operating system is a less-restrictive real time operating system, where a critical real-time task gets priority over other tasks, and retains that priority until it completes. Soft real time operating systems have more limited utility than hard real operating systems.

DOS

DOS or Disk Operating system is system software that provides an interface between the computer hardware and the computer user. DOS makes the computer alive. Without the DOS the computer is a dead machine, it cannot be used for any purpose. The most commonly used DOS with the PC is the MS-DOS, developed by microsoft corporation. It is operating system prepared for carrying single user and provide character user interface.

Functions of DOS

DOS acts an interpreter or we can say it acts as an interface between the hardware and the software. The major functions of DOS are summarized below.

1. It creates back-up file.
2. It also controls the operation of hardware like CPU and memory.
3. It allocates memory to programs.
4. The system unit contains the brain of PC–the CPU, hard disk and so on. All of these are derived by DOS which in turn is directed by the commands we type in at the keyboard.
5. It creates new files, deletes old files and can also rename them.
6. It formats the new floppy disks so that they can be made usable.

Wild Cards

A wild card is a character that can represent one or more character in a file name. The DOS has recognized two wildcards

(i) The asterisk (*) can represent one or more characters that a group of files have in common.

(ii) The question mark (?) represents s a single character that a group of files have a common name.

Example :

     A*.*

           /*means all file whose name starts with letter A.

     RCE*

           /* all file and directory whose names start with R.

     ?

           /* file and directory whose names contain only one letter.

Two types of commands are provided in DOS, internal and external.

Internal vs. External Command

(i) Internal command are always there in the primary memory whereas the external command needs to be loaded from the secondary memory into the primary memory each time they are executed.

(ii) Internal command are faster in execution as compared to the external commands.

(iii) We cannot add internal command from our side but we can add external command from our side.

File naming rules are:

1. A file name can have two parts, a main file name and a name extension.

2. The name can be minimum 1 char long and maximum 8 char long.

3. The name extension can be minimum 0 char long *i.e.*, you can have file name without a name extension and the max. Length of the name extension can be 3 char.

4. A file name and the name extension can contain alphabet as well as numbers and they can start with alphabet or numbers.

5. The file name and the name extension are separated by a period (.) symbol. A file name cannot contain more than one period symbol.

6. Other than alphabet and the numbers a file name and extension can also contain some other character available on the keyboard but many of these characters are not allowed in a file name so it is best to avoid than when giving a file name. Some of special characters not allowed in a file name.

    ^   [ ] : ;   " < > + - == *

7. A file name or the name extension cannot contain the space.

8. A file name cannot be the following reserved words. These words have special use for the DOS.

    Com, Con, Lpt, Prn.

Some Basic Command in DOS

1. VER

The ver command display the current DOS Version.

C:\ver and press Enter

MS Dos Version 6.22

2. TIME

The time command can be used to display and change the system time.When the time command is executed, it displays the system time . It also prompts the user for the new time, if you want to change the system time you can type in the new time.

Time and press Enter

Current time is 4 : 32 : 45.56p

Enter new time:

3. DATE

The date command can be used to view and change the system date. When the date command is executed, it displays the system date.

Date and press Enter

Current date is

Enter the date (mm-dd-yy)

4. CLS

This command is executed and clears the screen and places the prompt and the top left corner of the screen.

CLS and press Enter

5. DIR

The DIR command can be used to list selected entries present in a specified directory (To get the list of all the files created in the current directory we can DIR command).

DIR and press Enter

It displays all the directory and files of the current drive.

/P If list of files is long enough not to fit on the screen, then that could be seen page wise. Page wise display one screen on the listing at a time .To see the next screen, press any key.

/W will give a horizontal display of files have five files in a time.

/A display files with specified attributes.

    D = Directories.
    H = Hidden files.
    S = System files.
    R = Read only files.

/O : It displays the files in sorted order.

    N = In ascending alphabetic order by name.
    E = In ascending alphabetic order by extension .
    D = Sorted by data and time with earliest first.
    S = In Increasing order by size ,smallest first.
    L = Display unsorted directory names and filenames in lowercase.

6. MD or MKDIR

This command creates a new directories. We can create a new directory or sub directory in the main directory by using this command.

    MD < dir name >

7. CD

This command is used to change the directory or to display the name of the current directory.

    CD < dir name> and press Enter

Change to a subdirectory which must be there in the current directory.

    CD\ < dir name>

Change the directory to a main directory which must be there in the root directory.

8. RD or RMDIR

Delete a directory. The directory must be empty except for the ``.'' And ``...'' symbols.

    RD < Directory name >

9. REN or RENAME

Changes the name of the file or the directory.

    REN < Old file name > < New file name>

10. DEL

This command is used to delete the file.

    Del < File name>

11. TREE

This command is used to display the directory structure nested in a specified directory. The directory structure is displayed in the form of tree.

    Tree < Directory name >

12. COPY CON

This command is used to make a file. (This is a actually a copy command which is going to get data from the CON (Console) and will store data in the file specified at the end of the command.

    COPY CON < File name >

Here Con is a reserved word which is used to console. There is a drawback of this command that we cannot modify the contents of previous line. That means once after moving to a new line we cannot go the previous line.

To save the file by **Ctrl Z or F6.**

13. EDIT

Display the full screen editor while not as fully featured as a word processor ,it is handy for editing files. If we invoke EDIT without parameter the editor appears without a default open file or we can specify file name.

    EDIT drive :\path\ file

14. TYPE

This command is used to display the content of a text file.

    Type < File name>

15. PROMPT

This command is used to change prompt.

    PROMPT < Text>

To go back up to the default PROMPT use PG

16. DOSKEY

This command is used to load the Doskey program into memory. The doskey program recalls MS-DOS Command.

17. VOL

VOL displays the volume label of the specified drive.

    VOL :

18. ATTRIB

Displays or changes file attributes.

    ATTRIB [+R ǀ –R] [+A ǀ –A] [+S ǀ –S] [+H ǀ –H] [[drive:][path]filename] [/S]

+   Sets an attribute.

–   Clears an attribute.

R   Read-only file attribute.

A   Archive file attribute.

S   System file attribute.

H   Hidden file attribute.

/S Processes files in all directories in the specified path.

MS DOS has a certain attribute with a file such as read only , archive and hidden only. To add an attribute for a file we have to use `+' sign with the desired attribute and to remove an attribute we have to `-' sign.

+ R   Read only attribute.

− R   Remove the read only attribute.

+ H   Hidden the file.

− H   Remove the hidden attribute.

+ A   Add archive attribute.

− A   Remove archive attribute.

+ S   Add the system.

19. COPY

This command is used to copy one or more files either on the same disk or from one disk to another.

>   COPY [/A ǀ /B] source [/A ǀ /B] [+ source [/A ǀ /B] [+ ...]] [destination
>   [/A ǀ /B]] [/V] [/Y ǀ /-Y]

source   Specifies the file or files to be copied.

/A   Indicates an ASCII text file.

/B   Indicates a binary file.

destination Specifies the directory and/or filename for the new file(s).

/V   Verifies that new files are written correctly.

/Y   Suppresses prompting to confirm you want to overwrite an existing destination file.

/−Y   Causes prompting to confirm you want to overwrite an existing destination file.

The switch /Y may be preset in the COPYCMD environment variable.

This may be overridden with /--Y on the command line

To append files, specify a single file for destination, but multiple files for source (using wildcards or file1+file2+file3 format).

20. XCOPY

This command is very useful in a situation where it desired to copy files from sub-directories of the current directory to the disk.XCOPY command automatically created the corresponding sub directories on the disk or drive if they do not already exist.

/S   Copies directories and subdirectories except empty ones.

/E   Copies directories and subdirectories, including empty ones.

              Same as /S /E. May be used to modify /T.

/W   Prompts you to press a key before copying.

/C   Continues copying even if errors occur.

/I   If destination does not exist and copying more than one file, assumes that destination must be a directory.

/Q   Does not display file names while copying.

/F	Displays full source and destination file names while copying.
/L	Displays files that would be copied.
/H	Copies hidden and system files also.
/R	Overwrites read-only files.
/T	Creates directory structure, but does not copy files. Does not include empty directories or subdirectories. /T /E includes empty directories and subdirectories.
/U	Updates the files that already exist in destination.
/Y	Overwrites existing files without prompting.
/-Y	Prompts you before overwriting existing files.
/N	Copy using the generated short names.

21. FORMAT

Formats a disk for use with MS DOS. It a new root directory and file allocation table for the disk . Every new disk must firs be formatted using this command so that MS DOS may be use that.

FORMAT drive: [/V[:label]] [/Q] [/F:size] [/B | /S] [/C]

FORMAT drive: [/V[:label]] [/Q] [/T:tracks /N:sectors] [/B | /S] [/C]

FORMAT drive: [/V[:label]] [/Q] [/1] [/4] [/B | /S] [/C]

FORMAT drive: [/Q] [/1] [/4] [/8] [/B | /S] [/C]

/V	is used to tell FORMAT commands that we want a volume\name to be disk label.
/Q	Performs a quick format.
/B	Allocates space on the formatted disk for system files.
/S	Copies system files to the formatted disk.
/1	Formats a single side of a floppy disk.
/4	Formats a 5.25-inch 360 K floppy disk in a high-density drive.
/8	Formats eight sectors per track.
/C	Tests clusters that are currently marked "bad."

22. DISKCOPY

This command is used to make a duplicate copy of a disk . It copies the contents of diskette in the source drive to the diskette in the target drive .The target diskette is formatted if necessary, during the copy.

DISKCOPY [drive1: [drive2:]] [/1] [/V] [/M]

/1	Copies only the first side of the disk.
/V	Verifies that the information is copied correctly.
/M	Force multi-pass copy using memory only.

The two floppy disks must be the same type.

You may specify the same drive for drive1 and drive2.

23. CHKDSK

Checks a disk and displays a status report.

CHKDSK [drive:] [path]filename] [/F] [/V]

[drive:][path]	Specifies the drive and directory to check.
filename	Specifies the file(s) to check for fragmentation.
/F	Fixes errors on the disk.
/V	Displays the full path and name of every file on the disk.

Type CHKDSK without parameters to check the current disk. Instead of using CHKDSK, try using SCANDISK. SCANDISK can reliably detect and fix a much wider range of disk problems.

24. LABEL

Creates, changes, or deletes the volume label of a disk.

LABEL [drive:][label]

25. DISK COMP

This command is used to compare two files to check if they are identical .

DISK COMP [DRIVE 1] [DRIVE 2]

Where,

[DRIVE 1] = is the first drive

[DRIVE 2] = is the second drive to be compared.

26. MORE

Displays output one screen at a time.

MORE [drive:][path]filename

MORE < [drive:][path]filename

command-name I MORE [drive:][path][filename]

[drive:][path]filename	Specifies file(s) to display one screen at a time
command-name	Specifies a command whose output will be displayed.

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