What is a disk operating system?

A DOS, or disk operating system, is an operating system that runs from a disk drive. The term can also refer to a particular family of disk operating systems, most commonly **MS-DOS**, an acronym for Microsoft DOS.

An operating system (OS) is the software that controls a computer's hardware and peripheral devices and allows other software programs to function. Early computers of the 1940s and 1950s did not have disk drives. Instead, they were hard-wired to carry out specific computations.

Later, computers were able to store instructions loaded into the computer's memory using punch cards and then, after that, magnetic tapes. Computer memory space was limited, and when the instructions to control a computer were moved onto a disk drive, such as a floppy disk or internal HDD, it was considered cutting-edge technology.

DOS is also used to describe several similar command-line disk operating systems. Early computers, such as the Commodore 64, Atari 800 and Apple II, all featured a disk operating system, including Commodore Business Machines DOS, Atari DOS and Apple DOS, respectively. DOS/360 was an OS for IBM mainframes, which first appeared in 1966, but it is unrelated to the 8086-based DOS of the 1980s.

Introduction:

DOS (Disk Operating System) is an oldest type of Operating System. Disk Operating System is abbreviated as DOS. DOS is a CUI type of Operating System. In computer science, a generic term describing any operating system is system software which is loaded from disk devices when the system is started or rebooted. DOS is a single-tasking, single-user operating system with a command-line interface.

DOS acts on commands. Because DOS is ready to perform when given proper command hence, it is also known as Command Prompt.

Commands are certain words of English language or short form of English words. The meaning of this word or short form is already known to DOS. Since, DOS recognized these words and hence acts accordingly. These words and short forms of Englishwords are better known as commands.

Internal Command: -Those commands which are already stored in the "Command.Com" file of DOS are known as internal commands. For example, CLS, VOL, TIME, DATE, COPY etc

External Command: -Those commands which are not included in the command.com fileof DOS rather included in other files of DOS are known as external commands. It is formatted according to programme. For example, TREE, FORMAT, MODE etc

How does a disk operating system work?

When a computer is powered on it goes through various steps called the *boot process*. For a computer running a disk operating system, the following six steps are standard:

1. The read-only memory (ROM) bootstrap loader reads the Master Boot Record and passes control over to it.

2. The boot record loads the disk operating system into memory, and it takes control of the machine.

3. The computer transfers data stored on a magnetic disk to its main memory, the random-access memory.

4. It also transfers data to external devices attached to the computer, such as a computer screen or printer.

5. The computer provides various application programming interfaces for programs like character input/output (I/O), memory management, program loading and termination, as well as handling input from the user through a keyboard.

6. The OS also provides file management that organizes, reads and writes files on storage. The files are organized in a hierarchical structure of directories, subdirectories and files.

A disk operating system doesn't have a graphical user interface (GUI). Its interface is character-based, so users must type commands in the command line to indicate what actions they want.

DOS features

Among the features and limitations of disk operating systems are the following.

Features

- **Command-line interface (CLI).** It does not have a GUI and doesn't accept mouse inputs. It is a character-based interface system where all commands are entered in text at the command-line prompt.

- **Management.** A disk operating system can manage a computer's files, I/O system and its memory.

Limitations

- **No built-in security.** It does not have built-in security, such as file ownership and permissions.

- **No multiusers or multitasking.** It also does not support multiusers or multitasking. It is only able to run one program at a time, but it provides direct access to the basic I/O system and underlying hardware.

- **Challenging interface.** The CLI, in which a user must type in commands, requires the user to remember commands to run programs and do other OS tasks. This approach makes it difficult for novices to use. For example, typing the command cd *directory_name* changes the current working directory to the named directory and typing the command dir lists the files in the current directory.

Common DOS commands

MS-DOS is not case-sensitive, so commands can be typed in either uppercase or lowercase. However, other disk operating systems have case-sensitive CLIs. DOS commands include the following.

Command	What it does	Example
Cd	Changes directory	Type cd c:\techtarget in the command line to change the working directory to c:\techtarget.
Cls \\>cls ↵	Clears all the contents on the screen, leaving only the command prompt	Type cls in the command line.
Copy	Copies one or more files to another location	Type copy c:\techtarget\file.txt c:\techtarget\file2.txt to copy c:\techtarget\file.txt to c:\techtarget\file2.txt.

Command	What it does	Example
Del	Deletes one or more files	Type del c:\techtarget\file2.txt to delete the file file.txt from the directory c:\techtarget.
Deltree	Deletes all files and subdirectories from a computer	Type deltree c:\techtarget\drafts to delete the directory drafts, including all files and subdirectories contained in it.
Dir C:\>Dir ↵	Displays a list of files and directories in a directory	Type dir c:\techtarget to display a list of files and directories in the directory c:\techtarget.
Format	Formats a disk for DOS files	Type format e: to format the disk in drive e: for use with DOS.
Help	Lists the available commands or more information about a specific command	Type help del to display information about the del command and how to use it. Most commands have optional switches that are explained in the help information.

Command	What it does	Example
mkdir or md	Creates a new subdirectory	Type mkdir c:\techtarget\drafts to create the subdirectory drafts in the c:\techtarget directory.
Move	Moves files or directories from one directory to another or from one drive to another	Type move c:\techtarget\file.txt c:\techtarget\drafts\file.txt to move c:\techtarget\file.txt to c:\techtarget\drafts\file.txt.
ren or rename	Changes the name of a file or directory	Type ren c:\techtarget\file.txt c:\techtarget\file2.txt to rename the file c:\techtarget\file.txt to c:\techtarget\file2.txt.
Type	Displays the contents of a file on the screen	Type type c:\myfile.txt to show the contents of the myfile.txt file.
*	A wildcard character that represents one or more characters a group of files has in common	Type copy c:\techtarget*.txt c:\techtarget\drafts to copy all files with the extension of .txt to c:\techtarget\drafts.
?	A wildcard character that represents a single character a group of files has in common	Type copy c:\techtarget\document?.txt c:\techtarget\drafts to copy files named document1.txt, document2.txt and so on to c:\techtarget\drafts.

Some Internal Commands: -

1. **CLS** To clear the screen.
   \>cls ↵

2. **DIR** To view the directory and filesC:\>Dir ↵

3. **DATE** To View and change the dateC:\>Date ↵
   Current date is: 01-01-2008
   Enter new date (mm/dd/yy):21-03-2009 ↵

4. **TIME** To view and change the time.C:\>Time ↵
   The current time is: 06:11:56.45aEnter new
   time:1:15:48.57p ↵

5. **Exit** To exit from DOS screen.C:\>Exit

6. **Cd** To go to the root/main directory
   C:\Computer\Monitor>cd\ ↵
   C:\>

7. **Cd** To change the directory. C:\>CD
   φ<Directory Name> ↵

8. **Cd..** To go one directory back.
   C:\Computer\Monitor>cd.. ↵C:\Computer>

9. **Cd...** To go two directory back.
   C:\Computer\Monitor>cd... ↵
   C:\>

10. **Md**   To make a new directory C:\> MD
φ<Directory Name> ↵

11. **Rd**   To remove any existing directory C:\>RD φ
<Directory Name> ↵

12. **Copy Con**   To create a file. C:\>COPY φ CON
φ<FILE NAME> ↵

13. **COPY**   To copy the file.
C:\>Copyø<File Name>ø<New File Name> ↵

14. **Del**   To delete a file C:\>DEL φ
<File Name>

15. **Ren**   To rename the file
C:\>REN φ <OLD FILE NAME> φ <NEW FILE NAME> ↵

16. **Ver**   To check the version of DOS C:\>VER↵

17. **Type**   To display the contents. C:\>TYPE
φ<File Name> ↵

18. **Vol**   To check DOS volume. C:\>Vol ↵

19. **Label**   To apply label to any drive. C:\> Label
<Name> ↵

20. **Attrib**   To change the attribute of a directory or a file.
c:\>Attribø<File Name>ø+h/-hø+s/-sø+r/-r ↵

21. **Color**   To change the colour of background and font of DOS screen c:\>color
<any digit from 0 to 9 or ABCDEF>
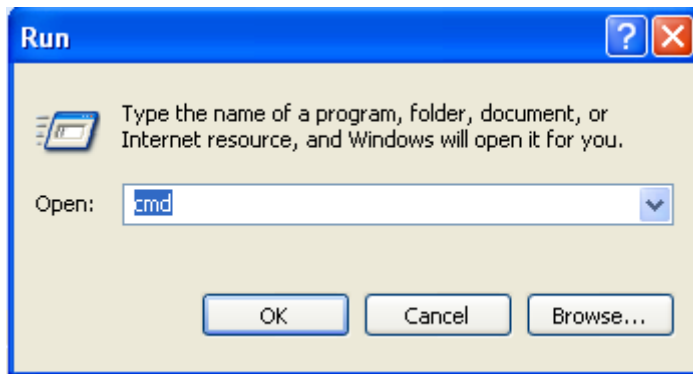
Some External Commands: -
1. **FORMAT** To   format   any   Drive.
C:\>FORMAT φ<DRIVE> ↵

2. **TREE**   To view directory & Sub directory
C:\>Treeø<Directory Name> ↵

3. **CHKDSK**   To Check disk or drive C:\>Chkdsk ↵

4. **MOVE**   To move any file to any location.
C:\>Move<sorce File Name>ø<Destination> ↵

5. **Edit**   To edit or modify the contents of the text file. C:\> EDIT φ
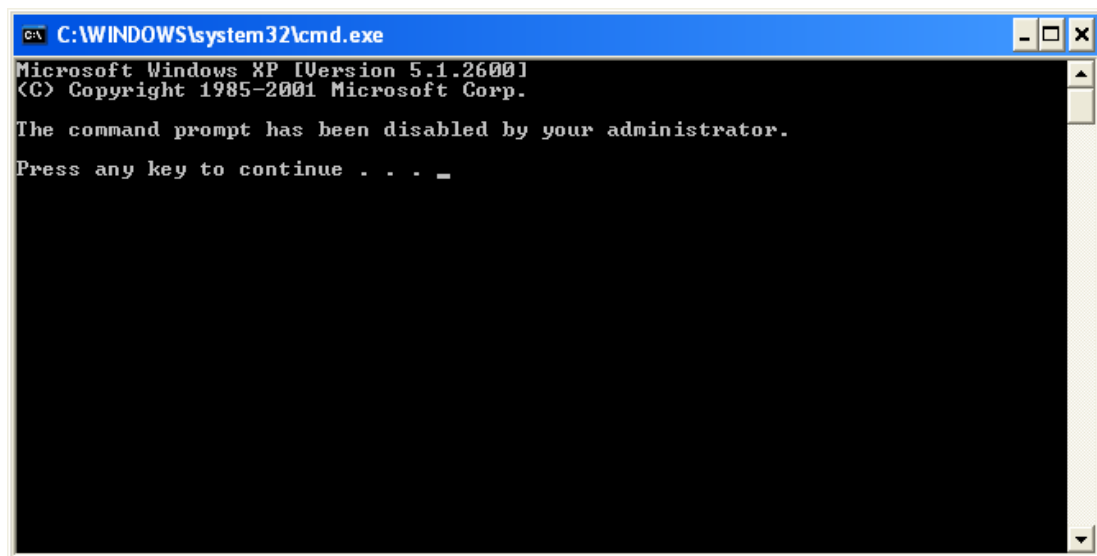<File Name> ↵

If we have installed WINDOWS as our main Operating System then we get a DOS environment within WINDOWS. MS DOS (Microsoft DOS) environment can be run oncomputer through WINDOWS in following way:

Click on start button and in the list produced click on "RUN" option. A dialog box appears.In this dialog box, type cmd or command in the given box next to label "Open". Press enter or click on OK button. DOS will open on your computer screen.

Start RUN

RUN dialog box.

DOS Screen