

**SGINFOTECH**



**MS-DOS**

STUDY MATERIAL

## PREFACE

*Dear Students,*

*Microsoft Disk Operating System (MS-DOS) is a text-based operating system that works with a keyboard to input data and receives output in plain text. MS-DOS is very lightweight and it allows direct access to most hardware.*

*This E-Book covers in-depth lessons on how to use various DOS Commands for managing small to large system. It has been designed for computer users who would like to learn Microsoft Disk Operating System (MS-DOS) in easy and simple steps.*

*If this E-Book helps anyone to learn and to use the computer effectively, it will be of great success.*

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## MS – DOS

### INTRODUCTION TO MS-DOS

Disk operating system (DOS) is a single user , CUI based operating system . It allows performing a lot of activities . To carry out instructions , DOS commands are executed . The operating system manages the loading and execution of task and responds to requests for input and output operations .

Operating System :

An operating system is the master control program of the computer , which helps the computer to manage files and check the various peripheral devices . You may think of an operating system as a policeman who directs traffic at a busy intersection . In the same way , an operating system helps you to have control over your computer . It acts as a common character and as a common platform between the user and the computer hardware and software .

Interface :

Interface is the medium of communication between the user and the computer system . It provides the platform through which the user can understand the instructions that he is giving and the resultant output that the computer is showing . In simple terms the screen that appears on the monitor is the interface .

There are basically two types of interfaces . They are :-

1. CUI-character user interface
2. GUI - graphical user interface

As the name suggests cui is character based which means that the command or instructions that we provide to the system are character based like in MS-DOS. But in GUI the commands are represented graphically or by picture . The character-based interfaces are a bit difficult to use and learn because the user has to remember the commands and the screen is usually very dull and boring . But graphical interfaces are easy to learn and use because they are very user-friendly . Users don't have to remember commands as the system itself leads the user . Example of GUI is windows that you will be learning soon .

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### Directories and Files :

This concept can be easily understood by thinking of document stored in an office . The office has filing cabinet , which in turn has drawers that are made according to different projects, clients or other groupings . Within each drawer there are letters , articles , diagrams , reports, etc . Similarly , in DOS imagine the cabinet to be the drive , the drawers to be the directories, subdirectory and the letters , diagrams etc, to be the files . It can be said that the files are the actual places that contain the necessary information whereas the files are categorized under the directories .

### Root Directory:

The base directory i.e. the drive itself is known as root directory . All other directories are branches of this directory . Directories may contain files , programs , or other directories . Computer or a batch represents the name of the drive or the storage devices! Computer! drive is the hard disk drive , A and B are the two floppy drives . A front slash (\) is used to denote a root directory .

### Dos Overview

#### Dos Function

Ms-dos includes commands that perform the following tasks :

- A. Manage files and directories .
- B. Maintain disks .
- C. Configure hardware .
- D. Optimize the use of memory .
- E. Customize MS-DOS .

#### Dos Architecture

Ms-DOS is partitioned into layers to isolate the logic of the operating system and the user perception of the system from the hardware it is running on . The layers are :

1. Bios: the acronym for basic input output system . The bios is actually a low level embedded software provided by the manufacturer of the mother board of the computer system . The function of the BIOS is to provide the basic link between the hardware and the operating system and to identify

the hardware components so that the operating system can talk and interact with them in the run time . When we switch on the system the bios initiates all the basic hardware components (e.g. Processor , memory , display etc .) and checks them , which we call as post (power on self test). After the post the bios initiates and handles the overall process of booting. The bios is stored as ROM so that it can not be modified at will .

2. Kernel : kernel is the core of the operating system , which is loaded into the primary memory Ram at the time of booting . It actually provides the interface between the bios and the operating system to interact with each other . It provides a collection of hardware independent services called system functions .

These functions include :-

- (1) file and record management .
- (2) execution of system related programs .
- (3) character device input/output .
- (4) memory management .

3. command processor : also called shell , it is the user interface to the operating system. It processes and executes the user commands , including loading and executing of other programs from the disk .

Booting Procedure :

The process of loading the operating system from the secondary memory storage device into the RAM is called booting . When a computer is switched on , it passes through a series of steps . At first the processor starts its operation by executing the instructions stored in the ROM and activated each time the power is switched on . These instructions are programmed to check whether the computer is in good working condition . This activity of checking the internal condition of a computer by ROM-bios is called power on self test (post). The next activity of ROM-bios instruction is the "bootstrap process" which loads the operating system into the memory depending on the partition table . The ROM-bios attempts to carry out the boot record from the disk . Every disk has a boot record in its first sector . If the ROM-bios is able to read boot record successfully,

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the control is handed over to the boot record also known as boot program. In case of DOS, the boot program in turn accesses two files that are loaded into the memory, the computer searches for config.sys, command.com, which in turn automatically searches for an autoexec. Bat file if it exists.

#### Wildcard Characters

Dos supports two wildcard characters ( ? ) and ( \* ). It allows specifying whole groups of file names. The ? stands for any single character in the specified position within the file name or extension, and the \* stands for any set of characters, starting at the specified position within the name or extension and continuing to the end of the file name or extension.

For example, the following syntax displays all the names on drive A that begin with any three characters followed by xyz and any extension.

```
A:\dir xyz*.*      or      a:\dir xyz*.*???
```

#### Internal and External Commands

The commands used in DOS can be broadly categorized under two main heads :

- Internal commands
- External commands

#### Internal Commands:

Dos internal commands are always available to the operator, and may be entered from any dos prompt. Generally, dos commands are entered at the dos system prompt. Dos com-mands are invoked by entering the command name, for example copy, dir or rename. Some-times a command name is preceded with a command parameter. The maximum length of a dos command is 127 characters.

**External Commands :** external commands are actually small, separate utility programs that actually accompany the operating system and expand its usefulness. If it is necessary to run a dos external command, all external commands are preceded with a drive letter or sub directory path name to indicate the location of the program file.

Most of the dos commands are listed below. These commands can be typed in either upper or lower case letters, because dos doesn't distinguish case.

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### Batch File Commands:

The batch file command descriptions enable batch files to make choices, perform repetitive tasks, call subroutines, and operate in various ways on optional parameters.

- @ commands suppresses the display of the line on the screen . Command lines that include the @ symbol are processed normally , but are not displayed. This symbol occupies the first character in the line .

### Syntax

@ command

- : indicates a section label in a batch file for use by the goto command. Syntax

:label name

- Call command invokes a second batch file from within a currently running batch file , and then returns to the original batch file.

Syntax call [drive:\path\] batch file

- Choice command prompts the user for a response and sets the error level variable based on the response given.

### Syntax

Choice /switches prompt

Switchers

/number suppresses display of the valid response keys

/system forces response keys to be case-sensitive.

- Echo command suppresses or displays batch file lines on the screen. Syntax

Echo On/Off Message

- For command allows dos to execute a command repeatedly. It creates a condition called loop , where a single command is executed on a series of parameters.

### Syntax

For% % variable in (dataset)do command [% %variable]

- Goto command redirects batch processing to the line immediately following the speci-fied label. It allows different portions of the batch file to execute selectively.
-

## Syntax

### Go to Label

- If command tests is used to determine if a particular condition is true. If the condition is true , executes a command . Otherwise, ignore the command.
- Pause command pauses the batch file processing and waits for the operator to press a key before continuing.
- Rem command indicates that the line is a non-executable string, used to place explanatory remarks within the batch file.
- Shift command shifts the location of command line parameters one position to the left, thereby allowing including more than 9 parameters on a command line.

The following examples show the application of all the commands you learnt so far.

Examples of batch file:

1. Rem this is try 1.bat

Begin

If"/1"= "=" goto

end Type %1

Shift

Go to begin

End

2. @echo off

Pw

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If errorlevel 1 goto intro

If errorlevel 0 goto end

:intro

File1

:begin

File2

If errorlevel 1 goto play

If errorlevel 0 goto end

:play

File90

Goto begin

:end

#### Dos Commands and Functions

1. Date : displays the system date.
  2. Time : displays the system time.
  3. Dir : displays all the directories and files of the currently currently active directory.
  4. Dir/p : displays all the directory &file name in page format or page wise.
  5. Dir/w : displays all the directory &file name in wide format or wide wise.
  6. Dir/ad : displays only the directory names.
  7. Dir/as : displays the system files.
  8. Dir/a-d : displays only the file name.
  9. Dir/ah : displays all the hidden file &directories .
  10. Dir/ar : displays all the read only file
  11. Dir/oe : displays all the directories &file names according to their extension names in ascending order.
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- 12. Dir/os : displays all the directories & file names according to their size in ascending order.
  - 13. Dir/od : displays all the directories & file names according to their creation date in ascending order.
  - 14. Dir/o-d : displays all the directories & file names according to their creation dates in descending order.
  - 15. Exit : exits or comes out of the dos environment.
  - 16. Md<dir name> : to make a new directory.
  - 17. Cd<dir name> : to change over to directory.
  - 18. Cd .. : to change over to the parent directory.
  - 19. Cd \ : to change over to the root directory.
  - 20. Copy con file name Message : to create a new file

Ctrl +z

Note 2 : while creating a new file it should be kept in mind that the name is unique. A file name can be 12 characters in length 8 characters for name and 3 characters for extension name and a (.) dot to act as separator.

A filename should also contain special characters like @,%,&.

- 21. Type <file name> : to see the contents of a file.
  - 22. Edit <filename> : to edit or modify the contents of a file .
  - 23. Copy source target : to make a duplicate copy of an original file.
  - 24. Xcopy/e/s source target : copies directories along with its files and sub directory to another directory.
  - 25. R <directory name> : to remove or erase an empty directory.
  - 26. Del <filename> : to remove or erase a file.
  - 27. Attrib +h filename : to make a file hidden.
  - 28. Attrib -h filename : to unhide a file.
  - 29. Attrib+r filename : to make a file read only.
  - 30. Attrib -r filename : to make a file non-read only.
  - 31. Sort <filename> : sorts the records or contents of a file in ascending order.
  - 32. Sort/r <filename> : sorts the records or contents of file in descending order.
  - 33. Find "alphabet" <filename> : displays all the records containing the given alphabet in the file.
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34. Find / v "alphabet"<filename> :displays all the records not containing the given record in the file.
35. Find /i"alphabet"<filename> : displays all the records containing the given alphabet ignoring its case in the file.
36. Find/n "alphabet" <filename : displays the line number of the records containing the given alphabet in the file.
37. Find/c "alphabet" <filename>: displays the number of times of the records that contain the given alphabet in the file.
38. Type file 1>file2 : moves the contents of the first file into the second file removing the contents of the second file.
39. Type file1>>file2 : merges or combines the contents of the first File into the second file.
40. Ren <oldfile> <newfile> : changes the name or rename a file. Without Changing its contents.
41. Doskey : to keep record of all the dos Commands that have currently been used.
42. F3 : displays the previous dos command on the Command prompt.
43. F7 : displays the list of all the previous used dos Commands, after activating doskey.
44. F9 : prompts to provide the line number of the Dos commands after pressing f7 key.
- Note 3 : the command number 43 and 44 returns or is capable to return a result only if the "doskey" command has been executed beforehand.
45. Dir alphabet\*.\* : displays all the files starting with given alphabet but of any extension.
46. Dir alphabet ?????.\* : displays all the files with names starting with the given alphabet and of only five character long and any extension.
47. Deltree <directory name> : removes the whole directory along with all its subject-directories and file .
- 48 Type filename> prn : to print a file.
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## Windows

### Introduction to Windows

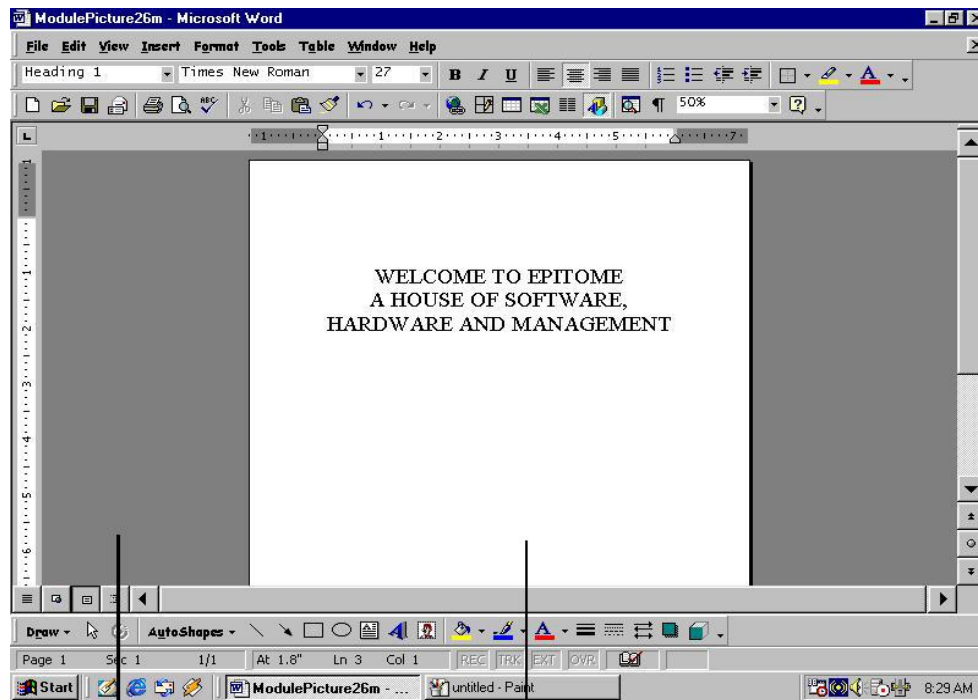
Windows is an operating system, offer a variety of facilities to develop applications, manage computer resources with ease and to use the computer efficiently. From the seventies when GUI ( graphical user interface ) concept was developed through early and mid eighties to the real development of GUI to the mid and late nineties with the capacity of virtual effects ( eye blinding ). Ultimately opening new doors into the new millennium the windows has evolutionised in a long way from a single GUI. But revolutionary software application to the self complete multi programming, multi user operating system, infact with extra edges to control the whole system of software and hardware under the control of user as a common platform for all. It is highly user friendly and enables the user to work with picture or icons. The user doesn't has to remember commands as in dos. It is a graphical system or graphical user interface based system and has been popular among the computer users as its learning period is very less. The windows gives pictorial representations of the command ( operation ). The pictorial representation is sometimes called icon or buttons. In order to execute the operation, the user has to choose ( click ) the appropriate button with the help of some pointing description like the mouse. Any query or representation on the screen will be in a rectangular area called windows. Each operation appears in a window. This window can be moved or resized. In windows environment multiple programs can be seen on the screen at a time. This features of windows is known as multi tasking whereas dos doesn't support multi tasking. In windows also the system of maintaining files and directories are the same as in dos. The only differ-ence is that windows file and directories name can be upto 256 characters long. And the directories are called as folders.

Windows is a boon for users of dos. They no longer need to understand the complex syntax of dos commands. Windows provides a standard, user friendly, powerful interface for all programs under dos.

### Types of Windows

There are two types of windows :

1. Application Window : these windows contain a program that you are running and working with, such as Microsoft word ,excel, power point etc. Most of the work that you will do will be on application window.
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Application Window

Document Window

2. Document Window : Some programs are designed in such a-way that it will allow you to work on more than one document that open at a time. For example Microsoft word for windows allows you to have several documents open at once, in a separate document window. Instead of running "word" several times ( which will use up too much precious RAM), in separate application windows, you can run it in one application and open several document windows within the main application windows

#### Parts of a Window :

Most windows have certain components in common. Because of these similarities, nearly all windows can be operated in the same manner. The parts of a window are :

1. Title bars : the name of the program or document appears at the top of each respective window, which is called the title bar. The title bar also serves another function; it indicates which window is active window. Active window is the one you are currently working in. When a window is made active, it jumps to the front of other windows that might be obscuring it and its title bar change colour. You can make a window active by clicking anywhere within its border.

2. Minimize, maximize / restore and close button : there are three buttons at the right end of the title bar with small graphics in them. These are little control buttons with which you can quickly change the size of a window.

Note : After a window has been maximized, the maximized button change to restore button.

There are essentially three sizes that a window can have :

1. Minimized : the window becomes an icon on the taskbar ( or on the application window if it is document window ) where it is ready to open again but takes up a minimum of screen space.
2. Normal : the window is open and takes up a portion of the desktop.
3. Scroll bar, scroll buttons and scroll boxes : on the bottom right edges many windows you will find scroll bars, scroll buttons and scroll boxes. These are used to move across the information in a window; up, down, left and right. This is necessary when there is too much information ( text or graphics ) to fit into the window at one time. For example, you might be writing a letter that is two pages long. Using the scroll bar you can move around, or scroll. Within your document to see the section you are interested in, as two pages of text can not be displayed in a window at one time in a normal view.
4. Menu bar : the menu bar is a row of words that appears just below the title bar. (it appears only at application window. Document window don't have menu bar. ). If you click one of the words in the menu bar ( called a menu name ) a menu opens up, displaying a series of options that you can choose from. It is through menu's that you can tell all windows programs what action you want to carry out.
5. Status bar : this bar appears above the task bar but only in application window. This bar shows the status of the page number, column number as well as row number (in ms word ), worksheet number ( in excel ), slide number ( in ms power point ) etc.

Entering Information In a Dialog Box :

Now, let us see how to enter information in a dialog box. There are seven basic types of sections in dialog boxes.

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- Text Boxes



text boxes ask you to type text from the keyboard. Sometimes there will be text already typed in for you. If you want to keep it as it is just leave it alone. To change the text, simply type in new text.

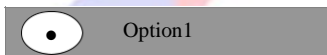
- Check Boxes



Check1

check boxes are the small ( or sometimes diamond shaped ) boxes. They are used to indicate nonexclusive options. There are toggle settings that you activate or deactivate by clicking the box. When the box is empty, the option is off, when you see an x or v the option is on.

- Option buttons



option buttons are exclusive settings. Sometimes called radio buttons, these are also round rather than square or diamond shaped, and only one option can be set on at a time.

- Command buttons

Ok

command buttons are like option button except that they are used to execute a command immediately. They are also rectangular rather than square or circular. There are always a command button that has a thicker border; this is the command that will execute if you press enter key.

- List box :

list boxes are like menus, they show you a list of options or items through which you can choose. Some list box are too small to show all the possible selections, in this case use the scroll bar on the right side of the box.

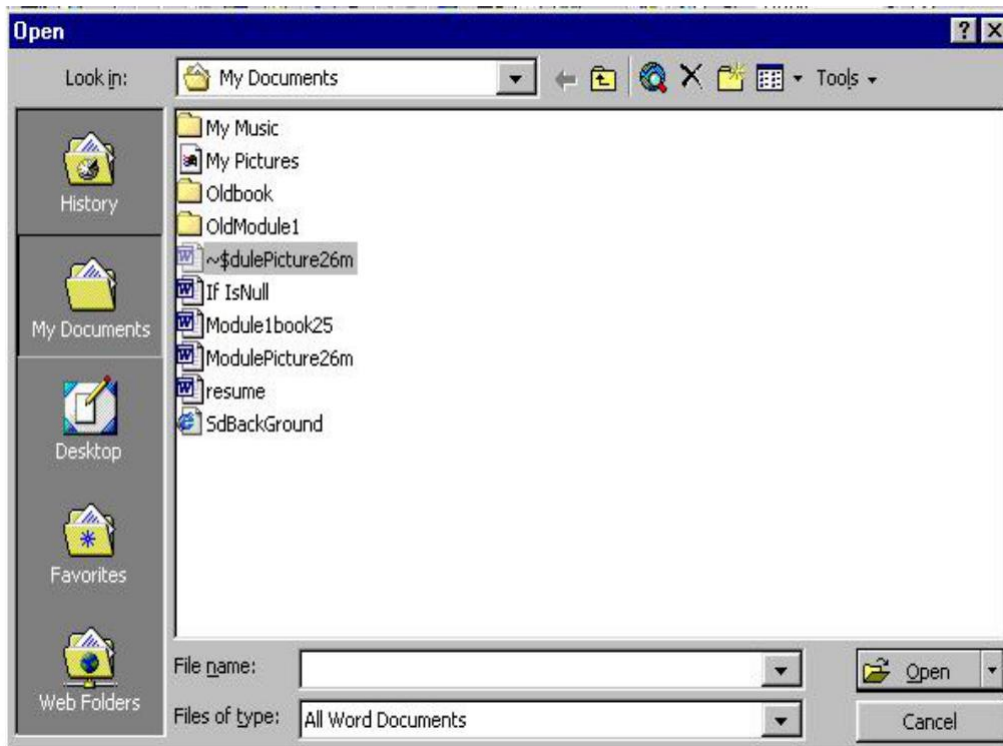
- Drop down list box or combo box

drop down list boxes are indicated by a small arrow in the box to the right of the option. Current setting is displayed to the left of the little arrow. Clicking the arrow opens a list that works just like a normal list box and has scroll bars if there are a lot of options

- Dialog box

a file dialog box often appears when you are working with windows programs. Though used in a variety of situations, you are most likely to see a file dialog box when you want to open file or when you want to save a document for the first time.

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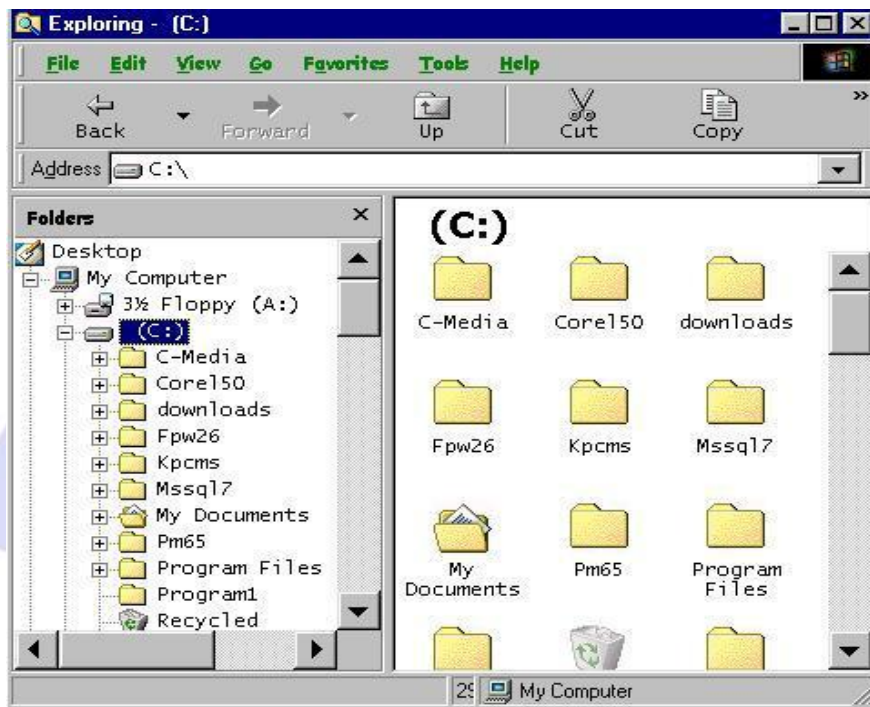


Dialog Box

### Windows Explorer

Windows explorer can be said to be the windows equivalent of the dir command and its suffixes of dos. Windows explorer or simply explorer allows us, as the name itself suggest, to explore what is in our computer. Everything in the computer is represented by the help of icons, there are icons to represent the drive, the folders, subject folders, files etc. We can figure out if any folder has a subject folder or not just by looking if there is a plus ( + ) symbol preceding the folder name or not. And we can see what is inside a folder by selecting it ( the folder icon changes and gives the impression of being open). On the right panel of the win-dow the files or subject – folders insides the selected folder is shown. When a particular folder is open the plus symbol changes to a minus ( - ) symbol. The explorer window has an address bar to show where the user is currently working or exploring by showing the path. The menu

bar and toolbar functions such as moving or copying a particular file from one place to another. The status bar shows how many files or folders ( objects ) are there inside a selected folder and also the size of the folder in bytes, kilobytes, megabytes.



Windows Explorer

