

Simplified

DISK OPERATING SYSTEM (DOS)



e-Book-2

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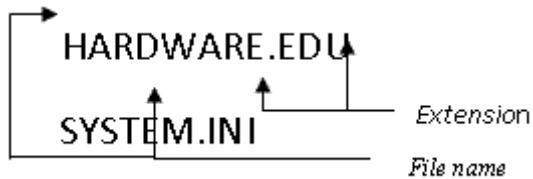
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MS-DOS (Microsoft Disk Operating System)

MS-DOS is older operating software, which was designed to work with 8086 processor, but still it is working fine with latest processors. It is necessary to be installed in the computer. Till windows 3.1, DOS was an individual operating software but now it became a part of windows. It helps to boot the PC. It is a text based single tasking operating software.

MS-DOS manifests each program and piece of task of data as an individual file. Each file has a name, which is stored with the file in the drive. Name breaks down into two parts; the file name and the extension. The file name can be no longer the eight characters and the extension, which is optional, can be up to three characters. No space and other illegal characters like (/ \ { [] + = - ; ? > <) etc can be used in the file name. The file name and extension are separated by a dot (.). Some example of file name and extension are as



follows:

The extension tells the type of file. Generally program files has EXE or COM, System files has SYS as extension

Directories:

DOS has its own system to assign the drives. While booting DOS assign the first floppy drive as A: and second; if installed as B:. Hard drives starts from C: and can continue to Z:; if necessary. DOS defines these letters. Like all OS DOS also creates and uses the same hierarchical directory tree to organize the contents of these drives. A directory is a group of all files. If any directory is created inside any existing directory, the second is called the sub directory.

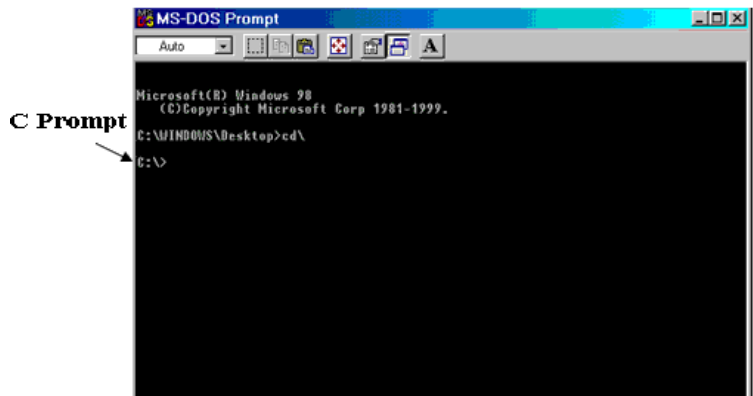
DOS three main files:

Three main files, accompanied by nearly 80 support files, compose the DOS. These three main files are:

TIPS: These files are loaded in the same order.

1. IO.SYS
2. MSDOS.SYS
3. COMMAND.COM

The files are also called the DOS bootable files and must be loaded in the C: drive. IO.SYS handles talking to the BIOS and hardware. MSDOS.SYS is the primary DOS code often called the kernel. COMMAND.COM actually interprets the commands. This file has inbuilt the several commands in it which are known as the internal commands. When we boot the PC in the DOS mode than we get the following screen:



Prompts is a path followed by a > sign. When we get prompt on the screen, we can start to give the commands.

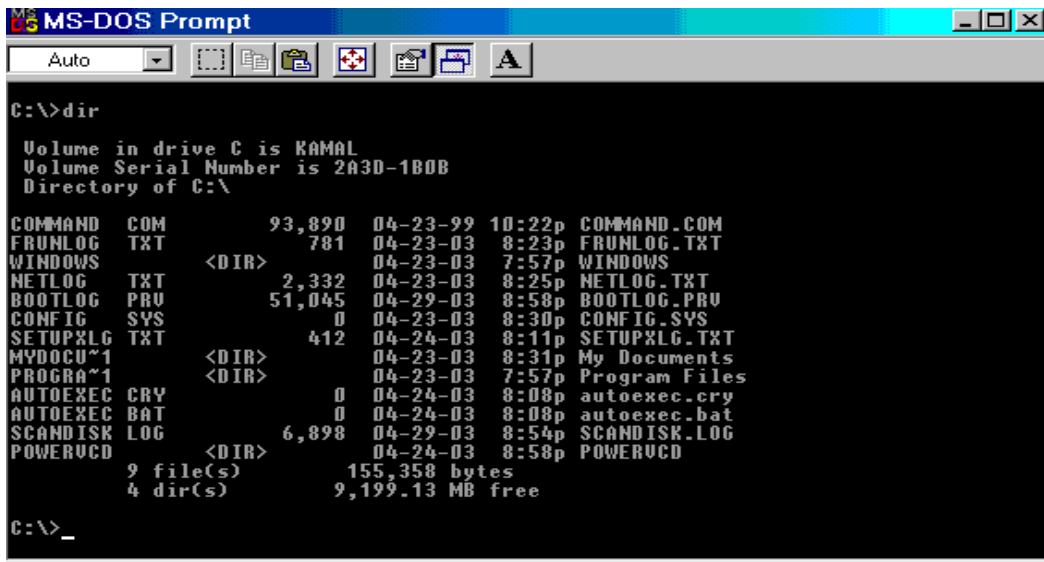
DOS commands:

Being a text based OS, DOS uses commands to complete its tasks. Commands are simply the orders given by the user to do the job with computer. DOS commands are classified into two groups. They are Internal commands and external commands.

Internal commands:

Internal commands are inbuilt in COMMAND.COM which means COMMAND.COM alone can handle these commands. Some commonly used internal commands and their functions are as follows:

1. **DIR** :- This command is used to display the contents of current directory. When we type this command in the C prompt, we may see something like this:



```

MS-DOS Prompt
Auto
C:\>dir

Volume in drive C is KAMAL
Volume Serial Number is 2A3D-1B0B
Directory of C:\

COMMAND.COM          93,890  04-23-99  10:22p  COMMAND.COM
FRUNLOG.TXT          781    04-23-03   8:23p  FRUNLOG.TXT
WINDOWS              <DIR>   04-23-03   7:57p  WINDOWS
NETLOG.TXT          2,332  04-23-03   8:25p  NETLOG.TXT
BOOTLOG.PRV        51,045  04-29-03   8:58p  BOOTLOG.PRV
CONFIG.SYS           0       04-23-03   8:30p  CONFIG.SYS
SETUPXLG.TXT         412    04-24-03   8:11p  SETUPXLG.TXT
MYDOCU*1            <DIR>   04-23-03   8:31p  My Documents
PROGRA*1            <DIR>   04-23-03   7:57p  Program Files
AUTOEXEC.CRY         0       04-24-03   8:08p  autoexec.cry
AUTOEXEC.BAT         0       04-24-03   8:08p  autoexec.bat
SCANDISK.LOG        6,898  04-29-03   8:54p  SCANDISK.LOG
POWERVCD            <DIR>   04-24-03   8:58p  POWERVCD
9 file(s)             155,358 bytes
4 dir(s)              9,199.13 MB free

C:\>_

```

Example: C:\>DIR

This command will display the content of C:\ directory. Several switches can be used after this command. Switches are the conditions to complete the task of command. To find the switches and their uses, type DIR/? in the prompt. This command will display the valid switches and their uses.

2. **CLS** :- This command is used to clear the screen. When we type the command and press enter than the text of screen will disappear and we will get the prompt only.

TIPS ↵ is known as enter sign. After giving any command do not forget to press enter key.

Example: C:\>CLS

3. **COPY_CON** (_ sign means

single space.):- This command is to create a new file. If you want to create a file in the DOS, type this command and give the file name.

Example C:\>COPY_CON_file name

When we press enter key after giving this command, the cursor will jump to next line where we can start typing our text. After completing the text press Ctrl and Z simultaneously or press F6. The following sign and message will appear telling that the file is saved. This message shows that the file made by us is properly saved.

4. **DEL** :- This command is to delete a file from the drive. Deleting a file means removing the file or erasing the file from the drive.

Example C:\>DEL_file name

5. **COPY** :- This command is to copy any file from one location to another. This command only makes the duplicate copy of any existing file.

Example C:\>copy_file name_target location
C:\>copy_command.com_a: (This command will copy the command.com file in the floppy disk,)

6. **MD** :- This command is to make a directory.

Example C:\>MD_directory name

We can make several directories inside the directory. To make directory inside the directory we have to go inside the directory.

7. **CD** :-This command will help to go inside the directory. To go inside the directory give the following command;

Example C:\>CD_directory name
C:\>CD_kamal (The result of this command will be:
C:\kamal>

8. **CD** :- This command is to come back to the root directory. If we have to come back to the root directory from any working directory or subdirectory at once type this command.

Example C:\Kamal\Anu\Arpan>cd\
C:\>

9. **CD..** :- This command is to step by step come back to the parent directory.

Example C:\ Kamal\Anu\Arpan >cd..
C:\ Kamal\Anu >

10. **RD** :- This command is used to remove an empty directory. It can not delete a directory heaving any document.

Example C:\>RD_direcotory name

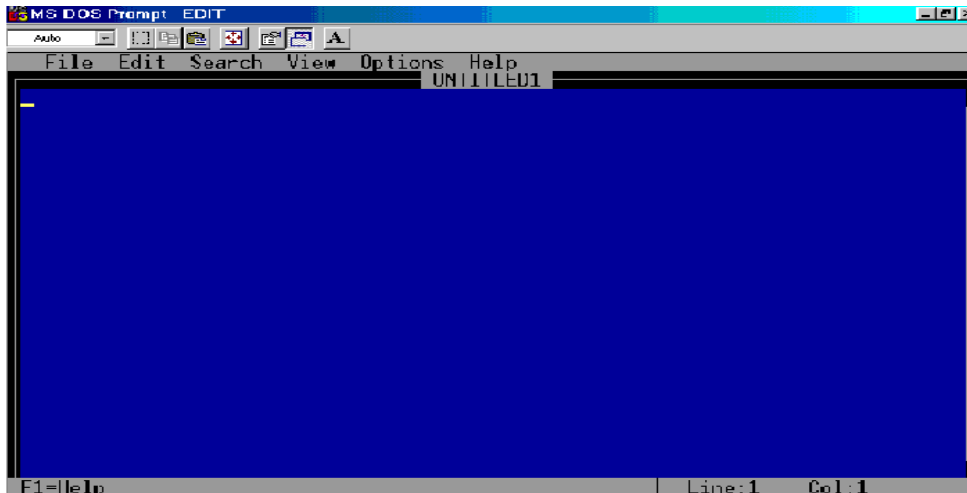
Some other internal commands to be practiced in the lab :

| | | |
|--------|------|------------|
| PROMPT | EXIT | TIME |
| DATE | VOL | VER |
| REN | PATH | BREAK etc. |

External Commands:

External commands not only recognized by COMMAND.COM file. These commands need the individual files to be executed. Internal commands are not enough to complete all the tasks of DOS. So, external commands are designed. Some mostly used external commands are :

1. **EDIT** : - This command is use to edit any text of DOS. EDIT.COM is the file needed to run this command. If this file is not loaded in the proper location, we can not run EDIT command. When we type the EDIT command in the system prompt, the edit screen appears as follow:

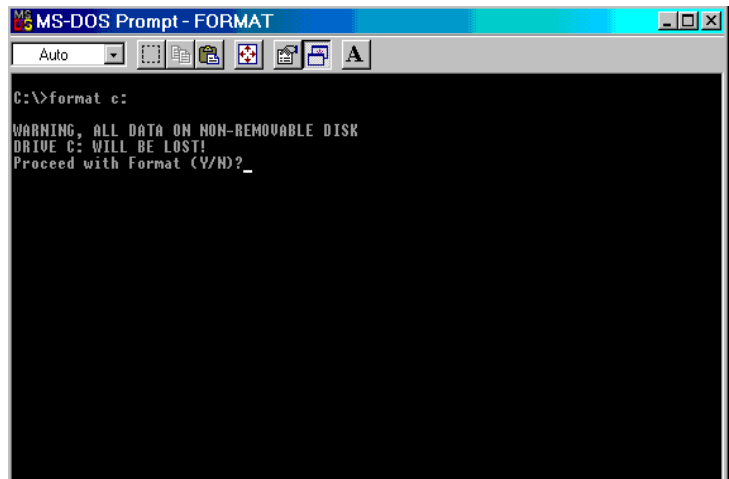


In this screen we can not only type the text but also modify the text, which was already written. To edit any existing file give the command as:

C:\>edit_rita

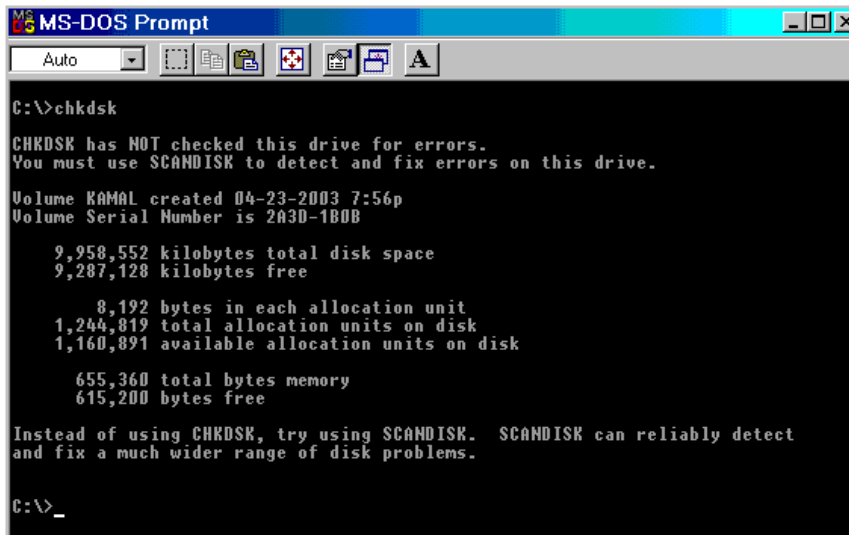
2. **FORMAT** :- This command is used to format any drive like floppy drive or hard disk drive. Formatting any drive means loosing all the contents of the drive to create new file system. So, before formatting any drive, be sure that the drive does not have any important document. To format any drive type the command as follow:
C:\>FORMAT_drive letter (Drive letter like C:, A:, D: etc)

When we press the enter key to format the hard drive than a conformation message display as follow:



3. **FDISK** :- This command is used to perform the partitioning of a hard disk. Partitioning of a hard disk means creating logical DOS drives on it like C:, D:, E: etc. At least one partition should be created to make a new hard disk working. FDISK.EXE file should be in the disk to run this command.

4. **CHKDSK** :- This command helps to check the currently use drive. CHKDSK.EXE file is needed to run this command. When we type this command in the system prompt the above information displays as follow:



```

MS-DOS Prompt
Auto
C:\>chkdsk

CHKDSK has NOT checked this drive for errors.
You must use SCANDISK to detect and fix errors on this drive.

Volume KAMAL created 04-23-2003 7:56p
Volume Serial Number is 2A3D-1B0B

   9,958,552 kilobytes total disk space
   9,287,128 kilobytes free

     8,192 bytes in each allocation unit
  1,244,819 total allocation units on disk
  1,160,891 available allocation units on disk

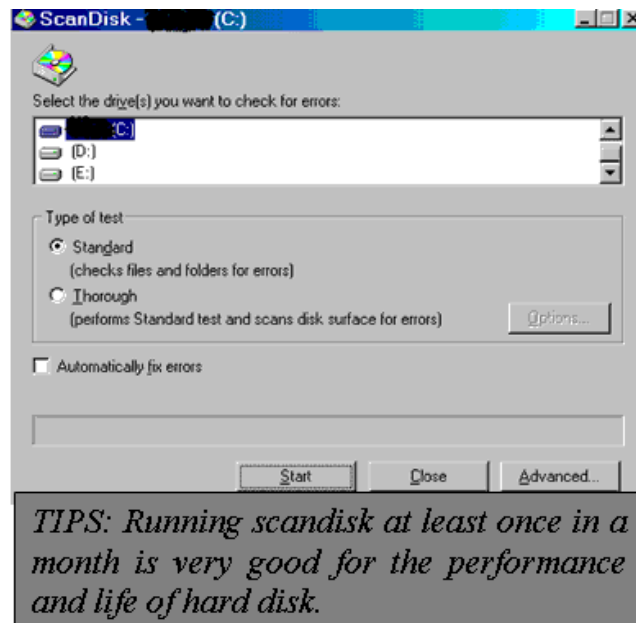
   655,360 total bytes memory
   615,200 bytes free

Instead of using CHKDSK, try using SCANDISK.  SCANDISK can reliably detect
and fix a much wider range of disk problems.

C:\>_

```

5. **SCANDISK** :- This command is better than CHKDSK because this command checks the drive for error. SCANDISK.EXE file is to be loaded in the disk to run this command. When we type the command the following dialog box will appear in the windows mode. (If the computer is started in the DOS mode this dialog box will not appear. The scandisk will start to scan the disk in the DOS mode) Select the option and click on the START button. First option helps to check the files and folder for error and second option helps to run the standard scanning and surface scanning for error.



6. **MOVE** :- This command is used to move a file from one location to another. Moving a file is just like cut and paste of MS-Word. MOVE.EXE is the file to run this command.

Example C:\>MOVE_file name_target location

7. **DELTREE** :- This command helps to remove a directory with its contents. DELTREE.EXE is the main file to run this command.

Example C:\>DELTREE_directory name

8. **SYS** :- This command is used to transfer DOS system files from one disk to another. SYS.COM is main file to run this command.

Example C:\>SYS A: (This command will transfer the main system files of DOS to floppy disk)

9. **ATTRIB** :- This command will display or change the attributes of file. Attribute means features of a device or manner in which a variable is handled by the computer. ATTRIB.EXE file is responsible to run this command. Using this command we can make a file read only, hidden or system etc.

Some other external commands to practice in the lab:

| | | |
|----------|---------|----------|
| MORE | TREE | XCOPY |
| DISKCOPY | EXTRACT | DISKCOMP |
| LABEL | RESTORE | FC etc. |

Wild-Cards and their functions

Wild cards are commonly used for the quick function of the execution of DOS commands. Wild Cards are just some symbols to represent any character or name. Mostly used two wild cards are asterisk (*) and question mark (?). The combination of wild cards and their meanings are as follow:

| Wild-Cards | Meanings |
|------------|--|
| * | Indicates any file name |
| .* | Indicates any extension |
| *.* | Indicates any file name with any extension |
| ? | Indicates any one character |
| : | Indicates any drive letter like C:\>, A:\> etc |
| / | Indicates options being added like C:\>DIR/P |
| ^ | Indicates control sign |
| | Indicates pipeline (Vertical bar) |

Working with some important DOS files:

Being an operating software, DOS includes some important files to manage the computer to run properly. These files are necessary to handle the PC properly. Some important DOS files are:

1. **CONFIG.SYS** :- This file is to set the basic configuration of device(s) used in the computer system. This file also controls the starting of MSDOS. Normally, CONFIG.SYS manage the device driver in the system. We can create this file as our need to assign any device in the system. This file is located in the root directory of startup disk. This file is loaded in the memory before COMMAND.COM and AUTOEXEC.BAT file.
2. **AUTOEXEC.BAT** :- This is a text file to start any particular file of driver automatically at the startup. This file contains several DOS commands as required. A simple batch file helps to run any executable file after

giving any certain command. AUTOEXEC.BAT file loads the most common files automatically. An example of creating this file is listed below:

Echo off

Date

Time

Prompt \$p\$g

As above if you give the proper command and save your file with .BAT extension, you can directly access the program after typing the file name created by you.

Some terms, their meanings and uses:

1. **Bootting:** Bootting is the process to load the main bootable DOS system files from the secondary storage (Hard disk or Floppy disk or Compact disc etc.) to the main memory of computer (RAM). During this process IO.SYS, MSDOS.SYS, CONFIG.SYS and COMMAND.COM files are loaded. These files are enough to run a PC in the DOS mode. Cold bootting and warm bootting are the types of bootting. The first bootting is called the cold bootting and the bootting after pressing Ctrl + Alt +Del or by pressing the restart button is called the warm bootting.
2. **System prompt:** System prompt is a logical sign or symbol to indicate that computer is ready to accept commands. C:\> is a sign to indicate the hard disk called the C prompt and A:\> is a sign to indicate the floppy disk drive called the A prompt.
3. **Volume label:** Each disk can have an unique name if given by the user. This name is called the volume label. User while formatting a disk assigns this label. We can easily change the volume label in need.
4. **Device:** Device is a type of hardware or a physical component. Keyboard, Mouse, Hard disk etc are all individual devices. Peripheral is another name used as synonym of device.
5. **Path:** Path is just a way. When we have to perform any task than we give the order to complete the task by showing the way.
6. **Data:** Data are the collection of raw facts. Any types of information we give to computer are known as data. Computer performs its action on this information.
7. **Processing:** Processing means any types of action taken on the data to get desirable result. Processing is the main job of computer.