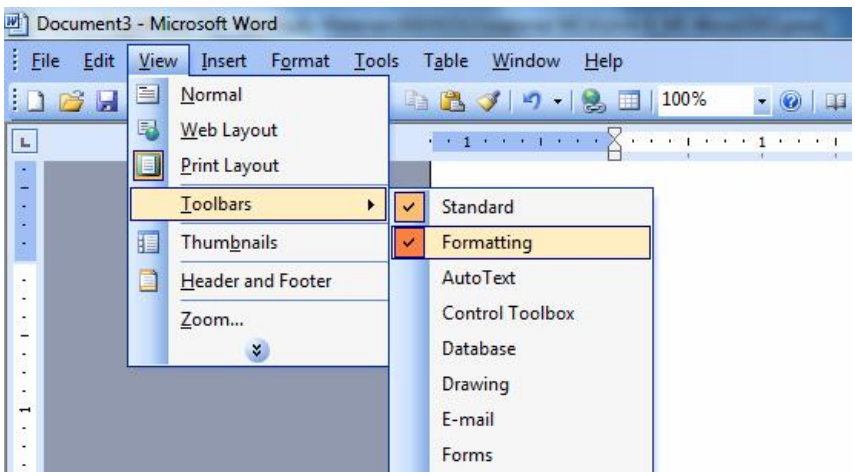


Figure 11.10: Document window with the View menu & Toolbars option

Standard Toolbar : Standard toolbar provides shortcuts for menu items. The left of the toolbar enables us to perform tasks common to many windows-based operations, such as opening a new file or existing file, saving or printing files, cutting and pasting of text, and undoing and redoing the most recent actions. The right of the standard toolbar offers some functions more specific to word application.



Figure 11.11 : The Standard Toolbar

The buttons of standard toolbar with a brief description is listed below:

New Blank document : Opens a new Word document.

Open : Opens an existing saved Word document.

Save : Saves the current document.

E-mail : Sends the contents of the document as the body of an e-mail message.

Print : Open the print dialog box.

Print Preview : Shows how a file will look when we print it.

Spelling and Grammar : Starts the spell check functions.

Cut : Places selected text on the Windows Clipboard.

Copy : Places a copy of selected text on the Windows Clipboard.

Paste : Pastes the contents of the Clipboard on the document.

Format Painter : Enables us to copy formatting from one object to another.

Undo : Undoes the last action.

Redo : Redoes the last undone action.

Insert hyperlink : Inserts a link to a WWW site on the document.

Web Toolbar : Displays the Web toolbar.

Insert Table : Inserts a word at the insertion point.

Insert Microsoft Excel Worksheet : Inserts an Excel worksheet with Excel tools available for editing.

Tables and Borders : Inserts a table and Borders toolbar.

Columns : Changes the number of columns in a document.

Drawing : Displays or hides the Drawing toolbar.

Document Map : Turns on or off Document map.

Show/Hide : Displays nonprinting characters such as tab characters, paragraph marks and hidden text.

Zoom : Allows you to zoom in or out to make the document screen larger or smaller.

Microsoft Office Word Help : Opens the Office Assistant or Help.

Formatting Toolbar : The Formatting Toolbar contain tools that are common to windows programs and related to formatting of text in documents. This includes changing document style, font, font type, color, paragraph alignments, borders etc.



Figure 11.12 : The Formatting Toolbar

The names and functions of Formatting Toolbar are as follows:

Style : Opens a drop-down list for selection of style.

Font : Opens a drop-down list for selection of font.

Font Size : Allows you to enter a new size for the selected text.

Bold : Toggles the text from bold to normal text.

Italic : Toggles the text from italic to normal text.

Underline : Underline the text.

Shadow : Applies a shadow effect to the selected text.

Left Alignment : Aligns selected text to the left.

Center Alignments : Aligns selected text to the center.

Justify : Aligns selected text at the left and right margins or indents.

Right Alignment : Aligns selected text to the right.

Numbering : Applies a numbering format to selected text.

Bullets : Applies a bullet list format to selected text.

Increase Indent : Increases spacing between selected lines of the text.

Decrease Indent : Decrease spacing between selected lines of the text.

Outside Border : Add or Remove a border around the selected text, paragraphs, pictures etc.

Highlight : Marks text so that it is highlighted.

Font Color : Formats the selected text with the color you click.

11.5 DOCUMENT VIEW

There are five views in MS-Word to display our document, which are: *Normal, Web Layout, Reading Layout*, *Online Layout* and *Print Layout*. Let us describe each of these views briefly.

Normal View : Normal view is used most often and shows formatting such as line spacing, font, point size, and italics.

Web Layout : Web layout view enables us to view our document as it would appear in a browser like Internet Explorer.

Reading Layout : Reading Layout view formats our screen to make reading our document more comfortable.

Outline View : Outline view displays the document in outline form. Headings can be displayed without the text. If we move a heading, the accompanying text moves with it.

Print Layout : The Print Layout view displays the document as it will look when it is printed.

11.6 CREATING A NEW DOCUMENT

We can create personal as well as professional documents with the help of MS-Word. We can type a document with the help of keyboard and save it to the hard disk of our system. Following are the steps to create our own document.

- Select the ***New*** option from ***File*** menu of the ***Menu*** bar.
- A dialog box appears on the right of the screen as shown in Fig.11.13. It shows different type of document we can create like Blank document, XML document, Web page and E-mail message etc.
- Click on ***Blank document*** link.
- A new blank document will be displayed.

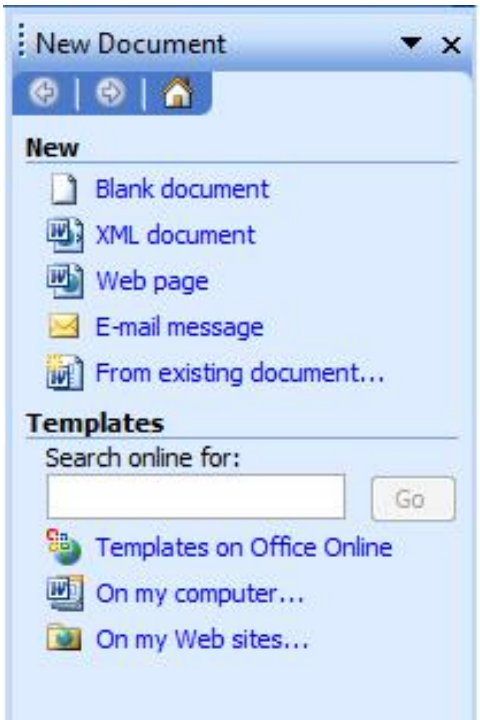


Figure 11.13 Creating a New Document

11.7 SAVING A DOCUMENT

We need to store the document we created on the disk so that it can be used whenever required. Following are the steps for this process:

- Select the ***Save*** option from the ***File*** menu of the ***Menu*** bar.
- Enter a filename in the *File name box* and click on the ***Save*** button.

The first and second steps are depicted in Fig. 11.14 and Fig.11.15 respectively. In Fig.11.15, we can see that the file is saved with a file name "education" in the *My Documents* folder. There are another two methods for saving a newly created file. Those are:

- Keyboard shortcut: ***Ctrl + S***
- Clicking the ***save***  button from the *Standard tool bar*.

By default, the new document is saved as Word document with the extension "**.doc**". In the higher version of MS-Office like Windows 2007/ 2010, the default MS-Word file extension is "**.docx**".

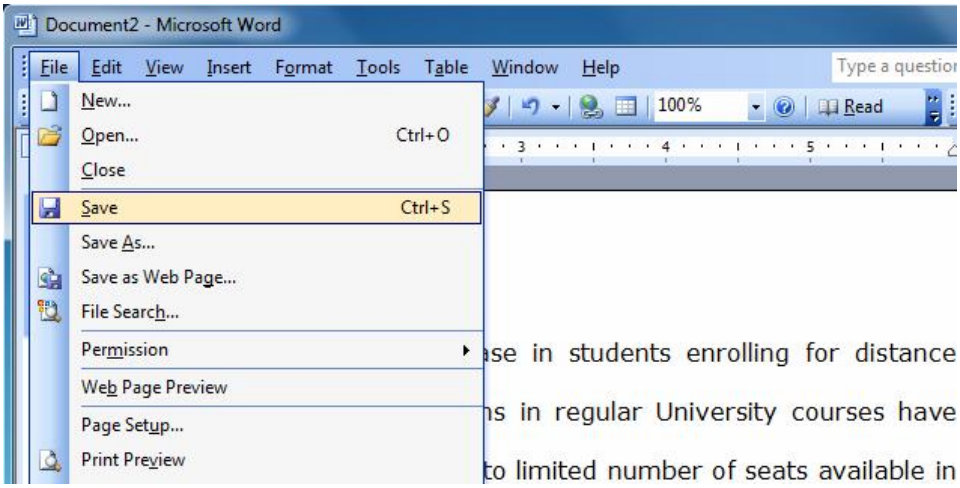


Figure 11.14 : File Menu with showing the Save option

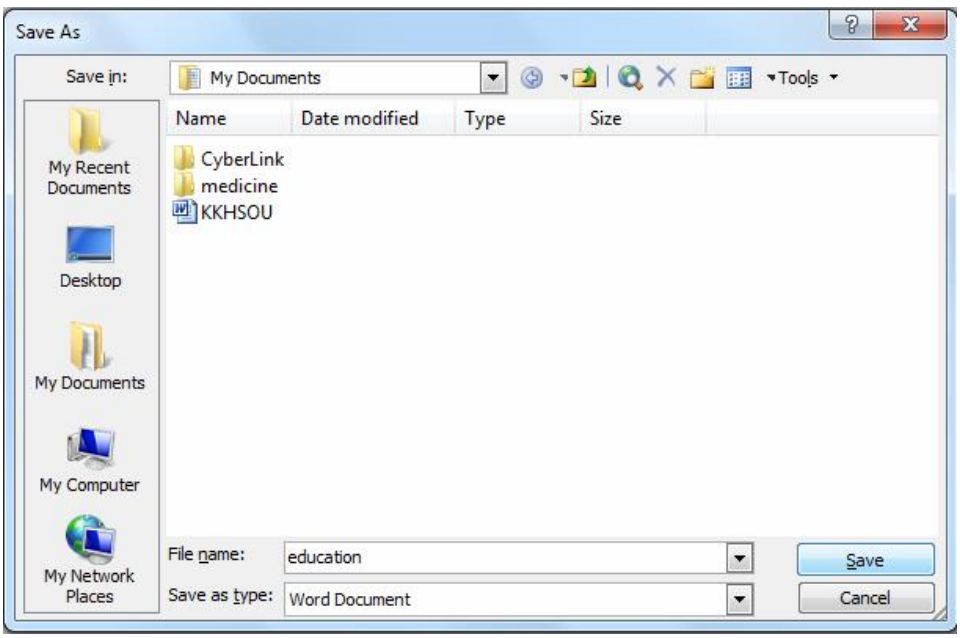


Figure 11.15 : File Menu with showing the Save option

11.8 OPENING AN EXISTING DOCUMENT

In MS-Word, we can open any existing or previously saved documents for alteration or reading purpose. For opening an existing document or file, we have to:

- Select the ***Open*** option from the ***File*** menu of the ***Menu*** bar.
- Select the appropriate drive and folder.
- Double click on the desired filename to open the document.

The keyboard shortcut for opening an existing document is **Ctrl+O**.

11.9 EXITING MS-WORD

To exit MS-Word, we have to:

- Click on ***File*** menu
- Click ***Exit***, which can be found at the bottom of the drop-down ***File*** menu.

If we have already entered text then we will be prompted with a message like "Do you want to save changes to Document1?" If we want to save, then we have to click on **Yes**, otherwise, we have to click on **No**. We have to specify the correct folder in the *Save As box* as discussed earlier.



LET US KNOW

During the unit, you will be asked to "click" items. When asked to click:

- Point to the item.
- Press your left mouse button once.

If you are asked to double-click an item :

- Point to the item.
- Quickly press your left mouse button twice.

If you are asked to right-click:

- Point to the item.
- Press your right mouse button.



CHECK YOUR PROGRESS

1. How do you select text in MS-Word?

   .....

   .....

2. How do you close MS-Word current document?

   .....

   .....

3. How do you exit MS-Word?

   .....

4. Fill in the blanks:

   (i) The name of the first document in MS-Word is _____.

   (ii) The extension name of MS-Word 2003 and MS-Word 2007 documents are _____ and _____ respectively.

   (iii) _____ shows how a file will look when we print it.

   (iv) _____ bar consists of _____ drop-down menues.

   (v) To view standard toolbar, we have to click _____ menu and then _____ option from the Toolbars submenu.

5. Choose the correct option:

   (i) The keyboard shortcut to save a file is

   (a) Ctrl+S (b) Alt+F5

   (c) Ctrl+V (d) Alt+S

   (ii) The keyboard shortcut for opening an existing document is

   (a) Ctrl+D (b) Alt+O

   (c) Ctrl+O (d) Alt+F6

   (iii) The keyboard shortcut for selecting all contents of a document

   (a) Ctrl+S (b) Ctrl+A

   (c) Ctrl+F2 (d) Ctrl+O

11.10 WORKING WITH TEXT

To enter text into a file in MS-Word, we simply type just as we would if we were using a typewriter. To capitalize, we have to hold down the ***Shift*** key while typing the letter. We do not need to press ***Enter*** key to start a new line; MS-Word automatically wraps at the end of the line. To start a new parapraph, we have to press ***Enter*** key.

11.10.1 Erasing Text

Using the Backspace Key : The ***Backspace*** key erases text before the *cursor* position. On one press on the ***Backspace*** Key, only one letter is erased. Let us consider the following example:

Example 1 :

1. Type the text : *State Open University*
2. Suppose you have to erase the word “University”. Now using either the ***arrow*** keys or the mouse, place the *cursor* after the letter “y” in “University”
3. Press the ***Backspace*** key until the word “University” is erased.
4. After erasing the word University, the sentence will be:
   State Open

Using the Delete Key : The ***Delete*** key erases text after the *cursor* position. On one press on the ***Delete*** key, only one letter is erased. Let us consider the following example:

Example 2 :

1. Type the following text:
   Indira Grandhi National Open University
2. Suppose you have to erase the word “Indira Gandhi”. Now using either the ***arrow*** keys or the mouse, place the *cursor* below the letter “I” in “Indira Gandhi”
3. Press the ***Delete*** key until the word “Indira Gandhi” is deleted.
4. The resulting text will be : National Open University

We can also erase text by highlighting the text to be erased and then either pressing the ***Backspace*** key or the ***Delete*** key only once.

11.10.2 Inserting Text

To insert text, we must be in the *Insert Mode*. To check to see whether we are in the *Insert Mode*, we can look at the right side of the *Status Bar*. If the word ***“OVR”*** is gray, we are in the *Insert Mode*. If the word ***“OVR”*** is black, we are in the *Overtype Mode*.



Insert Mode



Overtype Mode

To change to the *Insert Mode,* we have to :

- double click the word **"OVR"**. The word ***"OVR"*** is now gray.

Or

- press the ***Insert*** key (or *Ins* key) in the keyboard.

Example 3 : Let us type the following sentence:

Indira National Open University.

Make sure the word ***"OVR"*** is gray before proceeding. Let us insert the word "Gandhi" between the words "Indira" and "National":

1. Place the *cursor* after the word "Indira".
2. Type the word "Gandhi".
3. Press the ***Spacebar*** to add a space.
4. The sentence will be:

   Indira Gandhi National Open University.

11.10.3 Overtyping Text

We can type over the current text (replace the current text with new text). However, we must be in the *Overtype Mode*. We have to do the following to change to the *Overtype Mode*.

1. Double Click ***"OVR"*** on the ***Status Bar*.**
2. The word ***"OVR"*** should now be black.

Make sure the word ***"OVR"*** is black before proceeding to the following exercise.

Example 4 : Type the following sentence :

Faculty of Science

Now, Change the word "Science" to "Commerce"

1. Place the *cursor* before the letter “S” in “Science’’
2. Type the word “Commerce”.
3. It should now read :

   Faculty of Commerce

11.10.4 Highlighting Text

Throughout these units, you will be asked to *highlight* text. We can use either of the following methods:

Highlighting by Using Arrow Keys :

For this, we have to :

1. Place the *cursor* before or after the text we wish to *highlight* and *click* the left mouse button.
2. Press the appropriate *arrow* key (*left arrow* to move to the left or *right arrow* to move to the right) until the text is *highlighted*. We can use the *up* or *down arrow key* to *highlight* one line at a time.

Highlighting by Using the Mouse :

For this, we have to :

1. Place the *cursor* before or after the text we wish to *highlight*.
2. Hold down the left mouse button.
3. Move the mouse *left*, *right*, *up*, or *down* until the text is *highlighted*.

11.10.5 Formatting Text

Formatting a document involves assigning fonts and font sizes, aligning text, changing color of the text, paragraph specing, setting margins etc. By selecting different menu options from Menu bars and Toolbar buttons, we can format our documents.

Applying Fonts and Font Styles : Fonts refer to the manner or style in which text is displayed in the document. MS-Word offers large number of fonts styles like *Arial*, *Arial Black, Times New Roman*, *Impact*, etc. For applying new styles to our text, first we have to select text that we want to be formatted. For changing fonts and font styles, we have to:

- Click on the ***Font*** option of the ***Formatting tool bar***, a drop-down list will appear on our window as depicted in Fig. 11.16.
- Type the name of the desired font directly or select an option from the drop-down list and press *Enter* key.

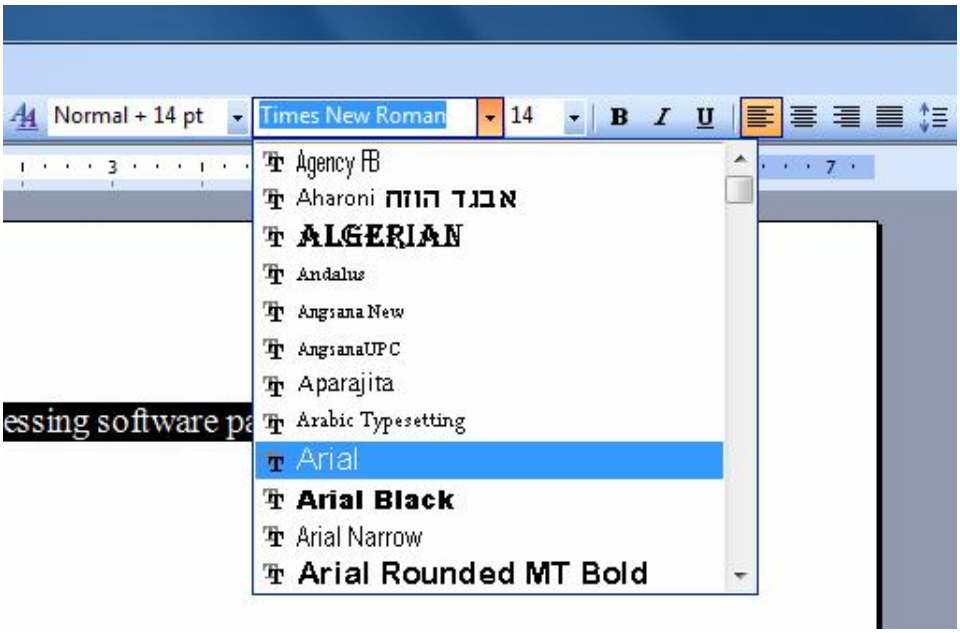


Figure 11.16 : Window showing Formatting tool bar with Font option

Changing Font Size : Font size is measured in points. Points and picas are used for measuring spacing, lines, and thickness and so on. There are 12 points to a pica and six picas to an inch; therefore there are 72 points to an inch. To change font size, we have to:

- Use the drop-down list of ***Font Size*** on the ***Formatting*** toolbar.
- Type the font size or select a font size from drop-down list and press Enter key.

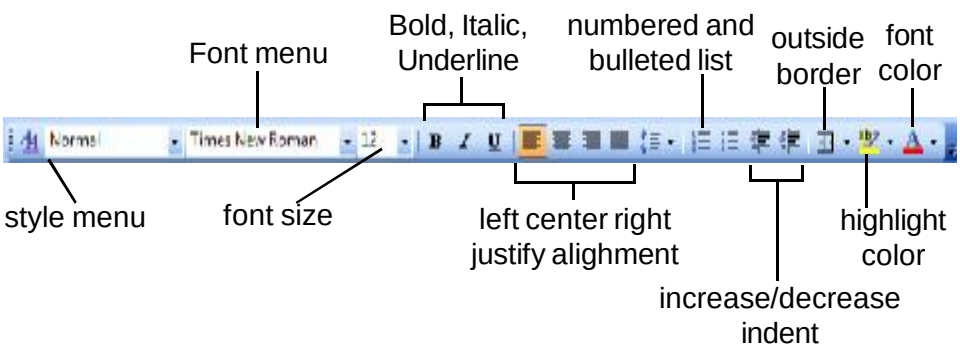


Figure 11.17 : Formatting toolbar showing different options

- **Bold, Underline and Italicize Text :** If we want to make Bold, Italic and Underline our text, first we have to select the text and then directly click **Bold** , **Italics** , **Underline**  options of the ***Formatting toolbar***. In other way, we can click on the *bold* option and type the text. Similarly, we can select *Italic* and *Underline* button. The keyboard shortcuts for making bold, italics and underline text are ***Ctrl+B***, ***Ctrl+I*** and ***Ctrl+U*** respectively.

The other options of formatting toolsbars shown in Fig. 11.17 are discussed below:

- ***Allignment :*** This option is used to align text to the left,center or right side of the page or it can be justified across the page.
- ***Numbered and Bulleted Lists :*** This option is used to add numbers or bullets to the highlighted text.
- ***Increase/Decrease Indent :*** This option is used to change the indentation of a paragraph in relation to the size of the page.
- ***Outside Boarder :*** When this option is used, it adds a border around a text selection.
- ***Highlight Color :*** This option is used to change the color behind a text selection. The color displayed on the button is not the default color but it is the last color used. To change a different color we have to click on the drop-down arrowhead. It will display the available colors. We have to select the color of our choice.
- ***Text Color :*** This option is used to change the color of the text. The color displayed on the button is the last color used. We have to click the drop-down arrowhead to select another color.

Alternatively we can use ***Font*** dialog box (Fig. 11.18) which appear when we click ***Font*** option of ***Format menu*** to change font size, fonts and font styles. To give specific color to the text, we have to select the font color from the ***Font color*** drop-down menu. The default font color is black. We can also specify different effects to the text by selecting the Effects that we want to add to the text by

clicking on the checkbox in the ***Effects*** box. The ***Preview*** box at the bottom displays the specified changes that we have made to our text. To save the modifications that have been made in the text, we have to press the ***OK*** button.

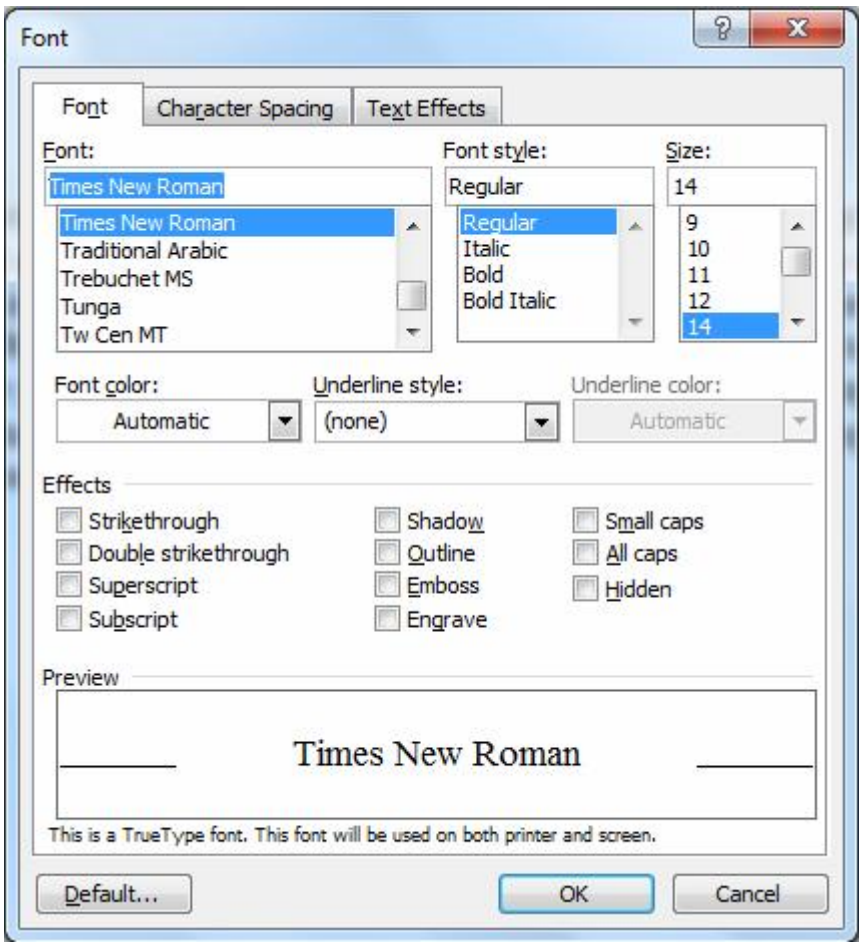


Figure 11.18 : Font dialog box

11.11 WORKING WITH PARAGRAPH

In this section we will learn various ways to arrange a paragraph. In MS-Word, whenever we press the *Enter* key, we create a new paragraph. When we open a new document, the default paragraph setting stored as a style is applied. When we are formatting a paragraph, we do not need to highlight the entire paragraph. Placing the cursor anywhere in the paragraph enables us to format it. After we set a paragraph format, subsequent paragraphs will have the same format unless we change their format.

Line Spacing : Spacing is used to design our document and make it more readable. Line Spacing sets the amount of space between lines within a paragraph.The default setting of spacing is single. Word enables us to change the line spacing in our text. We can set spacing to *single*, *double* or *one and half* lines. To set the line spacing, we have to follow the following steps:

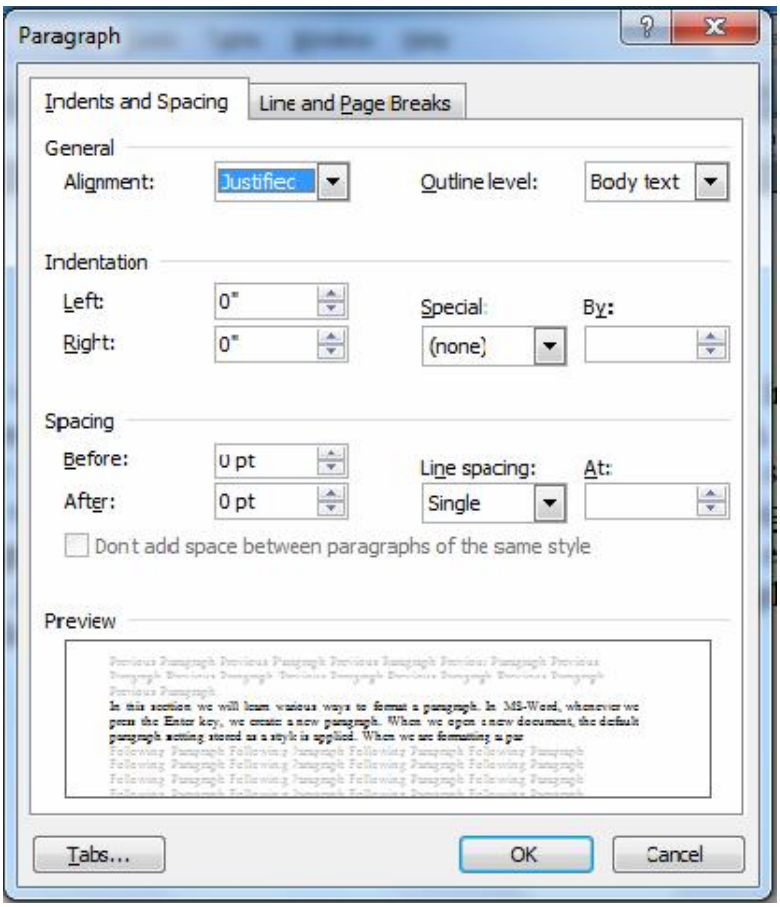


Figure 11.19 : The Paragraph dialog box

- Select the ***Paragraph*** option on the ***Format*** menu. The Paragraph dialog box gets invoked as displayed in the Fig. 11.19.
- Select the ***Indents and spacing*** tab
- Select an option from the ***Line spacing*** drop-down list.
- Select the value from the ***At*** list box.
- Click on the ***OK*** button to close the dialog box

If we select 1.5 lines, the Line Spacing is set to one-and-a-half times the single-space amount. For double-spaced lines, the line spacing is set

to two times the single-space amount. We can define white space placed before and after paragraphs by giving values in the ***spacing*** area of ***Paragraph*** dialog box.

Indenting Text : Indentation allows us to indent a paragraph from the left or right margin. Indents are added to margins thereby increasing the white space and decreasing the text area for specific paragraphs. To set the Indents for text by using paragraph dialog box we follow the following steps:

- Enter the specification for left, right and first line indents in the indentation area of Paragraph dialog box.
- Select an option from the drop-down list.
- Click the ***OK*** button.

In the *Paragraph dialogue box, Spacing Before* specifies how much space to leave before the paragraph. *Spacing After* specifies how much space to leave after the paragraph. *Line Spacing* sets the space between lines within a paragraph. One can type a paragraph of text and see the effect of Spacing Before, Spacing After, and Line Spacing by performing the following steps.

- Highlight the paragraph or place the cursor anywhere in the paragraph.
- Choose ***Paragraph*** from ***Format*** menu.
- Type **1"** in the Left field.
- Type **1"** in the Right field.
- Click ***OK***.

The paragraph will be indented one inch from both the left and right.

Alignment of Text in a Paragraph : Alignment is the way of organizing the text. It refers to the position of the text relative to margins. It enables us to ***left-align***, ***right-align***, ***center-align*** and ***justify*** the text in our document. The default alignment in MS-Word is left alignment.

- *Right-Aligned Text:* If the text is aligned with the right margin of the page then it is said to be right-aligned.
- *Left-Aligned Text:* If the text is aligned with the left margin of the page then it is said to be left-aligned. This is the default alignment for MS Word is.

- *Center-Aligned Text*: If the text is aligned to the center of the page then it is said to be center-aligned.
- *Justified*: This feature aligns a paragraph both the left and the right margins.

The following screenshot (Fig.11.20) shows all the above alignement options.

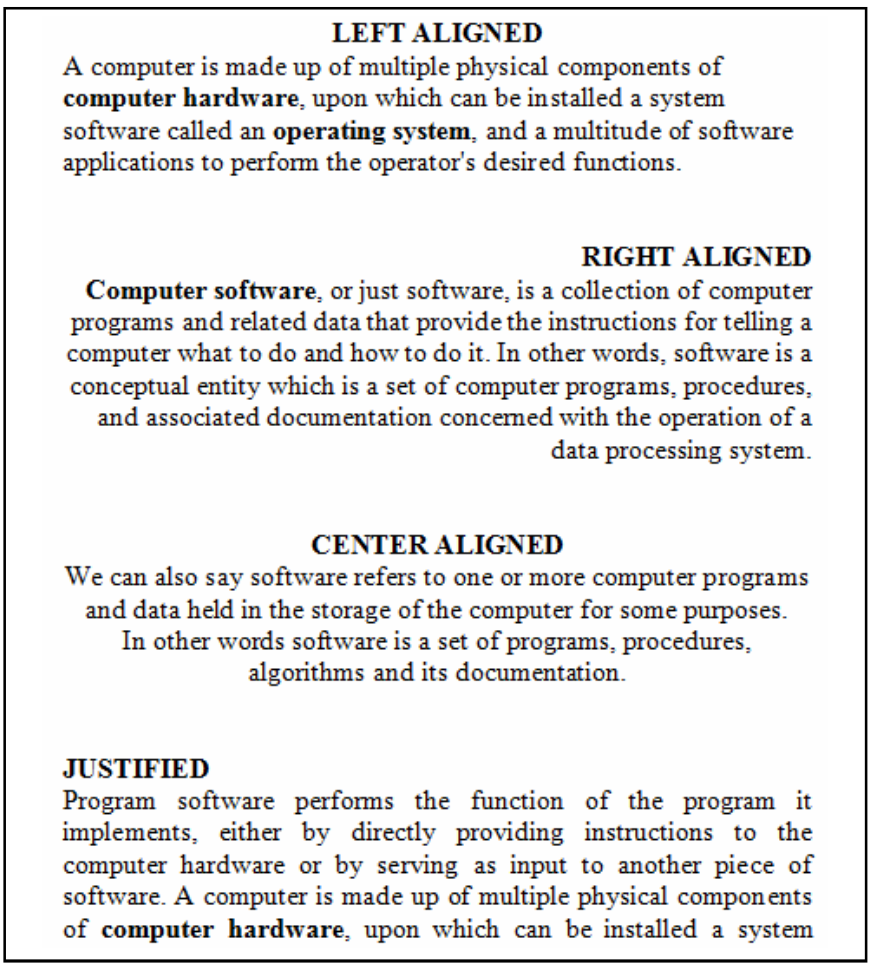


Figure 11.20: Allignment of paragraph showing four types of allignments



CHECK YOUR PROGRESS

6. Fill in the blanks :
   (i) To delete a letter just before the cursor position in a single step, we have to press _____ key.

(ii) To delete a letter above the cursor position, just press _____ key.

(iii) To insert text, we must be in the _____ mode.

(iv) *Font Size* is a _____ toolbar option.

(v) Bold,Italics and Underline options are present in _____ toolbar.

(vi) The default font color is _____.

7. Write T for True and F for False :

(i) Highlight color option is used to change the color behind a text selection

(ii) ***Outside Boarder*** option is used to remove a border around a text selection

(iii) *Indent and Spacing* tab is present in *paragraph dialog box*.

(iv) Right is default alignment for MS Word.

11.12 ADDING BULLETS AND NUMBERS

Bullets and numbers can be used to highlight the portion of a text we want to highlight. We can use bullets and numbers to make the lists. It also makes text easier to read. For this, we have to follow the following steps:

- Select the text before adding bullets and numbers.
- Select the "***Bullets and Numbering***" options of the ***Format*** menu. The *Bullets and Numbering dialog box* is shown in Fig. 11.21.
- Click on the ***Bulleted*** tab in the *Bullet and Numbering* dialog box.
- Click to select a style of your choice.
- Click on ***OK***

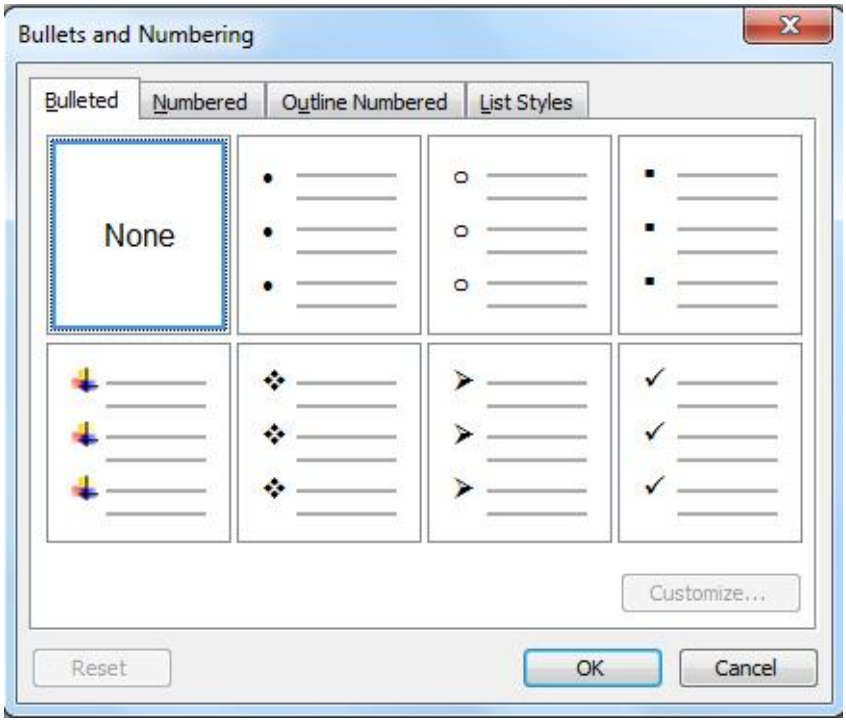


Figure 11. 21 : Bullets and Numbering dialog box

Alternatively, we can also click on the ***Bullets and Numbering*** options of the ***Formatting toolbar***. We can also change the predefined specifications for bullets and numbering by using ***Customize*** option in the "***Bullets and Numbering***" dialog box. A few examples of numbered and bulleted list is given below :

1. CCA	I. CCA	i. CCA
2. BCA	II. BCA	ii. BCA
3. PGDCA	III. PGDCA	iii. PGDCA
4. MCA	IV. MCA	iv. MCA
a. CCA	a) CCA	A. CCA
b. BCA	b) BCA	B. BCA
c. PGDCA	c) PGDCA	C. PGDCA
d. MCA	d) MCA	D. MCA
l Physics	Ø Physics	ü Physics
l Chemistry	Ø Chemistry	ü Mathematics
l Botany	Ø Botany	ü Botany
l Zoology	Ø Zoology	ü Zoology
l Statistics	Ø Statistics	ü Statistics

11.13 FIND AND REPLACE OPTION

In MS-Word, we can search for text, special character and other document items. We can also replace the searched items with a specified item.

For finding text, we have to:

- Click the ***Find*** option from the ***Edit*** menu. The ***Find and Replace*** dialog box gets invoked as shown in Fig.11.22.
- Enter the text in the ***Find what*** box.
- Click on the ***Find Next*** option of the ***Find and Replace*** dialog box to find the position of the text being searched.

The keyboard shortcut for finding text is ***Ctrl+F.***

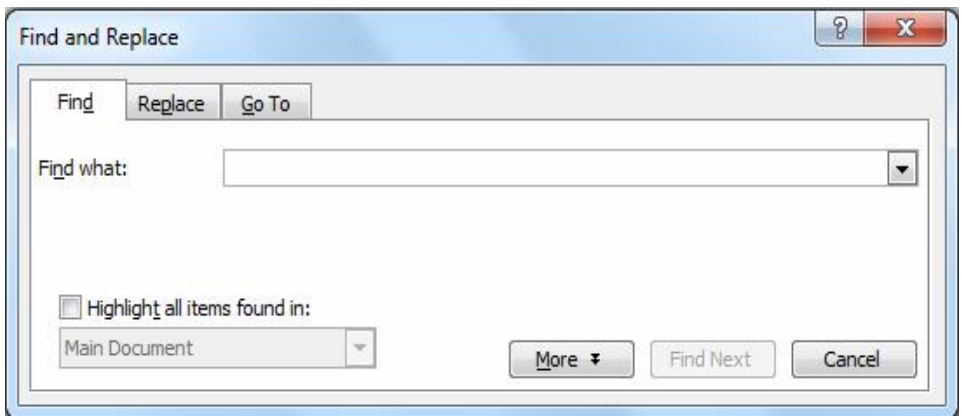


Figure 11.22 : Find and Replace dialog box showing Find tab

For replacing text, we have to :

- Select the ***Replace*** option from the ***Edit*** menu. The ***Find and Replace*** dialog box as shown in Fig. 11.23 gets invoked.
- Select the ***Replace*** tab.
- Enter the text to be replaced in the ***Find what*** box of the dialog box.
- Enter the text to be replaced with in the ***Replace with*** text box.
- Click on the ***Find Next*** button of the ***Find*** dialog box to start the search.
- Click on the ***replace*** button to replace the highlighted text in the ***Replace with*** box.

The keyboard shortcut for replacing text is ***Ctrl+H.***

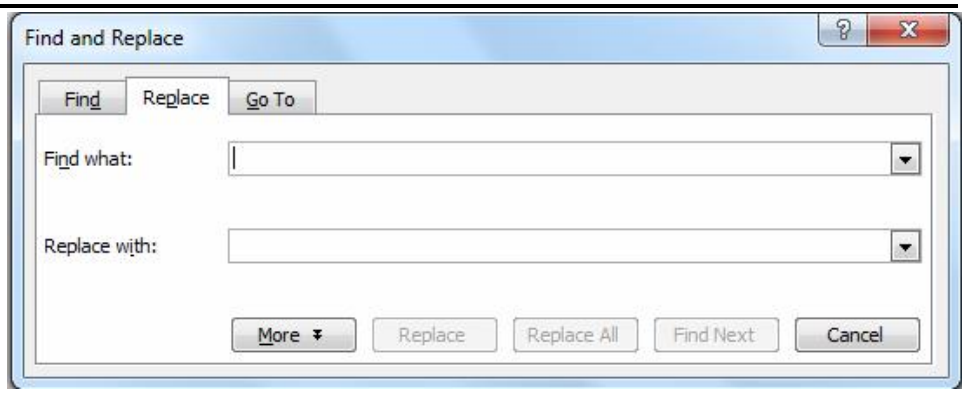


Figure 11.23 : Find and Replace dialog box showing Replace tab

11.14 CUT, COPY AND PASTE

In MS-Word, we can cut (delete) text from one area of a document and save that text so that it can be pasted elsewhere in the document. When we cut a text, it is stored on the Clipboard. We can also copy text. When we copy text, it is also stored on the Clipboard. Information stored on the Clipboard stays there until new information is either cut or copied. Each time we execute Cut or Copy, we replace the old information on the Clipboard with whatever we just cut or copied.

Cut and Paste :

Cut - using Menu

Select the content that you want to delete

Click **Edit** menu and then choose **Cut** from the menu.

Paste - using Menu

Place the cursor where you want to paste the deleted content.

Click ***Edit*** menu and then choose ***Paste*** from the menu.

Cut - using Icon 

Select the content that you want to delete

Click the ***Cut*** icon from the ***Standard*** toolbar.

Paste - using Icon 

Place the cursor where you want to paste the deleted content.

Click the ***Paste*** icon from the ***Standard*** toolbar .

Cut - using Keyboard shortcut

Select the content that you want to delete

Press ***Ctrl + X***

Paste - using Keyboard shortcut

Place the cursor where you want to paste the deleted content.

Press ***Ctrl+ V***

Copy and Paste : In Microsoft Word, we can copy text from one area of the document and place that text elsewhere in the document. As with cut data, copied data is stored on the Clipboard.

We can copy the text to another location or file by specifying the path. To copy text, we can selct ***Copy*** option from the ***Edit*** menu. Another way to copy content is by clicking ***Copy*** icon  from the ***Standard*** toolbar, or simply pressing ***Crtl+C*** after selecting the content.

To paste cut or copied text, we have to place the cursor at the location where the text is to be moved and then select ***Paste*** option from the ***Edit*** menu. Alternatively, we can click the ***Paste*** icon  from the ***Standard*** toolbar or we can simply press ***Ctrl+V*** to paste the text.



CHECK YOUR PROGRESS

8. What is the best option to move a small part of text to a shorter location in a document?

   .....

   .....

   .....

   .....

9. How do you access the *Find and Replace* option?

   .....

   .....

   .....



11.15 LET US SUM UP

- Microsoft Word is a ***Word Processor*** - a type of application software used to *create* letters, memos, reports, term papers etc.
- ***Title bar, Menu bar, Status bar, Ruler, Formatting*** and ***Standard*** toolbars are the key elements of a MS-Word document window.
- The ***Title Bar***, located at the very top of the screen, displays the name of the document you are currently using and maximize, minimize, close button.
- The various components of ***Menu Bar*** are *File, Edit, View, Insert, Format, Tools, Table, Window* and *Help*.
- ***Rulers*** are found at the top and left of a document and indicate text positioning, such as size of the margins.
- The ***Status Bar*** appears at the very bottom of the screen and provides information such as *current page*, *current section, total number of pages, inches from the top of the page, current line number* and *current column number*.
- The ***Horizontal Scroll Bar*** and ***Vertical Scroll Bar***, enable you to move up and down or across the window.
- The ***Text Area***, just below the ***Ruler***, is a large area where you can type your document.
- The ***Backspace*** key erases text before the *cursor* position.
- The ***Delete*** key erases text after the *cursor* position.
- To insert text, you must be in the ***Insert Mode***.
- In the ***Overtype Mode***, you can type over the current text (replace the current text with new text).
- Text can be formatted by changing ***font style***, ***size*** and ***color.***
- Text in a document can be made ***bold, underline*** and ***italicize.***
- In Microsoft Word, you can easily create ***bulleted or numbered lists*** of items.
- A paragraph can be formatted by placing the cursor within the paragraph and selecting ***Paragraph*** option from the ***Format*** menu.
- ***Line Spacing*** sets the amount of space between lines within a paragraph.

- The ***first-line indent*** feature indents the first line of the paragraph.
- ***Indentation*** allows you to indent your paragraph from the left or right margin.
- The different types of alignments are ***right***, ***left***, ***centre*** and ***justified***.
- In Microsoft Word, you can ***copy*** text from one area of the document and place that text elsewhere in the document.
- You can ***cut*** (delete) text from one area of a document and save that text so it can be pasted elsewhere in the document.
- The find and replace option can be accessed either by selecting ***Edit > Find*** or ***Edit > Replace*** menu by pressing key combinations as ***Ctrl+F*** and ***Ctrl+H*** for replace.



11.16 FURTHER READING

- Sanjay S. (2007). Introduction to Information Technology. Vikash Publishing, New Delhi.
- Perry, G. M. (1999). Sams teach yourself microsoft office 2003 in 24 hours. Sams.
- Sanjay S. (2007). MS Office XP for Everyone. Vikash Publishing, New Delhi.



11.17 ANSWERS TO CHECK YOUR PROGRESS

Ans. to Q. No. 1 : To select the text drag the mouse over the specific portion of text while keeping the left mouse button pressed.

Ans. to Q. No. 2 : To close the current document in MS-Word from the Menu bar, select ***Close*** option from the ***File*** menu.

Ans. to Q. No. 3 : To exit MS-Word, we have to click ***Exit*** option from the ***File*** menu.

Ans. to Q. No. 4 : (i) Document1, (ii) .doc, .docx, (iii) Print Preview, (iv) Menu, nine, (v) View, standard

Ans. to Q. No. 4 : (i) (a) Ctrl+S, (ii) (c) Ctrl+O, (iii)(b) Ctrl+A

Ans. to Q. No. 6 : (i) backspace, (ii) delete, (iii) insert, (iv) formatting (v) formatting, (vi) black

Ans. to Q. No. 7 : (i) T, (ii) F, (iii) T, (iv) F

Ans. to Q. No. 8 : For moving a small part of text to a shorter distance, use drag-and-drop method. Highlight the text to be moved. Click the text selection using the mouse and drag this selection to the location where you want to move the text and release the mouse button.

Ans. to Q. No. 9 : The **Find and Replace** option can be accessed either by selecting ***Edit > Find*** or **Edit > Replace** menu or by pressing key combinations as ***Ctrl+F*** for find and ***Ctrl+H*** for replace.



11.18 MODEL QUESTIONS

Q1. What is Word Processor? Give one example of a popular Word Processor.

Q2. What is MS-Word? What is the purpose of MS-Word ?

Q3. What are the basic components of toolbars and explain them?

Q4. What is the difference between removing text with the Delete key and with the Backspace key?

Q5. What is Insert mode?

Q6. What is Overtype mode?

Q7. How can a text be made Bold, Italic and Underlined? Mention the shortcuts to mark the text as bold, italic and underlined.

Q8. How can bulleted or numbered text be created in a document?

Q9. What are the functions of menu bar?

Q10. How do you create a new document in MS-Word?

Q11. Explain the steps involved in paragraph formatting.

Q12. How can line spacing in a paragraph be changed?

Q13. How can the first line indent be assigned in a paragraph?

Q14. Differentiate between the copy-paste and cut-paste method.

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UNIT 12 : MICROSOFT WORD– PART II

UNIT STRUCTURE

12.1 Learning Objectives

12.2 Introduction

12.3 Spelling and Grammar Checker

12.4 Undo and Redo

12.5 Header and Footer

12.6 Tab Key

12.7 Page Setup

12.8 Printing Documents

12.9 Inserting Picture

12.10 Working with Tables

- 12.10.1 Inserting a Table
- 12.10.2 Deleting a Table
- 12.10.3 Traversing aTable
- 12.10.4 Selecting Table, Rows, Columns
- 12.10.5 Inserting Rows and Columns
- 12.10.6 Deleting Rows and Columns
- 12.10.7 Merging of Cells
- 12.10.8 Splitting of Cells

12.11 Creating Multiple Columns

12.12 Let Us Sum Up

12.13 Further Reading

12.14 Answers to Check Your Progress

12.15 Model Questions

12.1 LEARNING OBJECTIVES

After going through this unit, you will be able to:

- learn how to check spellings and grammars of your document
- use undo and redo option
- insert header, footer and page number to your document

- learn to setup page margin, paper size and layout of the pages of your document
- prepare your document for printing
- insert pictures to make your document more attactive
- create table in MS-Word document and enter data into it
- delete a table
- format a table by adding rows and columns
- remove rows and columns from a table
- merge and split cells according to your requirements
- create multiple columns in your document

12.2 INTRODUCTION

In the previous unit (Unit 11) we have discussed the basics of MS-Word. Our discussion includes how to create a new Word document, how to open an existing document, exiting Word etc. Learners have also been acquainted with bulleted and numbered list in a Word document; formatting text as well as paragraphs and about copy, cut and paste option.

In this unit we will learn about some other features of MS-Word which include checking of spelling and grammars, inserting header and footer, page number, pictures, undo and redu options etc. We will also learn to insert tables into our document so that we can represent some data in tabular format. We will be able to add/delete rows and columns into/from a table which already exists. We will also learn to merge and split cells of a table according to our requirements .

12.3 SPELLING AND GRAMMAR CHECKER

MS-Word provides spelling and grammar checking facility so that we can identify or rectify our spelling mistakes as well as grammar.

- **AutoCorrect option :** The **AutoCorrect** feature of MS-Word automatically corrects many commonly misspelled words and wrong punctuation marks which are predefined. To view the list of words that can be corrected automatically, from the menu

bar, we have to select ***AutoCorrect option*** from the ***Tools*** menu. The ***AutoCorrect*** dialog box will be displayed as shown in Fig. 12.1.

Many options that include the additional capitalization of the first two letters of a word and capitalization of the first word of the sentence can be corrected automatically.

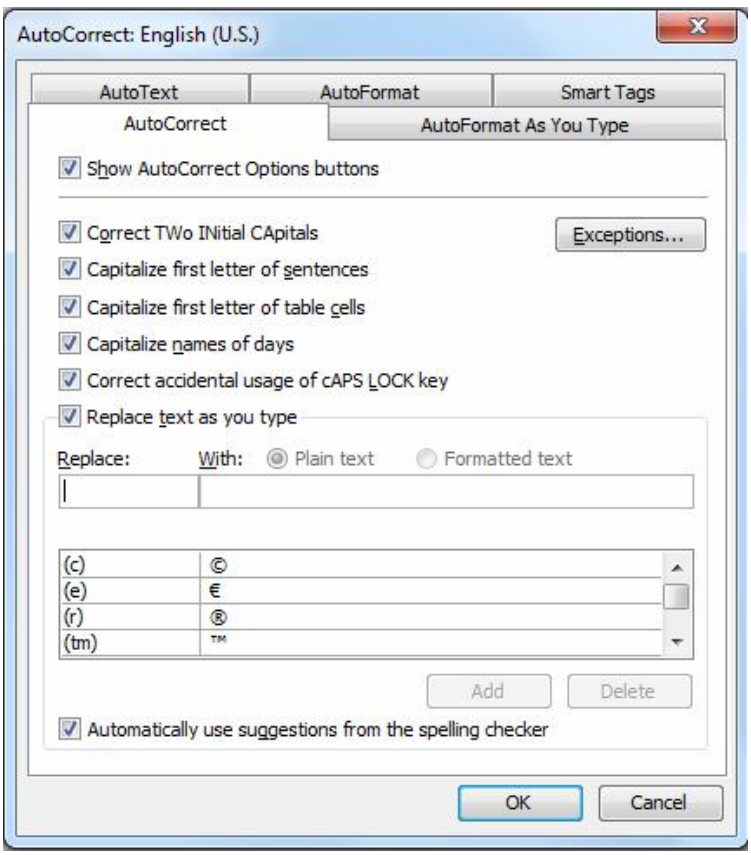


Figure 12.1 : AutoCorrect dialog box

- **Spelling and Grammar Check :** Word checks spelling and grammar as we type. Spelling errors are displayed with a red wavy line under the word. The red wavy line also appears under a word when there is no dictionary meaning of that word. Grammar errors are displayed with a green wavy line under the error. There are three different methods to spell check our entire document. These are listed below:
  - By pressing **F7** key
  - By clicking the spelling icon  from the ***Standard toolbar***

– By choosing ***Spelling and Grammar*** option from the ***Tools*** menu. The *Spelling and Grammar* dialog box will appear as shown in Fig.12.2.

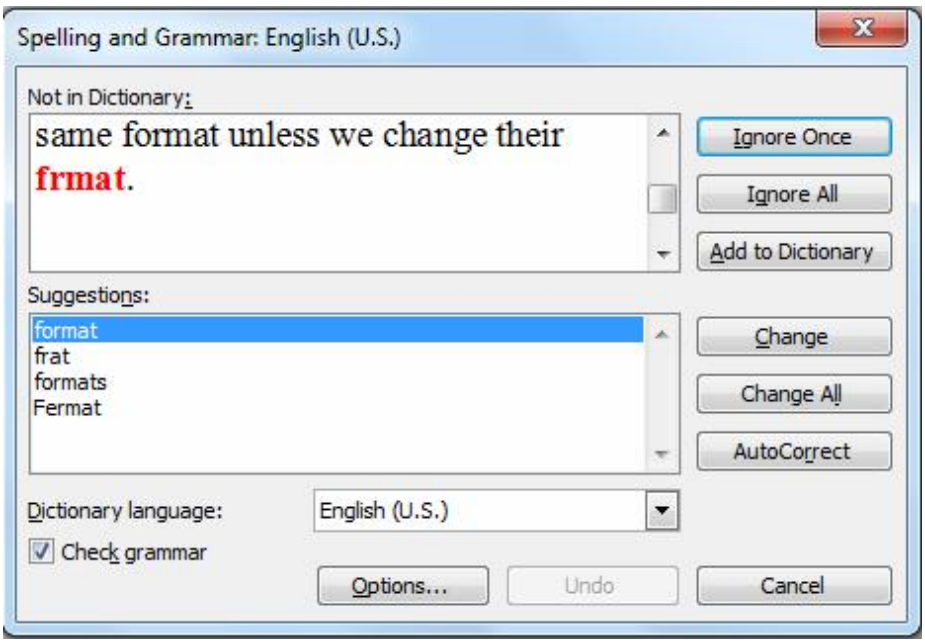


Figure 12.2 : Spelling and Grammer dialog box

If we want to check the spellings of a part of a document, we have to select the area first. After that we can follow any one of the above three steps.

12.4 UNDO AND REDO

We can undo the last action by clicking the ***Undo*** button on the ***Standard*** toolbar or by selecting ***Edit >Undo Typing*** option from the ***Menu*** bar. To remove the Undo action, click the ***Repeat Typing*** button on the ***Standard*** toolbar or select ***Edit > Repeat Typing***.

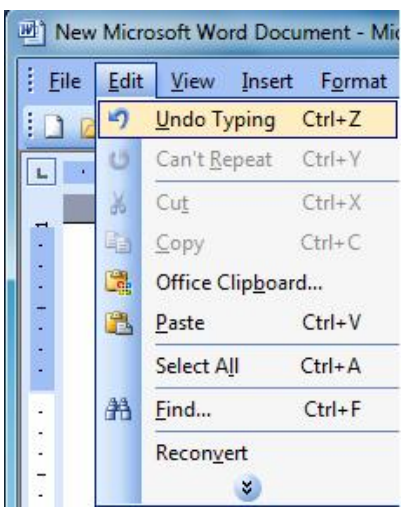


Figure 12.3 : Undo and Redo option of Edit Menu

12.5 HEADER AND FOOTER

Another useful feature of MS-Word is ***Header and Footer***. A *header* is a text that appears at the top of each page of our document. A *footer* appears at the bottom of the pages. Using this feature, one can create a standard piece of text and/or an image at the top or end of each page of their document(s). The most common use of header and footer is to display *page numbers* and *reference titles*.

We can add header and footer by choosing the ***Header and Footer*** option from the ***View*** menu Fig. 12.4. As soon as we select the option, two dashed line box (one at the top and one at the bottom of the text area) will appear as shown in Fig.12.5 . We can write any reference title as well as page number within these dashed line boxes.

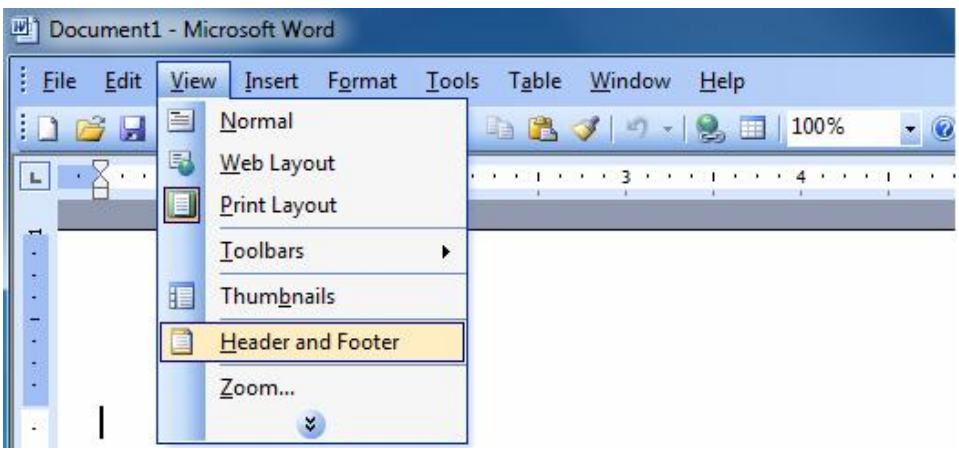


Figure 12.4 : Header and Footer option of View menu

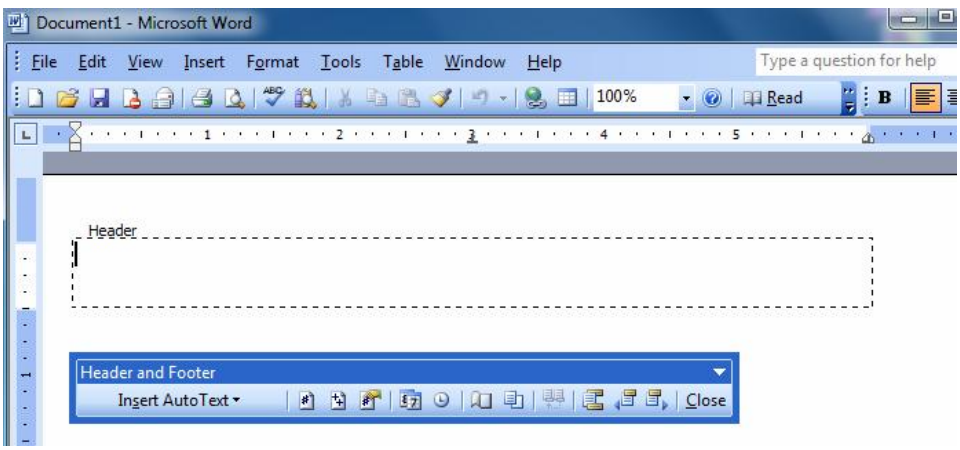


Figure 12.5 : The dashed box for Header

- **Inserting Page Number :** For inserting page number, we can choose ***Page Numbers*** option from the ***Insert*** menu. The following dialog box (Fig.12.6) will appear on the document. We can put page number either in the header or in the footer section. Page number can be aligned in any one of the direction: left, right, center, inside and outside.

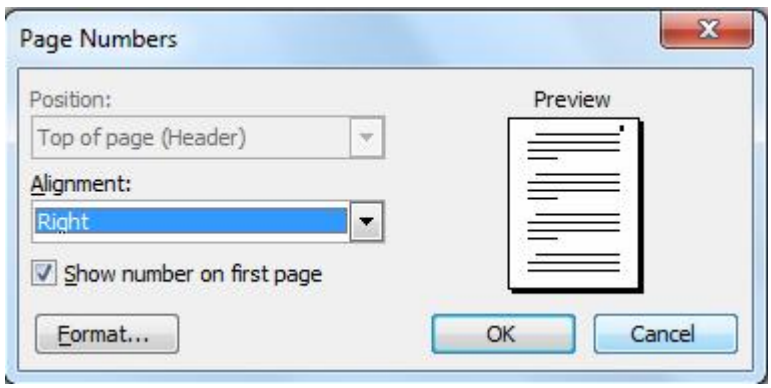


Figure 12.6 : The Page Numbers dialog box

If we want to insert a clip art graphic in the first page header, we can choose ***Clip Art*** from the ***Picture*** option of the ***Insert*** menu. After that we have to :

- ***Organize clips*** from the right panel. The *Clip Organizer* will pop out.
- Choose the ***Collection list*** from the left panel
- Choose a clip art of your choice from any folder of the *Collection list*
- Copy and paste the clip art or drag it on to the header. The chosen graphic would be displayed.

12.6 TAB KEY

The default Tab setting for Microsoft Word is .5 inches. When we press the Tab key, the cursor moves 1/2 inch across the page and an arrow appears on the screen. The arrow is a nonprinting character, when we print our document the arrow does not print. One can notice how the cursor moves across the page by pressing the Tab key a few times. To change the default Tab setting, we have to :

- Choose ***Tabs*** from the ***Format*** menu. The *Tabs dialog box* opens.
- Enter ***1"*** in the ***Default Tab Stops*** field.
- Click ***OK***.
- Press the *Tab key* a few times. We can notice how the cursor moves across the page. The cursor stops at every inch.

We can also set up Custom Tab Stops. To set our Tab Stops to 1", 3.5", and 5", we have to :

- Choose ***Tabs*** from the ***Format*** menu. The Tabs dialog box will appear.
- Enter **1"** in the Tab Stop Position field.
- Click ***Set***.
- Enter ***3.5*** in the ***Tab Stop Position*** field.
- Click ***Set***.
- Enter ***5*** in the ***Tab Stop Position*** field.
- Click ***OK***.
- Press the *Tab key* a few times. Note how the cursor moves across the page.

12.7 PAGE SETUP

The page margins of the MS-Word document can be set and changed using the ***Rulers*** on the page and the ***Page setup window***. To set the ***Ruler***, we have to:

- Move the mouse over the region where the Write ruler changes to gray
- Click with the mouse and the margin indicator to the desired location when the cursor becomes a double-ended arrow
- Release the mouse when the margin is set.

Page Margins and Orientation : The margins can also be set or changed using the ***Page Setup*** dialog box as shown in Fig.12.7. For this, we have to:

- Select ***Page Setup*** option from the ***File*** menu and specify the

Margin tab in the dialog box,

- Enter margin values in the *Top*, *Bottom*, *Left* and *Right* boxes. The *Preview window* will reflect the changes.
- Click on ***OK*** when specified.

We can change the ***Page Orientation*** within the *Page Setup* dialog box. For this, we have to change the page orientation from ***Portrait*** or ***Landscape*** by checking the corresponding radio button.

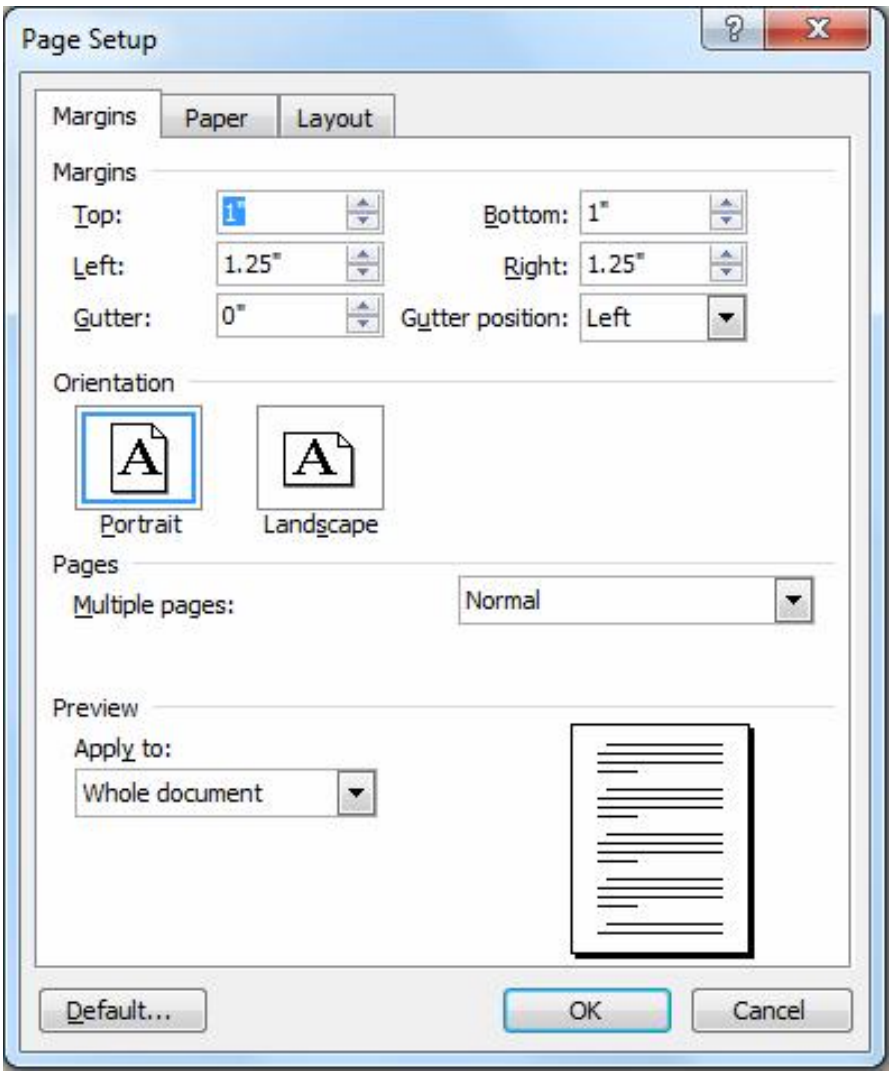


Figure 12.7 : Page Setup dialog box showing Margins tab

Paper Size : To set the paper size, we have to :

- Click the ***Paper*** tab of *Page Setup* dialog box (Fig. 12.8).
- Select the appropriate paper size from the drop-down menu of *Paper size* box

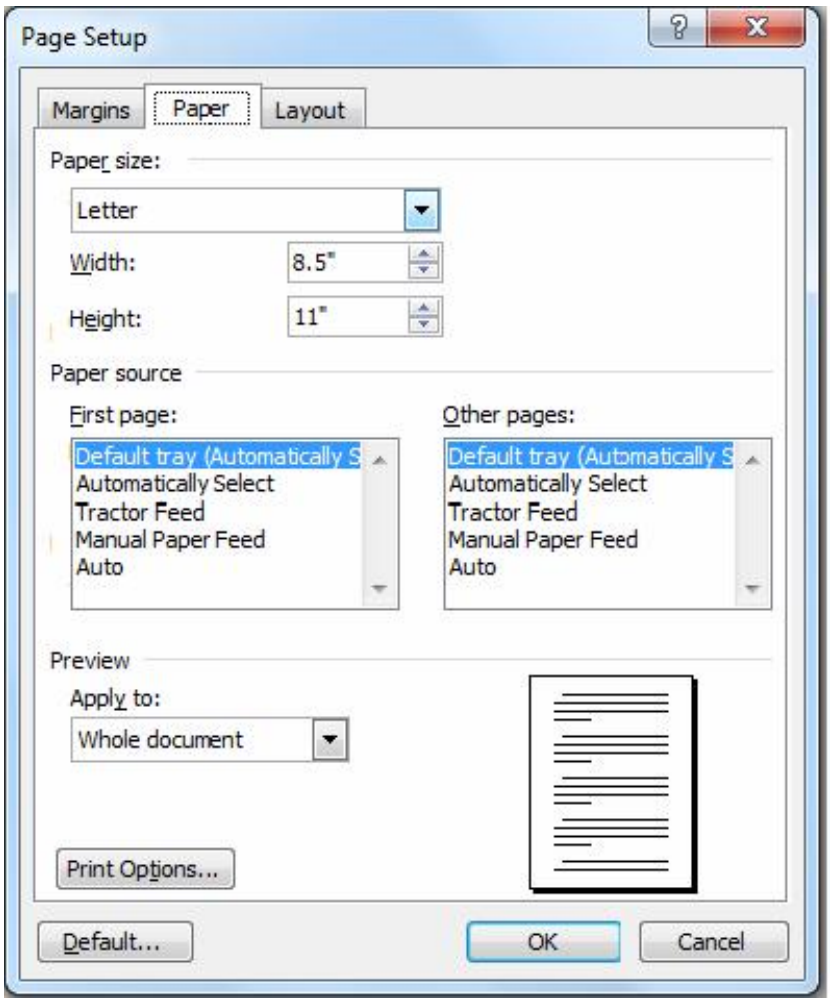


Figure 12.8 : Page Setup dialog box showing Paper tab

12.8 PRINTING DOCUMENTS

MS-Word allows us to take printout of our document. We should first setup our print properties and layouts before printing the documents. Before taking the print we should be sure that our computer is connected with printer. For taking a printout, we have to:

- Select ***Print Preview*** to check whether the layout of our document is appropriate or not. Otherwise, select ***Print*** from ***File*** menu of the ***Menu*** bar. A ***Print dialog box*** will appear.
- Set all the parameters like number of copies, take print from current page or we can specify page number too.
- Click on ***Print*** button.



CHECK YOUR PROGRESS

1. Fill in the blanks :
   (i) The_____ feature of MS-Word automatically corrects many commonly misspelled words and punctuation marks which are predefined.
   (ii) The default tab setting for Microsoft Word is _____.
   (iii) Red wavy line under a word indicates that the _____ of the word is wrong. or there is no Dictionary meaning of that word.
   (iv) Grammar errors display with a _____ wavy line under the error.
2. Write T for True and F for False :
   (i) Page number cannot be inserted in the header part of a document.
   (ii) If the spelling of a word is incorrect, then by right clicking on the word, we will get the probable correct options for the particular word.
   (iii) We can change the size of a picture which is inserted in a Word document with the help of a mouse.
   (iv) The page margins of a MS-Word document can be setup using the *Rulers* on the page.

12.9 INSERTING PICTURE

We can add a picture from the Clip-Art gallery or we can put a picture from the drives. Word facilitates us to design our document through enabling this feature. For inserting pictures, we have to:

- Click where we want add our picture.
- Click ***Insert*** from the ***Menu*** bar.
- Select ***Picture.***
- Select ***Clip Art*** or From File.

- Select ***picture*** and click ***Insert***.
- Select an appropriate picture from gallery or drives.
- Click on the ***OK*** button.

12.10 WORKING WITH TABLES

We can create tables in MS-Word document to display our text in tabular format. We can create multiple tables in one document. As per our need, we can add any number of rows and columns in the table.

12.10.1 Inserting Table

To insert a table in MS-Word document, we have to :

- Click where we want to insert the table
- Click on the ***Table*** menu from the ***Menu*** bar.
- Select ***Insert***
- Select ***Table*** (Fig.12.9). The ***Insert Table*** dialog box will appear on the screen as shown in Fig.12.10.
- Enter number of ***rows*** and ***columns*** according to our need
- Click on the ***OK*** button.

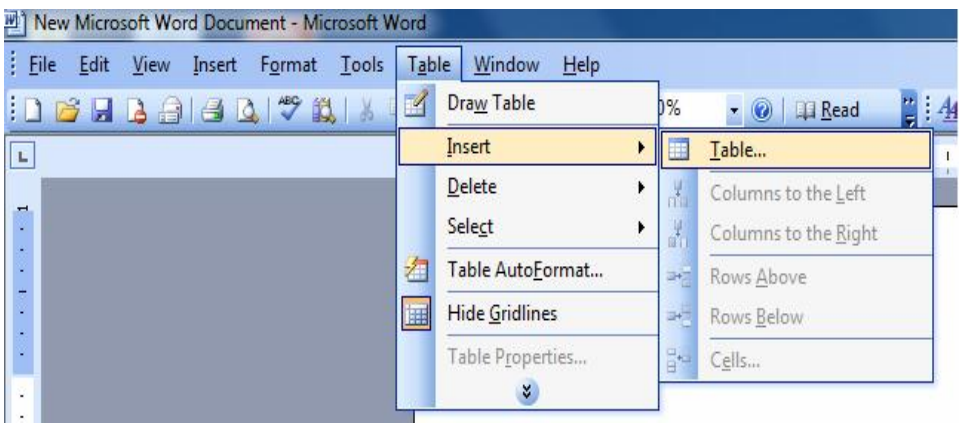


Figure 12.9 : Table dialog box

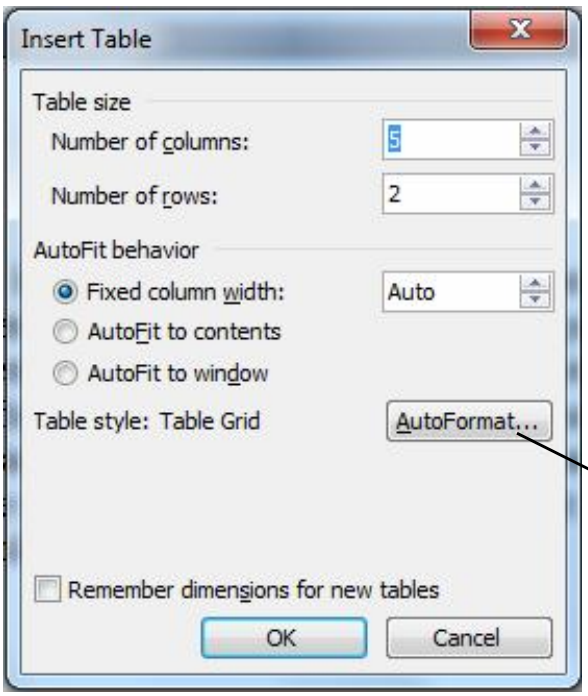


Figure 12.10 : Insert Table dialog box showing table size of 2 rows and 5 columns

A table will be inserted in the current position of the cursor. If we click the ***AutoFormat…*** button, a ***Table AutoFormat*** dialog box will be displayed as shown in the Fig.12.11. We have to select any of the formats from the ***Table styles*** list box. We can also set the

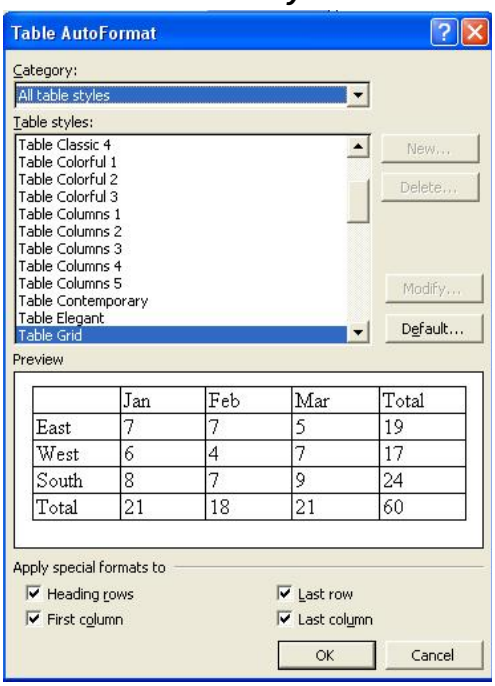


Figure 12.11 : Table AutoFormat dialog box

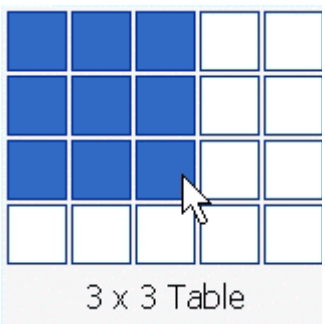
other options in the dialog box according to our need and then have to click ***OK*** button to close the dialog box. After that we have to click the ***OK*** button of the ***Insert Table*** dialog box. We also can set this table format as default format for the new tables by clicking the ***Default*** in the *Default table styles dialog box* and click the ***OK*** button.

Alternate Method : *Creating a Table by Using the Insert Table Icon :* We can also create a table by clicking on the ***Insert Table*** icon on the *Standard toolbar*. For this, we have to:

- Click the ***Insert Table*** icon as shown below.



- Highlight the number of rows and columns we need. The maximum table size we can create by this method is a ***four-row*** by ***five-column*** table.



- Press ***Enter*** (or click) to create the table.

12.10.2 Deleting a Table

To delete a table, we can click any of the cells of the table and then select the ***Delete > Table*** command from the ***Table*** menu as shown in Fig.12.12.

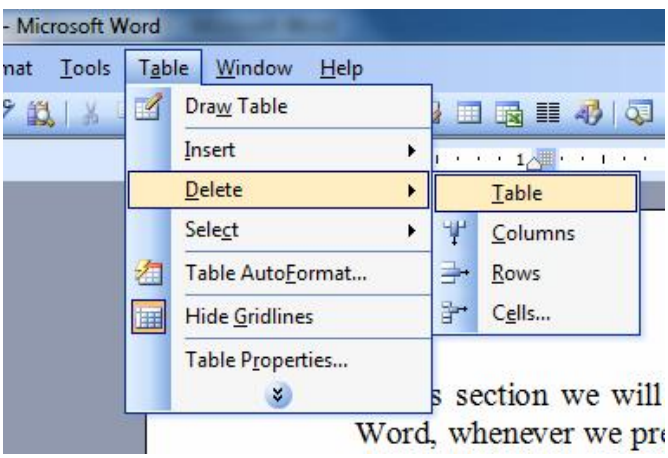


Figure 12.12 : *Delete Table* option from *Table* menu

12.10.3 Traversing a Table

Each block in a table is termed as a ***cell***. One of the easier ways to enter data in a table's cell is to click the cell and type. We can also use the ***Tab** key* to move from cell to cell from left to right. If we use ***Shift +Tab*** key together, then it will move cell to cell in the reverse direction i.e., from right to left. The keyboard shortcuts to move the cursor in a table are given below :

Keyboard shortcut	Location in the table from the current position of the cursor
Tab	The next cell
Shift+Tab	The preceding cell
Alt+PageUp	The column's top cell
Alt+PageDown	The column's bottom cell
Alt+Home	The current row's first cell
Alt+End	The current row's last cell

12.10.4 Selecting Table, Rows Columns

A table in MS-Word document can be selected by clicking at any of the cells of the table and then selecting the ***Select > Table*** option from the ***Table*** menu.

A row in a table can be selected by clicking at any of the cells in the row and then by selecting the ***Select > Row*** option from the ***Table*** menu.

The same methods can be applied for selecting a column. We can select a column by clicking at any of the cells in the column and then by selecting the ***Select > Column*** command from the ***Table*** menu.

A cell in a table can be selected by clicking at the cell of the table and then by selecting the **Select >Cell** option from the ***Table*** menu.

Alternatively, a table, its cells, rows and columns can also be selected with the help of mouse.

12.10.5 Inserting Rows and Columns

We can insert columns and rows in a table which is already created. A row in a table can be inserted by clicking a cell in the row above or below which the new row is to be inserted. By selecting the ***Rows Above*** or ***Row Below*** option from the ***Table*** menu, we can insert a row above or below the selected row.

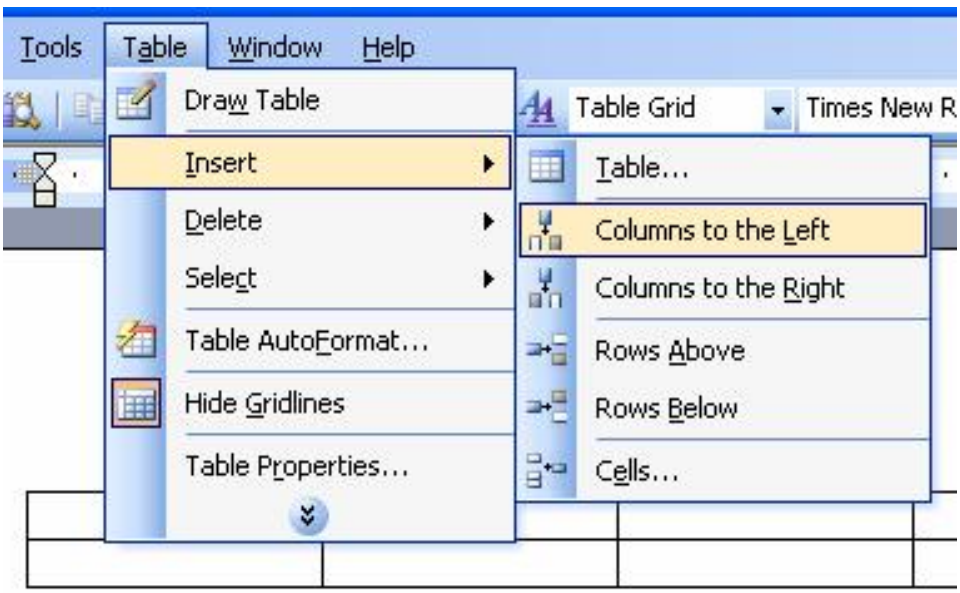


Figure 12.13 : Insert option for Rows and Columns in Table menu

Similarly, to insert a column in the table, we have to click at a cell of the column after or before which the new column is to be inserted. Now, by selecting the ***Columns to the Left*** or ***Columns to the Right*** option from the ***Table*** menu (Fig.12.13), we can insert a column to the left or right of the selected column.

12.10.6 Deleting Rows and Columns

Similar procedures can be applied for deleting rows and columns from a table. To delete a column from the table, we have to click at a cell of the column, which is to be deleted. Now by selecting the ***Table > Delete > Columns*** option (Fig.12.14) from the ***Table*** menu, the entire column can be deleted.

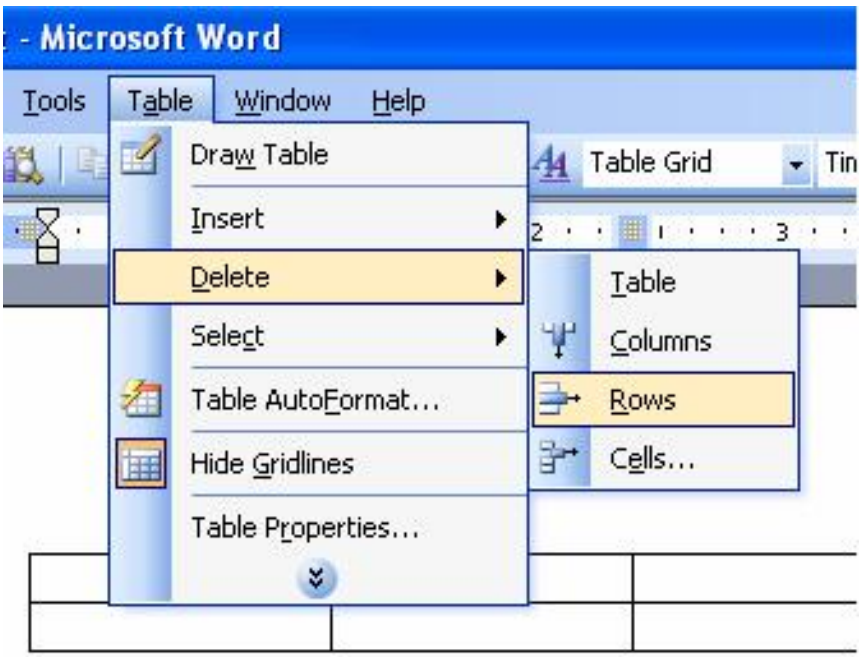


Figure 12.14 : Table menu showing Delete option

We can delete a row in a table by clicking at a cell of the row, which is to be deleted and then by selecting the ***Table > Delete > Rows*** option from the ***Table*** menu.

12.10.7 Merging of Cells

In MS-Word, we have the facility to merge cells in a table. Merging of cells means combining two or more cells into one single cell. For example, let us consider the following table for better understanding of merging of cells.

Subject	Physics	Chemistry	Maths	Total Marks
Rahul	65	76	81	222
Preeti	78	76	80	224

If we want to write a table heading above the row containg subjects name, then it will look better if we merge the all five cells of first row into a single cell. The structure of the table will be as followes after merging all the 5 cells of first row. We have written the heading “Marks of Class Test 1” in the first row.

Marks of Class Test 1				
Subject	**Physics**	**Chemistry**	**Maths**	**Total Marks**
Rahul	65	76	81	222
Preeti	78	76	80	224

Merging of cells can be done by :

- Selecting the cells to be merged
- Clicking the ***Merge Cells*** option from the ***Table*** menu.

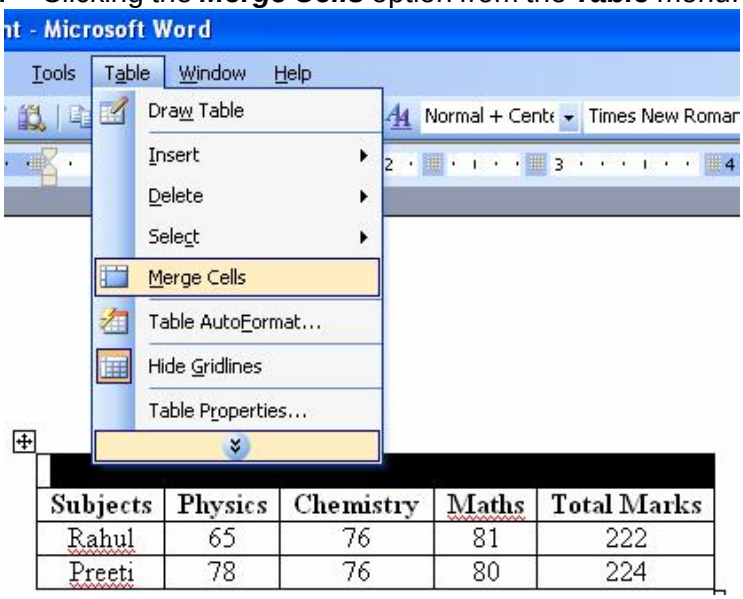


Figure 12.15 : Table menu showing Merge Cells option

Alternatively, we can right click on the selected position. As a result, a drop-down menu appears on the screen as shown in Fig.12.16. By selecting ***Merge Cells*** option, we can merge the cells of the table.

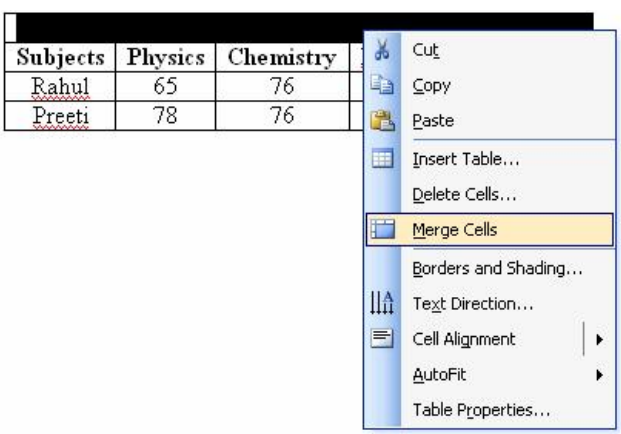
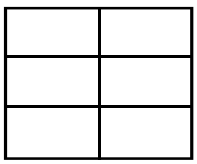


Figure 12.16 : Drop-down menu showing Merge Cells option

12.10.8 Splitting of Cells

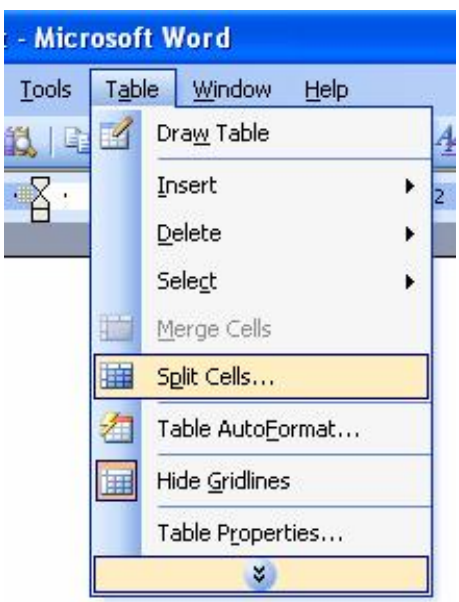
There is a split cells option in MS - Word table which provides us the facility to split cells i.e., turn one cell into more than one cell. Let us consider the previous example. Let us consider the following table:



Suppose, we want to split the lower left corner cell of the above table.

To split a cell, we have to:

- Place the cursor inside the cell by clicking the left mouse button.
- Click ***Split Cells*** option from the ***Table*** menu (Fig.12.17).



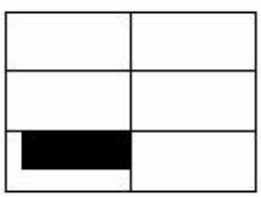


Figure 12.17 : *Table menu* showing *Split Cells...* option

A window will be displayed as shown in Fig. 12.18. In the window, we have to specify the number of rows and number of columns the cell will contain after splitting. After that we have to click the ***OK*** button.

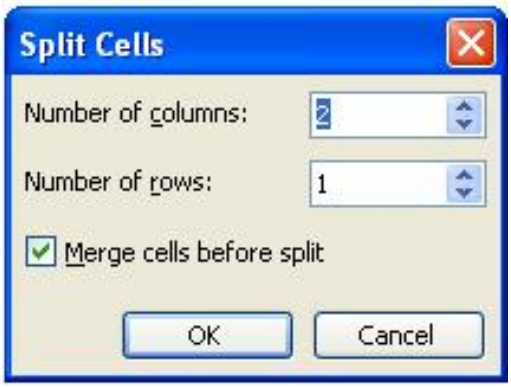
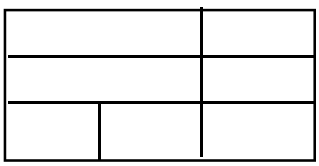


Figure12.18 : Window showing options for number of rows and columns

If we set the number of columns as **2** and the number of rows as **1**, then the structure of the table will look like:



Alternatively, we can split cells by right clicking the selected cell and then choosing *Split Cells* option.

12.11 CREATING MULTIPLE COLUMNS

MS-Word provides us the facility to create newspaper-style columns-such as those that appear in newsletters and brochures to format our text with multiple columns. We can assign multiple columns to the entire document or to only a selected part of our document. When we want to set multiple columns, we have to:

- Select the text we want to convert to multiple columns.
- Select ***Columns*** option from the ***Format*** menu.The ***Columns dialog box*** will appear as shown in Fig.12.19.

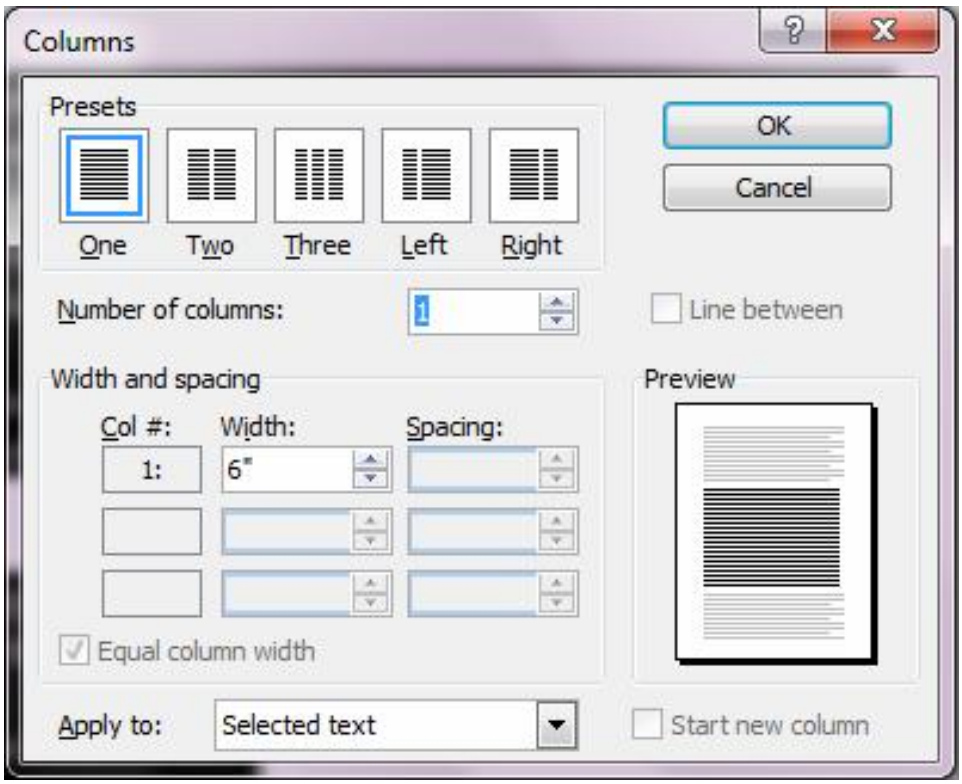


Figure 12.19 : Columns dialog box to set up multiple columns

- In the ***Preset area***, click the column format we want and then enter the number of columns we want to produce.
- In the ***Width and Spacing area***, adjust the column width and spacing between columns or accept Word's default. Generally, the default measurements work well. As we adjust the columns, Word updates the ***Preview*** area to give us an idea of the final result.
- If we want a line between the columns, select the option ***Line between***.

When we click ***OK*** button, Word formats our selected text into multiple columns.

Figure 12.20 shows a document with three columns and a single column at the top of the title area. Generally, we should type our document's text before breaking into multiple columns.

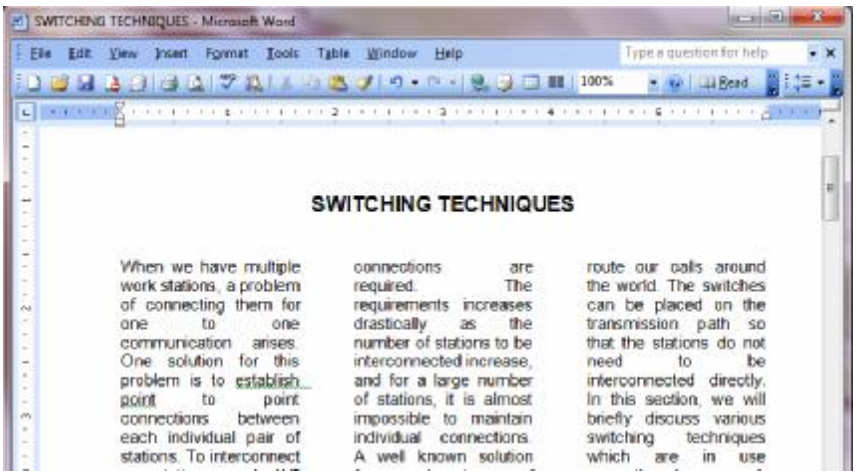


Figure 12.20: Text document showing 3 columns

Multiple columns option can be used when we want our text to flow from the bottom of one column to the top of another.



CHECK YOUR PROGRESS

3. Multiple Choice :

   (i) The keyboard shortcut for Undo operation is

   (a) Ctrl+U (b) Shift+Z

   (c) Alt +U (d) Ctrl+Z

   (ii) The maximum table size which can be created by the *Insert Table* option of toolbar is

   (a) 35 table (b) 44 table

   (c) 45 table (d) 54 table

4. Write T for True and F for False :

   (i) A table can also be drawn with the *Tables and Borders* option of the Standard toolbars

   (ii) We cannot insert a chart in MS-Word document.

   (iii) We can apply cut and paste feature in case of table also.

   (iv) Contents within a table cell cannot be aligned.

   (v) We can select a table by clicking the plus sign which appears at the upper right corner of the table while we move the mouse over the table.

5. What is the difference between a table and a document formatted with multiple columns?



12.12 LET US SUM UP

- **Word** checks our spelling and grammar as we type. *Spelling errors* display with a *red wavy line* under the word. *Grammatical errors* are displayed with a *green wavy line* under the error.
- We can quickly reverse most commands we execute by using ***Undo*** command
- Using the ***Redo*** command, we can go to the previous state after the use of ***Undo*** command.
- ***Header*** is a special text that appears at the top of the page, which is often used for repeating the title of a document from a page to another page. Page number and pictures can also be entered as header in a document.
- ***Footer*** is often used for the same purpose but at the bottom of a document.
- The ***default tab setting*** for Microsoft Word is .5 inches.
- The margin of a MS-Word document can be changed with the ***Page SetUp*** option.
- ***Print Preview*** enables us to view either a full readable page or an unreadable view of page depending on screen size.
- MS- Word provides us the facility to add pictures and graphics into our document to make the document more attarctive.
- A table in a MS-word document can be created with the ***Insert > Table*** option from the Table menu. While creating a table, we have to specify the size of the table (i.e. the Number of Rows and Number of Columns of the table)
- To delete a table, click any of the cells of the table and then choose the ***Delete > Table*** option from the ***Table*** menu.
- Each block in a table is called a ***cell.***

- After creating a table, additional rows and columns can be inserted at any position in the table.
- The size of a table can be reduced by deleting row(s) or column(s) from the table.
- In a table, the cells can be merged.
- In a table, a particular cell can be split to form new cells.
- Multiple columns work well for newsletters and brochures to keep reader's attention.



12.13 FURTHER READING

- Sanjay S. (2007). Introduction to Information Technology. Vikash Publishing, New Delhi.
- Perry, G. M. (1999). Sams teach yourself microsoft office 2003 in 24 hours. Sams.
- Sanjay S. (2007). MS Office XP for Everyone. Vikash Publishing, New Delhi.



12.14 ANSWERS TO CHECK YOUR PROGRESS

Ans. to Q. No. 1 : (i) AutoCorrect, (ii) half inches, (iii) Spelling, (iv) green

Ans. to Q. No. 2 : (i) F, (ii) T, (iii) T, (iv) T

Ans. to Q. No. 3 : (i) (d) Ctrl+Z, (ii) (c) 45 table

Ans. to Q. No. 4 : (i) T, (ii) F, (iii) T, (iv) F, (v) T

Ans. to Q. No. 5 : Both tables and multicolumn documents have multiple columns. The multicolumn document, however, is useful when we want to create a newspaper-style documnet with flowing columns of text and graphics. Tables have both columns as well as rows, making cells at each row and column intersection for specific data. A multicolumn document might contain a table in

one of its columns. We can use tables when we want side-by-side columns of related information. Multiple columns option can be used when we want our text to frow from the bottom of one column to the top of another.



12.15 MODEL QUESTIONS

Q1. What is the use of the Tab key? How can the Tab key be set?

Q2. Give the steps to turn off the automatic spell check?

Q3. What is Undo and Redo command?

Q4. What is the use of header and footer in a word document? How can header and footer be inserted in a document?

Q5. How can page number be displayed in header and footer in a document?

(a) Create a header and footer in a word document. The text “PC Software” should be included in the header part and the page number should be included in the footer part. The page number should be right aligned.

(b) Change the margin of the document as: Top 1.20", Bottom 0.80", Left 1.20" and Right 2.55".

Q6. Describe the steps to create a new table?

Q7. How can a new row be inserted in a table?

Q8. How can a new column be inserted in a table?

Q9. How can two or more cells be merged to form a new cell in a table?

Q10 How can a cell be split into more than one cell in a table?

Q11. Create a tableof 4 rows and 6 columns

(a) Delete the 2nd row from the table

(b) Delete the 3rd column from the table.

Q12. Write down the steps to color all cells of a table.

Q13. Write down the steps to insert an image which is saved in the computer desktop.

****

UNIT 13 : MICROSOFT EXCEL

UNIT STRUCTURE

13.1 Learning Objectives

13.2 Introduction

13.3 Starting MS Excel

- 13.3.1 Working with Toolbars

13.4 Row, Column and Cell

13.5 Working with Excel

- 13.5.1 Creating a New Workbook
- 13.5.2 Working with Cells and Fonts
- 13.5.3 Merging Cells
- 13.5.4 Inserting and Deleting Rows and Columns

13.6 Saving a Workbook

13.7 Closing a Workbook

13.8 Let Us Sum Up

13.9 Further Reading

13.10 Answers To Check Your Progress

13.11 Model Questions

13.1 LEARNING OBJECTIVES

After going through this unit, you will be able to:

- work with MS Excel
- describe the different parts of toolbar
- understand rows, columns and cells
- perform different operations on cells, rows and columns
- create a new workbook
- save and close a workbook

13.2 INTRODUCTION

While working with large amounts of data we need to order them logically. Such data often need to be organized in a nice tabular format. For

that purpose we need a program that allows us to organize and manipulate huge amounts of data in a nice and easily understandable manner. Such a computer program is often called a Spreadsheet. A spreadsheet is the computer equivalent of a paper ledger sheet. It consists of a grid made from columns and rows. It is an environment that can make number manipulation easy and somewhat painless. Excel is an electronic spreadsheet program that can be used for storing, organizing, making calculations and manipulating data.

In this unit, we will be discussing these features of MS Excel and introduce ourselves to the basic features of Excel that one should understand in order to use and work in the MS Excel environment.

13.3 STARTING MS EXCEL

In order to start using MS Excel 2007, we have to launch it first by selecting it from the **Programs** list.



Figure 13.1 : The Start menu

To do so we follow these steps :

1. Firstly we have to click on the **Start** button  located on the extreme left of the taskbar
2. This opens the **Start** menu of **Figure 13.1**
3. We then select the **Programs** menu, which gives us a list of all the installed programs
4. From among the installed programs we click on Microsoft Excel 2007 which shows the application window of MS Excel 2007 as in **Figure 13.2**.

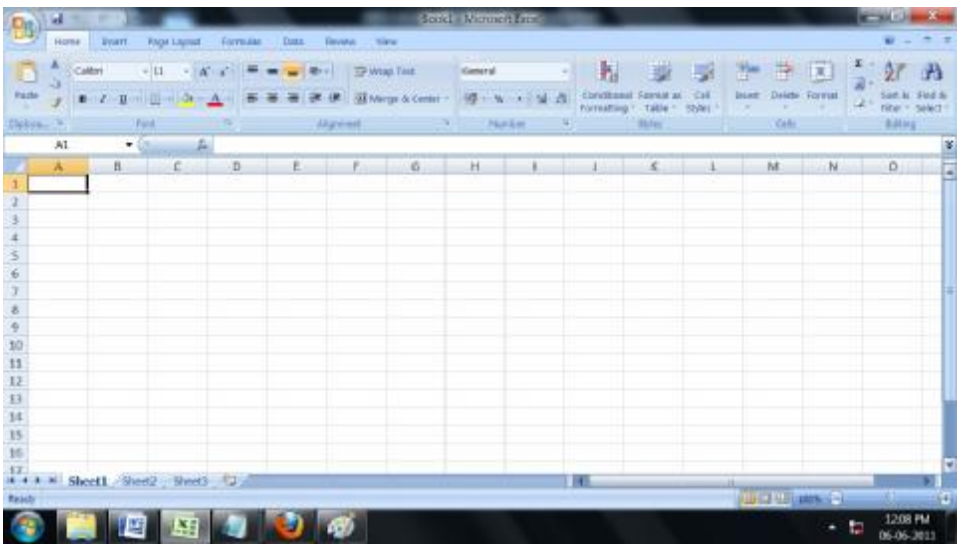


Figure 13.2 : MS Excel 2007 application window

13.3.1 Working with Toolbars

The previous versions of MS Excel had many menus and toolbars where from we could easily select many menu options and tools. But in MS Excel 2007 the menu bar and toolbar have been done away with. Excel 2007 introduces the **Ribbon**, which has replaced the menus and toolbars found in earlier versions of Excel. The Ribbon can quickly be hidden to give you more room to work in your spreadsheet.

Ribbon : The Ribbon is the strip of buttons and icons located above the work area in Excel 2007. Above the Ribbon are a number

of tabs, such as Home, Insert, Page Layout etc. Clicking on a tab displays the options located in this section of the ribbon. For example, when Excel 2007 opens, the options under the Home tab are displayed. These options are grouped according to their function - such as Clipboard (includes cut, copy, and paste options), and Font (includes current font, font size, bold, italic, and underline options).

Clicking on an option on the ribbon may lead to further options contained in a Contextual Menu that relate specifically to the option chosen.

In Excel 2007 we can use the scroll wheel on the mouse to scroll from one tab to another on the ribbon.

- **To Scroll Through Ribbon Tabs :**
  - We place the mouse pointer in the ribbon area at the top of the Excel 2007 screen.
  - Then we turn the scroll wheel on the mouse to scroll through the different ribbon commands.
- **To Hide the Ribbon Commands :**
  - We double click on one of the ribbon tabs - such as Home, Insert, or Page Layout.

    OR
  - Press the **CTRL + F1** keys on the keyboard.

  Only the tabs will be left showing above your spreadsheet.
- **To Show the Ribbon Commands Again :**
  - We click on one of the ribbon tabs - such as Home, Insert, or Page Layout.

    OR
  - Press the CTRL + F1 keys on the keyboard a second time.
- **To always keep the Ribbon minimized:**
  1. First we click the **Customize Quick Access** toolbar.
  2. In the list, we click **Minimize the Ribbon**.
  3. To use the Ribbon while it is minimized, we click the tab that we want to use, and then click the option or command we want to use. For example, with the Ribbon minimized, we

can select text in MS Office Word document, click the Home tab, and then in the Font group, we may click the size of the text needed. After clicking the desired text size, the Ribbon goes back to being minimized.



Figure 13.3 : The Ribbon

- **The Quick Access toolbar :** The **Quick Access Toolbar** in Excel 2007 is found in the upper left corner of the spreadsheet program above the ribbon and next to the Office Button. It is used to store shortcuts to frequently used features in Excel 2007. It is also where we add the shortcuts to Excel features that are not available on the ribbon in Excel 2007.



Figure 13.4 : The Quick Access toolbar

- **Moving the Quick Access toolbar :** The Quick Access toolbar is located above the Ribbon by default. To bring it below the Ribbon we follow these steps:
  1. We click **Customize Quick Access Toolbar**
  2. Then in the list, we click **Show Below the Ribbon**
- **Customizing the Quick Access toolbar :**
  - **Adding a command to the Quick Access Toolbar directly from the Ribbon**

We can add a command to the **Quick Access Toolbar** directly from commands that are displayed on the Ribbon by following these steps:

1. On the Ribbon, we click the appropriate tab or group to display the command that is to be added to the **Quick Access Toolbar**.
2. We right-click the command, and then click **Add to Quick Access Toolbar** on the shortcut menu.
   - **Adding a command to the Quick Access Toolbar by using the Program Name Options dialog box**

The new Ribbon in Office 2007 can take a while to get used to, so the Quick Access Toolbar is a great way to put the most frequently used commands on a single toolbar while getting used to the Ribbon. We can add a command to the **Quick Access Toolbar** from a list of commands in the **Program Name Options** dialog box, where **Program Name** is the name of the program being used, for example, Word Options

1. Firstly we do any one of the following
   - ø Using the MS Office button
     - (i) We click the MS Office Button, and then click **Program Name Options**, where Program Name is the name of the program being used, for example, Excel Options.
     - (ii) We click **Customize**.
   - ø Using the **Quick Access toolbar**
     - (i) We click **Customize Quick Access Toolbar**
     - (ii) In the list we click **More Commands** which opens the dialog box of **Figure 13.5**.
2. In the ***Program Name*** **Options** dialog box, in the **Choose commands from** list, we click the command category that we want.

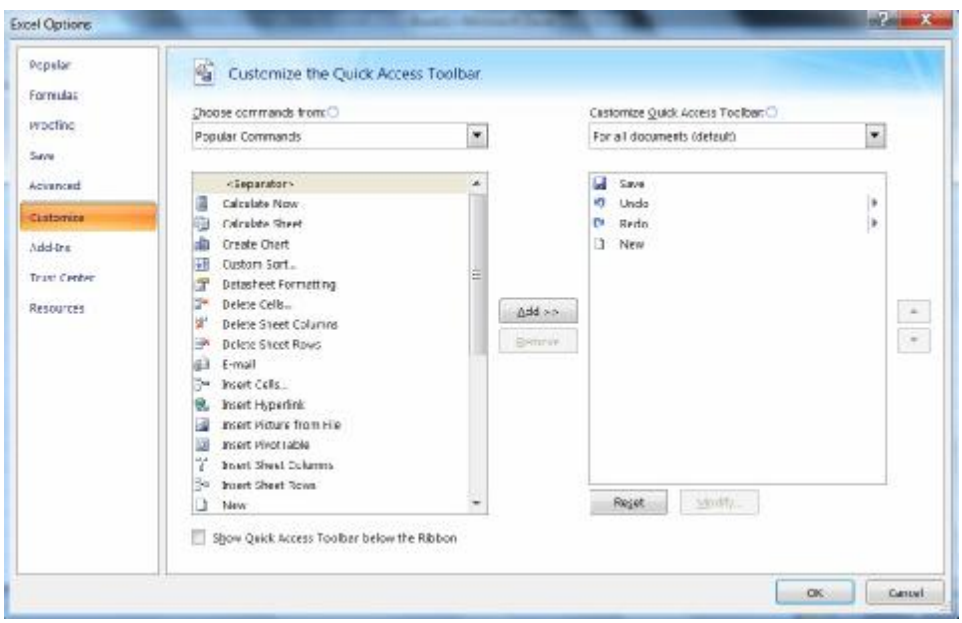


Figure 13.5 : The Excel Options dialog box

3. In the list of commands in the selected category, we click the command to be added to the **Quick Access Toolbar**, and then click **Add**.
4. After adding we click **OK**.

13.4 ROW, COLUMN AND CELL

MS Excel can be used to organize data into rows and columns. When we look at the Excel screen of **Figure 13.2**, we can see a rectangular table or grid of rows and columns. The horizontal rows are identified by numbers (1,2,3 etc) and the vertical columns are identified with letters of the alphabet (A,B,C etc). For columns beyond 26, columns are identified by two or more letters combination such as AA, AB, AC etc

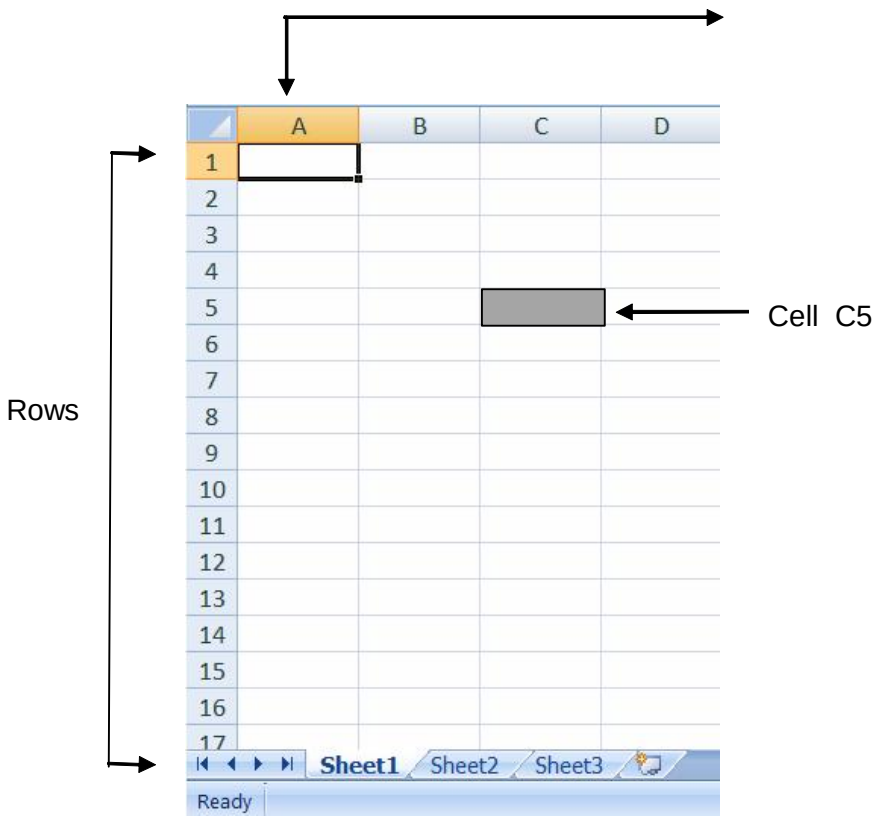
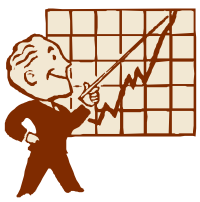


Figure 13.6 : Rows, Columns and Cells in an Excel Worksheet

The intersection point between a column and a row is a small rectangular box known as a **cell**. A cell is the basic unit for storing data in the spreadsheet. Because an Excel spreadsheet contains thousands of

these cells, each is given a **cell reference** or address to identify it. Sometimes referred to as a cell address, a cell reference consists of the column letter and row number that intersect at the location of the cell such as A3, B6, AA345. A cell reference identifies the location of a cell or group of cells in the spreadsheet. When listing a cell reference, the column letter is always listed first.

- Cell references are used in formulas, functions, charts and other Excel commands.
- While references often refer to individual cells such as **A1**, **B38**, or **Z345**, they can also refer to a group or range of cells.
- Ranges are identified by the cell references of the cells in the upper left and lower right corners of the range.
- The two cell references used for a range are separated by a colon (:) which tells Excel to include all the cells between these start and end points.
- An example of a range of adjacent cells would be **B5:D10**.



CHECK YOUR PROGRESS

1. Fill in the blanks.
   (i) A _____ is the computer equivalent of a paper ledger sheet.
   (ii) In Excel 2007 the _____ has replaced the menus and toolbars found in earlier versions of Excel.
   (iii) The _____ is used to store shortcuts to frequently used features in Excel 2007.
   (iv) In Excel 2007 we can use the _____ on the mouse to _____ from one tab to another on the ribbon.
2. State whether the following statements are True or False.
   (i) The Ribbon can quickly be hidden to get more room to work in our spreadsheet.

(ii) The Ribbon is the strip of buttons and icons located above the work area in Excel 2007.

(iii) Horizontal rows are identified by letters of the alphabet and the vertical columns are identified by numbers.

(iv) The intersection point between a column and a row is a small rectangular box known as a cell.

(v) A cell reference consists of the column number and row letter that intersect at the cell's location.

13.5 WORKING WITH EXCEL

Before working with Excel and using its various features and functions that help us to create Worksheets which enable us to manipulate data in rows and columns, it is important to understand some basic ways of working in the excel environment which would enable us to use later the more advanced features and techniques present in Excel 2007.

- **Navigating in Excel :** Any application program that has windows includes the navigation bars that allow us to have a full look into a worksheet, as shown in **Figure 13.7**.

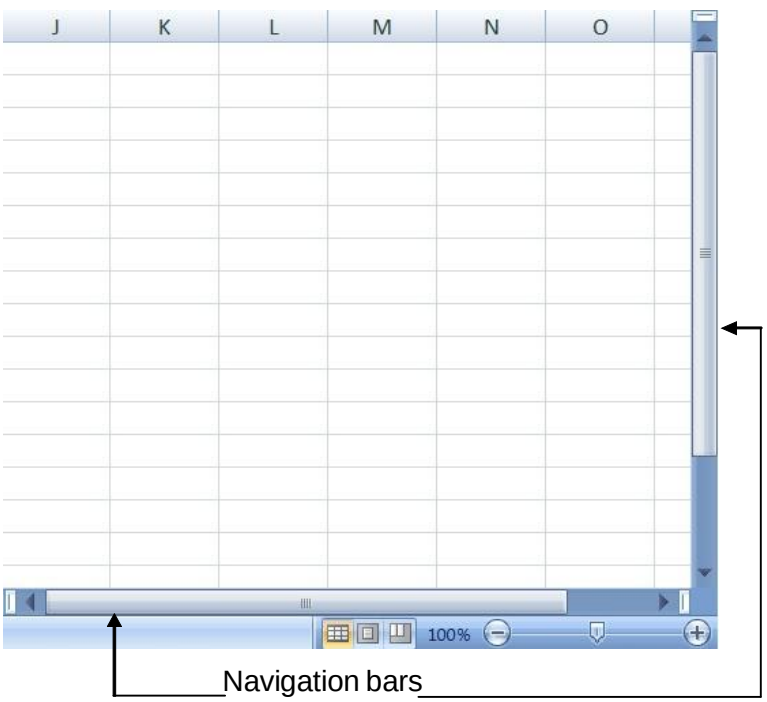


Figure 13.7 : Navigating the Worksheet

Using these two navigation bars we can browse through the entire worksheet.

- **Selecting sheets :** In order to work with multiple worksheets in Excel, we need to select them numerous times. If we have multiple worksheets in the Excel document, they can be seen as shown in **Figure 13.8**

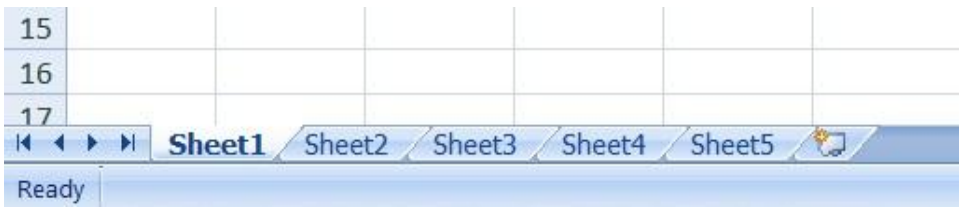


Figure 13.8 : Multiple Sheets in Excel

  - ø To select a single sheet while working with Excel we click the tabs of worksheets (or sheets) at the bottom of the window.
  - ø To select two or more adjacent sheets we click the tab for the first sheet, and then holding down **SHIFT** we click the tab for the last sheet that we want to select.
  - ø To select two or more nonadjacent sheets we click the tab for the first sheet, and holding down **CTRL** we click the tabs of the other sheets that we want to select.
  - ø To select all sheets in a workbook we right-click a sheet tab, and then click **Select All Sheets** on the shortcut menu.
- **Entering data into cells :**

  To enter data into Worksheet cells we do the following :

  1. Firstly we select the cell where data is to be inserted
  2. Then we type the text into that cell
  3. Finally we press **Enter** or **Tab**
- **Editing data in cells :**

  To edit data in a Worksheet cell we do the following:

  1. To place the contents of a cell in editing mode
     - ø We double-click the cell whose data is to be edited.

       OR

- We click the cell whose data is to be edited, and then click anywhere in the formula bar.

This positions the insertion point in the cell or formula bar.

2. **To edit the cell contents**
   - To delete characters, we click where we want to delete them, and then press BACKSPACE, or select them, and then press DELETE.

     OR
   - To insert characters, we click where we want to insert them, and then type the new characters.

     OR
   - To replace specific characters, we select them, and then type the new characters.

     OR
   - To turn on Overtype mode so that existing characters are replaced by new characters while typing, we press **INSERT**.

     OR
   - To start a new line of text at a specific point in a cell, we click where we want to break the line, and then press **ALT+ENTER**.

- **Deleting data from cells :**

  To delete data from a Worksheet cell we do the following:

1. Firstly, we select the cell whose data is to be deleted
2. Then we do one of the following
   - Press the **DELETE** key
   - Press the **BACKSPACE** key
   - Right-click the cell and select **Clear Contents** from the drop-down menu
   - Right-click the cell and select **Delete**, or on the **Home** tab, in the **Cells** group, we select **Delete** and click **Delete Cells**, which opens up the dialog box in **Figure 13.9**.

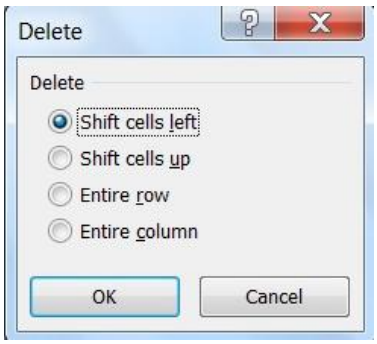


Figure 13.9: Delete options

3. Now we select any of the two options **Shift cells left** or **Shift cells up**.

13.5.1 Creating a New Workbook

A MS Excel workbook is a file containing one or more worksheets that we use to organize several kinds of related information.

- **To create a new workbook, we may**
  - Open a blank workbook
  - Base a new workbook on an existing workbook
  - Base a new workbook on a template
- **To open a new blank workbook we follow these steps:**
  1. We click the **Microsoft Office Button** and then click **New**.

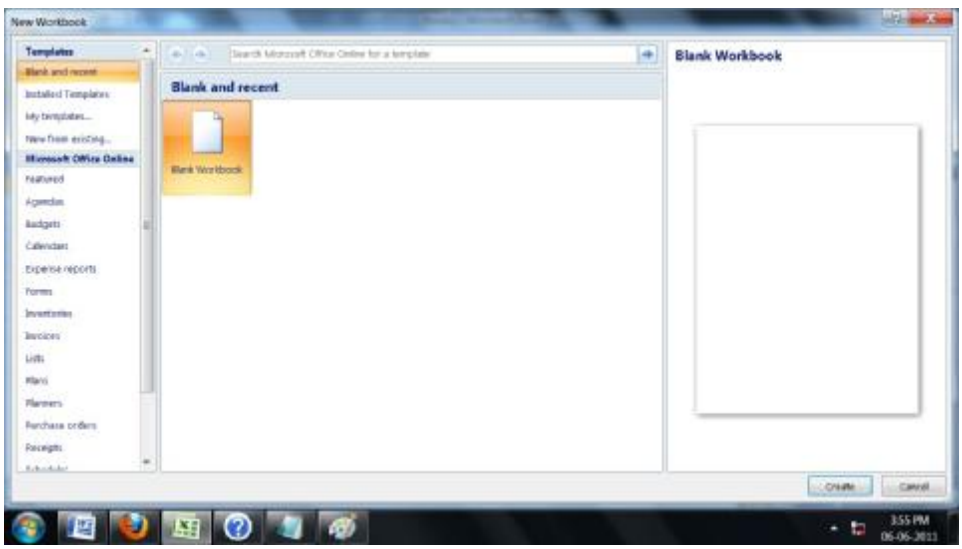


Figure 13.10 : The New Workbook dialogue box

OR

Press **Ctrl + N**

2. This opens the **New Workbook** dialog box as in **Figure 13.10**
3. Under **Templates**, we select **Blank and recent**, and then under Blank and recent in the right pane, we click **Blank Workbook**.

- **To base a new workbook on an existing workbook we follow these steps:**

1. We click the **Microsoft Office Button** and then click **New** or press **Ctrl + N** which opens the dialogue box of **Figure 13.10**
2. Under **Templates**, we click **New from existing** which opens up the **New from Existing Workbook** dialog box of **Figure 13.11**
3. In the **New from Existing Workbook** dialog box, we browse to the drive, folder, or Internet location that contains the workbook that we want to open.
4. We click the workbook, and then click **Create New**.

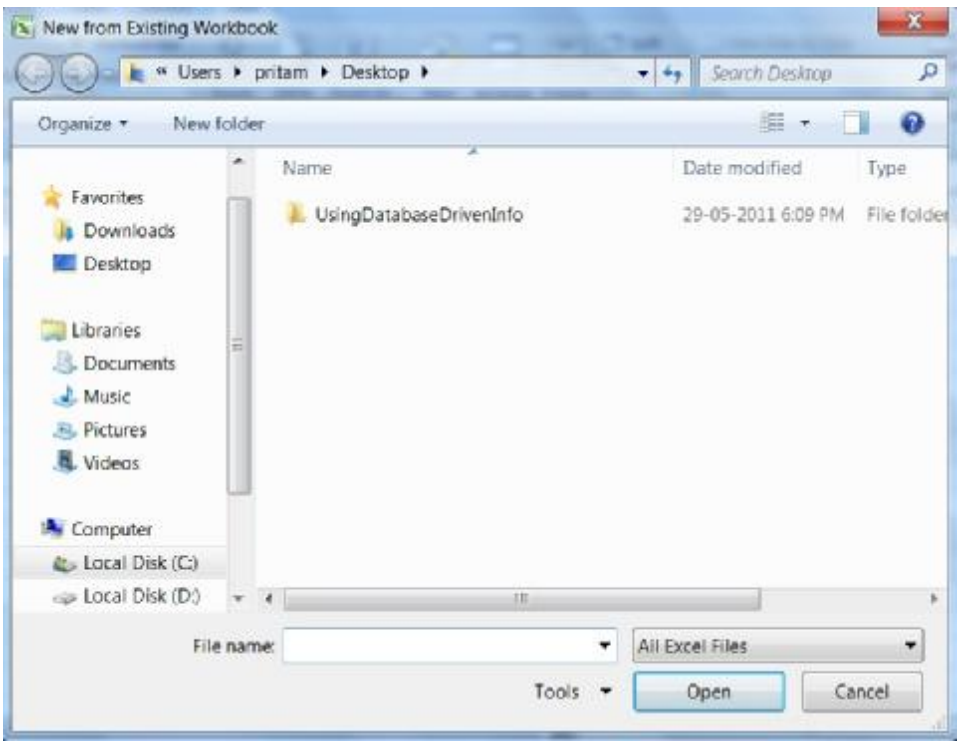


Figure 13.11 : The New from Existing Workbook dialog box

- **To base a new workbook on an existing template we follow these steps:**
  1. We click the **Microsoft Office Button** and then click **New** or press **Ctrl + N** which opens the dialogue box of **Figure 13.10**.
  2. Under **Templates**, we click **Installed Templates** which opens the dialog box of **Figure 13.12** or **My templates** which opens the dialog box of **Figure 13.13**.
  3. Finally we do one of the following
     - To use an installed template, under **Installed Templates**, we click the template we want, and then click **Create**.
     - To use our own template, on the **My Templates** tab, we double-click the template that we want.

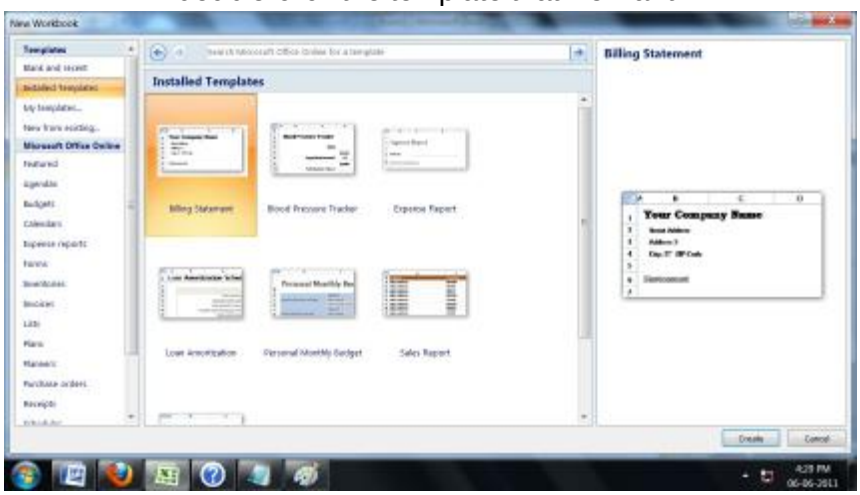


Figure 13.12 : The Installed Templates

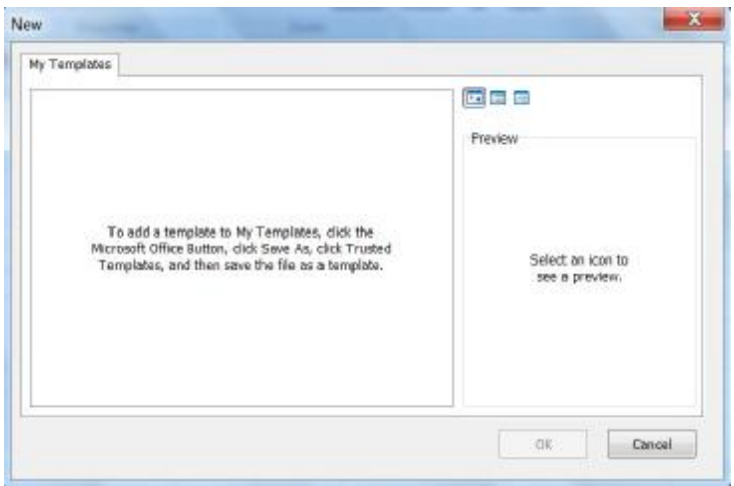


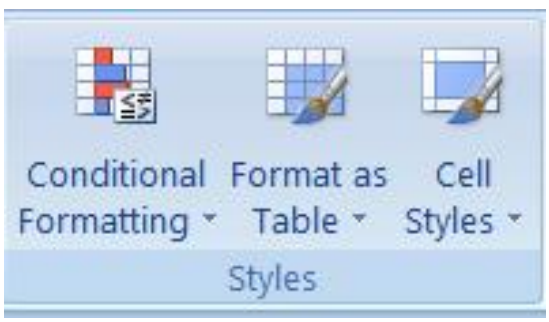
Figure 13.13 : The New dialog box

13.5.2 Working with Cells and Fonts

When we are working in Excel we are actually dealing with the data that we insert into the cells. We have already seen how we can perform operations on cell data like insertion, edition and deletion. In this section we will look into some other features of working with cells.

When we work with cells we can apply different formatting techniques to them. Also we can work with Fonts in Excel in a similar manner. Some of them are discussed below.

- **Working with Styles :** A cell style is a defined set of formatting characteristics, such as fonts and font sizes, number formats, cell borders, and cell shading. To prevent anyone from making changes to specific cells, we can also use a cell style that locks cells. To apply several formats in one step, and to ensure that cells have consistent formatting, we can use a cell style.
  - **To apply a cell style, we follow these steps :**
    1. Firstly we select the cells we want to format
    2. On the **Home** tab, in the **Styles** group, we click **Cell Styles**



    3. Lastly we select the cell style that we want to apply
  - **To create a custom cell style we follow these steps :**
    1. Firstly on the **Home** tab, in the **Styles** group, we click **Cell Styles**.
    2. Then we click on **New Cell Style** which opens the dialog box of **Figure 13.14**.

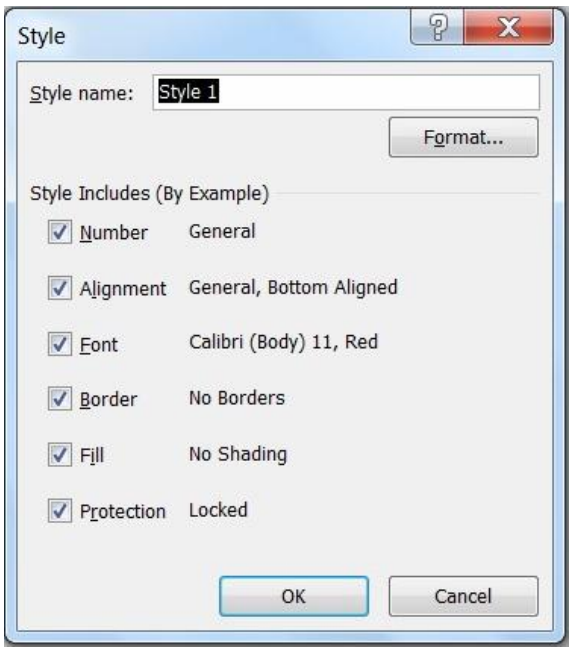


Figure 13.14 : The New Cell Style dialog box

3. In the **Style name** box, we type an appropriate name for the new cell style.
4. Then we click **Format to open the Format Cells dialog box of Figure 13.15**.

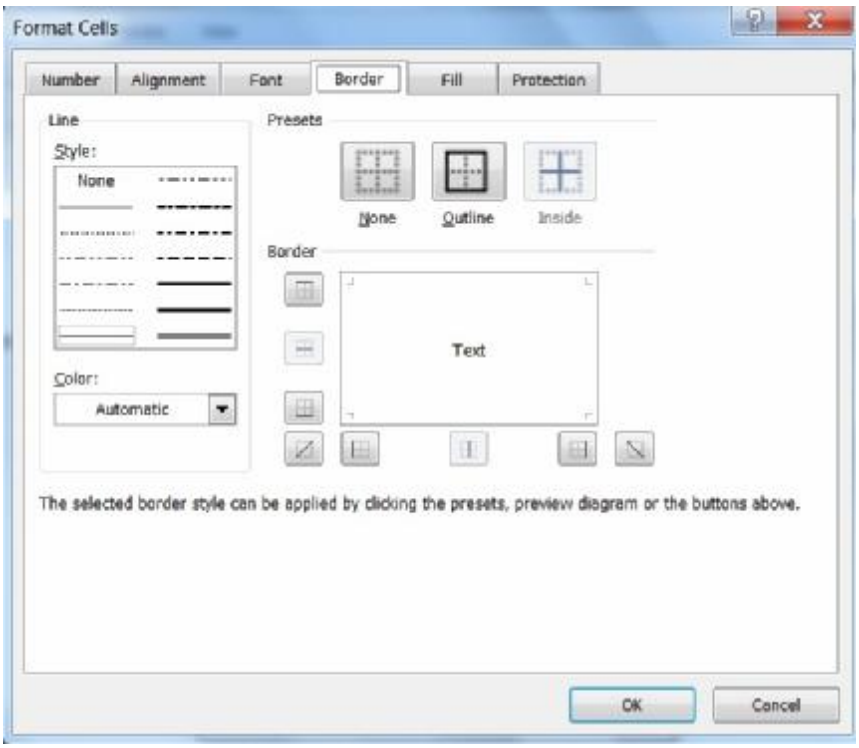


Figure 13.15 : The Format Cells dialog box

5. On the various tabs in the **Format Cells** dialog box, we select the formatting and click **OK**.
6. In the **Style** dialog box, under Style Includes, we clear the check boxes for any formatting that we do not want to include in the cell style.

ø **To fill cells with solid colors we follow these steps:**

1. Firstly we select the cells that we want to apply shading to or remove shading from
2. On the **Home** tab, in the **Font** group, we do one of the following:
   - To fill cells with a solid color, we click the arrow next to **Fill Color** in the **Font** group on the **Home** tab, and then click the color we want.
   - To apply the most recently selected color, we can click **Fill Color**.



ø **To fill cells with patterns, we follow these steps :**

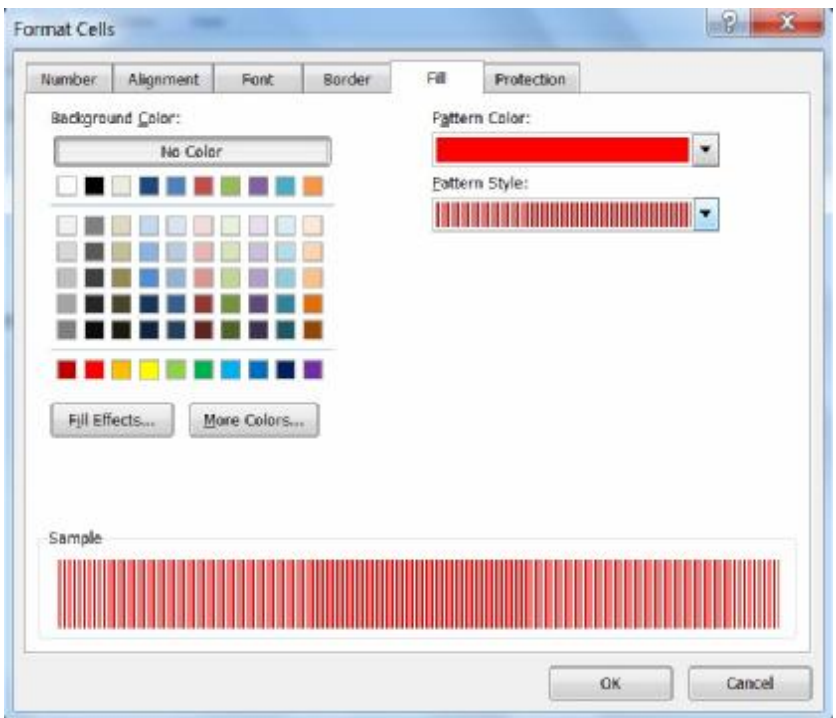


Figure 13.16 : The Format Cells dialog box

1. We select the cells to be fill with a pattern.
2. On the Home tab, we click the **Dialog Box Launcher** next to **Font**, and then click the **Fill** tab as shown in **Figure 13.16** below.
3. Under **Background Color**, we click the background color that we want to use.

ø **To apply cell borders we follow these steps :**

1. Firstly we select the cell/range of cells that we want to add a border to, to change the border style on, or to remove a border from
2. On the **Home** tab, in the **Font** group, we click the arrow next to **Border**s, and then click a border style.

- **Working with Fonts :** We can not only change the font or font size for selected cells or ranges in a worksheet, but also change the default font and font size that are used in new workbooks.

ø **To change the font or font size we follow these steps :**

1. Select the cell, range of cells, text, or characters that you want to format.
2. On the **Home** tab, in the **Font** group, we do the following:
   - To change the font, we click the needed font in the Font box Arial

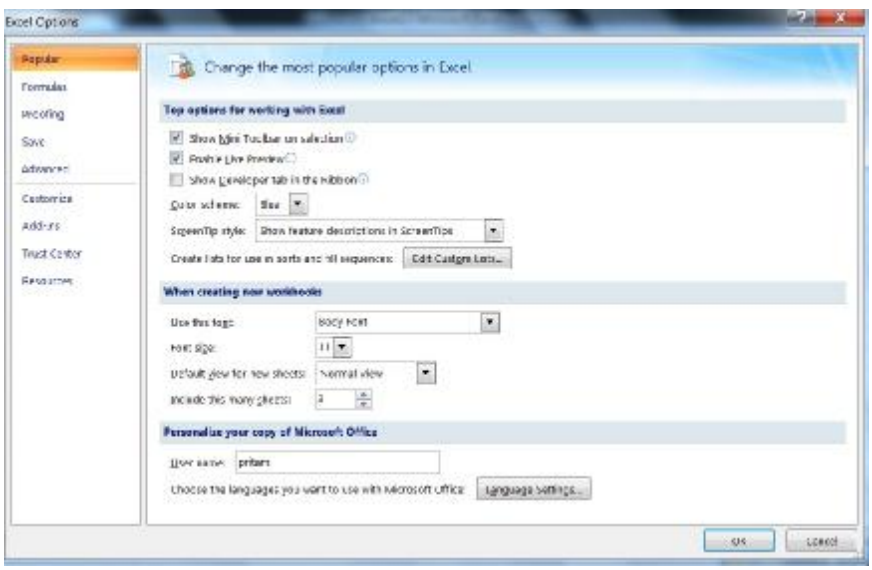
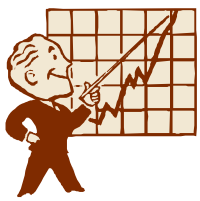


Figure 13.17 : The Excel Options dialog box

- To change the font size, we click the font size that we want in the **Font Size** box 11 or click **Increase Font Size** or **Decrease Font Size** until the size you want is displayed in the Font Size box.

ø **To change the default font or font size for new workbooks we follow these steps :**

1. We click the MS Office Button and then click **Excel Options** which opens the dialog box of **Figure 13.17**
2. In the **Popular** category, under **When creating new workbooks**, we click a font in the **Use this font** box, and then specify a font size in the **Font Size** box.



CHECK YOUR PROGRESS

3. State whether the following statements are True or False :
   (i) To select two or more adjacent sheets we click the tab for the first sheet, and then holding down SHIFT we click the tab for the last sheet that we want to select
   (ii) We cannot base a new workbook on an existing workbook.
   (iii) Base a new workbook on a template.
   (iv) We cannot use a cell style that locks cells.
   (v) We can fill cells with patterns.

13.5.3 Merging Cells

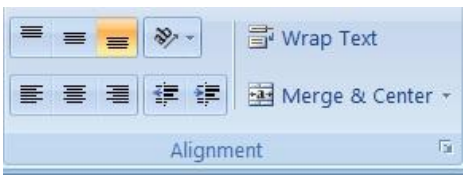
The merge formatting feature in Excel 2007 is a handy option to quickly format titles and headings in Excel 2007 spreadsheets. It allows us to align titles evenly above our data by merging a number of cells into one and then aligning the title in this one cell. In previous versions of Excel problems often occurred when we tried to make formatting changes to an area of the worksheet where the Merge

feature had been applied. Adding new columns to the merged area was particularly difficult and it was necessary to un-merge the cells, add the new columns, and then reapply Merge. In Excel 2007 this problem has been corrected. Adding new columns to the merged area is now quite easily done.

When we merge two or more adjacent horizontal or vertical cells, the cells become one large cell that is displayed across multiple columns or rows. The contents of one of the cells appear in the center of the merged cell. A merged cell is a single cell that is created by combining two or more selected cells. The cell reference for a merged cell is the upper-left cell in the original selected range.

- **To merge adjacent cells we do the following :**

1. Firstly we need to select two or more adjacent cells that we want to merge
2. On the **Home** tab, in the **Alignment** group, we click **Merge and Center**.

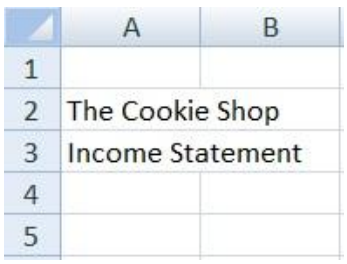


3. The cells will be merged in a row or column, and the cell contents will be centered in the merged cell. To merge cells without centering, we click the arrow next to **Merge and Center**, and then click **Merge Across** or **Merge Cells**
4. (Optional) We may change the alignment in the merged cell, if desired. For example, we may click the **Align Text Right** button in the **Alignment** group in case we want the text in the merged cell to be right-aligned instead of centered.

Example using the Merge and Center cells feature.

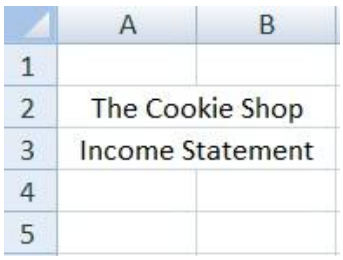
1. Firstly, we click on cell A2.
2. Then type in a title such as: **The Cookie Shop**.
3. Click on cell A3.
4. Then type in a subtitle such as: **Income Statement**.

5. We drag select cells A2 to C2
6. Then click on the **Home** tab.
7. Click on the **Merge & Center** option on the ribbon.
8. The title should be centered across columns A to C.
9. Drag select cells A3 to C3
10. Click on the Merge & Center option on the Ribbon.
11. The subtitle should be centered across columns A to C.



	A	B
1		
2	The Cookie Shop	
3	Income Statement	
4		
5		

Before applying Merge



	A	B
1		
2	The Cookie Shop	
3	Income Statement	
4		
5		

After applying Merge and Center

If we try to Merge & Center more than one row at a time only the title in the top row will be retained by Excel. All other titles will be discarded.

Splitting a merged cell :

We may also unmerge or split a merged cell into its original, individual cells. We can only split a cell that has previously been merged.

- **To split a merged cell we follow these steps :**
  1. Firstly we select the merged cell that we want to unmerge
  2. The **Merge & Center** button appears selected in the **Alignment** group.
  3. Finally we click the **Merge & Center** button in the **Alignment** group.

The merged cell reverts to a cell range again, and any text contained in the merged cell displays in the upper-left cell of the range.

13.5.4 Inserting and Deleting Rows and Columns

In an Excel workbook we can insert rows above a row and columns to the left of a column. We can also delete rows and columns in a worksheet**.**

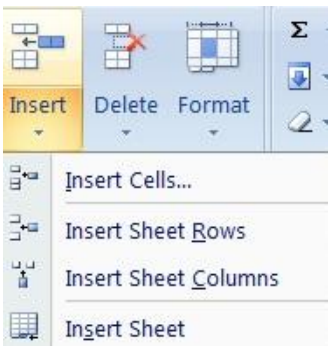
- **To insert rows on a worksheet we follow these steps :**
  1. Firstly, if we want to insert a single row, we select the row or a cell in the row above which we want to insert the new row.

     OR

     If we want to insert multiple rows, we select the rows above which we want to insert rows. We select the same number of rows as we want to insert.

     OR

     If we want to insert nonadjacent rows, we hold down **Ctrl** while selecting the nonadjacent rows.
  2. On the **Home** tab, in the **Cells** group, we click the arrow next to **Insert**, and then click **Insert Sheet Rows**.



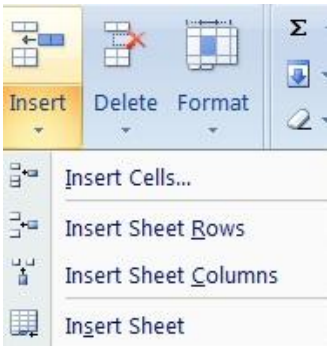
- **To insert columns on a worksheet we follow these steps :**
  1. Firstly, if we want to insert a single column we have to select the column or a cell in the column immediately to the right of where we want to insert the new column.

     OR

     If we want to insert multiple columns we have to select the columns immediately to the right of where we want to insert columns. We similarly select the same number of columns as we want to insert.

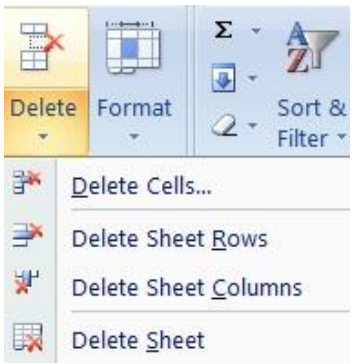
     OR

     If we want to insert nonadjacent columns, we have to hold down the **Ctrl** key while selecting nonadjacent columns
  2. On the **Home** tab, in the **Cells** group, we click the arrow next to **Insert**, and then click **Insert Sheet Columns**.



- **To delete rows or columns from a worksheet we follow these steps :**

  1. Firstly, we select the rows or columns to be deleted.
  2. On the **Home** tab, in the **Cells** group, we do one of the following:
     - ø To delete selected rows, we click the arrow next to **Delete**, and then click **Delete Sheet Rows**.
     - ø To delete selected columns, we click the arrow next to **Delete**, and then click **Delete Sheet Columns**.



When we delete rows or columns, the other rows or columns automatically shift up or to the left.

13.6 SAVING A WORKBOOK

When we save a file, we can save it on the hard disk drive, a network location, disk, CD, the desktop, or another storage location. We need to identify the target location in the **Save in list**. Otherwise, the saving process is the same, no matter what location we choose.

- **To Save an Excel file we do the following :**
  1. Firstly we click the **Microsoft Office button**
  2. From the drop down menu we click **Save**.

     OR

     We press **Ctrl + S** on the keyboard

*(If we are saving the file for the first time, the **Save As** dialog box opens and we are asked to give a file name)*

- **To save a copy of an Excel file we do the following :**
  1. Firstly we click the **Microsoft Office button** and choose **Save As**.
  2. Click the folder or drive to which we want to save.
  3. In the **File name** box, we enter a new name for the file.
  4. Click **Save**.
- **To save an Excel file to another format we do the following:**
  1. Firstly we click the **Microsoft Office Button** and then click **Save As**.
  2. In the **File name** box, we enter a new name for the file.
  3. In the **Save as type** list, we click the file format that we want to save the file in
  4. Click **Save**.

13.7 CLOSING A WORKBOOK

After we have finished working with our Excel workbook and saved it on the hard drive, we should close the workbook. The ways that are involved in closing a Workbook are discussed below.

- **To close a Workbook without quitting MS Excel 2007 we do the following :**
  1. We click the MS Office button and click **Close**

     OR

     Click the **Close window** button just above the worksheet
  2. If the Worksheet has not been saved, the dialog of **Figure 13.18** is displayed asking us if we would like to Save the Workbook.

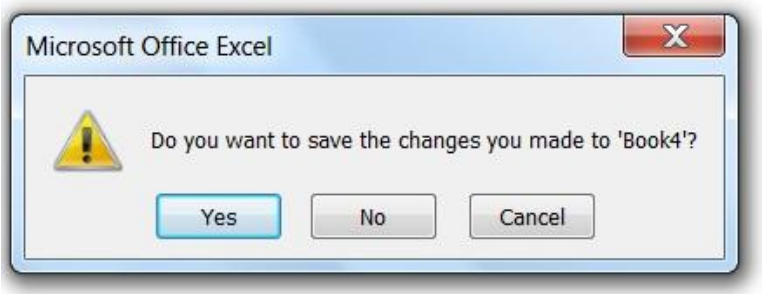
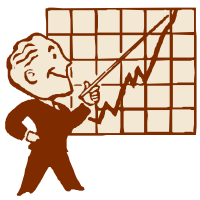


Figure 13.18 : Saving a Workbook

2. If we select **Yes**, another dialog box is provided which allows us to Close the workbook by saving it.

- **To close a Workbook by quitting MS Excel we do the following:**

1. Firstly we click the **Close** button  that closes MS Excel
2. If the Worksheet has not been saved, the dialog of **Figure 13.18** is displayed asking us if we would like to Save the Workbook
3. If we select **Yes**, another dialog box is provided which allows us to Close the workbook by saving it.



CHECK YOUR PROGRESS

4. Fill in the blanks:
   (i) The _____ formatting feature is a handy option to quickly format titles and headings.
   (ii) A _____ is a single cell that is created by combining two or more selected cells.
   (iii) If we try to _____ more than one row at a time only the title in the top row will be retained by Excel.
   (iv) We can only _____ a cell that has previously been _____.
   (v) If we want to insert nonadjacent rows, we _____ the nonadjacent rows.



13.8 LET US SUM UP

- Excel is an ***electronic spreadsheet program*** that can be used for storing, organizing and manipulating data.
- MS Excel can be used to organize data into ***rows and columns***.
- For columns beyond 26, columns are identified by ***two or more letters combination*** such as AA, AB, AC etc
- A ***cell*** is the basic unit for storing data in the spreadsheet.
- To select a single sheet while working with Excel we click the ***tabs of worksheets*** (or sheets) at the bottom of the window.
- When we work with cells we can apply different ***formatting techniques*** to them.
- A ***cell style*** is a defined set of formatting characteristics.
- When we ***merge*** two or more adjacent horizontal or vertical cells, the cells become one large cell that is displayed across multiple columns or rows.
- We can also ***unmerge or split*** a merged cell into its original, individual cell.
- In an Excel workbook we can ***insert rows above a row and columns to the left of a column***.



13.9 FURTHER READING

- Alexander, M. (2011). Excel 2007 Dashboards and Reports for Dummies. John Wiley & Sons.
- Walkenbach, J., Tyson, H., Wempen, F., Prague, C. N., Groh, M. R., Aitken, P. G., ... & Bucki, L. A. (2007). Office 2007 bible (Vol. 446). John Wiley & Sons. Chicago

13.10 ANSWERS TO CHECK YOUR PROGRESS

Ans. to Q. No. 1 : (i) spreadsheet, (ii) ribbon, (iii) quick access toolbar, (iv) scroll wheel, scroll

Ans. to Q. No. 2 : (i) true, (ii) true, (iii) false, (iv) true, (v) false

Ans. to Q. No. 3 : (i) true, (ii) false, (iii) false, (iv) false, (v) true

Ans. to Q. No. 4 : (i) Merge, (ii) merged cell, (iii) Merge and Center, (iv) Split, merged, (v) Ctrl + click



13.11 MODEL QUESTIONS

Q1. What is purpose of Excel using? What are its applications?

Q2. How do we start working with MS Excel 2007?

Q3. Describe the Ribbon in Excel 2007.

Q4. Define rows, columns and cells in Excel?

Q5. What are the steps involved in creating a new worksheet in Excel 2007?

Q6. How can we merge cells? Give an example.

Q7. How do we spit a merged cell? Explain

Q8. Explain the process of inserting rows and columns in Excel.

Q9. Explain the process of deleting rows and columns in Excel.

Q10. How do we close an Excel worksheet?

****

UNIT 14 : FUNCTIONS IN EXCEL

UNIT STRUCTURE

14.1 Learning Objectives

14.2 Introduction

14.3 Different Operators Used in Excel

14.4 Working with Formula and Functions

14.5 Sorting Data

14.6 Working with Charts

14.7 Let Us Sum Up

14.8 Further Reading

14.9 Answers To Check Your Progress

14.10 Model Questions

14.1 LEARNING OBJECTIVES

After going through this unit, you will be able to:

- describe the different operators used in Excel
- describe the various calculation techniques
- use functions in Excel to work with data
- use sorting to sort data differently
- describe and use different types of charts
- use different charts to display data trends

14.2 INTRODUCTION

In the previous unit, we were introduced to MS Excel 2007, where we got to know the purpose of Excel and its use. We were introduced to the terms like rows, columns, cells etc. We have also leant how to add and delete rows and columns. The basics of an Excel workbook were also introduced in the previous unit.

One important fact while using Excel is data manipulation. Data manipulation in Excel involves inserting various types of data in cells and

performing several different operations on them. Excel supports numerous functions and formulas that we can implement in order to get the desired result. These involve calculation of data, both simple and complex, using those functions and formulas.

Another concept involved with data manipulation is that of charts. Excel 2007 provides several different types of charts, each suited for a particular type of data-set. These charts give a graphical representation of data in worksheets, showing the relative comparison among data. In this unit we will be discussing at length these operations performed on worksheet data.

14.3 DIFFERENT OPERATORS USED IN EXCEL

Operators specify the type of calculation that we want to perform on the elements of a formula. There is a default order in which calculations occur, but we can change this order by using parentheses.

- **Types of operators :** There are four different types of calculation operators: arithmetic, comparison, text concatenation, and reference.
  - **Arithmetic operators :** To perform basic mathematical operations such as addition, subtraction, or multiplication; combine numbers; and produce numeric results, we use the following arithmetic operators.

OPERATOR	MEANING	EXAMPLE
+	Addition	4+4
–	Subtraction, Negation	4-2, -3
*	Multiplication	4*2
/	Division	3/3
%	Percent	30%
^	Exponentiation	2^3

  - **Comparison operators :** We can compare two values with the following operators. When two values are compared by

using these operators, the result is a logical value either TRUE or FALSE.

OPERATOR	MEANING	EXAMPLE
=	Equal to	A2=B2
>	Greater than	A3>B3
<	Less than	B3<A3
>=	Greater than or equal to	A4>=B4
<=	Less than or equal to	B4<=A4
<>	Not equal to	A2<>B4

- **Text concatenation operator :** We use the ampersand (&) to join, or concatenate, one or more text strings to produce a single piece of text.

OPERATOR	MEANING	EXAMPLE
&	Concatenates, two values to produce one continuous text value	(“Independence”&”day”)

- **Reference operators :** We can combine ranges of cells for calculations with the following operators.

OPERATOR	MEANING	EXAMPLE
:	Range operator, which produces one reference to all the cells between two references, including the two references	B5:B15
,	Union operator, which combines multiple references into one reference	SUM(B5:B15,D5:D15)
(Space)	Intersection operator, which produces on reference to cells common to the two references	B7:d7 c6:c8

- **The order in which Excel performs operations in formulas :** In some cases, the order in which calculation is performed can affect the return value of the formula, so it is important to understand how the order is determined and how we can change the order to obtain desired results.
  - **Calculation order :** Formulas calculate values in a specific order. A formula in Excel always begins with an equal sign (=), which tells Excel that the succeeding characters constitute a formula. Following the equal sign are the elements to be calculated (the operands), which are separated by calculation operators. Excel calculates the formula from left to right, according to a specific order for each operator in the formula.
  - **Operator precedence :** When we combine several operators in a single formula, Excel performs the operations in the order shown in the following table. If a formula contains operators with the same precedence — for example, if a formula contains both a multiplication and division operator — Excel evaluates the operators from left to right.

OPERATOR	DESCRIPTION
, : (space)	Reference operators
–	Negation
%	Percent
^	Exponentiation
* And /	Multiplication and division
+ And –	Addition and subtraction
&	Concatenation
= < >	

>	Comparison
=	
<	
=	
<	
>	

- **Use of parentheses :** In order to change the order in which an expression is evaluated, we enclose in parentheses the part of the formula to be calculated first. For example, the following formula produces 11 because Excel calculates multiplication before addition. The formula multiplies 2 by 3 and then adds 5 to the result.

  = 5+2*3

  In contrast, if we use parentheses to change the syntax, Excel adds 5 and 2 together and then multiplies the result by 3 to produce 21.

  = (5+2)*3

  In the example below, the parentheses around the first part of the formula forces Excel to calculate B4+25 first and then divide the result by the sum of the values in cells D5, E5, and F5.

  =(B4+25)/SUM(D5:F5)

14.4 WORKING WITH FORMULA AND FUNCTIONS

Calculations in a worksheet are performed using formulas. Formulas are one of the most useful features of spreadsheets like Excel. Formulas can be as simple as adding two numbers or can be complex calculations needed for high end business projections.

Excel 2007 formulas allow us to perform calculations on data entered into the spreadsheet.

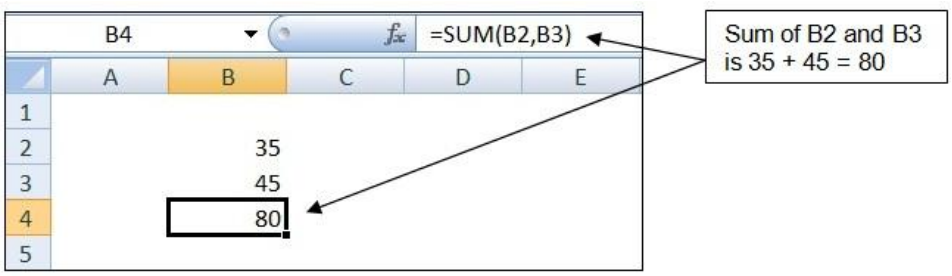
A formula is a set of mathematical instructions that can be used in Excel to perform calculations. Formals are started in the formula box with an = sign.

There are many elements to an Excel formula.

- References – The cell/range of cells use in the calculation.
- Operators – Symbols (+, -, *, /, etc.) specifying the calculation to be performed
- Constants – Numbers or text values that do not change
- Functions – Predefined formulas in Excel

- **To create a basic formula in Excel :**

1. We select the cell for the formula
2. Then type = (the equal sign) and the formula
3. Finally we click **Enter**



Example : The example creates a basic formula. The steps used to create this basic formula are the same ones to follow when writing more complex formulas. The formula will add the numbers 3 + 2. The final formula will look like this:

= E1 + E2

1. Type a 3 in cell E1 and press the **ENTER** key.
2. Type a 2 in cell E2 and press the **ENTER** key.

When creating formulas in MS Excel, we always start by typing the equal sign. We type it in the cell where we want the answer to appear.

3. Click on cell E3 (E3 displays the result).
4. Type the equal sign (=) in cell E3.

Following the equal sign, we add in the cell references of the cells containing our data. By using the cell references of our data in the formula, the formula will automatically update the answer if the data in cells E1 and E2 changes. The best way of adding cell references is by using the Excel feature called **pointing**. Pointing allows us to click on the cell containing the data to add its cell reference to the formula.

5. Click on cell E1 to enter the cell reference into the formula.
6. Type a plus (+) sign.
7. Click on cell E2 to enter the cell reference into the formula.
8. Press the **ENTER** key.
9. The answer 5 should appear in cell E3.
10. Click on cell E3. The formula = E1 + E2 is shown in the formula bar above the worksheet.

- **Functions :** Excel functions are mathematical expressions which are already available in Excel, and are categorized by their functionality. If we know the category of the function we are looking for, we can click that category. Excel uses functions to dynamically calculate results from data in our worksheets. There are several in-built functions in Excel 2007 that can be used to perform several operations on the data in a worksheet. Before using those functions, let us go through a list of functions that are provided by Excel 2007.
  - **Excel Date and Time Functions :** Dates are very important in spreadsheets. Not only is it important to add the current date to a spreadsheet when it is created, but much of the data stored in a spreadsheet is date related - such as the date of purchases or expenditures, the length of term of investments, and the date of scientific observations.

Function	Description
DATE	Returns the serial number of a particular date
DAY	Converts a serial number to a day of the month
HOUR	Converts a serial number to an hour
MINUTE	Converts a serial number to a minute
MONTH	Converts a serial number to a month
NOW	Returns the serial number of the current date and time
TIME	Returns the serial number of a particular time
YEAR	Converts a serial number to a year
TODAY	Returns the serial number of today's date

SECOND	Converts a serial number to a second
WEEKDAY	Converts a serial number to a day of the week

- **Lookup and reference functions :** The **LOOKUP** functions of MS Excel 2007 help us find specific information in large data tables such as an inventory list of parts or a large membership contact list. They can also be used in array formulas which makes it possible to create lookup formulas using multiple criteria or to return entire records from a database rather than just one field.

Function	Description
ADDRESS	Returns a reference as text to a single cell in a worksheet
COLUMN	Returns the column number of a reference
HLOOKUP	Looks in the top row of an array and returns the value of the indicated cell
INDEX	Uses an index to choose a value from a reference or array
LOOKUP	Looks up values in a vector or array
ROW	Returns the row number of a reference
VLOOKUP	Looks in the first column of an array and moves across the row to return the value of a cell.

- **Math and trigonometry functions**

Function	Description
ABS	Returns the absolute value of a number
COS	Returns the cosine of a number
DEGREES	Converts radians to degrees
EXP	Returns *e* raised to the power of a given number
FACT	Returns the factorial of a number
FLOOR	Rounds a number down, toward zero
INT	Rounds a number down to the nearest integer
LOG	Returns the logarithm of a number to a specified base
PI	Returns the value of pi

POWER	Returns the result of a number raised to a power
PRODUCT	Multiplies its arguments
SIN	Returns the sine of the given angle
SQRT	Returns a positive square root
SUM	Adds its arguments
SUBTOTAL	Returns a subtotal in a list or database
TAN	Returns the tangent of a number

ø Logical functions :

Function	Description
AND	Returns TRUE if all of its arguments are TRUE
FALSE	Returns the logical value of FALSE
IF	Specifies a logical test to perform
NOT	Reverses the logic of its argument
OR	Returns TRUE if any argument is TRUE
TRUE	Returns he logical value of TRUE

ø Database functions :

Function	Description
DAVERAGE	Returns the average of selected database entries
DCOUNT	Counts the cells that contain numbers in a database
DMAX	Returns the maximum value from selected database entries
DMIN	Returns the minimum value from selected database entries
DPRODUCT	Multiplies the values in a particular field of records that match the criteria in a database
DSUM	Adds the numbers in the field column of records in the database that match the criteria

ø Statistical functions :

Function	Description
AVEDEV	Returns the average of the absolute deviations of data points from their mean

AVERAGE	Returns the average of its arguments
COUNT	Counts how many numbers are in the list of arguments
DEVSQ	Returns the sum of squares of deviations
GEOMEAN	Returns the geometric mean
HARMEAN	Returns the harmonic mean
MAX	Returns the maximum value in a list of arguments
MEDIAN	Returns the median of the given numbers
MIN	Returns the minimum value in a list of arguments

ø **Text functions :**

Function	Description
CHAR	Returns the character specified by the code number
CONCATENATE	Joins several text items into one text item
DOLLAR	Converts a number to text, using the $ (dollar) currency format
LOWER	Converts text to lowercase
TEXT	Formats a number and converts it to text
TRIM	Removes spaces from text
UPPER	Converts text to uppercase

Apart from the above listed functions there are several more functions that Excel uses to perform several other manipulation operation using data in a spreadsheet.

- **Inserting a function :** Each of the functions of MS Excel 2007 is a predefined formula acting on a range of cells selected by us. Excel refers to each range of cells in the function as an **argument**. Although a few functions do not use arguments, most have one or more and some complex functions use as many as 3 or 4 arguments. The **Insert Function** window of Excel makes it easy to insert functions into worksheets and does not require us to remember the exact syntax of each function.

To insert a function we follow these steps :

1. Firstly we select the cell into which we have to insert the function.

2. Then we click the **Insert Function** button below the **Ribbon** to open the Insert Function dialog box as in **Figure 14.1**

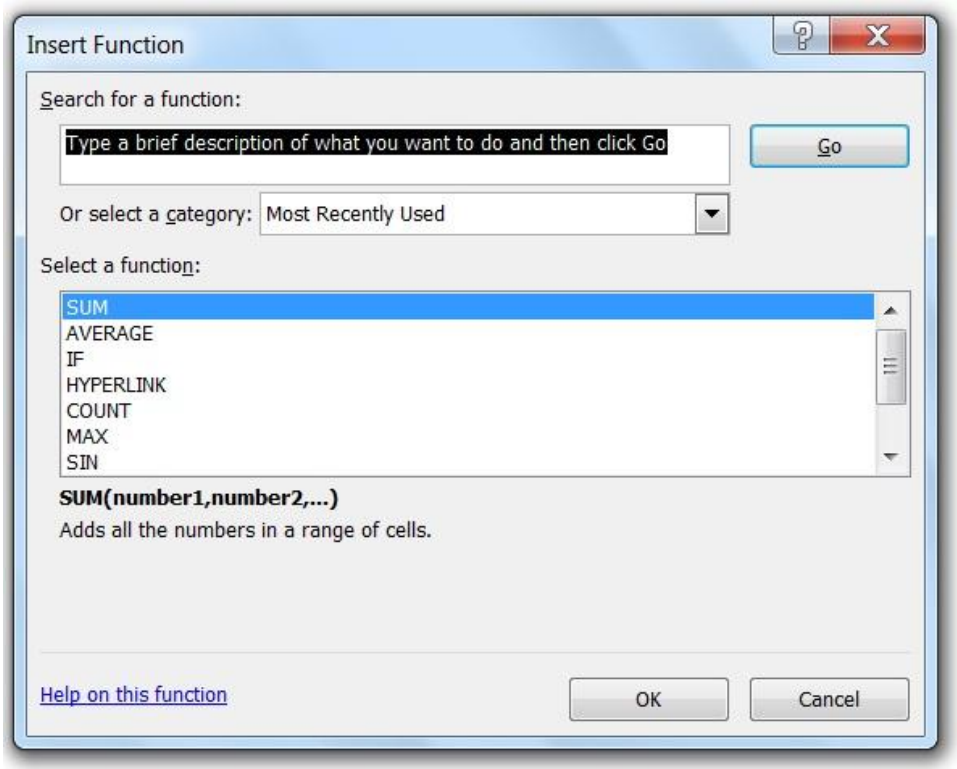


Figure 14.1 : The Insert Function dialog box

3. Excel remembers the last ten functions used, and displays them in the box labeled **Select a function** at the bottom of the window.
4. In order to insert a function, we do any one of the following
   - If the function name appears in the last ten function list, we click on the function name to select it.

     OR
   - If the function needed does not appear in the list at the bottom of the window, we type the name of the function that we want to use into the box labeled **Search for a Function**. Then we click **Go, which shows** a list of recommended functions in the **Select a function** list at the bottom of the window. Then we click on the name of the function you wish to insert from that list, and click **OK** to proceed.
5. Clicking **OK** displays the **Function Arguments** dialog box of **Figure 14.2**

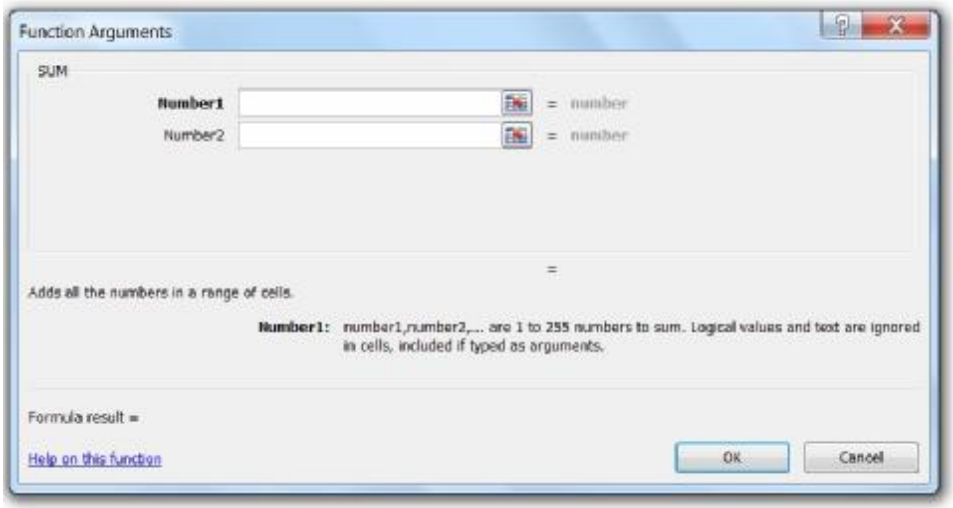


Figure 14.2 : The Function Argument dialog box

6. We then have to drag and select the cells that will be used as the first argument of the function. As we select these cells, the **Function Arguments** window will be temporarily minimized.
7. On finishing the selection making, the **Function Arguments** window reappears and the first argument of the function will appear in the box labeled **Number 1**.
8. In order to specify a second argument for the function we:
   - Click inside the box labeled **Number 2**.
   - Select the cell range for use in the second argument.
9. We may follow this process for specifying additional arguments for our function.
10. Finally, clicking **OK** inserts the function into the worksheet.



CHECK YOUR PROGRESS

1. Fill in the blanks:
   (i) _____ specify the type of calculation that we want to perform on the elements of a formula.
   (ii) When two values are compared using _____ operators, the result is either TRUE or FALSE.

(iii) A formula in Excel always begins with an _____ sign.

(iv) _____ in a worksheet are performed using formulas.

(v) _____ are started in the formula box with an = sign.

(vi) The cell or range of cells used in calculation are called _____.

(vii) _____ are Predefined formulas in Excel.

(viii) The _____ function returns the serial number of a particular date.

2. State whether the following statements are True or False

(i) The LOOKUP function looks in the first column of an array and moves across the row to return the value of a cell.

(ii) The ABS function returns the absolute value of a number.

(iii) The SUBTOTAL function returns a subtotal in a list or database.

(iv) AND function Returns TRUE if any argument is TRUE.

(v) DCOUNT counts the cells that contain numbers in a database.

(vi) CHAR returns the character specified by the code number.

(vii) Excel functions are not predefined formulas.

14.5 SORTING DATA

Sorting data is an integral part of data analysis. We sort data by numbers (largest to smallest or smallest to largest), text (Z to A or A to Z), and dates and times (newest to oldest and oldest to newest) in one or more columns. We can also sort by a custom list (such as Small, Medium, and Large) or by formats like font color, cell color, or icon set. Most sort operations are column sorts, but we can also sort by rows.

- **To sort text we follow these steps :**
  1. Firstly, we select a column of alphanumeric data in a range of cells, or make sure that the active cell is in a table column containing alphanumeric data
  2. On the **Home** tab, in the **Editing** group, we click **Sort & Filter**.



  3. Here we do one of the following:
     - ø To sort in ascending alphanumeric order, we click **Sort A to Z**.
     - ø To sort in descending alphanumeric order, we click **Sort Z to A**.

- **To sort numbers we follow these steps :**
  1. Firstly, we have to select a column of numeric data in a range of cells, or make sure that the active cell is in a table column containing numeric data.
  2. On the **Home** tab, in the **Editing** group, we click **Sort & Filter**, and then do one of the following:
     - ø To sort from low numbers to high numbers, we click **Sort Smallest to Largest**.
     - ø To sort from high numbers to low numbers, click Sort **Largest to Smallest**.

- **To Sort by cell color, font color, or icon we follow these steps :**
  1. Firstly, we select a column of data in a range of cells, or make sure that the active cell is in a table column.
  2. On the **Home** tab, in the **Editing** group, we click **Sort & Filter**, and then click **Custom Sort**, to open the **Sort** dialog box of **Figure 14.3**

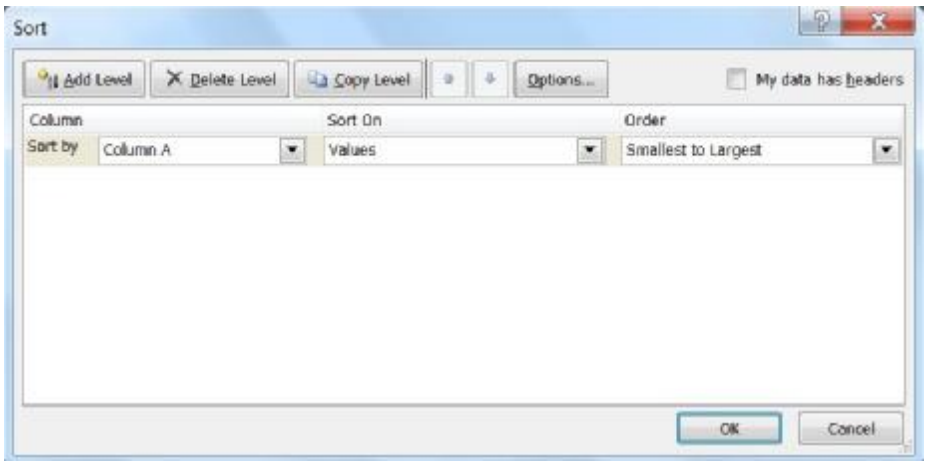


Figure 14.3 : The Sort dialog box

3. In the **Sort** by box and under **Columns**, we select the column to be sorted.
4. Under **Sort On**, we select the type of sort. Do one of the following:
   - ø To sort by cell color, we select **Cell Color**.
   - ø To sort by font color, we select **Font Color**.
   - ø To sort by an icon set, we select **Cell Icon**.
5. Under **Order**, we click the arrow next to the button, and depending on the type of format, we may select a cell color, font color, or cell icon.
6. Under **Order**, we select define how to sort by doing one of the following:
   - ø To move the cell color, font color, or icon to the top or left, we may select **On Top** for a column sort, and **On Left** for a row sort.
   - ø To move the cell color, font color, or icon to the bottom or right, we may select **On Bottom** for a column sort, and **On Right** for a row sort.
7. To specify the next cell color, font color, or icon to sort by, we click **Add Level**, and then repeat steps three through five.

- **Sort by more than one column or row :** If we have data to be grouped by the same value in one column or row, we might sort by more than one column or row and then sort another column

or row within that group of equal values. For example, if we have a Department and Employee column, we can first sort by Department (to group all the employees in the same department together), and then sort by name (to put the names in alphabetical order within each department). We can sort by up to 64 columns.

1. We select a range of cells with two or more columns of data, or make sure that the active cell is in a table with two or more columns.
2. On the **Home** tab, in the **Editing** group, we click **Sort & Filter**, and then click **Custom Sort** to open the **Sort** dialog box of **Figure 14.3**
3. Then under **Column**, in the **Sort by** box, we select the first column to be sorted.
4. Under **Sort On**, we select the type of sort. We do one of the following :
   - ø To sort by text, number, or date and time, we select **Values**
   - ø To sort by format, we select **Cell Color**, **Font Color**, or **Cell Icon**.
5. Under **Order**, we select as to how we want to sort. We do one of the following:
   - ø For text values, we select A to Z or Z to A.
   - ø For number values, we select **Smallest to Largest** or **Largest to Smallest**.
   - ø For date or time values, we select **Oldest to Newest** or **Newest to Oldest**.
   - ø To sort based on a custom list, we select **Custom List**.
6. We click **Add Level** if we want to add another column to sort by, and then repeat steps 3 through 5.
7. To copy a column to sort by, we select the entry, and then click **Copy Level**.
8. To delete a column to sort by, we select the entry, and then click **Delete Level**.

9. To change the sorting order of the columns, we select an entry, and then click the **Up** or **Down** arrow to change the order.

Entries higher in the list are sorted before entries lower in the list.

14.6 WORKING WITH CHARTS

In the previous versions of MS Excel, we had the chart wizard that helped us to create charts. But in Excel 2007 there is no chart wizard, and we can create a basic chart by clicking the chart type that we want on the MS Office Fluent user interface known as Ribbon. To create a professional-looking chart that displays the details that we want, we can modify the chart, apply predefined styles and layouts, and add eye-catching formatting. We can also reuse our favorite chart by saving it as a chart template.

Charts can convey much more than numbers alone can because charts present data in a visual way that makes it easier to see the meaning behind the numbers. MS Excel 2007 supports numerous types of charts like Column Chart, Line Chart, Pie Chart, Bar Chart, XY-Scatter Chart etc. to display data in ways that are meaningful to the user. We will introduce only the Column Chart and Pie Chart in this section.

Creating a Chart

Different chart types have different data arrangement requirements that relate to that particular type of chart. Therefore it is important to know how the data has to be arranged before applying a chart to a data set. We have shown only two types of data arrangement. You can explore the remaining types using MS Excel's help.

Chart type	Data arrangement
Column chart, Bar chart, Line chart, Area chart, Surface chart and Radar chart	Data arrangement should be in columns or rows, for example 1 2 3 4 or 1 3 2 4

<table>
<tr><th>Chart type</th><th>Data arrangement</th></tr>
<tr><td>Pie chart and Doughnut chart
(with more than one series)</td><td>In multiple columns or rows of data and one column or row of data labels, like:
<table><tr><td>A</td><td>1</td><td>2</td></tr><tr><td>B</td><td>3</td><td>4</td></tr><tr><td>C</td><td>5</td><td>6</td></tr></table>or
<table><tr><td>A</td><td>B</td><td>C</td></tr><tr><td>1</td><td>2</td><td>3</td></tr><tr><td>4</td><td>5</td><td>6</td></tr></table></td></tr>
</table>

- **To create a chart we follow these steps :**

1. Firstly, we arrange the data on the worksheet by following any of the above mentioned ways of arrangement.
2. Select the cells that contain the data to be used for the chart
3. On the **Insert** tab, in the **Charts** group, we do one of the following:
   - ø We click the chart type, and then click a chart subtype that we want to use.
   - ø In order to see all available chart types, we click a chart type, and then click **All Chart Types** to display the **Insert Chart** dialog box, then click the arrows to scroll through all available chart types and chart subtypes, and then click the ones to be used.



Column charts : Data that is arranged in columns or rows on a worksheet can be plotted in a column chart. Column charts are useful for showing data changes over a period of time or for illustrating comparisons

among items. In column charts, categories are typically organized along the horizontal axis and values along the vertical axis.

Example : Let us consider the marks obtained by three students in three subjects as shown below. We will create a chart to represent their individual performances.

	English	Mathematics	Science
Ramesh	65	70	72
Jyoti	75	60	55
Suraj	88	77	68

We represent this data using a 2D column chart by the following steps:

1. We insert the above data in an Excel worksheet as shown.
2. Then we select the data
3. Clicking the **Insert** tab of the **Ribbon** we select a Chart type from the **Charts** group.
4. The data in the table is then displayed in the selected chart type as shown in **Figure 14.4**

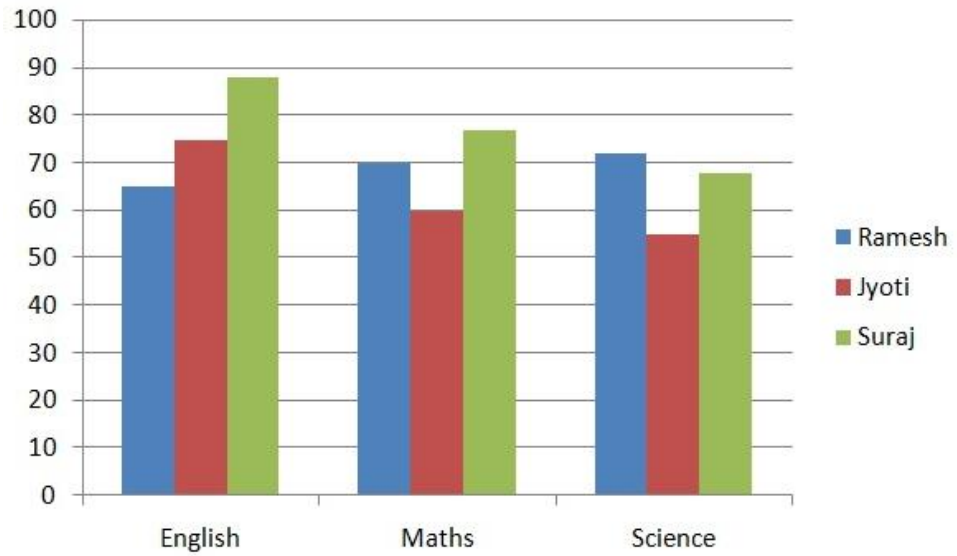


Figure 14.4 : A 2D Column chart

- **The different elements in a chart :** A chart has many elements. Some of these elements are displayed by default, while others can be added as needed. We may change the display of the

chart elements by moving them to other locations in the chart, resizing them, or by changing the format. We can also remove chart elements that we do not want to display.



Figure 14.5 : The different elements of a chart

1. The **chart area** of the chart, which includes the entire chart and all its elements.
2. The **plot area** of the chart, which is the area bounded by the axes, including all data series in a 2D chart. In a 3D chart, it is the area bounded by the axes, including the data series, category names, tick-mark labels, and axis titles.
3. The **data points** of the data series that are plotted in the chart. **Data series**: The related data points that are plotted in a chart. Each data series in a chart has a unique color or pattern and is represented in the chart legend. We can plot one or more data series in a chart. Pie charts have only one data series. Data points are the individual values plotted in a chart and represented by bars, columns, lines, pie or doughnut slices, dots, and various other shapes called data markers. Data markers of the same color constitute a data series.

4. The horizontal (category) and vertical (value) **axis** along which the data is plotted in the chart. The Axis is a line bordering the chart plot area used as a frame of reference for measurement. The y axis is usually the vertical axis and contains data. The x-axis is usually the horizontal axis and contains categories.
5. The **legend** of the chart which is a box that identifies the patterns or colors that are assigned to the data series or categories in a chart.
6. A chart and axis **title** used to describe text that is automatically aligned to an axis or centered at the top of a chart.
7. A data **label** used to identify the details of a data point in a data series, provides additional information about a data marker, which represents a single data point or value that originates from a datasheet cell.

When we hover the mouse pointer over one of these elements in the chart area, Excel displays information about that element in a ScreenTip.

Clicking anywhere in a chart also makes the Chart Tools available, adding the Design, Layout, and Format tabs.

Pie charts : Data that is arranged in one column or row only on a worksheet can be plotted in a pie chart. Pie charts show the size of items in one data series proportional to the sum of the items. The data points in a pie chart are displayed as a percentage of the whole pie.

We should use a pie chart when :

- We only have one data series to plot.
- None of the values to be plotted are negative.
- Almost none of the values to be plotted are zero values.
- We do not have more than seven categories.
- The categories represent parts of the whole pie.

Example : Let us consider the example of marks obtained by a student in five subjects. This time we will create a pie chart to represent the student's individual performance in each subject.

Subject	English	Maths	Science	Hindi	Computer
Ramesh	65	80	72	70	90

We represent this data using a 2D pie chart by the following steps:

1. We insert the above data in an Excel worksheet as shown.
2. Then we select the data
3. Clicking the **Insert** tab of the **Ribbon** we select a Chart type from the **Charts** group.
4. The data in the table is then displayed in the selected chart type as shown in **Figure 14.6**

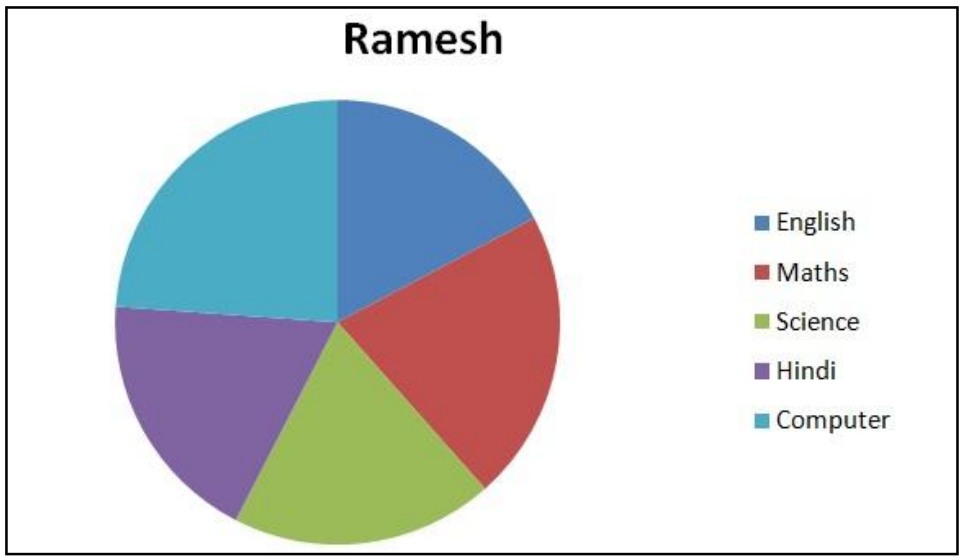


Figure 14.6 : A Pie chart



CHECK YOUR PROGRESS

3. Fill in the blanks:
   (i) We can ____ data by text, numbers, dates and times in one or more columns.
   (ii) We can sort by more than one _____ or ___.
   (iii) Excel 2007 does not have a _____ wizard.
   (iv) _____ present data in a visual way.
   (v) ____ charts show the size of items in one data series, proportional to the sum of the items.



14.7 LET US SUM UP

- Excel 2007 is used to perform tasks related to the data organized in rows and columns in a spreadsheet.
- Operators in Excel are used to perform numerous operations on different types of data.
- Calculations in Excel are performed using formulas
- Functions are mathematical expressions already available in Excel
- Formulas are mathematical expressions that we create to calculate result
- LOOKUP Functions can help you find specific information in large data tables
- Excel's Insert Function window makes it easy to insert functions into your worksheets and eliminates the need to remember the exact syntax of each function.
- Sorting data is an integral part of data analysis
- You can also reuse a favorite chart by saving it as a chart template
- The chart area of the chart, which includes the entire chart and all its elements.



14.8 FURTHER READING

- Alexander, M. (2011). Excel 2007 Dashboards and Reports for Dummies. John Wiley & Sons.
- Walkenbach, J., Tyson, H., Wempen, F., Prague, C. N., Groh, M. R., Aitken, P. G., ... & Bucki, L. A. (2007). Office 2007 bible (Vol. 446). John Wiley & Sons. Chicago



14.9 ANSWERS TO CHECK YOUR PROGRESS

Ans. to Q. No. 1 : (i) Operators, (ii) logical, (iii) equal, (iv) calculations, (v) Formulas, (vi) references, (vii) Functions, (viii) DATE

Ans. to Q. No. 2 : (i) False, (ii) True, (iii) True, (iv) False, (v) True, (vi) True, (vii) False

Ans. to Q. No. 3 : (i) sort, (ii) column, row, (iii) chart, (iv) Charts, (v) Pi



14.10 MODEL QUESTIONS

Q1. What are operators in Excel? How many types of operators are there in Excel?

Q2. What is the text concatenation operator in Excel and why is it used?

Q3. How are calculations performed in Excel? Give examples.

Q4. What is a formula? Give an example showing the use of formulas in Excel

Q5. What are Excel functions? Give examples of the LOOKUP function

Q6. How do we create a function in a worksheet?

Q7. What is sorting of data in Excel? Give the steps to apply sorting by cell color

Q8. What are charts in Excel and why are they used ?

Q9. What are pie charts? Create a pie chart to show data trends.

Q10. Define the different elements in a chart.

****

UNIT 15 : MICROSOFT POWERPOINT

UNIT STRUCTURE

15.1 Learning Objectives

15.2 Introduction

15.3 Starting MS PowerPoint

15.4 Creating a New Presentation

15.5 Working with Slides

15.6 Applying Text and Graphics

15.7 Applying Themes

15.8 Customizing Slide Show

15.8.1 Applying Custom Animation

15.8.2 Applying Slide Transition

15.9 Saving, Running and Closing a Presentation

15.10 Opening an Existing Presentation

15.11 Let Us Sum Up

15.12 Further Reading

15.13 Answers to Check Your Progress

15.14 Model Questions

15.1 LEARNING OBJECTIVES

After going through this unit, you will be able to:

- create presentations in PowerPoint
- work with text and graphics in PowerPoint
- use design templates
- apply slide animation and transition effects
- work with PowerPoint presentations

15.2 INTRODUCTION

Before computers were commonplace, presenters usually had an easel with posters or drawings to show any necessary graphics to the audience. In some cases the speaker would have a slide projector with a

carousel of individual slides to show photographs on a screen.

Today, many software package suites contain a program designed to accompany the speaker when he makes a presentation. The specific presentation program in this suite of programs is usually (but not always) in the form of a slide show, much like the ones used in the past. These presentation software programs make it simple and often fun to create a presentation for the audience. They contain a text editor to add written content, and abilities within the program to add charts and graphic images such as photographs, clip art or other objects to liven up the slide show and get our point across simply. Microsoft PowerPoint, usually just called PowerPoint, is a commercial presentation program developed by Microsoft, and is part of the Microsoft Office suite.

Microsoft Office PowerPoint 2007 provides a comprehensive set of features that can be used to create and format our information. We can create and add designer-quality SmartArt graphics with only a few mouse-clicks. This unit provides an introduction to MS PowerPoint 2007, and describes the methods and tools to create powerful and eye-catching presentations.

15.3 STARTING MS POWERPOINT

In order to work with PowerPoint and start building presentations we first have to start PowerPoint 2007. To start MS PowerPoint 2007, we have to follow these steps:

1. Firstly, we click on the **START** button.
2. Then we click/hover on **All Programs** which opens a list of all the installed programs.
3. We then click on the **Microsoft Office** option which shows a list of the installed MS Office applications as shown in **Figure 15.1**

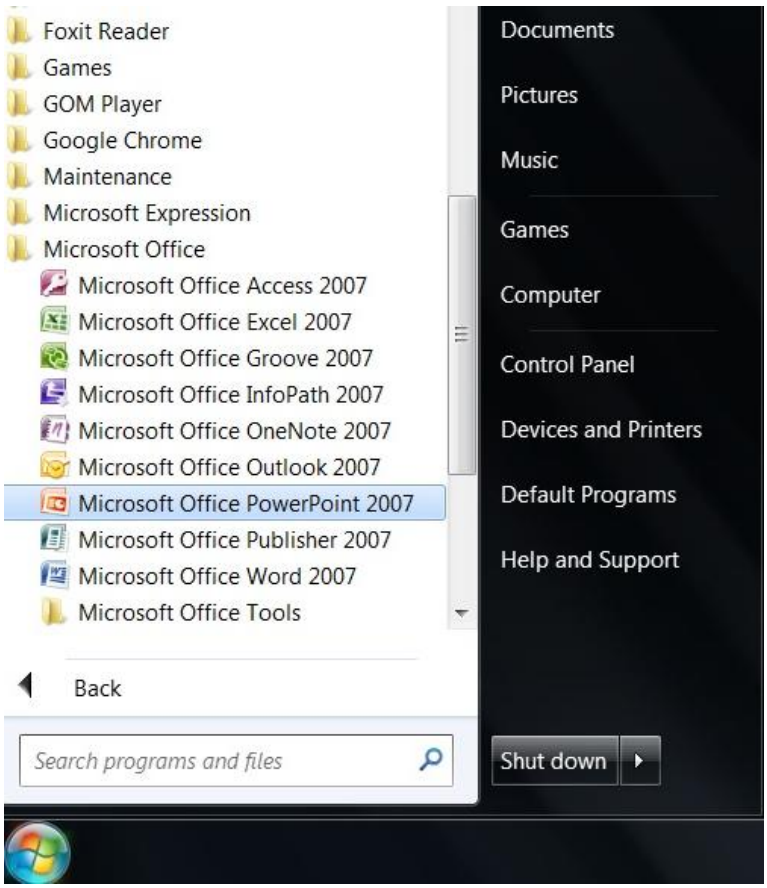


Figure 15.1 : The MS Office 2007 applications

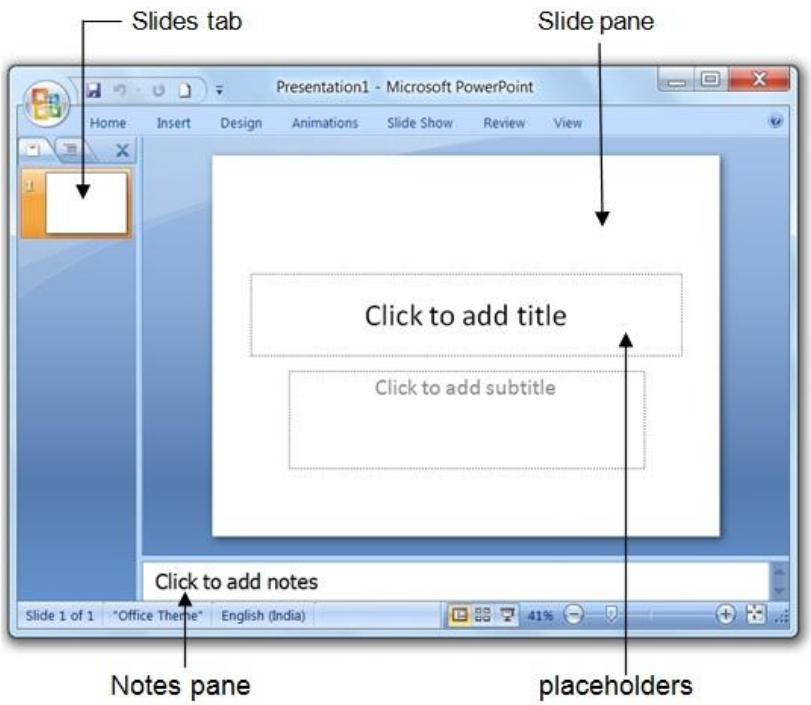


Figure 15.2 : The Microsoft PowerPoint 2007 application window

The PowerPoint application window has the following parts:–

Slide pane : Allows us to work directly on individual slides.

Placeholders : These are the borders that are part of most slide layouts, where we can type text or insert pictures, charts, and other objects.

Slides tab : This tab shows a thumbnail version of each full size slide shown in the Slide pane.

Notes pane : Here we can type notes about the current slide.

15.4 CREATING A NEW PRESENTATION

After we start PowerPoint as shown in the previous section, we are presented with the PowerPoint working interface as in **Figure 15.2** above. To begin working with PowerPoint and start creating a new presentation we follow these steps.

1. Firstly we click the MS Office button of PowerPoint and select **New**.

   OR

   Click the **New** icon  on the **Quick Access** toolbar

   OR

   Press **Ctrl + N** on the keyboard

2. If we click the **New** icon or press **Ctrl + N**, a blank presentation automatically opens.

   OR

   If we select **New** from the **Office button**, the **New Presentation** dialog box of **Figure 15.3** opens where we do any one of the following.

   - To apply a recently used template, we click **Blank and recent**, and click the template that we want, and then click **Create**.
   - To apply a template installed to the local hard drive, we click **Installed Templates**, and then click **Create**.
   - To create (and apply) a new template based on another template that is installed on the local hard drive, we click

New from existing, and then click **Create New**.

- To apply a template that has been saved to C:\Program Files\Microsoft Office\Templates\, we click **My templates**, select a custom template, and then click **OK**.
- To download and apply a template from Office Online, under **Microsoft Office Online**, we click a template category, select a template, and then click **Download**.

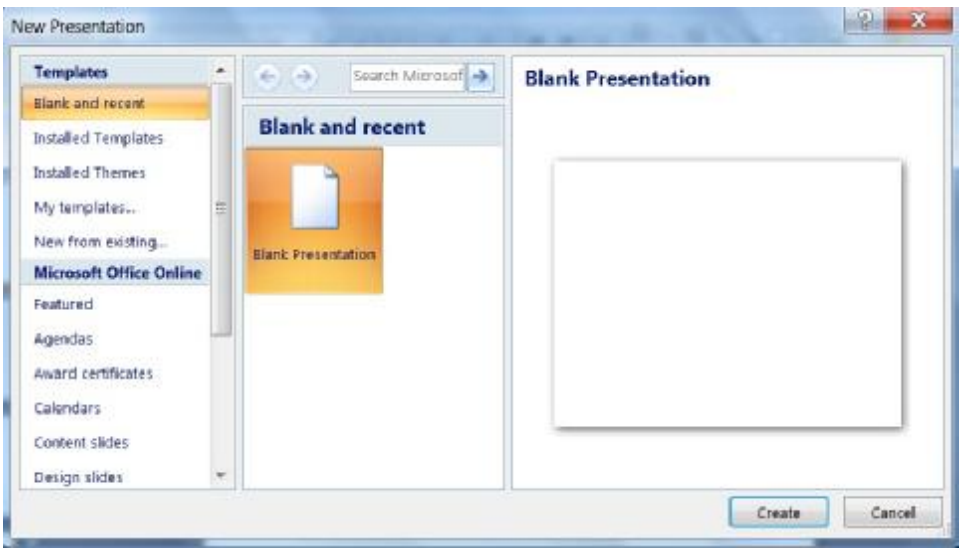


Figure 15.3 : The New Presentation dialog box

Now that we are ready to begin working on our new presentation, we will be discussing further on how to work with the different elements of a PowerPoint presentation in the later units.

15.5 WORKING WITH SLIDES

When working with MS PowerPoint we apply text, sound, color, graphic, animation, transitions etc to our presentation, and these effects are represented on slides. To create an effective PowerPoint presentation we should be able to carry out slide related tasks. Inserting, deleting, reusing slides to a presentation are a few of them and which will be discussed in this section.

- **Adding Slides :** There are several choices when we want to add a new slide to the presentation: Office Themes, Duplicate Selected Slide, or Reuse Slides.

To create a new slide from Office Themes, we follow these steps :

1. Firstly, we select the slide immediately BEFORE where the new slide is to be inserted.
2. Then we click the **New Slide** button on the **Home** tab.
3. Finally, we click the slide choice that fits our material.

- **Duplicate Slides :**

  To create a slide as a duplicate of a slide in the presentation we follow these steps :

  1. Firstly we select the slide that we want to duplicate.
  2. Then we click the **New Slide** button on the **Home** tab
  3. Finally we click **Duplicate Selected Slides**

  A slide may also be duplicated by right-clicking the slide and selecting **Duplicate Slide**.

- **Reusing Slides**

  To create a new slide from another presentation we follow these steps :

  1 Firstly we select the slide immediately BEFORE where we want the new slide

  2 Then we click the **New Slide** button on the **Home** tab

  3 We click **Reuse Slides**

  4 We click **Browse**

  5 We click **Browse File** and locate the slide show and click on the slide to import.

- **Changing the layout of slide/slides :** We can change the layout of slide/slides by applying a different layout to.

  To do so we follow these steps :

  1. Firstly we select the slide/slides.
  2. From the **Slides** group on the **Home** tabs, we click on the layout button 

  3. Finally we select the layout that we want.

- **Deleting slide/slides :** We can delete one or many slides at a time.

To do so we follow these steps :

1. First we select the slide/slides that we want to delete
2. Then we right-click on the selected slide/slides, and select **Delete Slide**.

   OR

   From the **Slides** group on the **Home** tabs, we click on the **Delete** button 

- **Changing the background of a slide/slides :**

1. Firstly we select the slide.
2. Then we right-click the slide and select **Format Background**, which opens the **Format Background** dialog box of **Figure 15.4**.

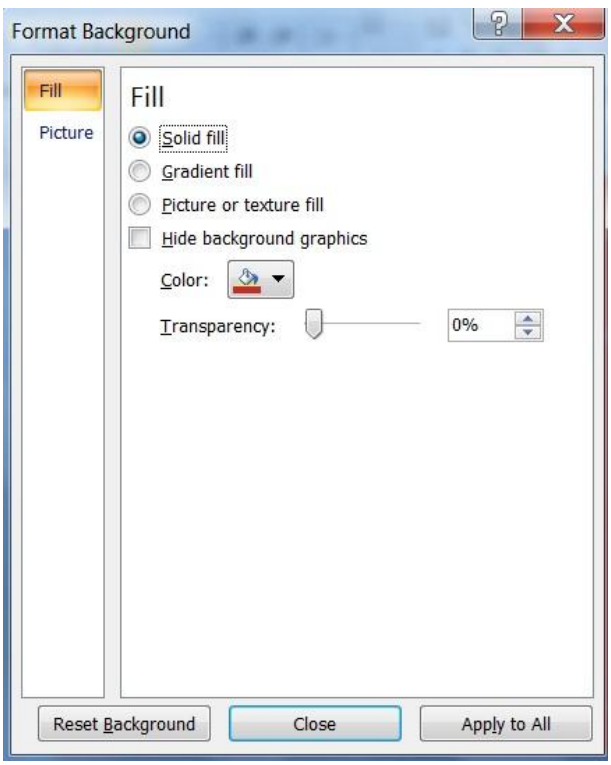


Figure 15.4 : The Format Background dialog box

In the dialog box of **Figure 15.4**, we have several options to choose from whereby we can apply different fills to the background.

3. After selecting the background **Fills**, we may **Close** the dialog box, which applies the effects only to the selected

slide. Clicking on **Apply to All** applies them to all the slides in the presentation.

- **Changing the order of slides :** When we create a presentation, we may sometimes want to change the order of the slides.
  1. In the pane that contains the **Outline and Slides** tabs, we click the **Slides** tab.
  2. Then on the **Home** tab, we select the slide thumbnails that are to be moved, and then drag them to their new location.

15.6 ADDING TEXT AND GRAPHICS

When creating presentations in PowerPoint 2007, we have to work with text and graphics. Text and graphics are an integral part of any presentation since they act together to bring forward the purpose and objective of a PowerPoint presentation. Text can be inserted, edited, cut, copied, pasted, and formatted by changing the Face, Type and Color. Paragraphs of text can be formatted by indenting them, etc. Graphics in PowerPoint can be included by inserting pictures, Clip Art, Shape, Smart Art etc. in this section we discuss these aspects of PowerPoint.

- **Working with text :**
  - **To enter text we follow these steps:**
    1. Firstly, we select the slide where we want the text
    2. Then we click in a Textbox to add text
  - **To add a text box we follow these steps:**
    1. Firstly, we select the slide where we want to place the Text Box
    2. On the **Insert** tab, we click **Text Box**
    3. Then we click on the slide and drag the cursor to expand the Text Box
    4. Finally we type in the text.
  - **To copy and paste data we follow these steps:**
    1. Firstly, we select the item(s) to be copied
    2. On the **Clipboard** group of the **Home** tab, we click **Copy**

3. Then we select the item(s) where we would like to copy the data
4. Finally, on the **Clipboard** group of the **Home** tab, we click **Paste**

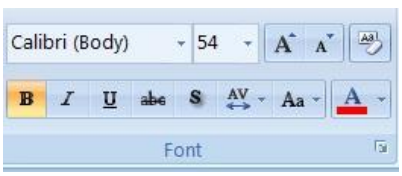


ø **To cut and paste data we follow these steps:**

1. Firstly, we select the item(s) to be cut
2. On the **Clipboard** group of the **Home** tab, we click **Cut**
3. Then we select the items(s) where we would like to copy the data
4. Finally, on the **Clipboard** group of the **Home** tab, we click **Paste**

ø **To change the font typeface we follow these steps:**

1. In the Font group under the **Home** menu, we click the arrow next to the font name and choose a font.
2. We can preview how the new font will look by highlighting the text, and hovering over the new font typeface.



ø **To change the font size we follow these steps:**

- We click the arrow next to the font size and choose the appropriate size

  OR

- We click the increase or decrease font size buttons.

l **Font Styles and Effects :** Font styles are predefined formatting options that are used to emphasize text. They include: **Bold**, **Italic**, and **Underline**.

ø **To add these to text we follow these steps**:

- We select the text and click the **Font Styles** included on

the **Font** group of the **Home** tab

OR

- We select the text and right click to display the font tools

ø **To change the text color we follow these steps :**

1. We select the text and click the **Colors** button  included on the **Font** Group of the **Ribbon**

   OR

   We highlight the text, right click and choose the colors tool.

2. Then we select the color by clicking the down arrow next to the font color button.

- **WordArt :** WordArt is a gallery of text styles that we can add to any 2007 Microsoft Office system documents to create decorative effects, such as shadowed or mirrored (reflected) text. In Microsoft Office PowerPoint 2007, we can also convert existing text into WordArt.

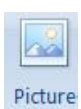
ø **To apply Word Art we follow these steps :**

1. Firstly, we select the text
2. Then from the **Text** group of the **Insert** tab we click the **WordArt** button 

3. Finally we choose the WordArt to be applied

- **Working with Graphics :** We can add Pictures, ClipArt, Shapes, SmartArt or a Photo Album to a presentation.

ø **To add a picture we follow these steps :**

1. Firstly we click the **Insert** tab.
2. We click the **Picture** button  from the **Illustrations** group

3. We browse to the picture from the files and click the name of the picture
4. We click **insert**

5. To move the graphic, we click it and drag it to where we want it.

- **Clipart :** Clipart is a single piece of ready-made art, often appearing as a bitmap or a combination of drawn shapes that we can use in our presentation.

  ø **To add Clip Art we follow these steps:**

  1. Firstly, we click the **Insert** tab
  2. Then from the **Illustrations** group we click the **Clip Art** button 

  3. We may search for the clip art using the search Clip Art dialog box



  4. Finally we click the clip art
  5. To move the graphic, we click it and drag it to where we want it

  ø **To add Shapes to a presentation we follow these steps:**

  1. Firstly, we click the **Insert** tab
  2. On the **Illustrations** group, we click the **Shapes** button 

and click the shape we want
  3. Then we click and drag on the slide to draw the shape
  4. Finally we drag the cursor to resize the Shape.

- **Adding SmartArt :** SmartArt is a feature in Office 2007 that allows us to choose from a variety of graphics, including flow charts, lists, cycles, and processes.

  ø **To add SmartArt we follow these steps:**

  1. Firstly, we click the **Insert** Tab
  2. We click the **SmartArt** button 

on the **Illustrations** group

3. This opens the Choose **a SmartArt Graphic** dialog box of **Figure 15.5**

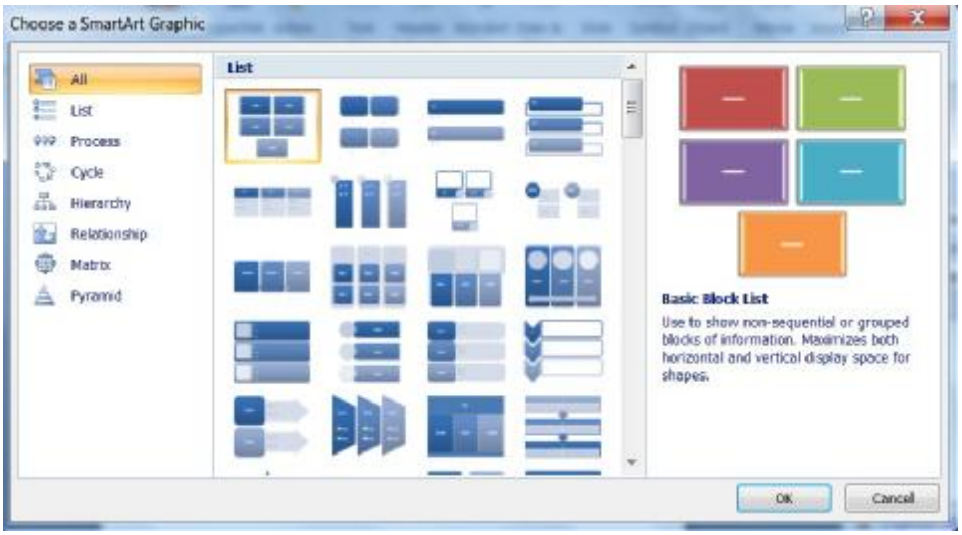


Figure 15.5 : The Choose a SmartArt Graphic dialog box

4. We select the **SmartArt** and click **OK**
5. Finally we drag it to the desired location on the slide

- **Photo Album :** The photo album feature is new in PowerPoint 2007 and allows us to easily create a photo album to share pictures.

  ø **To create a photo album we follow these steps:**

  1. Firstly, we click the **Insert** tab
  2. Then from the **Illustrations** group, we click the **Photo Album** button



  3. Then we select **New Photo Album** which opens the **Photo Album** dialog box of **Figure 15.6**
  4. We click **File/Disk** which opens up the **Insert New Pictures** dialog box of **Figure 15.7**

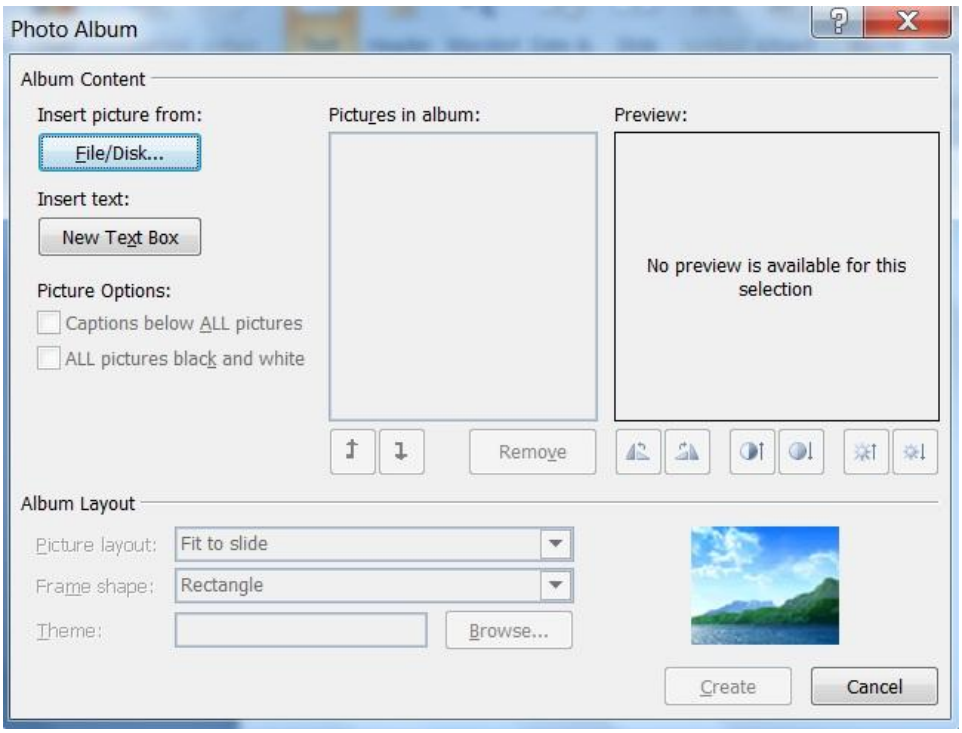


Figure 15.6 : The Photo Album dialog box

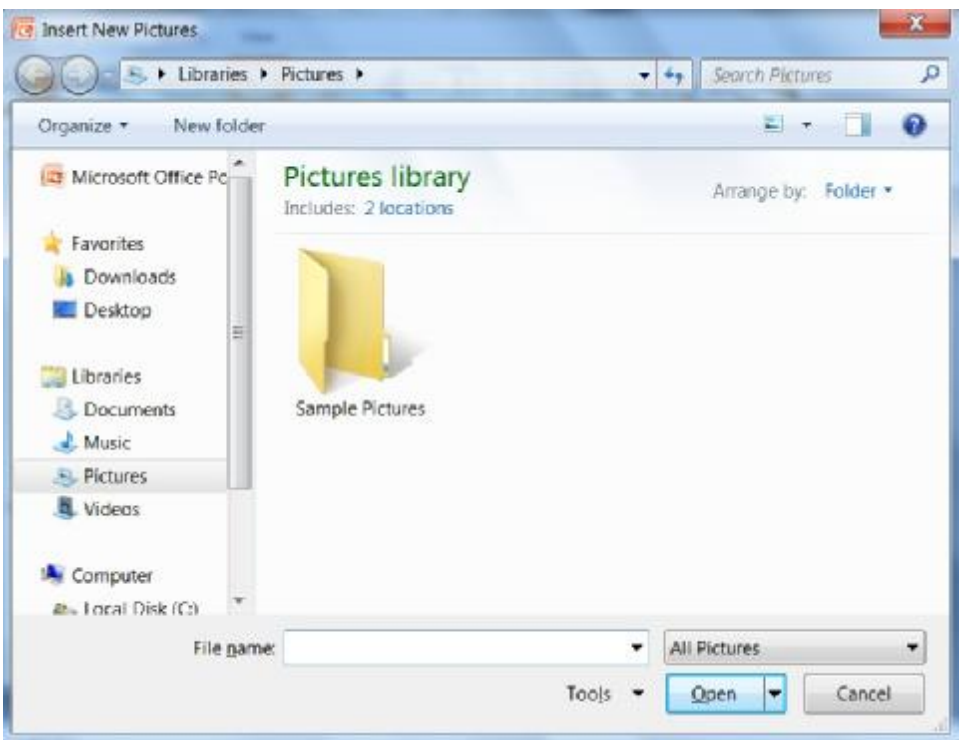


Figure 15.7 : The Insert New Pictures dialog box

5. We browse through to find the picture to add to the photo album.

6. Finally, we move the pictures up and down in the order of the album by clicking the **up/down** arrows in the **Photo Album** dialog box.

15.7 APPLYING THEMES

Design themes are a new addition to PowerPoint 2007. They work in a similar way as the design templates in earlier versions of PowerPoint. A really nice feature of the design themes, is that we can immediately see the effect reflected on our slides, before making a decision as to which theme has to be applied to our presentation finally. Microsoft Office PowerPoint 2007 contains several built-in themes which include theme colors, theme fonts, and theme effects such that if we change the theme, a complete set of new colors, fonts, and effects is applied to our entire document. We can use these themes and customize them by changing a few elements according to our needs.

- **To apply a theme to our presentation we follow these steps :**

  If a blank presentation is already open–

  1. In the Themes group on the **Design** tab are shown the available themes. More themes can be seen on clicking the **More** button as shown in **Figure 15.8**
  2. Clicking on any theme applies that theme to the slides.



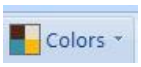
Figure 15.8: The Themes group

  If a blank presentation is not open already–

  1. In the **New Presentation** dialog box of **Figure 15.3**, we select any of the installed themes
  2. Then we click **Create** to apply the selected theme to the slide/slides.

- **Design Theme Color Schemes :** Once we have selected a style of design theme that we like for the PowerPoint presentation,

we are not limited to the color of the theme as it is currently applied.

1. We click on the **Colors button**  at the right end of the design themes on the **Design** ribbon.
2. Then we hover the mouse over the various color schemes shown in the drop down list. The current choice will be reflected on the slide.
3. Finally we click the right color scheme.

- **Select a Font Family :** Each design theme is assigned a font family. Once the design theme for the PowerPoint presentation is selected, we can change the font family to one of the many groupings within PowerPoint 2007.
  1. Firstly, we click the **Fonts** button  at the right end of the design themes shown on the **Design** ribbon.
  2. Then we hover over any of the font families to see how this group of fonts will look in the presentation.
  3. On making the selection, we click the mouse and the font family will be applied to our presentation.
- **Change the Background Style :** Just as we changed the background on a plain PowerPoint slide, we can do the same while using one of the many design themes.
  1. We click the **Background Styles** button  on the Design ribbon.
  2. Then we hover over any of the background styles.
  3. The background style will be reflected on the slide for us to evaluate.
  4. Finally on getting our desired background style we click the mouse.
- **Hide background Graphics :** Sometimes we want to show slides with no background graphics. which is often the case for printing purposes. The background graphics will remain with the design theme, but can be hidden from view.

1. We check the **Hide Background Graphics** box on the **Design** ribbon. 

2. The background graphics will disappear from our slides, but can be turned back on at any later time, by simply removing the check mark in the box.

- **Select a set of theme effects :** Theme effects are sets of lines and fill effects. When we click the **Theme Effects** button, we see the lines and fill effects used for each set of theme effects in the graphic displayed with the Theme Effects name. Even if we cannot create our own set of theme effects, we can choose the one we want to use in our own document theme.
  1. Firstly, on the **Design** tab, in the **Themes** group, we click **Theme Effects** 

  2. Then we click the effect we want.
- **Save a theme :** We can save any changes made to the colors, fonts, or line and fill effects of a theme as a custom theme that we can apply to other documents or presentations.
  1. On the **Design** tab, in the **Themes** group, click **More**. 
  2. Then we click **Save Current Theme**.
  3. In the **File Name** box, we type an appropriate name for the theme, and then click **Save**.

  The custom theme is saved in the **Document Themes** folder as a .thmx file and is automatically added to the list of custom themes.



CHECK YOUR PROGRESS

1. Fill in the blanks:
   (i) _____ allows us to work directly on individual slides.
   (ii) _____ are the borders that are part of most slide layouts, where you can type text or insert pictures, charts, and other objects.

(iii) _____ is a single piece of ready-made art, often appearing as a bitmap or a combination of drawn shapes that we can use in our presentations.

(iv) _____ is a feature in Office 2007 that allows us to choose from a variety of graphics, including flow charts, lists, cycles, and processes.

(v) We can customize _____ by changing a few elements according to our needs.

2. State whether the following statements are True or False.

(i) Font styles are predefined formatting options that are used to emphasize text.

(ii) In PowerPoint 2007, we cannot convert existing text into WordArt.

(iii) We can add Pictures, ClipArt, Shapes, SmartArt or a Photo Album to a presentation.

(iv) We cannot delete one or many slides at a time.

(v) Theme effects are sets of lines and fill effects.

15.8 CUSTOMIZING SLIDE SHOW

In the previous section we have learnt the basics of PowerPoint, the way PowerPoint presentations are created and the different methods of working with slides were also discussed. Text and Graphics, that are the heart and soul of every powerful and eye-catching PowerPoint presentation, have already been discussed. Apart from text and graphics we can also customize a presentation by applying animation and transition effects to our slides. Animation is nothing but the way of adding a special visual or sound effect to a slide object. For example, we can have our text bullet points fly in from the left, one word at a time, or hear the sound of applause when a picture is uncovered. We can use animation to focus on important points, to control the flow of information, and to increase viewer interest in our presentation.

Slide transitions are the visual effects that are applied to a presentation, and can be seen when we move from one slide to another

slide during the presentation. These slide transition effects prevent the viewer from seeing a sudden change between slides, and present a smooth and gradual change between the slides.

In the next two sections, we shall be dealing with these two aspects of PowerPoint presentations.

15.8.1 Applying Custom Animation

PowerPoint 2007 has numerous animation effects to choose from. Apart from that, we can also apply other animation effects that have been customized by us to gain more control over how and when effects are applied. For example, we can make text grow or shrink, spin or shimmer, and we can set an animation to hear the sound of applause when a picture is revealed. We can apply more than one animation, so we can make a line of text fly in with or without sound, and then make the text fly out. We can use emphasis, entrance, or exit options in addition to preset or custom motion paths.

We create custom animations in the **Custom Animation** task pane. The Custom Animation task pane shows important information about an animation effect, including the type of effect, the order of multiple effects in relation to each other, and a portion of the text of the effect.

- **Add a Custom Animation from the Quicklist :**
  - **Animations Tab on the Ribbon :**
    1. Firstly, we click the **Animations** tab on the ribbon.
    2. We select the object to be animated, such as a text box, or a graphic object.
    3. We click the drop down button beside the **Custom Animation** button located beside **Animate**
    4. The list of options allows us to quickly add one of the most commonly used animation types.

- **Open the Custom Animations Task Pane :**

1. We simply click on the **Custom Animation** button on the **Animations** group under the **Animations** menu.
2. This opens the **Custom Animations** task pane on the right side of the screen.

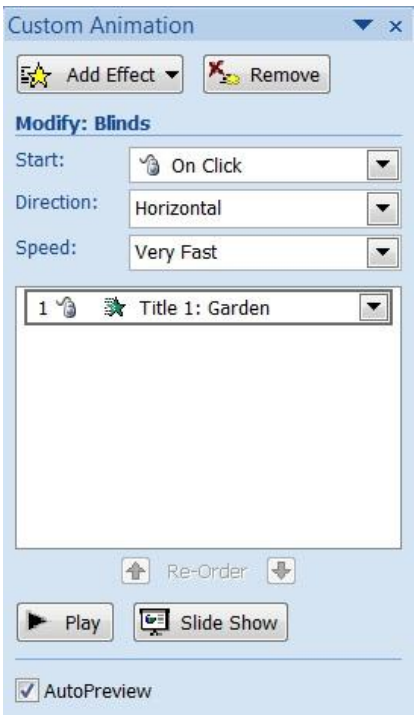


Figure 15.9 : The Custom Animation task pane

3. We choose the title, a picture or clip art, or a bulleted list to apply the first animation by the following.
   - ø We select graphics by clicking on the object.
   - ø We select a title or bulleted list by clicking on the border of the text box.
4. Once an object has been selected, the **Add Effect** button becomes active in the **Custom Animations** task pane.
5. We select a style of effect, such as **Entrance**, **Emphasis**, **Exit** or **Motion Path**. Choosing one of these styles will reveal a sub-menu with selections of animations.
6. We click on different animations and we will see a preview of the effect on the slide.
7. Lastly we make our selection.

- **Modifying an Animation Effect :**
  1. Firstly, we select the object whose animation effect has to be modified
  2. To modify the custom animation effect, we select the drop-down arrow beside each of the three categories – **Start**, **Direction** and **Speed**.

  a) Start
  - **On click** – Starts the animation on the mouse click
  - **With previous** – Starts the animation at the same time as the previous animation (could be another animation on this slide or the slide transition of this slide)
  - **After previous** – Starts the animation when the previous animation or transition has finished

  b) Direction
  - This option will vary depending on which Effect we have chosen. **Directions** can be from top, from right side, from bottom and so on.

  c) Speed
  - Speeds vary from very slow to very fast.

- **Move Animation Effects Up or Down in the List :** After applying more than one animation to a slide, we may wish to re-order them so that the title appears first and objects appear as they are referred.
  1. Firstly, we click on the animation to be moved.
  2. Then we use the **Re-Order** arrows at the bottom of the **Custom Animation** task pane to move the animation up or down in the list.
- **Other Effect Options for Custom Animations :** We can apply additional effects to objects on our PowerPoint slides such as sound effects or dim the previous bullet points as each new bullet appears.
  1. Firstly we select the effect in the list.
  2. Then we click the drop-down arrow to see available options.

3. We select **Effect Options** which opens the dialog box in **Figure 15.10**

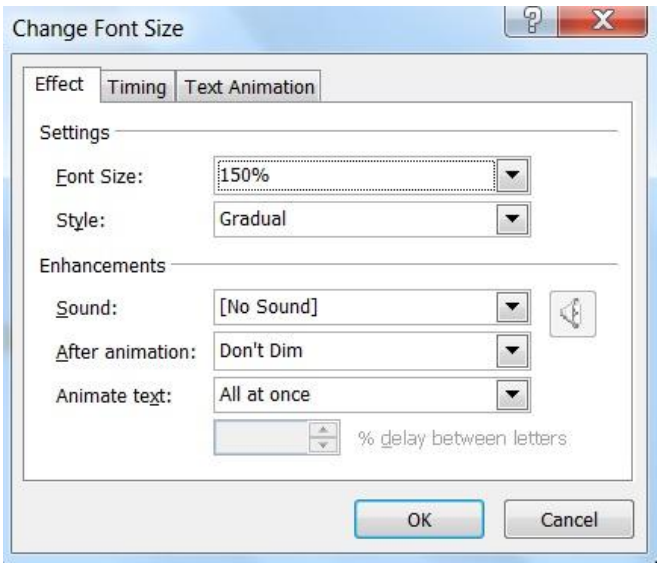


Figure 15.10 : The Effect Options dialog box

Timings are settings that automate our PowerPoint presentation. We can set the number of seconds for a specific item to show on screen and when it should start.

In the **Timing** dialog box we can also modify settings previously set.

Text Animations allow us to introduce text on the screen by paragraph level, automatically after a set number of seconds or in reverse order.

15.8.2 Applying Slide Transition

Slide transitions are the animation-like effects that occur in Slide Show view when moving from one slide to the next during an on-screen presentation. We can control the speed of each slide transition effect, and can also add sound.

Transition effects add some great animation to the slides in a presentation. Microsoft Office PowerPoint 2007 includes many different types of slide transitions. These transition effects are included in groups, each group having several effects of different

types. The groups are Fades and Dissolves, Wipes, Push and Cover and Stripes and Bars.

- **To add the same slide transition to all of the slides in a presentation we follow these steps:**
  1. Firstly, on the left side of the slide window, in the pane that contains the **Outline and Slides** tabs, we click the **Slides** tab.
  2. Then we select the slide thumbnails of the slides that we want to apply slide transitions to.
  3. On the **Animations** tab, in the **Transition To This Slide** group, we click a slide transition effect.

     To see more transition effects we may click the **More** button 
  4. To set the slide transition speed between the current slide and the next slide, in the **Transition To This Slide** group, we click the arrow next to **Transition Speed**, and then select the speed that we want.
  5. In the **Transition To This Slide** group, we click **Apply to All**.
- **To add different slide transitions to the slides in a presentation we follow these steps:**
  1. On the left side of the slide window, in the pane that contains the **Outline** and **Slides** tabs, we click the **Slides** tab, and then click a slide thumbnail.
  2. On the **Animations** tab, in the **Transition To This Slide** group, we click the slide transition effect that we want for that slide.

     To see more transition effects, we may click the **More** button 
  3. To set the slide transition speed between the current slide and the next slide, in the **Transition To This Slide** group, we click the arrow next to **Transition Speed**, and then select the speed that we want.
  4. To add a different slide transition to another slide in the presentation, we may repeat steps 2 through 4.

15.9 SAVING, RUNNING AND CLOSING A PRESENTATION

After we have finished creating our presentation in PowerPoint 2007, we have to save it in order to later use it. Let us now see how we can save, run and close a presentation in PowerPoint 2007.

- **To save a presentation we follow these steps:**

1. Firstly, we click the Microsoft Office button then click **Save**.

   OR

   Click the **Save** button

   OR

   Press **Ctrl + S**

2. If we are saving the file for the first time, we are asked to give it a name as in **Figure 15.11**

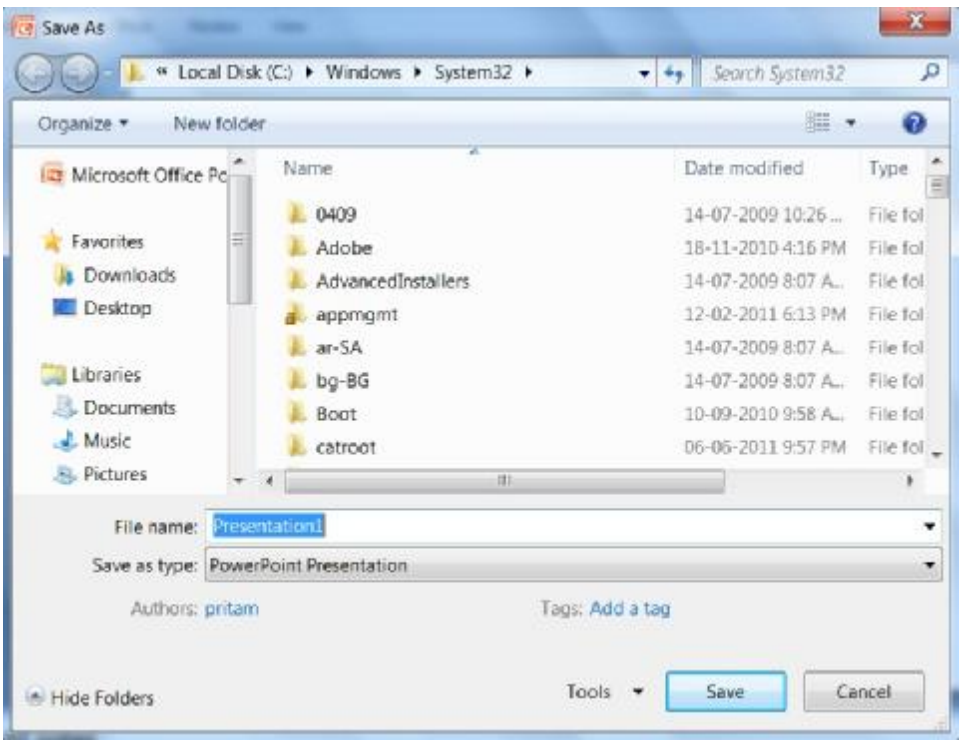


Figure 15.11 : The Save As dialog box

We then specify the file format type in the **Save as type** list, in which the presentation is to be saved. If we want to save the file for use in earlier version of PowerPoint, we may save our file in the 97-2003 file format by selecting 97-2003 from that list.

- **Running a presentation :** Running a finished presentation in PowerPoint gives us several options to choose from, that allow us to run a presentation in a variety of ways.

  Clicking on the **Slide Show** tabs on the Ribbon shows us a lot of options as shown in **Figure 15.12**



Figure 15.12 : Options for slide show

In the **Start Slide Show** group there are options to choose from that allow us to begin the slide show.

- **From beginning :** Clicking on this option begins the slide show from the very first in the presentation.
- **From Current Slide :** Clicking on this option begins the slide show from the slide that is selected.
- **Custom Slide Show :** Clicking this option and then selecting **Custom Shows** opens the dialog box of **Figure 15.13**, which allows us to define the sequence of the slides in the show.

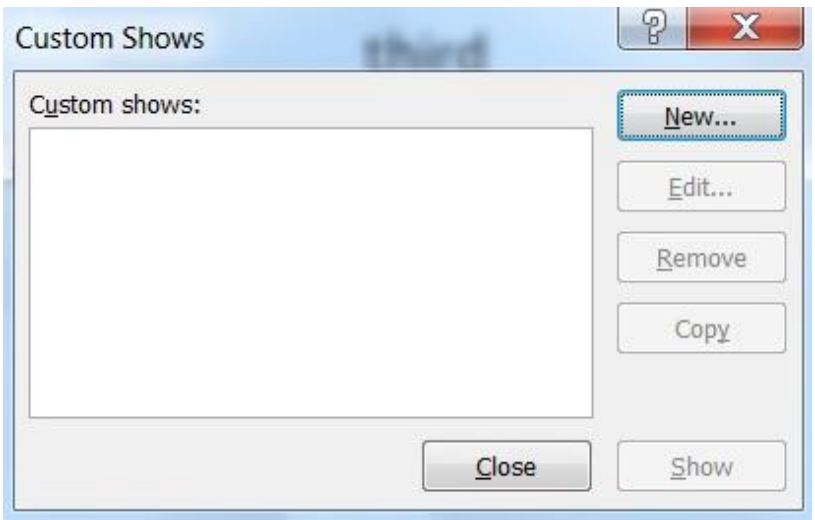


Figure 15.13 : The Custom Shows dialog box

- We click the **New** button to open the **Define Custom Show** dialog box of **Figure 15.14**

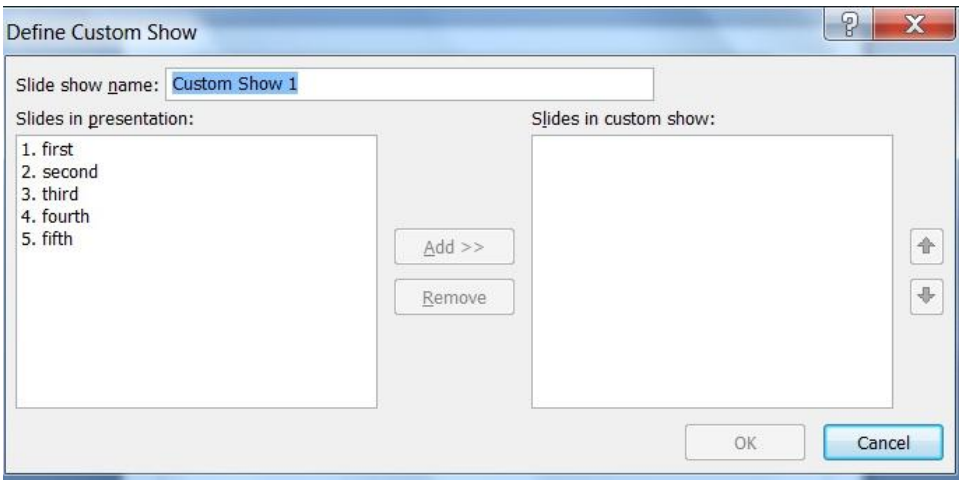


Figure 15.14 : The Define Custom Show dialog box

The **Slides in presentation** box display the slides that are included in the current presentation, and the **Slides in custom show** list display the slides that are included in the **Custom show**. To add slides to the Custom show, we select the slide in the **Slides in presentation** list and click the **Add** button, which adds that particular slide to the **Slides in Custom show** list.

- ø After including the slides to our Custom show, we give it a name and click **OK,** which closes the **Define Custom Show** dialog box. The **Custom Shows list** in the **Custom Shows** dialog box now includes the name of our custom show.
- ø To run the presentation we may click the **Show** button of the **Custom Shows** dialog box or Close the **Custom Shows** dialog box to run the presentation at a later stage.
- ø To run the presentation at a later stage, we click on the **Custom Slide Show** button on the **Ribbon** in the **Start Slide Show** group under the **Slide Show** menu, and click on the name of our **Custom show** which starts the show.

- **Closing a presentation :** We can have several ways by which we close a presentation. When we finish viewing the last slide of a presentation, we get to see the screen as in **Figure 15.15**

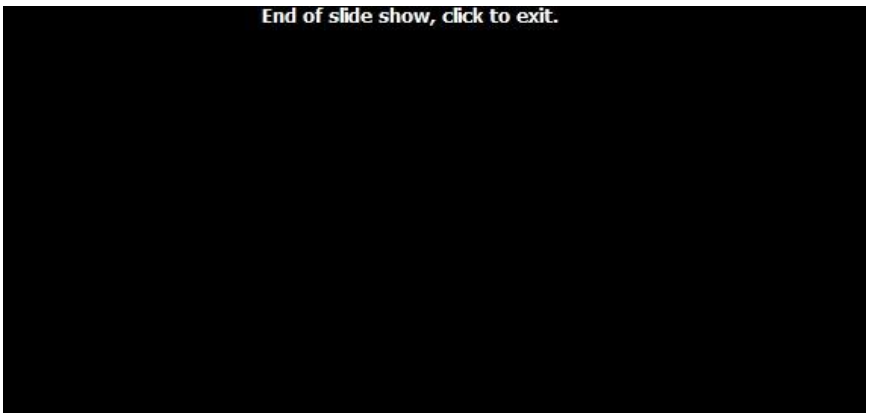


Figure 15.15 : End of a Presentation

From the figure it is quite obvious that the presentation has ended and we are asked to close the presentation with a mouse-click. We can also close a presentation mid-way during the slide show by

- Right-clicking on the slide being shown and selecting **End show**.

  OR

- Pressing the **Esc** key.

15.10 OPENING AN EXISTING PRESENTATION

We have already learnt how to create various kinds of presentations in PowerPoint 2007, adding text, graphics, transitions etc. Let us now see how to open an already existing PowerPoint presentation.

- **To open a presentation we follow these steps :**

  1. We click the Microsoft office button and select the **Open** option

     OR

     Use the keyboard shortcut **Ctrl + O**

     OR

     Click the **Open** icon on the **Quick Access toolbar**

  2. This opens the **Open** dialog box as in **Figure 15.16**

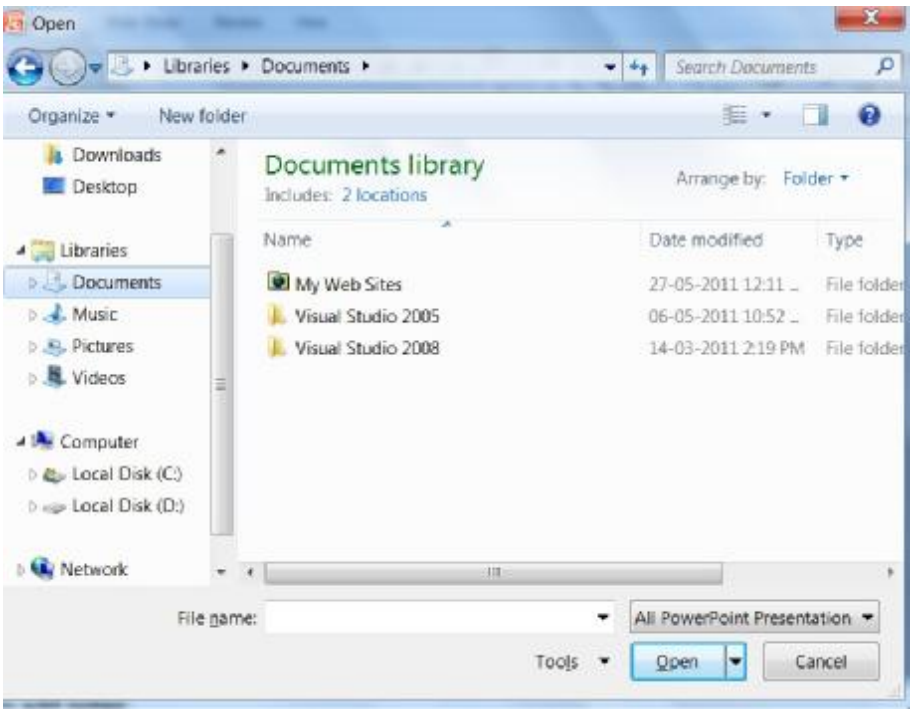


Figure 15.16 : The Open dialog box

3. We browse through directories and select an already existing MS PowerPoint file.
4. Then we click the **Open** button to open the selected file in PowerPoint.



CHECK YOUR PROGRESS

3. Fill in the blanks:
   (i) Animation is the way of adding a special _____ or _____ effect to a slide object.
   (ii) We can apply animation effects that have been _____ to gain more control over how and when effects are applied.
   (iii) We create custom animations in the _____ task pane.
   (iv) _____ are settings that allow us to automate our PowerPoint presentation.

(v) We can set the number of _____ for a specific item to show on screen and when it should start.

(vi) We can control the speed of each slide _____ effect.

(vii) _____ effects are included in groups, each group having several effects of different types.

(viii) The Slides in _____ box display the slides that are included in the current presentation, and the Slides in _____ display the slides that are included in the Custom show.



15.11 LET US SUM UP

- Slides in a PowerPoint presentation may contain text, graphic, effects, sounds etc
- We can change the layout of our PowerPoint slide/slides
- WordArt is a gallery of text styles
- The photo album feature is new in PowerPoint 2007 and it allows us to easily create a photo album to share pictures.
- Design themes are a new addition to PowerPoint 2007.
- Slide transitions are the visual effects that are applied to a presentation, and can be seen when we move from one slide to another slide during the presentation.
- The Custom Animation task pane shows important information about an animation effect.
- Text Animations allow us to introduce text on our screen by paragraph level, automatically after a set number of seconds or in reverse order.
- Slide transitions are the animation-like effects that occur in Slide Show view when you move from one slide to the next during an on-screen presentation.



15.12 FURTHER READING

- Weverka, P. (2011). PowerPoint 2007 all-in-one desk reference for dummies. John Wiley & Sons.
- O'Leary, T., & O'Leary, L. (2007). Microsoft Office 2007. McGraw-Hill, Inc..



15.13 ANSWERS TO CHECK YOUR PROGRESS

Ans. to Q. No. 1 : (i) Slide pane, (ii) Placeholders, (iii) ClipArt, (iv) SmartArt, (v) themes

Ans. to Q. No. 2 : (i) True, (ii) False, (iii) True, (iv) False, (v) True

Ans. to Q. No. 3 : (i) visual, sound, (ii) customized, (iii) Custom Animation, (iv) Timings, (v) seconds, (vi) transition, (vii) Transition, (viii) presentation, custom show list



15.14 MODEL QUESTIONS

Q1. What is MS PowerPoint 2007 and why is it used?

Q2. How do we create a new PowerPoint presentation?

Q3. What are slides and what are the operations that we perform on slides?

Q4. What are text and graphics in PowerPoint and how can we use them?

Q5. What are PowerPoint SmartArt? How do we use them?

Q6. What are design themes in PowerPoint 2007, and how do we apply them?

Q7. What is animation in PowerPoint 2007?

Q8. How can we apply Custom Animation to our PowerPoint presentation slides?

Q9. What are slide transition effects? Give an example of applying any transition effect to slides.

Q10. How do we run a PowerPoint presentation?

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