



Uttar Pradesh Rajarshi Tandon  
Open University

## Certificate in Computer Course

# CCC-1.1

## Office Tools and Internet

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Uttar Pradesh Rajarshi Tandon  
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**CCC-1.1**

**Office Tools and Internet**

Block

**1**

**MS-WORD & ITS ADVANCED FEATURES**

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<b>Prof. (Dr.) Ashutosh Gupta</b> (Director-Incharge) School of Computer and Information Science, UPRTOU, Prayagraj	<b>Chairman</b>
<b>Prof. R. S. Yadav</b> Department of Computer Science and Engineering MNNIT-Allahabad, Prayagraj	<b>Member</b>
<b>Ms. Marisha</b> Asstt. Professor, School of Science, UPRTOU, Prayagraj	<b>Member</b>
<b>Mr. Manoj Kumar Balwant</b> Asstt. Professor, School of Science, UPRTOU, Prayagraj	<b>Member</b>

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## Course Preparation Committee

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<b>Dr. Ravi Shankar Shukla</b> Associate Professor, Department of CSE, Invertis University Bareilly-243006, Uttar Pradesh	<b>Author (Block 1, 2)</b>
<b>Ms. Marisha</b> Asstt. Professor, School of Science, UPRTOU, Prayagraj	<b>Author (Block 3: Unit: 1, 2, 3)</b>
<b>Mr. Manoj Kumar Balwant</b> Asstt. Professor, School of Science, UPRTOU, Prayagraj	<b>Author (Block 4, Unit: 1, 2, 3, 4)</b>
<b>Dr. Sudhkar Pandey</b> Head, Department of IT, NIT, Raipur, Chattisgrah	<b>Editor (Block 1, 2)</b>
<b>Prof. (Dr.) Ashutosh Gupta</b> (Director-Incharge) School of Computer and Information Science, UPRTOU, Prayagraj	<b>Editor (Block 3, Block 4)</b>
<b>Mr. Manoj Kumar Balwant</b> Asstt. Professor, School of Science, UPRTOU, Prayagraj	<b>Coordinator</b>

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# UNIT-I

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## MS-WORD

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### Structure

- 1.0 Introduction
- 1.1 MS-Word
- 1.2 Features
- 1.3 Creating
- 1.4 Saving and Opening Documents in Word
- 1.5 Interface
- 1.6 Toolbars
- 1.7 Ruler, Menus
- 1.8 Keyboard Shortcut
- 1.9 Editing
- 1.10 Previewing
- 1.11 Printing & Formatting a Document
- 1.12 Summary
- 1.13 Review Questions

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### 1.0 INTRODUCTION

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This is the third unit of this block, named Word Processing. In this unit there are thirteen sections. Each section has detailed description about word processing. In Sec. 1.1 you will learn about MS-Word, in the second section i.e. Sec. 1.2 you will know about words features. In next section i.e. Sec 1.3 and 1.4 you will learn about creating, opening and saving word document. Sec. 1.5 will tell you about word Interface. Sec 1.6 to 1.7 you will know about toolbars, ruler and menus. Next section Sec. 1.8 will describe about keyboard shortcut. Sec. 1.9 define how to edit a word document. In the next section i.e. Sec. 1.10 we define previewing a word document. In the next section we describe printing & formatting a document. In Sec. 1.12 and 1.13 you will find summary and review questions respectively.

## Objectives

After studying this unit you should be able to:

- Define MS-Word, Create, save and open a document.
- Define interface, toolbars, ruler, menu, keyword shortcuts, editing, previewing and formatting a document.

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## 1.1 MS-WORD

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Microsoft Word is a word processing software package. You can use it to type letters, reports, and other documents. It gives you the ability to use your computer for desktop publishing. This tutorial teaches Microsoft Word 2007 basics. Although this tutorial was created for the computer novice, because Microsoft Word 2007 is so different from previous versions of Microsoft Word, even experienced users may find it useful. This lesson will introduce you to the Word window. You use this window to interact with Word.

### Starting Word

1. Click the Start button - the Start menu appears
2. Point to the entry for All Programs
3. Click on the entry for Microsoft Office – Word 2007

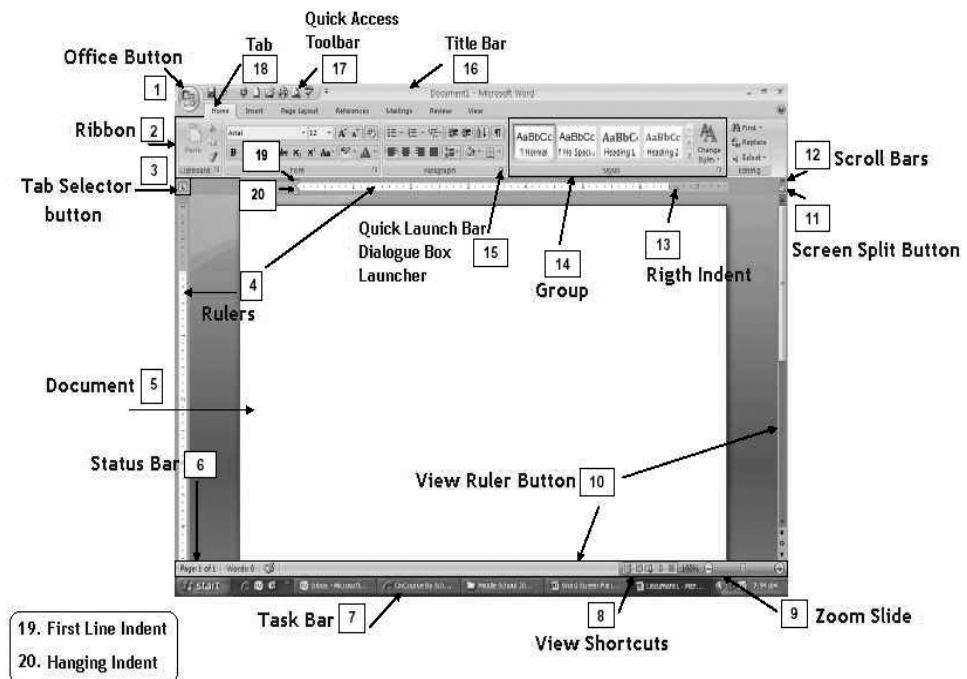


Figure 1-1 MS-Word Screen

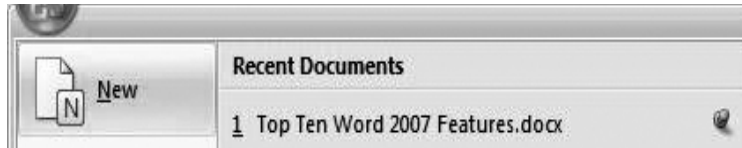
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## 1.2 FEATURES OF MS WORD

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### 1. Push Pins

As you work on documents, they appear in the Recent Documents list under the Office button in the top left corner. A single click on one re-opens it for editing, until it's pushed off the bottom of the list by new arrivals. Clicking the push pin sticks the document to the list for as long as you need to work on it.



**Figure 1-2 Push Pin**

### 2. Table Styles

Tables are a great way to present information, and now, it's easy to make them pretty with the built-in table styles.

### 3. Smart Art

Attractive, easy to use, pre-created charts and diagrams come in handy and save time when we want to add some visual interest to a document, as an alternative to a table.



**Figure 1-3 Smart Art**

### 4. Cropping Images

We are often pasting screenshots of websites into documents, and we think they are tidier without the browser window around them. We want the viewer to focus just on the web page content. The image cropping tool is invaluable for quickly trimming an image down, without need for external image software.

### 5. Track Changes

When collaborating on a document, it's critical to see the changes others make. Enabling this feature makes that such a breeze.

## 6. Compare Documents

However, if your collaborators forget to track their changes, this feature will find them, by comparing two different versions of the same document. You can easily accept, reject and merge changes into a final version.

## 7. Inspect Document

After a series of revisions, changes tracked and accepted or rejected, and comments added and removed, running the Document Inspector is wise. It will let you know about any last stray changes and comments, so that the version you release is truly the final one.

## 8. Save as PDF

Not everyone has Office 2007, but most people have or can install Adobe Reader or one of several other PDF readers. You can save your document as a PDF directly from Word with no additional software required.



Figure 1-4 PDF Plug-Ins

## 9. The Ribbon Bar

Last but not least, we've found that the grouping of features on the Ribbon Bar really does make sense. A skeptic at heart, we've come to enjoy using this interface over the options buried many levels deep in menus.



Figure 1-5 Ribbon Bar

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## 1.3 CREATE A NEW DOCUMENT

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There are several ways to create new documents, open existing documents, and save documents in Word:

- Click the **Microsoft Office Button**  and Click **New** or
- Press CTRL+N (Depress the CTRL key while pressing the “N”) on the keyboard



You will notice that when you click on the Microsoft Office Button and Click **New**, you have many choices about the types of documents you can create. If you wish to start from a blank document, click **Blank**. If you wish to start from a template, you can browse through your choices on the left, see the choices on center screen, and preview the selection on the right screen.

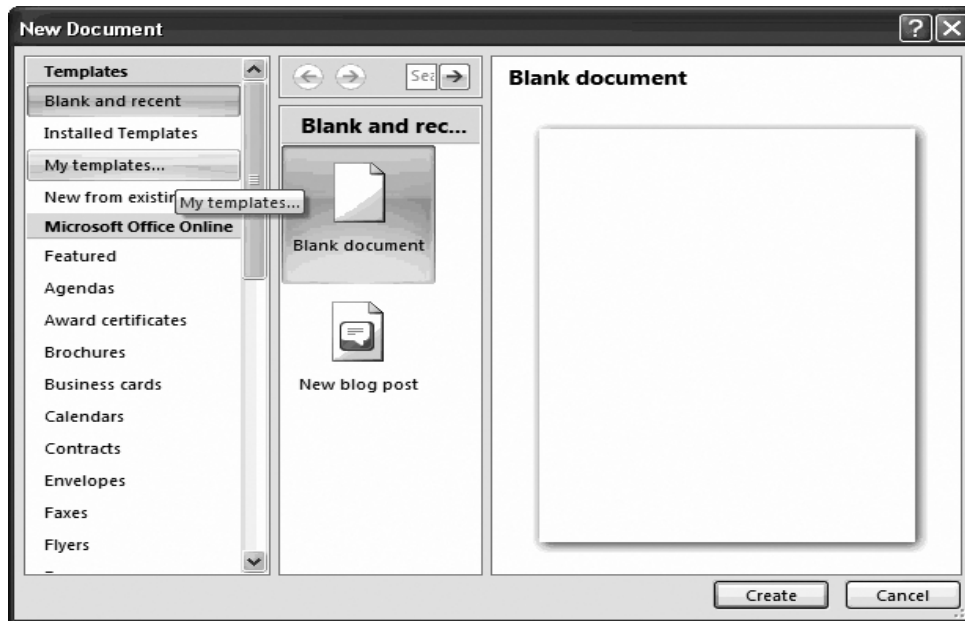


Figure 1-6- New Document Window

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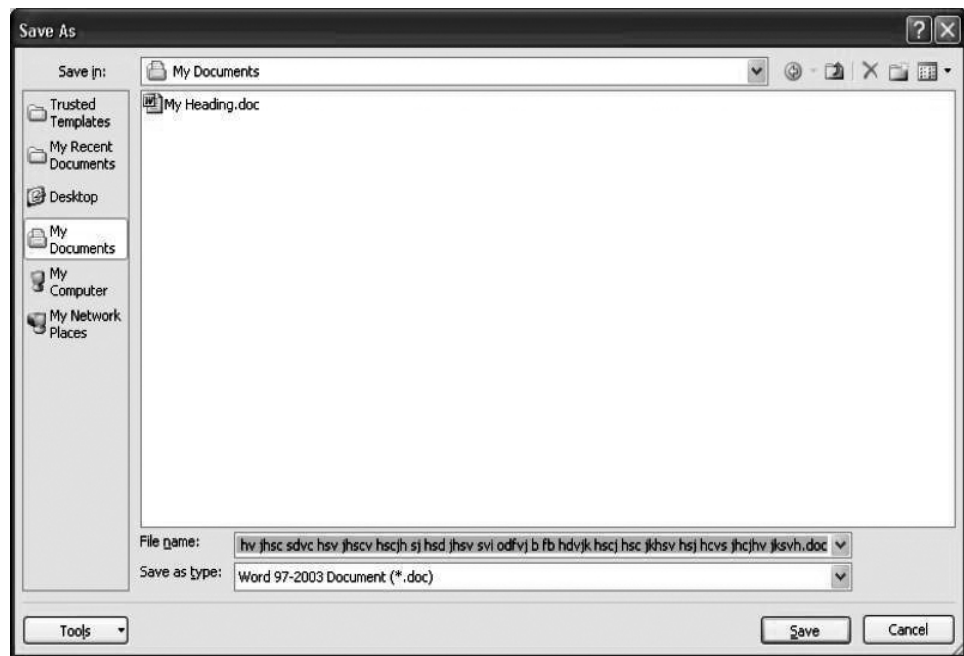
## 1.4 SAVING DOCUMENT

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You should save your work regularly - ideally every 10 minutes so that you don't lose what you have typed should the computer stop working. Word does have an *autosave* facility which should guard against loss of work; however this is *not* a proper save and should not be relied on.

1. Click on the **[Office]** button in the top left-hand corner and then you can choose **Save** (or use the **[Save]** button on the *Quick Access Toolbar* )

For a new document, a **Save As** dialog box similar to that below will appear:



**Figure 1-7- Save As Dialog Box**

2. Type a name for your work (e.g. **my first document**) - there's no need to clear the *File name:* box first; whatever you type will replace what's there already

*Note: you should mainly use letters and numbers for your file names (spaces, hyphens and underscores are also permitted); **DO NOT** use any other punctuation marks as they can cause problems.*

Your work will be saved to *My Documents*, which has been set up to be on *drive N:* on the computers on campus. This is an area on the network where you can save your own work, known as your *home directory*. No one else has access to your home directory; you connect to it whenever you logon to an IT Services computer. Backup copies of the files in your home directory are made hourly, so you should never lose any of your work.

Though the [**Save**] button shows a picture of a floppy disk, it is NOT a good idea to work directly from floppy. They can easily be damaged (or lost) and work can be corrupted if they become full. We recommend you only use floppy disks to move your files from one computer to another (this also applies to more modern media such as memory sticks and CDs).

3. Press <**Enter**> or click on [**Save**]

Once you have given your document a name, this will appear (instead of the original name, e.g. Document1) at the top of the Word window. Note that the extension **.docx** (or **.doc** for Word 2003

documents) is added automatically.

### 1.4.1 Opening an Existing Document

You may want to do some further work on an existing document. In this next exercise you will be opening the file you have just closed.

The notes which follow assume that your work was saved to My Documents on drive N: (your home directory). If your file is on a USB memory stick or a floppy disk, then you should first copy it to My Documents

*IMPORTANT: If you open a file direct from a USB memory stick or floppy disk then you must not remove the pen or disk until you have properly closed the file (or disconnected the memory stick). If you don't do this, it can result in your files being corrupted and you may lose your work. Never swap pens or disks or you may corrupt them both.*

1. Click on the [Office] button and choose Open

Note the list of Recent Documents on the right-hand side – from here you can open up your latest documents and can pin documents permanently to the list. The [Open] button on the Quick Access Toolbar (or the key combination <Ctrl o>) can be used to open a file but you then don't see the list of Recent Documents.



You will see a dialog box similar to the following, showing any folders and Word files in My Documents:

2. Click on the name of your file you want to work on, eg my first document.docx

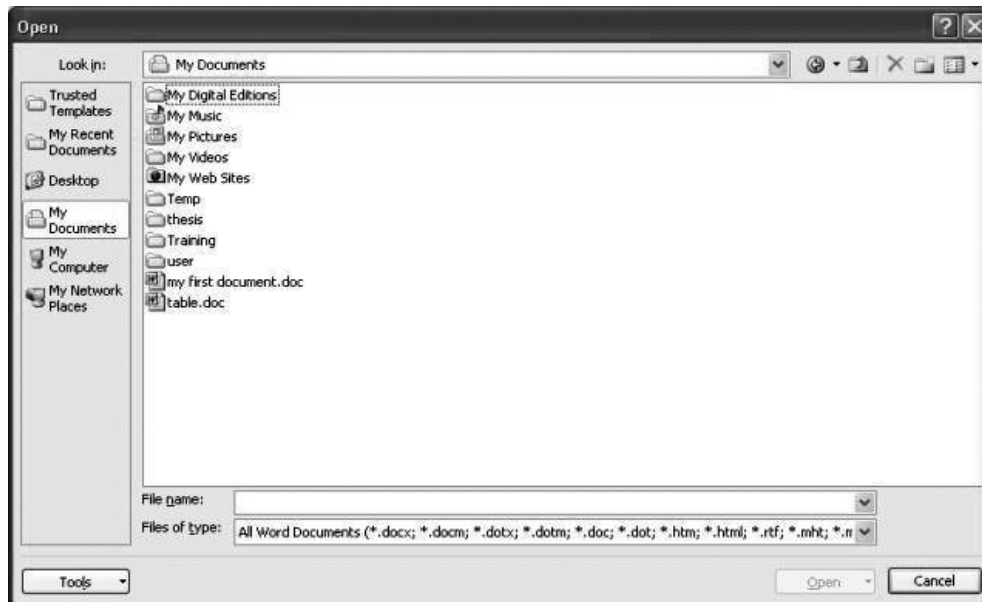


Figure 1-8- Open Dialog Box

3. Press <Enter> or click on [Open]

Use the <Page Down> key (above the arrow keys) to move down your document or <Ctrl End> to go to the end of your document.

### Check your progress

- Q1. What do you understand by MS Word? Also define the features of MS Word.
- Q2. Explain how to create, open and save a document in MS- Word.

## 1.5 INTERFACE OF MS WORD

When you launch MS Word 2007, its program window appears on screen. A screenshot of the window is shown below with the screen elements labeled. This tutorial will introduce these elements in brief. You would learn about them in detail in the subsequent tutorials.

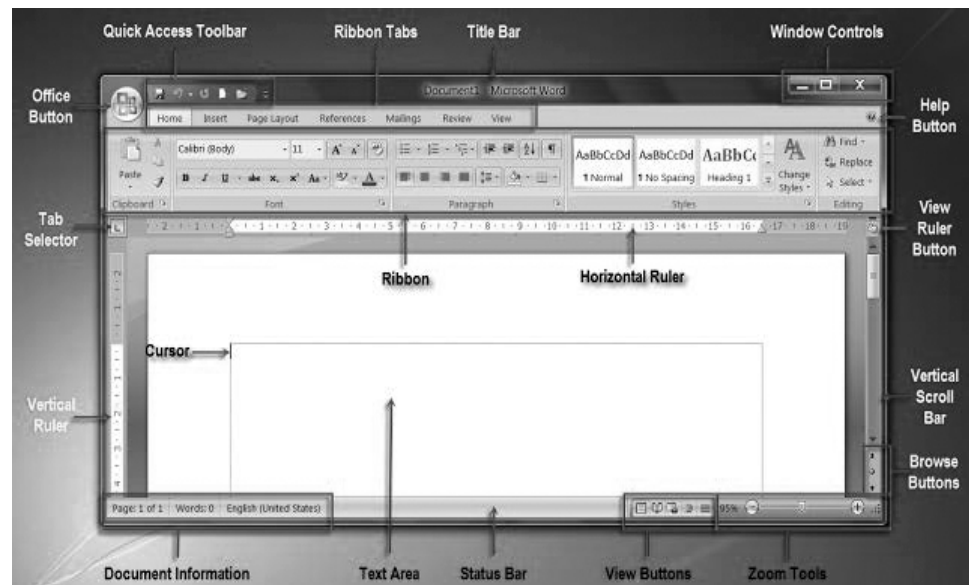


Figure 1-9 Interface of MS word

### Title Bar

The title bar shows the name of the document on screen. When a new document is started, Word 2007 gives it a generic name like 'Document 1' and this is displayed on the title bar. When you save the document with a name, the generic name on the title bar is replaced by the given name.

### Quick Access Toolbar

Located in the top left corner of the Word 2007 window, the Quick Access Toolbar contains some of the most frequently used commands like

Save, Undo, Redo. You can add more commands to the Quick Access Toolbar as per your need. This toolbar helps you to perform Word tasks speedily by providing one-click access to oft used commands.

### **Window Controls**

These are a set of three buttons in the top right corner of the program window.

- ❖ The right button, displaying an x, is the Close button. On clicking, this button closes the current document but not the Word program.
- ❖ The left button is the Minimize button which minimizes the program window to the taskbar.
- ❖ The middle button, sporting a rectangle, is the Maximize button, which, on clicking, maximizes the Word 2007 window and the button image changes to a pair of rectangles. Another click restores the program window to its previous size and the button image to a single rectangle.

### **Ribbon**

You can think of the Ribbon as a collection of seven horizontal tabbed toolbars arranged on top of each other. These toolbars are accessed through their tabs. The toolbars have command buttons, menus and input boxes arranged in groups. Some groups have dialog launchers (represented by a downward pointing arrow) which, when clicked, display a dialog box related to that group.

At any given time, only one tabbed toolbar is visible. When Word is launched, the Home tab is current and the toolbar attached to it is at the top, enabling you to invoke its commands by clicking them. When any other tab is clicked, its toolbar comes to the top and you can use the commands stored on it.

You may minimize the ribbon by clicking the 'Customize Quick Access Toolbar' button located to the right of the 'Quick access Toolbar' and choosing 'Minimize the Ribbon' from the drop-down menu. The Ribbon can also be minimized by double clicking the active tab; clicking any tab of the minimized Ribbon will redisplay it once again.

### **Office Button**

Clicking 'Office' button reveals a drop-down menu showing commands for file operations. These commands are described below in brief.

- ❖ **New:** When you click this button, the 'New Document' window comes up displaying three panes. The first pane shows a list of templates types, the second pane shows the templates available for the template type selected in the first pane and the third pane shows a preview of the template selected in second pane. You can start a new document based on a template selected amongst these.

By default, the blank document template is chosen. Clicking the Create button starts a new document based on the selected template. Notice that Word 2007 offers a wide variety of templates from the Microsoft Office Online.

- ❖ **Open:** Starts the Open dialog where you can navigate to your documents folder, select an existing (i.e. previously saved) document and open it in Word window.
- ❖ **Save:** Clicking Save button saves the current document if it has been given a name and saved earlier, otherwise it launches the Save As dialog.
- ❖ **Save As:** Opens the Save As dialog. Here you can assign a name to a new document and save it. You may also rename a document saved earlier and save it with the new name.
- ❖ **Print:** This command is used for printing the current document.
- ❖ **Prepare:** Clicking this button opens a menu which provides information regarding the current document and has commands for preparing it for distribution.
- ❖ **Send:** You may use this command to email a document or to fax it via internet.
- ❖ **Publish:** This command allows you to create a blog post and publish it.
- ❖ **Close:** You can close the current document using this button. However, the Word 2007 program keeps running.
- ❖ **Word Options:** Opens the Word Options Dialog where you can chose your preferred settings for display, proofing, saving, language, etc. It also provides facility for customizing the Ribbon and the Quick access Toolbar.
- ❖ **Exit Word:** Clicking this option closes the Word 2007 package together with all open documents.

### **Help Button**

Located below the Window Controls in the top right corner of Word window, this button brings up the Word Help window.

### **Rulers**

The horizontal ruler is used to set tabs and indent text. You may use the vertical ruler to set vertical location of text in the document. If the rulers are not visible, click the View Ruler button immediately below the Ribbon on the extreme right.

The rulers show measurements in inches or centimeters, depending on the units of measure specified in Word Options.

## Tab Selector

Repeated clicking of the Tab Selector shows five tab markers and two indent markers. By choosing the desired tab or indent marker and clicking on the horizontal ruler, you can set tabs or indent text.

## Status Bar

On the left hand side, the status bar displays document information such as the current page number and total number of pages, word count, language, proofing error notification, etc. You can customize the information display by right clicking the status bar and making selections out of the context menu that pops up.

## View Buttons

These buttons allow you to use five different document views:

- ❖ **Print Layout View:** This view shows the document as it will look when it is printed.
- ❖ **Full Screen Reading View:** This view shows the document on full screen to make reading your document more comfortable.
- ❖ **Web Layout View:** Web Layout view enables you to see your document as it would appear in a browser such as Firefox or Internet Explorer.
- ❖ **Outline View:** Outline view displays the document in outline form in which headings could be displayed without the text. When you move a heading, the accompanying text will move with it.
- ❖ **Draft View:** This is the most frequently used view for editing your document.

## Zoom Tools

The Zoom slider lets you zoom out or zoom in the current document. The zoom range is from 10% to 500%. The current zoom level is displayed on the taskbar immediately left of the slider. Clicking the zoom level opens the Zoom dialog where you can specify the desired zoom level.

## Vertical & Horizontal Scroll Bars

The vertical scroll bar is located at the extreme right of the Word 2007 window while the horizontal scroll bar is at the bottom of the window just above the status bar. Vertical scroll bar is always visible while the horizontal scroll bar appears only when the document width exceeds the screen width.

The scroll bars let you scroll the document up-down vertically or left-right horizontally. To scroll, you need to click and drag the scroll box showing three vertical/horizontal lines. The document moves in a direction opposite to the movement of the scroll box.

## Text Area

Framed between the rulers and the scroll bars is a large area looking like a blank sheet of paper. This is the text area where you type the text of the document. You will see a blinking vertical line in the top left corner. This is the Cursor. The typed characters appear at its location. As a character appears at its location, the cursor moves to its immediate right.

## Mouse Pointer

In Word, you use the mouse to choose commands, move around in the document, select and move text, etc. As you move the mouse pointer across the screen, it takes different shapes. It is a right pointing arrow within the left margin of the text area and an I-beam in the rest of the text area. Outside the text area, it takes the shape of a left pointing arrow.

The mouse is used to perform following actions:

- ❖ Point: Positioning the mouse pointer on an item.
- ❖ Single click: Clicking the left mouse button once.
- ❖ Double click: Clicking the left mouse button twice in quick succession.
- ❖ Triple click: Clicking the left mouse button thrice in quick succession.
- ❖ Right click: Clicking the right mouse button once.
- ❖ Drag & Drop: Pointing to an item, pressing and holding the left mouse button while moving the pointer to a new location and releasing the mouse button.

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## 1.6 QUICK ACCESS TOOLBAR

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**Figure 1-10**Quick Access

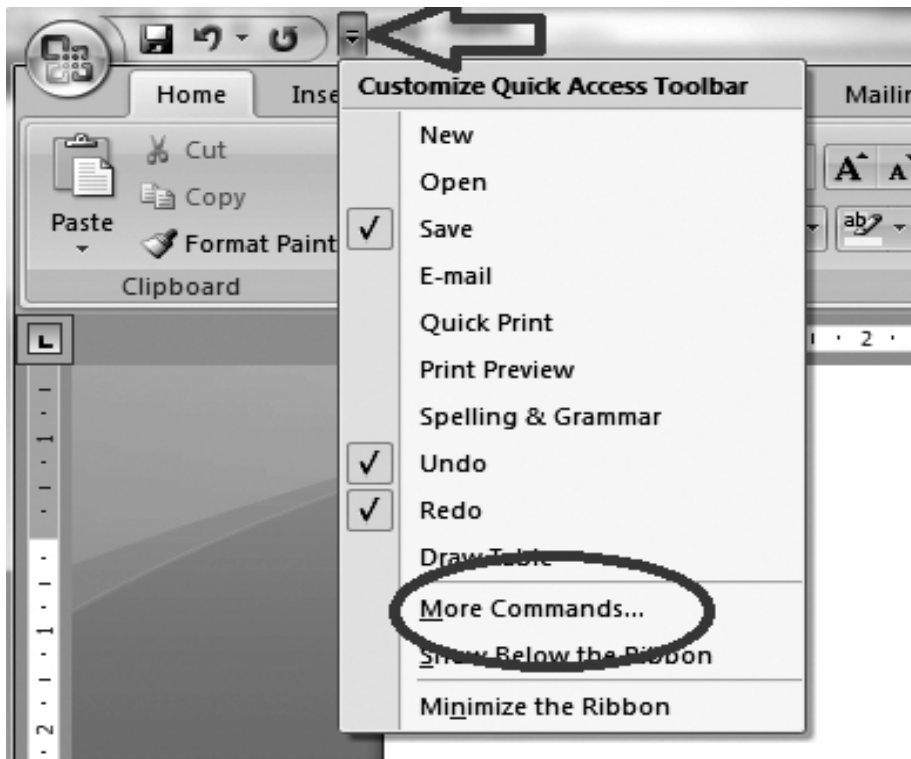
The quick access toolbar is a customizable toolbar that contains commands that you may want to use. You can place the quick access toolbar above or below the ribbon. To change the location of the quick



access toolbar, click on the arrow at the end of the toolbar and click on Show below the Ribbon. By default, you will have the commands to Save, Undo, and Redo. You may also add buttons such as Check Spelling and Grammar, Open a document, or create a New Document button.

### ***Quick Access Toolbar***

- A. *Save*
- B. *Redo*
- C. *Undo*
- D. *Add other buttons*



**Figure 1-11 Quick Access Toolbar**

You can also add items to the quick access toolbar. Right click on any item in the Office Button or the Ribbon and click on Add to Quick Access Toolbar and a shortcut will be added to the Quick Access Toolbar.



**Figure 1-12 Add Quick Access Toolbar**

## Check your progress

- Q1. Define the commands of Office button.
- Q2. Explain Quick Access Toolbar.
- Q3. Explain Vertical & Horizontal Scroll Bars.

### 1.7 RULER IN WORD 2007

The Ruler Bar allows you to format the vertical alignment of text in a document. It displays and sets tabs and indent markers for paragraphs. You can use it to quickly change the format of your document.

There are four types of indents: Left indent, Right indent, First Line indent, and Hanging indent. The Left and Right indents control the space between the paragraph and the left or right margin. The First Line Indent is used to indent the first line of a paragraph, similar to how you might use a tab. The Hanging indent controls how the text of a paragraph lines up under the first line. This is usually adjusted when working with bullets or numbering when text does not line up properly.

Indents are displayed on the Ruler. If your Ruler is not showing at the top of the document, click the **Ruler** checkbox on the View tab, in the Show section. You can also take a shortcut and click the **View Ruler** button at the top of your Scroll Bar. To apply your indent, simply select the text and drag the indent marker to the desired location.

About menus and toolbars

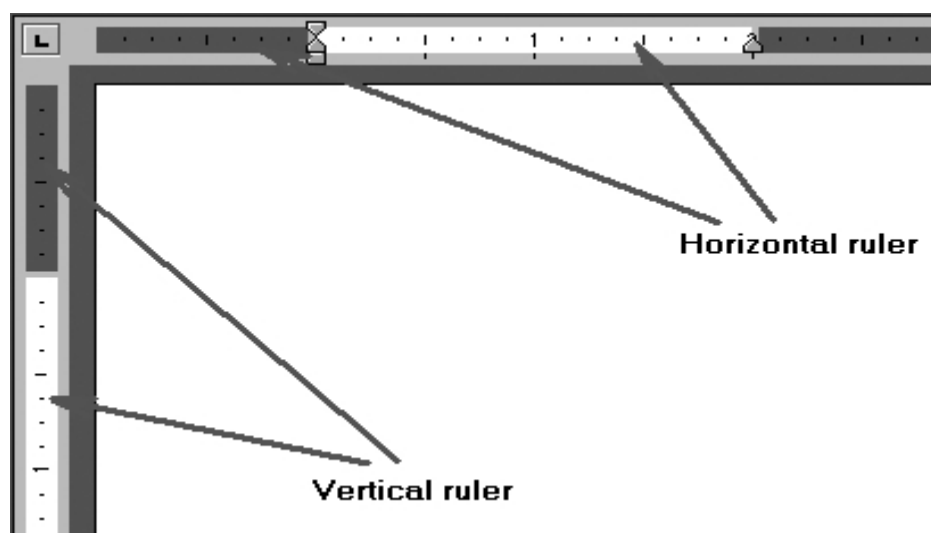
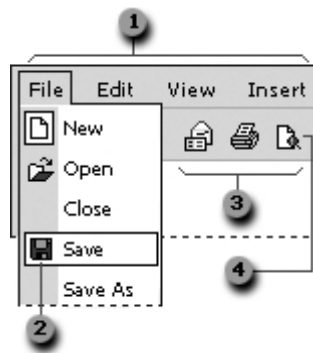


Figure 1-13 Rulers in MS-Word


A menu displays a list of commands. Some of these commands have images next to them so you can quickly associate the command with the image. Most menus are located on the menu bar, which is

the toolbar at the top of the screen. Toolbars can contain buttons, menus, or a combination of both.



**Figure 1-14**

### Displaying all the command on menu bar

To look for a command that you don't use often or have never used before, click the arrows  at the bottom of the menu to show all the commands. You can also double-click the menu to expand it. When you expand one menu, all of the menus are expanded until you choose a command or perform another action. When you click a command on the expanded menu, the command is immediately added to the short version of the menu. If you do not use the command often, it is dropped from the short version of the menu.

### Customize menu bar

You can customize menus and toolbars yourself; you can add and remove buttons and menus on toolbars, create your own custom toolbars, hide or display toolbars, and move toolbars. You can customize the menu bar the same way you customize any built-in toolbar — for example, you can quickly add and remove buttons and menus on the menu bar — but you can't hide the menu bar.

## 1.8 Keyboard Shortcuts

### Microsoft Office basics

To do this	Press
Switch to the next window.	<b>ALT+TAB</b>
Switch to the previous window.	<b>ALT+SHIFT+TAB</b>
Close the active window.	<b>CTRL+W or CTRL+F4</b>
Restore the size of the active	<b>ALT+F5</b>

window after you maximize it.	
Move to a task pane from another pane in the program window (clockwise direction). You may need to press F6 more than once.	<b>F6</b>
Move to a task pane from another pane in the program window (counterclockwise direction).	<b>SHIFT+F6</b>
When more than one window is open, switch to the next window.	<b>CTRL+F6</b>
Switch to the previous window.	<b>CTRL+SHIFT+F6</b>
Maximize or restore a selected window.	<b>CTRL+F10</b>
Copy a picture of the screen to the Clipboard.	<b>PRINT SCREEN</b>
Copy a picture of the selected window to the Clipboard.	<b>ALT+PRINT SCREEN</b>

**Table 1- MS Office Basics**

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## **1.9 EDITING A DOCUMENT**

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### **Typing and inserting Text**

To enter text just starts typing! The text will appear where the blinking cursor is located. Move the cursor by using the arrow buttons on the keyboard or positioning the mouse and clicking the left button. The keyboard shortcuts listed below are also helpful when moving through the text of a document:

<b>Move Action</b>	<b>Keystroke</b>
Beginning of the line	<b>HOME</b>
End of the line	<b>END</b>
Top of the document	<b>CTRL+HOME</b>
End of the document	<b>CTRL+END</b>

**Table-2 Short-cut Keys**

## Selecting Text

To change any attributes of text it must be highlighted first. Select the text by dragging the mouse over the desired text while keeping the left mouse button depressed, or hold down the **SHIFT** key on the keyboard while using the arrow buttons to highlight the text. The following table contains shortcuts for selecting a portion of the text:

<b>Selection</b>	<b>Technique</b>
Whole word	double-click within the word
Whole paragraph	triple-click within the paragraph
Several words or lines	drag the mouse over the words, or hold down <b>SHIFT</b> while using the arrow keys
Entire document	choose <b>Editing   Select   Select All</b> from the Ribbon, or press <b>CTRL+A</b>

**Table-3 Short-cut for selecting the text**

Deselect the text by clicking anywhere outside of the selection on the page or press an arrow key on the keyboard.

## Inserting Additional Text

Text can be inserted in a document at any point using any of the following methods:

- ✓ **Type Text:** Put your cursor where you want to add the text and begin typing
- ✓ **Copy and Paste Text:** Highlight the text you wish to copy and right click and click **Copy**, put your cursor where you want the text in the document and right click and click **Paste**.
- ✓ **Cut and Paste Text:** Highlight the text you wish to copy, right click, and click **Cut**, put your cursor where you want the text in the document, right click, and click **Paste**.
- ✓ **Drag Text:** Highlight the text you wish to move, click on it and drag it to the place where you want the text in the document.

You will notice that you can also use the Clipboard group on the Ribbon.



**Figure-1-15 Clipboard group on the Ribbon**

**Rearranging Blocks of Text** To rearrange text within a document, you can utilize the **Clipboard Group** on the **Home Tab** of the Ribbon. Insert picture of clipboard group labeled

- ✓ **Move text:** Cut and Paste or Drag as shown above
- ✓ **Copy Text:** Copy and Paste as above or use the Clipboard group on the Ribbon
- ✓ **Paste Text:** Ctrl + V (hold down the CTRL and the “V” key at the same time) or use the Clipboard group to Paste, Paste Special, or Paste as Hyperlink



**Figure-1-16 Clipboard functions**

## Deleting Blocks of Text

Use the **BACKSPACE** and **DELETE** keys on the keyboard to delete text. Backspace will delete text to the left of the cursor and Delete will erase text to the right. To delete a large selection of text, highlight it using any of the methods outlined above and press the **DELETE** key.

## Search and Replace Text

To find a particular word or phrase in a document:

- ✓ Click **Find** on the **Editing Group** on the Ribbon
- ✓ To find and replace a word or phrase in the document, click **Replace** on the **Editing Group** of the Ribbon.



**Figure-1-17**Search text

**Undo Changes** To undo changes:

- ✓ Click the **Undo Button** on the Quick Access Toolbar



**Figure-1-18**Undo Button

---

## 1.10 PREVIEW DOCUMENTS

---

Word 2007 includes a nifty Preview option that lets you see the contents of a document without actually having to open it. This feature comes in handy when you're looking for information but not sure in which document it's contained.

**To preview a document:**

1. Start the Office program associated with the document you want to preview.
2. In the Open window, enable the preview function.
  - ❖ In office 2003:
    - A. From the **File** drop-down list, select **Open**.
    - B. Select the document you want to preview.

- C. In the upper-right corner of the window, to the right of the **Views** icon, click the **arrow** icon.
- D. From the drop-down list, select **Preview**.
- ❖ In office 2007:
  - A. Click the **Office** button.
  - B. From the drop-down list, select **Open**.
  - C. Select the document you want to preview.
  - D. In the upper-right corner of the window, to the right of the **Views** icon, click the **arrow** icon.
  - E. From the drop-down list, select **Preview**.
- ❖ In office 2010:
  - A. Select the **File** tab.
  - B. In the left column, select **Open**.
  - C. Select the document you want to preview.
  - D. In the upper-right corner of the window, click the **Show the preview pane** icon.

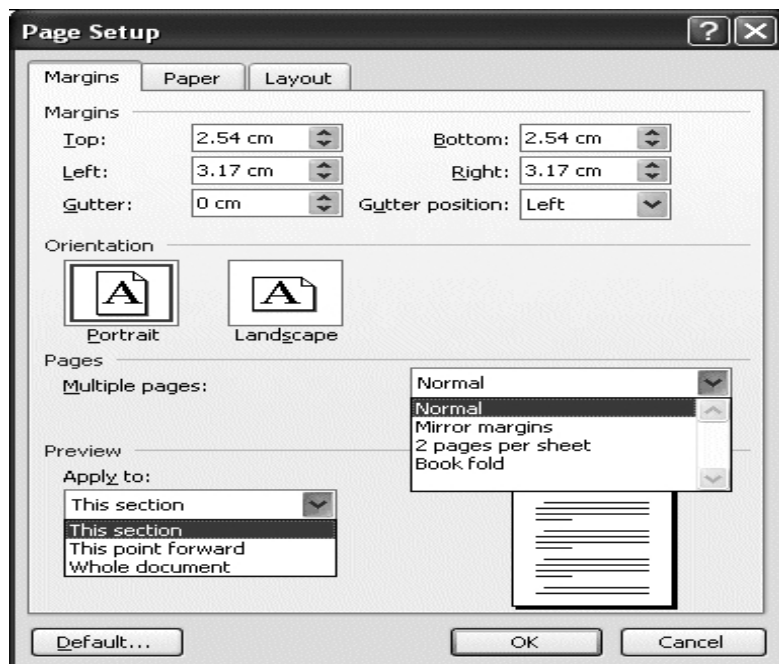
---

## 1.11 PRINTING & FORMATTING THE DOCUMENT

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### Set Page Setup options

- ✓ Click File menu
- ✓ Select and click Page Setup option. You will get the following screen.



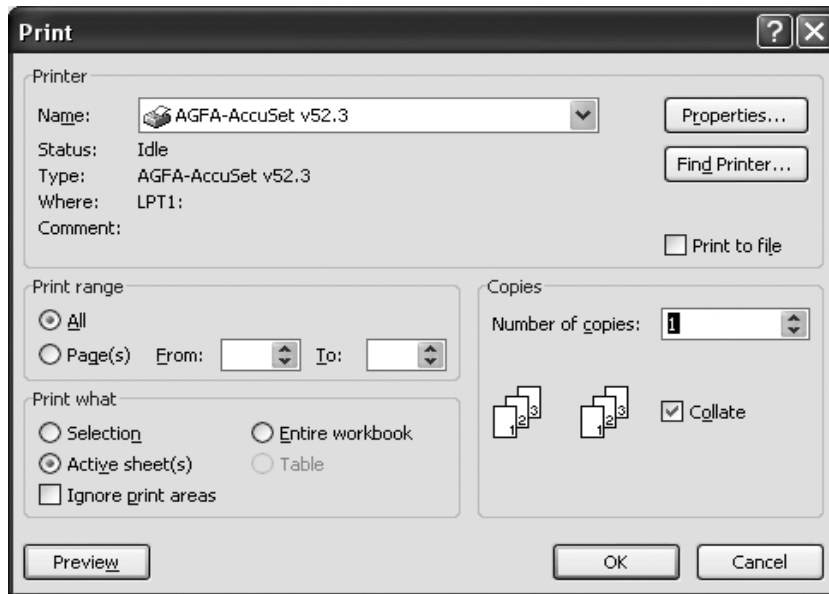
**Figure-1-19**Page Setup



- ✓ Here you can set margins (top, bottom, right and left) paper size, paper source and layout.
- ✓ Click OK button.

### Steps for Print a document

- ✓ Click File menu
- ✓ Click Print option.
- ✓ You will get a screen shown as below.



**Figure-1-20 Print Dialog box**

- ✓ In the above figure you can set default Printer name or you can select other printers from the drop down menu. You can set which pages to print, how many copies to print, the page range like "1-3,5-7", whether to print all pages and so on.
- ✓ Before printing, make sure your printer is switched on, is loaded with the appropriate paper [A4], and is on-line.
- ✓ If you are satisfied with the layout of your document, click on the Print icon on the toolbar to obtain a printout. You should see a message on screen showing that your file is being prepared for printing.
- ✓ Click OK button.

### Formatting Text Styles

A style is a format-enhancing tool that includes font typefaces, font size, effects (bold, italics, underline, etc.), colors and more. You will notice that on the Home Tab of the Ribbon, that you have several areas that will control the style of your document: Font, Paragraph, and Styles.

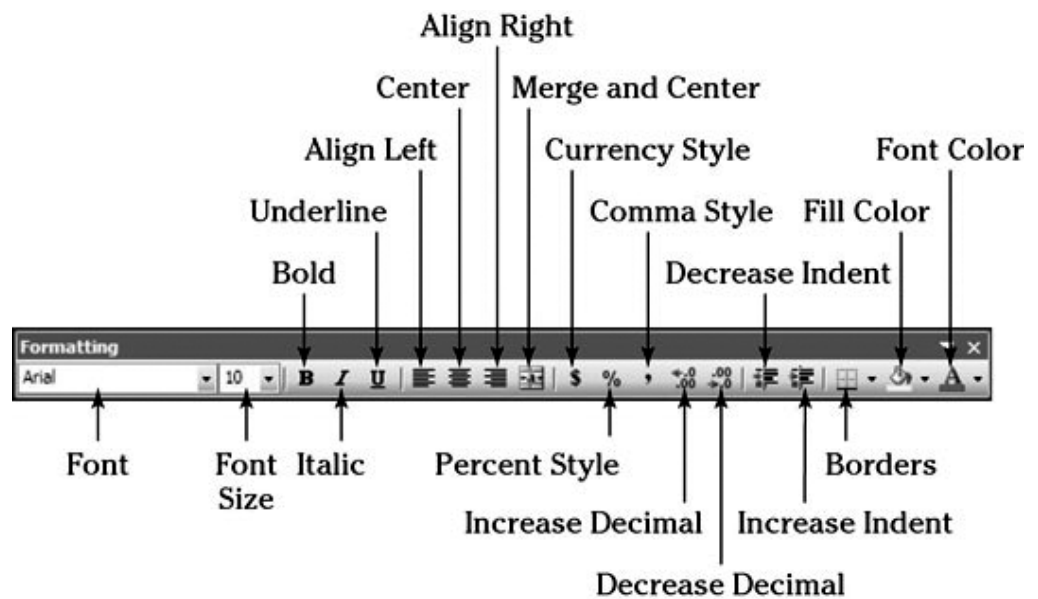


Figure-1-21 Formatting Text

### Change Font Typeface and Size

To change the font typeface:

- ✓ Click the **arrow** next to the font name and choose a font.



Figure 1-22 Change Font and Size

- ✓ Remember that you can preview how the new font will look by highlighting the text, and hovering over the new font typeface.

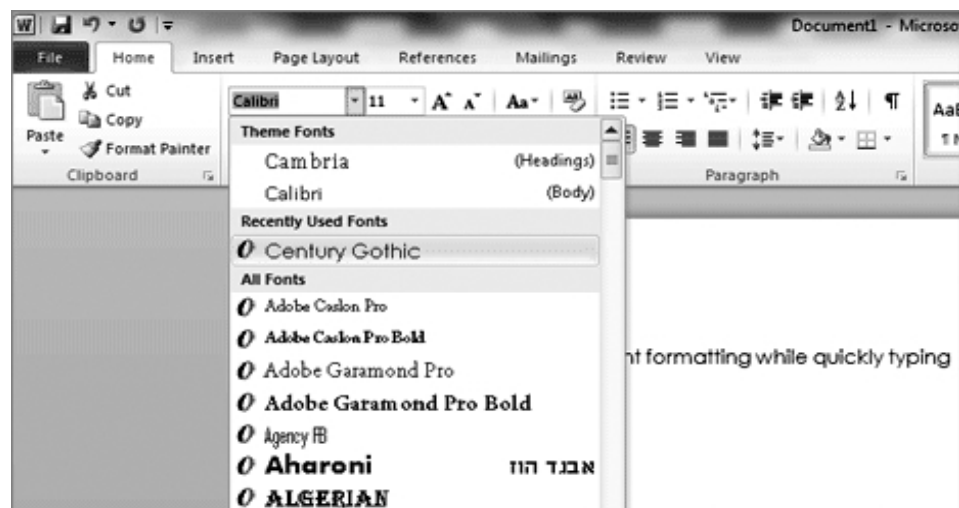


Figure 1-23 Change Font

## To change the font size:

- ✓ Click the **arrow** next to the font size and choose the appropriate size, or
- ✓ Click the **increase** or **decrease** font size buttons.

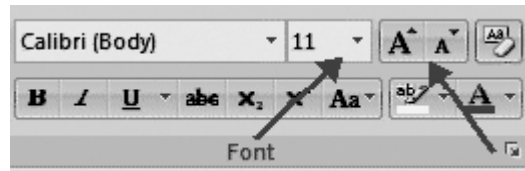


Figure 1-24 Change Size

## Font Styles and Effects

Font styles are predefined formatting options that are used to emphasize text. They include: Bold, Italic, and Underline. To add these to text:

- ✓ Select the text and click the **Font Styles** included on the Font Group of the Ribbon, or
- ✓ Select the text and right click to display the font tools

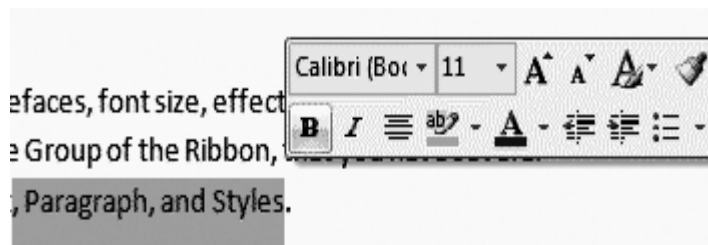


Figure 1-25 Font Style

## Change Text Color

To change the text color:

- ✓ Select the text and click the **Colors** button included on the Font Group of the Ribbon, or
- ✓ Highlight the text, right click, and choose the colors tool.
- ✓ Select the color by clicking the down arrow next to the font color button.

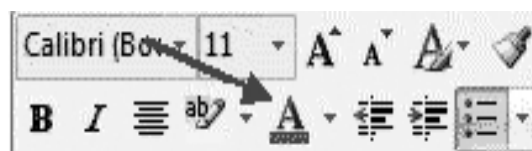


Figure 1-26 Font Color

## Highlight Text

Highlighting text allows you to use emphasize text as you would if you had a marker. To highlight text:

- ✓ Select the text
- ✓ Click the Highlight Button on the Font Group of the Ribbon, or
- ✓ Select the text and right click and select the highlight tool
- ✓ To change the color of the highlighter click on down arrow next to the highlight button.

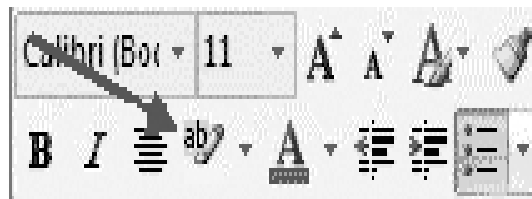


Figure 1-27 Text Highlight

## Copy Formatting

If you have already formatted text the way you want it and would like another portion of the document to have the same formatting, you can copy the formatting. To copy the formatting, do the following:

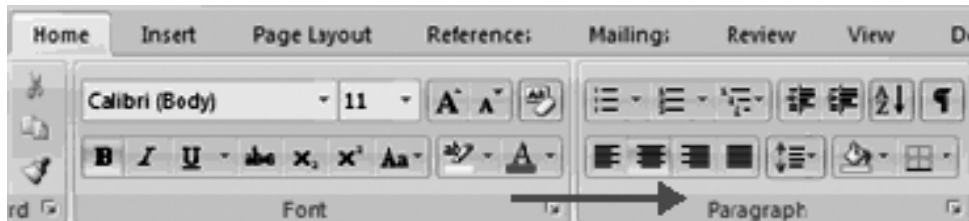
- ✓ Select the text with the formatting you want to copy.
- ✓ Copy the format of the text selected by clicking the Format Painter button on the Clipboard Group of the Home Tab
- ✓ Apply the copied format by selecting the text and clicking on it.



Figure 1-28 Text Format

## Formatting Paragraphs

Formatting paragraphs allows you to change the look of the overall document. You can access many of the tools of paragraph formatting by clicking the **Page Layout** Tab of the Ribbon or the **Paragraph** Group on the Home Tab of the Ribbon.

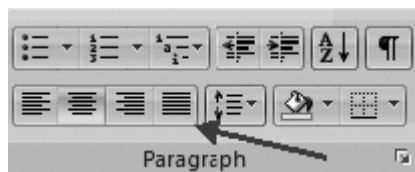


**Figure 1-29 Paragraph Group**

### **Change Paragraph Alignment**

The paragraph alignment allows you to set how you want text to appear. To change the alignment:

- ✓ Click the Home Tab
- ✓ Choose the appropriate button for alignment on the Paragraph Group.
- ✓ Align Left: the text is aligned with your left margin
- ✓ Center: The text is centered within your margins
- ✓ Align Right: Aligns text with the right margin
- ✓ Justify: Aligns text to both the left and right margins.



**Figure 1-30 Text Alignment**

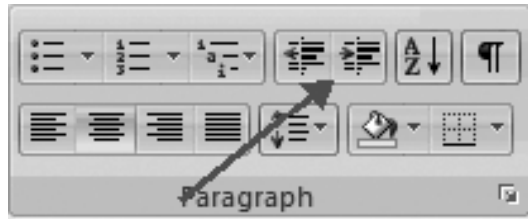
### **Indent Paragraphs**

Indenting paragraphs allows you set text within a paragraph at different margins. There are several options for indenting:

- ✓ First Line: Controls the left boundary for the first line of a paragraph
- ✓ Hanging: Controls the left boundary of every line in a paragraph except the first one
- ✓ Left: Controls the left boundary for every line in a paragraph
- ✓ Right: Controls the right boundary for every line in a paragraph

**To indent paragraphs, you can do the following:**

- ✓ Click the Indent buttons to control the indent.
- ✓ Click the Indent button repeated times to increase the size of the indent

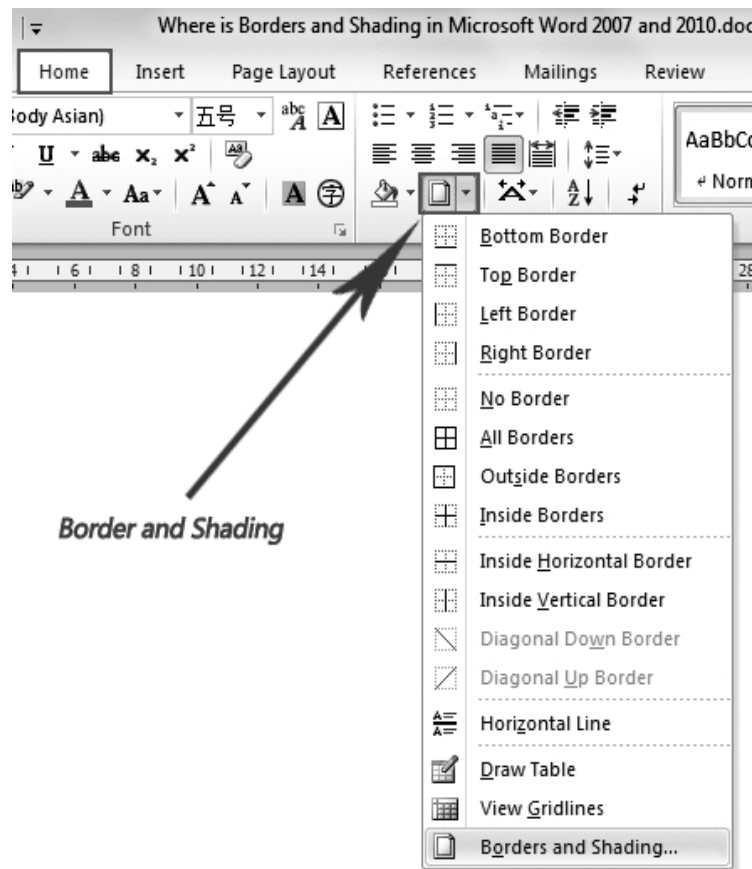


**Figure 1-31 Text Indentation**

### Add Borders and Shading

You can add borders and shading to paragraphs and entire pages. To create a border around a paragraph or paragraphs:

- ✓ Select the area of text where you want the border or shading.
- ✓ Click the Borders Button on the Paragraph Group on the Home Tab
- ✓ Choose the Border and Shading
- ✓ Choose the appropriate options

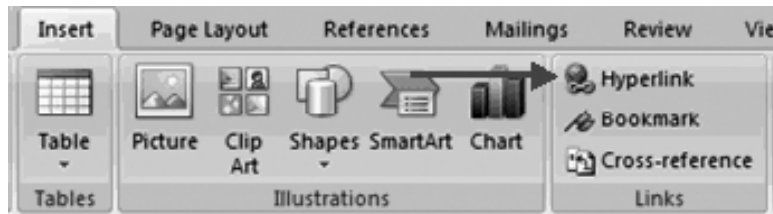


**Figure 1-32 Border & Shadings**

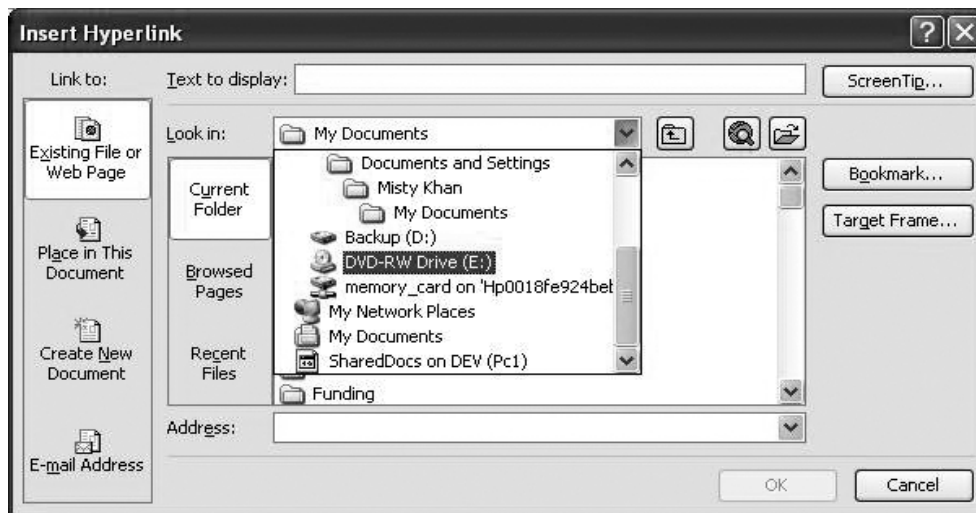
## Create Links

Creating links in a word document allows you to put in a URL that readers can click on to visit a web page. To insert a link:

- ✓ Click the Hyperlink Button on the Links Group of the Insert Tab.
- ✓ Type in the text in the “Text to Display” box and the web address in the “Address” box.



(a)



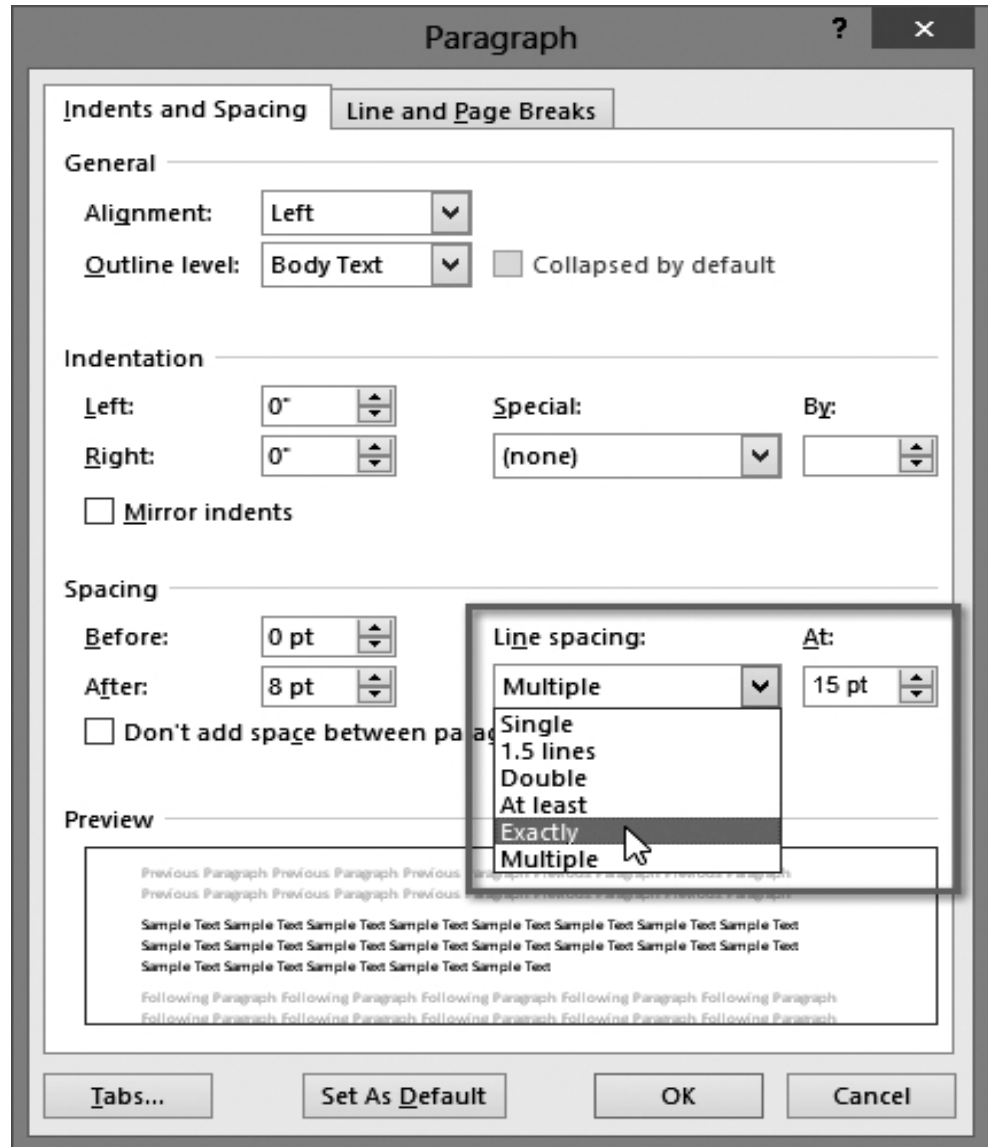
(b)

Figure 1-33 (a) link of hyperlink (b) Hyperlink dialog box

## Change Spacing Between Paragraphs and Lines

You can change the space between lines and paragraphs by doing the following:

- ✓ Select the paragraph or paragraphs you wish to change.
- ✓ On the Home Tab, Click the Paragraph Dialog Box
- ✓ Click the Indents and Spacing Tab
- ✓ In the Spacing section, adjust your spacing accordingly



**Figure 1-34 Adjust Spacing between Paragraphs and Lines**

## **Check your progress**

- Q1. Explain the Ruler in word in detail.
- Q2. How to customize menu bar in MS-Word
- Q3. How to edit a document in MS-Word?
- Q4. Explain how to preview a documents?
- Q5. Explain all the steps of printing & formatting the document.



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## 1.12 SUMMARY

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In this unit you learnt about basics of MS-word, its features, controls, menus, interface, toolbar, keyboard shortcuts, printing preview, printing and formatting the paragraph.

- Microsoft Word is a word processing software package.
- You can use it to type letters, reports, and other documents.
- It gives you the ability to use your computer for desktop publishing.
- Tables are a great way to present information
- The quick access toolbar is a customizable toolbar that contains commands that you may want to use.

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## 1.13 REVIEW QUESTIONS

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- Q1. What is MS-Word? How many version it has? Which version currently available in the market?
- Q2. What do you mean by Ribbon toolbar in MS-Word 2007?
- Q3. Define the Home tab in MS- Word in detail with example.
- Q4. Write 20 short-cut keys of MS-word with description.
- Q5. What do you mean by indentation in MS-Word?



# UNIT-II

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## MS-Word Advance Features

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### Structure

- 2.0 Introduction
- 2.1 Find & Replace
- 2.2 Using Thesaurus
- 2.3 Using Auto- Multiple Functions
- 2.4 Mail Merge
- 2.5 Handling Graphics
- 2.6 Tables & Charts
- 2.7 Document into various formats.
- 2.8 Summary
- 2.9 Review Questions

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### 2.0 INTRODUCTION

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This is the last unit of this block. This unit contained complete description about MS-Word advanced features. This unit contains nine sections. In the Sec. 2.1 you will learn how to find and replace a word. In Sec. 2.2 you will learn how to work with Thesaurus. This feature is very useful in the field of research. In Sec. 2.3 you will know about auto multiple functions. Another important topic we have added in Sec. 2.4 that is mail merge. After that we have defined handling graphics in Sec. 2.5. Next section Sec. 2.6 explain how to add tables and charts in to your documents. Next section explain you the conversion from MS-Words to other format like text, RTF, Word perfect and HTML. In Sec. 2.8 and 2.9 you will find summary and review questions respectively.

### Objectives

After studying this unit you should be able to:

- Express find and replace in MS-Word
- Define how to work with Thesaurus.
- Define auto multiple functions, mail merge, tables and charts & conversion.

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## 2.1 FINDING TEXT

---

Word allows you to find specific text in a variety of ways. You may choose to view each occurrence of the text individually; see all occurrences selected at once, or highlight all occurrences even after the *Find and Replace* dialog box is closed.

### Accessing the Find and Replace Dialog Box

To find text, you must first access the *Find and Replace* dialog box.

1. Windows: From the *Home* command tab, in the *Editing* group, click **FIND**  Find ▾

**Macintosh:** From the *Edit* menu, select *Find*.

**OR**

Windows: Press [Ctrl] + [F]

**Macintosh:** Press [command] + [F]

The *Find and Replace* dialog box appears, with the *Find* tab displayed.

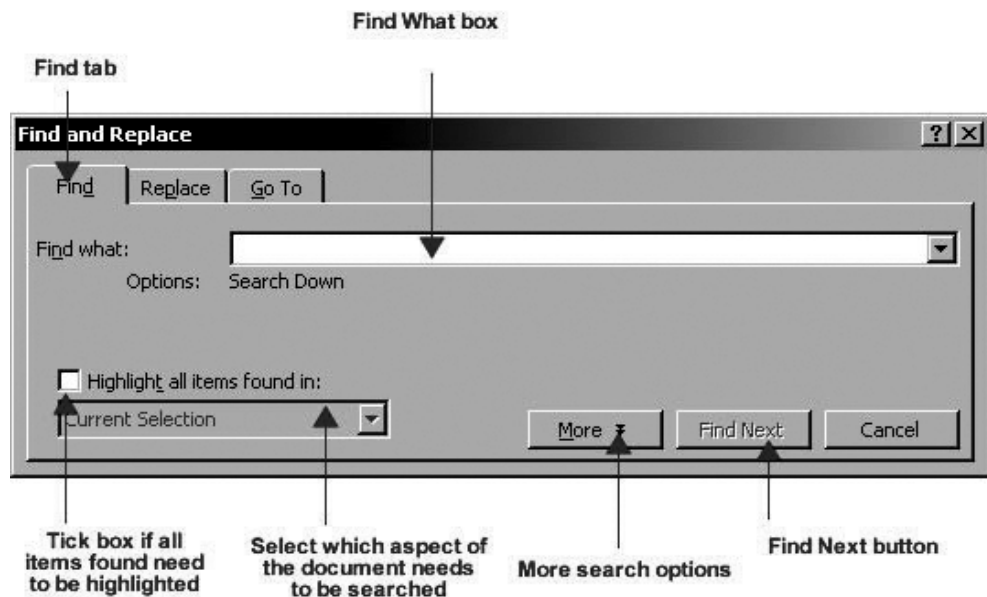



Figure 2-1 Find & Replace

### Replacing Text

Word allows you to choose how to replace text in your document. You may choose to replace all occurrences of a particular word or phrase or look at each occurrence before deciding which to replace.

### Accessing the Find and Replace Dialog Box

1. Windows: From the *Home* command tab, in the *Editing* group, click **REPLACE**  Replace

**Macintosh:** From the *Edit* menu, select *Replace*.

**OR**

Windows: Press [Ctrl] + [H]

**Macintosh:** Press [shift] + [command] + [H]

The *Find and Replace* dialog box appears, with the *Replace* tab displayed.

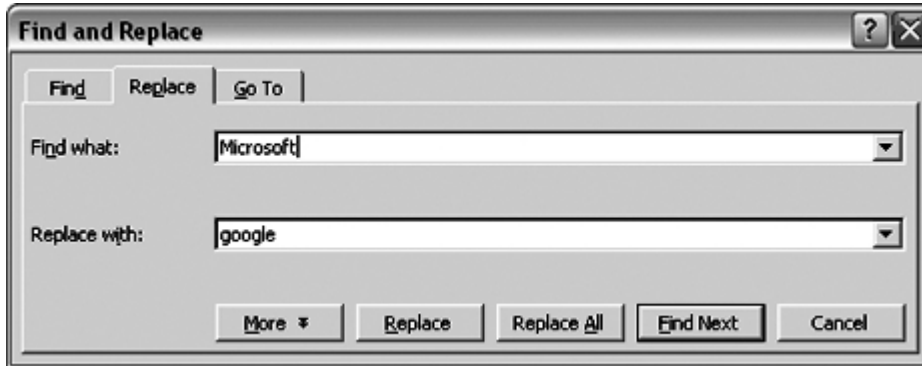


Figure 2-2 replace the word

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## 2.2 THESAURUS

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When you are working in Word, a thesaurus is at your fingertips. A thesaurus provides a list of synonyms for a selected word and it is very handy when you are writing. For example, if you want to find another word for “subsequent,” simply select it, open the thesaurus and Word will provide you with a list of alternative words to use.

### Using the Thesaurus from the Interface Menu

#### Access the thesaurus.

The location of the thesaurus feature depends on which version of Word you're using. Word 2003 uses the older menu and toolbar interface, while Word 2007 and 2010 each use the newer menu ribbon interface.

- In Word 2007 and 2010, select "Thesaurus" from the "Proofing" group on the "Review" menu ribbon.

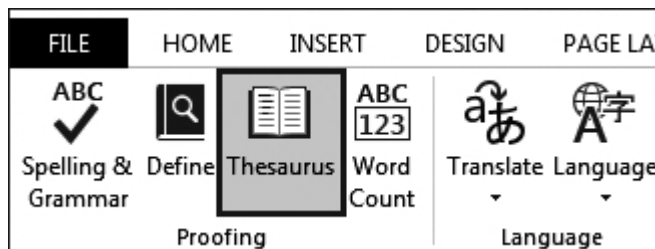
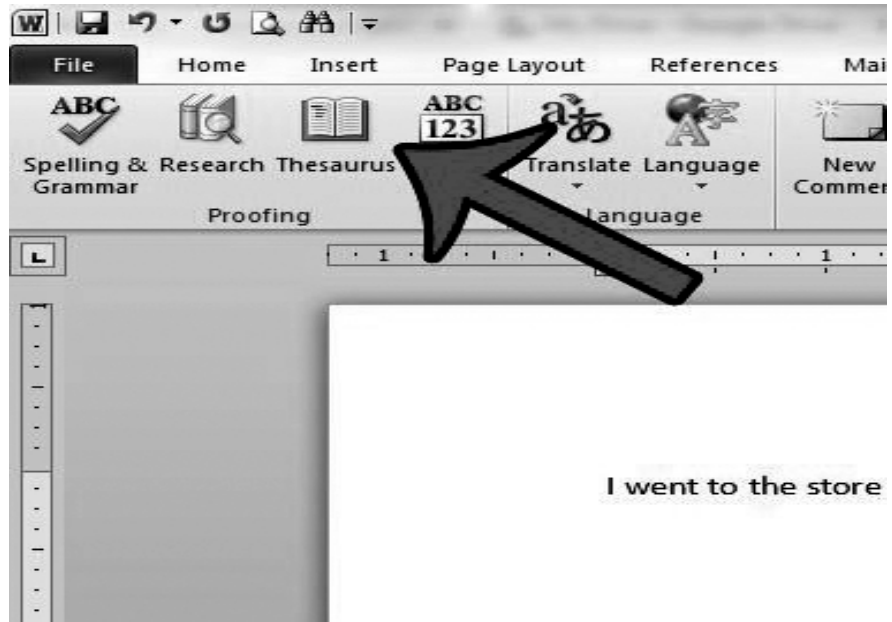


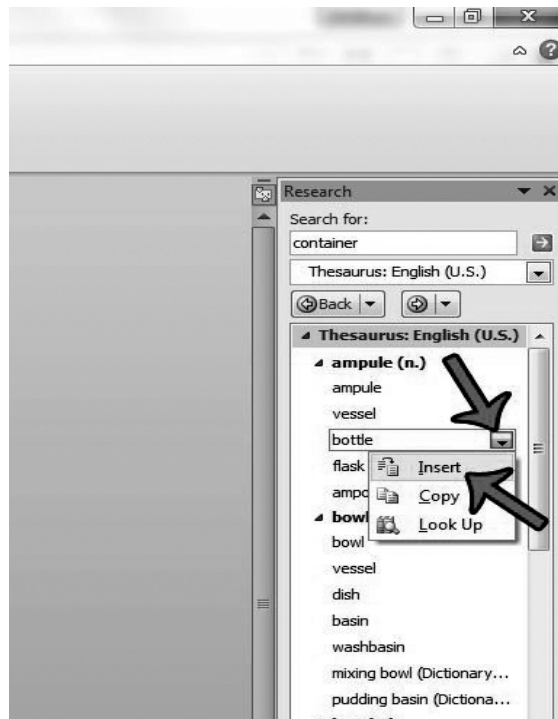
Figure 2-3 Thesaurus in Review Tab

- Select the word you want to find a synonym for. Press the "ALT" key and click on the word. A list of synonyms will appear in the "Research" task pane.



**Figure 2-4**Thesaurus used in documents

- Replace the selected word with the synonym or antonym of your choice. Point to the replacement word or phrase, click the down arrow to its right, and click "Insert" or "Copy" from the popup menu that appears.



**Figure 2-5**Thesaurus used in document

- If you don't see the word or phrase you want, you can find additional synonyms by clicking any word in the results list. To return to a previous list of words, click the "Back" button above the results list.

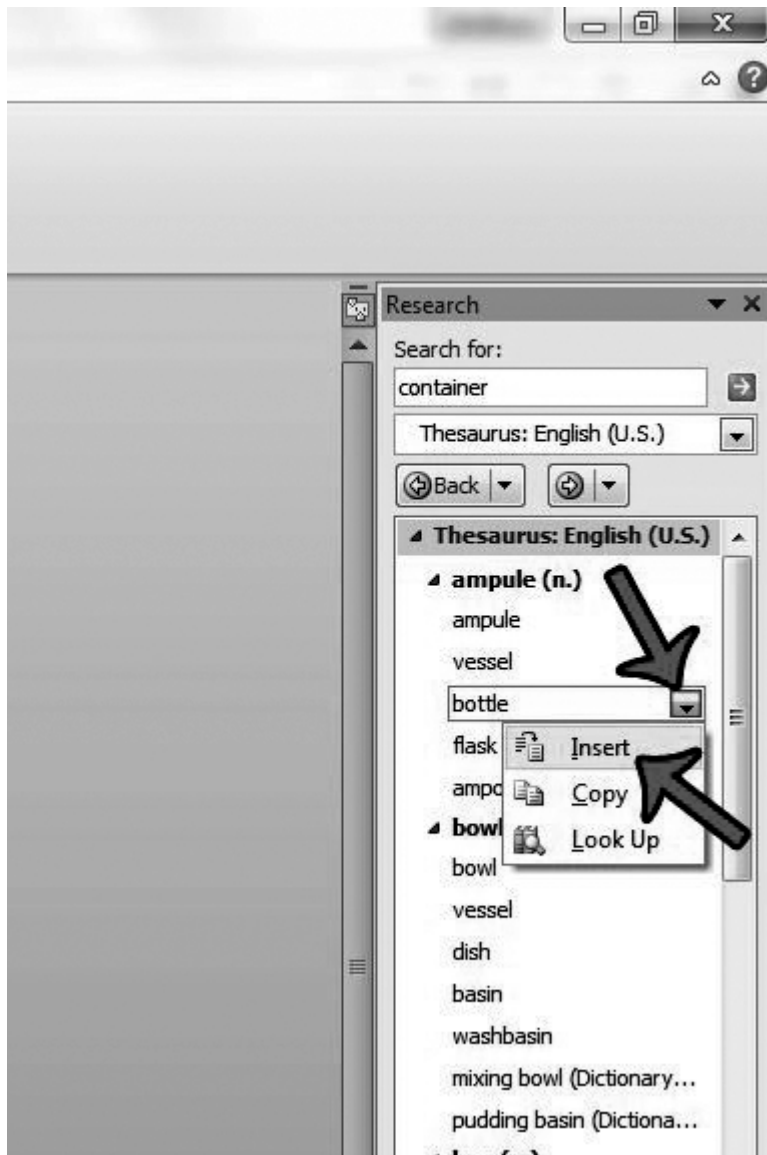


Figure 2-6 Thesaurus used in document

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## 2.3 Auto-Multiple functions

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1. Auto-Correct
2. Auto-Format
3. Auto-Text

**Auto-Correct:-** Enable auto-correction in Word 2007 to help prevent spelling and grammar errors that you define or allow. Using AutoCorrect in Word 2007 can also be helpful for proofing a document for

jargon, technical terms, or unique name spellings or when creating symbols (such as a copyright or trademark symbol).

Beyond spelling, use AutoCorrect to fix common errors, such as automatically capitalizing the first letter of a sentence or names of days, or correcting an iNVERSE cAPS IOCK pROBLEM and other types.

1. Click the Office button.



Figure 2-7 Office Button

2. Click the Word Options button at the bottom right.

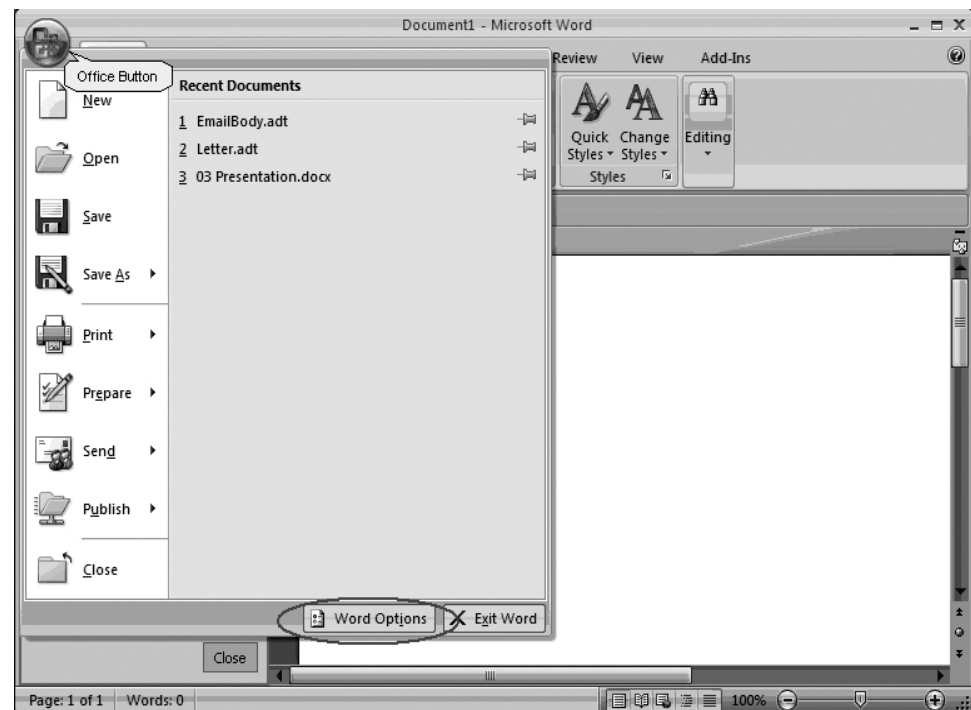
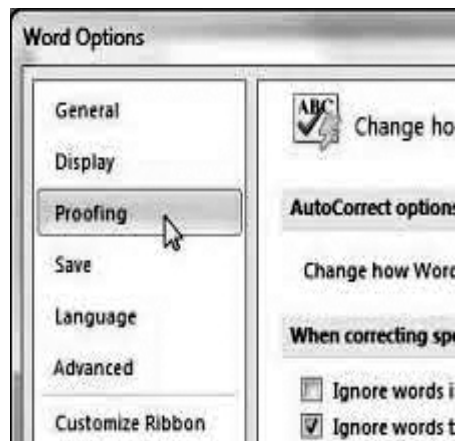


Figure 2-8 Word Option

Open Word Options.

3. In the Word Options window that opens, click the Proofing option (left column).





Open Proofing setting.

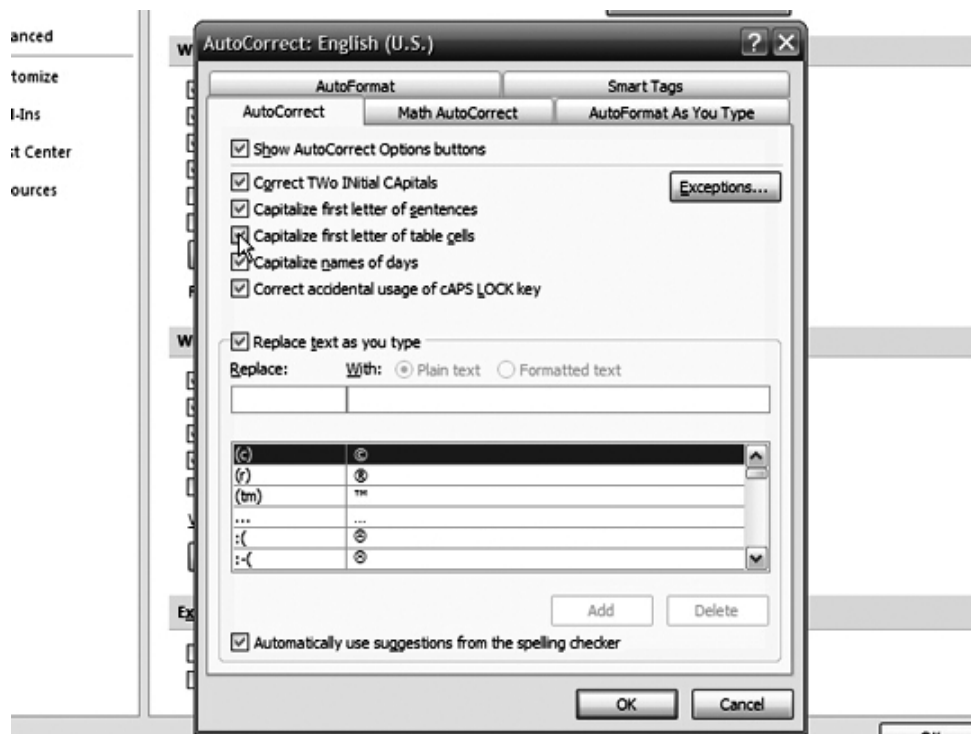
4. Click the AutoCorrect Options button (upper right.)



Figure 2-10 Auto-Correct Option

Enable auto-correction here.

5. On the AutoCorrect tab, mark the check boxes of those items you want Word to autocorrect for you.



**Figure 2-11 Auto-Correct Option**

- Correct Two Initial Capitals
- Capitalize First Letter of Sentences
- Capitalize First Letter of Table Cells
- Capitalize Names of Days
- Correct Accidental Usage of cAPS LOCK Key
- Replace Text As You Type

Type what you want auto-replaced (for example, theatre) in the Replace field and then your replacement choice (theater) in the width field. From this list, you can also choose from many preset symbols and words.

6. Click OK to exit AutoCorrect; then click OK to exit Word Options.
7. To add an entry to AutoCorrect without going through Word Options, right-click any word you want added to AutoCorrect.
8. From the contextual menu that appears, choose AutoCorrect.
9. From the list that opens, click the spelling you want.

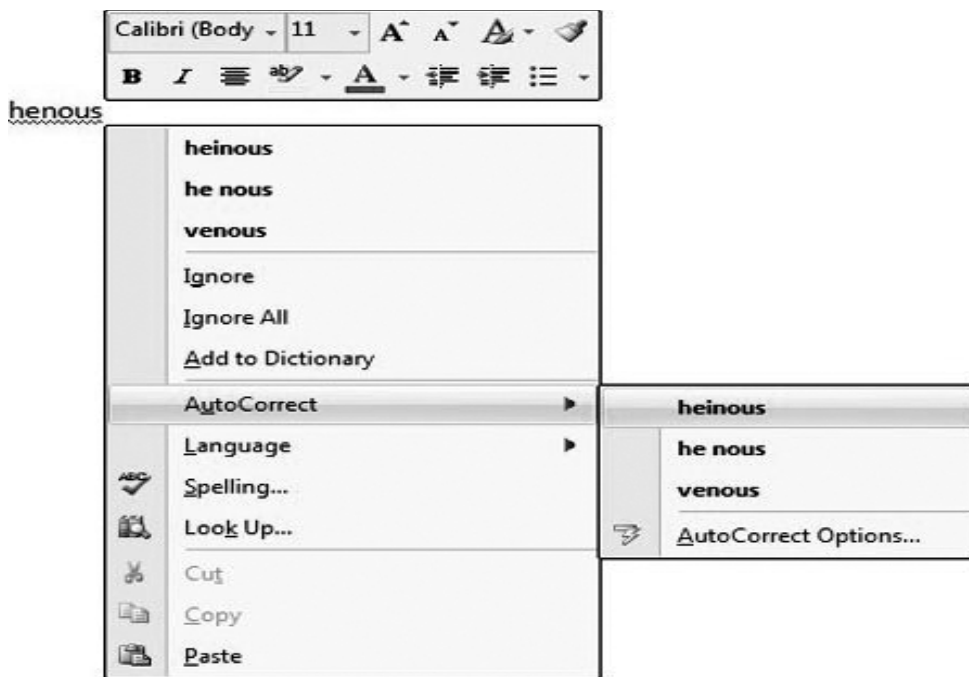


Figure 2-12 Auto-Correct using pop-up menu

### Auto-Format

MS Office Word 2007 has automated a lot of small, tedious chores that we had to do manually in older word processing programs. Many of these are formatting chores, and Word collects them under the term **AutoFormat**. You can control what formatting chores Word 2007 performs automatically in the AutoFormat panels of the **AutoCorrect** dialog box. The benefit of using AutoFormat is that you can concentrate more on the content of your document and less on the details of formatting.

AutoFormat works on two different ways—as you type or on command.

AutoFormat as You Type - Automatically formats bulleted, headings, numbered lists, borders, symbols, numbers, and many more while you type.

AutoFormat on Command - Automatically formats selected text or the entire document in one pass. You don't have to do anything to activate AutoFormat. By default, AutoFormat as You Type is enabled—you just enter text and **Word** formats it as you go. You can change the default to AutoFormat on **Command**, which allows you to manually run AutoFormat. This is similar to the way in which you can spell check a document—as you type, or manually, using the menu commands or toolbar icons.

### Working with AutoText

*AutoText* is useful for saving keystrokes while typing in your document. An *AutoText* entry is composed of an abbreviation and an associated phrase. This is an excellent way to reduce the number of keystrokes for

frequently used phrases such as your department name, the University's address, and a signature block on a letter. *AutoText* entries can include both text and graphics. *AutoText* allows you to retain the formatting (e.g., font, size, justification) used when you created the entry or match the entry to the current document's formatting. Once an entry is created, it can be used throughout the current document and other documents associated with the same template.

To make entering text easier, Word offers the *AutoText* toolbar. In addition to the entries you create, Word's *AutoText* entries include some standard entries to be used as they are or reformatted to your specifications.

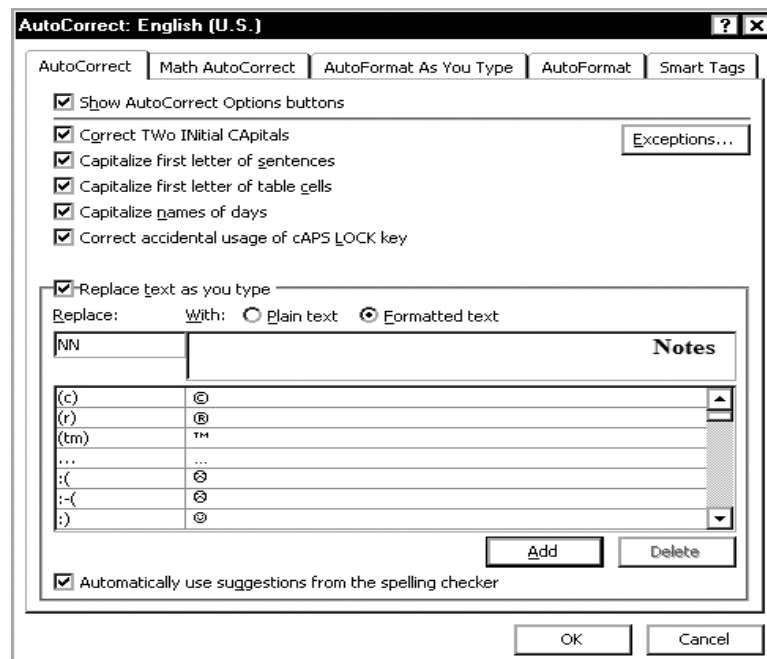
- Creating an AutoText Entry
- Inserting an AutoText Entry
- Deleting an AutoText Entry

### *Creating an AutoText Entry*

Word allows you to create an *AutoText* entry by using the dialog box. The dialog box allows you to edit or modify your *AutoText* option entry.

1. In your Word document, type the desired phrase and/or insert the graphic
2. Select the phrase and/or graphic
3. From the OFFICE BUTTON, click **WORD OPTIONS** » select **Proofing**
4. In the *AutoCorrect options* section, click **AUTOCORRECT OPTIONS...**

The *AutoCorrect* dialog box appears.



**Figure 2-13 Auto-Format advance**

5. In the *Replace text as you type* section, in the *Replace* text box, type the keyword or phrase you want replaced
6. In the *with* text box, type the word or phrase you want to replace the keyword when it is typed in a document
7. Click **ADD**
8. Click **OK**

The *AutoText* entry is created.

### ***Inserting an AutoText Entry***

You can insert your *AutoText* by using the *Ribbon* option or the dialog box option.



#### **Inserting an AutoText Entry: Ribbon Option**

The **ALL ENTRIES** button on the *AutoText* toolbar contains all available *AutoText* entries. The entries are organized by category. The entries you create are found in the *Normal* category unless you have modified one of Word's preset *AutoText* entries.

1. Place the insertion point where you want the entry to appear
2. On the *AutoText* toolbar, click **ALL ENTRIES** **All Entries ▾**  
» select a category » select the desired *AutoText* entry

#### **Inserting an AutoText Entry: Dialog Box Option**

1. Place the insertion point where you want the entry to appear
2. From the *Insert* menu, select ***AutoText* » *AutoText...***  
**OR**

On the *AutoText* toolbar, click **AUTOTEXT**  or   
The *AutoCorrect* dialog box appears.

3. Select the ***AutoText*** tab
4. In the *Enter AutoText entries here* section, from the scroll list, select the desired *AutoText* entry
5. Click **INSERT**  
**OR**  
Double click the entry

### ***Deleting an AutoText Entry***

If you wish to delete some or all of your *AutoText* entries, use the following steps:

1. From the *File* menu, click **WORD OPTIONS** » select ***Proofing***  
» click **AUTOCORRECT OPTIONS...**  
The *AutoCorrect* dialog box appears.

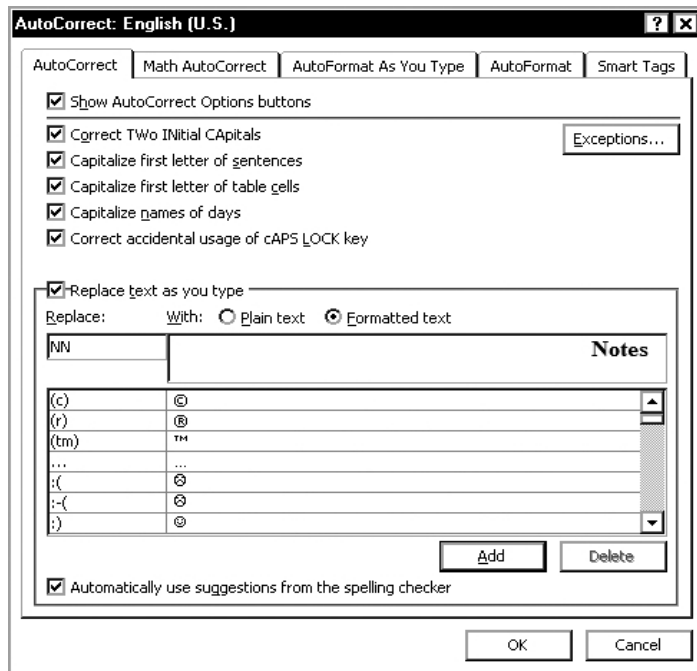


Figure 2-14 Auto-Format delete entry

1. In the *Replace* text box, type the keyword or phrase of the *AutoText* you want deleted  
The *AutoText* will appear in the *Width* textbox.
2. Click **DELETE**

Click **OK**

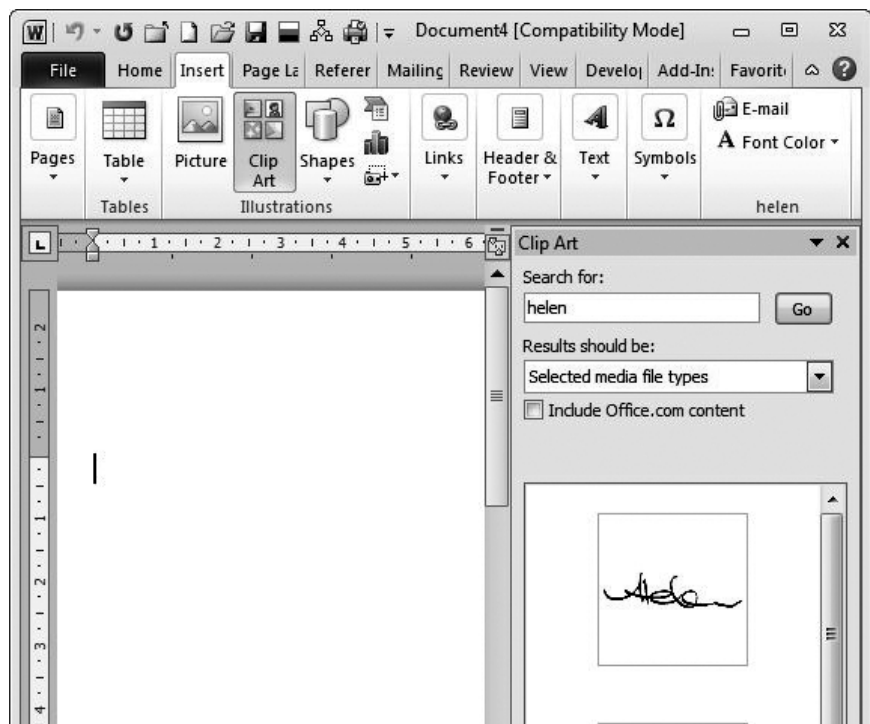


Figure 2-15 Clip Arts

## Check your progress

- Q1. Explain how we can find and replace Text
- Q2. Explain Thesaurus. Also explain how we use the Thesaurus from the Interface Menu
- Q3. Explain Auto-Multiple functions in detail.

---

## 2.4 MAIL MERGE

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Mail merge techniques allow you to create a document which combines repetitive text elements with data drawn from an external data document. To perform a mail merge. You'll need the following: • A template (previously created, or generated during the merge) • A recipient list or data source (created during the merge. or an existing file)

Word will then create a new document by inserting the data from your data source into the structure of your template document.

### Creating a Mail Merge document

Following are steps involved in creating a Mail Merge document.

- Create a new data source and enter information
- Create the main document
- Insert fields into the main document.
- Merge data source and main document.

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## 2.5 HANDLING GRAPHICS

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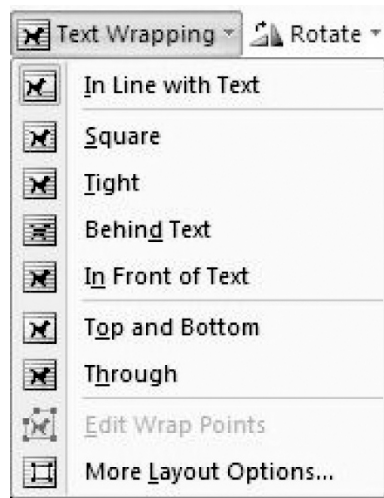
In Word you can modify objects, including graphics, in many ways to add sparkle to even the most mundane document. You can add drop caps, group two or more objects into one object, and change the layering of overlapping objects. You can also position graphics anywhere on a page, change text wraps around an object, and modify how objects are aligned relative to each other and to the page. You can enhance graphic objects with gradient color fills, textures, shadows, and 3-D effects and by adding a watermark and page border.

### Inserting Clip Art

Adding Clip Art to your document is a way to illustrate ideas. Clip art is a collection of graphic images that can be inserted in documents.

1. Click the **Insert** tab, from the **Illustrations** grouping click on **Clip Art**.
2. The Clip Art Task pane will open on the right of the screen.

3. In the three fields that are provided you **Search** for a particular topic, in all the collections provided by Microsoft and all media types.
4. After clicking the **Go** button the search will return a list of clip art.
5. Use the scroll bar to locate a clip you like. **Note:** the small world in the left hand corner of a clip art means this clip comes from Microsoft's web collect **Figure 4-15 Clip Arts**
6. Click once on the clip art to insert it into your document.



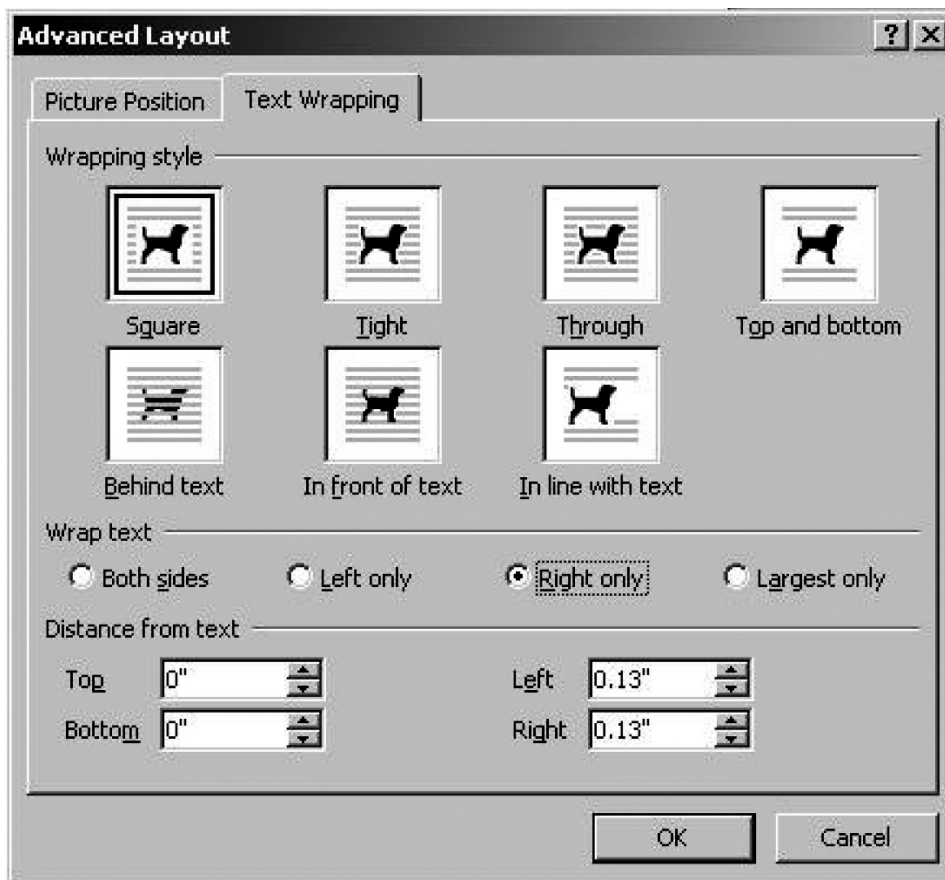
**Figure 2-16 wrapping text**

### **Wrapping Text around Graphics**

When you first insert a graphic using either Clip Art or a Picture positioning that graphic near text is the next step. You can specify how you would like the text to wrap around the graphic. Wrapping means that text flows around a graphic object rather than over it.

1. With the Graphic selected (When selected, squares called **sizing handles** will appear at the edges of the object and the **Picture Tools** Ribbon appears).
2. From the **Arrange** grouping select the **Text Wrapping drop-down**. Click one of the text wrapping options that appear or
3. Click **More Layout Options**, to change which sides of the object to place text or change the distance between the text and object.
4. When the Graphic is selected you can also click-hold and drag the graphic to a new position, which allows you to control how many lines of text are above to the right or left of the graphic.





**Figure 2-17 Layout text with picture**

## Inserting Text Boxes

A **text box** is a graphic image that contains text that you have typed.

1. Click the Insert tab, from the Illustrations grouping click on Shapes to save time select an object that displays text, you will then have to apply any format changes manually.
2. You can insert Preformatted Text Boxes from the Text grouping drop down. Scroll through the listing to see if something meets your needs. If you select a Preformatted Text Box you may not be able to change all the elements related to the preformatted boxes.
3. If you inserted the text box from the Shapes using the Text Box Formatting Ribbon you can choose to apply a style, change the fill color, change the shape, put on shadows or 3D effects.

## Drawing Lines

Lines that you draw are also graphic objects. You can draw straight lines, arrows, curved, or free-form lines, and you can insert and format lines using the Insert tab,

## Illustrations grouping Shapes then Lines

1. Click the style of choice from the Shapes Line dropdown. Position

the + pointer and drag the pointer so that the line will appear on your screen

2. To change the line color, weight of line or line style you must use the Using the Drawing Tools Format Ribbon. Under the Shape Styles grouping select the Shape Outline dropdown.



Figure 2.18

### Inserting Word Art

Word Art is another powerful graphics tool that you can use to give your documents visual impact. Text in Word Art is formatted in unique shapes, orientations, and patterns that you can easily modify and customize.

1. Click the **Insert** tab, from the Text grouping click the **Word Art** dropdown arrow.
2. Click a style of WordArt from the Gallery
3. Type your text in the **Your Text here** box, you can change the font and size before Clicking **OK**
4. Resize by dragging the white handles and position as desired.
5. Check out the WordArt Tools Format Ribbon for text edit, style changes, spacing and height

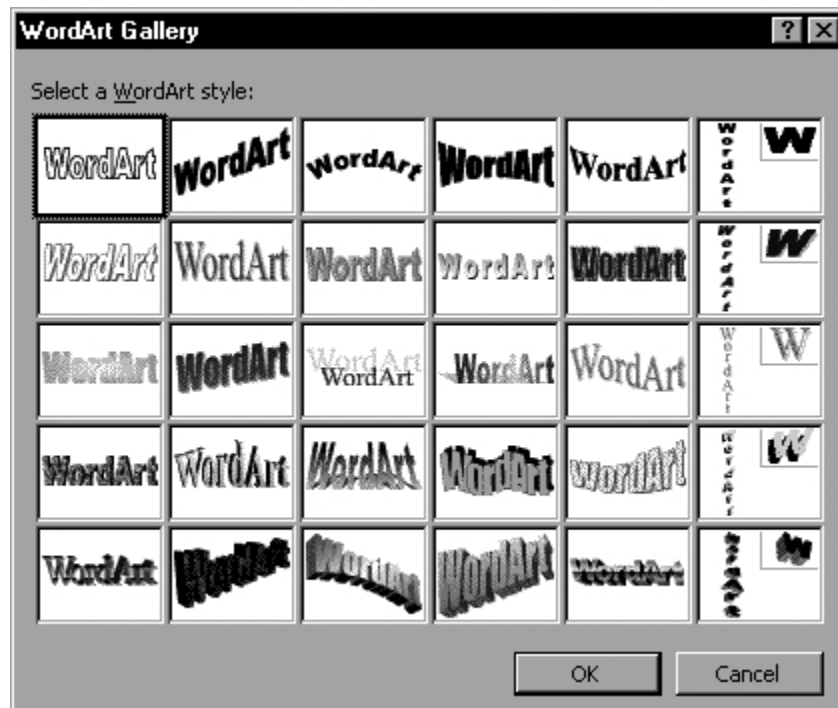


Figure 2-19 Word Art

## Modifying Shadow and 3-D Settings

You can use the shadow and 3-D effects groupings on the Drawing Format Ribbon to create a wide variety of exciting effects. For example, you can change a 2-D object to a 3-D object or you can add an attractive shadow to a clip art image. Once you have added a 3-D or shadow effect to an object, you can modify the shadow or 3-D settings in a wide variety of ways.

### Applying a Shadow

1. Click on the object to select it, if not already selected.
2. Click Shadow Effect dropdown. Select the type of Shadow you would like to the object to have.
3. If you would like to change the shadow color, click the dropdown again, the last item will supply you with the color pallet from which to make your selection.
4. If you would like to change the shadow just select any other shadow from the listing. If you want to delete the shadow, select No Shadow Effect.

**Note:** Do not try to select the shadow as it is the object that you are working with.

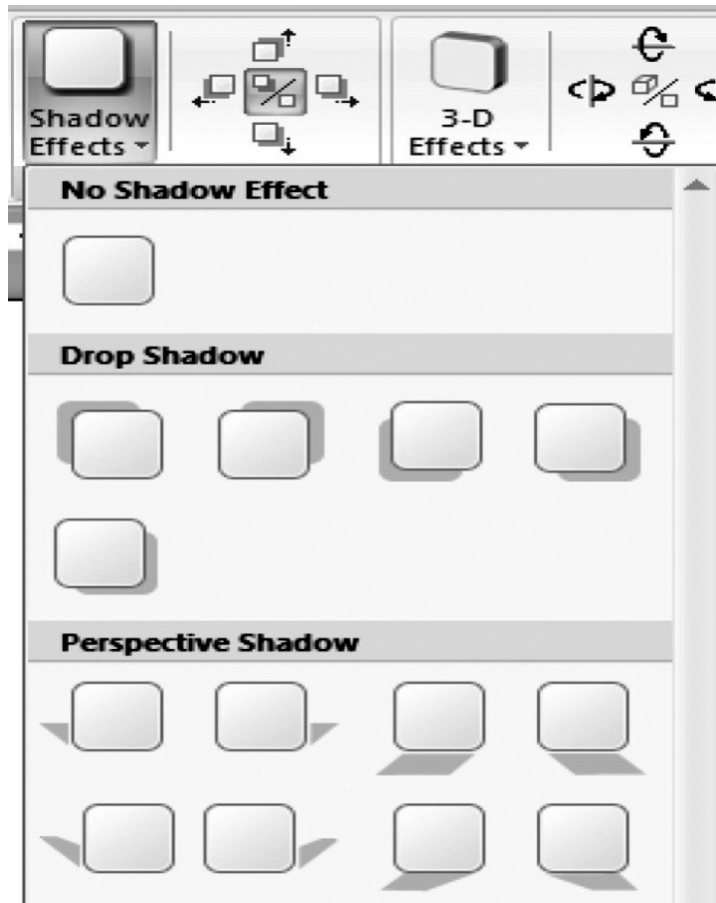


Figure 2-20 Insert Shadow

## Moving the Shadow

You can nudge the shadow in any directions by using the 4 one of the four directional arrows located in the Shadow Effects grouping.

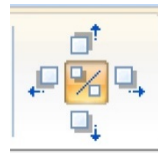


Figure 2-21 Shadow moving

## 3-D Settings

From the 3-D Effects grouping click the drop-down for see the 3-D Effects listing. Select the type of Effect you would like placed on the object. You can then change the 3-D Color, the Depth, Direction, Lighting and Surface. The live preview showing is perfect for this type of effect.

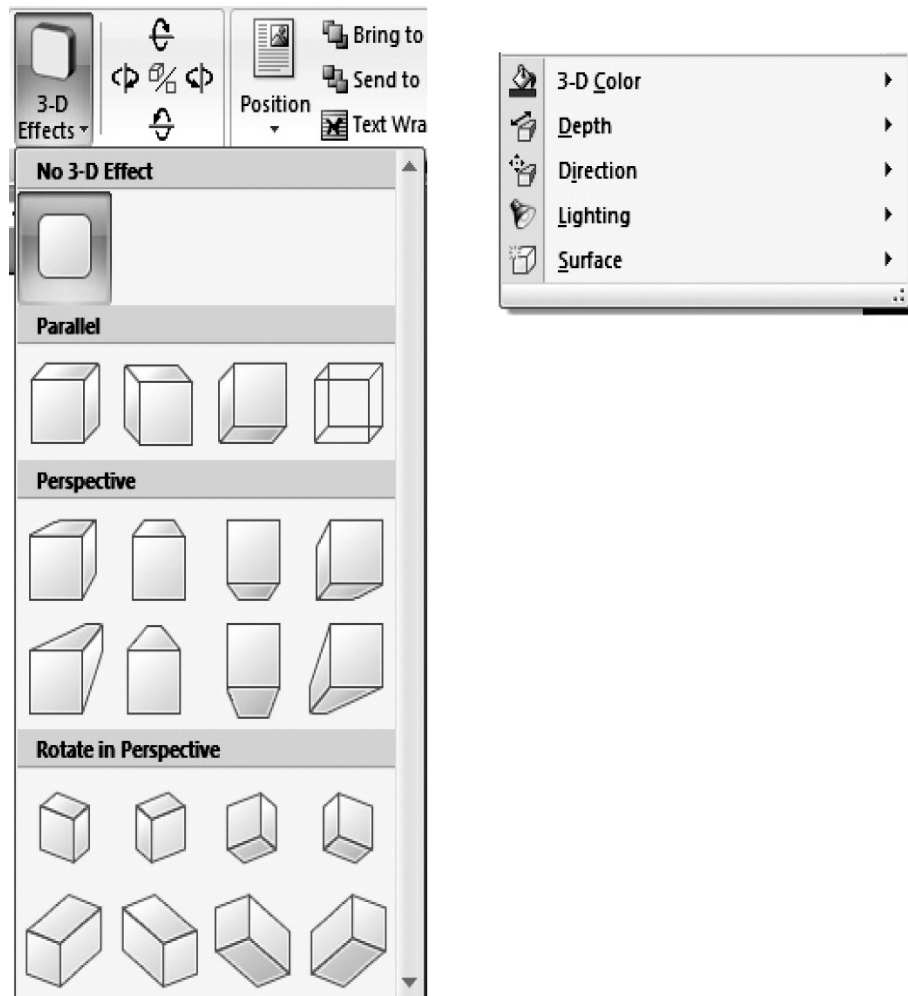
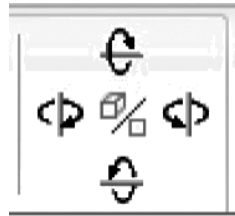


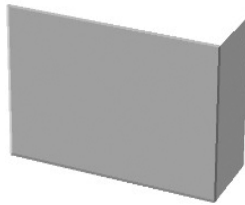
Figure 2-22 Shadow 3D

You can also change the **Tilt** of the 3-D object with one of the directional arrows located in the 3-D Effects grouping.



**Figure 2-23 Shadow 3D Tilt**

You can change the 3-D Effect by selecting another type or remove it the effect completely by selecting **No 3-D Effect** from the listing.



**Figure 2-24 Shadow 3D effect**

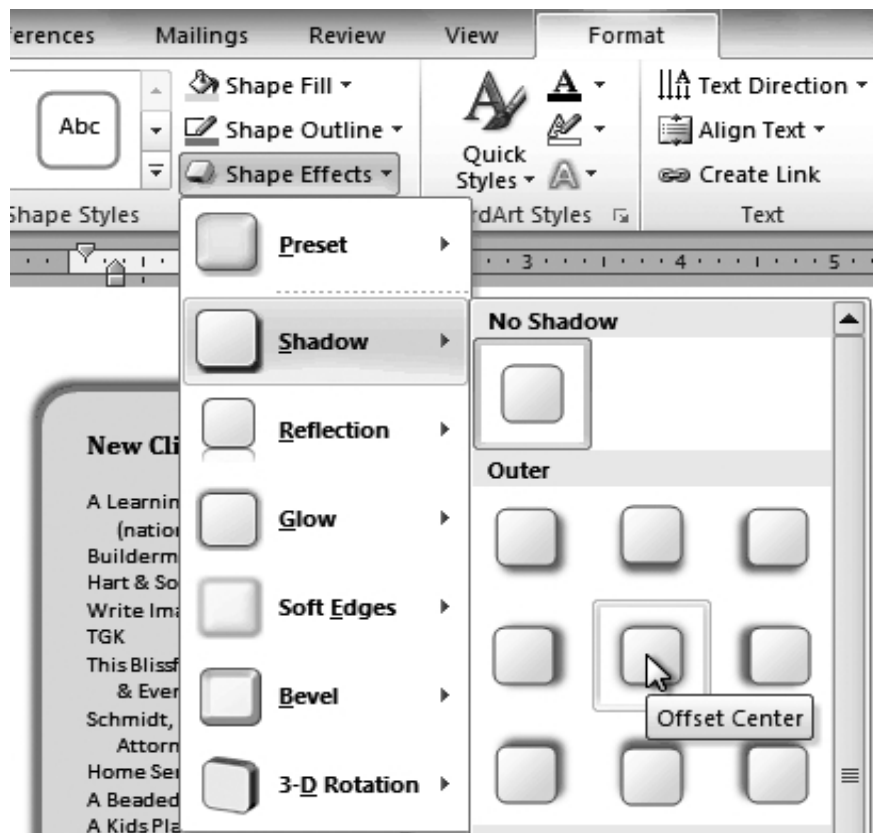
### **Adding a Watermark or a Page Border**

A **watermark** is a picture or other type of graphic object that appears grayed out or lightly tinted behind text in a document. For example, a document could include a text box containing the word “DRAFT” formatted in very large letters that appear in gray behind the document text. Also, a lightly tinted picture of a company logo could appear behind the document text.

#### **A Text Watermark**

Word 2007 has a pre-set list of text watermarks to select from or you can customize one.

1. Click the Page Layout Ribbon.
2. From the **Background** grouping click the Watermark drop-down to see the listing.
3. Scroll through this listing and click on the one you want applied to the document or you can select Custom if nothing meets your needs from the pre-set list.



**Figure 2-25 Shadow 3D effect**

4. From the custom Watermark dialog box, select the **Text watermark**. In the Text field type what you want to appear in the background. You can now change the font, color, size and place of the layout before clicking apply.

To delete a Watermark, click on the Watermark drop-down then select **RemoveWatermark** from the list.

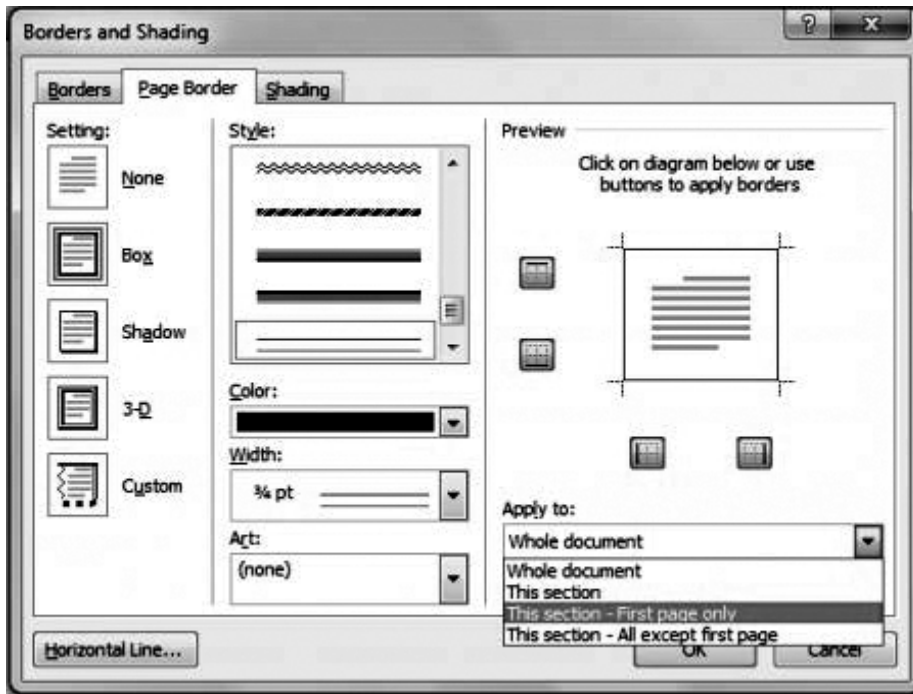
### **A Picture Watermark**

Start with the custom Watermark, click Picture watermark then **Select picture** button. Locate the picture to be inserted. The scale at Auto and Washout are defaults that work very well. Clip Art does not work as a Watermark; however, you can resize and make adjustments to the contrast and brightness along with placing it behind text to a Clip Art look like a watermark.

### **Page Border**

A page border will also enhance a Word document. You can choose to insert a simple box border then modify the color or thickness. You might select to one of the many art borders from fruit, holidays to graphic design.

1. Click the **Page Layout** Ribbon,
2. From the Page Background grouping, click **Page Borders**.



**Figure 2-26 Page Border**

3. From the Page Border tab select the type of border on the left, Box, Shadow, 3-D or Custom.
4. If you are selecting a line border, scroll through the Styles given. You can now change the width and color of the border.  
OR
5. If you would like to click the drop-down for **Art** borders. Select the one that is appropriate to the document.

---

## 2.6 TABLES & CHARTS

---

Aligning text in a word processing document can be tedious if you try to do it using tabs and spaces. Fortunately, Word allows you to insert tables in your document. A table will help you align columns and rows of text with ease.

If you've never used Word's tables feature before, it can be intimidating knowing where to start. And even if you have used the tables feature, you can find new ways to use it more effectively.

### Creating Tables

Tables are preferred when compared to using spacebar or tab for alignment to give a table format, but Word has another excellent feature

for alignment called "Tables". This feature is used to create financial reports, catalogues, accounts etc.

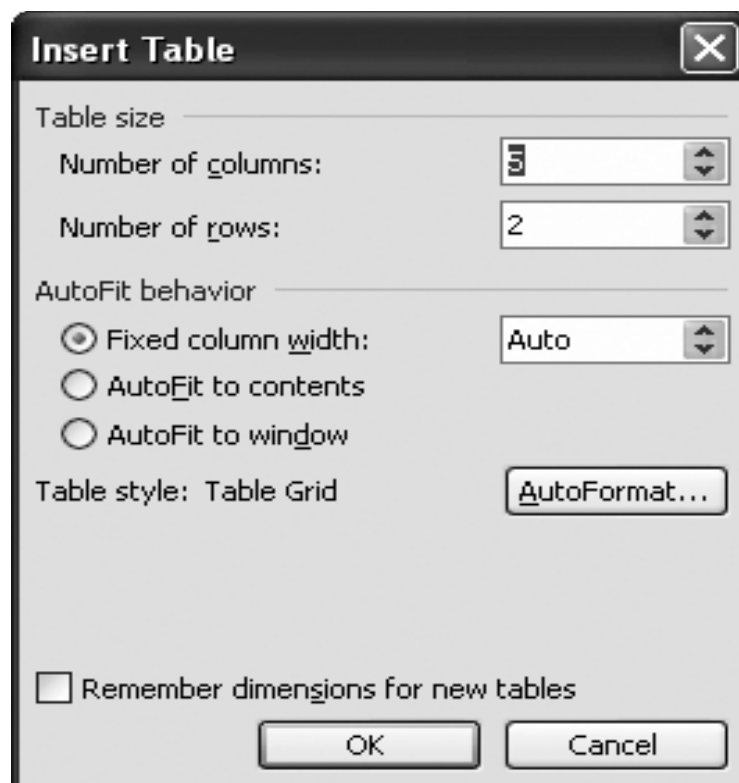
Tables consist of rows and columns. The text can be typed in the cells. The size, shape and appearance of a cell are controllable features. You can also convert a text to a table and a table back to text. It also supports importing and exporting data onto a spreadsheet.

### To create a table using Insert Tables Button

- ❖ Move the cursor to the place where you want to insert the table
- ❖ Choose tables button from the Standard Toolbar
- ❖ Drag the mouse to highlight the desired number of rows and columns in the tables menu
- ❖ Release the button. An empty table is inserted.

### To create a table using table menu

- ❖ Choose Insert table from Table Menu. You will find a dialog box as shown below:



**Figure 2-27 Insert Table**

- ❖ Now type the Number of Columns and rows as you require and set column width Auto. So that the Column with will be equal to the width of the text. Now click OK.

An empty table is inserted in the document. Now inserting rows, columns, Deleting rows and widening the columns is very easy.



## Insert Rows:

- ❖ Place the cursor in the table, where rows are to be inserted
- ❖ Choose Table and click Insert Rows option to insert rows in the table

## Delete Rows:

- ❖ Select the Row which is to be deleted
- ❖ Click Table and click Delete cells option.

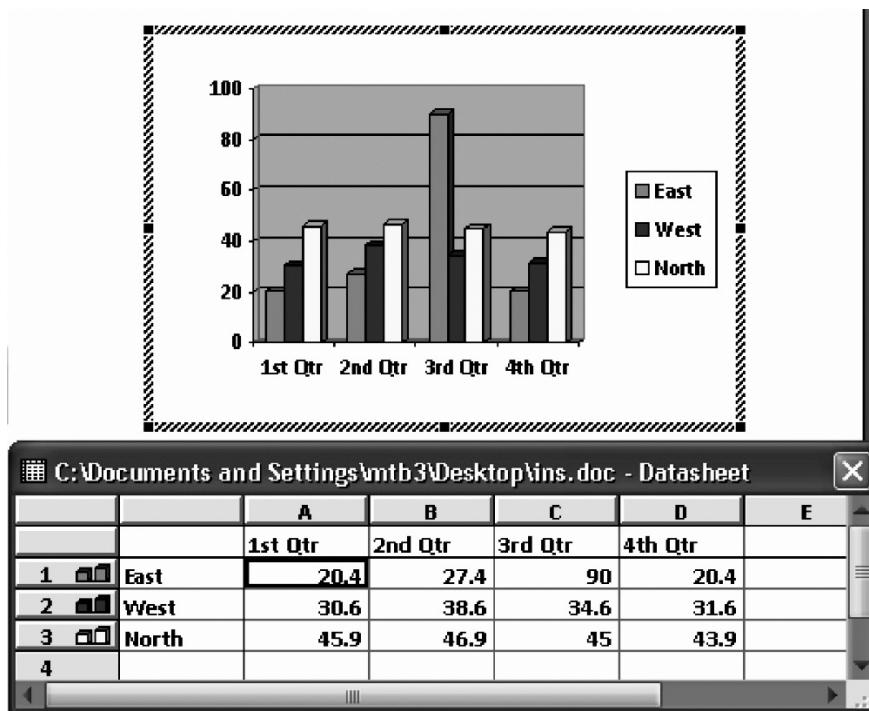
## Charts

Charts are used to display series of numeric data in a graphical format to make it easier to understand large quantities of data and the relationship between different series of data.

### Creating a graph

From the **Insert tab** click the **chartsymbol**.

- ❖ This will then **insert** a graph and display a small data table.



**Figure 2-28 Insert Graph**

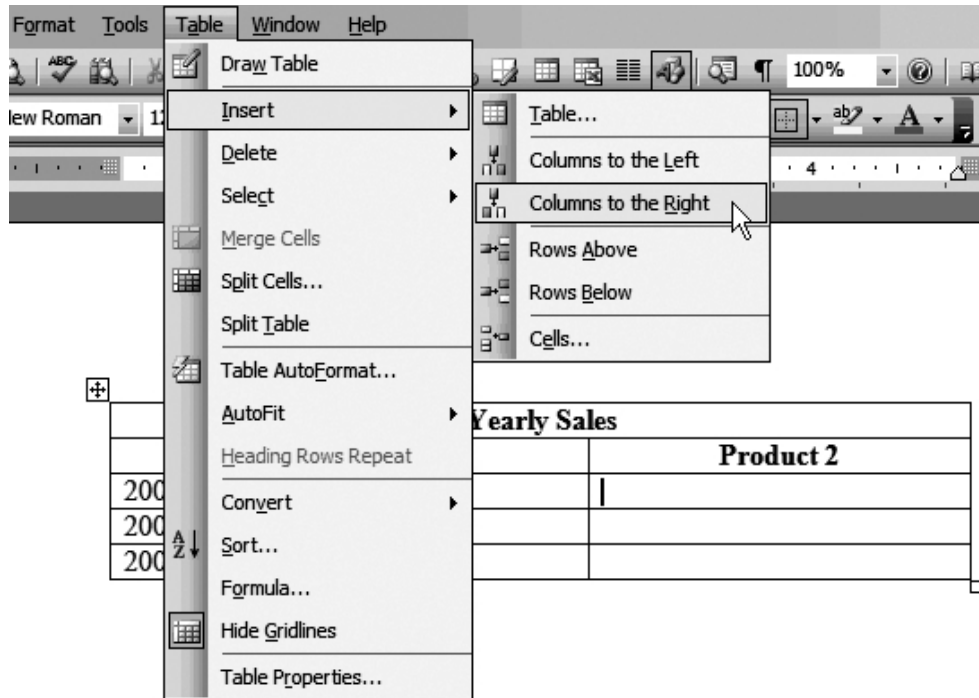
- ❖ This data table can be edited or new data can be imported.

### What is a datasheet?

The data sheet is where you type in data to create a graph. It is made up of cells, in rows and columns; columns are labeled alphabetically across the top of the data sheet; rows are numbered down the left side. To move the data sheet: position the pointer in

the datasheet's blue title bar, hold down the left mouse button and drag the datasheet to a new position

- ❖ Also note that the menu changes to give more options. From this menu you can change graph type, add axis and labels, and change what data is displayed on the graph.



**Figure 2-29 Insert Table through Menu**

### **Resize**

- ❖ The chart can be resized by **clicking** on any of its **corners**, then dragging this to the desired location.

### **Position**

- ❖ It can also be positioned by using the Left, Centre or Right text options.

### **Deleting**

- ❖ You can delete your graph by **clicking** on it and then pressing the **delete** key or **backspace** key.

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## **2.6 CONVERT WORD DOCUMENT FILES INTO PLAIN-TEXT FILES**

---

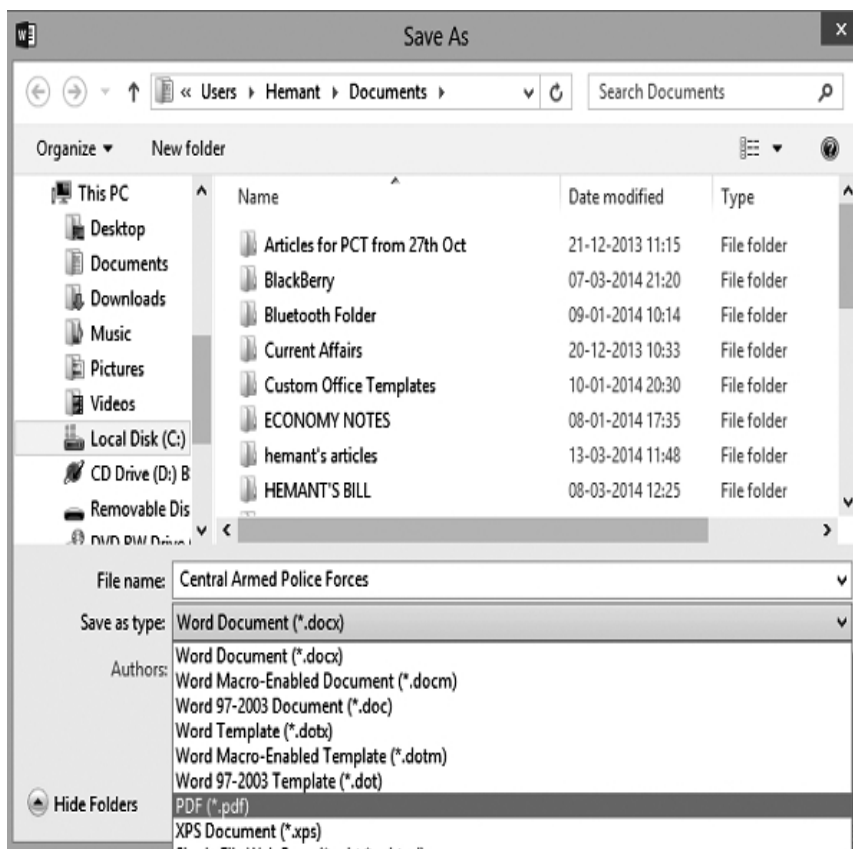
In order to use the contents of a Word Document (“.doc” or “.docx” extension) in a concordance it must be converted or saved as a plain text file (“.txt” extension). I will outline two different ways you can do this below.

### Method 1 (recommended)

1. open the document in Word,
2. do a “select all” (ctrl+A),
3. “copy” (ctrl+C),
4. open Notepad (found in *Start > All Programs > Accessories*),
5. “paste” (ctrl+V) the content into Notepad,
6. save the file

### Method 2

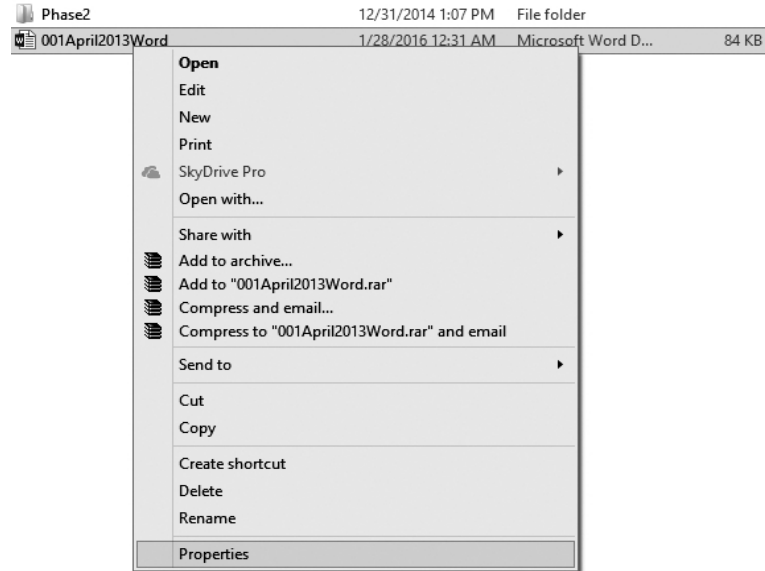
1. open the document in Word,
2. do a “Save as” in Word (goto *File > Save as*),
3. select “Save as type” (see image) as “plain text”,
4. click “Save”,
5. when the dialogue box appears (for non-English OSs) check “allow character substitution” and then click “OK”,



**Figure 2-30. Convert a word document Convert Microsoft Word Documents to RTF Format Unsure about the file format**

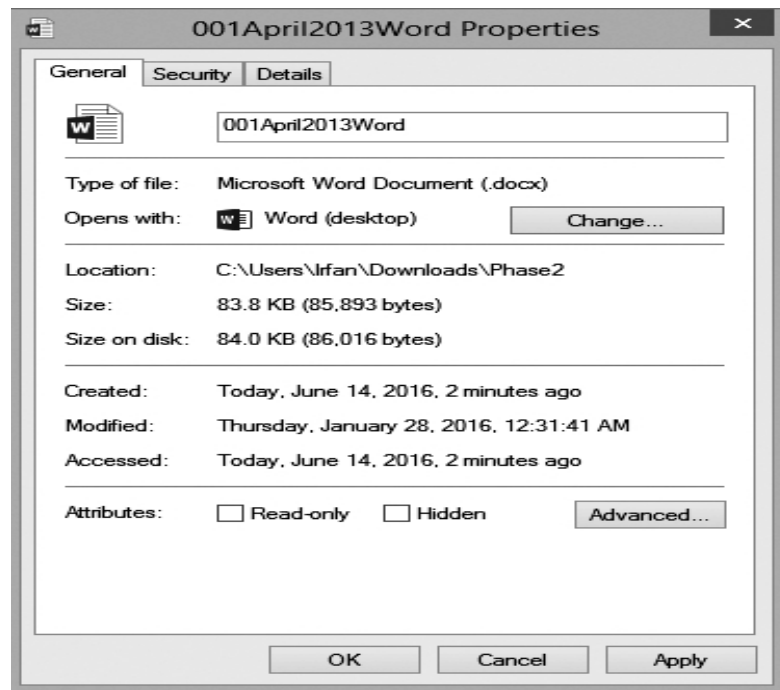
If you are unsure about what format a file was saved as, an easy way to check the format of the file in question is to view properties of the document. The file name in question, for this tutorial, is Doc1.

1. For the file in question; right click the file name and select Properties.



**Figure 2-31 convert a word document through properties**

2. Locate the “Type of file” section. As you can see, this document was saved as a Microsoft Word Document. If the file in question displays this information, it will have to be converted before submittal.

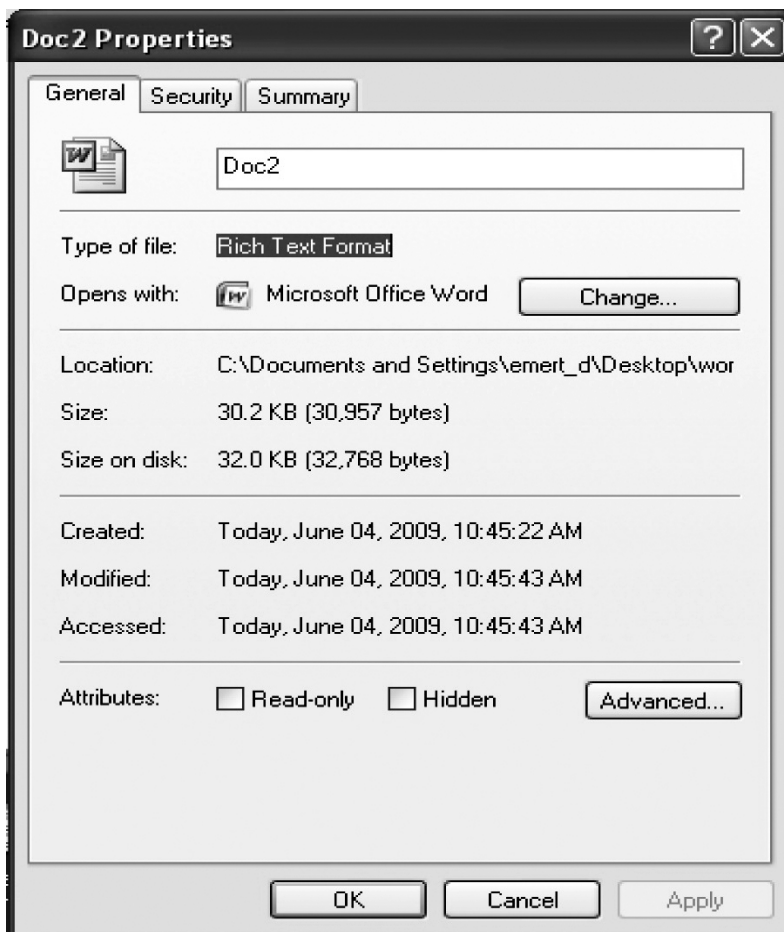


**Figure 2-32 convert a word document through properties**

If you have received this output of a file, please skip step 3 and continue on to step 4. It is now safe to close the properties window using either the close window button (the Red X at the top-right hand side of the properties window), the “OK” button, or the “Cancel” Button. Please do not select or modify any option within the properties window, as it may cause adverse effects for the file.

If this is not the output you have received, please continue to step 4.

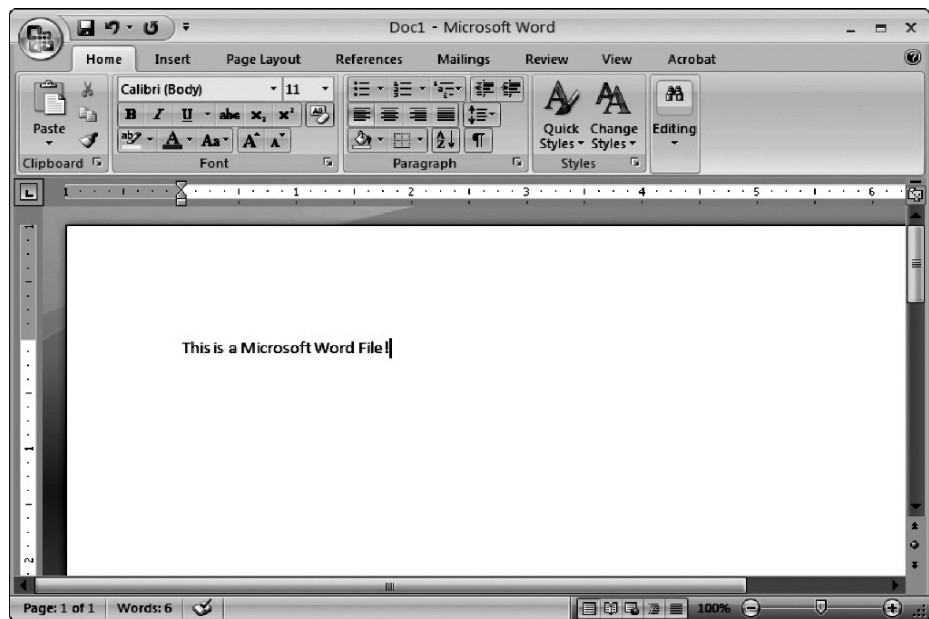
3. If this Document was saved as a Real Text Format, or RTF, the following output would be displayed.



**Figure 2-33 convert a word documentthrough properties**

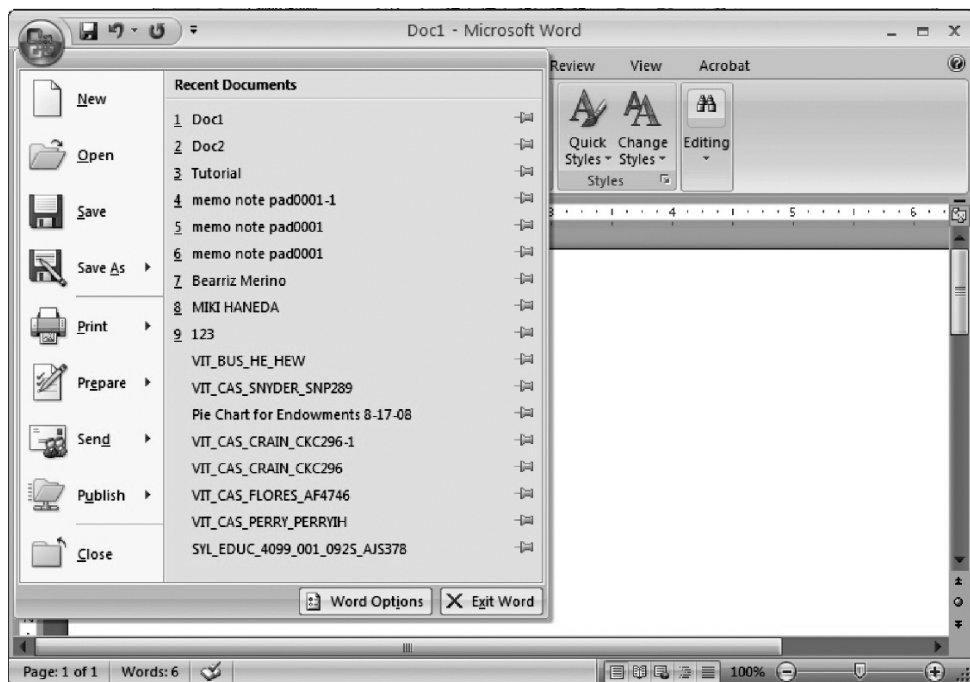
If you have received this output, the file in question is a RTF file. It is now safe to close the properties window using either the close window button (the Red X at the top-right hand side of the properties window), the “OK” button, or the “Cancel” Button. Please do not select or modify any option within the properties window, as it may cause adverse effects for the file.

4. Open the file, Here the file is in Microsoft Office 2007.



**Figure 2-34 convert an rtf in to word document**

5. In order to save the file as a RTF, or Rich Text Format, first select the Microsoft Office Logo. This is done by left clicking the Microsoft Office Logo, located in the top-left hand side of the screen.



**Figure 2-35 convert an rtf in to word document using word option**

6. Let the mouse hover over the "Save as" button, or click the arrow to the right of the save as button.

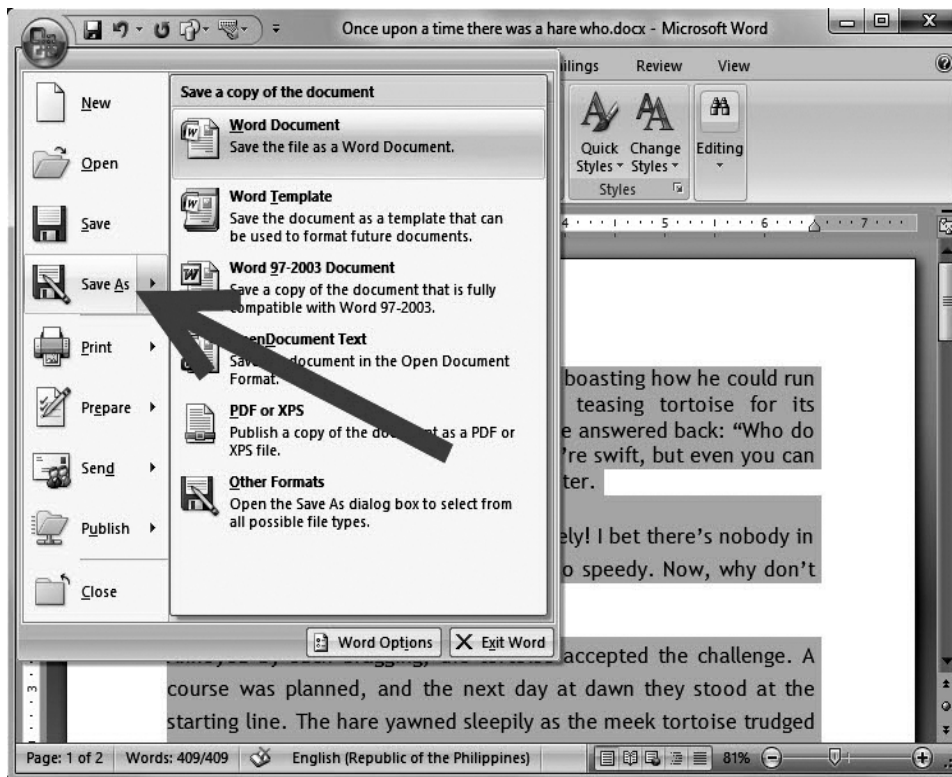


Figure 2-36 Save As Menu

7. Select "Other Formats"



Figure 2-37 Save As Menu

8. After selecting the “Other Formats” button, the “Save As” dialog should appear.

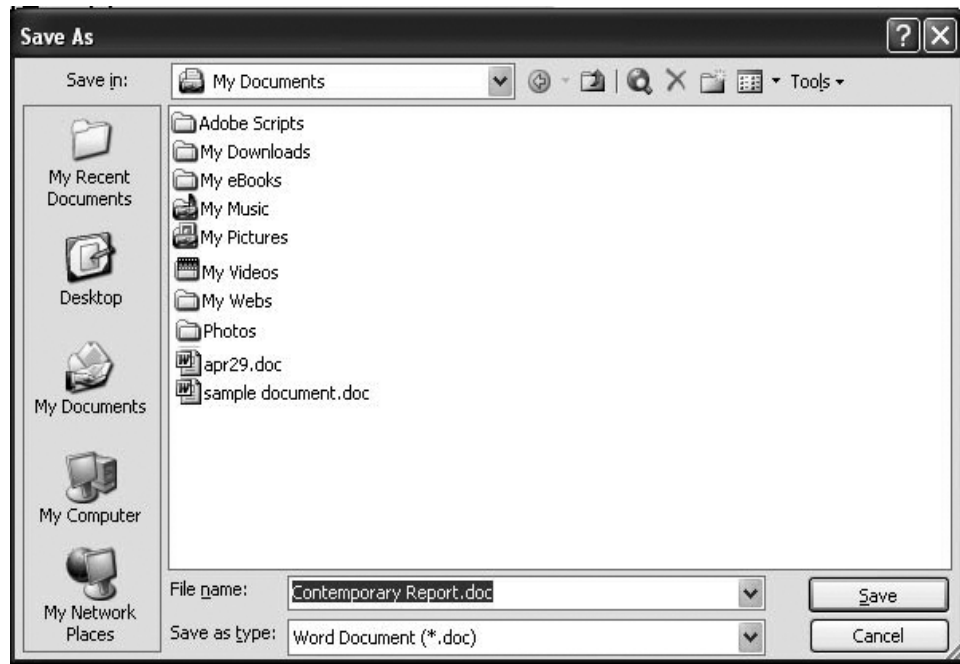


Figure 2-38 Save As Dialog Box

9. Under the “Save as Type”, located near the bottom of the “Save As” window, a selection list is available. There are now a multitude of different formats to save the file as, but in order to save the file as a RTF, scroll down the list and select “Rich Text Format.”

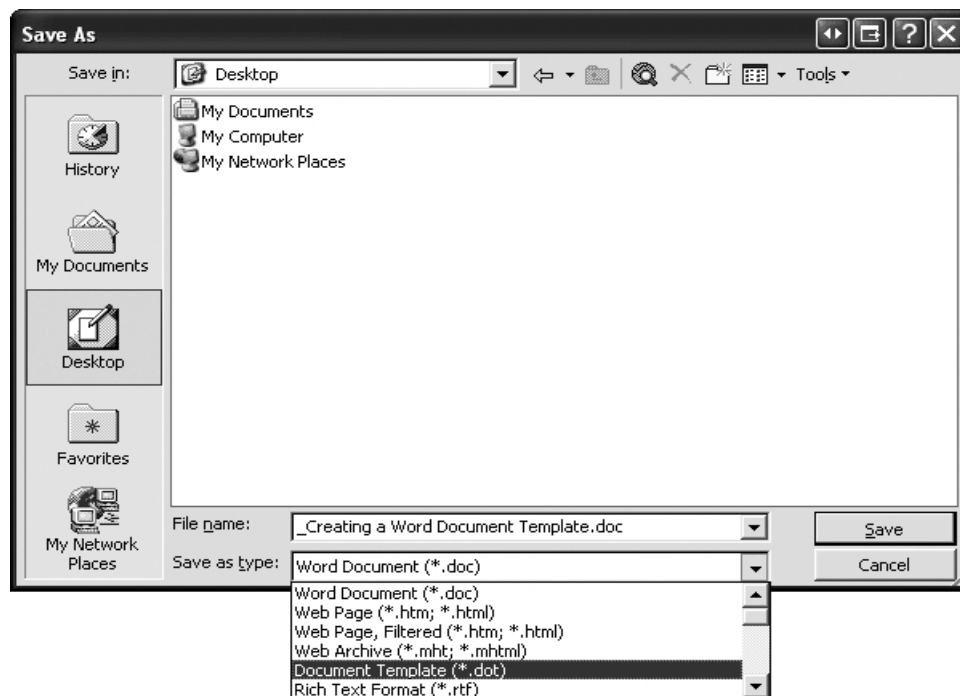


Figure 2-39 Save As File Type



10. Now, the document can be saved or renamed and saved using the “save” button at lower right hand side of the “save as” dialog screen.

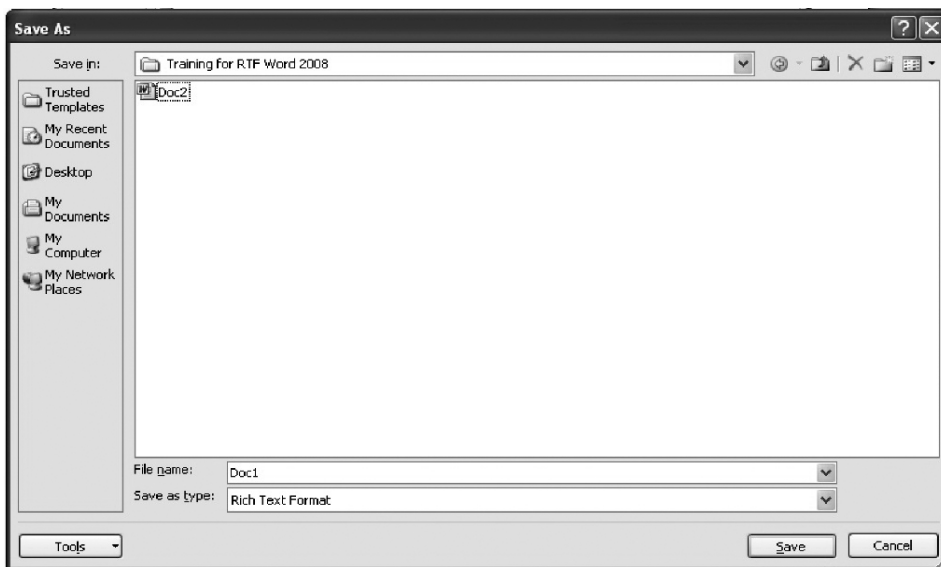


Figure 2-40 Save As dialog

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## 2.7 CONVERT A WORD DOCUMENT TO WORDPERFECT FORMAT

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Microsoft Word and Corel WordPerfect are two very popular word processing software programs. Although these two software programs function well independently of each other, there will no doubt be times when a file may need to be opened and edited in both of these programs. Luckily, converting a Microsoft Word document to WordPerfect format is a simple and straightforward process that can be done with just a few quick and easy steps.

### Instructions

1. Save the Word document as a WordPerfect-supported file type. To do this, go to "File" and click "Save as." When the "Save as" dialogue box appears, locate the drop-down menu for "File Type" and select a supported WordPerfect file type. Depending upon your version of Microsoft Word, you may have a WordPerfect file type (.wpd). If not, select the text file type (.txt) or rich text format type (.rtf) and click "Save."
2. Open up that file type in WordPerfect. If the file was saved correctly in Step 1 as a WordPerfect (.wpd) file or a text (.txt) or rich text format (.rft) file, WordPerfect should automatically open it with no problems. If the file is still in Word format (.doc), you may have to click on the drop-down menu at the bottom of the dialogue box and select "All files" for the file to be able to be opened.

3. Go to "File" and then "Save as" and resave the document as the WordPerfect (.wpd) file type. This should be the default option, but if the "File Type" drop-down menu box does not say this when the "Save as" dialogue box first appears, simply click it and manually choose the WordPerfect (.wpd) file type. This will successfully convert the file to WordPerfect format.

### **Check your progress**

- Q1. How to insert clip art in your document?
- Q2. How to wrap text around graphics?
- Q3. How to insert a text box in your document?
- Q4. How to Insert a Word Art in your document?
- Q5. Explain steps to add a watermark or a page border.
- Q6. Explain how to insert a table in the document.

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## **2.8 SUMMARY**

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In this unit you learnt about advance features of MS-Word like insert pictures, creating table, charts, creating thesaurus, word-art and converting word documents to other format.

- ❖ A table is made up of rows and column.
- ❖ Word 2007 provides more word-processing features than are offered by the Web page creation tools in Office SharePoint Server 2007 alone.
- ❖ Word Document has “.doc” or “.docx” extension.
- ❖ In Word® 2007 you can amend any graph by simply double clicking on it. This will then display the menu above and load the data for the graph.
- ❖ A watermark is a picture or other type of graphic object that appears grayed out or lightly tinted behind text in a document.

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## **2.9 REVIEW QUESTIONS**

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- Q1. Define Macros with example in details.
- Q2. What is a table? How can we create it? Define with example.
- Q3. Write all the steps to insert word-art in the word document.
- Q4. Define Thesaurus? Write all the required steps for it.
- Q5. What do you mean by Shapes? Elaborate your answer.

---

## SUGGESTED FURTHER READING

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1. Computing for seniors in Easy Steps: Windows 7 Edition, by Sue Price, Paperback: 240 pages Publisher: In Easy Steps Limited (March 12, 2010).
2. Understanding Computers: Today and Tomorrow, Introductory, by Deborah Morley, Paperback: 488 pages Publisher: Course Technology; 13 edition (February 4, 2010)
3. Essential Windows 7 Handbook, Paperback: 148 pages Publisher: Practical Publishing International Limited; 2nd edition edition (January 2010)
4. Exploring Getting Started with Windows 7, by Robert Grauer et al, Paperback: 96 pages Publisher: Prentice Hall; 1 edition (January 14, 2010)
5. GO! With Windows 7 Getting Started, by Shelley Gaskin, Robert L. Ferrett, Paperback: 80 pages Publisher: Prentice Hall; 1 edition (January 16, 2010)
6. How to Set Up a Home Network: Share Internet, Files and Printers between Windows 7, Windows Vista, and Windows XP, by Edward K McAuliffe, Paperback: 202 pages Publisher: CreateSpace (December 22, 2009)
7. Internet for seniors in Easy Steps: Windows 7 Edition, by Michael and Sue Price, Paperback: 240 pages Publisher: In Easy Steps Limited (March 31, 2010)
8. Windows 7 Tips and Techniques in Easy Steps: Secrets Revealed, by Stuart Yarnold, Paperback: 216 pages Publisher: In Easy Steps Limited (February 1, 2010)
9. Windows 7: Up and Running: A Quick, Hands-On Introduction, by Lee Weng-Meng, Paperback: 202 pages Publisher: O'Reilly Media (October 13, 2009)
10. Ericson, Gary (2001) Microsoft Office 2000 Resources Kit New Delhi: Prentice Hall of India.
11. <http://www.baycongroup.com/wlesson0.htm>
12. <http://web.simmons.edu/~gslislab/website/howto/word2007.pdf>
13. [https://ptgmedia.pearsoncmg.com/images/9780735623026/sample\\_pages/9780735623026.pdf](https://ptgmedia.pearsoncmg.com/images/9780735623026/sample_pages/9780735623026.pdf)
14. <http://www.word07.com/>





Uttar Pradesh Rajarshi Tandon  
Open University

## Certificate in Computer Course

# CCC-1.1

## Office Tools and Internet

Block

# 2

### **MS-WORD & ITS ADVANCED FEATURES**

<b>Unit 1</b>	<b>Worksheet- MS-Excel</b>	<b>71-90</b>
<b>Unit II</b>	<b>MS- Excel Advanced Features</b>	<b>91-118</b>
<b>Unit III</b>	<b>Introduction to Power point</b>	<b>119-140</b>
<b>Unit IV</b>	<b>MS- Power point Advanced Features &amp; DTP Software</b>	<b>141-162</b>

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# UNIT-I

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## WORKSHEET- MS-EXCEL

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### Structure

- 1.0 Introduction
- 1.1 Worksheet basics
- 1.2 Creating worksheet
- 1.3 Entering into worksheet
- 1.4 Heading information
- 1.5 Date & Time
- 1.7 Alphanumeric values
- 1.8 Saving & quitting worksheet
- 1.9 Opening and moving around in an existing worksheet
- 1.10 Toolbars and Menus
- 1.11 Excel shortcut and function keys
- 1.12 Summary
- 1.13 Review Questions
- 1.13 Review Questions

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### 1.0 Introduction

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This is the first unit of this block. This unit has covered the topic Worksheet-Excel. In this unit there are thirteen sections. Each section has given detail knowledge about excel. In the Sec. 1.1 you will learn about the basics of worksheet. In the Sec. 1.2 we define how to create the worksheet. In the next section you will know about entering into worksheet. In Sec. 1.4 you will know about heading information. You can learn about data and text & date and time in Sec. 1.5 and Se. 1.6 respectively. In the Sec. 1.7 you will learn about alphanumeric values. Next section told you how to save and quit worksheet. Sec. 1.9 describe open and move an existing worksheet. Sec. 1.10 explain toolbars and menus. In the next section we describe excel shortcut and function keys. In Sec. 1.12 and 1.13 you will find summary and review questions respectively.

## Objectives

After studying this unit you should be able to:

- Express about worksheet basics, creating worksheets, entering into worksheets.
- Define heading information, data, text, date & time, alphanumeric values.
- Describe saving and quitting worksheet, Opening and moving around in an existing worksheet.
- Define Toolbars and Menus and excel shortcuts.

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## 1.1 Worksheet Basics

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Excel is software that lets you create tables, and calculate and analyze data. This type of software is called spreadsheet software. Excel lets you create tables that automatically calculate the totals of numerical values you input, print out tables in neat layouts, and create simple graphs.

Excel is a part of "Office", a suite of products combining several types of software for creating documents, spreadsheets, and presentations, and for managing e-mail.



**Figure 1-1 Worksheet**

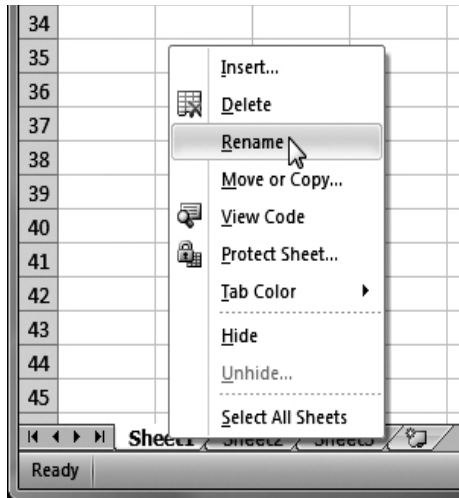
Every Excel **workbook** contains at least one or more **worksheets**. If you are working with a large amount of related data, you can use worksheets to help organize your data and make it easier to work with.

When you open an Excel workbook, there are three worksheets by default. The default names on the worksheet tabs are Sheet1, Sheet2 and Sheet3. To organize your workbook and make it easier to navigate, you can rename and even color-code the worksheet tabs. Additionally, you can insert, delete, move, and copy worksheets.



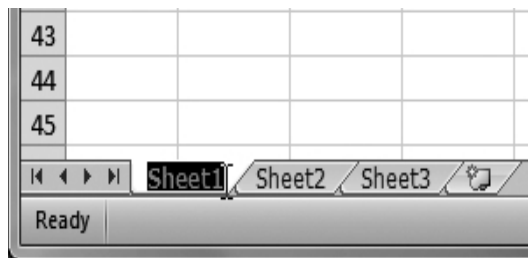
## To Rename Worksheets

1. Right-click the worksheet tab you want to rename. The worksheet menu appears.
2. Select Rename.



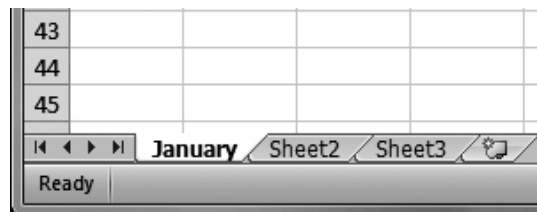
**Figure 1-2: Selecting the Rename command**

3. The text is now highlighted by a black box. Type the name of your worksheet.



**Figure 1-3 renaming the worksheet**

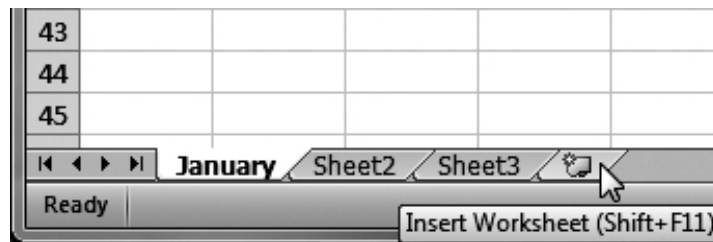
4. Click anywhere outside of the tab. The worksheet is renamed.



**Figure 1-4 Renamed worksheets**

## Insert New Worksheets

Click on the Insert Worksheet icon. A new worksheet will appear.



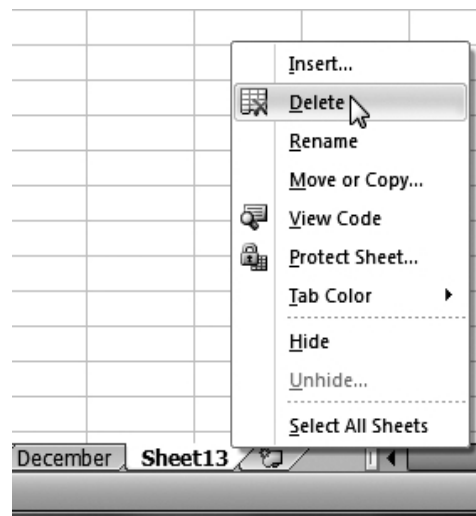
**Figure 1-5: Inserting a new worksheet**

You can change the setting for the default number of worksheets that appear in Excel workbooks. To access this setting, go into backstage view and click on Options.

### Delete Worksheets

Worksheets can be deleted from a workbook, including those that contain data.

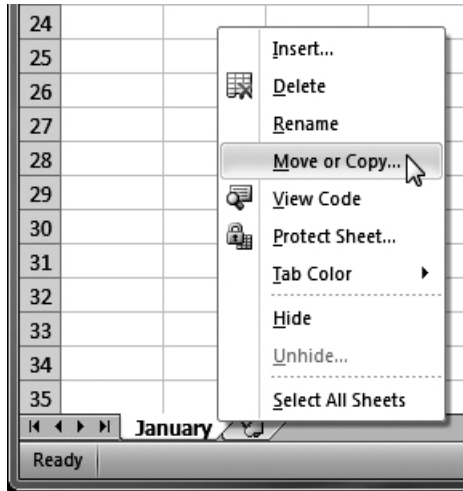
1. Select the worksheets you want to delete.
2. Right-click one of the selected worksheets. The **worksheet** menu appears.
3. Select **Delete**. The selected worksheets will be deleted from your workbook.



**Figure 1-6: Deleting a worksheet**

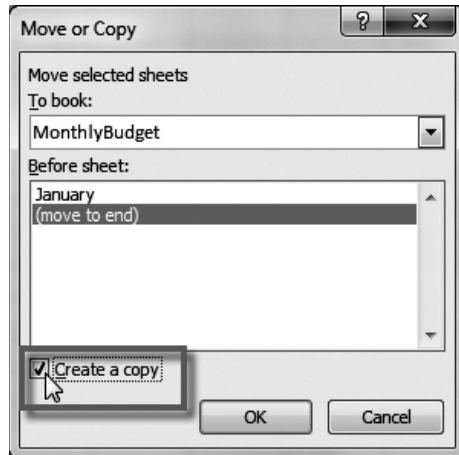
### Copy a Worksheet

1. Right-click the worksheet you want to copy. The **worksheet** menu appears.
2. Select **Move or Copy**.



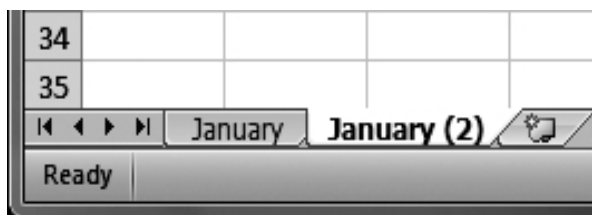
**Figure 1-7 Selecting the Move or Copy command**

3. The **Move or Copy** dialog box appears. Check the **Create a copy** box.





**Figure 1-8 checking the Create a copy box**

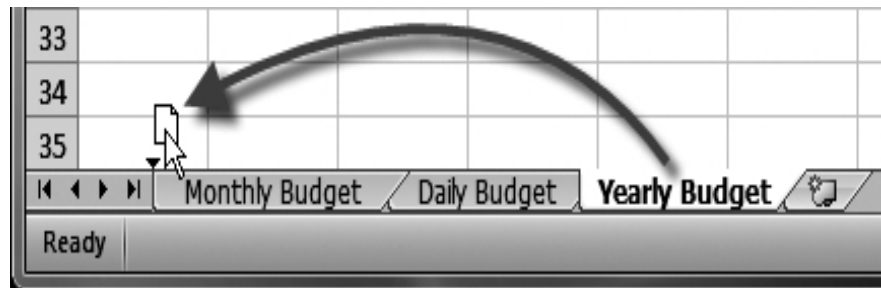
4. Click **OK**. Your worksheet is copied. It will have the same title as your original worksheet, but the title will include a version number, such as "January (2)".



**Figure 1-9 Copied worksheets**

### **Move a Worksheet:**

1. Click on the worksheet you want to move. The mouse will change to show a small worksheet icon .
2. Drag the worksheet icon until a small black arrow  appears where you want the worksheet to be moved.



**Figure 1-10 moving a worksheet**

3. Release your mouse and the worksheet will be moved.




**Figure 1-11 Moved worksheets**

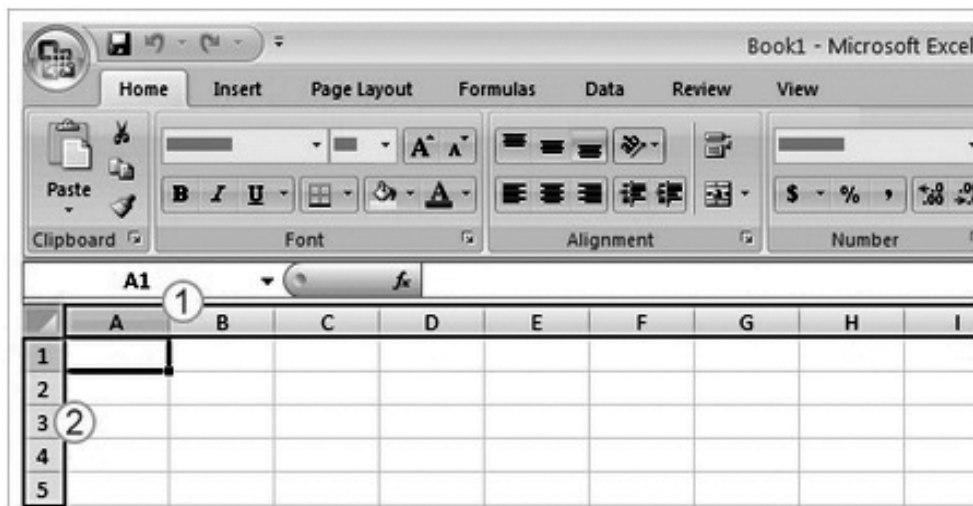
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## **1.2 Creating New Worksheet**

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- ❖ Click the **Microsoft Office Button**  at the upper left.
- ❖ Then click **New**. In the **New Workbook** window,
- ❖ Click **Blank workbook**.

After the first 26 column headings (A through Z), the next 26 column headings are AA through AZ. The column headings continue through column XFD, for a total of 16,384 columns.



**Figure 1-12 Worksheets New**

1. Column headings are indicated by letters.
2. Row headings are indicated by numbers.

Worksheets are divided into columns, rows, and cells. That's the grid you see when you open up a workbook.

Columns go from top to bottom on the worksheet, vertically. Rows go from left to right on the worksheet, horizontally. A cell is the space where one column and one row meet.

Each column has an alphabetical heading at the top. The first 26 columns have the letters from A through Z. Each worksheet contains 16,384 columns in all, so after Z the letters begin again in pairs, AA through AZ. See Figure 2.

After AZ, the letter pairs start again with columns BA through BZ, and so on, until all 16,384 columns have alphabetical headings, ending at XFD.

Each row also has a heading. Row headings are numbers, from 1 through 1,048,576.

The alphabetical headings on the columns and the numerical headings on the rows tell you where you are in a worksheet when you click a cell. The headings combine to form the cell address, also called the **cell reference**.

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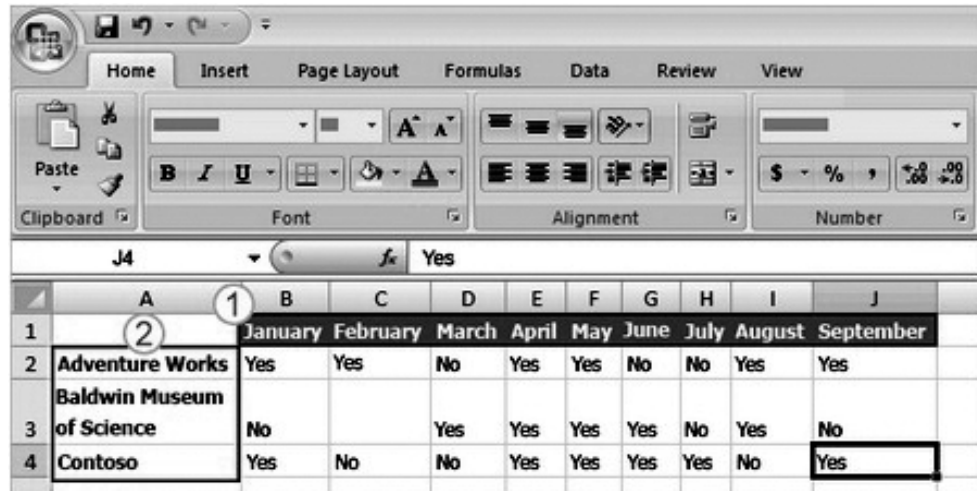
### **1.3 Entering Data into Worksheet**

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You can enter two basic kinds of data into worksheet cells: numbers and text. You can use Excel to create budgets, to work with taxes, or to record student grades. You can use Excel to list the products you sell or to record student attendance.

You can even use Excel to track how much you exercise every day, and your weight loss, or how much your house remodel is costing you. The possibilities really are endless. Now let's dive into data entry.

## 1.4 Start with Column Title



	A	B	C	D	E	F	G	H	I	J
1		January	February	March	April	May	June	July	August	September
2	Adventure Works	Yes	Yes	No	Yes	Yes	No	No	Yes	Yes
3	Baldwin Museum of Science	No		Yes	Yes	Yes	Yes	No	Yes	No
4	Contoso	Yes	No	No	Yes	Yes	Yes	Yes	No	Yes

Figure 1-13 Worksheets Column Title

Worksheet with column and row titles

1. The column titles are the months of the year.
2. The row titles are company names.

When you enter data, it's a good idea to start by entering titles at the top of each column so that anyone who shares your worksheet can understand what the data means (and so that you can understand it yourself, later on).

In the picture, the column titles are the months of the year, across the top of the worksheet.

You'll often want to enter row titles too. In the picture, the row titles down the left side are the names of companies.

This worksheet shows whether or not a representative from each company attended a monthly business lunch.

### Check your progress

- Q1. How to open, save, rename and copy a worksheet?
- Q2. How to creating New Worksheet
- Q3. How to entering data into worksheet.

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## 1.5 Data & Text

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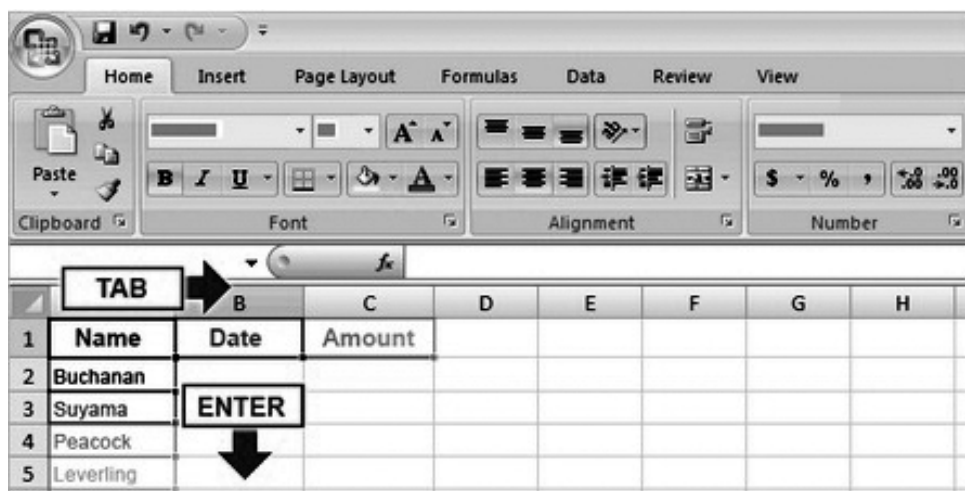


Figure 1-14 Worksheets Typing

Say that you're creating a list of sales people names. The list will also have the dates of sales, with their amounts. So you will need these column titles: Name, Date, and Amount.

You don't need row titles down the left side of the worksheet in this case; the sales people names will be in the leftmost column.

You would type "Date" in cell B1 and press TAB. Then you'd type "Amount" in cell C1.

After you typed the column titles, you'd click in cell A2 to begin typing the names of the salespeople.

You would type the first name, and then press ENTER to move the selection *down* one cell to cell A3 (down the column), and then type the next name, and so on.

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## 1.6 DATE and TIME

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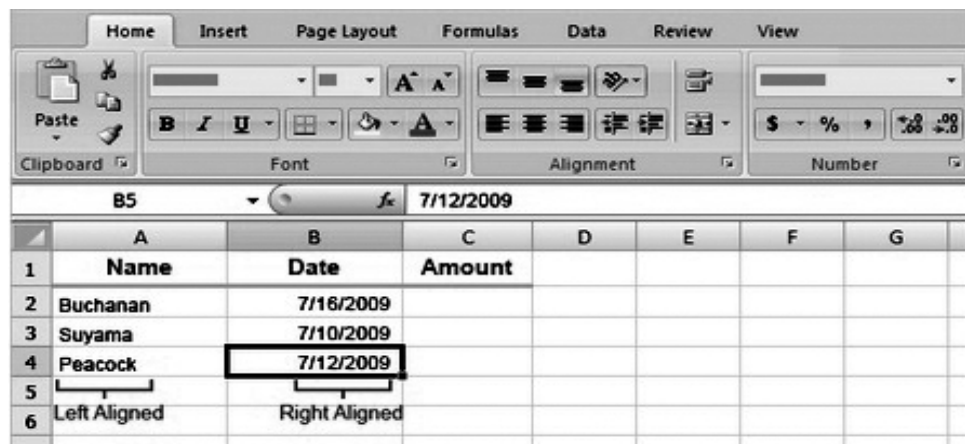


Figure 1-15 Date Time

To enter a date in column B, the Date column, you should use a slash or a hyphen to separate the parts: 7/16/2009 or 16-July-2009. Excel will recognize this as a date.

If you need to enter a time, type the numbers, a space, and then "a" or "p" — for example, 9:00 p. If you put in just the number, Excel recognizes a time and enters it as AM.

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## 1.7 Entering Numbers Formatted as Text (Alphanumeric)


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When cells are formatted for text, all cell contents—letters, numerals, or alpha-numeric combinations—are treated as text. Information is displayed exactly as it is entered. There are two ways to enter numbers as text.

### Entering Numbers Formatted as Text: Apostrophe Character

1. Select the cell you want to enter information into
2. Press ['], then type numeric information
3. To accept the information, press [**Enter**] or an [**Arrow**]

### Entering Numbers Formatted as Text: Dialog Box

1. From the *Ribbon*, select the **Home** command tab
2. In the *Number* group, click **FORMAT CELLS**  The *Format Cells* dialog box appears.
3. Select the **Number** tab

From the *Category* scroll list, s

4. From the *Category* scroll list, select **Text**
5. Click **OK**
6. Type the desired numbers and/or text in the cell
7. To accept the text, press [**Enter**] or an [**Arrow**]  
To force text to wrap at a specific point in a cell, press [**Alt**] + [**Enter**]

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## 1.8 Saving & Quitting Worksheet

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The following steps should be used when you are saving a worksheet for the first time, when you want to save it to a new location (e.g., as a backup), or when you want to save a copy with a different name.

1. In the top left corner of the Excel window, click **FILE**  
The *File* menu appears





2. From the *File* menu, select *Save As...*  
**OR**  
Press [Ctrl] + [S]  
The *Save As* dialog box appears.
3. From the *Save in* pull-down list, select the appropriate save location
4. In the *File name* text box, type a *filename*
5. OPTIONAL: To save your workbook in a format other than the default (.xlsx), from the *Save as type* pull-down list, select the desired format  
NOTE: This is an important consideration if you want your document to be able to open in Excel 97-2003.
6. Click **SAVE**  
The file is saved.

### **Close workbooks or workbook windows**


When your computer is running a single instance of Excel, all workbooks that you open are opened in a workbook window inside the Excel window. You can also create new workbook windows for any worksheet in a workbook by using the **New Window** command (**View** tab, **Window** group).

You can close each of these workbook windows one at a time, or you can close the whole workbook (including all of its workbook windows). To close all workbooks that are open, you can close the Excel window or exit Excel.

What do you want to do?

- Close the active workbook window
- Close a workbook
- Close all workbooks and exit Excel

### **Close the active workbook window**

1. Click the workbook window that you want to close.
2. In the upper-right corner of the workbook window, click **Close Window** .

**NOTE** If the window is the only open window of the workbook, the whole workbook is closed. If there are more workbook windows of the same workbook, only the active workbook window is closed.



### ***Close a workbook***

1. Activate the workbook that you want to close.

2. Click the **Microsoft Office Button** , and then click **Close**.

### *Close all workbooks and exit Excel*

Do one of the following:

- In the upper-right corner of the Excel window, click **Close** .
- Click the **Microsoft Office Button** , and then click **Exit Excel**.

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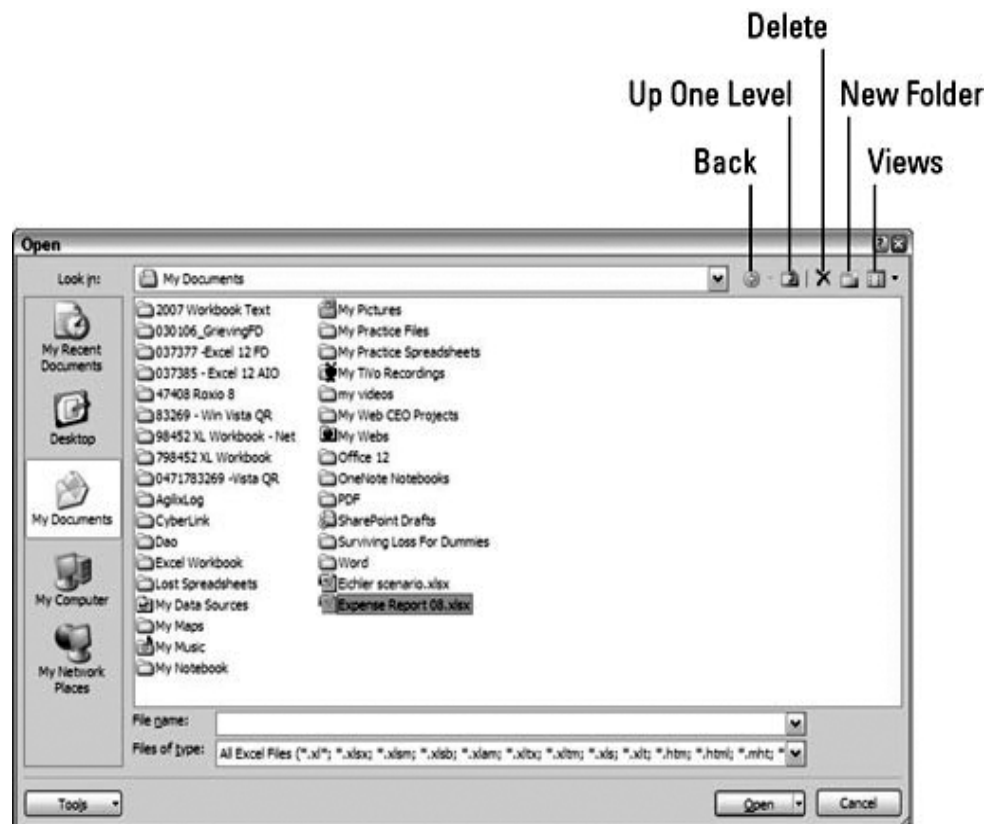
## 1.9 Opening and moving around in an existing worksheet

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If you're running Excel 2007 on Windows XP, use these steps to open a workbook:

1. **Click the Office button and choose Open.**

The Open dialog box appears. This dialog box is divided into two sections: a My Places panel on the left and a folder and file list box on the right.



**Figure 1-16 Open Dialog box**

*The Open dialog box as it appears when running Excel 2007 on Windows XP.*

2. **If you want to open a workbook in another folder, click the Look In drop-down list button and select the folder that contains the file.**

Use the Up One Level button to move up one level at a time in the file hierarchy to find the desired folder. You also can use the buttons on the My Places panel on the left side of the dialog box to jump to those folders.

3. **Click the file you want to open and then click the Open button, or double-click the file's icon.**

Use the Views button drop-down menu on the Open dialog box to change the way folder and file icons appear in the dialog box.

### **Move or copy a worksheet**

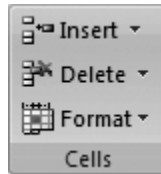
#### *Move or copy worksheets to another location in the same workbook*

It's easy to move or copy a whole worksheet (or sheet) to another location in a workbook. However, be aware that calculations or charts that are based on worksheet data might become inaccurate if you move the worksheet. Similarly, if a moved or copied worksheet is inserted between sheets that are referred to by a 3-D formula reference, data on that worksheet might be unexpectedly included in the calculation.

1. Select the worksheets that you want to move or copy.

**Keyboard shortcut:** - To move to the next or previous sheet tab, you can also press CTRL+PAGE UP or CTRL+PAGE DOWN.

2. On the **Home** tab, in the **Cells** group, click **Format**, and then under **Organize Sheets**, click **Move or Copy Sheet**.



**Figure 1-17** Popup Menu

**TIP** You can also right-click a selected sheet tab, and then click **Move or Copy**.

3. In the **Move or Copy** dialog box, in the **Before sheet** list, do one of the following:
  - Click the sheet before that want to insert the moved or copied sheets directly in front of.
  - Click **move to end** to insert the moved or copied sheets after the last sheet in the workbook and before the **Insert Worksheet** tab.



**Figure 1-18 Insert worksheet**

4. To copy the sheets instead of moving them, in the **Move or Copy** dialog box, select the **Create a copy** check box.

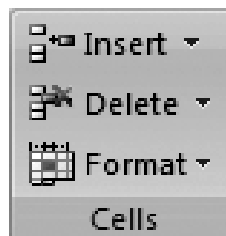
#### **Move or copy worksheets to a different workbook**

1. To move or copy worksheets to another workbook, make sure that the target workbook is open in the same instance of Microsoft Office Excel.
2. In the workbook that contains the sheets that you want to move or copy, select the sheets.

#### **Keyboard shortcut**

To move to the next or previous sheet tab, you can also press CTRL+PAGE UP or CTRL+PAGE DOWN.

3. On the **Home** tab, in the **Cells** group, click **Format**, and then under **Organize Sheets**, click **Move or Copy Sheet**.



**Figure 1-19 Popup Menu**

4. In the **Move or Copy** dialog box, in the **To book** list, do one of the following:
  - Click the workbook to which you want to move or copy the selected sheets.
  - Click **new book** to move or copy the selected sheets to a new workbook.
5. In the **Before sheet** list, do one of the following:
  - Click the sheet that you want to insert the moved or copied sheets directly in front of.
  - Click **move to end** to insert the moved or copied sheets after the last sheet in the workbook and before the **Insert Worksheet** tab.



**Figure 1-20 Sheets of Workbook**

6. To copy the sheets instead of moving those, in the **Move or Copy** dialog box, select the **Create a copy** check box.

### **Check your progress**

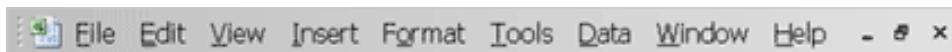
- Q1. Explain how we can insert DATE and TIME in our document.
- Q2. Explain Number formatting in document.
- Q3. How to save & quit Worksheet
- Q4. Explain how to open and move around in an existing worksheet.

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## **1.10 Toolbars and Menus**

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### ***The Menu Bar***



**Figure 1-21 Menu Bar**

The Menu bar is directly below the Title bar. The menu begins with the word *File* and continues with *Edit*, *View*, *Insert*, *Format*, *Tools*, *Data*, *Window*, and *Help*. You use a menu to give instructions to the software. Point with your mouse to a menu option and click the left mouse button. A drop-down menu opens. You can now use the left and right arrow keys on your keyboard to move left and right across the Menu bar. You can use the up and down arrow keys to move up and down the drop-down menu. To choose an option, highlight the item on the drop-down menu and press *Enter*. An ellipse after a menu item signifies additional options; if you choose that option, a dialog box opens.

Do the following exercise, which demonstrates using the Microsoft Excel menu bar.

1. Point to the word *File*, which is located on the Menu bar.
2. Click your left mouse button.
3. Press the right arrow key until *Help* is highlighted.
4. Press the left arrow key until *Format* is highlighted.
5. Press the down arrow key until *Style* is highlighted. Press the up arrow key until *Cells* is highlighted.
6. Press *Enter* to choose the *Cells* menu option.
7. Point to *Cancel* and click the left mouse button to close the dialog box.

When using Microsoft Excel, you can set an option to tell Microsoft Excel to always show full menus or to show only the most frequently and recently used options. All the lessons in this tutorial assume you have your menus set to Always Show Full Menus. To set your menu to display full menus:

1. Point to the word Tools, which is located on the menu bar.
2. Click your left mouse button.
3. Press the down arrow until customize is highlighted.
4. Press Enter.
5. Choose the Options Tab by clicking on it.
6. If Always Show Full Menus does not have a check mark in it, click in the Always Show Full Menus box.
7. Click Close to close the dialog box.

### The Toolbars

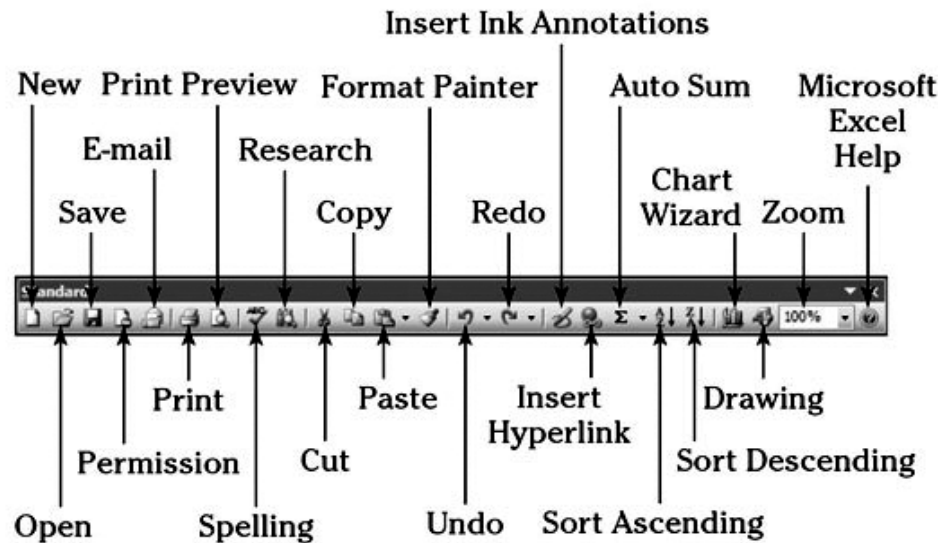


Figure 1-22the Standard Toolbar

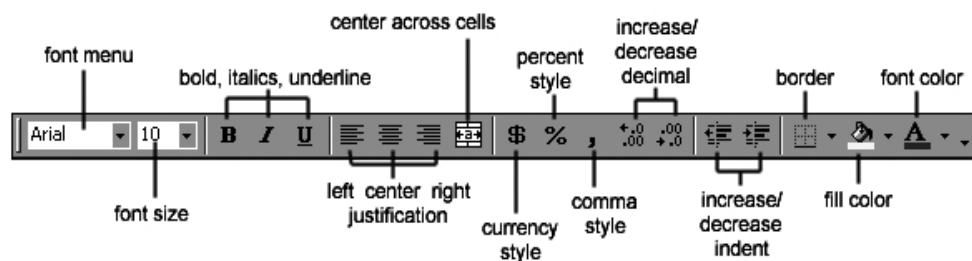


Figure 1-23.The Formatting Toolbar

Toolbars provide shortcuts to menu commands. Toolbars are generally located just below the Menu bar. Before proceeding with this lesson, make sure the toolbars you will use -- Standard and Formatting -- are available. Follow the steps outlined here:

1. Point to *View*, which is located on the Menu bar.
2. Click the left mouse button.
3. Press the down arrow key until Toolbars is highlighted.
4. Press the right arrow key.
5. Both Standard and Formatting should have a check mark next to them. If both have a check mark next to them, press Esc two times to close the menu. If either does not have a check mark, press the down arrow key until Customize is highlighted.
6. Press Enter. The Customize dialog box opens.
7. Choose the Toolbars tab.
8. Point to the box or boxes next to the unchecked word or words, Standard and/or Formatting, and click the left mouse button. A check mark should appear. **Note:** You turn the check mark on and off by clicking the left mouse button.
9. Point to Close and click the left mouse button to close the dialog box.

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## 1.11 Excel shortcut and function keys

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The following lists contain CTRL combination shortcut keys, function keys, and some other common shortcut keys, along with descriptions of their functionality.

### CTRL combination shortcut keys

**Table 1-1**

KEY	DESCRIPTION
<b>CTRL+ PgUp</b>	Switches between worksheet tabs, from left-to-right.
<b>CTRL+ PgDn</b>	Switches between worksheet tabs, from right-to-left.
<b>CTRL+SHIFT+(</b>	Unhides any hidden rows within the selection.
<b>CTRL+SHIFT+)</b>	Unhides any hidden columns within the selection.
<b>CTRL+SHIFT+&amp;</b>	Applies the outline border to the selected cells.
<b>CTRL+SHIFT_</b>	Removes the outline border from the selected cells.
<b>CTRL+1</b>	Displays the <b>Format Cells</b> dialog box.

<b>CTRL+2</b>	Applies or removes bold formatting.
<b>CTRL+3</b>	Applies or removes italic formatting.
<b>CTRL+4</b>	Applies or removes underlining.
<b>CTRL+5</b>	Applies or removes strikethrough.
<b>CTRL+6</b>	Alternates between hiding objects, displaying objects, and displaying placeholders for objects.
<b>CTRL+8</b>	Displays or hides the outline symbols.
<b>CTRL+9</b>	Hides the selected rows.
<b>CTRL+0</b>	Hides the selected columns.
<b>CTRL+A</b>	<p>Selects the entire worksheet.</p> <p>If the worksheet contains data, CTRL+A selects the current region. Pressing CTRL+A a second time selects the current region and its summary rows. Pressing CTRL+A a third time selects the entire worksheet.</p> <p>When the insertion point is to the right of a function name in a formula, displays the <b>Function Arguments</b> dialog box.</p> <p>CTRL+SHIFT+A inserts the argument names and parentheses when the insertion point is to the right of a function name in a formula.</p>
<b>CTRL+H</b>	Displays the <b>Find and Replace</b> dialog box, with the <b>Replace</b> tab selected.
<b>CTRL+I</b>	Applies or removes italic formatting.
<b>CTRL+K</b>	Displays the <b>Insert Hyperlink</b> dialog box for new hyperlinks or the <b>Edit Hyperlink</b> dialog box for selected existing hyperlinks.
<b>CTRL+N</b>	Creates a new, blank workbook.
<b>CTRL+O</b>	Displays the <b>Open</b> dialog box to open or find a file. CTRL+SHIFT+O select all cells that contain comments.
<b>CTRL+P</b>	Displays the <b>Print</b> dialog box. CTRL+SHIFT+P opens the <b>Format Cells</b> dialog box with the <b>Font</b> tab selected.
<b>CTRL+S</b>	Saves the active file with its current file name, location, and file format.
<b>CTRL+T</b>	Displays the <b>Create Table</b> dialog box.
<b>CTRL+U</b>	Applies or removes underlining. CTRL+SHIFT+U switches between expanding and



	collapsing of the formula bar.
<b>CTRL+V</b>	<p>Inserts the contents of the Clipboard at the insertion point and replaces any selection. Available only after you have cut or copied an object, text, or cell contents.</p> <p>CTRL+ALT+V displays the <b>Paste Special</b> dialog box. Available only after you have cut or copied an object, text, or cell contents on a worksheet or in another program.</p>
<b>CTRL+W</b>	Closes the selected workbook window.
<b>CTRL+X</b>	Cuts the selected cells.
<b>CTRL+Y</b>	Repeats the last command or action, if possible.
<b>CTRL+Z</b>	<p>Uses the <b>Undo</b> command to reverse the last command or to delete the last entry that you typed.</p> <p>CTRL+SHIFT+Z uses the <b>Undo</b> or <b>Redo</b> command to reverse or restore the last automatic correction when AutoCorrect Smart Tags are displayed.</p>

## Function keys

**Table 1-2**

<b>KEY</b>	<b>DESCRIPTION</b>
<b>F1</b>	<p>Displays the <b>Microsoft Office Excel Help</b> task pane.</p> <p>CTRL+F1 displays or hides the Ribbon, a component of the Microsoft Office Fluent user interface.</p> <p>ALT+F1 creates a chart of the data in the current range.</p> <p>ALT+SHIFT+F1 inserts a new worksheet.</p>
<b>F2</b>	<p>Edits the active cell and positions the insertion point at the end of the cell contents. It also moves the insertion point into the Formula Bar when editing in a cell is turned off.</p> <p>SHIFT+F2 adds or edits a cell comment.</p> <p>CTRL+F2 displays the Print Preview window.</p>
<b>F3</b>	<p>Displays the <b>Paste Name</b> dialog box.</p> <p>SHIFT+F3 displays the <b>Insert Function</b> dialog box.</p>
<b>F4</b>	<p>Repeats the last command or action, if possible.</p> <p>When a cell reference or range is selected in a formula, F4 cycles through the various combinations of absolute and relative references.</p> <p>CTRL+F4 closes the selected workbook window.</p>
<b>F5</b>	<p>Displays the <b>Go To</b> dialog box.</p> <p>CTRL+F5 restores the window size of the selected workbook window.</p>

## **Check your progress**

Q1. Explain menu bar in detail.

Q2. Explain toolbar in detail.

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### **1.12 Summary**

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In this unit you learnt about basics of Excel, worksheets, opening and creating worksheets, renaming a worksheet, saving and quitting a worksheet. You also learnt how to enter text, data, date & time, alphanumeric values in a worksheet.

- ❖ Excel is software that lets you create tables, and calculate and analyze data. This type of software is called spreadsheet software.
- ❖ Excel lets you create tables that automatically calculate the totals of numerical values you input, print out tables in neat layouts, and create simple graphs.
- ❖ You can enter two basic kinds of data into worksheet cells: numbers and text.
- ❖ You can use Excel to create budgets, to work with taxes, or to record student grades.
- ❖ You can use Excel to list the products you sell or to record student attendance.

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### **1.13 Review Questions**

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- Q1. What is excel spread sheet? Explain in details with example.
- Q2. How can you open create and rename the worksheet?
- Q3. What is the difference between worksheet and workbook?
- Q4. Define toolbar and menu bar in Excel?
- Q5. Write at least 10 keyboard short-cut of Excel.

# UNIT-II

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## MS-EXCEL –ADVANCE FEATURES

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### Structure

- 2.0 Introduction
- 2.1 Working with single and multiple workbook
- 2.2 Working with formulae & cell referencing
- 2.3 Auto sum, coping formulae
- 2.4 Absolute & relative addressing
- 2.5 Worksheet with ranges
- 2.6 Formatting of worksheet
- 2.7 Previewing & Printing worksheet
- 2.8 Graphs and charts, Database
- 2.9 Creating and using macros
- 2.10 Multiple worksheets- concepts, creating and using
- 2.11 Summary
- 2.12 Review Questions

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### 2.0 Introduction

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This is the second unit of this block. This unit focused on the MS-Excel Advanced features. This unit has twelve sections. In the first section we defined how to work with single and multiple workbook. In the Sec. 2.2 you will learn about working of formulae and cell referencing. Next section tells about how auto sum works and how we can copying the formulae. In the section Sec. 2.4 we described about absolute & relative addressing. Sec. 2.5 and 2.6 explains worksheet with ranges and formatting of worksheet respectively. Sec. 2.7 define how we can preview and print the worksheet. Next section express graphs, charts and database creation. Sec. 2.9 define how we create and use macros in worksheet. In the next section we defined how to create multiple worksheet its concept and use. In Sec. 2.11 and 2.12 you will find summary and review questions respectively.

## Objectives

After studying this unit you should be able to:

- Define working with single and multiple workbook, working with formulae & cell referencing.
- Describe Auto sum, coping formulae & Absolute & relative addressing.
- Express worksheet with ranges & formatting of worksheet.
- Describe previewing & printing worksheet.
- Explain graphs and charts and database.
- Define how to creating and using macros
- Express multiple worksheets, its concepts, its creation and use.

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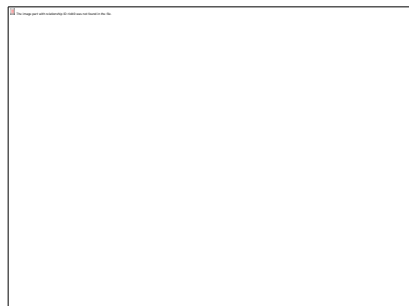
## 2.1 Working with Workbook single and multiple workbook

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Data Excel allows you to move, copy, and paste cells and cell content through cutting and pasting and copying and pasting.

Select Data to select a cell or data to be copied or cut:

- ❖ **Click the cell**



**Figure 2-1: The Cell**

- ❖ **Click and drag the cursor to select many cells in a range**



**Figure 2-2: Cell in Range**

## Select a Row or Column

To select a row or column click on the row or column header.



**Figure 2-3: Row or Column header**

## Copy and Paste

To copy and paste data:

- ❖ Select the cell(s) that you wish to copy
- ❖ On the Clipboard group of the Home tab, click Copy



**Figure 2-4: Clipboard**

- ❖ Select the cell(s) where you would like to copy the data
- ❖ On the Clipboard group of the Home tab, click Paste



**Figure 2-5: Clipboard Paste**

## Cut and Paste

To cut and paste data:

- ❖ Select the cell(s) that you wish to copy
- ❖ On the Clipboard group of the Home tab, click Cut



**Figure 2-6: Clipboard Cut Paste**

- ❖ Select the cell(s) where you would like to copy the data
- ❖ On the Clipboard group of the Home tab, click Paste

### **Undo and Redo**

To undo or redo your most recent actions:

- ❖ On the Quick Access Toolbar
- ❖ Click Undo or Redo



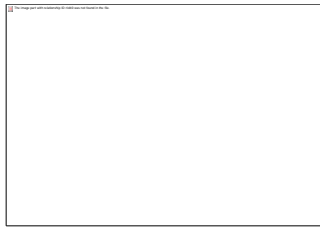
**Figure 2-7: Clipboard Undo**

### **Modifying a Worksheet**

#### **Insert Cells, Rows, and Columns**

To insert cells, rows, and columns in Excel:

- ❖ Place the cursor in the row below where you want the new row, or in the column to the left of where you want the new column
- ❖ Click the Insert button on the Cells group of the Home tab
- ❖ Click the appropriate choice: Cell, Row, or Column

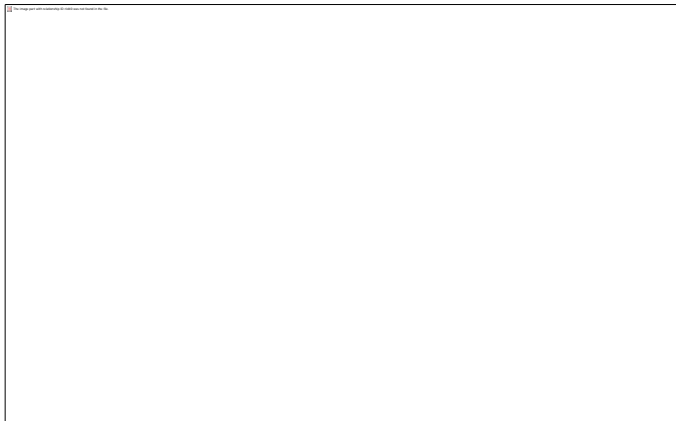


**Figure 2-8: Insert Options**

## **Find and Replace**

To find data or find and replace data:

- ❖ Click the Find & Select button on the Editing group of the Home tab
- ❖ Choose Find or Replace
- ❖ Complete the Find What text box
- ❖ Click on Options for more search options



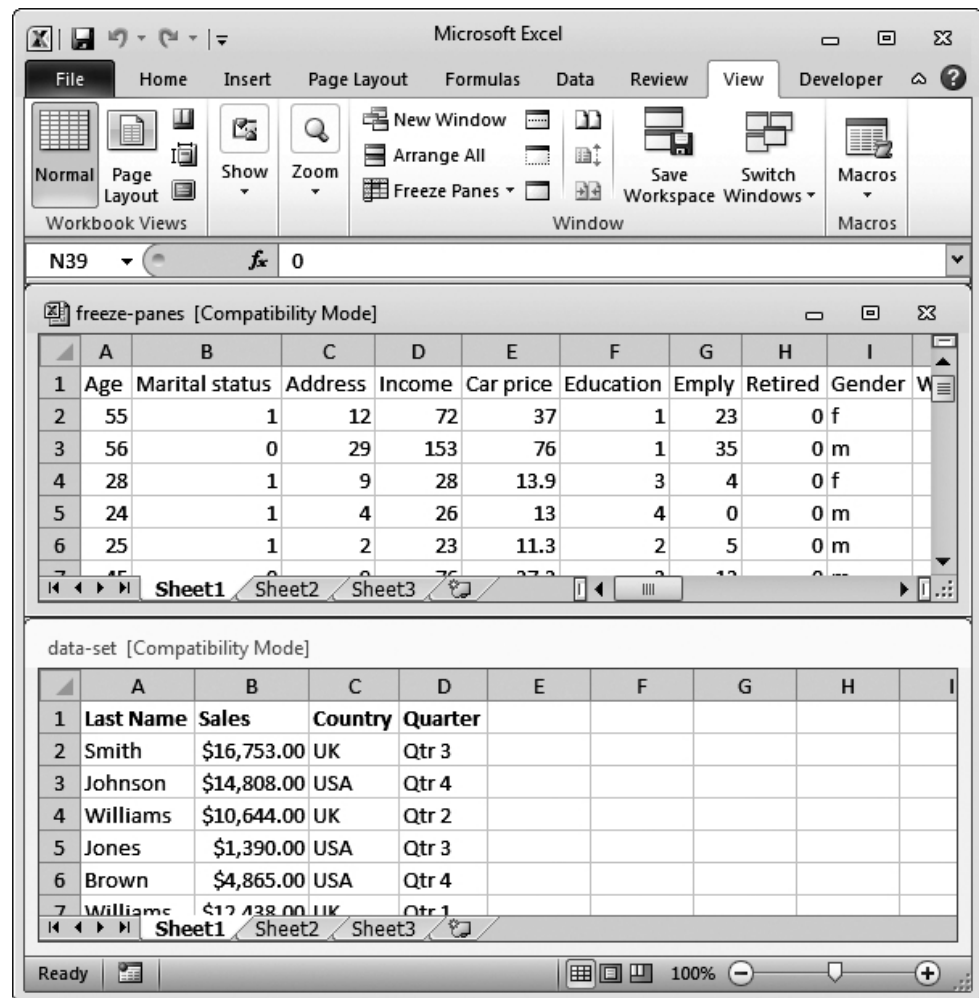
**Figure 2-9: Find and Replace Options**

## **Working with Multiple workbooks**

As mentioned before, Excel is a workbook that has the capability of holding a large number of worksheets. Worksheets can be copied, added and erased. In your Excel workbook you can use worksheets to separate specific types of data such as assumptions, charts, summaries and more. For example, if you were using Excel for capital budgeting purposes you may want to separate a sales forecast in a separate worksheet than a forecast of operating cash flow. A worksheet is what most people think of when they think spreadsheet. The workbook is the file or Excel project as a whole.

Once you have the Excel application open, you can open as many workbooks at a time as you want. Once you have multiple workbooks open you can resize, minimize and maximize each workbook as you

prefer. This could be useful when comparing a revised workbook with the old workbook.



**Figure 2-10: Multiple Workbooks**

Each workbook has three buttons on the top right which can be used to minimize, maximize and close the workbook. You can also re-size a workbook by holding your cursor over the edge or the corner of the workbook. You can re-size your workbooks manually or you can let Excel do the work for you. If you prefer this option simply click Arrange All which is located on the ribbon under the View tab.

When you have multiple workbooks open, only one workbook will be active. You can tell which workbook is active because it will be a different color than the other open workbooks. You are only able to work in the active workbook. There are several different ways to activate different workbooks.

Click on another workbook

- ❖ Press Ctrl + Tab: This will cycle through all the open workbooks.



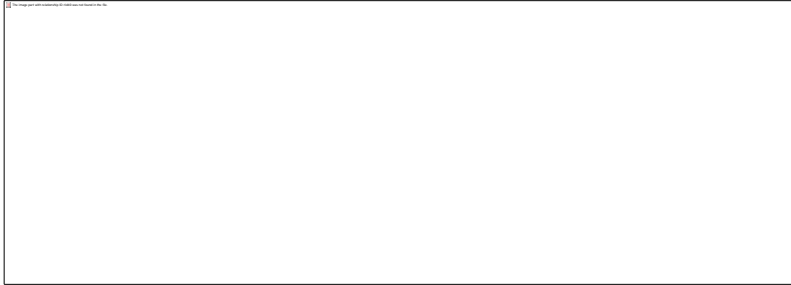
- ❖ Ctrl+F6: This has the same effect as the previous method.
- ❖ Click View > Switch Windows > and then select the workbook you want from the drop down menu.

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## 2.2 Working with Formula

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

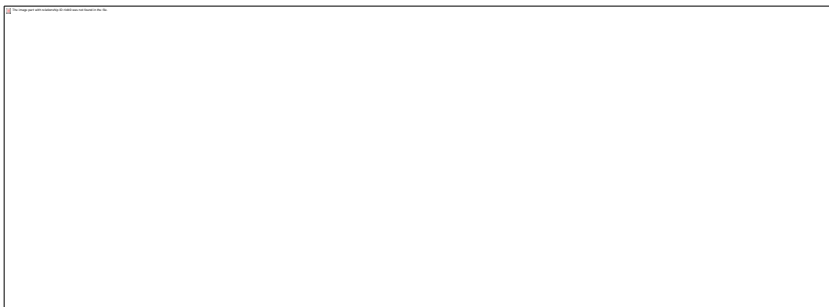


**Figure 2-11: Formula Box**

There are many elements to an Excel formula.

To create a basic formula in Excel:

- ❖ Select the cell for the formula
- ❖ Type = (the equal sign) and the formula
- ❖ Click Enter



**Figure 2-12: Formula in cell**

### Calculate with Functions

A function is a built-in formula in Excel. A function has a name and arguments (the mathematical function) in parentheses. Common functions in Excel:

Sum: Adds all cells in the argument

Average: Calculates the average of the cells in the argument

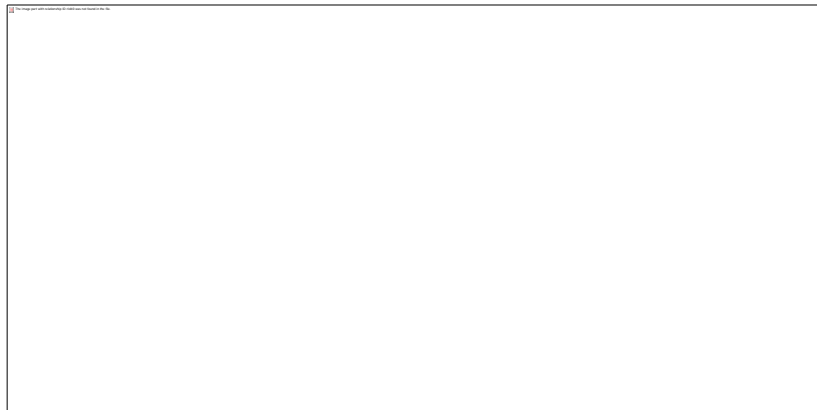
Min: Finds the minimum value

Max: Finds the maximum value

Count: Finds the number of cells that contain a numerical value within a range of the argument

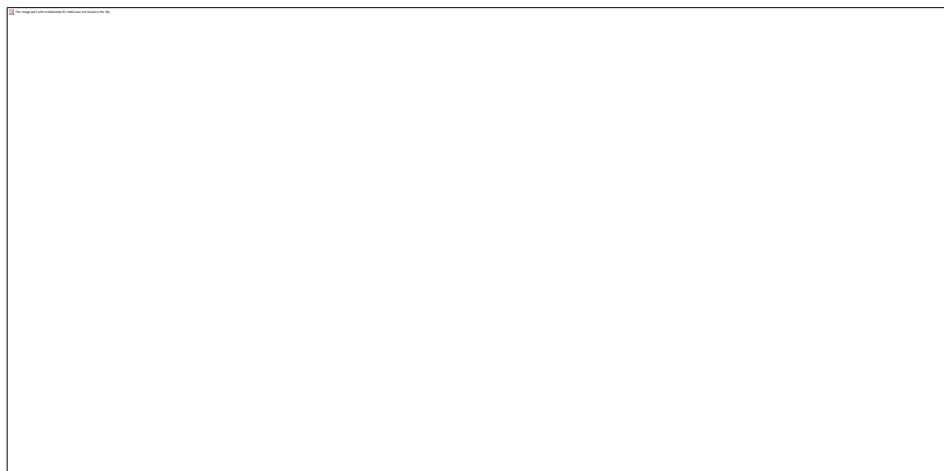
To calculate a function:

- ❖ Click the cell where you want the function applied
- ❖ Click the Insert Function button
- ❖ Choose the function
- ❖ Click OK



**Figure 2-13: Formula Tab**

- ❖ Complete the Number 1 box with the first cell in the range that you want calculated
- ❖ Complete the Number 2 box with the last cell in the range that you want calculated



**Figure 2-14: Function Arguments**

## Function Library

The function library is a large group of functions on the Formula Tab of the Ribbon. These functions include:

AutoSum: Easily calculates the sum of a range

Recently Used: All recently used functions

Financial: Accrued interest, cash flow return rates and additional financial functions

Logical: And, If, True, False, etc.

Text: Text based functions

Date & Time: Functions calculated on date and time

Math & Trig: Mathematical Functions



**Figure 2-15: Function Ribbon**

## Cell References

	A	B	C
1	4	16	
2	8	23	
3	15	42	
4			

**Figure 1**

**Figure 2-16: Cell Reference**

Cell references are the basic building blocks of the formulas and functions you will use in Excel. Notice that each column of a spreadsheet is assigned a letter and each row of a spreadsheet is assigned a number. Each cell in a spreadsheet can be uniquely identified by referring to the column letter and row number that the cell is in.

In this example, the number 42 is entered in column B and in row 3. The cell reference for this cell is B3.

The value stored in cell A1 is 4. The value stored in cell A2 is 8.

An Excel cell reference always names the column letter first, followed by the row number.

Cell references can get a little more involved than this, but this is the basic idea: You can refer to a cell by its column letter and row number.

You can use cell references as variables in the formulas and functions that you set up in your spreadsheet, and the values stored in the referenced cells will be used in the calculation. The example in Figure 2 of Figure 2-21 shows some formulas and functions that use cell references. Figure 2-21 shows the results of those formulas and functions.

	A	B	C
1	4	16	=B1/A1
2	8	23	=A2*B2
3	15	42	=(B3-A3)*10
4	=SUM(A1:A3)	=AVERAGE(B1:B3)	

Figure 2

	A	B	C
1	4	16	4
2	8	23	184
3	15	42	270
4	27	27	

Figure 3

**Figure 2-17: results of those formulas and functions**

Taking a closer look at some of what is going on here:

- ❖ The formula in cell C1 says, “Take the contents of cell B1 and divide it by the contents of cell A1, and display the results.” The value 16 in cell B1 is divided by the value 4 from cell A1, and the result, 4, is displayed in cell C1.
- ❖ The function in cell B4 says, “Take the average of all the values stored within the range of cells that starts at cell B1 and ends at cell B3, and display the results.” The values in cell B1, B2, and B3 (16, 23, and 42) are averaged, and the result, 27, is displayed in cell B4.

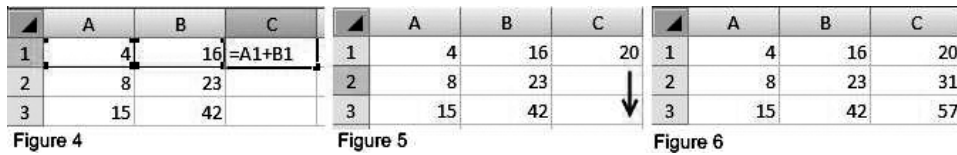
### The Different Types of Cell References

There are a few different types of cell references that you can use in Excel: relative cell references, absolute cell references, and mixed cell references. The differences between these different types of cell references only come into play when you are copying a formula or function to a new cell. If you are entering a formula that is not going to be copied, it would not make any difference which cell reference type you chose.

#### Relative Cell References

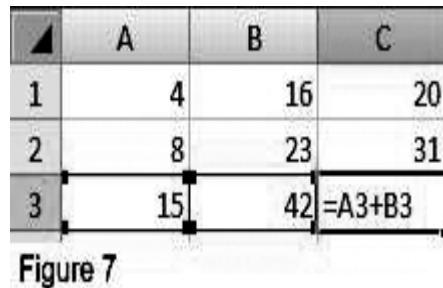
The most commonly used of the cell reference types is the relative cell reference. When you type a cell reference using just the column letter and

row number, you are using a relative reference. When a formula with a relative reference in it is copied to a new cell, the reference “moves” the same distance that the copied formula moves, Look at the example if



**Figure 2-18: Relative Cell Reference**

In Figure 4, The formula =A1+B1 is typed into cell C1. Figure 5 shows the result of that formula, 20. That formula is copied, using the fill handle, to cells C2 and C3. Figure 6 of Figure 2-22 shows the results, after the formula has been copied.



**Figure 2-19: Copy Cell**

In Figure 7 of Figure 2-23, Notice that what ends up in the new cells isn’t exactly what was originally typed. The formula =A1+B1 was typed in cell C1, but what ends up in cell C3 is the formula =A3+B3. The formula was copied down two cells, from cell C1 to cell C3. The cell references used in the formula moved down two cells also. A1 became A3, and B1 became B3.

When it comes to copying formulas, Excel understands a relative cell references like this: “Take the value stored two cells to the left of the current cell and add it to the value stored one cell to the left of the current cell, and display the results.” The “current cell” in the example is cell C1, the cell two to the left of that is cell A1, and the cell one to the left of that is cell B1. When the formula is copied to a new location, Excel references whatever cells are two to the left and one to the left of location the formula is copied to.

If you copy a formula three cells to the right and two cells down, the relative cell references in the formula move three cells to the right, and two cells down. Everything stays the same relative distance from the cell with the formula in it.

## Absolute Cell References

There are times when you are copying a formula that you do not want Excel to change certain cell references when the formula is pasted in the new location. Absolute Cell References don't change when a formula is copied and pasted; the location they refer to always stay the same even though the formula moves to a new cell. A dollar sign is typed before the column letter and before the row number to indicate that the cell reference is an absolute reference (for example: \$B\$2).

	A	B	C
1	Bonus %	5%	
2	name	Salary	Bonus
3	Jones	3000	=B3*\$B\$1
4	Lee	3500	
5	Smith	3300	

Figure 8

	A	B	C
1	Bonus %	5%	
2	name	Salary	Bonus
3	Jones	3000	150
4	Lee	3500	
5	Smith	3300	

Figure 9

	A	B	C
1	Bonus %	5%	
2	name	Salary	Bonus
3	Jones	3000	150
4	Lee	3500	175
5	Smith	3300	165

Figure 10

**Figure 2-20: Absolute Cell Reference**

The example shown in Figures 8 – 11 of Figure 2-24 to Figure 2-25 on the next page gives a scenario where an absolute reference comes in handy. A company wants to give each employee a bonus this month. The bonus for each employee is calculated by multiplying their salary for the month times the

	A	B	C
1	Bonus %	5%	
2	name	Salary	Bonus
3	Jones	3000	150
4	Lee	3500	175
5	Smith	3300	=B5*\$B\$1

Figure 11

**Figure 2-21: Absolute Cell Reference**

In Figure 8 of Figure 2-24, the formula =B3\*\$B\$1 is and one absolute reference (\$B\$1). Cell C3 was copied to cells C4 and C5 has been copied .entered into cell C3. This formula uses one relative reference (B3), Figure 9 shows the result of the formula, 150. That formula from using the fill handle, Figure 10 of Figure 2-24 shows the results, after the formula

Figure 11 of Figure 2-25 shows the formula that ended up in cell C5. The cell reference B3 that was originally typed has changed to B5 when the formula was copied and pasted. The formula moved down two cells, so the relative cell reference moved down two cells. Because an absolute cell reference was used for cell B1, that cell reference stayed fixed in place when the formula moved.

	A	B	C
1	Bonus %	5%	
2	name	Salary	Bonus
3	Jones	3000	150
4	Lee	3500	#VALUE!
5	Smith	3300	9900000

Figure 12

**Figure 2-22: Error in Cell**

Figure 12 of Figure 2-26 shows what would have happened if an absolute reference had not been used in the original formula entered in cell C3. If the formula had just been entered as  $=B3*B1$ , the result in cell C3 would have still been correct. But when the formula was copied to cells C4 and C5, you get incorrect results. The formula that ends up in cell C4 is  $=B4*B2$  (that's 3500 times the word Salary, which results in an error message). The formula that ends up in cell C5 is  $=B5*B3$  (that's Jones's salary times Smith's salary, giving Smith a bonus of 9900000).

---

## 2.3 AutoSum Formula

---

AutoSum is a simple mathematical formula to display the total sum of the neighboring cells. Excel chooses these cells automatically based on the ideal usage of the position of the result. AutoSum first checks if there is any continuous group of cells which has numbers above the result cell for its range, then it checks to the left side of the result cell. But the range of cells that are included for the calculation can be reselected manually by dragging if it's wrong.

### Copying Formulas with the Fill Handle

To complete the worksheet, we need to add the three formulas created above to rows 9, 10, and 11. Since our data is laid out in rows we can copy the formulas in row 8 to rows 9 to 11. A quick way of copying formulas is to use the fill handle. The fill handle is the small black square in the bottom right corner of the active cell.

### Steps for Copying Formula

1. Drag select cells D8 to F8 to highlight them.
2. Place the mouse pointer over the black square in the bottom right corner of cell F8. The pointer will change to a plus sign "+".

3. Click the left mouse button and drag the fill handle down to cell F11.
4. Release the mouse button. Cells D9 to E11 should contain the results of the Total Income, Deductions, and Net Salary formulas.
5. Save your worksheet.

---

## 2.4 Relative and Absolute Addressing

---

You already know that one of the powerful features of spreadsheets is that you can refer to the contents of other cells within a formula. In Excel, cells are referred to by a combination of their column letter and row number. Thus, the cell at the intersection of column D and row 15 is known as cell D15.

When you copy a formula that contains a cell reference, Excel automatically assumes that you want to cell reference modified to reflect the cell into which you are pasting the formula. For example, suppose that the cell at B1 contains the simplest of formulas, as follows:

=A1

This simply means that B1 will contain the same value as in A1. Now suppose you copy cell B1 and paste it into B2 through B5. As Excel pastes each cell, it modifies the formula so the cell reference is the same, relative to the new location, as it was to the old. In the original formula, Excel knows that the cell being referenced was one cell to the left of the cell containing the formula. Thus, every cell into which the formula is pasted will contain a formula that has a cell reference one cell to the left of the target cell. For example, cell B2 will contain the formula =A2 and cell B5 will contain the formula =A5.

If you don't want Excel to modify the row or column designator in your cell references, then you must use absolute cell references. You designate a reference as absolute (unchangeable) by preceding it with a dollar sign (\$). You can precede either the column letter or row number with the dollar sign. When you later copy and paste the formula containing the absolute reference, Excel will not modify that portion of the reference, but will paste it unchanged in the target.

Normally you use absolute referencing when you want to refer to a non-changing position in a formula. For instance, if the cell at A7 contains an interest rate, and you want that interest rate referred to specifically, without it being modified by Excel, then you would use the following cell reference:



= $\$A\$7$

Another way to ensure that Excel does not modify your cell reference is to name the references and use the names in your formulas.

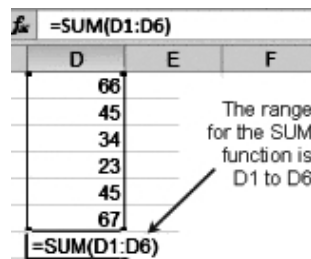
## Check your progress

- Q1. Explain the working of single and multiple workbook.
- Q2. How we Calculate with Functions in excel?
- Q3. Explain AutoSum Formula.
- Q4. Explain Relative and Absolute Addressing

## 2.5 Worksheet with ranges

A range is a group or block of cells in a worksheet that have been selected or highlighted. When cells have been selected they are surrounded by an outline or border.

Normally there is only one cell in the worksheet with a black outline. This is the active cell. Whatever command is executed by Excel affects the active cell.



The screenshot shows an Excel worksheet with columns D, E, and F. Column D contains the values 66, 45, 34, 23, 45, and 67. A black border highlights the range D1:D6. A text box with an arrow points to this range, stating "The range for the SUM function is D1 to D6". The formula bar at the top shows "=SUM(D1:D6)" and the cell D7 also displays "=SUM(D1:D6)".

D	E	F
66		
45		
34		
23		
45		
67		
=SUM(D1:D6)		

Figure 2-23: Range in Worksheet

Using the mouse, keyboard or Name Box, more than one cell can be selected to create a range, and commands executed by Excel will affect the entire range.

Ranges can be made up of adjacent or non-adjacent cells. Adjacent cells are all together. There are no gaps in the range. Non-adjacent cell ranges consist of two or more separate blocks of cells. These blocks can be separated by rows or columns. For non-adjacent ranges, a block of cells can be of any size – from one to several hundred or even a thousand or more.

A range consisting of adjacent cells can be created by dragging with the mouse.

Ranges consisting of non-adjacent cells can be created by using the mouse and keyboard, or the keyboard on its own.

Ranges are identified by the cell references or addresses of the cells in the upper left and lower right corners of the range. These two references 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 as seen in the image above would be D1:D6.

Non adjacent cell ranges are identified by separating the range of each cell block with commas.

An example would be A2:B4, D6:E8.

The two cell blocks in the range are A2 to B4 and D6 to E8.

---

## 2.6 Format Worksheet

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### Convert Text to Columns

Sometimes you will want to split data in one cell into two or more cells. You can do this easily by utilizing the Convert Text to Columns Wizard.

- ❖ Highlight the column in which you wish to split the data
- ❖ Click the Text to Columns button on the Data tab
- ❖ Click Delimited if you have a comma or tab separating the data, or click fixed widths to set the data separation at a specific size.

### Format Cells Dialog Box

In Excel, you can also apply specific formatting to a cell. To apply formatting to a cell or group of cells:

- ❖ Select the cell or cells that will have the formatting

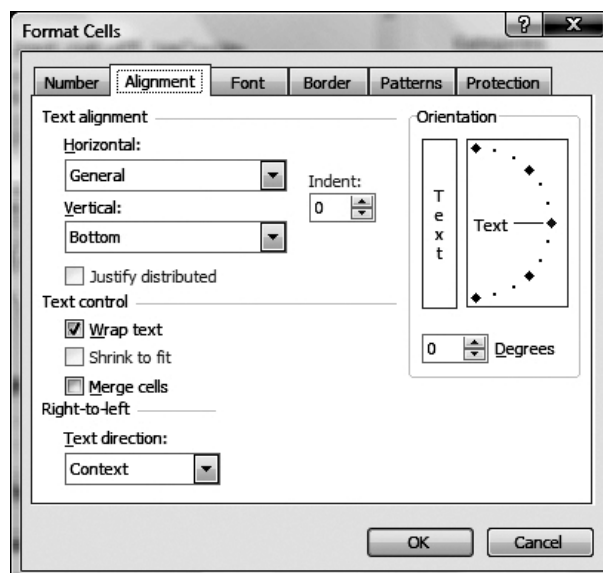


Figure 2-24: Format Cells

- ❖ Click the Dialog Box arrow on the Alignment group of the Home tab

There are several tabs on this dialog box that allow you to modify properties of the cell or cells.

Number: Allows for the display of different number types and decimal places

Alignment: Allows for the horizontal and vertical alignment of text, wrap text, shrink text, merge cells and the direction of the text.

Font: Allows for control of font, font style, size, color, and additional features

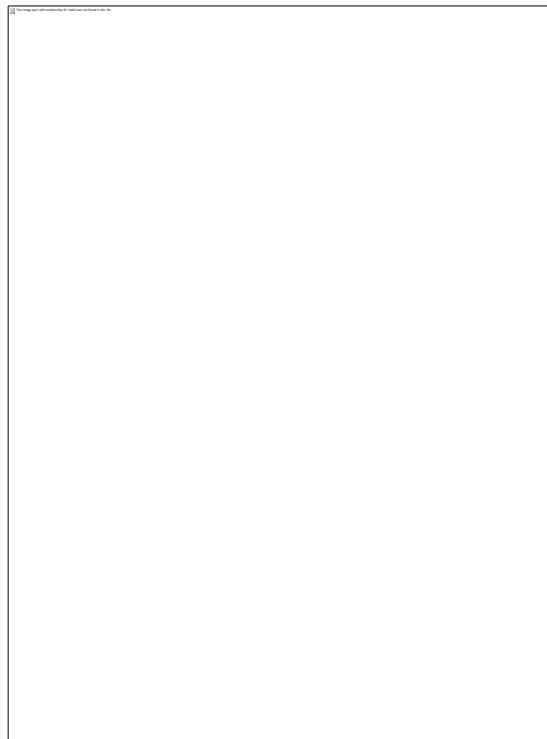
Border: Border styles and colors

Fill: Cell fills colors and styles

Hide or Unhide Rows or Columns

To hide or unhide rows or columns:

- ❖ Select the row or column you wish to hide or unhide
- ❖ Click the Format button on the Cells group of the Home tab
- ❖ Click Hide & Unhide



**Figure 2-25: Cell Hide/Unhide**

## Merge Cells

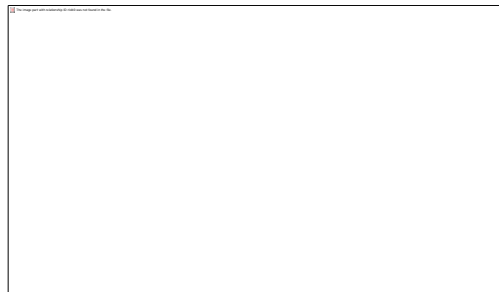
To merge cells select the cells you want to merge and click the Merge & Center button on the Alignment group of the Home tab. The four choices for merging cells are:

Merge & Center: Combines the cells and centers the contents in the new, larger cell

Merge Across: Combines the cells across columns without centering data

Merge Cells: Combines the cells in a range without centering

Unmerge Cells: Splits the cell that has been merged



**Figure 2-26: Cell Merge/Unmerge**

---

## 2.7 Previewing & Printing worksheet

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Your worksheet looks fine on the screen, so you are now ready to print — right? Not necessarily. You could save time and paper by adjusting the format and page layout of your worksheet, or by taking measures to avoid common printing problems before you print your worksheet.

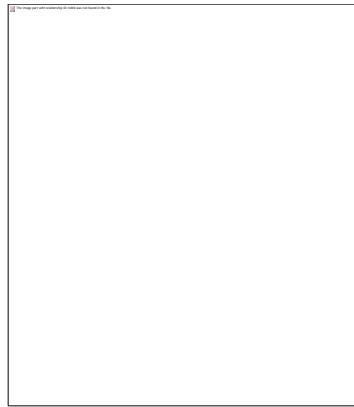
### Fine-tuning the layout of printed pages

Before you print a worksheet that contains large quantities of data or charts, you can quickly fine-tune the worksheet in the new Page Layout view to achieve professional-looking results. In this view, you can see your data in the context of printed pages. You can easily add or change page headers and footers, hide or display row and column headers, change the page orientation of printed pages, change the layout and format of data, use the rulers to measure the width and height of the data, and set margins for printing.

### Printing row and column headings or labels on every page

If a worksheet spans more than one page, you can print row and column headings or labels (also called print titles) on every page to ensure that the data is properly labeled.

#### Column labels




**Figure 2-27: Column Labels**

Previewing a worksheet before you print it

For an exact preview of how the data will be printed, you may want to preview the worksheet pages in Print Preview view. In this view, you can make any final adjustments to the pages before you print.

Printing all or part of a worksheet

You are finally ready to print your data. When you click Print (Microsoft Office Button ) , you can specify exactly what you want to print. You can print all of the worksheets in your workbook, print one or more selected worksheets, or print only a selected portion of the worksheet.

If you plan to print a specific portion of a worksheet frequently, you can define it as a print area (Page Layout tab, Page Setup group). That way, every time that you print the worksheet, Excel prints only the data that is specified in the print area.

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## 2.8 Graphs & Charts

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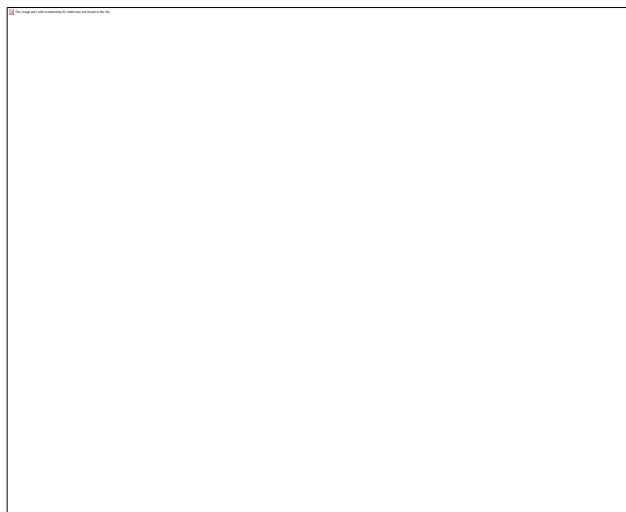
Microsoft Office Excel 2007 no longer provides the chart wizard. Instead, you can create a basic chart by clicking the chart type that you want on the Microsoft Office Fluent user interface Ribbon. To create a professional-looking chart that displays the details that you want, you can modify the chart, apply predefined styles and layouts, and add eye-catching formatting. You can also reuse a favorite chart by saving it as a chart template.

If you have Office Excel 2007 installed, you can also take advantage of the powerful Excel charting functionality in other 2007 Microsoft Office system programs, such as Microsoft Office PowerPoint 2007 and Microsoft Office Word 2007.

Charts are used to display series of numeric data in a graphical format to make it easier to understand large quantities of data and the relationship between different series of data.

A chart has many elements. Some of these elements are displayed by default; others can be added as needed. You can change the display of the chart elements by moving them to other locations in the chart, resizing them, or by changing the format. You can also remove chart elements that you do not want to display.

- The chart area of the chart
- The plot area of the chart
- The data points of the data series that are plotted in the chart.
- The horizontal (category) and vertical (value) axis along which the data is plotted in the chart
- The legend of the chart
- A chart and axis title that you can use in the chart
- A data label that you can use to identify the details of a data point in a data series



**Figure 2-28 Graphs**

When you click anywhere in the chart area, and then hover the mouse pointer over one of these elements, Excel displays information about that element in a ScreenTip.

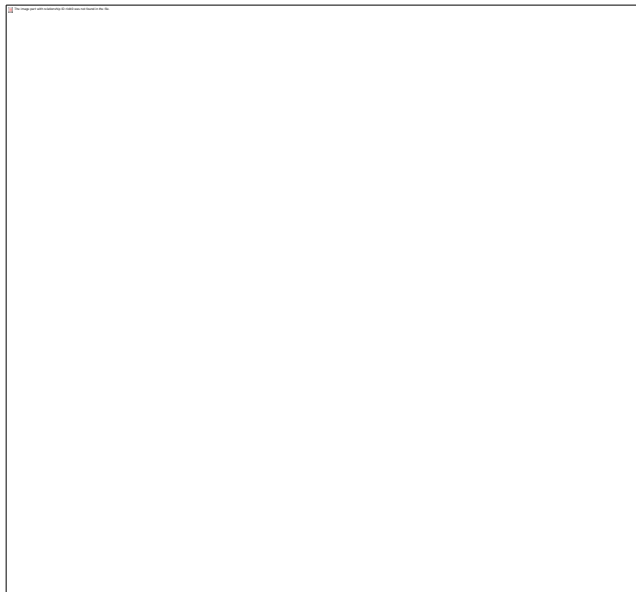
Clicking anywhere in a chart also makes the Chart Tools available, adding the Design, Layout, and Format tabs.



**Figure 2-29 Graphs Design**

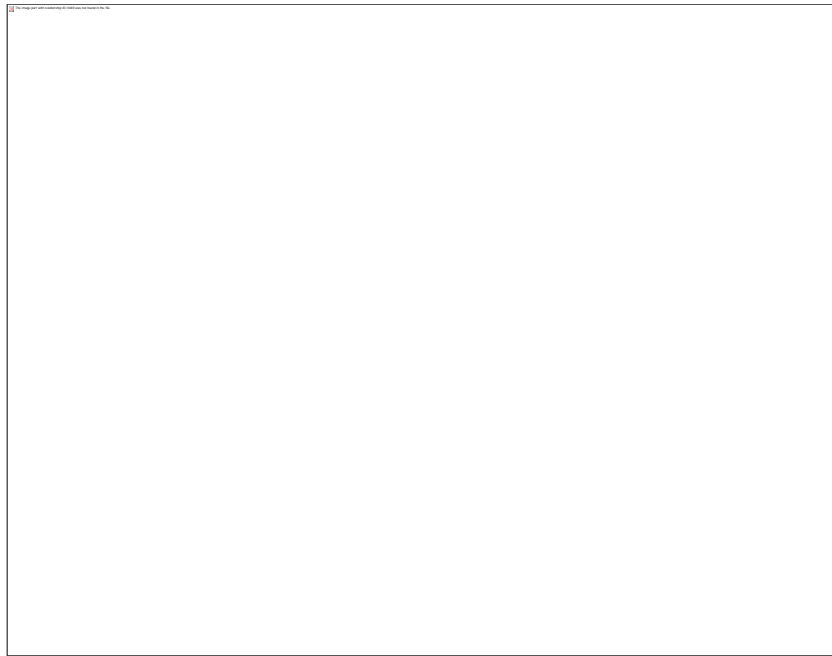
### **Creating Bar Charts**

**1.** Select the data: To select the data for your graph (include the category labels and values) click on the first cell of data and then drag your cursor (it should be a thick cross) over the remaining data to be included as part of the chart. If you are graphing more than one series, click on the empty cell above the category labels and slide to the right over the series labels (then down over the values). If the series labels are not directly above the data values, you will need to retype the series labels above the data values (see below).



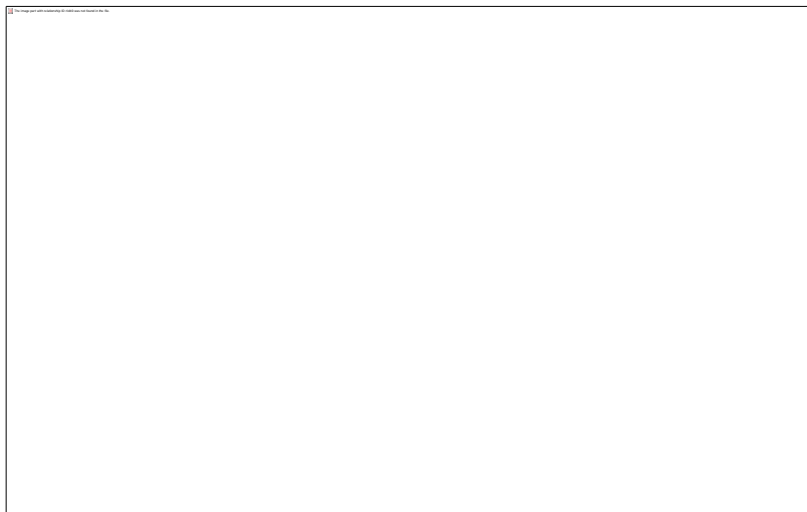
**Figure 2-30 Bar Chart Data**

**2.** Choose a chart type: On the Insert tab of the Charts group select Column. Under Column, choose 2-D Clustered Column (the first option on the left). A simple graph is created.



**Figure 2-31 Insert Chart**

**2.** Choose a layout: You will need to add a title and axis labels. First click on the graph to activate the Chart Tools menu and then choose the Design tab. Under the Charts Layout group, select Layout 9. (Click on the "more" arrow to display all nine layouts. Slide over each layout until you locate #9.)



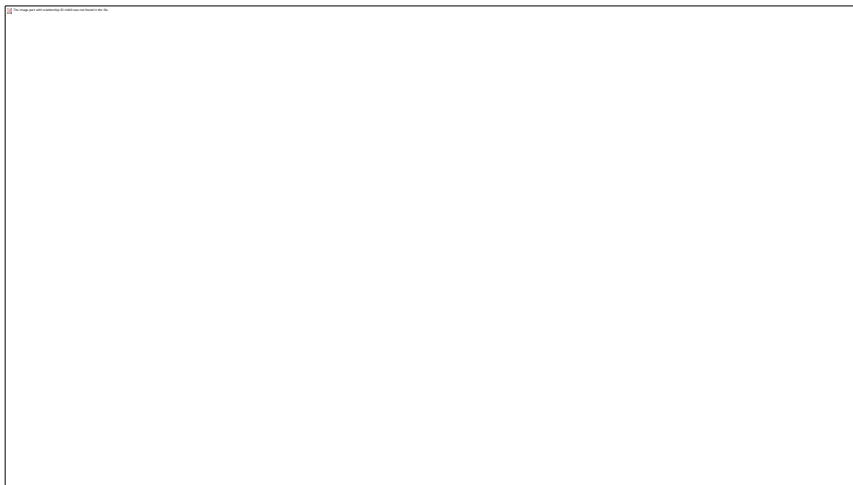
**Figure 2-32 Chart Design**

**4.** Update titles: Click on the Chart Title and add a descriptive title (consider who, what, where and when). Click on each Axis Title and label both your x-axis (horizontal axis) and your y-axis (vertical axis). If you



are graphing only one series of data, always be certain to remove the legend (just click on the legend and use either the delete or backspace button).

5. Naming each series in the legend: If you need to edit the names of your series (2000 and 2004 above) you can do so by first clicking on the graph to activate the Chart Tools menu. Under Chart Tools choose the Design tab, and under the Data group, select Select Data. The series are on the left side of the box. To edit the name of a series, highlight it and then click the Edit button. When the Edit Series box appears, type your series name in the box labeled Series Name.



**Figure 2-33 Chart Data Source**



**Figure 2-34 Edit Series**

6. Add the Source: It is important to add a text box stating the data source used to create the graph. Under the Insert tab choose text box under the Text group. Draw a text box on your chart and then type in "Source:" followed by the data source. If no data source is listed, type "Unknown".

---

## **2.9 Creating and using macros**

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Start by turning on the macro recorder and running through the tasks. When you turn off the recorder, Office Excel 2007 converts every

click and key press into a series of commands and functions that are stored as a module in a workbook or in Excel 2007. The next time you need to perform the tasks, run the macro, and the commands and functions are performed automatically in the order in which they were recorded.

Because Excel 2007 is running the commands, tasks are performed at the speed of a computer and without interruption. Manually, a task could take 10 or more seconds, but by using a macro, a range can be formatted in a fraction of a second. The macro not only saves you time, it saves you from having to remember a lot of tedious details. With a macro, the formatting is exactly the same every time you run it.

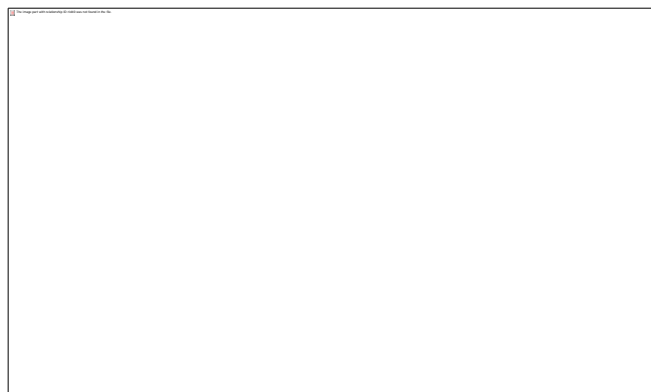
Think about the tasks that you need to automate when you work with certain types of worksheets. For example, you could create a macro that quickly hides a group of monthly columns so that only the summary data shows. You could create another macro to show all of the details again. You could even create a macro to format cells so that long headings wrap around the cells.

### **Create macros**

To create macros, you need to first enable the Developer tab in Office Excel 2007 and change your security for macros. Then, you can record and run macros when you need them. To run a macro, a user does not necessarily need the Developer tab.

### **Enable macros**

1. If you do not see a Developer tab at the top of your Excel 2007 window, click the Microsoft Office button, and then click Excel Options.
2. In the left navigation pane, click Popular, and then under Top options for working with Excel, select the Show Developer tab in the Ribbon check box.
3. Click OK.
4. Click the Developer tab, and in the code group, click Macro Security.



You can modify the macro code in Visual Basic, but you are not required to do so.

5. Select Enable all macros (not recommended; potentially dangerous code can run), and then click OK.

Tip: Enabling macros will not harm your computer, and neither will your macro. However, you should keep in mind that by enabling all macros to run in Excel 2007, you are not only allowing your own macros to run but also potentially harmful macros. By setting macro security to disable all macros with notification, a security warning will appear when you open an Excel 2007 workbook that contains a macro. To enable macros, click Options, and then select enable this content. See macro security topics in Office Excel 2007 Help for more information.

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## 2.10 Working with Multiple Worksheets

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Working with multiply sheets concurrently is how MS Excel power users create and format a complex workbook with the least amount of effort expended.

Follow the steps below to make working with multiple sheet a piece of cake and you will be on your way to becoming a power user!

- ❖ Hold down the CTRL key as you click each tab top selects multiple worksheets.  
To select a contiguous group of worksheets, click the first one in the group and then hold down the Shift key and click the last one in the group.
- ❖ To select all the worksheets in the current workbook, right-click any worksheet tab and choose select All Sheets from the shortcut menu.
- ❖ To quickly make any sheet active, click its index tab; to remove a sheet from a selected group of sheets, hold down CTRL and click its tab.
- ❖ To remove the multiple selection and resume working with a single sheet, click any unselected sheet. If you have selected every sheet in the workbook, right-click any worksheet tab and choose Ungroup Sheets. If you have selected more than one sheet, you see the word Group in brackets in the title boar, and any data you enter appears in the corresponding cells on each worksheet in the group. So, if you have grouped Sheet1, Sheet2 and Sheet3, entering text in cellA1 on Sheet1 also enters the same text in the corresponding cells on Sheet2 and Sheet3.

- ❖ Any choices you make such as applying a number format, affect all the grouped worksheets identically. If you are building a workbook with identically formatted sheets, you can use these techniques to quickly enter category headings, etc. along the top of each sheet.
- ❖ You cannot use the Clipboard to enter data into multiple sheets concurrently. When you paste data, it only appears in the active sheet and not in any other sheets you have selected.

### **Check your progress**

- Q1. Explain how to Convert Text to Columns
- Q2. How to Merge Cells in excel?
- Q3. How to print row and column headings or labels on every page?
- Q4. Explain charts and their elements.
- Q5. How to creating bar charts?
- Q6. How to create macros?

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## **2.11 Summary**

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In this unit you learnt advanced features of MS- Excel like Working with single and multiple workbook, Working with formula & cell referencing Auto sum, Coping formula Absolute & relative addressing, Worksheet with ranges Formatting of worksheet Previewing & Printing worksheet Graphs and charts, Database Creating and Using macros Multiple worksheets- concepts.

- ❖ A formula is a set of mathematical instructions that can be used in Excel to perform calculations.
- ❖ A function is a built in formula in Excel. A function has a name and arguments (the mathematical function) in parentheses.
- ❖ Each workbook has three buttons on the top right which can be used to minimize, maximize and close the workbook.
- ❖ When you have multiple workbooks open, only one workbook will be active.
- ❖ Charts are used to display series of numeric data in a graphical format to make it easier to understand large quantities of data and the relationship between different series of data.

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## 2.12 Review Questions

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- Q1. How can we use multiple workbooks?
- Q2. What is cell referencing? Why we use it? Explain with example.
- Q3. Define Absolute & relative addressing with example.
- Q4. What are graphs and charts? How we can used it in our excel sheet?
- Q5. How can we create and use multiple worksheets? Define with example.



# UNIT-III

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## INTRODUCTION TO POWER POINT

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### Structure

- 3.0 Introduction
- 3.1 Presentations
- 3.2 Creating Slides
- 3.3 Manipulating & Enhancing Slides
- 3.4 Organizational Charts
- 3.5 Excel Charts
- 3.6 Word Art
- 3.7 Layering an Object
- 3.8 Animations and Sounds
- 3.9 Summary
- 3.10 Review Questions

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### 3.0 Introduction

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This is the third unit of this block. This block define MS-PowerPoint In this block there are eight sections. In the first section we defined about the presentation. Next section express how you we can create slides. In the Sec. 3.3 you will learn about manipulating and enhancing slides. In the section Sec. 3.4 you will know about how to create and handle organizational charts. Next section explain about excel charts. In Sec. 3.6 you will learn about word art. In the Sec. 3.7 we focused on object layering and the next section describe about the animations and sounds. In Sec. 3.9 and 3.10 you will find summary and review questions respectively.

#### Objectives

After studying this unit you should be able to:

- Define presentation, slide creations, manipulation of slides.
- Express organizational charts, excel chats, word art, layering an object and animation and sound.

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## 3.1 Presentations

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Microsoft PowerPoint, part of Microsoft Office, creates and plays presentations. A presentation is something a speaker makes to an audience, typically using a computer and LCD projector to display material in a lecture hall or auditorium. PowerPoint works a lot like Microsoft Word, and the assumption here is that you are familiar with Word.

A PowerPoint presentation is made up of "slides" that is individual frames or screens of information. To create a presentation, create the slides. A PowerPoint file (\*.ppt) is a collection of slides, typically for one and only one presentation, although files can be linked together to make up compound presentations. PowerPoint has functions for

- ❖ Creating and inserting new slides.
- ❖ Editing existing slides.
- ❖ Reordering existing slides.

Slides can contain

- ❖ Text
- ❖ Tables
- ❖ Bulleted and numbered lists
- ❖ Graphics
- ❖ Audio
- ❖ Video
- ❖ Many other types of content.

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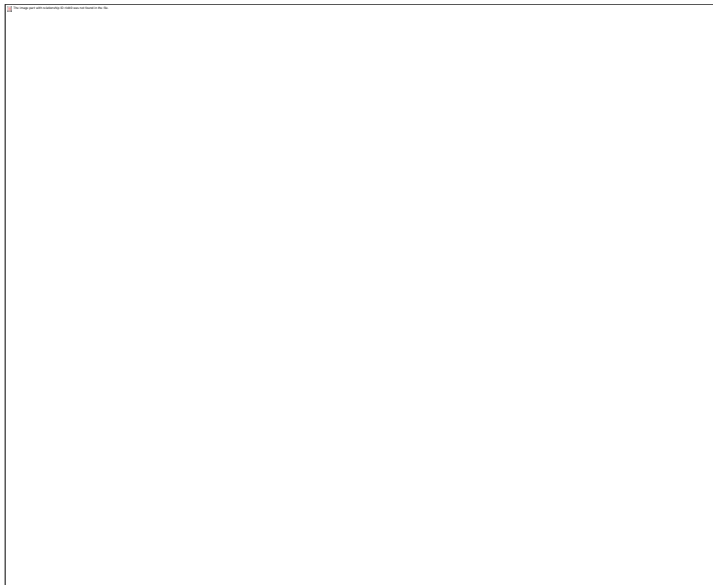
## 3.2 Creating Slide

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- ❖ If Office PowerPoint 2007 is already running, save and close any open presentations, and then exit and restart PowerPoint 2007.
- ❖ Find links to information about saving presentations in the See Also section.
- ❖ If Office PowerPoint 2007 isn't already running, start it now.

When you start PowerPoint, it opens in the view called Normal view, where you create and work on slides.




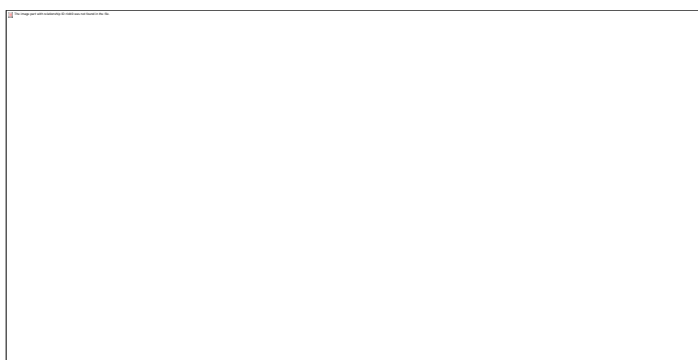


- ❑ In the Slide pane, you can work directly on individual slides.
- ❑ Dotted borders identify placeholders, where you can type text or insert pictures, charts, and other objects.
- ❑ The Slides tab shows a thumbnail version of each full size slide shown in the Slide pane. After you add other slides, you can click a thumbnail on the Slides tab to make the slide appear in the Slide pane. Or you can drag thumbnails to rearrange the slides in your presentation. You can also add or delete slides on the Slides tab.
- ❑ In the Notes pane, you can type notes about the current slide. You can hand out your notes to your audience or refer to your notes in Presenter view when you give your presentation.

To create a new presentation that is based on the Blank Presentation template, click the Microsoft Office Button , click New, click Blank and recent under Templates, and then double-click Blank Presentation under Blank and recent.

After you open the Blank Presentation template, only a small portion of the Notes pane is visible. To see a larger portion of the Notes pane so that you have more room to type in it, do the following:

1. Point to the top border of the Notes pane.
2. When the pointer becomes a , drag the border up to make a little more room for your speaker notes, as shown in the following illustration.



**Figure 3-1: Add Notes**

Notice that the slide in the Slide pane resizes automatically to fit the available space.

Near the top of the screen are three buttons that you may find useful:


- ❖ Undo  , which undoes your last change. (To see a ScreenTip about which action will be undone, rest your pointer on the button. To see a menu of other recent changes that can also be undone, click the arrow to the right of Undo  .) You can also undo a change by pressing CTRL+Z.
- ❖ Redo  or Repeat  , which either repeats or redoes your last change, depending on what action you just performed. (To see a ScreenTip about which action will be repeated or redone, rest your pointer on the button.) You can also repeat or redo a change by pressing CTRL+Y.
- ❖ Microsoft Office PowerPoint Help  , which opens the PowerPoint Help pane. You can also open Help by pressing F1.

Name and save your presentation

As with any software program, it is a good idea to name and save your presentation right away and then to save your changes frequently while you work:

1. Click the Microsoft Office Button  , point to Save As, and then do one of the following:
  - ❖ For a presentation that can be opened only in Office PowerPoint 2007, click PowerPoint Presentation.
  - ❖ For a presentation that can be opened in either Office PowerPoint 2007 or earlier versions of PowerPoint, click PowerPoint 97-2003 Presentation.
  - ❖ If you choose this option, you cannot use any of the features that are new in Office PowerPoint 2007.

2. In the Save As dialog box, in the Save in list, select the folder or other location where you want to save your presentation.
3. In the File name box, type a name for your presentation, or do nothing to accept the default file name, and then click save.

From now on, you can press CTRL+S or click Save  near the top of the screen to save your presentation quickly at any time.

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## 3.3 Manipulating & Enhancing Slides

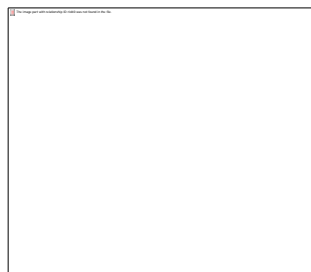
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Add, rearrange, and delete slides

The single slide that is provided automatically in your presentation has two placeholders, one formatted for a title and the other formatted for a subtitle. The arrangement of placeholders on a slide is called a layout. Office PowerPoint 2007 also provides other types of placeholders, such as those for pictures and SmartArt graphics.



When you add a slide to your presentation, you can do the following to choose a layout for the new slide at the same time:

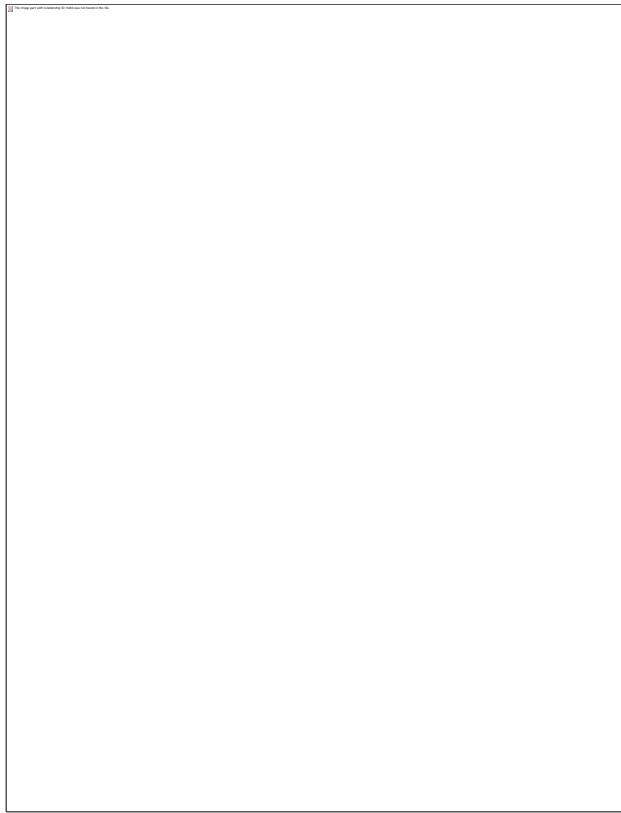
1. On the Slides tab, click just below the single slide that already appears there.
2. On the Home tab, in the Slides group, click the arrow next to New Slide.



**Figure 3-2: New Slides**

A gallery appears, showing thumbnails of the various slide layouts that are available.

-  The name identifies the content that each layout is designed for.
-  Placeholders that display colour icons can contain text, but you can also click the icons to automatically insert objects, including SmartArt graphics and clip art.



**Figure 3-3**

3. Click the layout that you want for your new slide.

The new slide now appears both on the Slides tab, where it is highlighted as the current slide, and in the Slide pane. Repeat this procedure for each new slide that you want to add.

Apply a new layout to a slide

To change the layout of an existing slide, do the following:

1. On the Slides tab, click the slide that you want to apply a new layout to.
2. On the Home tab, in the Slides group, click Layout, and then click the new layout that you want.

Copy a slide if you want to create two slides that are similar in content and layout, you can save work by creating one slide that has all of the formatting and content that both slides will share and then making a copy of that slide before you add the final, individual touches to each.

1. On the Slides tab, right-click the slide that you want to copy, and then click Copy on the shortcut menu.
2. Still on the Slides tab, right-click where you want to add the new copy of the slide, and then click Paste on the shortcut menu.

You can also insert a copy of a slide from one presentation into another presentation.

Delete a slide

- ❖ On the Slides tab, right-click the slide that you want to delete, and then click Delete Slide on the shortcut menu.

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## 3.4 Organization chart

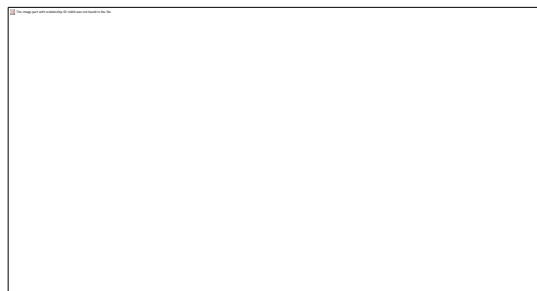
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If you want to illustrate the reporting relationships in your company or organization, you can create a SmartArt graphic that uses an organization chart layout, such as Organization Chart, or you can use Microsoft Office Visio 2007 to create an organization chart. If you have Office Visio 2007, you can read more about when Visio is the best way to create your organization chart.

### Overview of creating an organization chart

An organization chart graphically represents the management structure of an organization, such as department managers and non-management employees within a company. By using a SmartArt graphic in Microsoft Office Excel 2007, Microsoft Office Outlook 2007, Microsoft Office PowerPoint 2007, or Microsoft Office Word 2007, you can create an organization chart and include it in your worksheet, presentation, or document. To create an organization chart quickly and easily, you can type or paste text in your organization chart and then have the text automatically positioned and arranged for you.

When you add an assistant box to an organization chart layout, such as Organization Chart, a bullet with a line attached indicates the assistant box in the Text pane.



**Figure 3-4: Organization Chart**

Although you can use other hierarchy layouts to create an organization chart, the assistant box and the hanging layouts are available only with organization chart layouts.

To quickly add a designer-quality look and polish to your SmartArt graphic, you can change the colors or apply a SmartArt Style to your organization chart. You can also add effects, such as glows, soft edges, or

3-D effects. In Office PowerPoint 2007 presentations, you can animate your organization chart.

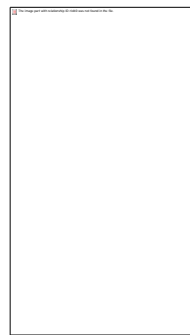
### **Create an organization chart**

1. On the Insert tab, in the Illustrations group, click SmartArt.



**Figure 3-5: Smart Art**

2. In the Choose a SmartArt Graphic gallery, click Hierarchy, click an organization chart layout (such as Organization Chart), and then click OK.
3. To enter your text, do one of the following:
  - ❖ Click in a box in the SmartArt graphic, and then type your text.
  - ❖ Click [Text] in the Text pane, and then type your text.
  - ❖ Copy text from another location or program, click [Text] in the Text pane, and then paste your text.

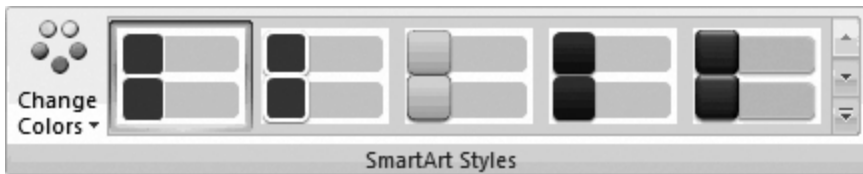


**Figure 3-6: Text Pane**

### **Change the colors of your organization chart**

You can apply color combinations that are derived from the theme colors to the boxes in your SmartArt graphic.

1. Click the SmartArt graphic whose color you want to change.
2. Under SmartArt Tools, on the Design tab, in the SmartArt Styles group, click Change Colors.



**Figure 3-7**

If you don't see the SmartArt Tools or Design tabs, make sure that you've selected a SmartArt graphic.

3. Click the color combination that you want.

Change the background color of a box in your organization chart

1. Right-click the border of a box, and then click Format Shape on the shortcut menu.
2. Click the Fill pane, and then click Solid fill.
3. Click Color , and then click the color that you want.
4. To specify how much you can see through the background color, move the Transparency slider, or enter a number in the box next to the slider. You can vary the percentage of transparency from 0% (fully opaque, the default setting) to 100% (fully transparent).

Apply a SmartArt Style to your organization chart

A SmartArt Style is a combination of various effects, such as line style, bevel, or 3-D that you can apply to the boxes in your SmartArt graphic to create a unique and professionally designed look.

1. Click the SmartArt graphic who's SmartArt Style you want to change.
2. Under SmartArt Tools, on the Design tab, in the SmartArt Styles group, click the SmartArt Style that you want.

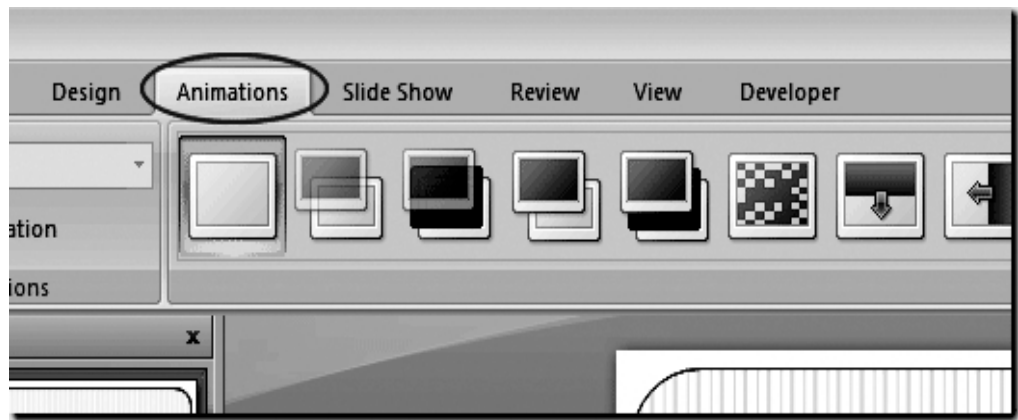
To see more SmartArt Styles, click the More button .

If you don't see the SmartArt Tools or Design tabs, make sure that you've selected a SmartArt graphic.

Animate your organization chart

If you're using Microsoft PowerPoint 2007, you can animate your organization chart to emphasize each box, each branch, or each hierarchical level.

1. Click the SmartArt graphic organization chart that you want to animate.
2. On the Animations tab, in the Animations group, click Animate, and then click By branch one by one.



**Figure 3-8**

**NOTE** If you copy an organization chart that has an animation applied to it to another slide, the animation is also copied.

#### Use charts and graphs in your presentation

Office PowerPoint 2007 includes many different types of data charts and graphs including column charts, line graphs, pie charts, bar charts, area graphs, scatter graphs, stock charts, surface charts, doughnut charts, bubble graphs, and radar graphs.

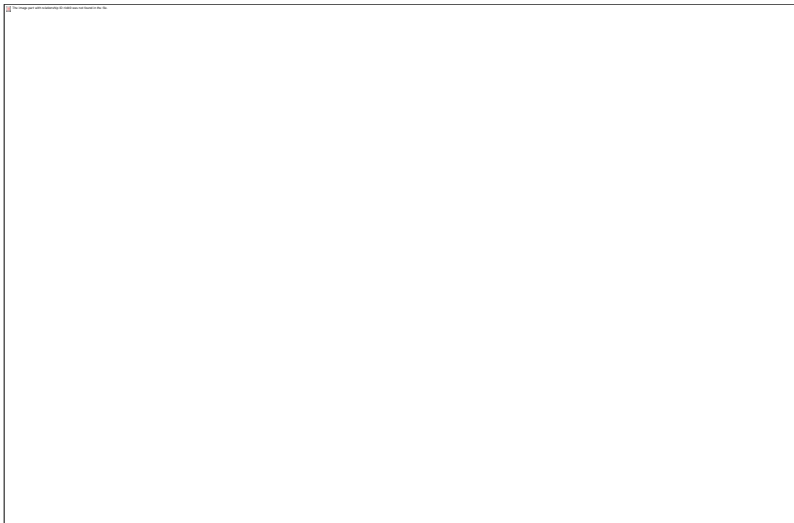
If Office Excel 2007 is not installed, when you create a new data chart in Microsoft Office PowerPoint 2007, Microsoft Graph opens. A chart then appears with its associated data in a table called a datasheet. You can enter your own data in the datasheet, import data from a text file to the datasheet, or paste data from another program to the datasheet.

#### Overview of data charting and graphing

You can add a data chart or graph to your presentation in one of two ways:

- ❖ You can create a chart or graph in your presentation. When you create a new chart in PowerPoint, you edit the data for that chart in Office Excel 2007, but the data is saved with the PowerPoint file.
- ❖ You can paste an Excel chart or graph into your presentation and link to the data in an Office Excel 2007 file. When you copy a chart from a saved Office Excel 2007 file and paste it into your presentation, the data in the chart is linked to that Excel file. If you want to change the data in the chart, you must make your changes to the linked worksheet in Office Excel 2007 and then refresh the data in your PowerPoint presentation. The Excel worksheet is a separate file and is not saved with the PowerPoint file.





**Figure 3-9 Graphs**

A chart in PowerPoint that is made up of sample data from an Excel worksheet

Insert a chart or graph in your presentation

Do the following when you want to create a new chart or graph in PowerPoint:

1. In PowerPoint, click the placeholder that you want to contain the chart.
2. On the Insert tab, in the Illustrations group, click Chart.
3. In the Insert Chart dialog box, click a chart, and then click OK.

Office Excel 2007 opens in a split window and displays sample data on a worksheet.



**Figure 3-10: Sample data on an Excel worksheet**

4. In Excel, to replace the sample data, click a cell on the worksheet, and then type the data that you want. You can also replace the sample axis labels in Column A and the legend entry name in Row 1.
5. When you are finished inputting the data in Excel, on the File menu, click Close.

## Check your progress

- Q1. How to creating a slide in power point
- Q2. How to manipulate & enhance slides
- Q3. Explain steps to create an organization chart

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### 3.5 Excel chart

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You create and copy the chart or graph in Office Excel 2007 and then paste it into your PowerPoint presentation. When you update the data in the linked Office Excel 2007 file, you can update the chart in PowerPoint by using the Refresh Data command.

1. In Excel, select the chart by clicking its border, and then on the Home tab, in the Clipboard group, click Cut.
2. In PowerPoint, click the placeholder on the slide or notes page that you want to insert the chart on.
3. On the Home tab, in the Clipboard group, click the arrow under Paste, and then click Paste.

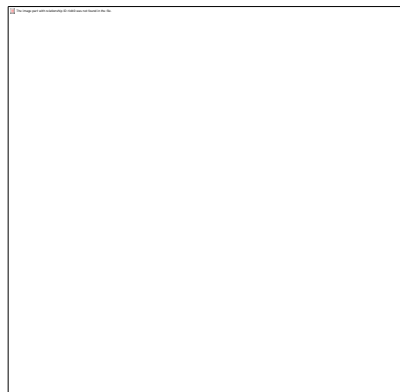
*Create another type of chart (flow chart, organization chart, timeline)*

- ❖ To create an organization chart, see the article Create an organization chart.
- ❖ To create a flow chart, look at the template Basic flow chart template for PowerPoint 2007.
- ❖ To create a timeline using a SmartArt graphic, see the article Create a SmartArt graphic.

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### 3.6 Word Art

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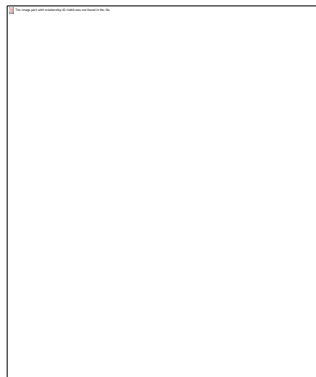
**Figure 3-11: Word Art**

There are many features and commands you can use in PowerPoint to create visually appealing slides. Two of these features are WordArt and shapes. WordArt allows the user to create stylized text with textures, shadows, outlines, and more. It can be applied to text on any slide. Additionally, in PowerPoint, you can insert a variety of shapes such as lines, arrows, callouts, stars, and basic shapes including rectangles and circles.

### Working with WordArt

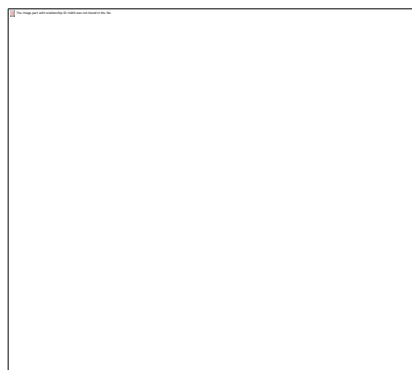
To Apply a WordArt Style:

- ❖ Select the text you wish to modify. The Format tab will appear.
- ❖ Select the Format tab.
- ❖ Move your cursor over a WordArt style in the WordArt Styles group to see a live preview of the style on the slide.



**Figure 3-12: Word Art Styles**

- ❖ Click the More drop-down arrow to see all the possible WordArt styles.

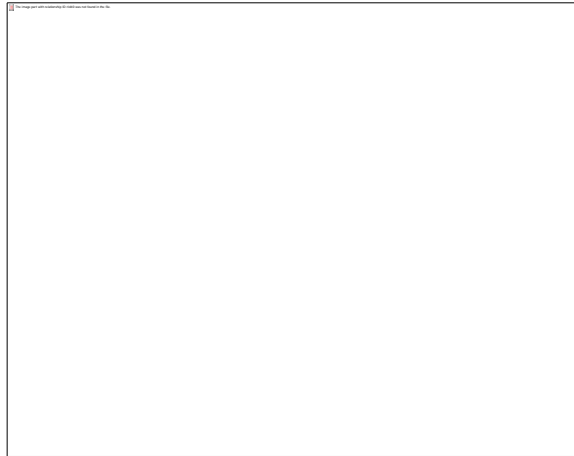


**Figure 3-13: Word Art Styles More**

- ❖ Click an option to select it.

To Change the Fill Color of a WordArt Style:

- ❖ Select the text you wish to modify.
- ❖ Click the Text Fill command in the WordArt Styles group.

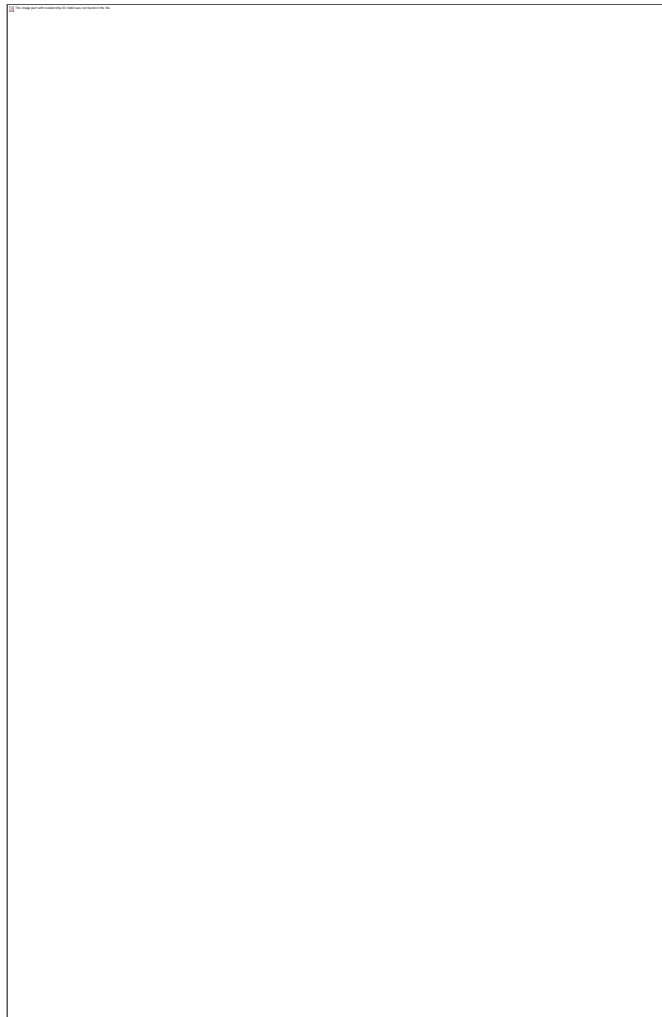


**Figure 3-14: Word Art Format**

- ❖ Move your cursor over a color option to see a live preview on the slide.
- ❖ Click a color to select it.  
Or Select:
- ❖ No Fill: This option will leave the WordArt text without a fill color.
- ❖ More Fill Colors: Opens a dialog box of color choices that you can use as a fill color.
- ❖ Picture: Opens the Insert Picture dialog box. From here, you can select a picture from your computer to use as the fill background.
- ❖ Gradient: Displays a sub menu of various gradient options that changes how the fill color appears.
- ❖ Textures: Displays a sub menu of various textures that you can apply to the WordArt text.

To Change the Text Outline of a WordArt Style:

- ❖ Select the text you wish to modify. The Format tab will appear.
- ❖ Select the Format tab.
- ❖ Click the Text Outline command in the WordArt Styles group.



**Figure 3-15: Word Art Format**

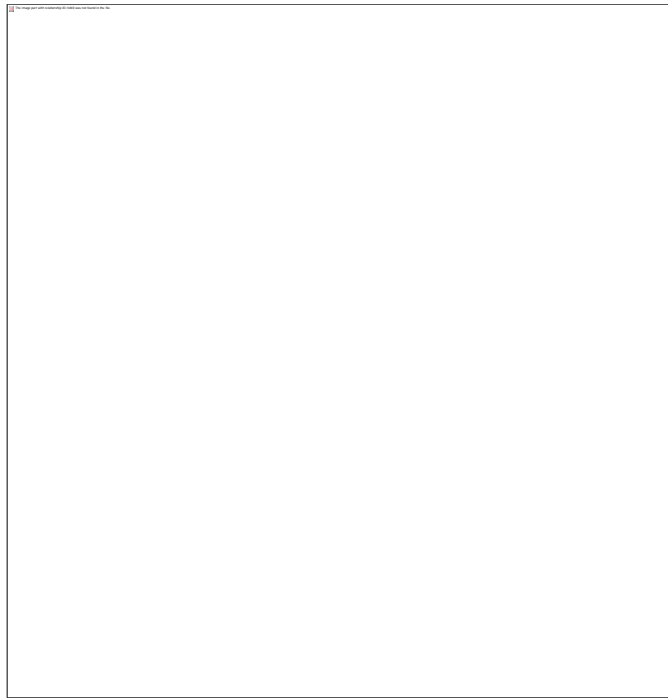
- ❖ Move your cursor over a color option to see a live preview on the slide.
- ❖ Click a color to select it.

From the Text Outline menu, you can also choose to apply no outline color, access more colors, change the weight of the line, and change the line style.

To Apply a Text Effect to a WordArt Style:

- ❖ Select the text you wish to modify. The Format tab will appear.
- ❖ Select the Format tab.
- ❖ Click the Text Effects command. A menu of options will appear.

Select a menu option. The options are: Shadows, Reflection, Glow, Bevel, and Transform. This will display a sub menu.



**Figure 3-16: Text Effects**

- ❖ Click an option from the sub menu to select it.

You can use WordArt to create stylized text that is eye-catching and professional; however, with so many styles and options, you can also create text that is not appropriate for the presentation, difficult to read, or simply does not look appealing. Remember, just because you can do something does not mean you should!

---

### **3.7 Layering Objects in PowerPoint**

---

As you add objects to your slides, you may find that one object overlaps on another or causes another object to disappear completely. For instance, you may add a Clip Art graphic to your slide and then want to draw a rectangle around the graphic. However, when you draw the rectangle, you find that the graphic has disappeared from the screen.

PowerPoint layers objects in a stack; that is to say, the first object drawn or inserted is on the bottom of the stack, the next object appears on top of the previous object, and so on. You can change the position of an object in the stack by using one of the Order commands. There are four order commands:

- ❖ Bring to Front – moves the selected object to the very top of the stack
- ❖ Send to Back – moves the selected object to the very back of the stack

- ❖ Bring Forward – moves the selected object one position up in the stack
- ❖ Send Backward – moves the selected object one position back in the stack



**Figure 3-17: Layering Objects commands**

In the example above, if we selected the rectangle and chose the Send to Back command, our text box would now be visible as the rectangle has now moved to the back of the layered stack.

To Change the Layering Order of Objects

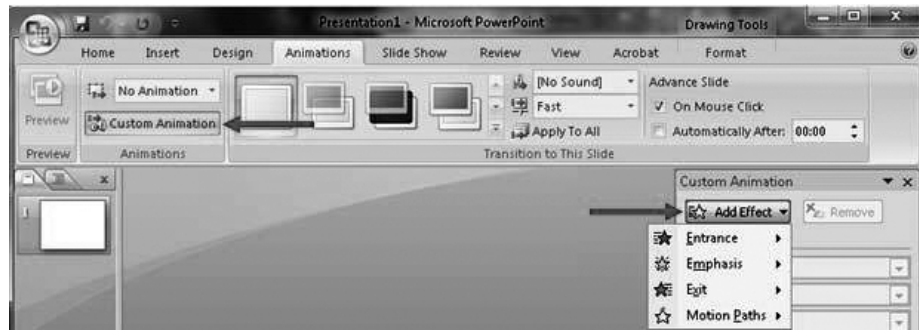
1. Select the graphical object that you wish to move.
2. Click the Format tab under the Drawing Tools group.
3. To send an object backward or to the back of the stack, click the Send to Back arrow on the Arrange group and choose either Send to back or Send Backward.
4. To bring an object forward or to the front of the stack, click the Bring to Front arrow on the Arrange group and choose either Bring to Front or Bring Forward.

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## **3.8 Slide Animation and Sound**

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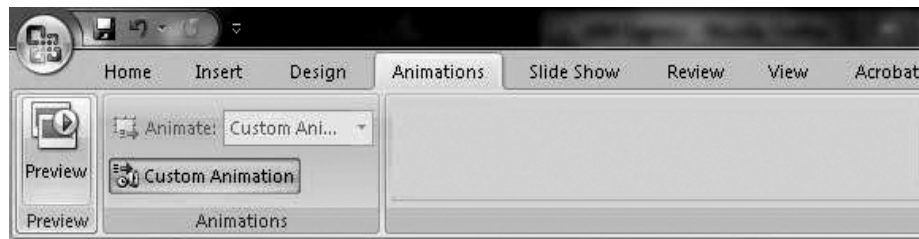
Slide animations are special effects that you can add to objects on a slide.



**Figure 3-18: Custom Animation**

1. To apply animation effects:

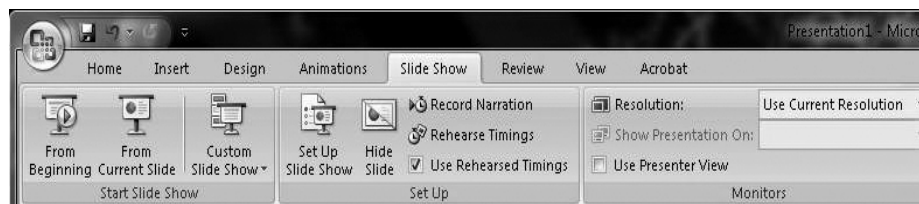
- ❖ Select the object you want to animate.
- ❖ Click the Animation tab on the Ribbon.
- ❖ Click Add Effect.
- ❖ Choose the effect you want on your object.



**Figure 3-19: Custom Animation**

2. To preview the animation on a slide:

- ❖ Click the Preview button on the Animation tab.




**Figure 3-20: Slide Show**

3. Slide Show Options:

- ❖ Preview the slide show from the beginning.
- ❖ Preview the slide show from current slide.
- ❖ Set up slide show.



## Sounds

When you insert a sound on a slide, an icon  that represents the sound file appears. To play the sound while you give your presentation, you can set the sound to start automatically when the slide is displayed, start on a mouse-click, start automatically but with a time delay, or play as part of an animation sequence. You can also play music from a CD or add narration to your presentation.

You can add sounds from files on your computer, a network, or Microsoft Clip Organizer. You can also record your own sounds to add to a presentation or use music from a CD.

You can preview a sound and also make the sound icon invisible during a slide show by hiding it or moving it off the slide into the grey area.

To use a sound effect for emphasis, you will want to play the sound once, which is the default behaviour for sounds in Microsoft Office PowerPoint. To keep the sound playing until you stop it, or to play it for the duration of the presentation, you need to choose the stop options in the Custom Animation task pane or set the sound to play continuously. If you do not choose when you want a sound to stop, it stops the next time that you click the slide.

Only .wav (waveform audio data) sound files can be embedded — all other media files types are linked. By default, .wav sound files that are greater than 100 kilobytes (KB) in size are automatically linked to your presentation, rather than embedded in it. You can increase the size limit for embedded .wav files to be a maximum size of 50,000 KB, but raising this limit also increases the overall size of your presentation.

When you insert a linked sound file, PowerPoint creates a link to the sound file's current location. If you later move the sound file to a different location, PowerPoint cannot locate it when you want the file to play. It is a good practice to copy the sounds into the same folder as your presentation before you insert the sounds. PowerPoint creates a link to the sound file and can find the sound file as long as you keep it in the presentation folder, even if you move or copy the folder to another computer. Another way to be sure that your linked files are in the same folder as your presentation is to use the Package for CD feature. This feature copies all the files to one location (a CD or folder) with your presentation and automatically updates all the links for the sound files. When your presentation has linked files, you must copy the linked files as well as the presentation if you plan to give the presentation on another computer or send it to someone in e-mail.

If you want the .wav sound file to be contained inside the presentation, you can increase the size of the embedded file to a maximum of 50,000 KB (50 megabytes). However, raising this limit also increases the overall size of your presentation and may slow down its performance.

## Add a sound

To prevent possible problems with links, it is a good idea to copy the sounds into the same folder as your presentation before you add the sounds to your presentation.


1. In the pane that contains the Outline and Slides tabs, click the Slides tab.
2. Click the slide to which you want to add a sound.
3. On the Insert tab, in the Media Clips group, click the arrow under Sound.



**Figure 3-21: Sound**

4. Do one of the following:
  - ❖ Click Sound from File, locate the folder that contains the file, and then double-click the file that you want to add.
  - ❖ Click Sound from Clip Organizer, scroll to find the clip that you want in the Clip Art task pane, and then click it to add it to the slide.

## Preview a sound

1. On the slide, click the sound icon .
2. Under Sound Tools, on the Options tab, in the Play group, click Preview. You can also double-click the sound icon.

## Choose between Automatically or When Clicked

When you insert a sound, you are prompted with a message asking how you want the sound to start: automatically (Automatically) or when you click the sound (When Clicked).

- ❖ To automatically start the sound when you show the slide, click automatically.

The sound plays automatically when you show the slide unless there are other media effects on the slide. If there are other effects, such as an animation, the sound plays after that effect.

- ❖ To manually start the sound when you click it on the slide, click When Clicked.

When you insert a sound, a play trigger effect is added. This setting is known as a trigger because, to play the sound, you have to click something specific, as opposed to just clicking the slide.

### **Check your progress**

- Q1. How to create another type of chart (flow chart, organization chart, timeline).
- Q2. How to working with word art?
- Q3. How to use Layering Objects in PowerPoint.
- Q4. How to add and preview a sound.

---

## **3.8 Summary**

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In this unit you learnt about basics of power point, creating slides, adding animations, adding sounds to slides, excel charts, word arts, organization of charts etc.

- ❖ Microsoft PowerPoint, part of Microsoft Office, creates and plays presentations.
- ❖ A presentation is something a speaker makes to an audience, typically using a computer and LCD projector to display material in a lecture hall or auditorium.
- ❖ PowerPoint works a lot like Microsoft Word, and the assumption here is that you are familiar with Word.
- ❖ A PowerPoint presentation is made up of "slides" that is individual frames or screens of information.
- ❖ To create a presentation, create the slides.
- ❖ A PowerPoint file (\*.ppt) is a collection of slides, typically for one and only one presentation, although files can be linked together to make up compound presentations.

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## 3.9 Review Questions

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- Q1. What is a power point presentation? How can we create a presentation? Explain.
- Q2. Write all the steps of adding sound to presentation.
- Q3. Define excel charts? Also define the use of excel chart.
- Q4. What is a word art? Write all steps to insert word art into power point presentation.
- Q5. Write short note on “Layering an objects”

# UNIT-IV

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## MS- POWER POINT ADVANCED FEATURES & DTP SOFTWARE

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### Structure

- 4.0 Introduction
- 4.1 Inserting Animated Pictures or Accessing through Object
- 4.2 Inserting Recorded Sound Effect or In-Built Sound Effect
- 4.3 Other packages:
- 4.4 Summary
- 4.5 Review Questions

---

### 4.0 Introduction

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This is the last unit of this block. In this unit you will find MS-Power point Advanced Features & DTP Software. There are three sections in this unit. Sec. 4.1 define about how to insert animated pictures or how we can accessing it through Object. In the next Sec. 4.2 you will learn about how to insert recorded sound effect or in-built sound effects in your slides. Next section explain about some other software like: DTP software, Brief survey of MS Publisher, PageMaker, CorelDraw, and Adobe Photoshop. These packages are very important in the market and you can learn a lot of creativity with the help of these packages.

### Objectives

After studying this unit you should be able to:

- Describe how to insert animated pictures, insert recorded sound effect.
- Define DTP software, MS publisher
- Express PageMaker, CorelDraw, and Adobe Photoshop.

---

### 4.1 Inserting Animated Pictures or Accessing through Object

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Animate the text or objects in your presentation to give them sound effects or visual effects, including movement. You can use animation to focus on important points, to control the flow of information, and to increase viewer interest in your presentation.

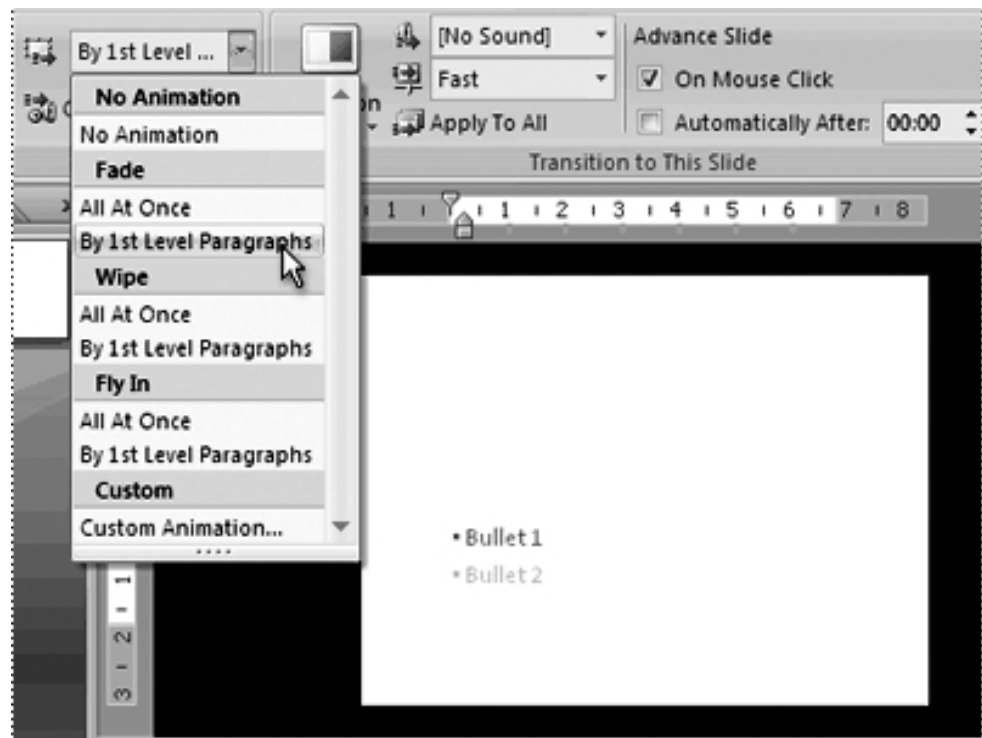
You can use the built-in animation effects in Microsoft Office PowerPoint 2007, or you can create your own custom effects. You can apply animation effects to individual slides, to the slide master, or to custom slide layouts. For more information about slide masters and custom layouts, see Create, customize, and apply a slide master and Overview of layouts.

- ❖ For information about adding transitions between slides (including the different types that are available) and adding sound to slide transitions, see Add transitions between slides.
- ❖ To animate a SmartArt graphic, see Animate your SmartArt graphic.

Apply a built-in animation effect to text or an object

To apply a built-in animation effect in Office PowerPoint 2007, do the following:

1. Select the text or object that you want to animate.
2. On the Animations tab, in the Animations group, select the animation effect that you want from the animate list.



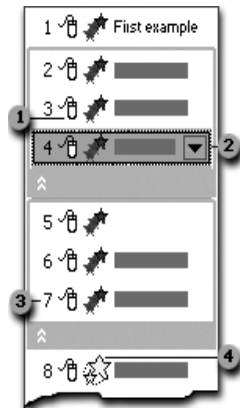
**Figure 4-1 Animation effects**

Create and apply a custom animation effect to text or objects

To gain more control over how and when effects are applied, you can create and apply a custom animation. For example, you can make text grow or shrink, spin or shimmer, and you can set an animation so that you hear the sound of applause when a picture is revealed. You can apply more

than one animation, so you can make a line of text fly in with or without sound, and then make the text fly out. You can use emphasis, entrance, or exit options in addition to preset or custom motion paths.

You 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.



Icons indicate the timing of the animation effect in relation to the other events on the slide. Choices include the following:

- ❖ Start on Click (mouse icon, shown here): The animation effect begins when you click the slide.
- ❖ Start with Previous (no icon): The animation effect begins at the same time as the previous effect in the list starts playing (that is, one click executes two or more animation effects).
- ❖ Start after Previous (clock icon): The animation effect begins immediately after the previous effect in the list finishes playing (that is, no additional click is required to make the next animation effect start).

Select an item in the list to see the menu icon (down arrow), and then click the icon to reveal the menu.

Numbers indicate the order in which animation effects play. Numbers also correspond to the labels associated with animated items in Normal view with the Custom Animation task pane displayed.

Icons represent the type of animation effect. In this example, it is an Emphasis effect.

Animated items are noted on the slide by a non-printing numbered tag. This tag corresponds to the effects in the Custom Animation list, and the tag is displayed to the side of the text or object. The tag appears only in Normal view with the Custom Animation task pane displayed.

To apply a custom animation effect in Office PowerPoint 2007, do the following:

1. Select the text or object that you want to animate.
2. On the Animations tab, in the Animations group, click Custom Animation.
3. In the Custom Animation task pane, click Add Effect, and then do one or more of the following:
  - ❖ To make the text or object enter with an effect, point to Entrance, and then click an effect.
  - ❖ To add an effect, such as a spin effect, to text or an object that is already visible on the slide, point to Emphasis, and then click an effect.
  - ❖ To add an effect that makes text or an object leave the slide at some point, point to Exit, and then click an effect.
  - ❖ To add an effect that makes text or an object move in a specified pattern, point to Motion Paths, and then click a path.
1. To specify how the effect is applied to your text or object, right-click the custom animation effect in the Custom Animation list, and then click Effect Options on the shortcut menu.
2. Do one of the following:
  - ❖ To specify settings for text, on the Effect, Timing, and Text Animation tabs, click the options that you want to use to animate the text.
  - ❖ To specify settings for an object, on the Effect and Timing tabs, click the options that you want to use to animate the object.

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## 4.2 Inserting Sounds and Movies

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A PowerPoint Presentation can include sound files to be used as background music or as a single-event sound clip.

To insert a sound in a slide:

1. On the menu panel go to Insert and choose the Sound pull-down menu.
2. From this menu you can choose to insert from a file, from the clip organizer, play from CD, or record your own sound, (Figure 3).
3. After the sound has been selected, a message will appear. This message will ask if you want the sound to play automatically or after a mouse click.
4. When the sound is placed in the slide, a sound icon will appear.





**Figure 4-2 Insert Sound**

To insert a movie clip:

1. On the menu panel go to Insert and choose the Movie pull-down menu.
2. From this menu you can choose to insert a movie from the gallery, or to open a movie from a specific file.
3. A message will appear and ask if you want the movie to play automatically or after a mouse click.

### **Check your progress**

- Q1. How to apply a built-in animation effect to text or an object
- Q2. How to insert a sound in a slide

---

## **4.3 Other Packages**

### **4.3.1 DTP Software**

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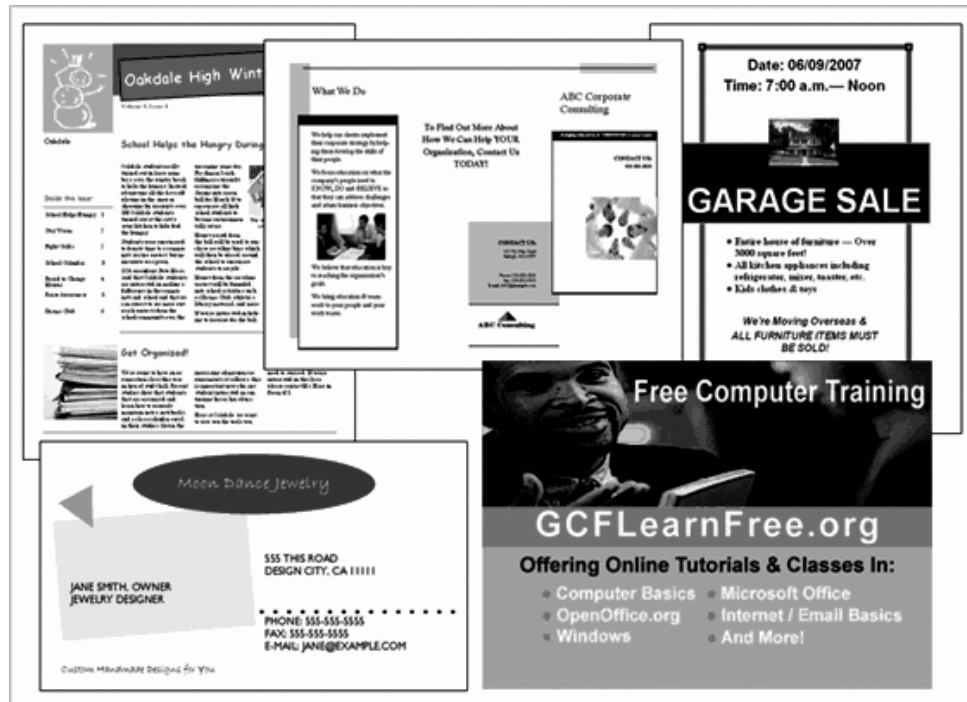
Desktop publishing is the use of the computer and specialized software to create documents for desktop or commercial printing. Those specialized programs are primarily page layout software, but can also include word processing, graphics software, and creative printing or home publishing software.

#### **4.3.1.1 MS-Publisher**

Microsoft Publisher is a desktop publishing application that allows you to create and fine-tune publications from a variety of templates or blank publications.

You can create many different types of publications including items such as promotional flyers, company brochures, garage sale flyers, business cards, school newsletters, and more.

Publisher has many types of templates available for you to use. These include Quick Publications, Advertisements, Brochures, Flyers, Greeting Cards, and so much more. You can click on each of these headings to display subheadings with additional templates.



Sample Publications

Figure 4-3 Sample Publication

## Starting a Publication

When you open Microsoft Office Publisher 2007, you will first see a screen that looks like this:

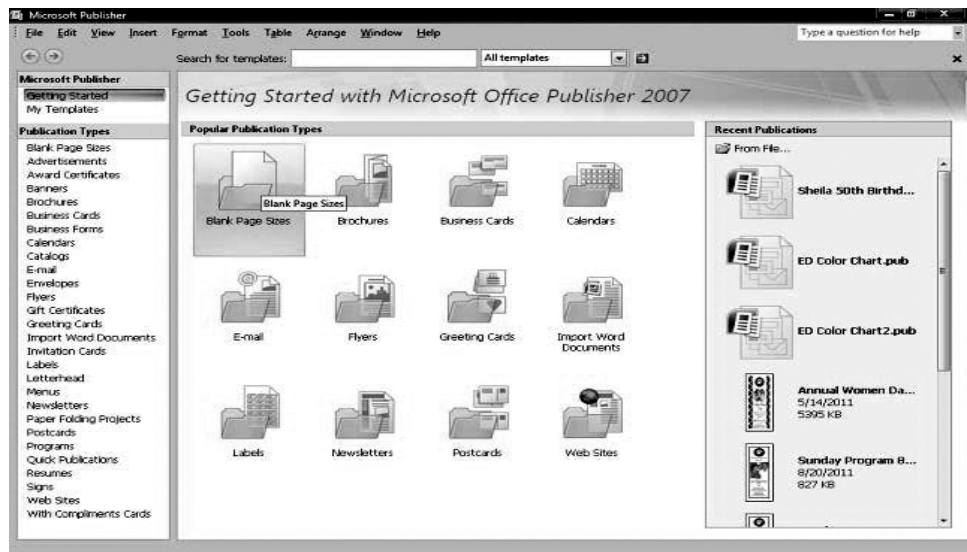


Figure 4-4 Starting Publication

## To start your document:

Click on the Publication Type you want from either the Publication Types (1) listed on the left or from the Popular Publication Types (2) listed in the center. After you click, you will be taken to a screen that lets you choose from several pre-designed templates for the publication type you want to work on.

For example, the customization page for Newsletters looks like this:



**Figure 4-5 Customization Page**

a. Customization options will appear on the right side of the screen. (Each publication type may have different customization options.) Examples as shown above include:

1. Color scheme.
2. Font scheme.
3. Business information (you can upload and store your company/personal logo and colors).

4. the page size

b. After you select your options, click on Create (5).

Your publication will open in a screen similar to the one shown below.

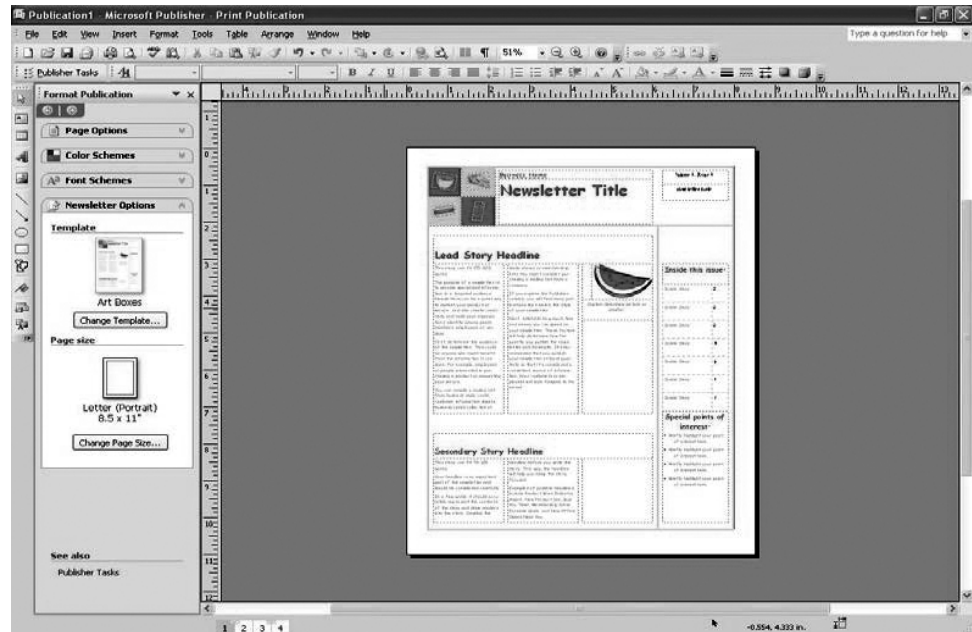


Figure 4-6

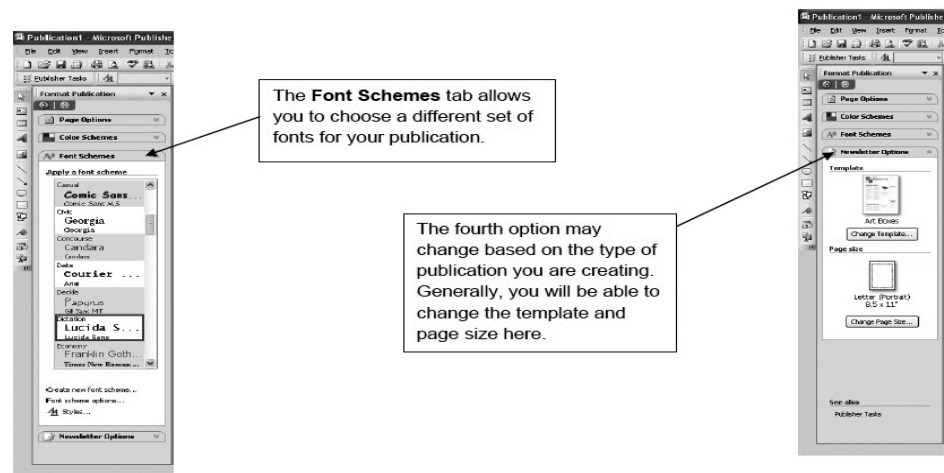


Figure 4-7

### 4.3.1.2 Adobe PageMaker

#### Introduction

PageMaker is a desktop publishing program. It is used to create documents with a complex layout of text and graphics, such as brochures, pamphlets, newsletters, fliers, reports etc. It offers certain functionalities of a graphics program, and is therefore more suited to organizing pages compared to a word processing program (especially when including graphic images in the document).

This handout walks you through creating a report containing graphic images in PageMaker.

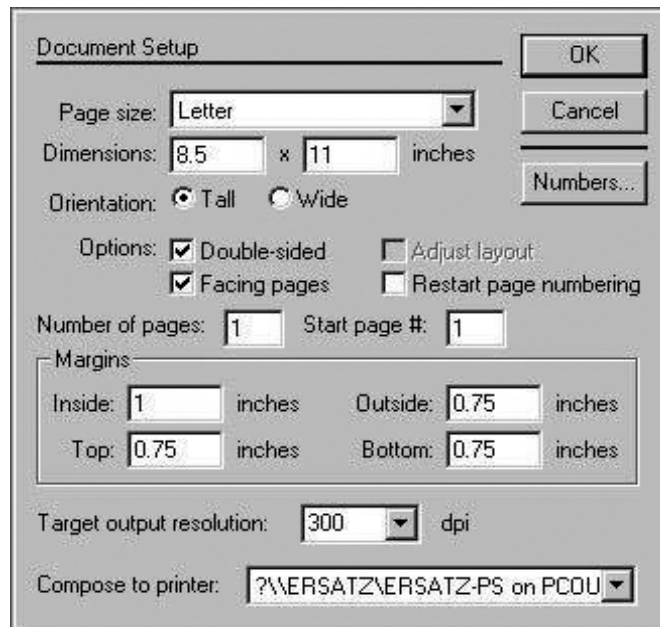
To open PageMaker in the Open Access Labs go to:

**Start** □ Programs □ Applications □ Graph

### How to Create a New Document

Upon starting PageMaker you will see a screen offering you a variety of initial choices of templates upon which to base your publication. In our case, we will start with a blank presentation. After becoming familiar with PageMaker we can always choose one of the templates to create our publication. Close the templates-options screen by clicking on the Close button located on the top right corner of the screen.

Go to: File □ New. A dialogue box showing th to Figure 4-15 will appear. Here we can specify the page dimensions, orientation, margins, number of the pages etc. Set the inside margin to “1”, all other margins to “.75” and the page size to “Letter”.

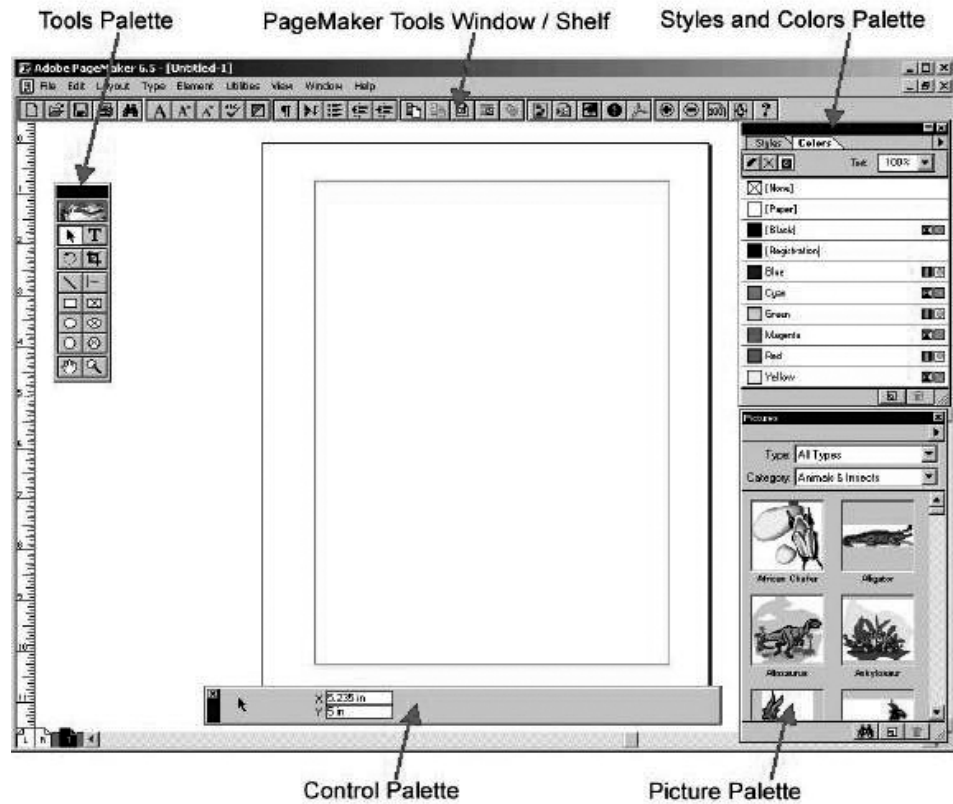


**Figure 4-8 Document Setup**

When done, click OK. We can return to this window by clicking on: File □ Document Setup, and change or modify any of the settings at a later stage. We now have a new document open in PageMaker. The top and bottom boundaries of the page are indicated by pink lines and the left and right boundaries of the page are indicated by blue lines. We must be careful to remain within these boundaries at all times, i.e. we must place our graphics and text within these margins.

### The Different Windows in PageMaker

A number of windows are open in the default PageMaker window. Figure 4-16 shows them with their names. We will touch upon them briefly as all these windows provide us with important tools.



**Figure 4-9 Window Page maker**

1. **Tools Palette:** this window displays tools that are used for drawing, entering and editing text, selecting and dragging objects on the page and zooming in and out of the page. We have to click on a particular tool icon to select that tool.
2. **PageMaker Tools Window:** this window can also appear as a shelf on the top of the main PageMaker window as shown in Figure 4-16. It displays additional PageMaker tools as convenient icons.
3. **Control Palette:** this window is used for making precise changes to text and graphics.
4. **Styles and Colors Palette:** this window displays the predefined paragraph styles and colors.
5. **Plug-in Palettes, e.g. Picture Palette:** this window contains the links to readymade graphic images that can be inserted into the document.

We can minimize these windows at any time if the screen gets too cluttered. They can be maximized selectively for a less cluttered screen and more efficient work.

### **How to Work with Text**

Text can be inserted into PageMaker documents in numerous ways. One way is typing it directly in the document. Other ways include inserting text

created in other word -processing applications such as Word, Word-Perfect etc. or copying and pasting text from other sources on the computer. For creating the caption of our report we will type it directly in PageMaker instead of importing it from elsewhere.

1. Select the Text tool from the Tools Palette and click it anywhere on the page to establish an insertion point. A blinking cursor appears and we can now type in the caption. The typed text may appear too big or too small for the cover page depending on the text settings. We can change the size, face, spacing and style etc. of the font by changing the options in the Control Palette.
2. We can also change the font by going to Type  Font.
3. We can change the font size by going to Type  Size.
4. We can change the font style by going to Type  Type Style. Check out all the other options available under Type for playing around with the look of the text and getting the desired look.
5. To change the color of the text, select the text and click on the color of your choice in the Colors Window. We can have the text in different tints of the chosen color, too. To do this, select the part of the text you want in a different tint and go to the drop-down box that says Tint in the Colors Palette. Choose a tint of, say, 40% of the original color. We will notice the tint of the chosen text lightens considerably. In Figure 4-20, the text has two different colors and two different tints for the blue color.



**Figure 4-10**

### **4.3.1.3 CorelDraw**

Corel Draw is a PC-based graphic design vector drawing program. You can use Corel Draw to tackle a wide variety of projects - from Illustration and logo creation to Web graphics or multi-page marketing brochures, or eye-catching signs. You can also Draw shapes, work with text, add color and effects, Corel Draw is a very flexible vector and graphic package.

You can do many things in Corel Draw. You can create basic shapes and lines to complex ones which are used to create vector illustrations, logos,

clipart, etc. You can also import images and trace them to form vectored files. When a file is vectored you can also print it on a laser cutter out of card, wood, or plastic (note: you cannot do this with an image).

### What are vectors?

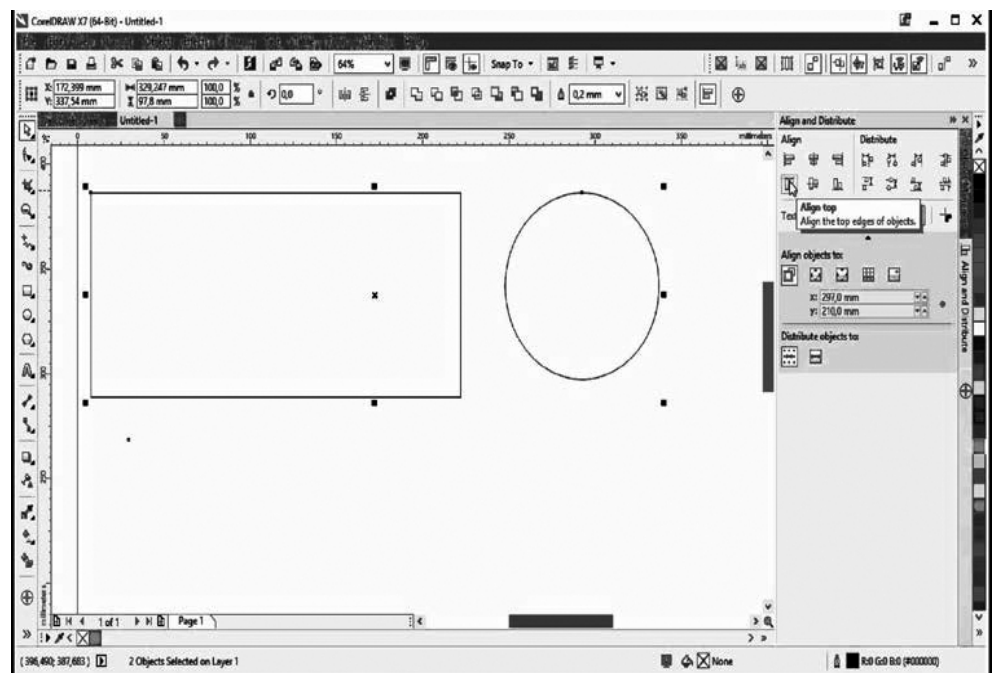
There are two basic types of graphic files: Images and Vectors. Images are constructed from a series of pixels, or tiny squares. Each pixel contains a unique color and together they make up the image. Vector images however have no pixels. They are displayed or printed by using mathematical positioning. A vector image breaks down into a mathematical formula and contains messages like, draw a rectangle, this size and at this place on the page. A vector image looks like an illustration.

Vector files are usually considerably smaller than a image files of the same image, since there is less information required to achieve the same results. Images however lose quality if they are scaled to a larger size. Basically when blown up the pixels just get bigger. With vector images things are different the vector contains mathematical points that map the shapes of the vectors. So vectors have no quality loss and no file size increase.

*Note: you will rarely see an image used as a logo as when they are blown up they lose quality, most logos are vector drawings.*

### What do the tools do?

Take a look at the screenshots below to get an overview of some of the basic tools. Remember if you don't know what a tool is rollover it and a small tag will appear saying what the tool does!





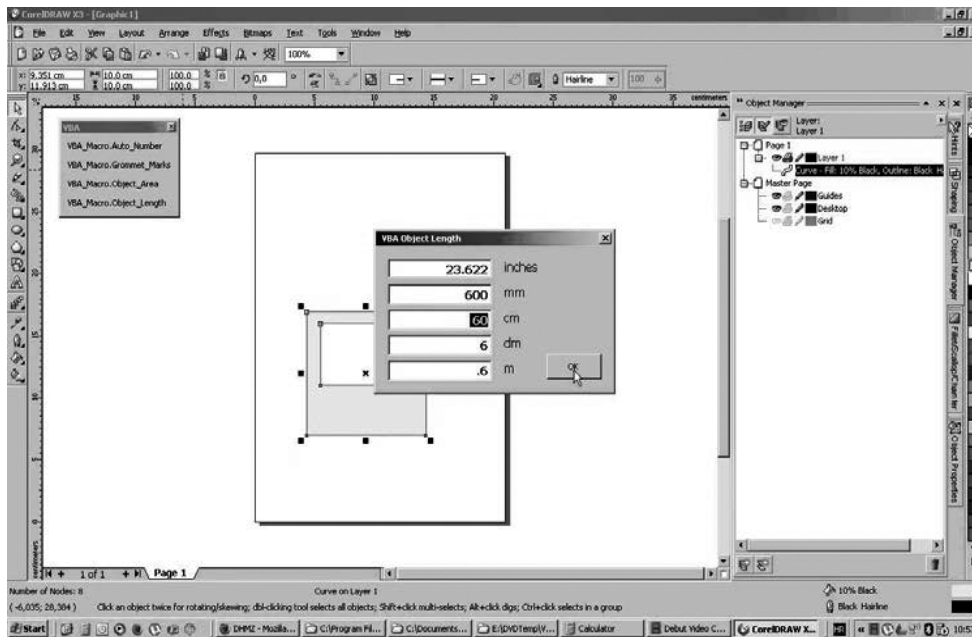


Figure 4-12

### 4.3.1.4 Adobe Photoshop

This lesson is a brief introduction to Photoshop, I will not cover all the topics but I will cover enough of them to teach you how to edit (resize, crop, merge) images yourself without asking somebody else.

Adobe Photoshop is probably the single image editing program that you need. It is a very comprehensive software, it can meet almost all your needs and solve almost all your problems that you face with the images. You have been hearing about Photoshop all these while, everyday more and more. So here is your chance to get your hands on Photoshop. If you don't have the software buy one, or download the trial but fully functional version at Adobe.com. Let's get started!

#### Tools and Options Panel


















Open your Photoshop. If you don't see Tools Toolbar already then go to Window > Tools.






Below is the screenshot of the Tools panel. If the tool has a small triangle at the bottom corner it means it has more than one tools. To see these options just click on the tool and hold your mouse for a few seconds, and you will see the options on the popup window as shown below.



Figure 4-13

Let's go through one tool from each group and their functions. The letters inside the brackets are the shortcuts for the particular tool, when you are in Photoshop and press V for example it would select the Move Tool.

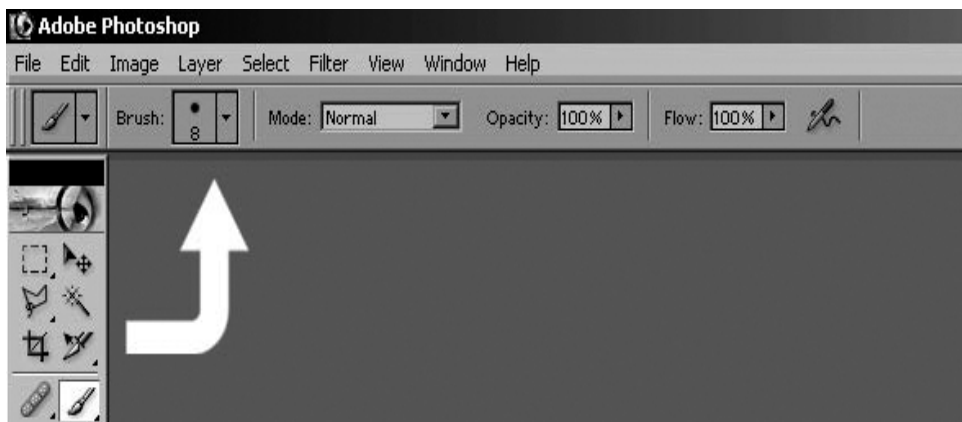
		Move Tool (V): Is used to select and move images (objects) on any active layer.
		Rectangular Marquee Tool (M): It is used for making selection on the image (objects) on any active layer.
		Magic Wand Tool (W): Used for making selection (similar colors at once for example)
		Polygonal Lasso Tool (L): Used for making free selection as you go
		Slice Select Tool (K): Used for selecting slices
		Crop Tool (C): Used for cropping images
		Patch Tool (J): Used for correcting images
		Brush Tool (B): Used for drawing freehand
		History Brush Tool (Y): Used for restoring specified history state
		Clone Stamp Tool (S): Used for selecting a source and copying (drawing) it in another place
		Gradient Tool (G): Used for making gradient effect on images
		Eraser Tool (E): You are right, this tool is used for erasing 😊
		Dodge Tool (O): Used for making images lighter (And Burn tool makes the opposite –
		Horizontal Type Tool (T): Yes used for inserting text to image
		Path Selection Tool (A): Used for selecting the active path
	Custom Shape Tool (U): Used to insert pre-specified (ready) shapes to image	

	Pen Tool (P): Used for creating vector shapes
	Eyedropper Tool (I): Used for selecting color
	Notes Tool (N): Used for inserting notes on the image
	Zoom Tool (Z): Yes used for zooming in or out
	Hand Tool (H): Used for dragging image when you are in the zoom in state

### Options Panel

As you see below from the screenshot below, Options Panel is highlighted with light-red. Whenever you switch from one tool to another, Options Panel will change accordingly. Currently as you can see Brush Tool is selected in the Tools panel, and in the Options Panel you can see the properties of the Brush Tool, namely : Brush Size (Type), Mode, Opacity and Flow.

Just remember to look up to the Options Panel when you choose a particular tool, because sometimes if something is selected or unselected in the Options Panel, you might not be able to use that particular tool properly. For example Opacity of the color might be set to “Zero” in the Options Panel, in that case anything that you draw would not show up since 0 means invisible.




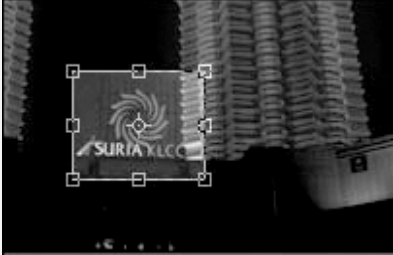

**Figure 4-14**

### Working with Images

#### Cropping

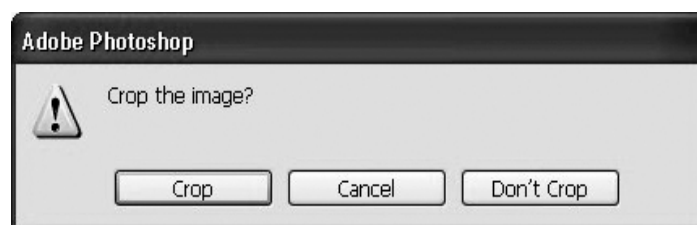
Download this image or open any image in your Photoshop. Select the Crop Tool (Press ‘C’ to Select or Select it with your Mouse)and draw a

selection on your image as shown below. (To make a selection click and drag with your mouse)

Make a selection	After you made your selection press Enter	Result
		
Make a selection	After you made your selection press Enter	Result

**Figure 4-15**

Cropping images is actually that easy in Photoshop, just select the area you want to keep and press Enter on your keyboard, and you are done. You can also press on the Move Tool instead of pressing Enter on your keyboard, it will prompt you a window similar to the one shown below. If you are satisfied with your selection just press on the Crop button and your image will be cropped.

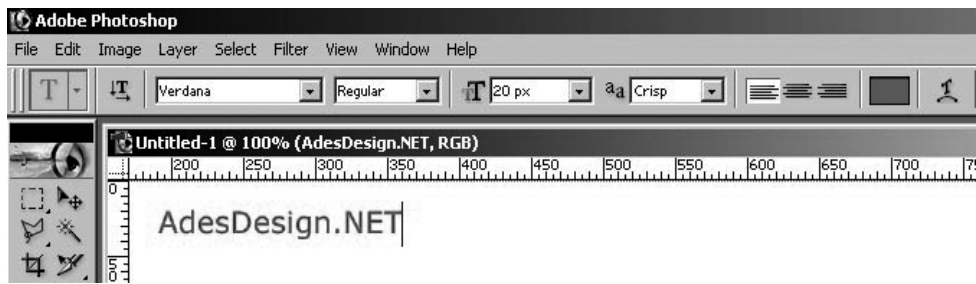


**Figure 4-16**

### Working with Texts

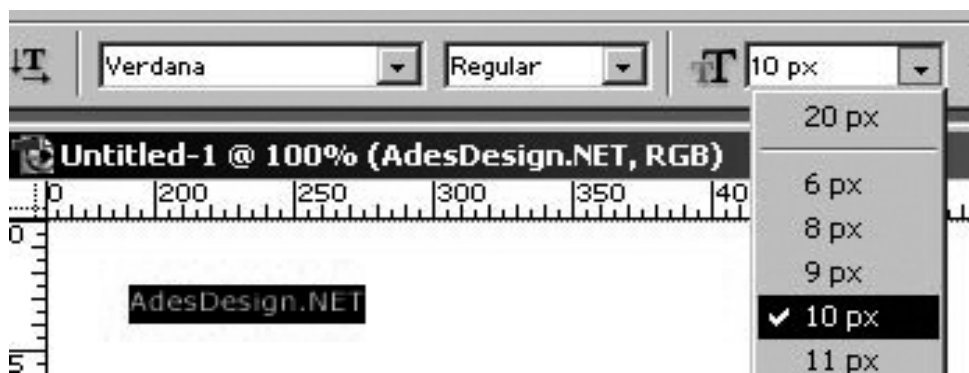
Open a new window Ctrl + N (choose a bigger dimensions for the window; width 400 and height 300) and press OK

Select the Horizontal Type Tool (T) and click on the window that you just opened and type something.



**Figure 4-17**

If you want to make changes to your text, highlight it and change the properties from Options Panel



**Figure 4-18**

After you are done making changes click on the Move Tool (V) and by clicking on your text position it on the top left corner of the window.

Note: When working with Texts it's important to click on Move Tool (V) after you are done typing. Many newbies make this mistake of not clicking on Move Tool or on any other tool than the Text Tool and are literally stuck in the Photoshop.

To move your text from one place to another choose the Move Tool and just click on your text with your mouse and without releasing your mouse move the text to the desired place.

There is another way to change the properties of the Text, in addition to the Options Panel we have discussed and that is by using Character Panel. If you don't see the Character Panel go to Windows > Character to bring up the Character Panel.

Below is the Character Panel screenshot, if you change any of the properties in this window it will be reflected on your text. However for it to be effective you need to be on the correct layer, otherwise you will not see any changes on the text. Layers will be our next discussion.



Figure 4-19

### Working with Layers

Photoshop uses “Layers” for managing multiple (separate) objects in the same file, to open your Layers Panel go to Window > Layers. If you have used other image editing programs that use the same “Layers” concept. Then this should be familiar to you. If you haven’t then it’s an easy concept to understand, just think of the Layers as a “Stack of Books” on the floor, and imagine yourself as looking at this stack of books from top.

Firstly, when you look at this stack from top, you will be able to see the cover of the first book which is on top of all the other books without a problem, however when you try to see the cover of the second book that is below the first book, you will notice that most of it are not visible to you. Because it’s being blocked by the first book. And when you look at the third book’s cover it will be even more hidden from your eyes. So think of Layers in Photoshop as a Stack of Books, one layer representing one book or level in the stack.

Layer that is on top

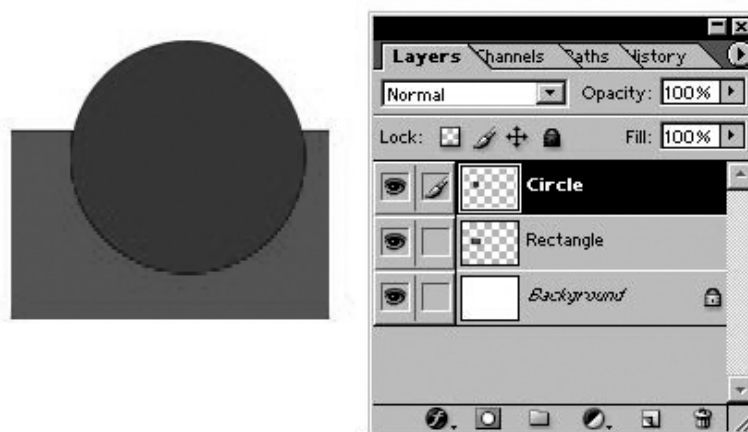


Figure 4-20

As you can see from the image above, the blue circle is located on the Top Layer, I have named the Layer as “Circle”, and red rectangle is on second

layer, I have named this layer as “Rectangle”. As we have discussed earlier, book that is on top of the stack will cover the layers below. Thus you see the Circle covering Rectangle. And our background is a white color which is visible from the sides of the circle and rectangle.

### Changing layer positions

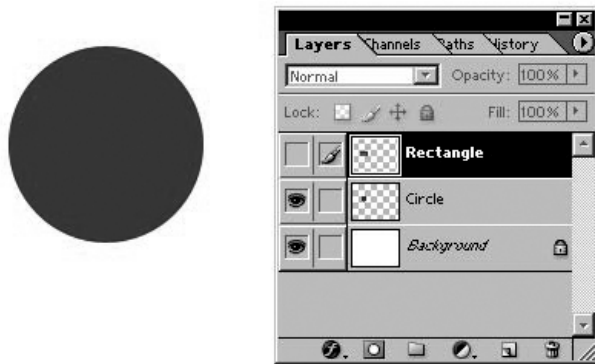
Here I have moved Red Rectangle to Top, as you see now Red Rectangle is on top and it covers the Circle. To move the particular layer just click on it with your mouse and while still holding your mouse move it up or down. Or you can click on the Layer that you want to move and use shortcut keys on your keyboard to move it up (Ctrl+]) and down (Ctrl+[).

### What is Active Layer?

Active layer is the layer which you are working on, for example from the image below we can see that the Active Layer is the Rectangle Layer – active layer will always be highlighted (selected).

Note: And if you want to move particular object you should select it’s respective layer first, then only you can move it. Otherwise you will end up moving something else.

The “Eye” icon on the left of the layers means that the layers are currently visible, if you toggle them off then the object will also disappear (will become invisible) from our window.



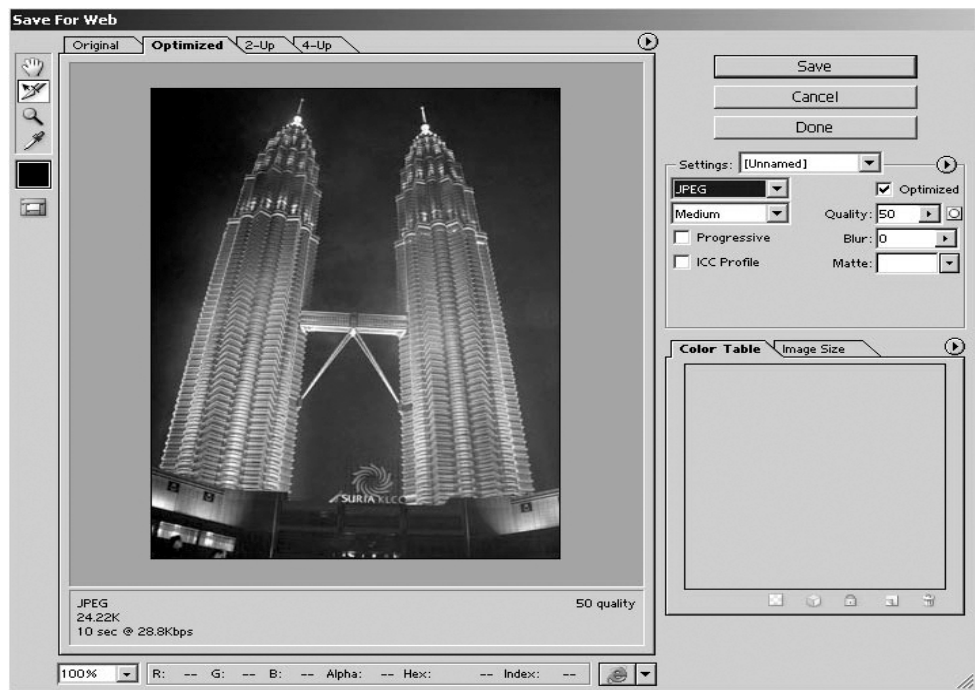
**Figure 4-21**

As you can see from the screenshot above, I have deselected/removed the eye icon from the layer Rectangle. We still can see the rectangle in the Layers Panel but it is not visible on our image – we can only see the blue circle.

### 6.0 Saving for Web (as JPG or GIF)

After you have completed your work I believe you would want to save it as .jpg or .gif (or any other format that Photoshop supports)

To save your image for web go to File > Save for Web or press Alt+Shift+Ctrl+S and you will see an identical window like this one below.



**Figure 4-22**

From here you can change the image type to JPG, GIF, PNG and WBMP. You can change the quality of the image as well, the higher the quality the bigger the size will be.

## Check your progress

- Q1. Define MS-Publisher. How to start a publication?
- Q2. How to create a new document in Adobe PageMaker
- Q3. What are vectors in Corel draw?
- Q4. How we use Images in Adobe Photoshop?

## 4.4 Summary

In this unit you learnt about Inserting Animated Pictures or Accessing through Object, Inserting Recorded Sound Effect or In-Built Sound Effect. We also learnt about other packages like DTP software, Brief survey of MS Publisher, PageMaker, CorelDraw, and Adobe Photoshop

- ❖ You can make text grow or shrink, spin or shimmer.
- ❖ You 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.



- ❖ Many types of objects can be included in PowerPoint presentations, including Bitmap images, Flash movies, Microsoft Excel spreadsheets, Microsoft Word documents, and a variety of media clips.
- ❖ A PowerPoint Presentation can include sound files to be used as background music or as a single-event sound clip.

---

## 4.5 Review Questions

---

- Q1. Write all the steps of inserting pictures in your slide with example.
- Q2. We can use recorded sound in the presentation. Elaborate your answer.
- Q3. What are DTP packages? Why we use DTP software? List all DTP software.
- Q4. What is Adobe PageMaker? Write the benefits of Adobe PageMaker.
- Q5. Write a short note on- Corel Draw and Adobe Photoshop.

---

## Suggested Further Reading

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॥ सरस्वती नमः सुमनसं नमस्कृतम् ॥

Uttar Pradesh Rajarshi Tandon  
Open University

## Certificate in Computer Course

# CCC-1.1

## Office Tools and Internet

Block

# 3

### COMMUNICATION

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**Unit I Fundamentals of Data Communication 167-178**

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**Unit II Computer Networks 179-190**

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**Unit III Advanced Concepts in Networking 191-198**

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## Course Design Committee

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<b>Prof. (Dr.) Ashutosh Gupta</b> (Director-Incharge) School of Computer and Information Science, UPRTOU, Prayagraj	<b>Chairman</b>
<b>Prof. R. S. Yadav</b> Department of Computer Science and Engineering MNNIT-Allahabad, Prayagraj	<b>Member</b>
<b>Ms. Marisha</b> Asstt. Professor, School of Science, UPRTOU, Prayagraj	<b>Member</b>
<b>Mr. Manoj Kumar Balwant</b> Asstt. Professor, School of Science, UPRTOU, Prayagraj	<b>Member</b>

---

## Course Preparation Committee

---

<b>Dr. Ravi Shankar Shukla</b> Associate Professor, Department of CSE, Invertis University Bareilly-243006, Uttar Pradesh	<b>Author (Block 1, 2)</b>
<b>Ms. Marisha</b> Asstt. Professor, School of Science, UPRTOU, Prayagraj	<b>Author (Block 3: Unit: 1, 2, 3)</b>
<b>Mr. Manoj Kumar Balwant</b> Asstt. Professor, School of Science, UPRTOU, Prayagraj	<b>Author (Block 4, Unit: 1, 2, 3, 4)</b>
<b>Dr. Sudhkar Pandey</b> Head, Department of IT, NIT, Raipur, Chattisgrah	<b>Editor (Block 1, 2)</b>
<b>Prof. (Dr.) Ashutosh Gupta</b> (Director-Incharge) School of Computer and Information Science, UPRTOU, Prayagraj	<b>Editor (Block 3, Block 4)</b>
<b>Mr. Manoj Kumar Balwant</b> Asstt. Professor, School of Science, UPRTOU, Prayagraj	<b>Coordinator</b>

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## **Unit -1: Fundamentals of Data Communication**

Concept, Data Communication modes, Communication Hardware

## **Unit -2: Computer Networks**

Network concept and classification, LAN, WAN, MAN

## **Unit -3: Advanced Concepts in Networking**

Internet, E-Mail, EDI, NICNET

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## **Block Introduction**

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The rapid growth of Internet and the World Wide Web has made communication networks a part of life. Standalone computers are now a thing of past. Not only computers but all other digitally operable devices are now connected using communication networks to provide integrated services to the users, which is the idea behind the concept of Internet of Things. It is therefore, very important to learn about the fundamentals of computer networks, their structure, operations and applications in various real world scenarios.

This block introduces you to the fundamental concepts in communication. The first unit discusses the basics of data communication, different modes of communication and communication hardware. The second unit is concerned with the concept of networking, the network models or architecture and various types of networks such as the LAN, WAN and MAN. The third unit is more application oriented and discusses various applications of networking such as the Internet, E-Mail, Electronic Data Interchange and a computer network developed by the government of India - the NICNET. This block will help you gain the basic knowledge about computer networks. The area of networking is ever changing and new developments are taking place every day. By the time, you end up reading this block, you will find yourself curious to learn more about what new changes that are taking place in the technology and how they can help in making your life even better with applications of computer networks.

# UNIT-I

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## FUNDAMENTALS OF DATA COMMUNICATION

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### Structure

- 1.1 Introduction
- 1.2 Objectives
- 1.3 Concept of Data Communication
- 1.4 Data Communication Modes
- 1.5 Communication Hardware
- 1.6 Summary
- 1.7 Review Questions

---

### 1.1 Introduction

---

Data communication deals with transmission of information between two ends (also known as sender and receiver) through some medium of communication. When there are more than two devices that communicate with each other, they are said to form a network. The information to be communicated between the devices is represented in the form as agreed between the sender and receiver and it is known as data. Further, for any successful communication, the sender and receiver must agree to a set of rules that must be followed while communicating; these are known as protocols. Thus, data communication basically involves four entities – data, sender, receiver, transmission medium and protocol.

For transmitting data from one device to other, it must be converted into electromagnetic signals. In this unit, we shall discuss the two types of signals used for transmission and various modes of transmission of data. We shall also briefly discuss some communication hardware which would involve communicating devices as well as communication channels.

### 1.2 Objective

After learning this unit, you should be able to:

1. Understand the basic concepts of data communication
2. Define various terminologies related to communication
3. Understand the different types of signals and their properties

4. Understand different types of communication hardware

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## 1.3 Concept of Data Communication

---

As discussed earlier data communication involves transmission of information among communicating devices. The devices that communicate with each other are usually computers. However, for large networks, there may also be connecting devices in between the sending and receiving ends. In the following sections, we shall briefly discuss the fundamental characteristics of communication systems, different types of representation of data, the flow of data in communication and communication protocols.

### 1.3.1 Fundamental Characteristics of Communication

The effectiveness of a data communication system is measured by four fundamental characteristics:

1. **Delivery:** The system must deliver the data to the correct destination. This implies that the data must be delivered to the intended receiver and it must be received by the intended receiver only.
2. **Accuracy:** It means that the data must be received at the receiving end exactly as it was sent by the sender. The data must not get altered during transmission.
3. **Timeliness:** This is related to time bound delivery of data. Delivery of data to the destination must not be late. This condition is even more stringent in case of audio and video data where, the data must be delivered in the order in which it is generated and not with much delay.
4. **Jitter:** It refers to the uneven delay in the delivery of audio and video packets. The uneven delay in receiving results into poor quality of audio/video.

### 1.3.2 Representation of Data

The data used in communication can be in the form of text, numbers, audio and video. As you already know, all the data in computer is represented in binary form only. In other words, any type of data is represented as a sequence of bits. There are various techniques for converting each type of data into binary format. We shall briefly discuss the representation of each type of data:

1. **Text:** The prevalent coding system to represent text today is **Unicode**. Unicode uses 32-bits to represent a symbol or character. It covers all the languages of the world. The Standard **ASCII** code used in computers forms the first 127 characters of Unicode, also referred to as Basic Latin.



2. **Numbers:** Numbers are directly converted into binary formats using various representation schemes available for representing numbers.
3. **Images:** Images are represented as a pattern of bits. First, the image is divided into a fixed number of pixels. A pixel is a small squared area of the image. Each pixel is then represented as a bit pattern based on the colors in the pixel. An image could be either colored or black and white. For black and white images, the two colors can be represented using two bits 0 and 1 (for colors black and white say). In practice, however more number of bits are used where different strings of bits represent different levels of grey scale for the image. For colored images, several methods are used. The RGB representation uses three colors Red, Green and Blue to generate all types of colors. Different intensities of the three colors are represented using different bit patterns. The combination of intensities of all the three colors represents each pixel of the image. Another scheme used for image representation is YCM that uses Yellow, Cyan and Magenta as the primary colors for image representation.
4. **Audio:** Audio signals are generated in continuous form i.e. audio signals are analog by nature. These signals are converted to digital signals using some conversion scheme and used for digital communication.
5. **Video:** Videos can be generated as both continuous and discrete entities. Videos can also be converted into digital as well as analog signals.

### 1.3.3 Communication Rate

It is the speed with which data transfer takes place between the two communicating ends. In computer networks, the speed of transmission is defined in terms of bits transferred per second from one end to the other. It is denoted as bps (bits per second).

### 1.3.4 Communication Protocols

When two devices communicate with each other, it is not only important to transmit data from one device to other but the information contained in the data must be understood at the receiving end. This is possible when the communicating devices adhere to certain rules during communication. You can understand this as the language used for communication between two humans. Both must understand the language and the sentences must be framed according to the grammatical rules by the speaker in order for the information to be correctly interpreted by the listener.

Communication protocols are the set of rules that govern the exchange of signals between the communicating devices. It defines the what, why and when of communication. A protocol has three key elements namely, syntax, semantics and timing. Syntax defines the structure of the data,

semantics define the meaning of each section in the data, how it is to be interpreted and timing defines when the data is to be sent and at what rate. Usually, certain guidelines are provided to the manufacturers, vendors, government agencies to ensure the compatibility of different devices. These guidelines are also known as **Standards**. Standards could be de facto or de jure. **De facto** standards are those which have been adopted by widespread use and are not formally approved by any organization. Such standards are usually set by manufacturers who introduce a new product or technology. **De jure** standards on the other hand are legislated by a recognized standards organization.

Some of the important standards creation committees are:

- a. International Organization for Standardization (ISO)
- b. American National Standards Institute (ANSI)
- c. Institute of Electrical and Electronics Engineering (IEEE)
- d. Consultative Committee for International Telegraphy and Telephony (CCITT)

Following are some of the functions that are regulated by communication protocols:

- a. Controlling information transfer
- b. Controlling the structure and format of data
- c. Error Recovery
- d. Retransmission Control and
- e. Interfaces Management

---

## 1.4 Communication Modes

---

So far, we have discussed the basic concepts related to data communication. The transmission of data through a medium can take place according to different methods. In the following sections, we will discuss the different modes in which data communication can take place.

### 1.4.1 Simplex, Half-Duplex and Full Duplex transmission

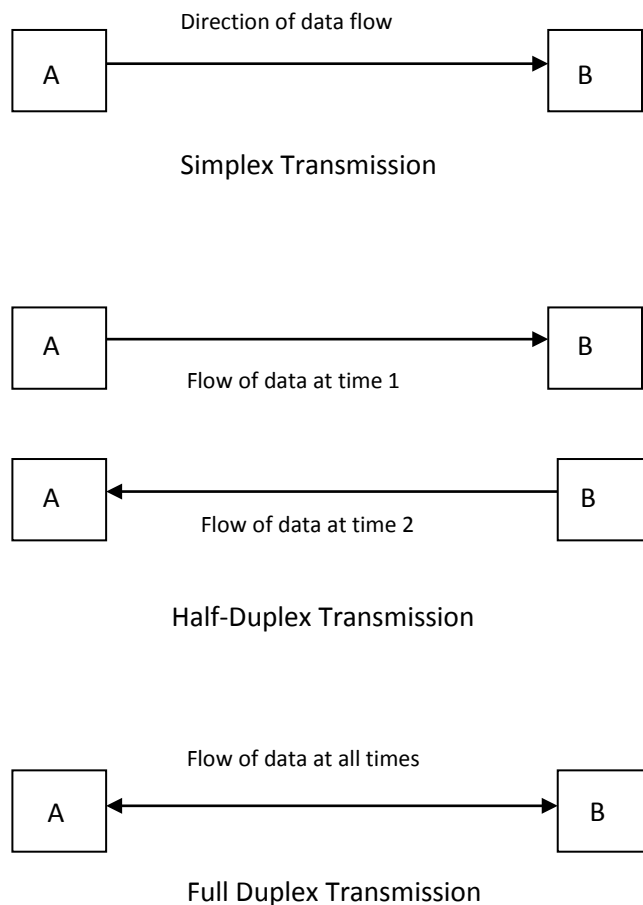
Based on the direction of flow of data between two devices, the communication can be of three types:

**Simplex:** In this type of communication, the flow of data is unidirectional. Here, only one of the communicating devices can send the data and the other can only receive. Such systems utilize the full capacity of the

transmission channel. Keyboard, monitor etc. are examples of devices that use simplex mode of transmission.

**Half-Duplex:** In this mode, both the devices can both send and receive data but not simultaneously. If one end is transmitting the data the other can only receive at that time. Walkie-talkie is an example of a device using half-duplex transmission. It requires the devices to switch between send and receive modes after each transmission. This type of transmission is used where there is no need of simultaneous communication between two ends and therefore, full capacity of the channel is utilized for unidirectional transmission.

**Full-Duplex:** In this mode, both the ends can send and receive data simultaneously. Telephone is a common example of this type of transmission.



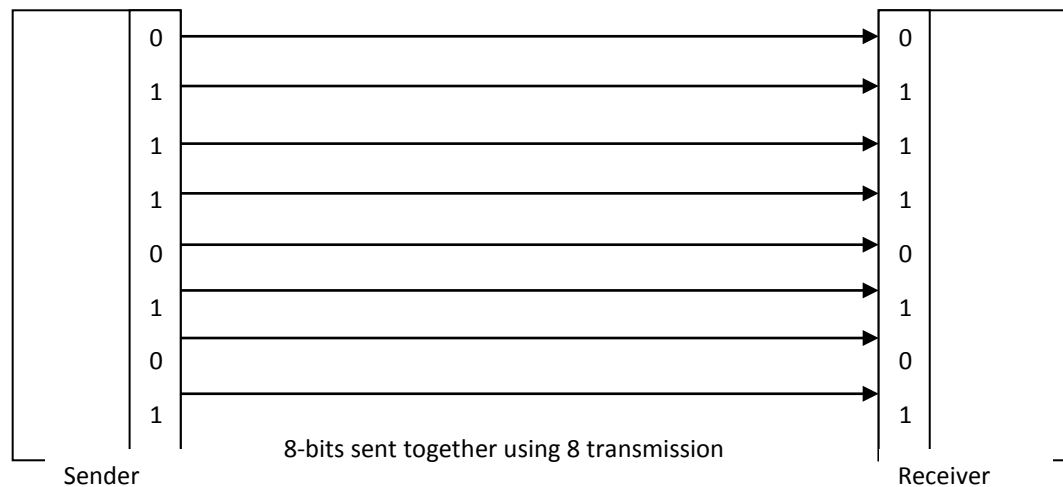
**Fig. 1.1: Simplex, Half-duplex and Full duplex transmission**

### 1.4.2 Parallel and Serial Transmission

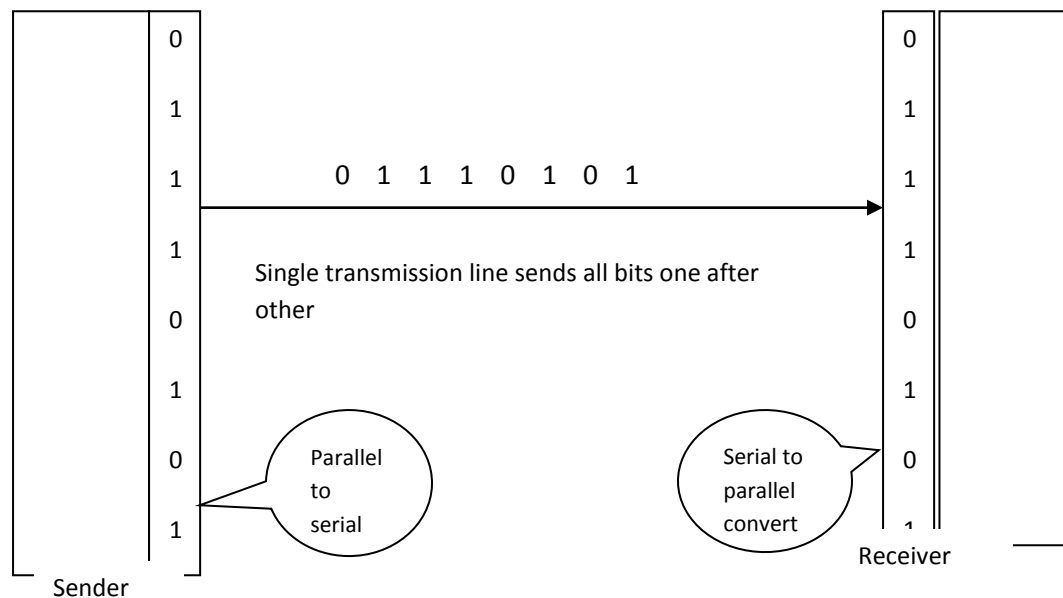
The transmission of data can be done either in parallel or serially in the channel.

In **Parallel Transmission**, the data bits are first grouped into a set of say n bits and then they are sent simultaneously using n transmission lines as shown in Fig. 1.2. Parallel transmission increases the speed of communication but it also results in high cost of communication. It is mostly used for short distance communication.

**Serial Transmission**, on the other hand uses a single channel for transmission. Here, the bits of data are serially transmitted using the single transmission channel as shown in Fig. 1.3. As you know, the communication within devices is parallel; therefore, serial transmission requires converters at both the ends. The sender uses a parallel to serial converter to send the data bits while the receiver uses serial to parallel converter for receiving the signal from channel.



**Fig. 1.2: Parallel transmission between two devices**



**Fig. 1.3: Figure showing serial transmission between two devices**

### 1.4.3 Synchronous, Asynchronous and Isochronous Transmission

Serial transmission can be done in one of the following three ways:

**Asynchronous Transmission:** In this method, the timing of the signals is not important. The communication is done using agreed patterns and the receiver can interpret the signals until those patterns are followed.

In asynchronous transmission, the data is sent in group of bits. Each unit of data received at the receiver is treated independently of the others. Since, there is no synchronization in the data units; the receiver cannot use timing to predict the coming of the next group of data. Therefore, start and stop bits are used to let the receiver know the beginning and end of a group. Usually a byte of data is sent with a 0 as start bit and a trailing 1 as stop bit. Thus, each byte of data consists of 10 bits of which 8 bits are information and 2 or more bits are signals for the receiver.

**Synchronous Transmission:** Here, the bit streams are combined to form longer data units also known as **frames**. Each frame may contain one or more bytes. The bytes of data are not separated by start and stop bits. Thus, there is no mechanism for the receiver for bit synchronization. Timing is therefore, very important in this case. It should however be noted that although there is no gap between the bits in a frame, there may be uneven gap between each data frame.

The advantage of synchronous transmission over the asynchronous method is the increase in speed of transmission. Since, there are no extra bits transmitted in synchronous transmission, it increases the speed of transmission. This mode of transmission is particularly useful for high-speed applications.

**Isochronous Transmission:** For real-time applications such as streaming audio and video data, just synchronization is not enough. For example, TV images are broadcast at a fixed rate of 30 images per second and should be received in the same order. Suppose, each image runs over more than one frame then, there should not be delays between each frame. For such applications, isochronous transmission is used that guarantees that the data arrive at a fixed rate.

---

## 1.5 Communication Hardware

---

In this section we will discuss about the devices used for communication and also discuss various types of transmission channels and their properties.

### 1.5.1 Communication Devices

There are different types of devices used for communication between two nodes on a network. The nodes could be any device such as a PC, a mainframe computer, printer etc. The most common networking devices that you can come across for connecting a computer to a network are:

- a. Modem
- b. Network Card
- c. Wi-Fi devices (or Wi-Fi router)
- d. Bluetooth devices
- e. Infrared devices

- a. **Modem:** the abbreviation for Modulator/ Demodulator; modem is a device that is used to communicate through a computer over a telephone line. It allows communication by converting the digital signals from the computer to analog signal which is transmitted over the telephone line and vice-versa.
- b. **Network Card:** The Network Interface Card (NIC) allows a computer to connect to a network using Ethernet cable and RJ-45 connector.
- c. **Wi-Fi devices:** Wireless Fidelity devices are used for wirelessly connecting various devices. It is based on the 802.11 standards for wireless connection. It is also used in the home wireless networks to connect to the Internet.
- d. **Bluetooth Devices:** Bluetooth devices are used for short range communications. It utilizes Radio frequency at 2.4 GHz and is effective in a range of 10 meters. Bluetooth devices can provide data transfer rates of about 1Mbps.
- e. **Infrared Devices:** Infrared devices utilize the infrared radiations for communication. We will discuss about infra red and its properties in the next section.

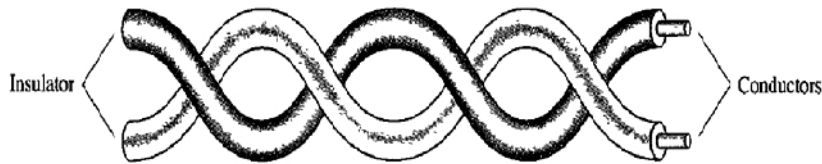
### 1.5.2 Transmission Media

A transmission channel or transmission medium can be defined as any medium that carries the signals from the sender to the receiver. The transmission medium could be wired or wireless. The wired transmission media are known as **guided media** and the wireless transmission media are known as **unguided media**. We will now discuss different types of guided and unguided media.

#### Guided Media

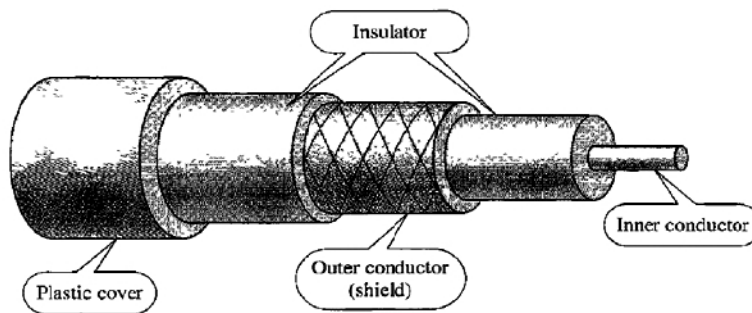
- a. **Twisted Pair Cable:** Twisted pair cables are made up of two copper wires each of which are coated with a plastic for insulation. The two insulated wires are then twisted over each other to make cable. In twisted pair cables only one of the two wires carries

signal and the other wire is used for grounding purpose. The receiver obtains the original signal by calculating the difference between the values of two wires. The two wires are twisted so as to reduce the effect of noise in the signal (see Fig 1.4). Practically, there are many variations of twisted pair cables which are used in Local Area Networks (LANs).



**Fig. 1.4: Twisted Pair Cable**

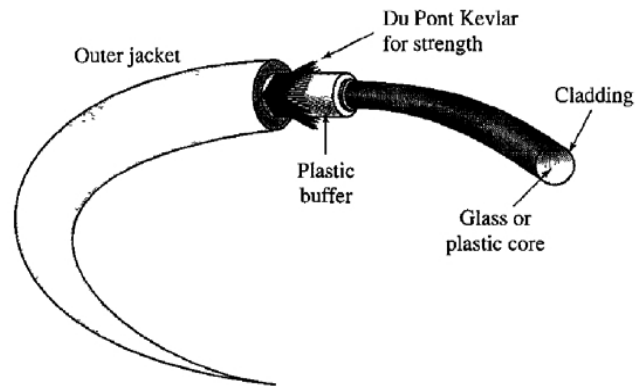
- b. **Coaxial Cable:** Coaxial cable does not contain two separate wires. It has one inner core made up of a metal such as copper which carries the signal. This inner core is covered by an insulating sheath which is again covered by another metallic foil which acts both as a shield against noise and as a conductor to complete the circuit. The outer conductor is also covered by an insulator. This whole system is then covered by an outer plastic cover (see Fig. 1.5). Due to its construction, the coaxial cable can carry signals of higher frequency range as compared to twisted pair cable



**Fig. 1.5: Co-axial cable<sup>1</sup>**

- c. **Fiber Optic Cable:** Optical fiber cables are made up of glass or plastic and are used for transmitting signals in the form of light. Optical fibers are based on the concept of reflection of light. The inner core which is made up of glass or plastic is surrounded by a cladding which is made up of a less dense material (glass or plastic). The refractive index of the outer cladding is such that when the light passes through the inner core it gets totally internally reflected upon striking the cladding (Fig. 1.6). Optical fiber cables offer much bigger bandwidth as compared to coaxial cables and twisted-pair cables. Also, the attenuation (loss in signal strength during transmission) in fiber optic cables is almost 10

times lower than the twisted-pair and coaxial cables. Fiber optic cables are used in backbone networks and high-speed networks. Like twisted-pair and coaxial cables, optic fiber cables also come in a number of varieties.



**Fig. 1.6: Optic Fiber**

### **Unguided Media**

Unguided media are those which do not use a physical medium for transmission of signal. These are also known as wireless transmission media. Unguided media use electromagnetic signal for transmission. Wireless transmission is usually performed using radio waves, micro waves and infrared waves. The three types of waves are distinguished based on their frequency ranges. However, the general distinction between radio and microwaves is based on the behavior of the waves rather than the frequency range. The radio wave is omnidirectional for most part of its spectrum while micro-waves are unidirectional and use line of sight propagation. We will discuss the properties of these waves in detail now.

- a. **Radio Wave:** These are omnidirectional i.e. they can propagate in all directions. Their frequency lies between 3KHz and 1GHz. Because of their omnidirectional nature and the ability to penetrate through walls, radio waves are generally used for long distance multi-cast propagation such as TV signals and cell phone communications. Radio wave transmission can be done in three different ways based on the frequency of the wave used. For low frequency range radio waves (3-300 KHz) **ground propagation** is used. Here, the signal travels through the lowest portion of the atmosphere. The distance travelled by the signal depends on signal strength, the higher the strength the longer the distance travelled. These are mainly used for navigation purposes. Middle to high range frequencies (300 KHz-300 MHz) are propagated using **sky** mode. In the sky mode of transmission, the travelling



signal is reflected from the ionosphere and received by the receiver antenna. Sky communication is mainly used for radio, TV, aircraft communication etc. Very high to ultra high frequency radio waves (above 30 MHz) use **line of sight** propagation. In this method, the signals travel uni-directionally. The receiver antenna must be aligned with the sender to receive the signal. This is used in satellite, radar and cell phone communications. For radio frequencies the data transfer rate is in the range of 100 to 400 Kbps. The frequency ranges between 30-300 MHz can be propagated using both line of sight and sky mode of propagation.

- b. Micro Wave:** Microwaves (300MHz-300GHz) are unidirectional and therefore always use line of sight propagation. For line of sight communication, the sender and receiver antenna must be kept at a large height so that they are not affected by the curvature of earth and any other obstacle during communication. The signal also needs to be amplified after certain distance. Very high frequency micro-waves cannot penetrate walls. Micro-waves however, give higher data transfer rates of about 1000 Mbps. They are used in satellite communication, cell phones and wireless LANs.
- c. Infrared Wave:** Infrared frequencies range between 300 GHz and 400 THz. Infrared waves cannot penetrate walls and therefore, they are used for short range communications. TV remote control is an example of a device that uses infrared waves. Nowadays, infrared keyboards and mouse are also being used. Some manufacturers provide a special infrared port (IrDA) in the computers in order to allow them to communicate with wireless mouse and keyboard.

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## 1.6 Summary

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In this unit, we have discussed the important concepts of data communication. We discussed four fundamental characteristics of an effective communication viz., delivery, accuracy, timeliness and jitter. We then discussed the representation of data in a computer. We also discussed communication rate that defines the speed with which data is transmitted through a channel. We also described the meaning of communication protocols and some of the agencies that set communication standards. We then discussed different classifications of communication modes. We also discussed communication hardware where we gave a brief introduction to different types of communication devices and discussed about various types of transmission channels and their properties.

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## 1.7 Review Questions

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1. Match the following:
  - a. Modem
  - b. Protocols
  - c. Communication Rate
  - d. Radio Wave
  - e. Micro Wave
  - i. omnidirectional
  - ii. Speed of transmission
  - iii. Line of Sight communication
  - iv. Signal conversion
  - v. Set of Rules
2. Discuss the properties of infrared waves. What are its applications in communication?
3. Discuss the construction of any two types of guided media.
4. What do you understand by Jitter? What type of transmission method can ensure jitter free transmission of data and why?

# UNIT-II

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## COMPUTER NETWORKS

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### Structure

- 2.1 Introduction
- 2.2 Objectives
- 2.3 Network Concept and Classification
- 2.4 Communication Architecture
- 2.5 Local Area Networks (LAN)
- 2.6 Wide Area Networks (WAN)
- 2.7 Metropolitan Area Networks (MAN)
- 2.8 Summary
- 2.9 Review Questions

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### 2.1 Introduction

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Nowadays, computer networks form the backbone of most of the organizations. They allow computers and devices to connect to each other not only within the organization but also to the outside world. Computer networks also allow resource sharing among the remote devices and thus help in providing high computational power at reduced price. In this unit, we shall discuss different types of computer networks and their structures. We will also discuss about the interconnection of networks and interconnecting devices.

### 2.2 Objectives

After learning this unit you should be able to:

1. Define computer networks
2. Describe LAN, WAN and MAN
3. Understand the difference between the above networks and their characteristics
4. Describe communication architecture
5. Describe interconnecting devices for networks

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## **2.3 Network Concept and Classification**

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A computer network is a collection of computers and/or other digital devices (nodes) connected together through a communication channel (wired or unwired) and governed by a set of protocols. Each node on the network is identified by an address. An address can be understood as analogous to telephone numbers in a telephone network. Network architecture refers to the design of a computer network. It consists of both hardware and software, connection between the nodes and communication protocols. There are two common types of network architectures: Hierarchical Networks and Peer Networks. In Hierarchical networking, there is one node known as the master and rest all the nodes in the network are called slaves. The network is entirely controlled by the master who assigns addresses to the nodes in the network. Any resource that has to participate in the network must be known to the master beforehand. In case of peer networking however, all the nodes are considered equal and pre-defined network addressing is not required. Each node in the network is a peer to all other nodes. Whenever a new node joins the network, it introduces itself to its peers and also informs of any other resources in the network that it knows about. Such networks are open and share network information. Computer networks can be divided into two broad categories: Local Area Networks and Wide Area Networks. Another type of network that lies between these two is the Metropolitan Area Network. We shall discuss about all these types of networks in following sections. But before that we shall discuss communication architecture and also discuss the OSI reference model.

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## **2.4 Communication Architecture**

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Data communication among two devices through a network is a complex task. At the lowest level it involves just the transfer of signal from one device to the other. But there are other factors that are involved in this process. For example, the message needs to be correctly received at the receiver, if there are any errors, either they should be corrected or a request for retransmission must be made, the message must be interpretable at the receiving end, for long distance communication large messages are usually broken into smaller ones, at the receiving end these smaller messages must be combined properly to regenerate the original message. All these tasks cannot be accomplished by just hardware as it would make the system highly complex and unmanageable. Therefore, the communication system is a combination of hardware as well as software.

Further, in order to reduce complexity, it is important to divide these tasks so that separate software can handle their part with scope for

interaction among them whenever required. This is even more important when information travels from one network to the other as both the networks might not be using same architecture. In order to simplify network communication, the task of communication is divided into a number of layers. Each layer has its own functions independent of others and each layer interacts with layers just above and below it. This type of communication architecture is known as **Layered Architecture**. The oldest layered model was proposed by the International Organization for Standardization (ISO) and is known as the Open System Interconnection (OSI) model. Later the TCP/IP protocol suite was proposed which became the dominant commercial architecture of the Internet. In this section, we shall briefly discuss the OSI model. It should be noted here, that OSI is a model and not a protocol. The OSI model consists of seven layers. The first layer is the physical layer which is mostly hardware. The second and third layers are data link layer and network layer that are a combination of hardware and software. The next three layers are session layer, presentation layer and application layer that are totally software based. Each layer in a device interact with the layers above and below it while for two different devices each layer interacts with the corresponding layer on the other device. This is known as peer-to-peer communication. We will now briefly discuss the functionality of each layer.

**Physical Layer** : This is the first layer of the OSI model and it is responsible for transmission of bits over a medium in the form of signals. It also defines mechanical and electrical specifications for physical transmission.

**Data Link Layer** : This layer is responsible for hop-to-hop delivery of the message. It organizes bits into frames and detects errors that may occur in the physical layer.

**Network Layer** : It moves packets from source to destination. It provides inter-networking services and routing across multiple networks.

**Transport Layer** : This layer is responsible for reliable process-to-process delivery of message and error recovery. Since, up to this point the message is already delivered to the destination system; all the functionalities provided by transport layer and layers above it are based on software only and no hardware is used.

**Session Layer** : This layer manages the session in communication. It is responsible for establishing and terminating sessions. It provides dialog control and synchronization.

**Presentation Layer** : It is responsible for presentation of information to the application program. It provides facilities such as data conversion and

code translation (e.g. ASCII to EBCDIC). It also provides encryption and compression of data.

**Application Layer :** It is responsible for providing services to the end user. It enables end users to access network resources.

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## 2.5 Local Area Network (LAN)

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A LAN is a network that typically connects devices in a single building, office or campus. It is usually privately owned and designed to allow resource sharing between personal computers and workstations. The resources could be hardware (e.g. printer etc.), software (e.g. application programs) or data. LANs are normally limited to the area of a few kilometers. Since, the LAN is owned by a single organization or entity; it has several advantages over other types of networks. Some of them are listed here:

1. Transmission media is shared by all the devices on the network.
2. Device incompatibility and large speed differences among the devices are not present.
3. High data transfer rates can be achieved
4. Congestion and flow control are not serious issues.
5. Malicious traffic can be easily controlled using gateway-level filtering

Besides size, LANs are also distinguished based on transmission media and topology.

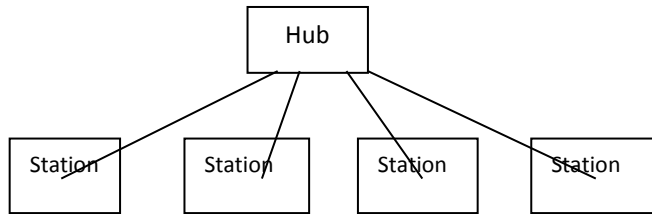
### 2.5.1 LAN Topology

Network topology refers to the physical arrangement of nodes in the network. Different topologies can be used to construct a network. The most common topologies used for constructing LANs are:

- a. Star
- b. Bus
- c. Ring

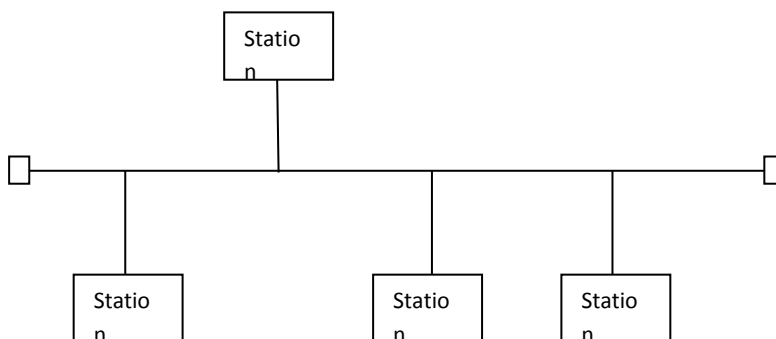
**Star Topology:** In star topology, there is a single node which acts as a hub and all the devices in the network have a direct connection only to the hub. None of the nodes are directly connected to each other. Star topology is less expensive as only one link needs to be made per node. This also makes it easy to install and maintain. Also, failure of a node does not affect other nodes in the network. However, the star topology has one big

disadvantage. If the hub fails, the entire system is dead. The pictorial representation of a star topology is given in Fig 2.1.



**Fig. 2.1: Star topology**

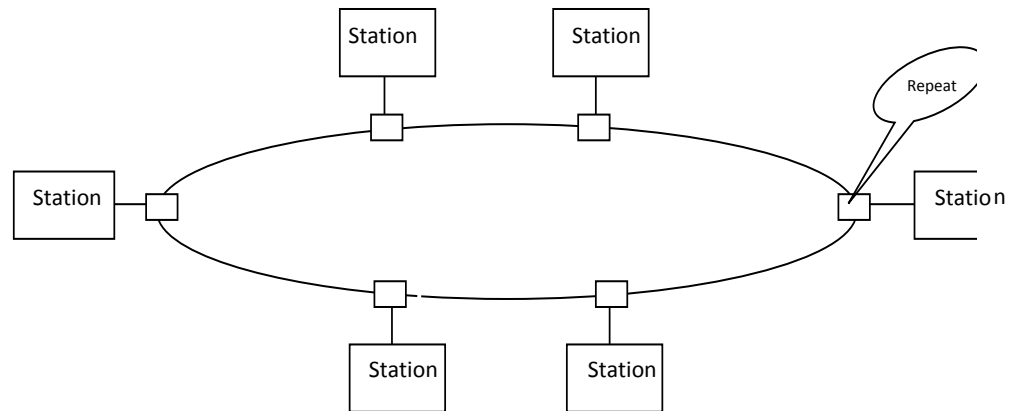
**Bus Topology :** The star topology is an example of point to point topology. Bus topology on the other hand is multipoint. In bus topology, a long cable is used that acts as the backbone of the network. All the devices are connected to the cable by drop lines and taps. Data that originates from a station goes to both the directions from the bus. Each station on the bus receives the data and matches its address field. If the destination address is not same as the node's address, the data is discarded and sent back to the bus otherwise the data is accepted. Bus topology is efficient in terms of the length of wire required to connect the nodes and is also easy to install. Addition of nodes in the bus however causes problems. Also, if a fault occurs in the bus, the entire system will fail. An example of bus topology is shown in Fig 2.2.



**Fig. 2.2: Bus topology**

**Ring Topology:** In a ring topology, each node is connected only to two of its adjacent nodes. The structure of the network is in the form of a logical ring. Signal in the ring travels only in a single direction station to station until it reaches the destination node. A station upon receiving a signal not intended for it, regenerates the signal using repeaters and sends it to the next station and this process continues until the signal reaches its destination. In ring topology, fault finding is relatively easier. Generally, a signal keeps circulating all the time in the ring. If a station does not receive a signal within a specified time period, it can issue an alarm. The alarm can inform the network operator about an issue in the network and

its location. Ring topology also suffers from the same problem as the previous two. The failure of a station in the ring disrupts the communication because the signal is not regenerated. Ring topology is shown in Fig 2.3.



**Fig. 2.3: Ring topology**

### 2.5.2 LAN Software/ Operating System

**Servers:** For providing storage and resource sharing a LAN uses a dedicated computer that controls the resources. This computer is known as the server. It contains both the hardware and software interface for the LAN. The most commonly used LAN servers are:

- a. File Server
- b. Printer Server
- c. Modem Server

A file server is a computer that is used to share storage space for files. Apart from this, it is also used for providing periodical backup and as a gateway for other servers within or between LANs. A printer server is used for sharing the printer resources and handles printing related tasks of all the workstations connected to the LAN. The modem server is used for connecting the workstations within the LAN to outside networks such as the Internet.

LAN operating systems or network operating systems are the systems that are primarily designed to support networking tasks such as providing file sharing and printer access to multiple workstations connected to a LAN. Such operating systems provide multi-user and multi-tasking facilities. They also include specialized network devices such as router, switch and firewall. Some examples of network operating systems are: Novell Netware, IBM LAN Server, and Novell SIT Netware. Some multi-purpose operating systems such as Windows NT and OpenVMS also have networking capabilities integrated into the system.



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## 2.6 Wide Area Network (WAN)

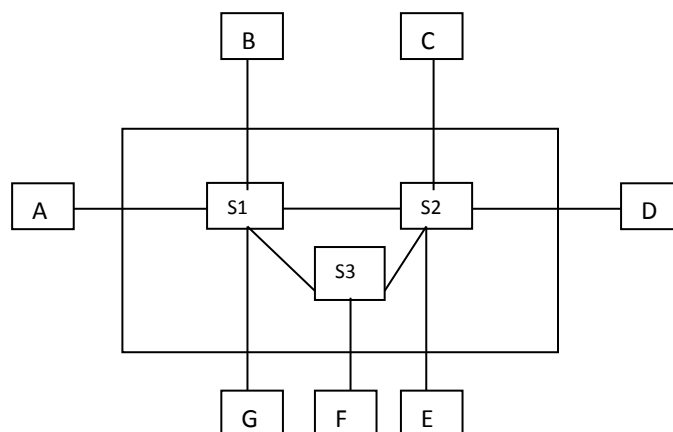
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A Wide Area Network (WAN) is a communication network that covers a large geographical area such as a country or a continent. The largest WAN in the world is the Internet which connects the whole world. A WAN is usually constructed by connecting various smaller networks such as LANs through routers. Although, the simplest architecture of the WAN could be a dial-up line that connects a personal computer in home to the Internet. Such type of WAN is known as a **point-to-point WAN**. The type of WAN that connects multiple smaller networks through routers to form a single larger network is known as the **switched WAN**. Point-to-point WAN is mostly constructed using a leased-line obtained from a service provider such as a telephone or Cable TV network provider that connects a home computer to the Internet Service Provider (ISP).

### 2.6.1 Switching

For larger networks, connecting each device on the network to every other device or to a hub like structure (like in mesh and star topologies respectively) is not particularly feasible. It requires large amount of cables for connection which increases the cost of setup. Further, large part of the channel remains idle for most of the time. The possibility of using a bus topology is also ruled out because of large distance between devices and the possible existence of more number of devices than the capacity of the channel. The better solution in such cases is to use **switching**. Switches are devices that are capable of creating a temporary connection between two nodes in the network. A switched network consists of a series of interconnecting switches. An example of a switched network is shown in Fig. 2.4.

There are three types of switching techniques that are used in networking. These are circuit switching, packet switching and message-switching. Out of these, the first two are more commonly used while the third one has been phased out, though it has some application in networking.



**Fig 2.4: Example of a switched network**

**Circuit Switching :** In circuit-switching, switches are connected by physical links. Each link is divided into n channels using multiplexing. Any two nodes are connected using a dedicated path consisting of one or more links. In circuit-switching the connection must be established before starting communication and the resources must be reserved for the entire duration of communication. Here, the data flows continuously during the communication and there is no addressing involved. Circuit switching is usually done on the physical layer. A common example of circuit switched network is the communication over a telephone line.

**Packet Switching :** In packet switching, the data is first divided into fixed length or variable length packets. The packets are then sent over the network, the packets pass through the communication channel in order to reach the destination. There are two types of packets switching techniques used:

- ❖ Datagram
- ❖ Virtual circuits

In Datagram switching, each packet is treated independently of the others, even though it might be the part of the same communication. Each packet contains the source and the destination addresses which are used for its transmission to the correct destination. There is no reservation of resources. Whenever, a packet is received by a switch it processes it and routes it to the correct path. Since, there is no reservation of resources; a packet might face delay in transmission. A switch serves packets on a first-come-first-serve basis and a packet must wait until its turn to get transmitted to the next suitable node. Datagram switching is mostly done on the network layer.

Virtual circuit switching combines both circuit switching and datagram switching. Like in datagram switching, virtual circuit switching uses packets and like circuit switching, a fixed path is defined between the sender and receiver before the transmission begins. However, this path is not physical but logical. The path remains unchanged during the entire duration of communication and each packet passes through the same logical path to reach the destination. The resources can however be allocated either initially or on demand. This type of switching is normally implemented on the data link layer.

## 2.6.2 Connecting Devices

In this section, we shall discuss about connecting devices that are used for connecting two or more LANs. As discussed earlier, switching helps in connecting multiple devices in a network. For transmitting data from the sender to the receiver, proper routing is needed. Routing functionality is provided by devices such as bridges, routers and gateways at different layers.

**Bridges:** Bridges are used both at the physical and data link layer. At the physical layer they simply act as repeaters but at the data link layer they

also provide routing facility. They can check the physical (MAC) address of the data frame and use it to route the data frame. They do not have capability to change the address of the data frame. Bridges are used to connect two or more LANs that share same protocol in a Wide Area Network. Bridges have filtering capability and can pick the data frame from a LAN that are intended for a device in other LAN and pass these data frames to the other LAN. The data frames intended for a destination in the same LAN are dropped. Since, all the LANs connected by the bridges use same protocol, processing time for data frames at the bridges is minimal. However, bridges cannot be used for connecting two different types of LANs.

**Routers:** Routers are devices normally used to connect two different types of LANs or a LAN with a WAN over large geographical distances. Routers operate at the Network layer of the OSI model. Routers maintain a table called as the routing table which is used to make decisions about the route of a packet. All routers in a network participate in a routing protocol to determine the network topology. The information gathered in this manner is used to determine the best route between a sender and a receiver. For large networks, the routers are placed at such locations so as to minimize the link costs and prevent large scale network failures. The devices are then connected to the nearest router.

**Gateways:** Gateways are also used for connecting two different types of LANs or WANs. Gateways are often used interchangeably with the routers. However, there is a subtle difference between a gateway and a router. Gateways operate at the application layer of the OSI model whereas routers operate at the network layer. Gateways can therefore connect two networks that use different types of network models. For example, a network using the OSI model can be connected with a network that uses the Internet model. Gateways access the data packets and convert them from one protocol format to another before forwarding. Gateways can also provide security by filtering unwanted application layer messages.

### 2.6.3 Types of WANs

Wide Area Networks are mainly used for long distance communication and for connecting remote devices. In this section, we will discuss some of the commonly used WANs.

- 1. Public Switched Telephone Network (PSTN):** It refers to international telephone system which carries analog voice data using copper wires. It consists of a number of telephones connected through a public exchange network. It is based on the ITU-T standards that allow different networks across countries to interconnect with each other. Later, this network started to be used for data communication also. The network was modified and advanced time-to-time so as to achieve high speed and reliable data transfer.

**2. Public Switched Data Network (PSDN):** It is used for providing data services using multiple Wide Area Networks (WANs). It provides a variety of switching techniques including circuit switching, packet switching and message switching. These networks provide high level of reliability and high quality of connections and can support both high and low data speeds.

**3. Value Added Networks (VANs):** Value added services are used for sharing received, stored and forwarded messages. Such service providers process, store and manipulate data sent over the network so as to add value to it. Initially, value added networks only provided message storage and forwarding facilities. But such services failed to be the attractive choice after the arrival of low cost services provided using Internet. As a result, the VAN network providers added more services to their value added suite in order to remain in competition. Nowadays, they provide services such as secure email, encryption, management and reporting. Electronic Data Interchange (EDI) is one of the application areas where VDN is used. Here, two trading partners exchange trading documents such as purchase orders, invoices and transportation etc. We shall discuss EDI in detail in the next section.

**4. Integrated Services Digital Network (ISDN):** It is the international standard for end-to-end digital transmission of voice and data. It enables simultaneous transfer of digital data over standard phone lines that are used for both voice calls and data transfer. It is based on a circuit-switched telephone network that allows access to packet switched telephone networks. Once a widely used technology, nowadays it is largely replaced by DSL and cable services which provide fast speed at low costs and is now rarely used for Internet access.

**5. Private Networks:** Private networks are built by individual offices and institutions for special purposes. They might be connected to the Internet for providing wide range of services. Whatever standard technology is available can be used for developing such networks.

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## **2.7 Metropolitan Area Network (MAN)**

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Another category of network that lies between a Local Area Network and Wide Area Network is Metropolitan Area Network (MAN). It covers an area of a town or a city. MAN is used to provide high-speed connectivity to a small number of users spread across a town or city normally to the Internet. An example of a MAN could be the part of the connection provided by a telecom company to home users through a high-speed DSL (Digital Subscriber Line). MANs are not very common and the most commonly occurring networks are LANs which are privately owned and

connected through routers and leased lines to the Internet that forms a very large WAN.

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## 2.8 Summary

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In this unit, we discussed the basics of computer networks. We first defined networks and their types namely LAN, WAN and MAN. Then, we discussed about the network architecture. We saw that the process of communication through a network is divided into various steps aka layers which clearly define the functions to be performed during various stages in communication. We also briefly discussed the OSI reference model which is the oldest model developed for setting a standard procedure for data communication. We then discussed each type of network in detail. We first defined LAN, then we discussed some of the important LAN topologies, their advantages and disadvantages, then we discussed about LAN software and some of the commonly used LAN operating systems. In the section on WAN, we defined WAN and introduced the concept of switching which allows temporary connection between two devices for transfer of data. We discussed two of the commonly used switching techniques viz, circuit switching and packet switching. Next, we discussed the connecting devices which are used to connect LANs and WANs to create a larger network. The resulting network could be as large as the one that can connect the whole world (e.g. Internet). Next, we discussed some examples of WANs. In the last section we provided a brief introduction to MANs.

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## 2.9 Review Questions

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1. What do you understand by network architecture? Name the network architecture used in the Internet.
2. Which LAN topology requires smallest length of wire to establish connections in the network? Which topology requires the largest?
3. What do you understand by switching? Write one real world example each of circuit switching and packet switching.
4. Write a short note on Router.



# UNIT-III

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## ADVANCED CONCEPTS IN NETWORKING

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### Structure

- 3.1 Introduction
- 3.2 Objectives
- 3.3 Internet
- 3.4 E-Mail
- 3.5 Electronic Data Interchange
- 3.6 NICNET
- 3.7 Summary
- 3.8 Review Questions

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### 3.1 Introduction

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In the previous units, we discussed the fundamentals of data communication and the basic concepts of networking. In this unit, we shall discuss some of the advanced concepts in networking. We shall discuss one of the most important applications of networking that is the Internet. We will also discuss the concept of an electronic mail and its characteristics. We will then discuss an application of networking developed specifically for business purposes that is the EDI. Lastly, we will discuss NICNET which is an application developed by the government of India for educational purposes.

### 3.2 Objectives

After learning this unit you should be able to:

1. Explain about Internet and its applications
2. Describe Email
3. Define EDI
4. Define NICNET

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## 3.3 Internet

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Internet is the world's largest communication network that connects a large number of networks across the world. It was initially developed by the US department of defense and at present includes various public, private, business, government and academic networks. The Internet uses TCP/IP communication protocol for transmission of data. It has several high bandwidth data lines that are called "backbone". The major Internet hubs (ISPs) connected to the backbone provide lines for giving access of Internet to the common people. Some of the important services provided by the Internet are listed below:

- a. **E-mail:** It is a platform that allows users to send and receive messages electronically. We will discuss more about email in the next section.
- b. **USENET:** It is a collection of messages on various subjects submitted by the users of the service. These are posted to servers on the Internet. It is the precursor to the Internet forums used today. Here, posts are threaded and are categorized according to subject categories.
- c. **TELNET:** Abbreviation for Terminal NETwork, it is an application program that allows users to remotely access other devices using Internet. It facilitates remote login into another system so that the local terminal appears to be the remote terminal. It is a general purpose client/server application program based on standard TCP/IP protocol for virtual terminal service proposed by ISO.
- d. **FTP:** It is a standard protocol for copying a file from one system to the other. It is also provided by TCP/IP and allows transfer of file regardless of the differences that might be present between the two systems internally (e.g. directory structure etc.) and the type of data contained in the file.

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## 3.4 E-Mail

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E-mail (or electronic mail) is a software service that is used for sending and receiving messages electronically between individuals or a group of individuals. Email is one of the most common and highly used applications in communications and networking. An email system, actually involves much more than just sending and receiving messages. It is concerned with multimedia mail, database access, document sharing, scheduling etc. An E-mail system mainly consists of a server and a client. The email servers are computers that store and process messages which can be accessed by users using an email client or through a web mail service. The messages stored on the server can also be downloaded using the email client for offline use.



**E-Mail Servers:** There are three types of E-mail servers which are commonly used. These are briefly discussed below:

1. **SMTP Server:** SMTP refers to Simple Mail Transfer Protocol. SMTP server is responsible for delivering message to the recipient. It is a computer program running SMTP. The e-mail messages are first sent to the SMTP server which is responsible for delivering it to the receiver.
2. **POP Servers:** These are servers that run the Post Office Protocol. It gives users of the e-mail service access to the messages stored in the user's account.
3. **IMAP Servers:** These are servers running the Internet Message Access Protocol. This protocol is more advanced than the POP and allows users to access folders created by them and synchronize the folders and messages on the server with those stored on the user's local machine.

**E-Mail Client:** E-mail clients are software that provide the users an interface to access their e-mail messages stored on the server. The client uses POP or IMAP to connect to the server and downloads/ synchronizes messages and displays it to users. Nowadays, web-based e-mail services are more common that provide access to user's email through web browsers.

### 3.4.1 Characteristics of Email System

A good email system should provide ease of access and easy management of emails to the users along with proper management of directories at the server and secure and reliable services. The specific characteristics of a good email system are discussed in this section.

- a. **Easy Management:** For large e-mail systems, thousands of users exchange messages every day. This puts huge burden on the system administrator. A good email system should be designed in such a way that it can handle heavy traffic. Large email systems will also require large storage of email. Therefore, the email system should also aim at efficient utilization of storage space.
- b. **Reliability:** It is vital for effectiveness of any e-mail system. E-mail systems should avoid incompatible naming conventions and addressing so as to avoid loss of mail while crossing gateways. Reports for tracking performance and cost should also be used.
- c. **Security:** E-mail system should be especially efficient at providing secure e-mail services to its users. This implies securing the directory structure at the e-mail server. Along with this, it is also important to allow people to access their own e-mails easily and connect with other users. An efficient e-mail security service is provided by X.500 that codifies directory structure and also allows linked systems to find and query each other.

- d. **Scalability:** An efficient email system should allow the size of directory to grow smoothly along with demand. It should also provide smooth migration from or co-existence with the host. Scalability has two underlying steps – synchronization and propagation. Synchronization is transaction based process which is concerned with bringing directions up to date within a system while propagation involves sending directory updates to other servers. A scalable email system should allow smooth working of both these procedures as the size of the system grows.
- e. **E-Mail Text Editing:** A good email system should also provide the users with sufficient editing features so as to allow them to write personalized messages with required formatting. Some such important features include- ability to cut, copy and paste, font choices, spell checking, automatic differentiation of text with initial message and OLE (Object Linking and Embedding) for graphics and sound embedding.
- f. **Remote Accessing:** This involves several activities such as offline message creation, bulk transfer of mail, offline directory service etc. A good email system should also provide these facilities to the users.

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### 3.5 Electronic Data Interchange

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Electronic data interchange (or EDI) is the technique that allows electronic interchange of business documents among the trading entities.

#### Understanding EDI

Business trading involves exchange of various types of documents. Two most common such documents are purchase orders and invoices. Initially, everything used to be manual so that manual entries were maintained for all kinds of records associated with the business. Later, computers were started to be used for this purpose. Though the use of computers has reduced manual work, still a significant amount of manual work is associated with exchange of business documents. Consider for example, the business between two entities that exchange purchase orders and invoices. The normal course in this case would be that the buyer will generate the purchase order using her computer. Then, she will either fax or email this order to the supplier. The supplier upon receiving the order will re-enter this order into her system and print the invoice. This invoice will then be emailed or faxed back to the buyer. The buyer will then again enter the invoice details into her system for further processing. As you might have realized, this whole process still involves a large amount of manual work. It would be more useful and time-saving to have a system which can generate the purchase orders, invoices etc. automatically in the electronic form, allow automatic exchange of these documents between the buyer and supplier systems and can also translate these documents into a human-readable form whenever required. EDI is an application that is

developed for doing these tasks. It allows the computer-to-computer exchange of business documents among the trading partners.

### **3.5.1 Benefits of EDI**

EDI has several benefits over the manual system of exchanges in trading. Some of the benefits are given below:

1. EDI transactions eliminate the need of paper, printing, storage, filing and postage etc. thus it greatly reduces the cost of transaction
2. Increases efficiency as data does not need to be entered multiple times
3. Reduces the chances of errors
4. Saves time
5. With the reduction in amount of manual work required, the requirement of staff also reduces and hence the cost of business is further reduced.

### **Components of EDI**

EDI has three main components as listed below.

- EDI Standards
- EDI Software
- Third party providers

### **3.5.2 EDI Standards**

Since, EDI is concerned with exchange of information between two or more computers; the documents generated by it must follow a standard format so that any trading partner system can read it regardless of the type of system. For successfully conducting the trading operation, EDI standards are maintained both for formatting and communication. EDI formatting standards provide guidelines regarding the preparation of EDI documents while communication standards are concerned with how these documents will be transferred electronically from one system to the other. Some of the issues addressed by EDI communication standards are:

1. Communication passwords and identification codes
2. Rate and transmission mode
3. Line protocols
4. Network availability and service level
5. Communication links

X. 400, AS2, OFTP, FTP and FTPS are some of the EDI communication standards.

### **3.5.3 EDI Document Types**

**ANSI X 12:** It is the standard for EDI documents developed by the Accredited Standards Committee X 12. ASC was chartered by the American National Standards Institute (ANSI). The ANSI X12 standards are used by various business organizations across the world. EDI standards continue to be modified in today's time as new sets of transactions appear which may be candidates for standardization.

#### **Retail Industry Standards**

The need for retail industry standards arose when the traditional EDI standards developed for transportation industry seemed inadequate for handling specific requirements of retail industry. The Uniform Communication Standards (UCS) was developed for grocery segment and was adopted by several other retail sectors. It is a subset of the ANSI X12 standards.

#### **International Standards**

Another important international standard for EDI is EDIFACT. EDIFACT was developed under the United Nations. EDIFACT has been adopted by ISO and is responsible for developing syntax rules and data dictionary for it. EDIFACT has become the de-facto choice for standards for businesses carrying international operations using EDI.

### **3.5.4 EDI Software**

EDI software consists of computer programs that can automatically convert the unstructured files to specific format as required for EDI transactions. They also receive messages from outside systems and convert them from the standard EDI format to company specific format so that it can be used for internal processing in the company. Thus, the main tasks of EDI software are data formatting, conversion of data from company specific to EDI format and vice-versa and communication over the EDI network. EDI software are available for mainframe computers as well as for mini and microcomputers. EDI software require continuous maintenance and up gradation of environment after establishment. Smaller businesses generally do not possess enough IT resources to manage their own EDI environment. Such companies can also use hosted or software-as-a service based EDI.

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## **3.6 NICNET**

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The National Informatics Centre is an institution of the government of India that provides e-governance facilities to government bodies at the

district, state and national level. It operates the NIC Network (NICNET). It provides Management Information Services (MIS) and computerisation facilities to several ministries and departments associated with central and state governments across the country. The main aim of NIC is to use computer networking to enable efficient exchange of information between the centre, state and districts as well as among the various departments of the government bodies.

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### **3.7 Summary**

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In this unit, we learnt about some of the important applications designed on the top of a computer network. We first discussed the Internet, which is the world's largest internetwork connecting billions of computers across the world. We also studied about some of the platforms built using the Internet. In the next section, we discussed about e-mail. E-mail is a software service used for sending and receiving messages electronically. We also discussed about three different types of e-mail servers- the SMTP server, the POP and the IMAP server. SMTP server is responsible for delivery of message while POP and IMAP servers are concerned with storage and access of email. The e-mail client on the other hand provides the platform for reading and writing messages and other services. We also discussed the important characteristics of a good e-mail system. Electronic Data Interchange is the facility provided for electronic exchange of documents among trading partners. It enables paperless business work and simplifies business transactions by automating the manual data entry and other tasks. We discussed about EDI standards, document types and also about EDI software. In the last section, we discussed NICNET which is an initiative of the NIC to connect various government offices and ministries using computer networks. It provides software solutions for governance tasks and also aims at connecting centre, with the state and districts in a hierarchical manner through computer networks.

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### **3.8 Review Questions**

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1. Why is standardization important in EDI? Discuss any two types of EDI document standards.
2. Write any two examples of e-mail clients.
3. What do you understand by scalability of an e-mail system? Why is it important to consider scalability while designing an e-mail system?

4. Find out some of the software solutions developed by NICNET in different sectors. Write short note on the work of NICNET based on it.

---

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॥ सरस्वती नमः सुमनसं नमस्कृतम् ॥

Uttar Pradesh Rajarshi Tandon  
Open University

## Certificate in Computer Course

# CCC-1.1

## Office Tools and Internet

Block

# 4

### INTERNET AWARENESS

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## Course Design Committee

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<b>Prof. (Dr.) Ashutosh Gupta</b> (Director-Incharge) School of Computer and Information Science, UPRTOU, Prayagraj	<b>Chairman</b>
<b>Prof. R. S. Yadav</b> Department of Computer Science and Engineering MNNIT-Allahabad, Prayagraj	<b>Member</b>
<b>Ms. Marisha</b> Asstt. Professor, School of Science, UPRTOU, Prayagraj	<b>Member</b>
<b>Mr. Manoj Kumar Balwant</b> Asstt. Professor, School of Science, UPRTOU, Prayagraj	<b>Member</b>

---

## Course Preparation Committee

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<b>Dr. Ravi Shankar Shukla</b> Associate Professor, Department of CSE, Invertis University Bareilly-243006, Uttar Pradesh	<b>Author (Block 1, 2)</b>
<b>Ms. Marisha</b> Asstt. Professor, School of Science, UPRTOU, Prayagraj	<b>Author (Block 3: Unit: 1, 2, 3)</b>
<b>Mr. Manoj Kumar Balwant</b> Asstt. Professor, School of Science, UPRTOU, Prayagraj	<b>Author (Block 4, Unit: 1, 2, 3, 4)</b>
<b>Dr. Sudhkar Pandey</b> Head, Department of IT, NIT, Raipur, Chattisgrah	<b>Editor (Block 1, 2)</b>
<b>Prof. (Dr.) Ashutosh Gupta</b> (Director-Incharge) School of Computer and Information Science, UPRTOU, Prayagraj	<b>Editor (Block 3, Block 4)</b>
<b>Mr. Manoj Kumar Balwant</b> Asstt. Professor, School of Science, UPRTOU, Prayagraj	<b>Coordinator</b>

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## BLOCK INTRODUCTION

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In this block you will learn an overview of internet, Internet tools, Web browsers, and visiting Websites. The first unit describes you about the working of Internet and various services offered by it. This unit will explain how networks, ISPs, Domain Name Server, and server works. Here, you will learn about IP address, URL and hyperlink. You will be explained the various ways to get the Internet connection using Internet Service Providers. In second unit, you will learn about an email, File Transfer Protocol and their working. This unit will describe you how to use these services. In third unit, you will learn about some popular Web browsers like NCSA Mosaic, Netscape Navigator, CHROME, Mozilla Firefox and Internet Explorer. This unit will describe you the various features offered by these Web browsers. You will also learn to use bookmarks, RSS, plugins using Internet Explorer in this unit. After studying this unit, you will be able to perform some important operations that are frequently used with Web browsers. In last unit, you will learn to download files on the Internet. In this unit you will be explained about various types of Websites available on the World Wide Web and their uses.



# UNIT-I

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## INTERNET : AN OVERVIEW

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### Structure

- 1.1 Introduction
- 1.2 Objective
- 1.3 What is Internet
- 1.4 How to Connect a Computer to the Internet
- 1.5 Hyperlinks and Uniform Resource Locator (URL)
- 1.6 IP address
- 1.7 Domain Name System (DNS)
- 1.8 Client, Server and Port
- 1.9 Services on Internet
- 1.10 Summary
- 1.11 Terminal Questions

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### 1.1 Introduction

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Today, the Internet is possible by Networks, routers, ISPs, DNS and powerful servers. Without these extremely important components, the Internet would not be possible. And without the Internet, our life would be very different. Now a day, the Internet has become an important part of our life. There are so many things that we can do with the Internet. For example, it can be used as the source of information, entertainment, education and work. To efficiently use these various services, a basic understanding is required. You will be surprised, when you think that all the information are sent in milliseconds to ever corner of the world. In this chapter, you will learn the underlying technology behind the working of Internet and fundamental concepts involved.

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### 1.2 Objective

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After studying this chapter, you should be able to:

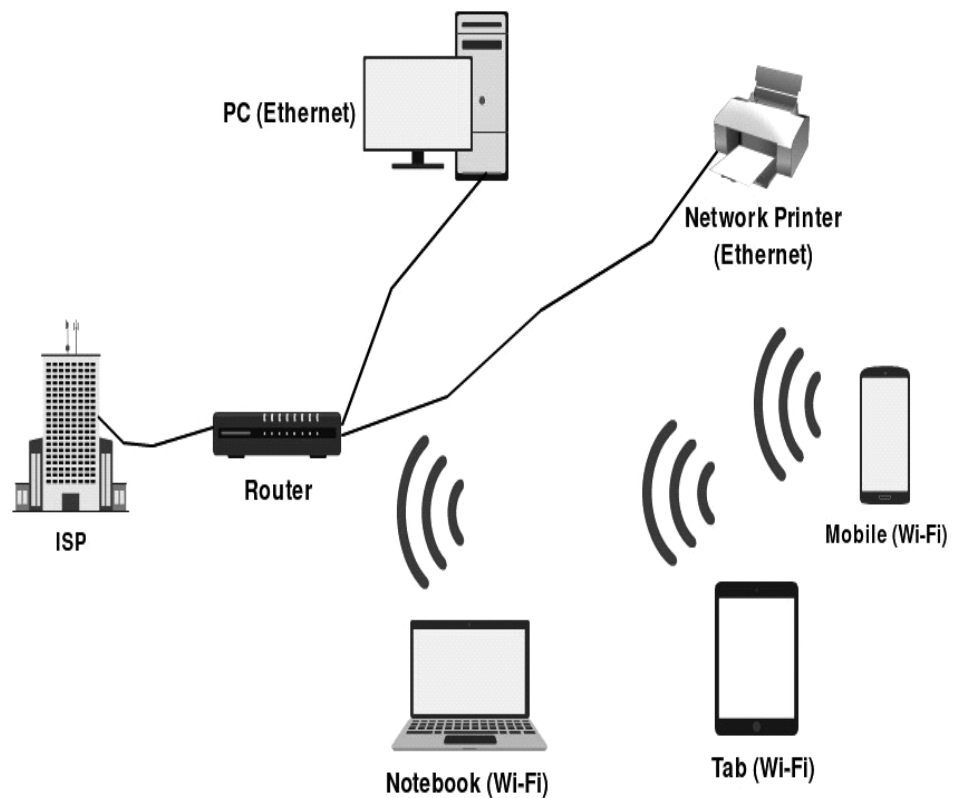
- Understand how the Internet works.
- Explain how Network, ISPs, DNS and server work.
- Understand how you get connected to Internet.

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## 1.3 What is Internet

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The Internet is a huge collection of computers from every corner of world. These computers are connected to each other by telephone lines, network cables, fibre-optic or through wireless signals. In general, every computer on the Internet are not connected with every other computer. Instead, individual computers in an organization are connected through a local area network (LAN) and one of the computers on this local area network is physically connected to the Internet. So, the Internet is publicly-accessible network that consists of many smaller networks (shown in Figure 1.2) including domestic network, business network, academic network and government networks. The connections in the network are made using telephone lines, cable data lines, fibre-optic, or even wireless signals as shown in Figure 1.1. A computer connected to the Internet is commonly referred as a host. Each host computer accesses services on Internet by sending and receiving data in digital form using protocols. For example, Simple Mail Transfer Protocol (SMTP) for electronic mail, file transfer protocol (FTP) for moving files, telnet for accessing information and hypertext transfer protocol (HTTP) for serving web pages.



**Figure 1.1: Devices like phone, laptop, desktop computer etc. can be connected to the Internet through ISP**

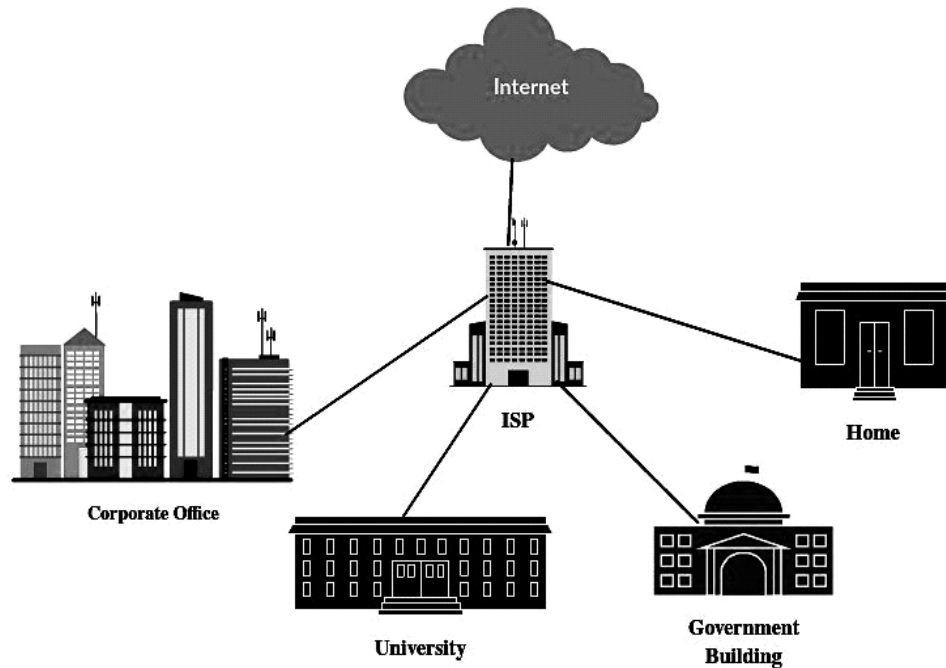
The Advanced Research Projects Agency Network (ARPANET) was the first Network which is considered as a predecessor to the modern Internet. The ARPANET was developed by the U.S. government during the Cold War, in order to build a robust and reliable communication network. This network was built by connecting several computers that could communicate simultaneously and would continue to run even when a single node was taken out. There is a common misperception that the Internet is same as the World Wide Web (WWW). But, the Internet is different from the World Wide Web. The World Wide Web is a massive collection of web pages, pictures, audio, videos and other online contents that are accessed through web browser software. The World Wide Web was originally designed in 1991 by Tim Berners-Lee at CERN. One important feature of web pages is their use of hyperlinks. Hyperlinks present within the web pages allow you to quickly move from one web page to other web pages. So, you can jump to these web pages, even if the web pages are sitting on different servers located at different parts of the world.

---

## **1.4 How to Connect a Computer to the Internet**

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An internet Service Provider (ISP) is a company such as BSNL, ACT Fibernet, Airtel Broadband, Hathway, MTNL etc. that provide internet access to their customers by using copper, fibre optics, or even satellite communications. We all have some sort of devices in our home or business such as your phone, laptop, desktop computer etc. These devices can be connected to the Internet through ISP as shown in Figure 1.1. The ISP has dedicated computers that act as servers to serve customer's request to access web pages or e-mail. There are several Internet Service Providers (ISP) in each locality. You can get installation of Internet connection by paying some nominal charges which can be monthly or annually. You can choose any one of the available options that best fits your requirements. You can choose a high bandwidth broadband or leased line connection, if you need a high speed internet connection. If you need an internet connection on a single PC then you choose a low bandwidth or dialup connection. Some small services can be made available anywhere and anytime by using your mobile phones. These days, you can even find wireless connections in several places like Railway Stations, Universities, Corporate offices, etc. To access these wireless connections, your device should be attached with a Wi Fi card. So, there are various ways by which you can get connected to internet through the ISPs. These can be mainly classified into following categories.



**Figure 1.2: An Internet Service Provider**

### **Dial-up Connection**

Dial-up Connection is the most basic type of internet connection available from ISPs. Dial-up connection requires your computer, Internet browser, modem, telephone Connection and internet account from the ISP as shown in Figure 1.3. Your computer acts as a “Client” or “Terminal” and the computer on the ISP side which provides Internet access is known as ‘Host’. The host computer is full time connected to the internet just like a Leased Connection. Host computer carries all the commands from a client machine and forward them to Internet. When the Host computer receives data and information from internet, it passes back to the client computer. The client computer uses modem to access the “host” computer. 56K modems are widely available that allows user to surf the Web at 56 Kbps. These types of modem are supported by most ISPs.

### **Cable inside your Home**

## **Leased Connection:**

A leased connection is sometimes also known as a dedicated line. It provides a high speed internet access. It is secure and most expensive type of Internet connection. It uses a reserved circuit which is always active. A traditional telephone service reuses the same line for different conversations. A leased line connection keeps a single open circuit available at all times. An Internet Service provider places a special electronic device called router at your site and establish a dedicated link. A router connects a local network to the Internet and allows all members of the local network a complete Internet access. A leased line connection offers higher bandwidth than other types of Internet connections such as a simple dial-up connection, residential DSL and cable internet broadband service. The high cost of this type of connection discourages most people. This type of connection is mostly used by large institutions like corporate offices and government agencies. A major benefit of this connection is that it is available all time i.e. 24 hrs a day, seven days a week, (24x7).

## **DSL (Digital Subscriber Line or Dedicated Service Line) Broadband Connection:**

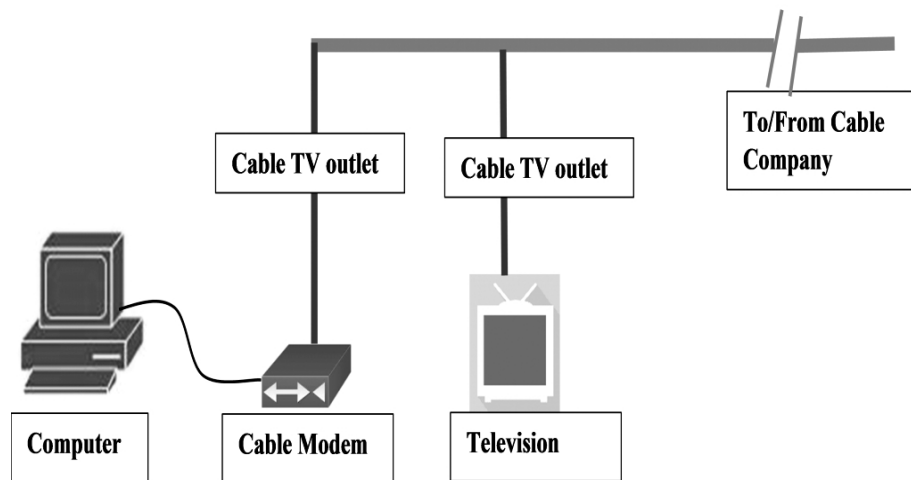
DSL provides a high-speed internet connection by using the same telephone wire that you see in your street. DSL uses the same phone line but works on a frequency band that is different from the phone connection. A standard telephone wire at your home consists of a pair of copper wires. These copper wires are capable of carrying more than the phone calls. They offered greater bandwidth (or range of frequencies) which is much more than as required for voice. DSL uses this "extra capacity" to carry internet signals on the same wire without affecting disturbing its ability to carry phone conversations. This way, DSL creates a dedicated circuit that filters out standard phone calls and Internet signals. In a dial-up connection, either the phone will work or the Internet will work, but both will not work together. With DSL, the phone will remain active while the Internet is being used. DSL broadband connection requires a DSL modem, a telephone line and a computer with Network Interface Card (NIC). DSL offers higher Internet speed than a dial up connection. It offers speed rate between 256 Kbps-20 Mbps, while estimated data speed in a dialup connection is 56 Kbps at a maximum.

## **Cable Modem Connection**

Now, if you have a cable TV, you can get a high-speed internet connection from your cable provider (as shown in Figure 1.4). Cable modem internet connection provides faster Internet access than a dial-up but it is sometimes slower than DSL. In a cable TV system, each channel is usually given a 6-MHz slice of the available cable bandwidth. The **coaxial cable** used for cable TV system can carry hundreds of such signals. A cable company offers Internet connection using the same cable, but Internet information is put on a separate channel. A cable modem system is place at customer end that puts downstream data (data sent from the Internet to an individual computer) on a 6 MHz channel. On average, most

people download more than they upload. There is a cable modem termination system (CMTS) at the cable provider's end that places upstream data (data sent from an individual to the Internet) requires even less of the cable's bandwidth, just 2 MHz. The Cable modem may present inside or outside of your computer. Sometimes, the cable modem is a part of the set-top cable box.

#### Cable inside your Home



**Figure 1.4: Cable Modem Internet Connection**

#### Reasons a Page Cannot Be Displayed

Sometimes, you cannot access a particular web page and sees a generic message 'Page cannot be displayed'. The main causes for this problem can range from a simple typo error in the URL to a number of different reasons. The possible cause for this problem falls in one of the following.

1. You have lost your Internet connection. Check your Internet connection (or wireless signal) and try again.
2. The web page does not exist anymore or changed to another URL. Check the web address you typed or use a search engine to find its new web address.
3. Too many users are viewing the web page at once. Wait for a while (sometimes a few minutes or sometimes a few hours) and try again.
4. The server that stores the web page is down. Wait for some time and try again.



## Check your progress

- Q.1 What is an Internet Service Provider (ISP)?
- Q.2 How does the Cable Modem Connection works?
- Q.3 What are the differences between Dial up Connection and DSL Broadband Connection?
- Q.4 How do you connect to Internet through Leased Connection?

---

## 1.5 Hyperlinks and Uniform Resource Locator (URL)

---

A hyperlink (commonly referred as a link) is a text, an icon or graphic in a Web page that contain link to other web page or file. The web pages on World Wide Web are linked to another through hyperlinks. Hyperlink allows you to open a web page without knowing the URL of the web page. When you click on a hyperlink, your browser leaves the current page and opens the link either in same window or in new window. A keyboard can also be used in place of mouse to open a hyperlink. You can press Tab key repeatedly to reach each links on a Web page. When you reached to a desired link, you can press either the Spacebar key or the Enter key on the keyboard to open the link.

A Uniform Resource Locator (URL) is sometimes also called as a web address. It is used for accessing web resources in order to specify their location on a computer network. It gives addresses to web pages by using symbolic words. This way, it provides us a mechanism for retrieving any web pages or resources. An example of a URL is [http://www.uprtou.ac.in/about\\_us.php](http://www.uprtou.ac.in/about_us.php), which is the URL for the U.P.Rajarshi Tandon Open University, Allahabad website. Each part of URL provides some additional information. For Example, the https URL for the IRCTC page shown in Figure 1.5 contains four parts.

**http:// or https://:** The "http" (Hyper Text Transfer Protocol), allows your web browser to know which protocol it will use to access a Web page specified in the URL. The "https" protocol is short form for "Hypertext Transfer Protocol Secure" which allows secure and encrypted transfer of information over Internet while accessing any Web page. The colon ( : ) and two forward slashes ( // ) separate http or https protocol from the remainder sections of the URL. Please note that a URL does not necessarily contain HTTP or HTTPS, instead it may start with other protocols like Telnet and FTP.

**[www.irctc.co.in](http://www.irctc.co.in):** "[www.irctc.co.in](http://www.irctc.co.in)" is the domain name for Indian Railways Reservation Website (IRCTC). The first portion of URL is "www" which stands for World Wide Web. This portion is optional and can be left out many times. For example, typing "<http://irctc.co.in>" would still bring you the IRCTC web page. The last portion of the domain i.e. ".co.in" is a domain suffix. This portion tells you the type or location of the website. For example, ".com" is used for commercial Websites, ".org" is used for an organization, and ".co.in" is used for India. There are many other domain suffixes available to identify other type of Websites. Some of the most Common Domain suffix are shown in Table 1.1.

Domain suffix	Application
.net (network)	Used for network Organisations
.int (international)	Strictly used by organizations that are approved by a treaty between two or more nations.
.edu (education)	Used for specific <u>higher</u> educational institutions.
.gov (Govenment)	Used for governmental entities and agencies.

#### Non-Geographical Domain

Domain suffix	Country
.in	India
.us	United State
.uk	United Kingdom
.cn	China

#### Geographical Domain

**Table 1.1: Common Domain Suffix.**

**/eticketing/:** This portion of the above URL is the directory name on the server that contains IRCTC web page. The webpage **loginHome.jsf** is located in /eticketing/ directory on the server. The web page can also reside deep inside the multiple directories, For example, the Webpage "TatkalBooking.html" can be found on the server in /tatkal/en/ directory.

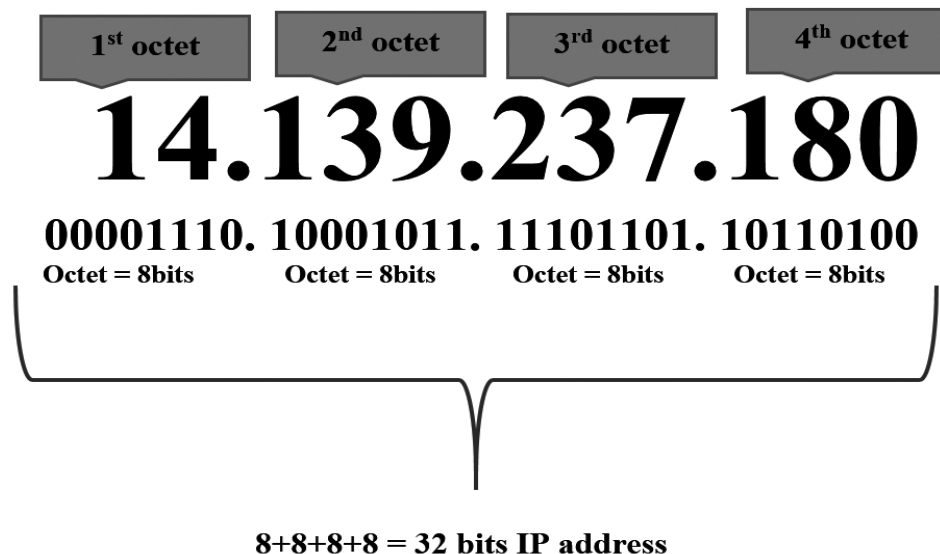
**loginHome.jsf:** Finally, “loginHome.jsf” is a Web page on the IRCTC domain name. This web page’s name ends with .jsf file extension which indicates that this is a jsf web page. A web page may also contain other file extensions like .html, .php, .asp, .cgi, .xml, .jpg, and .gif. Each of these extensions is used for different purposes for performing different functions. This can be thought of different types of files on your computer serve different purposes.

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## 1.6 IP address

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We are generally more comfortable in remembering words rather than numbers. But, each computer on the Internet is identified with a unique address known as an Internet Protocol Address (or IP Address). Usually, an IP address looks like this: 103.252.142.19. The computing devices such as smart phones, personal computers and tablets use this IP Addresses to identify itself and communicate with other devices on the Internet. Any device connected to internet must have a unique IP address in order to access various services on the Internet. An IP address is similar to a house address or a telephone number that is required to uniquely identify or communicate with a particular person. A traditional 32 bit IP address is Internet Protocol version 4 (IPv4) that uses a 32-bit number to represent an IP address. This 32-bit number can provide roughly  $2^{32}$  or 4 billion unique IP addresses. An IP address is generally written in "dotted decimal" notation with 4 sets of numbers, each separated by dot. Each set represent an 8-bit number that vary from (0-255). For example, a typical structure of an IPv4 address is shown below.



Today, IPV4 addresses are almost used up due to the rapid increase in the number of devices on the Internet. So, Internet Protocol version 6 (IPv6) is developed to overcome this problem of shortage of IP addresses. The IPv6 uses 128 bits instead of 32 bits that offers virtually unlimited number of unique IP addresses.

## Check your progress

- Q.1 What is URL?
- Q.2 Explain different parts of the URL?
- Q.3 What's the Difference Between a Website and a URL?
- Q.4 What is an IP address?

---

## 1.7 Domain Name System (DNS)

---

It is very difficult to remember IP addresses of all those websites that we visit daily. We are generally more comfortable in remembering words like domain name rather than numbers like IP address. But the internet works on IP addresses. This is where DNS comes into the picture. DNS (Domain Name System or Service or Server) converts a domain name (or URL) into its IP address which the computer understands. It is an Internet service that translates the domain name like "[www.irctc.co.in](http://www.irctc.co.in)" into its IP address (103.252.142.19). The computers on the internet use this IP address to identify other computers and access various services on the internet. The Figure 1.6 shows how the DNS works.



**Figure 1.6: Host want to know IP address of  
<https://www.irctc.co.in/eticketing/loginHome.jsf>**

This is similar to dialling a phone number instead of a name of the person to connect to that person. Although you are good at remembering names of persons, but the phone services work on mobile numbers. Thanks to DNS, you do not need to remember all the IP addresses or maintaining an address book of IP addresses. You can just connect to a domain name server that maintains a massive database of the Internet domain names and their corresponding IP addresses. When you type a URL [www.irctc.co.in/eticketing/loginHome.jsf](http://www.irctc.co.in/eticketing/loginHome.jsf) in your browser, it extracts the domain name [www.irctc.co.in](http://www.irctc.co.in) from the URL. Your Internet Service Provider then connect you to the DNS server to translate it into a machine friendly IP address 103.252.142.19 and then redirects you to the IRCTC

website. However if you already know the IP address of IRCTC website, you can always skip a DNS lookup by directly entering 103.252.142.19 in your browser.

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## 1.8 Clients, Servers and Port

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**Clients & Servers :** Internet servers have made possible the various services on the Internet. The machines or computers available on the Internet are either clients or servers. A server computer or machine provides services to other computers on the Internet. While, a client computer connects to these servers to access services provided by them. A server computer is a special type of desktop computer usually equipped with most advanced hardware to work 24-hours a day and is more reliable than a desktop computer. There are a variety of servers on the Internet such as web servers, e-mail servers and FTP servers. A single server computer may provide more than one services on the Internet. For example, a server computer might be running a software that allows it to act as a Web server, while it might contain other software that allow it to work as an e-mail server or an FTP server. When you open “www.irctc.co.in” website on your computer for reservation, you are using a client computer and accessing the IRCTC Web server. The IRCTC’s server computer finds the requested web page and sends it to you. So, a client’s request to access any web page is passed to the web server software not the e-mail server software running on the server computer. Your Telnet application on your computer will communicate to the Telnet server, your e-mail application will communicate to the e-mail server, and so on.

**Port :** The software services like mail server, file server, web server, proxy server, etc., on a server machine are made available using port numbers. Each software service available on the server is accessed using a port number. For example, web server software running on a server computer is accessed through port 80. Similarly, a file transfer protocol (FTP) server software can be accessed through port 21. This way, a client computer connects to a specific service on a server by using its IP address along with the corresponding port number. After a client gets connected to a particular software service using its port number, it can access the service using a specific protocol. Protocols are simply a set of rules which describe how the client and server communicate to each other for a particular service. For example, every Web server on Internet uses hypertext transfer protocol (HTTP). The HTTP uses port 80, while HTTPS uses port 443. So when you are connecting to a web site like <http://www.nvsp.in>, you are actually connecting to <http://www.nvsp.in:80> with a colon followed by port number. This <http://www.nvsp.in> is an official website for new voter registration, voter ID status, voter ID card correction, etc. Since 80 is the default port for web servers, it can be left off. A port number is a 16-bit number which can provide  $2^{16}$  (from 0 to 65535) distinct ports. The first 1024 ports are reserved for privileged services.

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## **1.9 Services on Internet**

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### **Electronic Mail**

Electronic mail or simply E-mail is a faster and cheaper method of exchanging messages between persons over internet. You can use e-mail to send notes, letters, photos and other documents to one person or even many people at the same time. You can also look the copies of the messages that are sent to other persons anytime. Normally, the post office post takes several days to deliver your letter at its destination. While on other hand, an E-mail just takes only few seconds to arrive at their destination. You can send Email messages anytime of the day or night and it will get delivered immediately. The email service is available 24x7 i.e. 24 hrs a day, seven days a week on the internet. You do not need to worry about the holidays or working time of the post office. You can also send other multimedia files like graphics, images, etc., along with your e-mail. One of the main advantages of the e-mail is that it is very cheap, especially when you are sending messages to other persons residing in other states or countries. A received email can be replied or forwarded to other persons. You can even store it for later use.

### **TELNET**

Telnet is used to access and control remote computers. You can connect your computer to other computers on the internet by using a Telnet program that is available on your computer. Once you connected, you can control remote computers and communicate with them by entering commands on your Telnet program. These commands will be executed on the server like you are directly entering them. The Telnet program grants you full control on all files and applications on remote computers similar to an actual user. The TELNET program only requires a keyboard because there is no graphical user interface as you see in modern operating systems. Everything is displayed on the screen as text. In Windows, the TELNET program is available from the command prompt. The commands available in Telnet program use Telnet protocol.

### **FTP**

The FTP (File Transfer Protocol) is used for exchanging files online similar to Hypertext Transfer Protocol (HTTP). There are two computers involved in an FTP transfer. The first computer is FTP server and second computer is FTP client. The FTP server computer looks on the network for connection requests from FTP client computers. A FTP client computer can make a connection with a FTP server by using FTP client software. Once FTP client computer successfully connected to FTP server computer, the client can perform a number of file manipulation operations such as download files from the server, uploading files to the server and rename or delete files on the server. FTP is used for sharing of files in reliably and efficiently to remote computers on the Internet. FTP works on two different ports: 20 and 21.

## WWW

In earlier days about twenty or thirty years ago, use of public libraries for finding information on any subjects is taken for granted. You could walk to a public library and open up a reference book for finding information you wanted. Now a day, the World Wide Web is taken for granted for online information. You can use any computer, almost anywhere on the earth and access far more powerful source of information than any public library. In this twenty-first century, our life is so dependent on the World Wide Web that it seems to be too difficult to live without it. The World Wide Web is a massive collection of text pages, images, audio files, videos, animations, etc., which can be accessed through any Internet enabled devices and using a web browser. An important point to note that is that all these information are connected together. A web page of text is the basic building block of the World Wide Web. A website consists of several web pages that are sitting on same server computer. Every web page contains highlighted phrases called links (or hypertext links). Using these hypertext links you can move to another web page on this website or another website. These web Pages are viewed by a specialized tool called Internet browser or simply browser (like Internet Explorer and Mozilla Firefox.). It is a software program specifically designed to retrieve web pages based on the users' request. The process of viewing information on Internet using browser is known as Browsing or Surfing.

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### 1.10 Summary

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In summary, you learned:

1. The Internet is a huge collection of millions of computers from every corner of world that are connected to each other by telephone lines, network cables, fibre-optic or through wireless signals.
2. You understand how do an Internet Service Provider (ISP) provides internet access to their customers.
3. You learned about URL and hyperlink.
4. An IP address is necessary to uniquely identify a computer on the Internet and communicate with other computers.
5. Domain Name System (DNS) translates the domain name like "www.irctc.co.in" into its IP address like 103.252.142.19.
6. The machines or computers available on the Internet are either clients or servers. The machines that provide services to other machines are servers. And the machines that connect to those services are clients. A server machine makes its software services available using port numbers. Each software service available on the server is accessed using a port number.

7. You learned about some of the Internet services like Email, Telnet, FTP, and WWW.

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## **1.11 Terminal Questions**

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- Q.1 What is the main purpose of DNS?
- Q.2 Discuss the role of an IP address in Internet?
- Q.3 What is a Port? Explain its role in Internet.
- Q.4 Describe the various services offered by Internet.
- Q.5 Explain the role of an Internet Service Provider (ISP)?
- Q.6 What are the differences between a server and a client computer?



# UNIT-II

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## INTERNET TOOLS

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### Structure

- 2.1 Introduction
- 2.2 Objective
- 2.3 Electronic Mail
- 2.4 FTP
- 2.5 Telnet
- 2.6 Summary
- 2.7 Terminal Questions

---

### 2.1 Introduction

---

Today, the various services like Email, FTP, Telnet, WWW, etc., have made the Internet popular. These services make the internet an essential part of our lives whether it is our workplaces or personal life. You can use these services to communicate with other people, whether they are sitting in next building or on other part of the world. These services including communication, education, e-commerce and access to unlimited web resources provide many benefits to us. In this chapter we will see some Internet protocols other than HTTP. These protocols work much in same way like HTTP where a client software in your computer makes requests to a server computer running appropriate server software.

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### 2.2 Objective

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After studying this chapter, you should be able to:

- Explain about an email and how does it works.
- Understand FTP (File Transfer Protocol).
- Understand Telnet and how do you use Telnet in Windows.

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### 2.3 Electronic Mail

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Now a days, many people use e-mail daily to send messages to their colleagues, friends, and family. They daily sign-in the websites and their check their email account for new messages. Every day, people install email program on their smart phone, tablet and computer. It is clear

that the e-mail communication has replaced letter writing and telephonic call in many social and professional environments. Now, the email has become one of the extremely popular communication tools.

### **What Is Email?**

An E-mail or Electronic mail is a digital message that uses your keyboard to write a message on the electronic devices like mobile phones, tablets and computers. An email has always been a simple text message sent to a recipient. But, the ability to add attachments to the email has made it quite long. Even with the attachment the email continues to be a simple text message. An e-mail address is written with a user defined name followed by the email service provider's domain name, both separated with @. For example, *[yourname@gmail.com](mailto:yourname@gmail.com)*.

### **Advantages of an Email**

Some of the reasons that many people use email in their daily life are as follows:

- ❖ **Speed:** People can send email within a minute or seconds from anywhere across the world. This adds huge benefit to many people.
- ❖ **Attachments:** It is quite easy to add any file like picture, PDF, word processor document, movie, program, etc., to an email message and send them to an individual or a group of person. You can share your vacation pictures or spreadsheet to your co-worker with the e-mail.
- ❖ **Accessibility:** An e-mail account can be thought of a large collection of folders containing private messages along with other important documents. You can search through any information or documents contained within the email and so they are always readily available.
- ❖ **A Record:** Email provides a record of a conversation in form of e-mail messages. You can print emails when required. You can utilize your email provider's large storage space to keep your documents available online that can be accessed anytime and anywhere.
- ❖ **Free communication:** The other form of communications like long distance calling or physical mail messages require some charges which can be expensive in some cases. But in case of email, most email providers give you free storage and access to an email account. You can send and receive your electronic mails, store everything online and you do not need to pay anything.
- ❖ **Security:** Email services are specifically built for privacy and security. So you can be confident that your messages and files are only visible to intended recipients and hidden for everyone else.

## How to send, read and reply to E-Mails:

In order to access an email service, you need to first create an email account with any email service providers. You can create a new email account within a few minutes. You just need to sign up by providing few personal information about yourself, an account name and a desired password. Your user ID or username will become part of your email address. For example, if you open Gmail and choose *lastsamurai* as your username, your email address becomes *lastsamurai@gmail.com*. After creating your email account, you can send email messages to other persons by following steps:

- ❖ Open the website of your email service provider on your browser e.g. [www.gmail.com](http://www.gmail.com). And then login by using your user name and password.
- ❖ Click compose button to create a new message. You will see a new screen as shown in Figure 2.1. Similar to letters, email messages also have two main parts: header section and body section. Header section contains address of the recipient and subject of the message. While the body section contains the message itself.

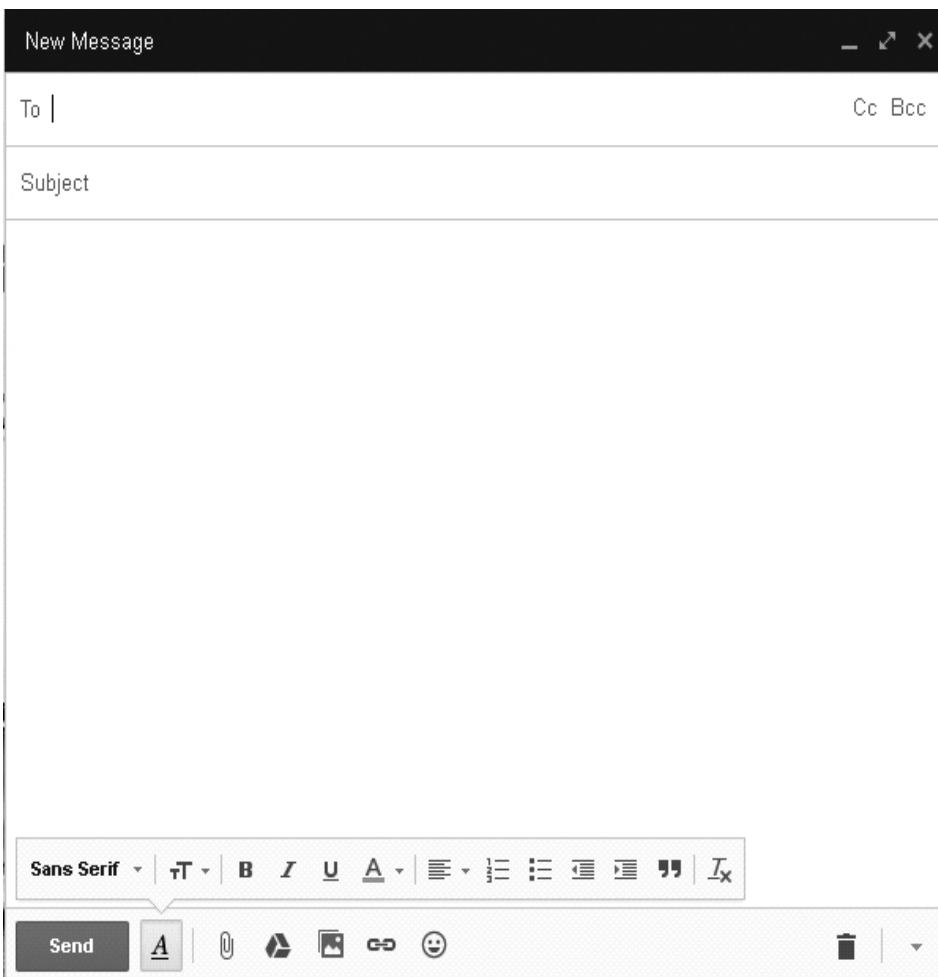


Figure 2.1: An Email dialog Box.

- ❖ Type the e-mail address of the person who is recipient of the message in the “To:” field. If you are replying to a mail, this field will be filled automatically. For multiple recipients, e-mail id should be separated by commas.
- ❖ From field: This field contains your e-mail address. From field is automatically filled with email address of the sender.
- ❖ Type a subject of your message in the “Subject:” field. This field contains the title of the email that describes the content of the email. This field is optional that lets the recipient to know what the e-mail is about, without opening and reading the e-mail.
- ❖ The large text box as shown in Figure 2.1 is used to write the contents of your message. This is the place where you type your main content of the message. The message body often contains your [signature](#) at the bottom, similar to a hand-written letter.
- ❖ In the “Cc” (Carbon Copy) field, enter the email address of those to whom you would like to send a “carbon copy” of your message. This field is also optional. This field allow you to send copies of an email to additional people. For example, you can send an email to Sudhir and CC to Ashok and Shaukat. This e-mail will be sent to Sudhir, however Ashok and Shaukat will also receive a copy of this email. The email addresses are visible to each other in their respective fields.
- ❖ In the “Bcc:” (“blind carbon copy”) field, enter the e-mail addresses of those to whom you would like to send a “blind carbon copy” of your message. This field is similar to CC, except the recipients list of BCC is kept secret. When you add people in CC field, the CC list is visible to each person in this list. For example, if you add *kanahiya@example.com* and [dinesh@example.com](#) in CC field, Kanahiya and dinesh will both know that the other have received the email. In case of BCC, no one but the sender can see the list of BCC recipients. For example, if you add *alok@example.com* and *vikash@example.com* in the BCC list, neither Alok nor Vikash will know that the other has received the email. However, each recipient in BCC list can see everything else, including the CC list and the content of the email. The persons in the BCC list can see only their own email address on the BCC list.
- ❖ Click the Attach files icon to attach file(s) like photos, audio, video, executable files, etc., if required.
- ❖ Finally click the send button to send the message.

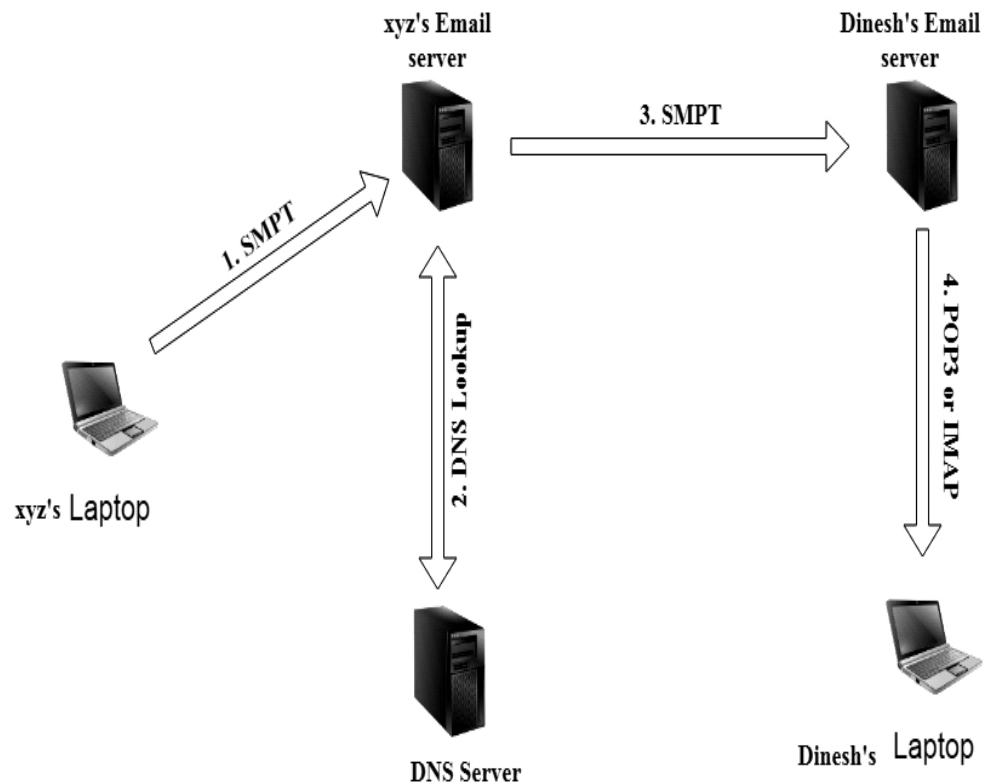
### How E-mail Works

Sending and receiving-mails requires an **e-mail client** (some kind of stand-alone-mail application). Many of you have already used well-known e-mail clients such as Microsoft Outlook, Outlook Express and [Mozilla](#)

Thunderbird. You can also use e-mail services from Gmail (<https://www.gmail.com>) or Yahoo (<https://www.mail.yahoo.com>) where the e-mail client is embedded in their Web pages. Once you have access to any of e-mail services on your computer, you can send and receive e-mails. The e-mail client connects to an **e-mail server or mail server** for accessing the mail services. The mail server runs two different servers. The first one is **SMTP** (Simple Mail Transfer Protocol) **server** that handles all outgoing mail. The other one is either a **POP3** (Post Office Protocol) **server** or an **IMAP** (Internet Mail Access Protocol) **server** that handles all incoming mail. The SMTP server listens requests on well-known port number 25. While, the POP3 listens requests on port 110 and IMAP uses port 143. When you set up your email account, for example, *xyz@gmail.com* with Gmail, the Outlook Express communicates with the mail server –smtp.gmail.com. When you compose a message and send it your friend Dinesh with email id *dineshskt@gmail.com*, here is what happens (overall mechanism is shown in Figure 2.2):

- ❖ Your e-mail client connects to Gmail's SMTP server at smtp.gmail.com using port 25.
- ❖ Now, the e-mail client communicates with Gmail's SMTP server to give the email address of the sender and the email address of the recipient along with the body of the message.
- ❖ The Gmail's SMTP server takes the "to" address (*dineshskt@yahoo.com*) and breaks it into two parts: the recipient name (dineshskt) and its domain name (Yahoo.com). If the "to" address is another user at domain gmail.com, the SMTP server would simply pass the message to the POP3 server of gmail.com. Since the recipient is at another domain which is yahoo mail, Gmail SMTP's server needs to communicate with Yahoo mail's SMPT server.
- ❖ To communicate with Yahoo mail's SMPT, Gmail's SMPT server needs the IP address of yahoo mail's SMPT server. So, it communicates with Domain Name Server (DNS) and requests, "Please give me the IP address of yahoo.com SMTP server" The DNS replies with the one or more IP addresses of the SMTP server(s) on which Yahoo mail operates.
- ❖ Now, Gmail's SMTP server connects with the SMTP server at Yahoo mail using the IP address and port 25. Gmail's SMTP server hand over the message body to the Yahoo's SMTP server. The SMTP server at yahoo mail recognizes the username dineshskt at Yahoo mail. So it passes the message to

yahoo mail's POP3 server, which puts the message in dineshskt's mailbox.



**Figure 2.2: Overall steps involved in sending an email to Dinesh.**

### **Email Flaws**

Unwanted e-mails more commonly known as spam are the biggest problem of the e-mail. With hundreds of these junk emails, your occasional useful emails get lost. Fortunately, most email service providers provide sophisticated filters to sort out the unwanted emails automatically. But these filters are not effective always. However, you can identify and report the spam to block them from incoming in future. You can also identify spam correctly by following details:

- ❖ The sender email address does not belong to someone you recognize.
- ❖ They contain strange attachments or unfamiliar links that causes downloading of malware, viruses, and other types of malicious files.
- ❖ The spam mails ask to enter your personal details like bank account numbers, debit/credit card numbers etc.
- ❖ You can also identify spam from the email service provider of the sender used to send the message.

## Check your progress

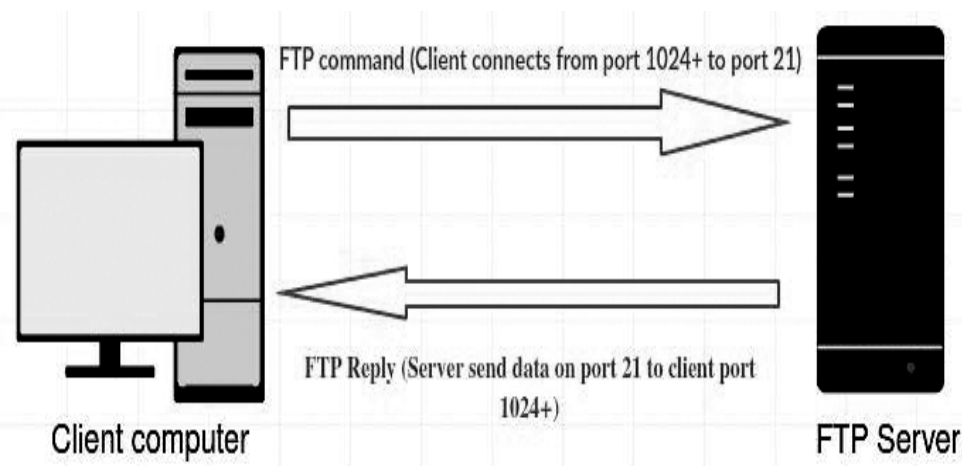
- Q.1 How does the “Bcc:” (“blind carbon copy”) differ from “cc:” (“carbon copy”) field?
- Q.2 What are the some flaws of Email?
- Q.3 What are the various things you can send through an email?

---

## 2.4 FTP

---

File Transfer Protocol (FTP) is commonly used for downloading and uploading files on Internet. This protocol is used to access directories, folders, software, data and text files on remote Computers. FTP works similar to Client/Server model as shown in Figure 2.3. There is a FTP “Client” program running on your computer that enables you to access remote computers. The FTP client program takes FTP commands from user and sends them to the remote computer. To access a remote FTP server, login credential in form of User Login name and password are required. If one does not have an account in the remote FTP server, still he can access to the remote FTP server using anonymous login with limited access. Using anonymous login, anyone can login a FTP server and can access public file archives. FTP works on two different TCP ports: 20 and 21. For successful FTP transfer, both these ports must be opened on the network.



**Figure 2.3: FTP Connection**

**The basic objectives of FTP are:**

1. Reliable and efficient transfer of files between computers on the internet.

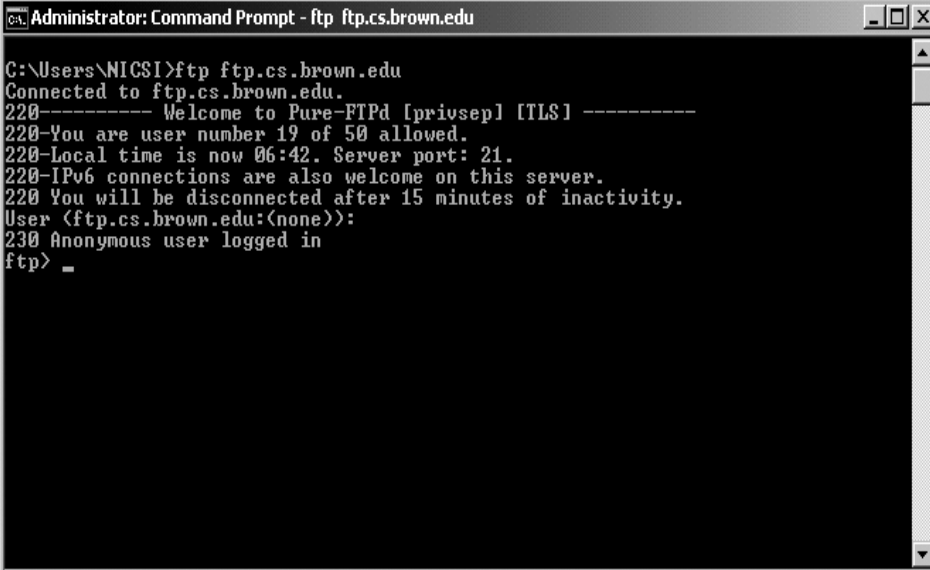
2. Promote sharing of computer programs, files and other data over a network.
3. Encourage direct or indirect access to remote computers.
4. Shield a user from variations in file storage systems among hosts.

### Using ftp program in Windows

In Windows OS, you can use ftp program directly from Command Prompt. You just need to simply type ftp followed by the name of the remote computer (domain name or IP address of the FTP server) to which you want to connect with. For example,

ftp <ftp.cs.brown.edu>

After giving above command, the ftp client program makes a connection with the remote computer. Once you are connected with the remote computer, you will see a welcome message like shown in Figure 2.3:



```
Administrator: Command Prompt - ftp ftp.cs.brown.edu
C:\Users\NICSI>ftp ftp.cs.brown.edu
Connected to ftp.cs.brown.edu.
220----- Welcome to Pure-FTPd [privsep] [TLS] -----
220-You are user number 19 of 50 allowed.
220-Local time is now 06:42. Server port: 21.
220-IPv6 connections are also welcome on this server.
220 You will be disconnected after 15 minutes of inactivity.
User (ftp.cs.brown.edu:(none)):
230 Anonymous user logged in
ftp> _
```

**Figure 2.4: FTP connection**

Sometimes, you may be asked for your username and password associated with the remote machine. FTP is built on the client-server model where one computer acts as a client that sends instructions to other computer called server. Now a day, most Web browsers are built with FTP utilities that allow files to be transferred automatically to your computer from Internet URL. Your browser still uses FTP protocol, but it saves you from direct use of the ftp programs. You can start a FTP session in Windows OS by following these basic steps:

1. Start FTP client program by typing “ftp” on command promptLine “C>”.



2. Now type an address of FTP server to which you want to get connected with.
3. Type Login Name and then a password associated with that particular login name to identify yourself on the FTP server.
4. FTP server will verify the login credentials – username/password. After that, you can access the files on FTP server.
5. Navigate to the desired directory to access files. You can also change the directories

<b>Commands</b>	<b>Description</b>	<b>Example</b>
ls / dir	Listing the contents of remote directory	ftp> ls
Cd	Changing the remote and local directory	ftp> cd dir1
Put	Uploading a file to FTP server	ftp> put filename
Get	Download a file using ftp	ftp> get FILENAME
Pwd	Display current directory on the remote system	ftp> pwd

**Table 2.1: Basic ftp commands**

## **Check your progress**

- Q.1 What are the basic objectives of File Transfer Protocol?
- Q.2 What are the use of ls, cd and pwd commands on FTP?

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## **2.5 Telnet**

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You have already read about Telnet in last chapter that it is used to remotely control Web servers. You can communicate with server computers by entering commands on the Telnet program. These commands will be executed on the server like you are entering directly on the server. The Telnet program grants you direct control over all the rights on files and applications on the server as an actual user. To start a Telnet connection, you must log in to a server computer by entering a valid username and password. The telnet program only requires a keyboard because everything on the screen display as text. Please note that TELNET is a network protocol used to provide a command line interface for communicating with a device over internet. While telnet is a client program that supports the TELNET protocol over TCP. Now a day Telnet is rarely used to connect remote devices anymore. These days most devices can be configured and managed simply through web based interfaces. These are more secure and easy to use than Telnet. Since Telnet transfers all data in plain text without any encryption, it is considered as

insecure. It is possible for intruder to capture your username and password when they are being transmitted. If you are concerned about your data being transmitted, you can use SSH protocol (also referred to as Secure Shell).

### **Difference between Telnet and FTP**

Following are the main differences between FTP and Telnet.

1. Telnet is used for issuing commands to a remote server and listen the responses while FTP is usually used for uploading files to a remote computer.
2. Telnet is limited to use with command line only (like Command prompt) while FTP can be used from a variety of programs including command line, a dedicated application, and even with web browsers.
3. Telnet is always been unsecured and widely replaced by SSH while FTP can be used in a secure way using **FTPS and SFTP**.
4. Telnet is now generally used as diagnostic tool to check working of certain network services while FTP is a reliable and safe method of uploading files to web servers.

### **TELNET Basic Commands**

TELNET protocol defines a standard representation for some functions:

- ❖ IP - Interrupt Process
- ❖ AO - Abort Output
- ❖ AYT - Are You There
- ❖ EC - Erase Character
- ❖ EL - Erase Line
- ❖ SYNCH - Synchronize
- ❖ QUIT - quit session

### **How to Use TELNET in Windows**

You can use TELNET in Windows operating system. Windows OS provides a telnet program that uses TELNET protocol for remote communication with server. This telnet program can be accessed from the Command Prompt window where you type Telnet commands. This Telnet program is available in every version of Windows, but you first need to enable it before using it. The Telnet program can be **enable** in Windows 10, Windows 8, Windows 7, and Windows Vista through following steps.

- ❖ Open Control Panel.
- ❖ Select **Programs and Features** from the list of category items and open it.

- ❖ Click on the **Turn Windows features on or off** link on the left side of the page.
- ❖ Now you will see a window containing list of *Windows Features*. Select the check box next to **Telnet Client**.
- ❖ Now click **OK** to enable Telnet.

In Windows XP and Windows 98, the Telnet program is already installed and ready to use.

### Executing TELNET Commands in Windows

Telnet commands are very easy to execute. These commands can be used from command prompt. You just need to open command prompt and then type telnet followed by any Telnet command. The telnet command syntax is:

```
telnet [host name] [port]
```

Replace "[host name]" with the IP address or domain name of the server (for example "rainmaker.wunderground.com") and replace "[port]" with the port number of desired service and then press "Enter." If asked, type the username and password to log in the remote computer. Port number is not required to specify, if it is available on the default port 23. Otherwise you need to specify the port number also, if it is other than 23. For example, running the command "**telnet** towel.blinkenlights.nl 23" is the same as running "**telnet** towel.blinkenlights.nl". But it is not the same as "**telnet** towel.blinkenlights.nl 666". This would connect to that same server but on port number 666.

### Telnet Games & Additional Information

You can access many useful information all in text form by using a command prompt and the Telnet program only. The majority of Telnet servers do not require any default Telnet user name and password to log on. You can check the weather at [Weather Underground](#) by typing following command:

```
telnet rainmaker.wunderground.com
```

You can even talk to an artificially intelligent psychotherapist named *Eliza*. You just need to type below command to connect with Telehack. If you are asked to choose any command, Enter **eliza**.

```
telnet telehack.com
```

The text based access to internet resources can be fun and exciting. Telnet can be used to access a variety of resources available on the internet. Below is a list of a few interesting places you can try.

1. [rainmaker.wunderground.com](#) :: weather via telnet!
2. [nyancat.dakko.us](#) :: ANSI art animation of "poptart cat", with support for many different terminals ([cool screenshots!](#))

3. [mapsci.me](http://mapsci.me) :: You can view the map in terminal window
4. [india.colorado.edu](http://india.colorado.edu) 13 (Get the time) :: get the time
5. [telnet.wmflabs.org](http://telnet.wmflabs.org) :: telnet gateway to wikimedia content
6. [telehack.com](http://telehack.com) 23 :: Telehack
7. [telehack.com](http://telehack.com) :: Telehack - web
8. [freechess.org](http://freechess.org) 5000 :: freechess.org
9. [towel.blinkenlights.nl](http://towel.blinkenlights.nl) 23 :: Star Wars asciimation
10. [towel.blinkenlights.nl](http://towel.blinkenlights.nl) 666 :: The Bofh Excuse Server
11. [mtrek.com](http://mtrek.com):1701 :: mtrek (star trek themed game)
12. [xmltrek.com](http://xmltrek.com):1701 :: xmltrek (star trek themed game)

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## 2.6 Summary

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In Summary, you learned that:

1. An email is a digital message that uses your keyboard to write on the electronic devices like a phone and a computer.
2. The File Transfer Protocol is commonly used Protocol to access directories or folders, software, data and text files on remote Computers.
3. Telnet is used to remotely control and communicate with Web server.

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## 2.7 Terminal Questions

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- Q.1 How Does Email works?
- Q.2 How do you open telnet program on Windows Operating system.
- Q.3 What is the use of File Transfer Protocol?
- Q.4 Write the steps involve in sending an Email.
- Q.5 Explain how you can use File Transfer Protocol in Windows.
- Q.6 How does the FTP different from Telnet?
- Q.7 Discuss some of the useful information that you can access through TELNET.
- Q.8 Explain how you execute TELNET Commands in Windows.

# UNIT-III

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## BROWSERS

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### Structure

- 3.1 Introduction
- 3.2 Objective
- 3.3 History of Web Browser
- 3.4 Popular Web Browsing Software
- 3.5 Using A Web Browser (Internet Explorer 8)
- 3.6 Searching words and phrases with the Search Box
- 3.7 Adding Bookmarks/Favorites Folder
- 3.8 Printing Web Pages
- 3.9 Using RSS Feeds
- 3.10 Using Plugins or Add-ons
- 3.11 Using Browsing History
- 3.12 Summary
- 3.13 Terminal Questions

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### 3.1 Introduction

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A web browser is a software that is used for accessing various resources available on the World Wide Web. Your computer already comes with a preinstalled browser. Personal computers with Microsoft Windows come with Internet Explorer as a default browser, while Macs operating systems come with Safari as a default browser. If you want to use different browser, you can download Google Chrome, Firefox or Opera. All of these browsers are freely available. The main functionality of any Web browser is to fetch web pages and display them on users' devices. The Web browsers retrieve web resources like web pages, images, and videos from the World Wide Web by their unique URL and display them on your device. When enter a URL, like <https://en.wikipedia.org/>, into your browser, it retrieves the web page with the [Hypertext Transfer Protocol](#). Web pages contain several [hyperlinks](#) to other web pages. When you click on the hyperlink, your browser navigates to a new Web page and thus the process of bringing new Web pages begin again.

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## 3.2 Objective

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After studying this chapter, you should be able to:

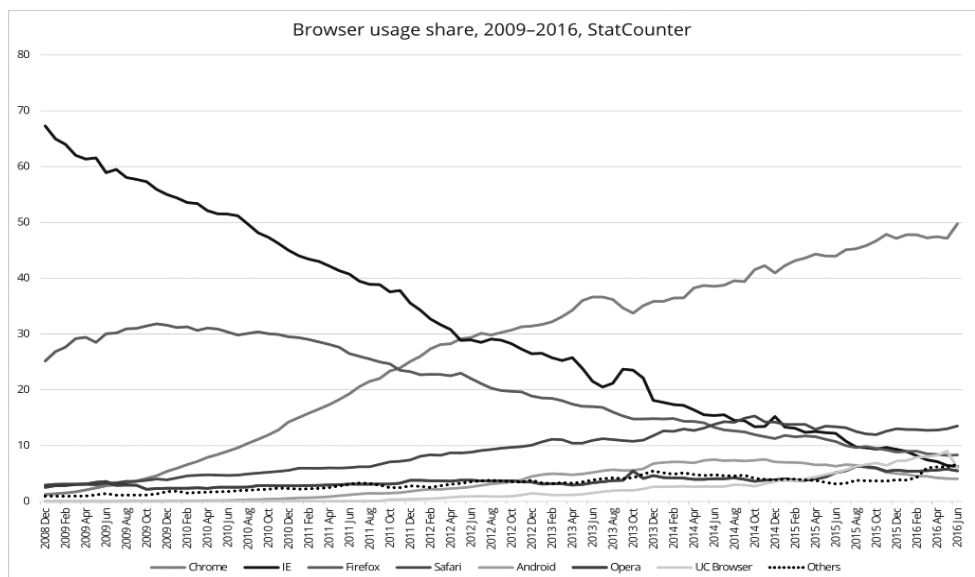
- Explain what the Web browser is.
- Describe various features offered by popular Web browsers.
- Explain the various operations that you can perform with a Web browser.

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## 3.2 History of Web Browser

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The first web browser called Worldwide Web comes in 1990. It was developed by Sir Tim Berners-Lee. After one year, he developed another browser called Line Mode Browser in 1991 that displayed web pages on dumb terminals. In 1993, world's first popular browser called Mosaic came. This browser came with graphical interface that allowed even an average person to easier use and access the World Wide Web resources. This had brought boom to the Internet in 1990s and the Web grew very rapidly. Marc Andreessen, the leader of the Mosaic team soon opened his own company called Netscape and released Netscape Navigator browser in 1994. Soon after its release, the Navigator became the most popular browser at that time. In 1995, Microsoft introduced Internet Explorer that was giving a tough competition to Netscape. Soon after its release, Internet Explorer gained a dominant position in the market and attained a peak market share of Internet over 95% by 2003. Later, Netscape became the Mozilla Foundation and released an open source browser called Firefox in 2004. By 2011, Firefox had reached a market share of 28%. In 2008, Chrome browser was released by Google and got a huge success. It took away the market share of Internet Explorer and became the most popular browser during 2012. The market shares of internet for various browsers are shown in Figure 3.1.



**Figure 3.1: Usage share of web browsers according to StatCounter.**

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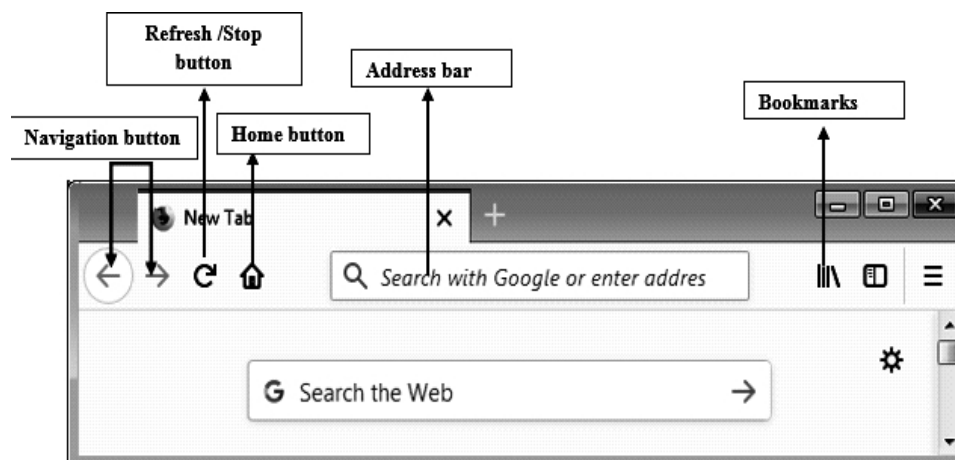
## 3.4 Popular Web Browsing Software

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### Basic features of web browser

Almost all browsers offer you similar features. They allow you to open multiple Web pages simultaneously, either in different tabs or in different browser's windows. They provide you support for the use of extensions. The basic features of a Web browser are following:

- ❖ **Back and forward buttons (Navigation buttons)** is used to go to the previous visited web page or forward to the recent one.
- ❖ **Refresh or reload button** is used to reload a current web page. Most browsers store local copies of visited pages to speed up performance when it is accessed again. This sometimes prevents you to see the most updated information. When you click on refresh button, this will forcefully bring you the latest version of the Web page.
- ❖ **Stop button** cancels web browser's communication with a server and stops loading of page. It is very useful to stop loading of malicious sites, if accidentally opened.
- ❖ **Home button** loads a predefined web page. You can set any web page as browser's home page.
- ❖ **Address bar** is used to enter website's URL to view a web page.
- ❖ **Bookmark button:** It is user defined button that is used to switch to a particular website which is added to the bookmark. It is very useful to create a bookmark button for frequently visited Websites.



**Figure 3.2: Basic control buttons in Firefox browser.**

### NCSA Mosaic:

NCSA Mosaic was the first browser to achieve popularity among the general public. This browser has popularized the World Wide Web. There

are several other browsers available that time, but Mosaic's clean and easily understood user interface has opened the web to the general public. It was also available on Windows operating system and had simple installation. The original version of Mosaic was released for UNIX operating systems. Soon after this release, Mac version and Windows version were also released. This made Mosaic the first browser with cross-platform support of several operating systems. Later, it had shifted its focus to other research and development activities. So, NCSA had stopped developing Mosaic and discontinued its support in 1997. But, you can still download Mosaic browser along with its documentation at NCSA's FTP site-<ftp://ftp.ncsa.uiuc.edu/Mosaic/>. The important features that were offered by Mosaic are following:

- ❖ The main feature introduced by Mosaic was the inclusion of the *image* tag. This had made possible the inclusion of images with text in Web pages. While, earlier browsers only allowed the viewing of images as separate files.
- ❖ It offered a graphical interface (shown in Figure 3.3) with clickable buttons to easily navigate to Web pages. It had also provided controls to scroll the text with ease.
- ❖ Earlier browsers provided hypertext links in form of reference numbers and users typed the corresponding URL to navigate to the linked web page. But Mosaic had made another innovation with a new form of hyperlink. This new form of hyperlink allowed the users to simply click on the link to retrieve the corresponding Web page.
- ❖ Mosaic facilitated support for sound, graphics, and video clips. Mosaic also added other features like bookmarks and history files.



Figure 3.3: NCSA Mosaic 3.0 for Microsoft Windows



## Netscape Navigator:

Netscape Navigator is a discontinued web browser that was developed by Netscape Communications Corporation. During 1990s, it was a dominant web browser in term of usage share, but it got almost disappeared by 2002. It was available for Windows, UNIX, Macintosh, Linux and OS/2 operating systems. The GUI of Netscape Navigator is shown in Figure 3.4. One remarkable innovation introduced by Netscape was the display of texts in a web page as graphics continue to download. So, people could begin reading text in a web page after several seconds of entering any web address, while rest of the content (like graphics) of the web page continue to download. Earlier, web browsers did not display a page until all graphics within the Web page downloaded. This often caused a user to look a blank page for several minutes. Netscape Navigator introduced many new features along with some improved features:

- ❖ It offered support for cookies that store user-specific information and settings for giving a customized experience.
- ❖ It provided support for frames that divide a Web page into multiple parts and each part is allowed to display its content independent of other parts.
- ❖ It offered support for plugins to perform additional functions.
- ❖ It introduced an e-mail client called Netscape Mail and Usenet News called Netscape News.
- ❖ It added support for LiveScript (now known as JavaScript)
- ❖ It added support for FTP uploading.
- ❖ It provided support for proxy auto-config that allows Netscape to automatically choose an appropriate proxy server for fetching a given URL.

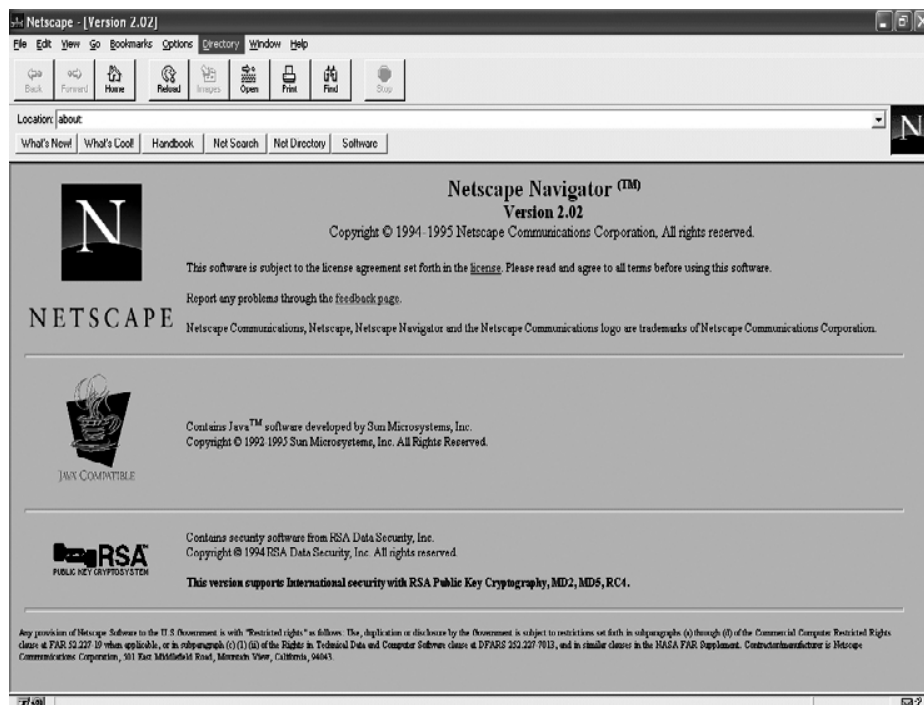
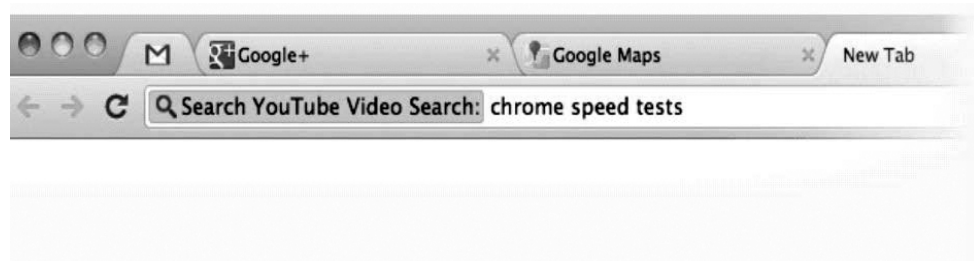


Figure 3.4: Netscape Navigator Browser Interface

**Google Chrome:** Chrome is designed to be fast, simple and secure web browser for the modern World Wide Web. It is compatible with all Operating System and devices. Chrome offers you the following features:

**Speed:** Chrome is designed to be as simple as possible. Chrome launches quickly from your desktop when you double-click the Chrome icon and runs complex web applications lightning fast. Chrome combines search with address bar so that you can type in both searches and web addresses in Chrome's address bar. The address bar has auto-complete functionality that gives you suggestions for searches and web addresses while typing.

**Simplicity:** chrome's window is clean, simple and run smooth. In Chrome, you can open multiple web pages at the same time in multiple tabs all in either same Window or in different Windows as shown in Figure 3.5. You can easily drag and drop Chrome's tab and rearrange them. Chrome offers you a built-in PDF viewer to view PDF files with the chrome browser. You do not need to launch a separate PDF reader to view the pdf files available on the web. When you close Chrome, it remembers all the tabs opened previously. So, you can start your browsing right where you left off last time.



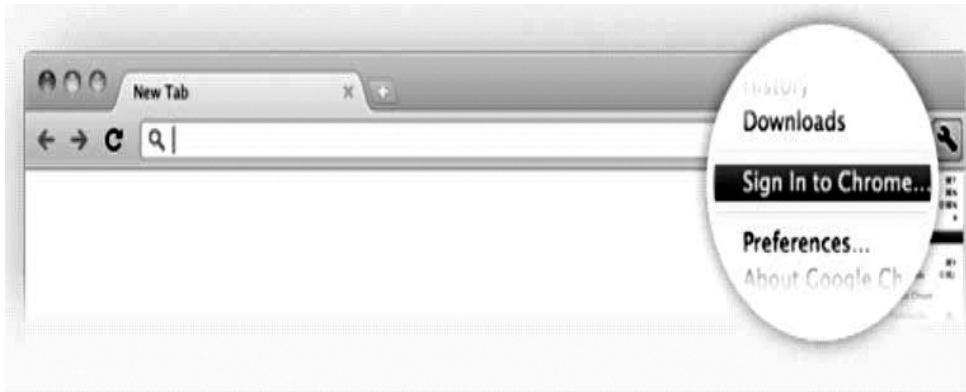
**Figure 3.5: Multiple tabs in Chrome.**

**Security:** Chrome has built-in malware and phishing protection to keep you safer on the Internet. It shows a warning message when you visit suspected web pages containing [malware or phishing](#). Chrome regularly checks for latest updates to ensure that your version of Chrome has the latest security features and fixes.

**Privacy:** Chrome controls your private and sensitive information while you do browsing. Chrome offers you Incognito mode feature where all browsing and download history get deleted as you close the incognito window. You can open normal window, as well as incognito window separately at the same time.

**Customisation:** You can customize your Chrome in many ways. Chrome offers you a number of extensions from the Chrome Web Store to give you more productive and better browsing experiences.

**Signing in:** Chrome offers you Sign in feature by which you can access all your bookmarks, extensions, passwords, history, settings and preferences in all your devices. You can also signed in to all your favourite Google services as shown in Figure 3.6.

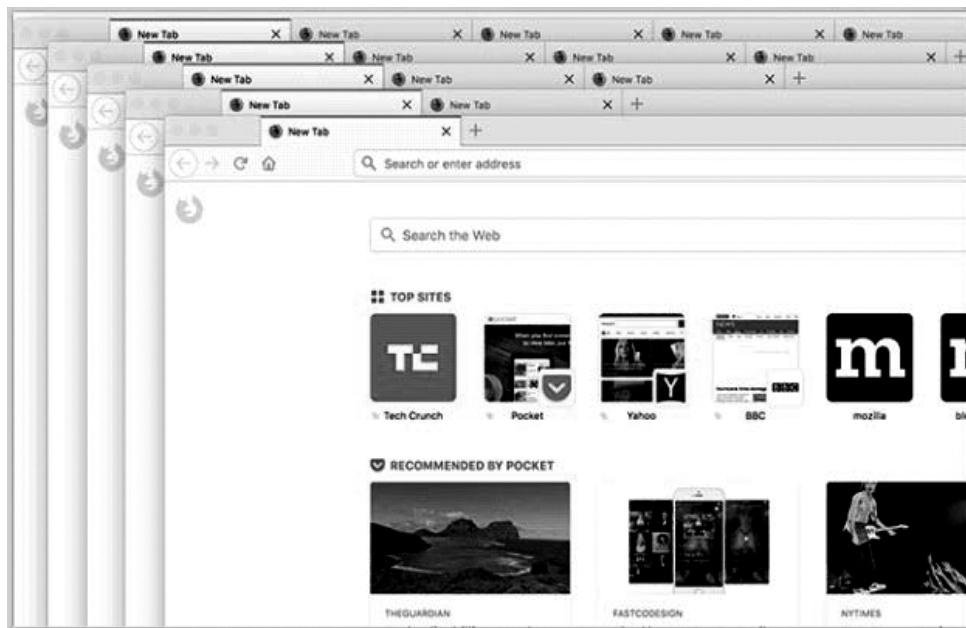


**Figure 3.6: Sign in to Chrome.**

### **Mozilla Firefox:**

Firefox is designed for simplicity, security and extensibility. It is available for Windows, Linux, MacOS and android Operating System. It offers you lots of extensions and themes to customize your Firefox browser as per your need. The main features of Firefox include:

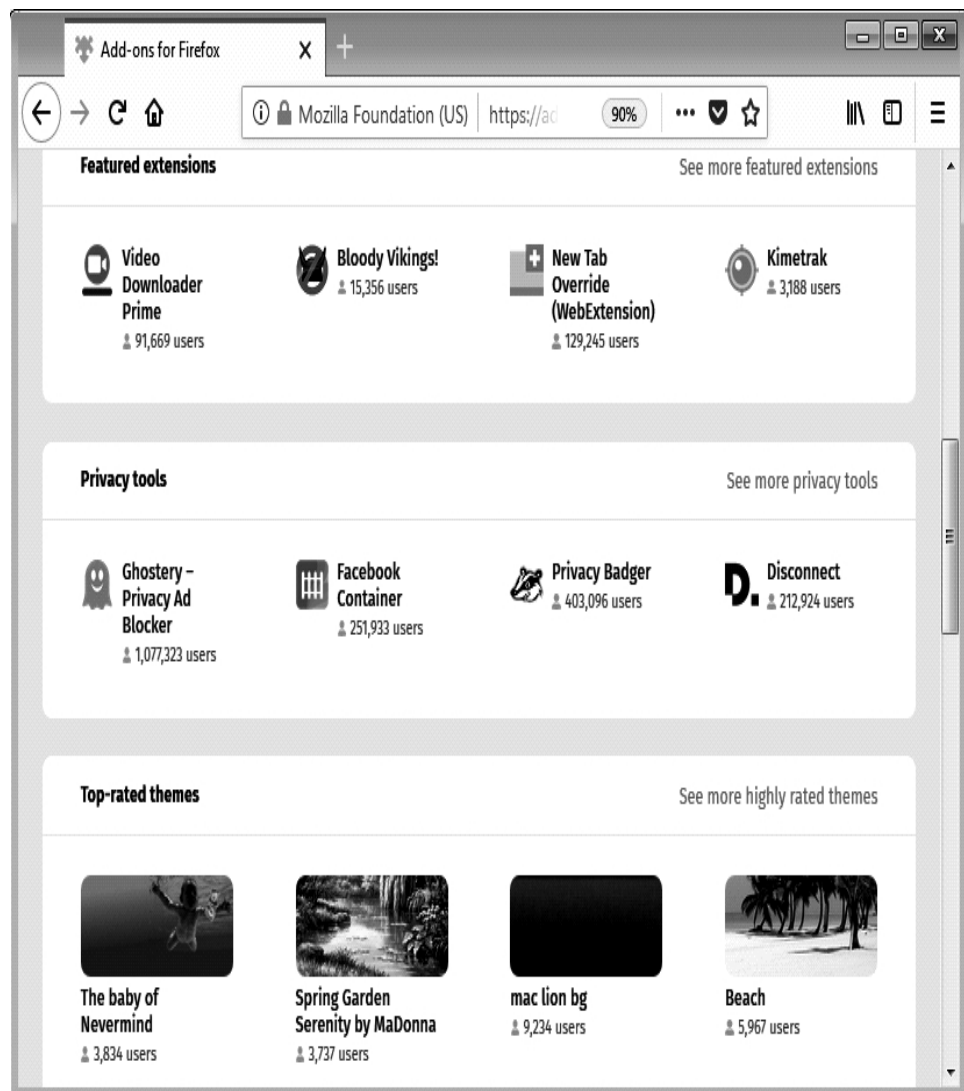
**Smooth browsing:** Firefox offers you to open multiple web pages at the same time with multiple tabs in either same Window or different Windows. You can quickly switch between these tabs as shown in Figure 3.7.



**Figure 3.7: Multiple tabs in Firefox.**

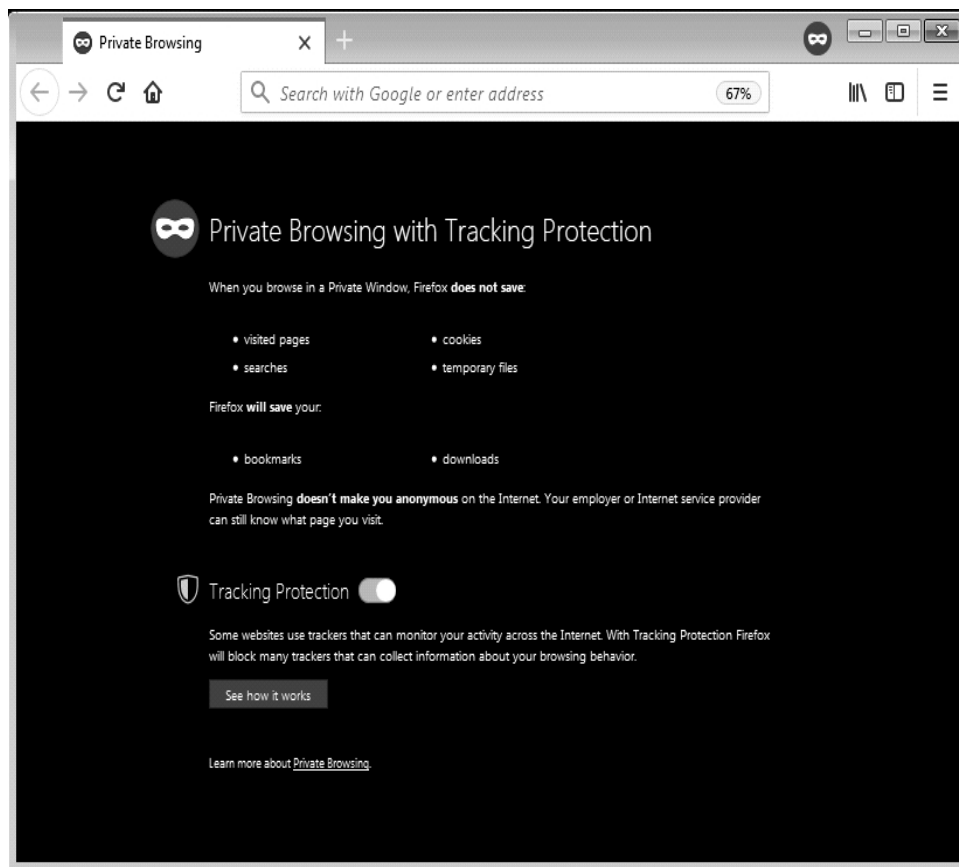
**Sync your devices:** Firefox offers you uninterrupted browsing with Firefox Sync feature. This feature allows you to easily access your bookmarks, tabs and passwords across all your devices like desktop, mobile and tablet. Your Firefox Account stores all your web stuff even your open tabs and saved reads. This allows you to resume your browsing where you left off last time.

**Customization Features:** You can customize your Firefox with thousands of extensions (as shown in Figure 3.8) like LastPass, uBlock Origin, Evernote etc. These extensions are available on Firefox Add-on page. You can also change the Firefox theme as per your mood from theme categories.



**Figure 3.8: Firefox Add-on page.**

**Private Browsing:** Firefox offers you Private Browsing mode (shown in Figure 3.9) to protect your privacy. When you close this Private Browsing window, it automatically erases all of your online information like passwords, cookies and history. Firefox's Private Browsing blocks ads to browse faster and freely.



**Figure 3.9: Private browsing with Firefox.**

### **Check your progress**

- Q.1 What are the features offered by the Netscape Navigator?
- Q.2 Explain some key features offered by Google Chrome.
- Q.3 What do you mean by Private Browsing?

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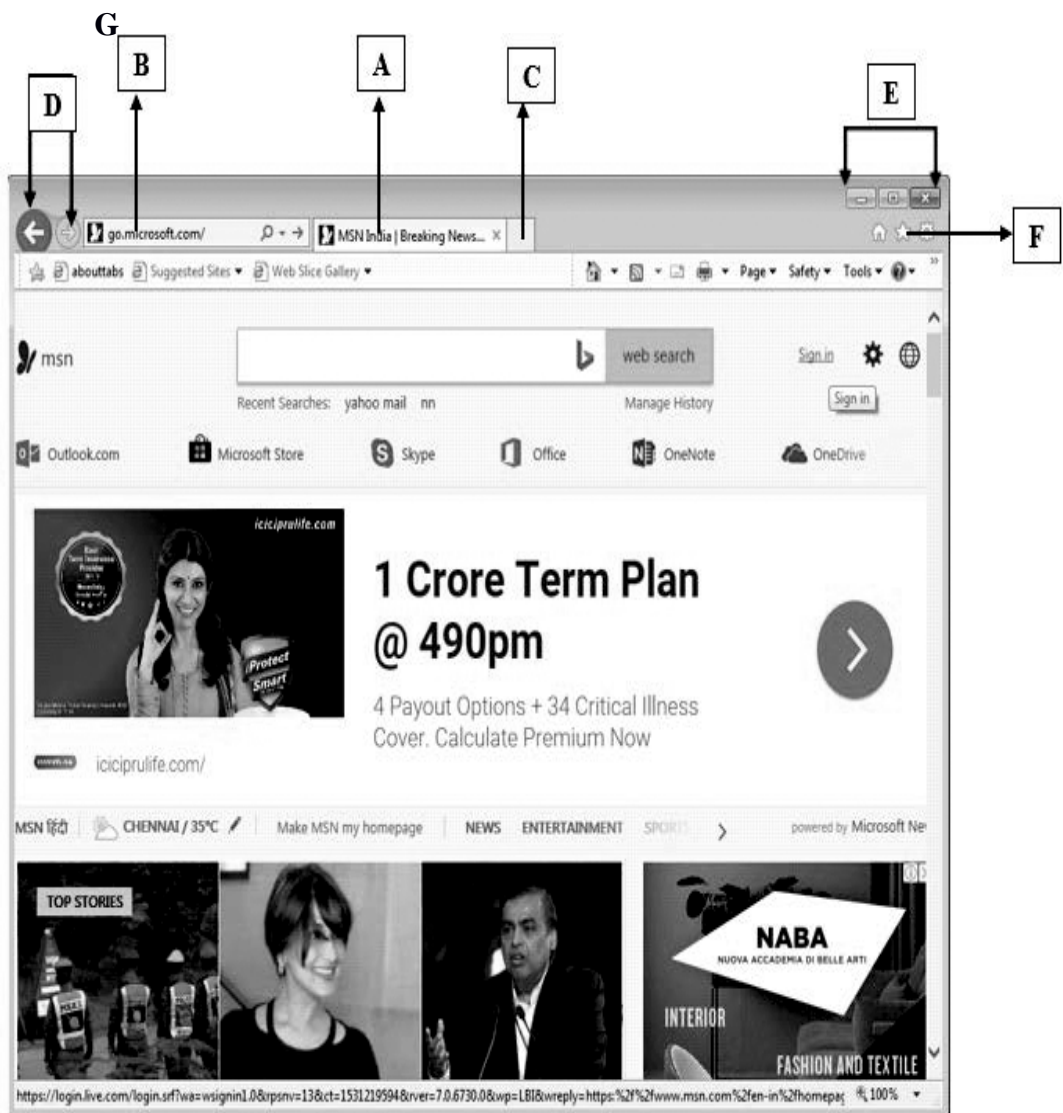
## **3.5 Using A Web Browser (Internet Explorer)**

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Internet Explorer (commonly abbreviated as IE) is a web browser developed by Microsoft and included as default browser in Microsoft Windows operating systems. Earlier, Internet Explorer was one of the most widely used web browser. It had attained a peak usage share of about 95% by 2003.

### **Understanding the Internet Explorer Window**

IE provides you various options for ease of your browsing. Some of important features are shown in Figure 3.10.



**Figure 3.10: Various elements of IE.**

**A Title bar:** This displays the name of the currently active Web page and F program.

**B Address bar:** Here you type web addresses to visit a Web site. **D**

**C Tabbed browsing:** This Open up multiple Web pages in separate tabs for faster, more convenient browsing. **E**

**G Command Bar:** This is used to customize Internet Explorer.

**Favourites Button:** This gives you one-click access to your favourite or frequently visited Web pages.

**Navigation buttons:** These buttons are used for going backward or forward among web pages that you have visited already.

**Minimize, Maximize, and Close buttons:** These buttons are used to minimize, resize, or close Internet Explorer.

## AutoComplete feature in the address bar

When you browse the internet, you come across many web pages. It is difficult for individual to remember all those URL of these web pages. So, if you can't remember a URL, the AutoComplete feature of IE helps you as shown in Figure 3.11. When types a URL in the address bar, the autocomplete feature (in address bar) will automatically recall and display sites based on your past visit. Based upon what you type, it searches into your History, Favorites, and RSS Feeds for correct website match. You can use this feature of IE using following steps:

- ❖ Click the address bar and begin typing. Internet Explorer begins searching through your History, Favorites, and RSS Feeds for matches based on what you've typed.
- ❖ Click the result that you want to view.

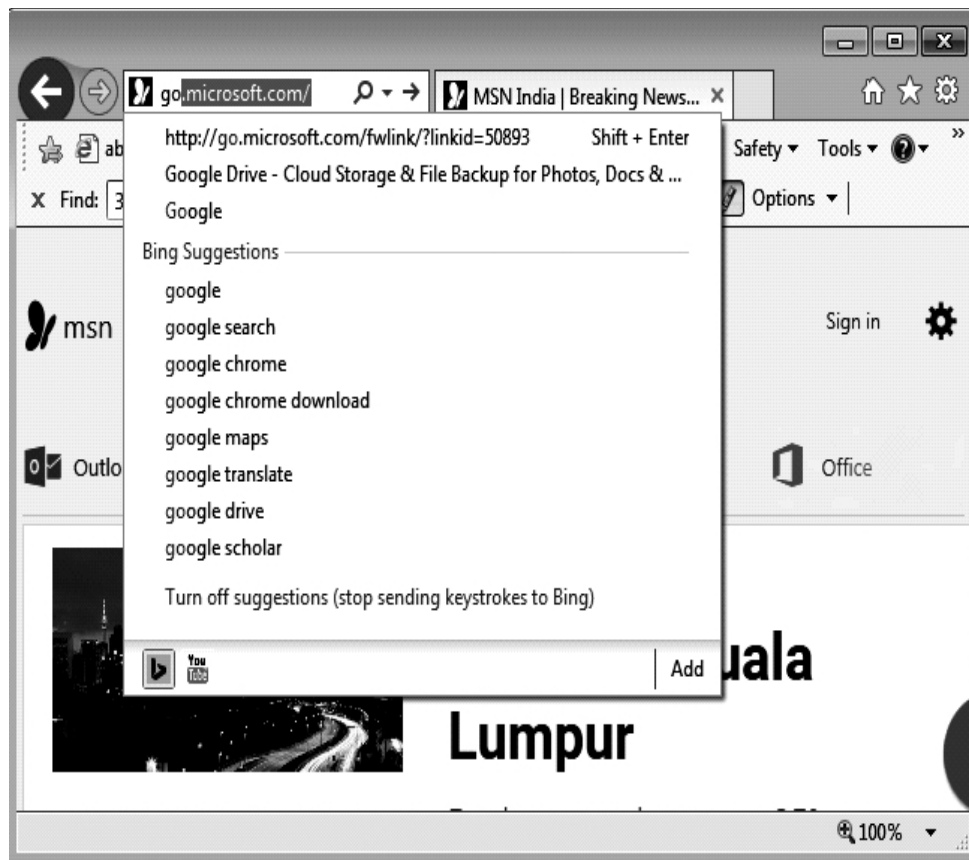


Figure 3.11: AutoComplete feature in the address bar.

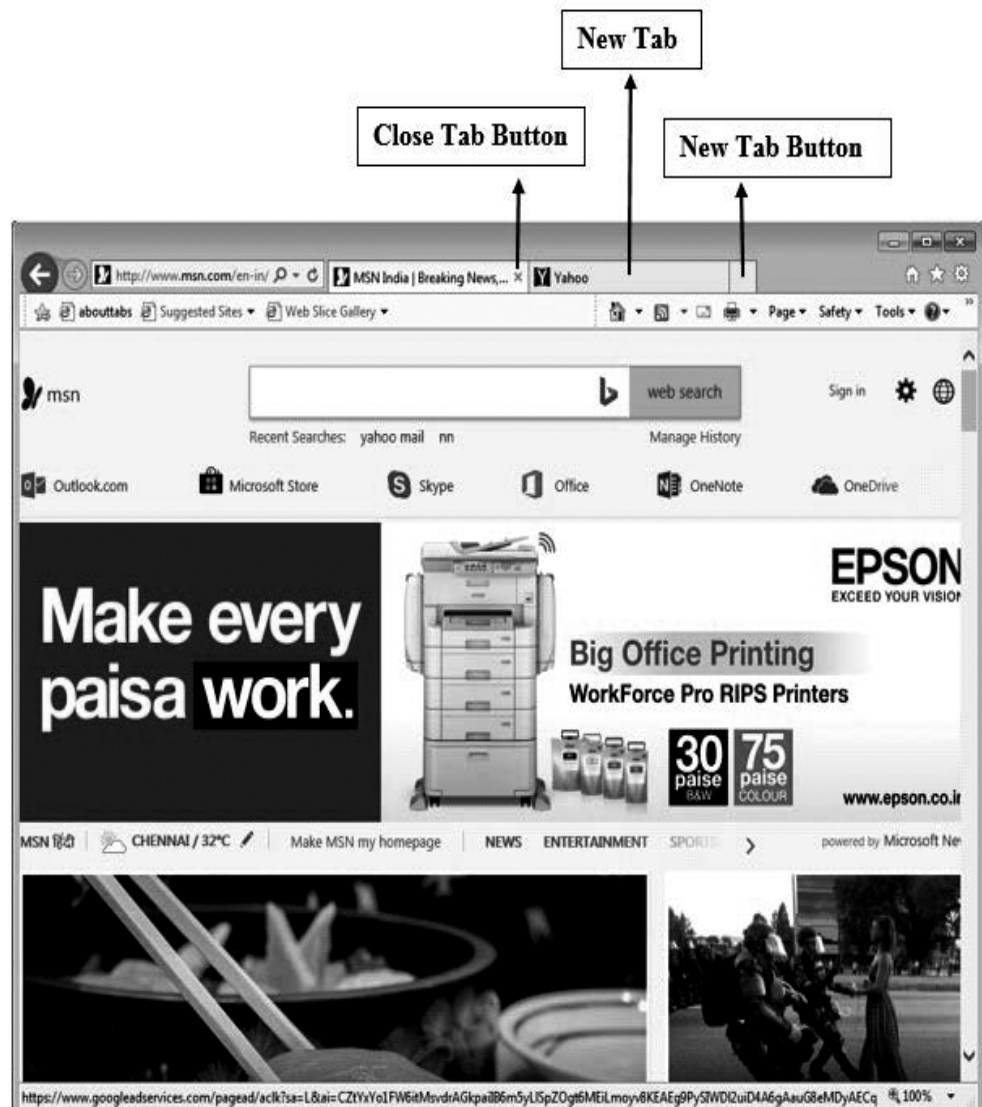
## Refresh a page

Sometimes a web page loads slowly. This happens due to many reasons. Usually this happens when the server computer that stores the Web page is handling too many requests. In other word many people are trying view the page at the same time. Refreshing the page may solve the problem. On clicking on the Refresh button, the data for the Web page is automatically

reset, and the page loads again. You can also refresh a Page by pressing the <F5> key. Also, refreshing the web page will bring you a recent version of the document.

### Browsing with Tabs

Tabs in the IE allow you to browse multiple web pages in a single window. These multiple pages are displayed in tabs at the top of the browser window. You can switch to a particular web page by switching to corresponding tab. This feature is useful for users who want to view multiple web pages, but don't want to open multiple browser windows. This also leaves more room on your taskbar. In Figure 3.12, you can see that the IE window has two tabs open. You can easily switch between these Web pages. Internet Explorer starts with only one tab where you can open a web page. If you further want to view other web pages, you can open additional tabs.





**Figure 3.12: Two or more Web pages can be viewed in a single window using tabs.**

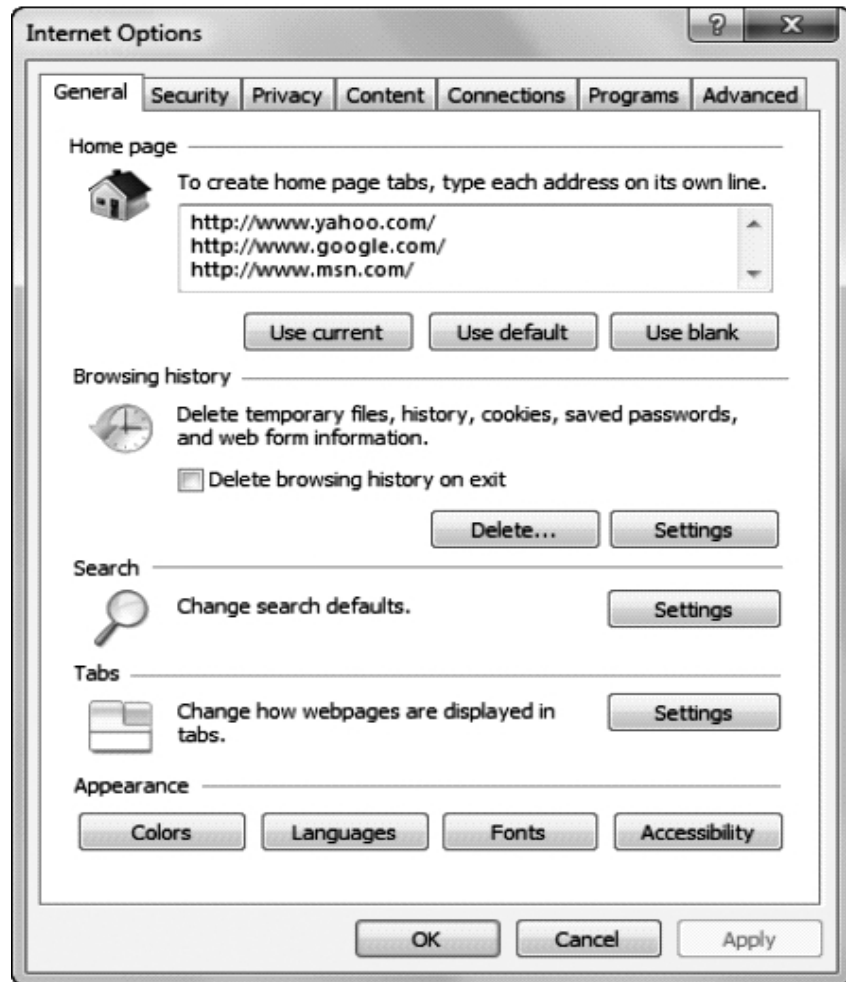


Some of the important features which are helpful in browsing with tabs are:

- ❖ Most browsers that support Tabs such as [Internet Explorer](#), [Chrome](#) and [Firefox](#) allow you to open a link within a web page in a new tab by clicking your mouse's middle-button (mouse wheel).
- ❖ To open a new Tab, click on the new tab button just beside the current Tab. You can also open a new tab using the [keyboard shortcut](#) key **Ctrl+T**. You can also open a previously closed Tab by pressing **Ctrl+Shift+T**.
- ❖ To close a Tab any time, click on the X on the top and right-hand side of the Tab or press **Ctrl+W** on your keyboard.
- ❖ To view a tab, click over it. Alternatively, you can press **Ctrl + Tab** to cycle through open tabs.

### Changing the Home Page

- ❖ Most of you have certain favourite websites that you want to check each time when you open Internet Explorer. You can set these frequently opened websites as your home page in Internet Explorer. Now, each time when you launch IE, it opens with your favourite websites. The home page can be a corporate website like Google, a social website Facebook, or even your personal web site. You can change Home Page of your IE by following steps:
- ❖ Open the web page in IE that you would like to make your home page. You can open additional pages in multiple tabs to use multiple pages as your home page.
- ❖ Click the Tools button (  ) at the right upper corner of the browser's window and then select Internet Options.
- ❖ An Internet Options dialog box (as shown in Figure 3.13) will appear. Under Home section in General tab, you will see several options for setting the home page:
  - Use current: This button allows you to set current web page or any additional pages currently open in tabs as your new home page(s).
  - Use default: When you click this button, a default home page: [www.msn.com](http://www.msn.com) is set.
  - Use blank: When you click this button, no web page will be set as a home page.
- ❖ Click on "Use current" button. The URLs for the current web page and additional web pages if open are listed in the box. If you are using multiple home pages, all URLs will be listed.
- ❖ Click on Apply, and then select OK. Next time, when you open the IE or click on the Home button (  ) in between your browsing, your home pages will be opened automatically.



**Figure 3.13: Home page settings in the Internet Options dialog box.**

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## **3.6 Searching words and phrases with the Search Box**

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When you are viewing any web page in your browser, you can search for any words and phrases in the web page. Web browser comes with a Find tool, which searches the web page for matching words or phrases. Search phrases that you typed in the Find tool will be displayed at all places in the Web page where it appears. Your browser will also highlight all your search phrases that appear at different places in the Web page. In Internet Explorer, you can use Find on Page function to find a specific word or phrase on a Web page as follows:

- ❖ Press <Ctrl> + <F> on your keyboard. The Find On Page toolbar will appear with a cursor in the Find text box as shown in Figure 3.14. Alternately, you can also open the Find On Page toolbar by

pressing the <Alt> key and then going to the Edit menu. Click on Find on this Page option that appears there.

- ❖ Type a word or phrase that you want to search within the web page and then press <Enter>. IE searches the entire Web page to find all matches and highlights them with yellow color. You can also see the number of matches at the far right of the Find On Page toolbar. If IE does not find any match, the Find On Page toolbar displays “No Matches Found” message. You can also do more specific or exact searches. For this, click On the Options button on the Find On Page toolbar and select Match Whole Word Only or Match Case.
- ❖ Click on Next or Previous button to see all the matches.
- ❖ Click on Close button at the Find On Page toolbar when you are finished finding matches on the page.

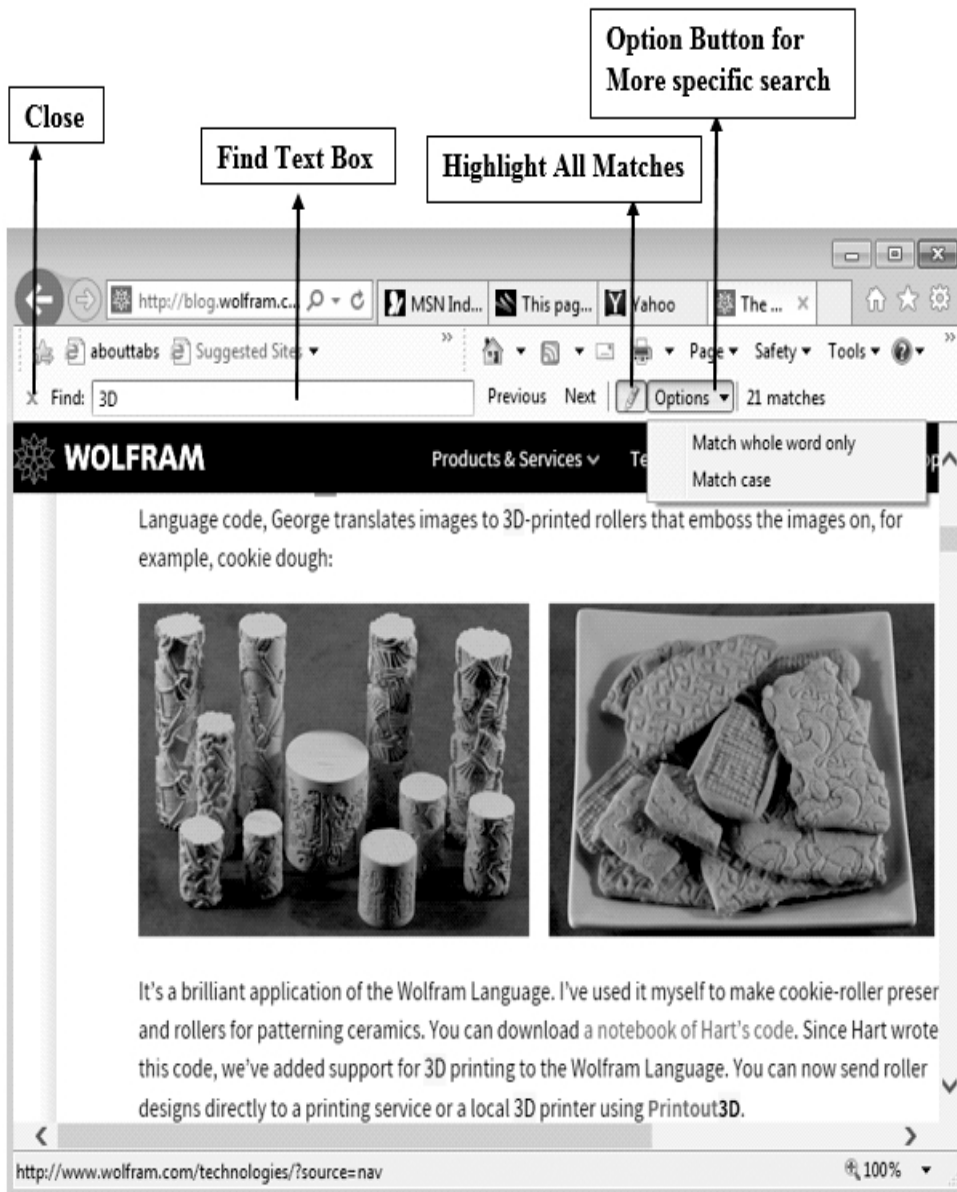


Figure 3.14: Find On Page toolbar appears below the Web page Tab.

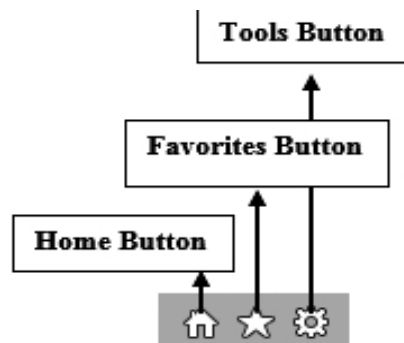
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## 3.7 Adding Bookmarks/Favorites Folder

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You come across a number of useful web pages on Internet that you want visit them regularly. But, unfortunately you could not remember all the URLs. Your Browser provides “**Favorites**” feature that allows you to easily and quickly access all these web pages at later time. **Favorites** stores all your favorite web pages in a single place. It is a great way to save and organize frequently visited web pages. **Favorites** also called **bookmarks** in most browsers. IE provides you Favorites Centre to save these web pages and view them later. In IE, You can add web pages of your choice to Favorites by following steps:

- ❖ Open the web page that you want to add to a favorite.
- ❖ Click on the Favorites button as shown in Figure 3.15. The Favorites Center appears similar to shown in Figure 3.16.
- ❖ Click Add to Favorites button. “Add a Favorite” dialog box will appear. Alternatively, you can press **Ctrl+D** on your keyboard to open “Add a Favorite” dialog box. You can also add several Web pages to the Favorites list at once. Just open all web pages on different tabs and then click the Favorites button. Click “Add to Favorites” arrow button and select “Add Current Tabs to Favorites” option.



**Figure 3.15: Favorites Button.**

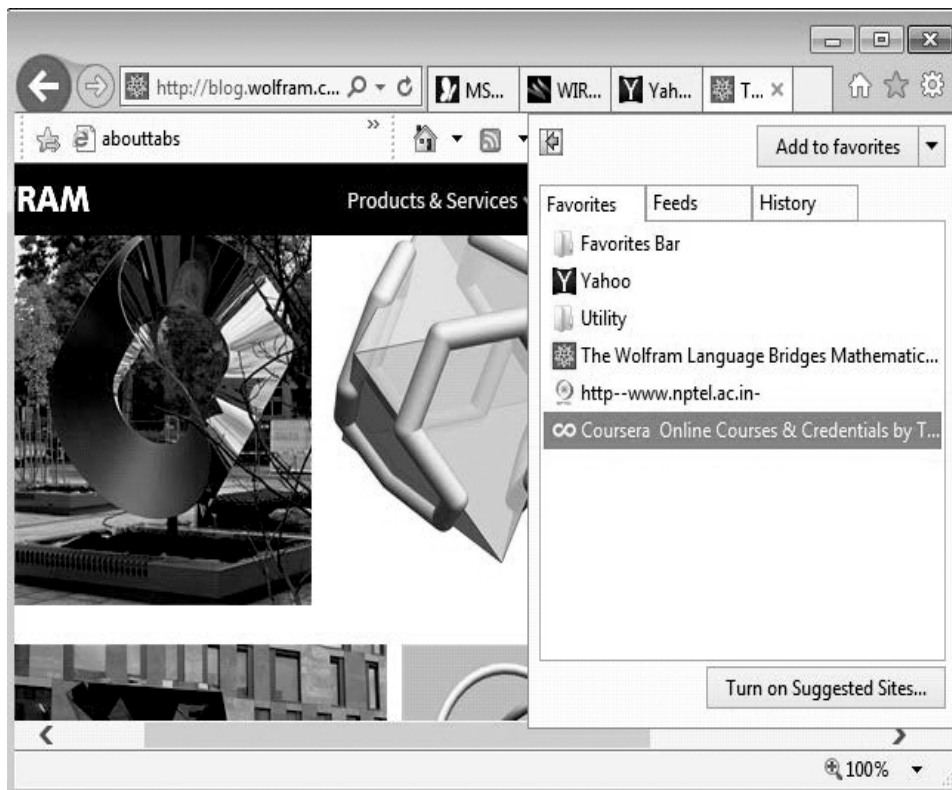
- ❖ The “Add a Favorite” dialog box will appear, enter a meaningful name there. You may stick with the default name or change it using the *Name* textbox. Now, choose where you want to save the new favorite page. You can place it in any folder or subfolder using the “*Create in*” drop-down list. If you don’t choose any folder, it will be saved in the Favorites folder.
- ❖ Finally, click Add button. The Web page is added to the Favorites Center.

### Viewing saved Web pages in Favorites

Once a Web page is added to Favorites, you can view it from the Favorites Center.

You just need to follow these steps:

- ❖ Click on the Favorites button. The Favorites Center will appear similar to shown in Figure 3.16. You can also open the Favorites Center by pressing  $\langle \text{Ctrl} \rangle + \langle I \rangle$  from your keyboard.
- ❖ Now, click the Favorite tab. Find the folder where you saved the web page and then click on the web page you would like to open. The Web page will be displayed.



**Figure 3.16: Favorites Center in the IE.**

### **Check your progress**


- Q.1 Why do you add certain web pages to the Favorites?
- Q.2 Can you search for words and phrases within a web page?  
Explain how?
- Q.3 Explain the benefits of Browsing with Tabs.


## **3.8 Printing Web Pages**

During browsing, you come across several web pages containing useful information like articles, research papers, graphics etc. Sometimes, you want to print them for later use. For example, you may want to print a receipt that is generated online during your online transaction. These web pages can be printed from your browser. But, the content of Web pages

are arranged in a different manner than other types of printable materials like a standard word processing document. You may find some options when printing web pages in your browser that do not normally seen when printing from other programs. You can adjust the setup of a web page and can also include additional information in the headers and footers.

### Previewing and Printing Web Pages

Before you print out any Web page, it is good to see how it will look like. To print a web page in IE, first click on Print Preview option. This option can be located under Print option of Tools button (). When you click on this option, a Print Preview window will appear and the Web page will be shown in Print Preview mode. After you have customized the text size, margins, orientation, Header and Footer, just click on Print icon next to Print Preview button to print the document. Any Web page can be printed in the desktop version of IE by following these steps:

- ❖ Open a web page in Internet Explorer that you want to print.
- ❖ Click the Tools button () at the right upper corner of the browser.
- ❖ Click on the Print arrow button and select Print Preview.
- ❖ The web page will be shown in Preview mode. Here, you can customize the appearance of the web page to be printed using various options as shown in Table 3.1.

Icon	Commands	Description
	Print	Prints the Web page.
	Portrait	Orients the page vertically.
	Landscape	Orients the page horizontally.
	Page Setup	Opens the Page Setup dialog box.
	Turn headers and footers on and off	Display additional information about the Web page at the top and bottom of the page.
	View Full Width	Zoom the Web page to the full width of the print preview window.
	View Full Page	Zoom out to show the full page in the print preview window.
	Show Multiple Pages	View multiple pages on the preview screen
	Change Print Size	Stretch or shrink the Web page to fit the printed page.
	First Page / Last Page	Go to the first page/last page.
	Previous Page / Next Page	Go to the previous page/next page.
	Adjust margin	Change the page margins by dragging the horizontal and vertical markers.

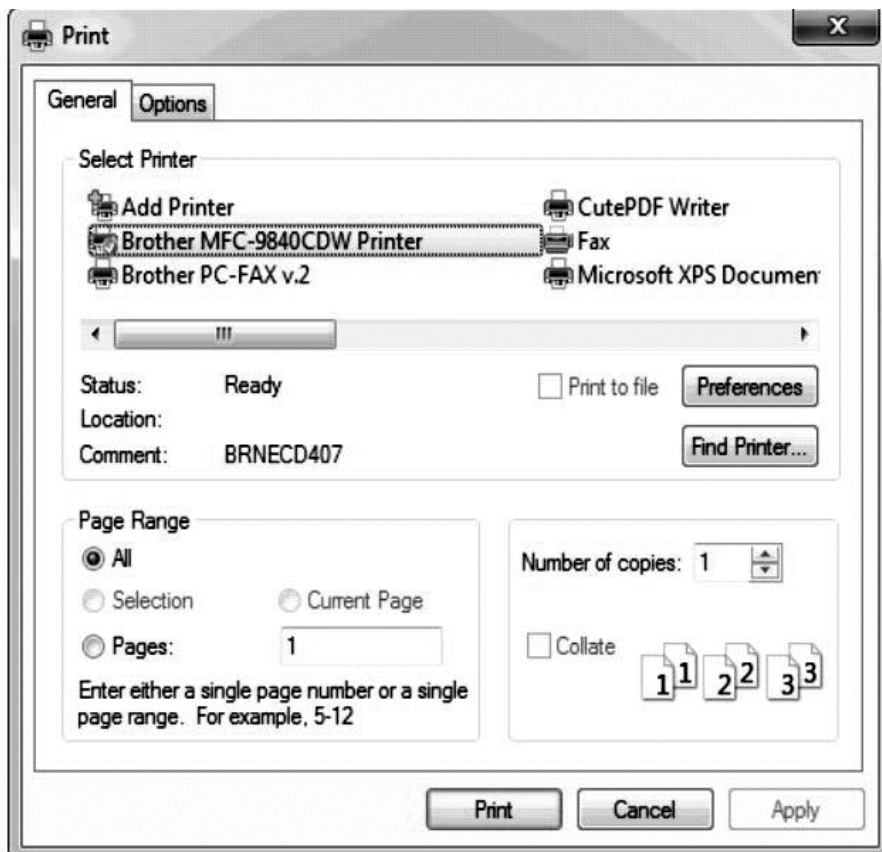
**Table 3.1: Print Preview Commands**

- ❖ After you have specified page setup options, click on Print button to print the document. Sometimes many Web sites already provide print option for printing their Web pages, like receipts which is already customized for printing.

### Quick print a Web page

You can directly print any web page without any customization. Make sure that your printer is turned on and ready to use and then follow these steps:

- ❖ Click on Tools (⚙️) at the upper right-hand corner of the IE window.
- ❖ Move your mouse pointer over Print option and click on Print option from drop-down menu. This will open a Print dialog box as shown in Figure 3.17. Here you can specify various print options as shown in Table 3.2. You can also open the print dialog box using keyboard shortcut: Press **Ctrl + P**.



**Figure 3.17: Print dialog box.**

- ❖ Make sure that the appropriate printer is selected and then click Apply (if you made any changes) button.
- ❖ Finally, click on Print button to print the Web page.

Select Printer	This will show a list of all printers that have been configured for use. Make sure that the printer you want to use is highlighted and selected here.
Page range	This allows you to specify which pages you want to print using several options: <b>All:</b> Prints entire pages in the document. <b>Current page:</b> Prints only the page you're currently on. <b>Selection:</b> Prints only selected content in the web page. <b>Pages:</b> This would Print only those pages that you specify here. You can specify a range of pages with a hyphen (e.g 5-8). You can also specify separate single pages with a comma (e.g 3,7).
Number of copies	Specify the number of copies you want to print

**Table 3.2: Settings in Print Dialog Box.**

## **Printing background Colors and Images**

Sometimes, you do not want to include background color and images while printing a web page. These background color and images consume more inks. If you are more interested about the content than its background colors and images, it is better to turn off this. This option need to be specified from the browser itself. In IE, you can disable this option by following these steps:

- 4 Go to file menu and click on **Page Setup option**. If you do not see the **File** menu, press ALT.
- 5 In the **Page Setup** dialog box as shown in Figure 3.18, unselect the **Print background Colors and Images** check box.
- 6 Click **OK** to close the **Page Setup** dialog box.
- 7 Print the Web page again.

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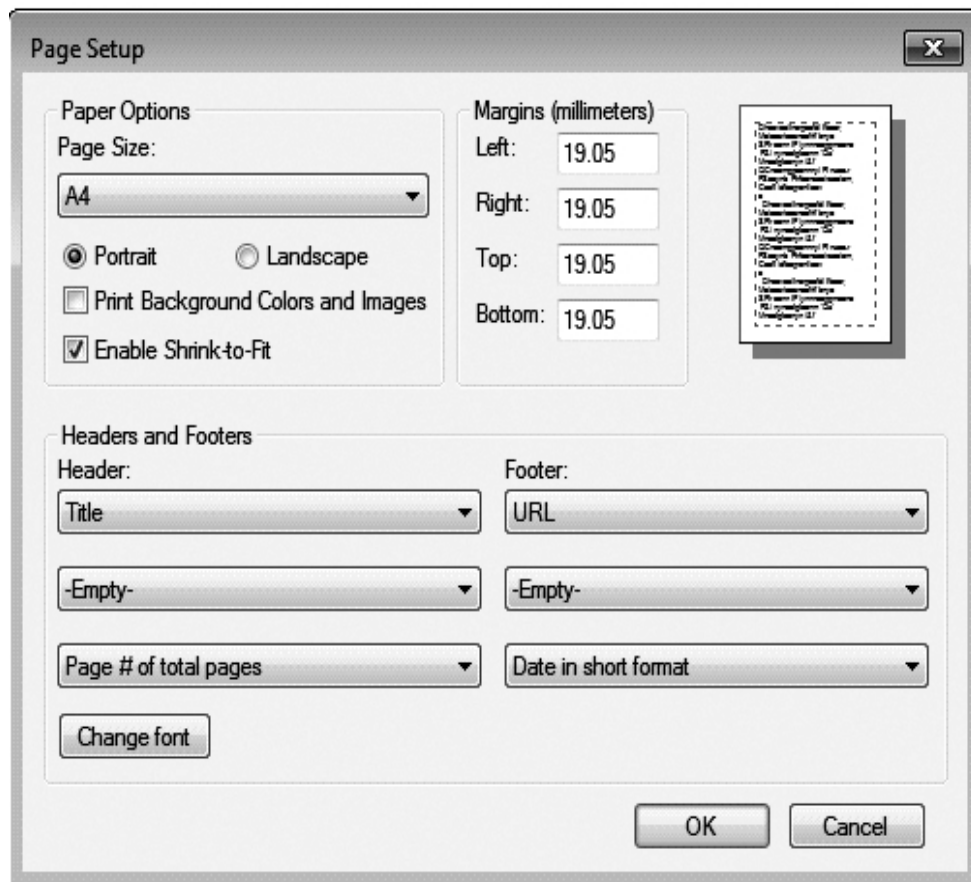
## **3.9 Using RSS Feeds**

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Most Websites like Facebook, Twitter, LinkedIn, news, government site etc. frequently update their contents for readers. You can add such Websites as a favorite in Internet Explorer and check their updated content regularly. But, Websites' RSS feed are more convenience way to get the updated contents. Once you subscribes to a Website's RSS



feed, you can get the updates from the Website directly delivered via RSS feed. So you do not need to check the Website regularly for updates. RSS feed (Short for Really Simple Syndication or Rich Site Summary)



**Figure 3.18: Page Setup dialog box.**

is a revolutionize way of interacting with online contents. You may have seen text or image buttons (  ) on various websites for subscribing RSS feed. RSS feeds benefit readers as well as Websites's owners to deliver their updated contents like articles, pictures, video, or audio etc. among their subscriber more quickly.

### **What Is a Feed Reader?**

A Feed Reader is a client software or a web application, that aggregate content from a variety of different RSS feed providers in a single place. The Feed reader quickly scan headlines or full stories at a glance from various RSS feed providers. You don't have to keep checking individual website's RSS feed for updated contents. You can read filtered information from a variety of websites and customize your reading experience from these sources with the help of RSS reader. This saves your time and energy in visiting each site individually. A variety of feed readers are freely available on the web such as **Feedly, Digg Reader,**

**NewsBlur, Inoreader and Feeder.** You can choose any feed reader to subscribe RSS feeds of your favourite Websites. The Feed reader will automatically pull recently updated posts from various websites and you can read them directly in the Feed reader. You can also move to the source website by clicking the link that are provided there.

### Subscribe to a RSS feed

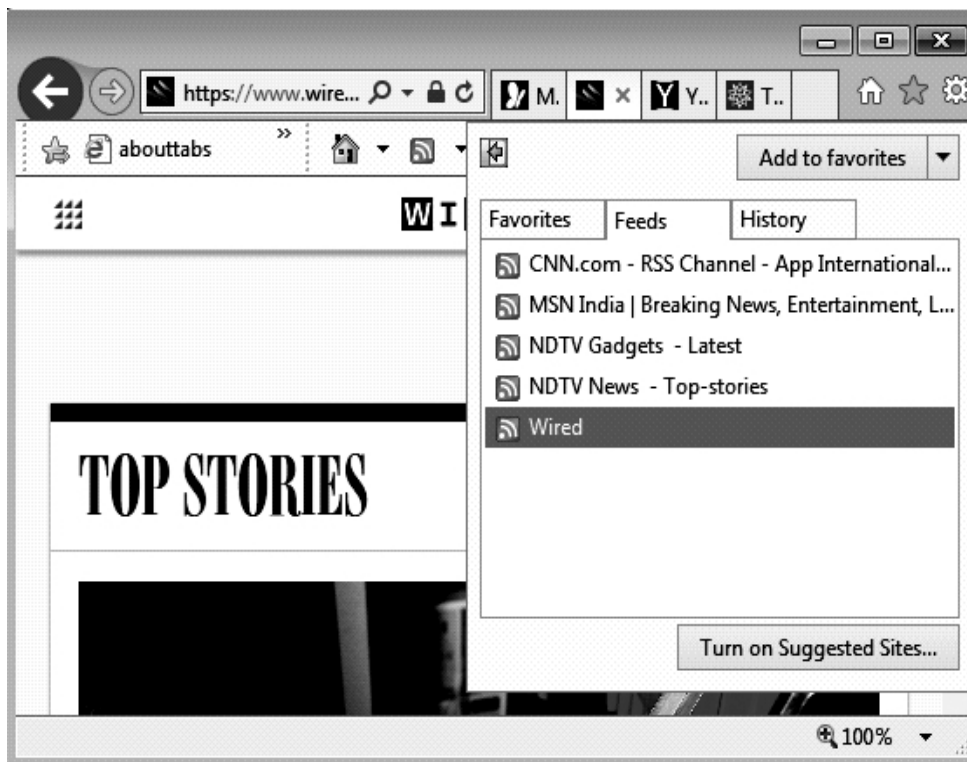
Once you subscribed to RSS feeds in Internet Explorer, it will download the new contents from its website when it is published. You can subscribe to several feeds as per your interest and get updates according to your interest only. Some of the popular RSS feed are shown in Table 3.3. RSS feeds can be subscribed in Internet Explorer by following these steps.

- ❖ Open the Web site to which you want to stay updated. If the Web site offers feed service, you can find the orange RSS feed icon in the Website.
- ❖ Click this RSS feed icon. A list of available feeds provided by the website will appear.
- ❖ Click on the desired feed and then click Subscribe to this feed link. Do this for each of the feed which you want to subscribe.
- ❖ A “Subscribe to this Feed” dialog box will appear. Here, you can change the name of the feed and folder where you wish to save.
- ❖ Finally click the Subscribe button. Internet Explorer will display you a confirmation message that you have successfully subscribed to this feed.

RSS feed	Description
Times of India ( <a href="http://timesofindia.indiatimes.com">timesofindia.indiatimes.com</a> )	It brings the Latest News & Breaking News Headlines from India & around the World.
The Hindu ( <a href="http://www.thehindu.com">www.thehindu.com</a> )	It brings Latest news, analysis, comments, in-depth coverage of politics, business, sport, environment, cinema and arts from India's national newspaper.
FrontLine ( <a href="http://www.frontline.in">www.frontline.in</a> )	It covers latest news from physics, chemistry, medicine, astronomy, science, space, and technology.
Dictionary.com	Learn a new word every day!
Wired Top Stories ( <a href="http://www.wired.com">www.wired.com</a> )	Wired Top Stories The latest science and technology news

## View subscribed feeds

After subscribing the RSS feeds, you can view them in same way as you view the favourite websites in IE. You can follow these steps to view all subscribed RSS feeds.



**Figure 3.19: The Feeds tab in the Favorites Center.**

- ❖ Click the Favorites button (★) located on the Favorites Bar.
- ❖ The Favorites Center will appear similar to shown in Figure 3.16. Click the Feeds tab in the Favorites Center. A list of subscribed RSS feeds will appear as shown in Figure 3.19.
- ❖ Click the desired RSS feed to view for new content. A list of headlines and/or full articles appears in the current tab.
- ❖ Click the headline if you want to view it in its Website.

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## 3.10 Using Plugins or Add-ons

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A browser Plugins or Add-ons are small programs that extend the functionality of a web browser. They are sometimes also called as browser extensions. Plugins give additional capability to the web browser without affecting viewable content of a web page. With these small programs your browser can perform a variety of tasks, which your browser without these Plugins would not able to perform. The ultimate goal of these Plugins is to give you a better browsing experience. The browser Plugins are similar to a Swiss knife by using which you can perform multiple tasks. For

example, a Google Translate Plugin translations any web page (which is not in your local language) to your local language. A Google Dictionary Plugin helps you to find meaning of any word appearing in a web page without opening a new tab to find its meaning. Once you installed this Plugin, you can simply highlight the word to look for its meaning and then click on the dictionary icon that appears next to the browser's URL field. Today, every browser supports Plugins. Each Plugin is coded specifically for a particular browser. For example, Google Chrome Plugins are available on Google's Chrome Web Store. Similarly, you can find Firefox plugins at the Mozilla Add-ons Gallery. You can install add-ons in IE from the Internet Explorer Gallery by following these steps.

- ❖ Go to the IE Gallery website and click **Add-Ons**,
- ❖ Click the desired add-on from the list.
- ❖ Click "Add" link of desired Add-ons that are located next to each Add-ons
- ❖ When an installation dialog box will prompt, click on **Add button**.

### **Check your progress**

Q.1 What is the purpose of using Plugins in your web browser?

Q.2 What is RSS Feeds?

Q.3 How do you print any web page?

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## **3.11 Using Browsing History**

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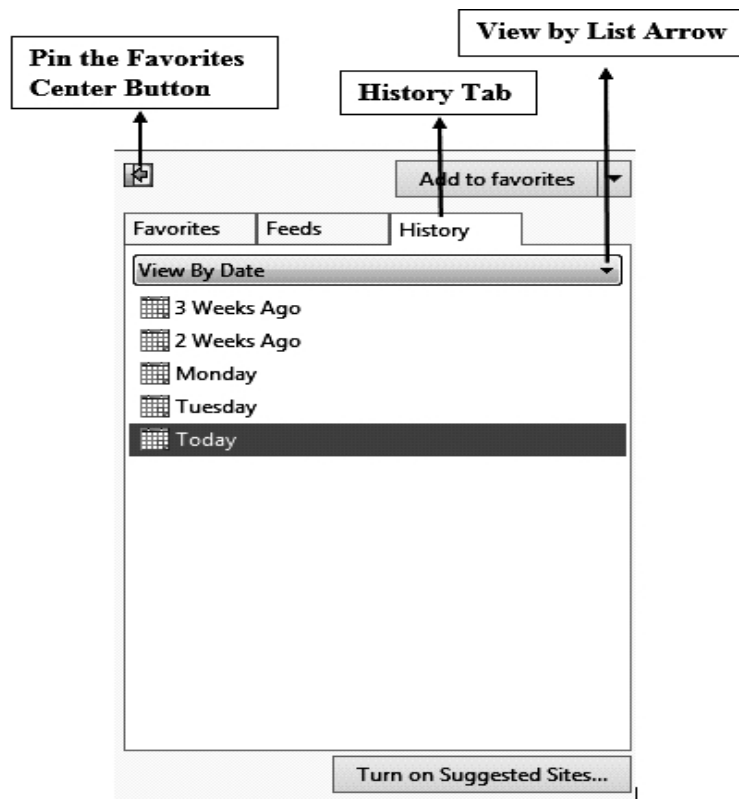
Just imagine, yesterday you have found an interesting website on gift ideas. It would help you to plan for a wonderful gift for your friend's anniversary. Unfortunately, you could not remember the URL of the website. Internet Explorer saves your browsing history for such type of situations. Every time when you browse web pages, your web browser saves a copy of every page that you have visited. Whether you use Internet Explorer, Chrome, Firefox, or something else, they all keep track of your locations and a history of pages you have seen so far. This browsing history is maintained just for your convenience. Unless, you don't want someone else to see your browsing history such as you are planning a secret birthday or doing some personal browsing, it makes your online experience easier and better. When you are typing a previously visited web address on address bar, the AutoComplete feature uses your browsing history to give you suggestions.

### **View your browsing history**

A history containing details of all the Web pages that you have visited can be seen in any browser. In IE, a history Tab (as shown in Figure 3.20) can be found under the Favorites section. This Tab contains details of web

pages for the last several weeks. You can view the History Tab in IE by following steps:

1. Click the Favorites button that appears on top right corner.
2. The Favorites Center (as shown in Figure 3.16) will appear. Move to History Tab by clicking over it. Your browsing history details are grouped by date. You can also open your Browsing History by pressing **Ctrl + H** on your keyboard.
3. Click the “View by list” arrow to see your history in various ways as shown in Figure: 3.20.
4. Click a particular day to see the history. The pages are organized by dates into different folders.
5. Click the desired folder to view the Web pages and then click a specific Web page to view it in the browser window.



**Figure 3.20: The History tab under the Favorites.**

### **Delete browsing history**

History feature in your browser makes your online experience easy and convenient. If you do not have anything to hide from others, then it does not bother you. But most of you would not like if someone can spy your browser history to see what web pages you have visited. This would be the invasion of your privacy, if someone gets access to your computer and searches your history. If you are concerned about your privacy, you can

remove Web pages from your browsing history or delete the history entirely. The browsing history in IE can be deleted by following these steps:

1. Click on the Tools button that appears at top right corner. Then select Safety option, and then click on the Delete browsing history option.
2. A Delete Browsing History dialog box will appear as shown in Figure 3.21. Here, you will see a number of options related to type of data stored on your computer. Choose the types of data or files you want to delete from your computer.
3. **Preserve Favorites website data:** This option is selected by default. When it is selected, it will instruct IE to preserve some stored data (like cache and cookies) from your Favorites. The rest of the data components for all other websites will be cleared.
4. **Temporary Internet files and website files:** This option is also selected by default. The selection of this option removes images, multimedia files, and even full copies of Web pages that are stored on your hard-disk. These are stored on your hard-disk to reduce page load time on subsequent visits. These files as a whole are also known as your browser's cache.
5. **Cookies and website data:** When a website is visited, user-specific information and settings are stored in a text file on your hard-drive. The website uses this text file to give you a customized experience by retrieving the user data such as your login credentials or session data. When this option is selected, this will delete all these files from your hard drive.
6. **History:** IE maintains a list of Web page addresses that you have visited. When this option is selected, all these records will be deleted from your computer.
7. **Download History:** IE keeps track of all the files downloaded through it. Selection of this option wipes this download history from your hard drive.
8. **Form data:** IE stores a portion of the data that you enter into a Web form. Next time, when you fills similar kind of form, some of its entries gets auto-populated. For example, after typing few letters of your name in a form, your entire name gets auto- showed. Although, this provides you a convenience while filling forms, but it may reveal some of your private information to others. This may cause a privacy issue or security risk. A selection of this option deletes all form data that are stored so far.
9. **Passwords:** Nowadays, many passwords are needed for various accounts on the Web. IE helps you to avoid typing these passwords every time you visit these websites. This can be a welcome feature

in the web browser that store these passwords for later use. But sometimes you may not want your passwords to be stored locally, especially when other people use your computer. When this option is selected, it instructs IE to delete all saved passwords.

10. **Tracking Protection, ActiveX Filtering and Do Not Track:** ActiveX controls are small apps that are embedded in the websites to provide you interactive contents such as videos and games and toolbars. However, these apps might cause you trouble some time. For example, they might collect sensitive information, install software without your consent, or allows someone else to remotely control your PC. The ActiveX Filtering prevents websites from installing and using these apps. When the ActiveX Filtering is enabled, videos, games, and other interactive content might not work. When **Tracking Protection, ActiveX Filtering and Do Not Track** option is selected, all the websites you've excluded from ActiveX Filtering, and data used to detect tracking activity get deleted from your browser.
11. Select the check boxes for the desired items you want to delete.
12. Finally, click the Delete button. The browsing history will be deleted.

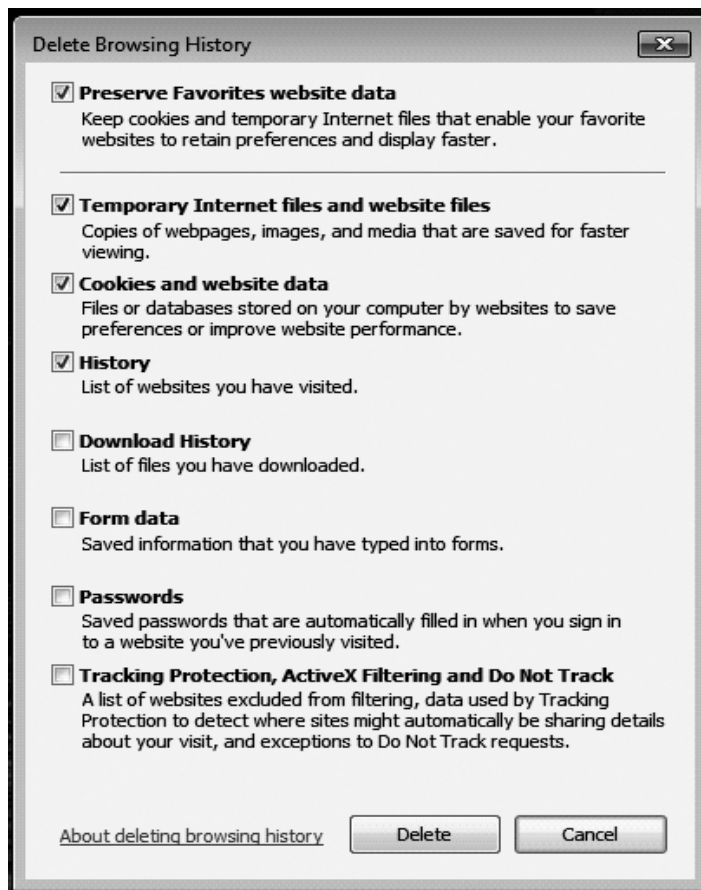


Figure 3.21: The Delete Browsing History dialog box.

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## 3.12 Summary

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In summary, you learned:

1. Some Popular Web Browsing Software such as NCSA Mosaic, Netscape Navigator, CHROME, Mozilla Firefox and Internet Explorer and various features offered by them.
2. The various features available in the Internet Explorer make your browsing experience smoother.
3. You learned that how do you search any word or phrase appearing within a Web page.
4. Adding Bookmarks to Favourites helps you to access Web pages quickly at later time.
5. You can print any web page containing useful information like articles, research papers, graphics etc. for later use.
6. RSS feeds deliver the updates from the Website directly and more quickly. You do not need to check the Website regularly for updates.
7. Browser Plugins are small programs to extend the functionality of a web browser.
8. Web browsers keep track of your locations and a history of Web pages that you visited in form of Browsing History.

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## 3.13 Terminal Questions

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- Q.1 How do you access RSS feeds to which you've subscribed?
- Q.2 How do you access your browsing history?
- Q.3 What are the features offered by NCSA Mosaic browser?
- Q.4 What does the Refresh button in the browser do?
- Q.5 What is the homepage? How can you save more than one homepage in Internet Explorer?
- Q.6 Describe the various features offered by Mozilla Firefox.
- Q.7 How do you view the Favorite web pages in IE?
- Q.8 What are the various options that are available for printing any web page?



# UNIT-IV

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## VISITING WEBSITES

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### Structure

- 4.1 Introduction
- 4.2 Objective
- 4.3 Downloading
- 4.5 Types of Websites
- 4.6 Summary
- 4.7 Terminal Questions

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### 4.1 Introduction

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A Website is a collection of Web pages that contain multimedia elements. Some of the popular Websites are [wikipedia.org](http://wikipedia.org), [google.com](http://google.com), [yahoo.com](http://yahoo.com), [msn.com](http://msn.com) and [amazon.com](http://amazon.com). Websites are basically designed to serve our various purposes like education, news, Social networking and entertainment. A website can be a personal website such as an individual celebrity, an e-commerce website to run a business, a corporate website for a company use, a photo sharing website to share your favourite photos, a government website for government policies, a news website for latest updates around the world and many more. All these websites collectively form the World Wide Web (WWW). Some websites are private which are only accessible to limited people such as a company's employees. These websites are a part of an Intranet. Websites are designed generally in HTML (Hyper Text Mark-up Language) and can be accessed through any web browser. These websites can be viewed in any Internet enabled devices like desktop computers, laptops, tablets, and smart phones.

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### 4.2 Objective

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After studying this chapter, you will understand:

- How you download files on internet.
- Various types of Websites and their usage.

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### 4.3 Downloading

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When you browse the Web, you come across various type of files such as images, audio, documents and software. Each Website makes their files available to download in different ways. Downloading is a process of

receiving data from a server computer such as a web server, an FTP server and an email server. While, uploading is the process of sending data from your computer to a server computer. You can start downloading of a file by clicking on its download link. A download link is simply a URL which is usually shown with different coloured text with an underline. Sometimes you may find a download icon or button (shown in Figure 4.1) for downloading a file. Once you click on this download link, your web browser either automatically starts downloading of a file or prompt you a message to continue the download.



**Figure 4.1: Generic symbols for downloading**

Each browser handles downloading of files in different ways. In Internet Explorer Browser, you can follow few basic steps to begin a download.

- ❖ Click the download link of desired file. A “file download dialog box” will appear that will ask you to either open the file or save the file.
- ❖ **Open:** If you choose to open the file, after the downloading finishes, it will be opened in a default program that is assigned to handle this type of file. For example, if it is a word file, then the file would be opened in the Microsoft Office Word program.
- ❖ **Save:** If you choose to save the file, it will ask for a location on disk. Once the file is downloaded, you can open it by double-click on the downloaded file.

**Other Ways to Download a File:** Alternatively, you can also download a desired file by a right-click on the download link and then selecting **Save Target As** from the context menu. When it asks, specify a desired folder to save the file. You can also rename the file at later time, after the downloading finishes.

#### **Finding downloaded files on your PC**

Downloaded files such as pictures, documents, and other files are automatically saved in the Download folder by default. This folder is located on the Windows installation drive (usually C:\ drive). You can open this folder and view all the downloaded files by going to “C:\users\your\_PC\_name\downloads”. If you wish to move any downloaded files from here, you can move it to other places on your computer. The files that are downloaded using Internet Explorer can be viewed by selecting the **Tools** button, and then selecting **View downloads**.

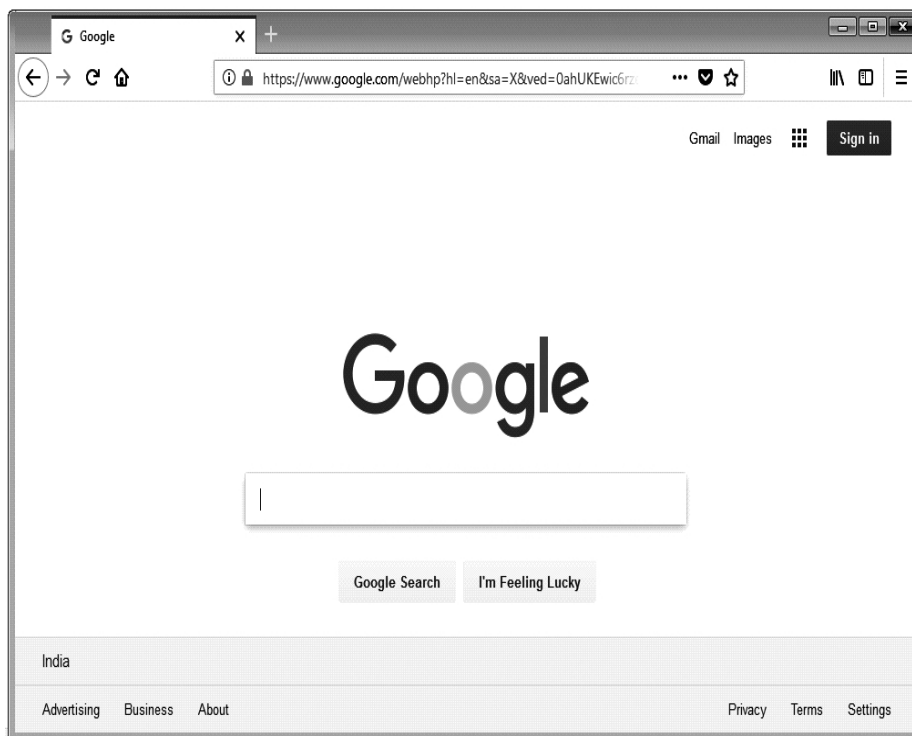
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## 4.5 Types of Websites

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At the time of origin of Internet, websites were purely informational. The World Wide Web was not opened to public. It was mostly used by educational and research institutions including government agencies to share information through text based Websites. Now, the WWW has plenty of websites, each designed for a specific purpose. Through these websites, you can purchase goods and services online; interact with your friends; search for related web contents and many more. These Websites can be broadly classified as follow:

**Search Engine:** There are millions of web pages that are available on the World Wide Web on variety of topics. These web pages are titled as per the desire of their authors. So, they are sitting on the server computers with mysterious names. Internet search engines such as Google, Yahoo and Bing are special websites that are designed to access other web pages. The search engines show web pages to you based on the relevance of your search queries or phrases.



**Figure 4.1: Google Search Engine Website.**

All these search engines perform the same basic tasks that include crawling (acquisition of data), indexing (acquired data is processed and placed in data centre), and retrieval (search for your query and return the most relevant web pages):

**Crawling:** Crawling is a process of scanning websites for collecting details like titles, images, keywords and other linked pages. A special software called crawler quickly (around thousands of pages per second) visits each Web page one by one. The crawler begins with popular websites. It follows every links within a web page and maintains a useful list of words.

**Indexing:** When a crawler crawled a web page, the collected data is returned to the search engine and stored in its data center. Indexing is a process of efficiently organizing the collected data so that they can be searched quickly for displaying relevant results based on your search query.

**Retrieval:** Here, a search engine processes your search query that you type and returns the most relevant web pages that match your query. Most search engines differ from each other in their retrieval methods. They use different criteria to choose web pages that best fit your expectations. This is why search results vary from one search engine to another search engine.

**Social Networking Websites:** These Websites provide you a common platform to interact with other people or meet new people based on your interests. Some of the most popular social networking websites are Facebook, Twitter, Google Plus, LinkedIn etc. You can create your own online profile with your photo and some additional details about yourself. Profiles are the unique pages of individual people where you can add about yourself. When you are joining any social networking sites, you are asked several questions including your age, date of birth, location, interest, and about yourself. Most social networking websites allow you to add multimedia content to enhance your profile. They encourage you to add your photos to get better response. The profile visibility of users varies from website to website and depends on the user choice. Some social websites like Friendster and Tribe.net allows their users profile to be searched through search engines, regardless of the viewer account. While other websites like Myspace allow their users to control their profile visibility as public or friends only. Facebook adopts different approach. It only allows to view their users profile to other users of same network, unless the profile owner deny the permission to access his/her profile. Once you created your profile on these platforms, you can communicate with other people of your interest by voice, chat, instant message, and videoconferencing. A friends list contains links to each of his/her friend's profile. Other user within the same network can see this friend list to view any profile. Most social Websites allow users to leave messages to their friends' profiles inform of "comments" and "private messages". Some

Social websites offer beyond profiles, Friends, comments, and private messaging. For example, they provide their users additional capability for instant messaging, blogging, photo-sharing and video-sharing.

**Blogs:** Usually, websites consist of a home page with many hyperlinks to its subpages. Each subpage contains detail information about a particular topic. For example a typical website like yahoo news organises their thousands of articles into several categories. And each article is accessed from categories available on the Website's home page. A blog is a discussion or informational website that consists of diary style text entries of posts. All these organised into a single main page as shown in Figure 4.2. These posts can be your thoughts, opinions or experiences about a particular subject that you want to put on the internet for other people to read. People only care about the main page. The entries in the page are organised into a reverse-chronological order i.e. from most recent blog entry to least recent. The blog are usually written by single user and are normally open to public so that the whole world can see them. There are several Websites like WordPress.com or Google Blogs (formerly Blogger) that offer you a free platform to start a blog.

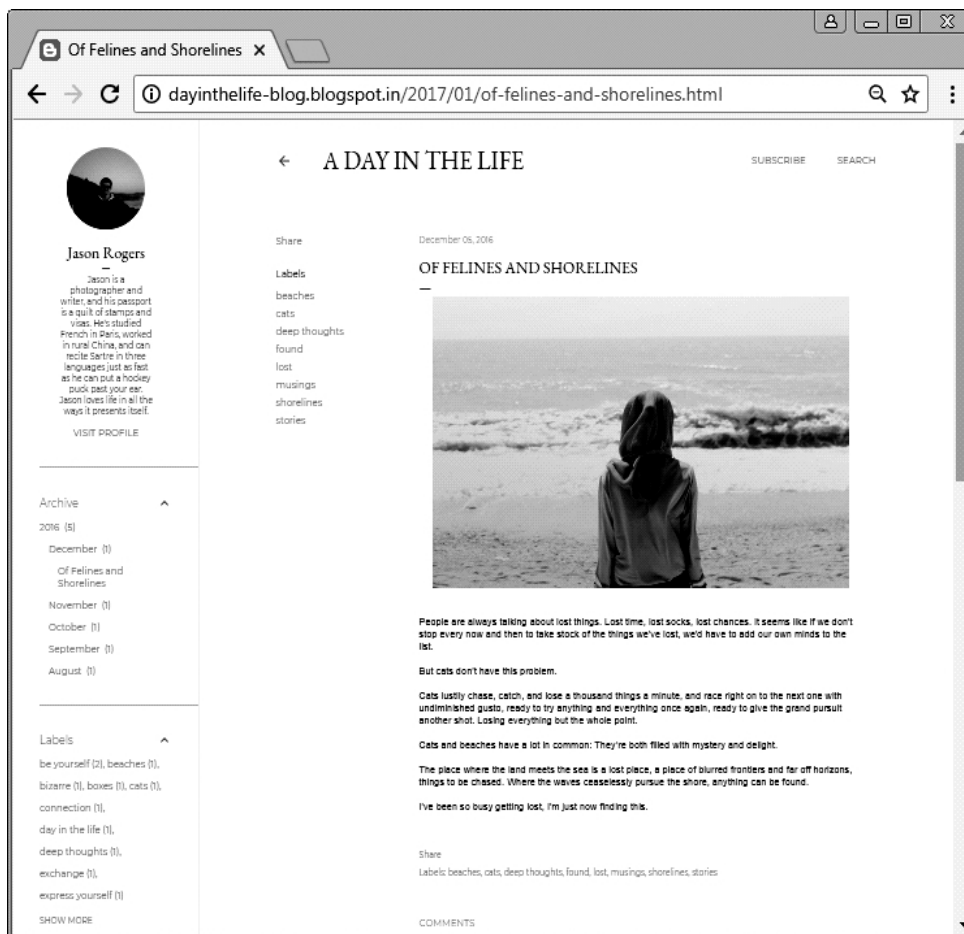


Figure 4.2: A post from Blogger.

**File Storage and Sharing Websites:** Today, the individual data increases fast as the technology increases. You usually store your personal data on storage devices like hard disks, flash drives and other kind of physical storage devices. But these storage devices have limited memory. There are various websites such as Dropbox, Amazon Drive, Google Drive, Microsoft and OneDrive on web that offer you file storage and sharing platform. Once, you subscribed with these websites, you can bring all your files together in a single place. Also, you can backup or recover these files, whenever you want. You can access and work with your files anywhere and anytime. Your files are synced across all your devices whether it is your Windows, Mac, tablet or your mobile devices (for example, as shown in Figure 4.3). You can also confidently share your files to other people and they can access these files smoothly and securely.



**Figure 4.3: You can access your files in Google Drive anywhere on your smart phone, tablet, or computer.**

**E-commerce Website:** Ecommerce websites like Flipkart, Amazon, Paytm, Ebay etc. provide an online platform for buying of goods and services. There are many ecommerce websites in every field based on target people. Some of them offer specific goods and services such as music portals, consultancy websites, finance and management websites.

They allow you to reach global market without any limitations of geographical boundary. You can make global choice of goods and services and compare their prices from other suppliers. These websites are like virtual stores which are open 24 \*7. They offer reduced cost of goods and services, which is an important advantage.

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## **4.6 Summary**

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In summary

1. You learned about downloading of files.
2. You learned various types of Websites available on the World Wide Web and their uses.

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## **4.7 Terminal Questions**

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- Q.1 What are the various types of files available on Internet?
- Q.2 How can you use E-commerce Websites?
- Q.3 What is Blog? What are the main uses of a Blog?
- Q.4 Discuss the benefits of using File storage and sharing Websites.
- Q.5 How do you download files on the Internet?
- Q.6 Explain the various functions offered by Social Networking Websites.
- Q.7 How does a Search Engine Work?

