

Chapter 3 (Part – 2)

DISK OPERATING SYSTEM (DOS)

DISK OPERATING SYSTEM (DOS)

- DOS stands for Disk operating system.
- It is used for abstraction and management of secondary storage devices of the computers and the information stored there.

HISTORY

- In early days of computers, there were no disk drives; instead magnetic tapes, punched cards etc. were used. After creation of hard disks and floppy disks, the need of a software for managing rapid access to block storage of sequential and other data became inevitable. So, DOS was developed.

DOS FUNCTIONS

- To manage disk files.
- To allocate system resources according to the requirement.
- To provide features essential to control hardware devices such as Keyboard, Screen, Disk Devices, Printers, Modems and programs.

NAMING THE FILES IN DOS

DOS permits the user to assign a name consisting of two parts to a filename - primary & secondary names.

Primary can consist of 8 characters while secondary can consist of 3 characters. Both names are separated by a dot (.)

For Example: Bioedit.exe

DIRECTORY STRUCTURE IN DOS

- DOS files are organized in a hierarchical or inverted tree-like structure. The general analogy is with a file cabinet having a no. of drawers, which in turn may contain folders that may contain info.
- The file cabinet in DOS is the **ROOT DIRECTORY**, the drawer is **INDIVIDUAL DIRECTORY**, the folders are **SUB-DIRECTORY** and the info contained in these files may be termed as FILES.

TYPES OF DOS

Following are the major types of DOS Command:

- **External dos commands** which are used separately to perform specific task or operation. Internal dos commands are those commands which are included in command processor (command.com). For example: FORMAT, DISKCOPY, etc
- **Internal dos commands** are built in command.com file and while the computer has been booted this file or commands are loaded in the computer memory and you can use this basic dos commands while computer is ON. For example: DEL, COPY, TYPE, etc.

INTERNAL DOS COMMAND

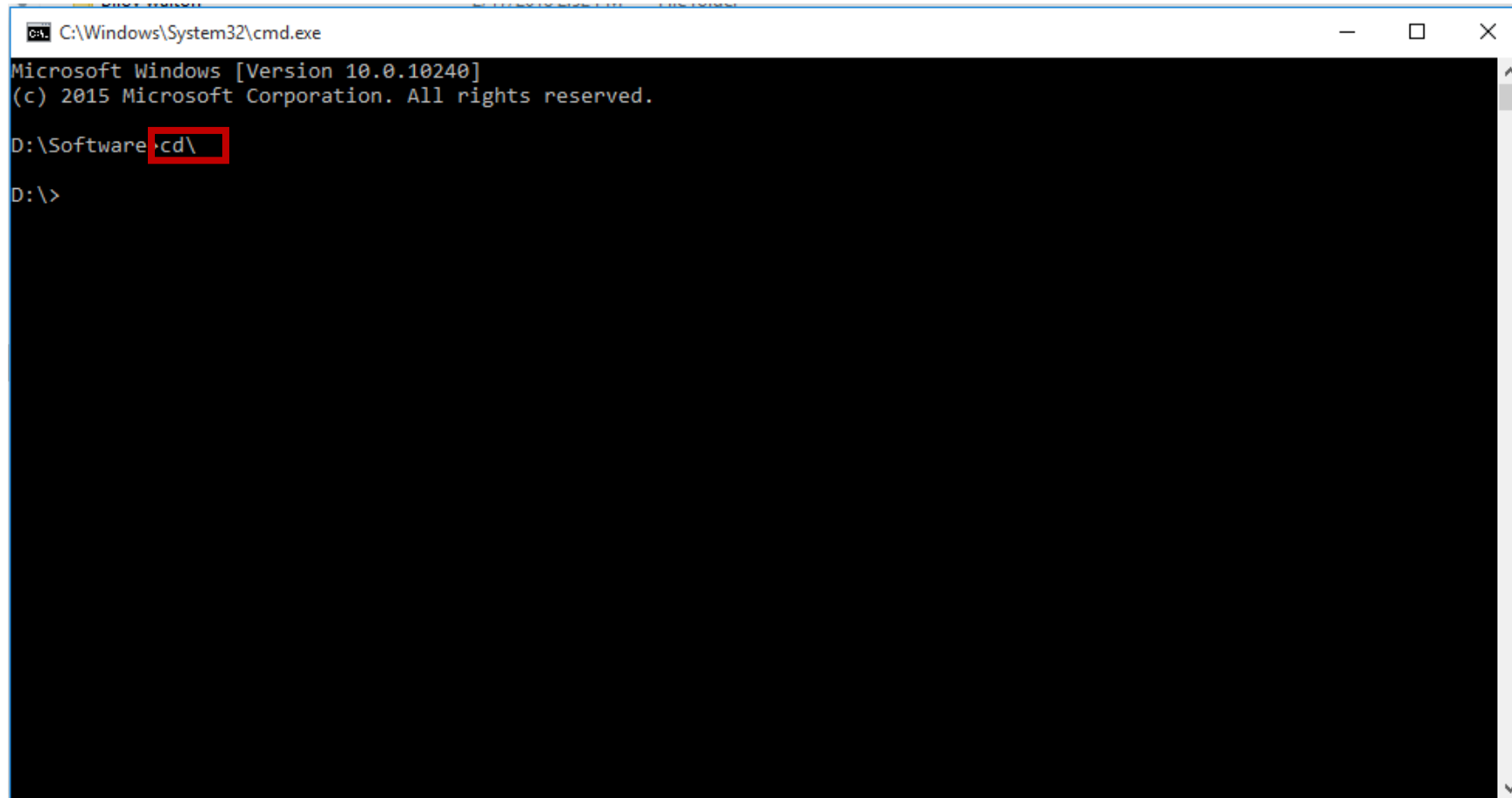
CHANGE DIRECTORY(CD) **Command**

This command enables to change the current directory or, in other words, to navigate to another folder from the PC.

Syntax

C:> cd\ (Press Enter)

CHANGE DIRECTORY(CD) Command



```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.10240]
(c) 2015 Microsoft Corporation. All rights reserved.

D:\Software>cd\
D:\>
```

The screenshot shows a Windows Command Prompt window with a black background and white text. The title bar at the top reads "C:\Windows\System32\cmd.exe". The command history shows the user entering "cd\" from the "D:\Software" directory, which is highlighted with a red box. The prompt then changes to "D:\>".

INTERNAL DOS COMMAND

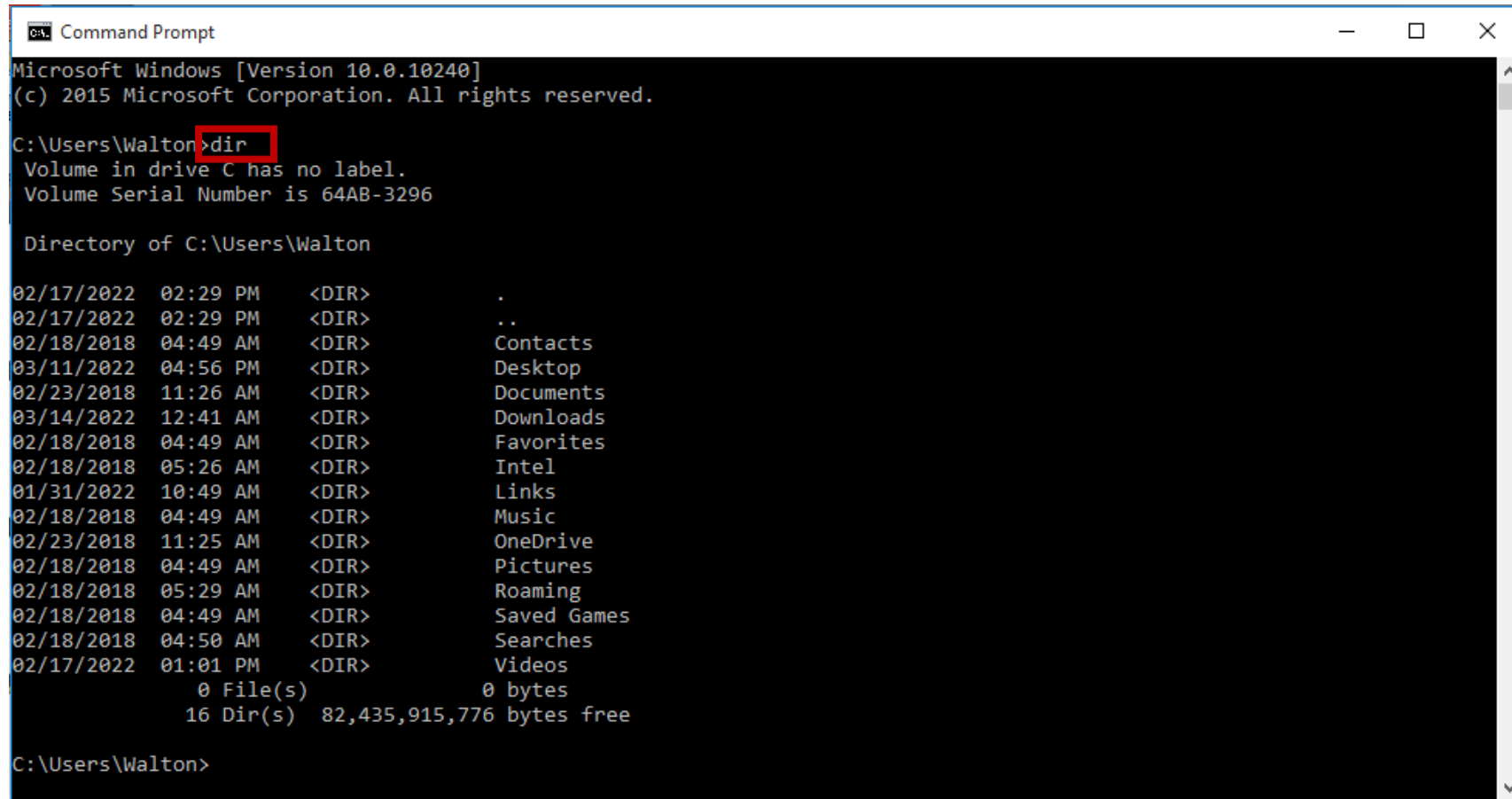
DIRECTORY(DIR) Command

dir (directory) is a command in various computer operating systems used for computer file and directory listing. It is one of the basic commands to help navigate the file system

Syntax

C:> dir (Press Enter)

DIRECTORY(DIR) Command



```
Command Prompt
Microsoft Windows [Version 10.0.10240]
(c) 2015 Microsoft Corporation. All rights reserved.

C:\Users\Walton>dir
Volume in drive C has no label.
Volume Serial Number is 64AB-3296

Directory of C:\Users\Walton

02/17/2022  02:29 PM    <DIR>          .
02/17/2022  02:29 PM    <DIR>          ..
02/18/2018  04:49 AM    <DIR>          Contacts
03/11/2022  04:56 PM    <DIR>          Desktop
02/23/2018  11:26 AM    <DIR>          Documents
03/14/2022  12:41 AM    <DIR>          Downloads
02/18/2018  04:49 AM    <DIR>          Favorites
02/18/2018  05:26 AM    <DIR>          Intel
01/31/2022  10:49 AM    <DIR>          Links
02/18/2018  04:49 AM    <DIR>          Music
02/23/2018  11:25 AM    <DIR>          OneDrive
02/18/2018  04:49 AM    <DIR>          Pictures
02/18/2018  05:29 AM    <DIR>          Roaming
02/18/2018  04:49 AM    <DIR>          Saved Games
02/18/2018  04:50 AM    <DIR>          Searches
02/17/2022  01:01 PM    <DIR>          Videos
               0 File(s)              0 bytes
              16 Dir(s)  82,435,915,776 bytes free

C:\Users\Walton>
```

INTERNAL DOS COMMAND

MAKE DIRECTORY(MKDIR) **Command**

MKDIR (Make Directory) or the MD command is used to make new folder or directory.

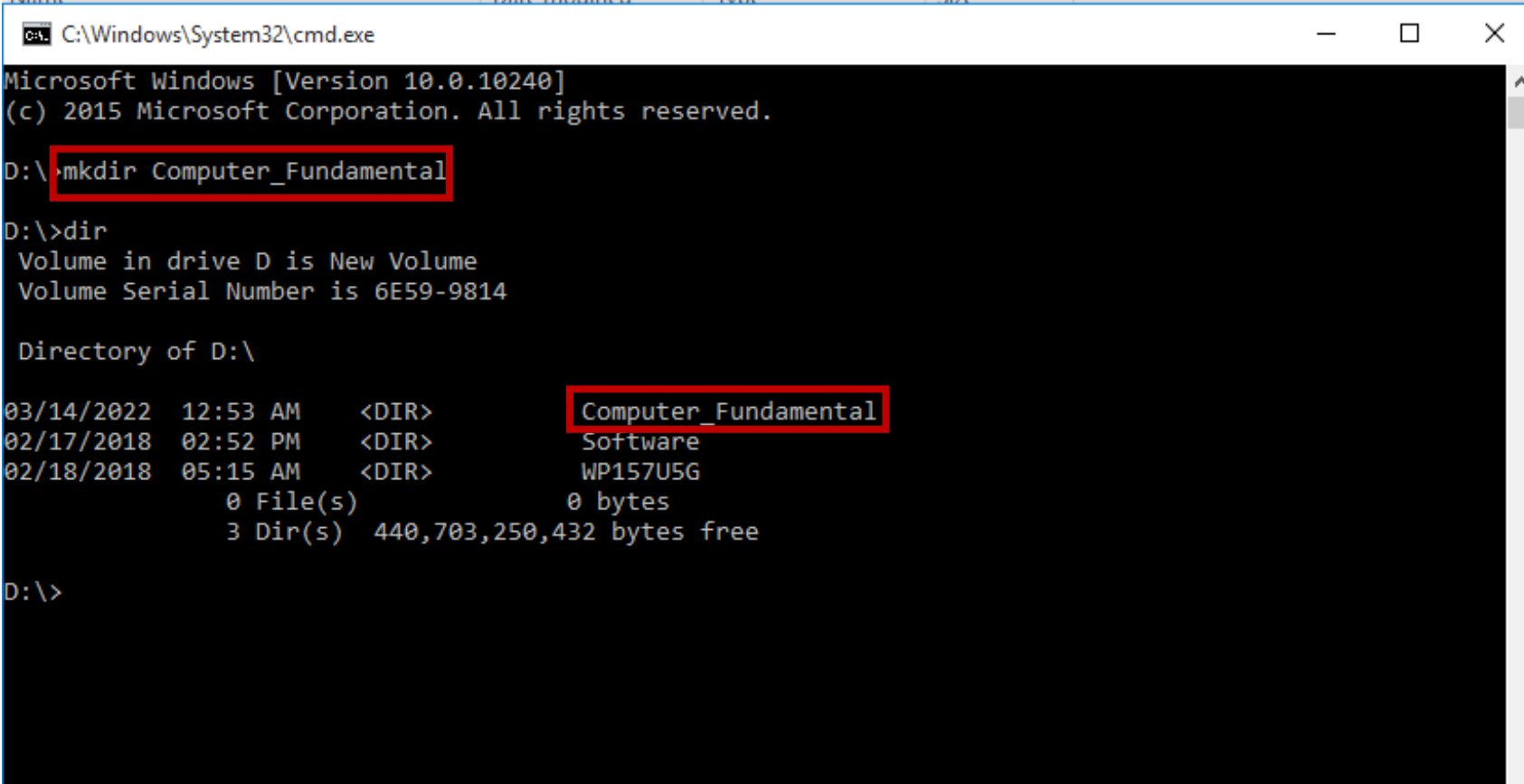
Syntax

C:> mkdir folder name(Press Enter)

Or

C:> md folder name(Press Enter)

MAKE DIRECTORY(MKDIR) Command



```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.10240]
(c) 2015 Microsoft Corporation. All rights reserved.

D:\>mkdir Computer_Fundamental

D:\>dir
Volume in drive D is New Volume
Volume Serial Number is 6E59-9814

Directory of D:\

03/14/2022  12:53 AM    <DIR>          Computer_Fundamental
02/17/2018  02:52 PM    <DIR>          Software
02/18/2018  05:15 AM    <DIR>          WP157U5G
               0 File(s)                0 bytes
               3 Dir(s)  440,703,250,432 bytes free

D:\>
```

The screenshot shows a Windows Command Prompt window with the title bar "C:\Windows\System32\cmd.exe". The command prompt displays the Windows version (10.0.10240) and copyright information. The user enters the command `mkdir Computer_Fundamental` at the `D:\>` prompt. The output shows the directory listing for drive D, indicating that the new directory `Computer_Fundamental` has been successfully created. The directory listing also shows existing directories `Software` and `WP157U5G`, and reports that there are 0 files and 3 directories, with 440,703,250,432 bytes free.

INTERNAL DOS COMMAND

Rename DIRECTORY(REN) Command

REN command is used to rename the directory or folder.

Syntax

```
C:> ren folder-name new-  
folder-name(Press Enter)
```

```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.10240]
(c) 2015 Microsoft Corporation. All rights reserved.

D:\>ren Computer_Fundamental Test

D:\>dir
Volume in drive D is New Volume
Volume Serial Number is 6E59-9814

Directory of D:\

03/14/2022  02:13 AM                46 ComputerFundamental.txt
02/17/2018  02:52 PM             <DIR>      Software
03/14/2022  02:29 AM             <DIR>      Test
02/18/2018  05:15 AM             <DIR>      WP15705G
          1 File(s)                46 bytes
          3 Dir(s)  440,703,246,336 bytes free

D:\>
```

INTERNAL DOS COMMAND

REMOVE DIRECTORY(RMDIR) **Command**

RMDIR (Remove Directory) is used to remove or delete the folder or directory.

Syntax

```
C:> rmdir /s folder-name  
(Press Enter)
```

```
C:\Windows\System32\cmd.exe

D:\>dir
Volume in drive D is New Volume
Volume Serial Number is 6E59-9814

Directory of D:\

03/14/2022  02:13 AM                46 ComputerFundamental.txt
03/14/2022  02:27 AM             <DIR>      Computer_Fundamental
02/17/2018  02:52 PM             <DIR>      Software
02/18/2018  05:15 AM             <DIR>      WP157U5G
               1 File(s)                46 bytes
               3 Dir(s)  440,703,246,336 bytes free

D:\>rmdir /s Computer_Fundamental
Computer_Fundamental, Are you sure (Y/N)? y

D:\>dir
Volume in drive D is New Volume
Volume Serial Number is 6E59-9814

Directory of D:\

03/14/2022  02:13 AM                46 ComputerFundamental.txt
02/17/2018  02:52 PM             <DIR>      Software
02/18/2018  05:15 AM             <DIR>      WP157U5G
               1 File(s)                46 bytes
               2 Dir(s)  440,703,246,336 bytes free

D:\>
```


INTERNAL DOS COMMAND

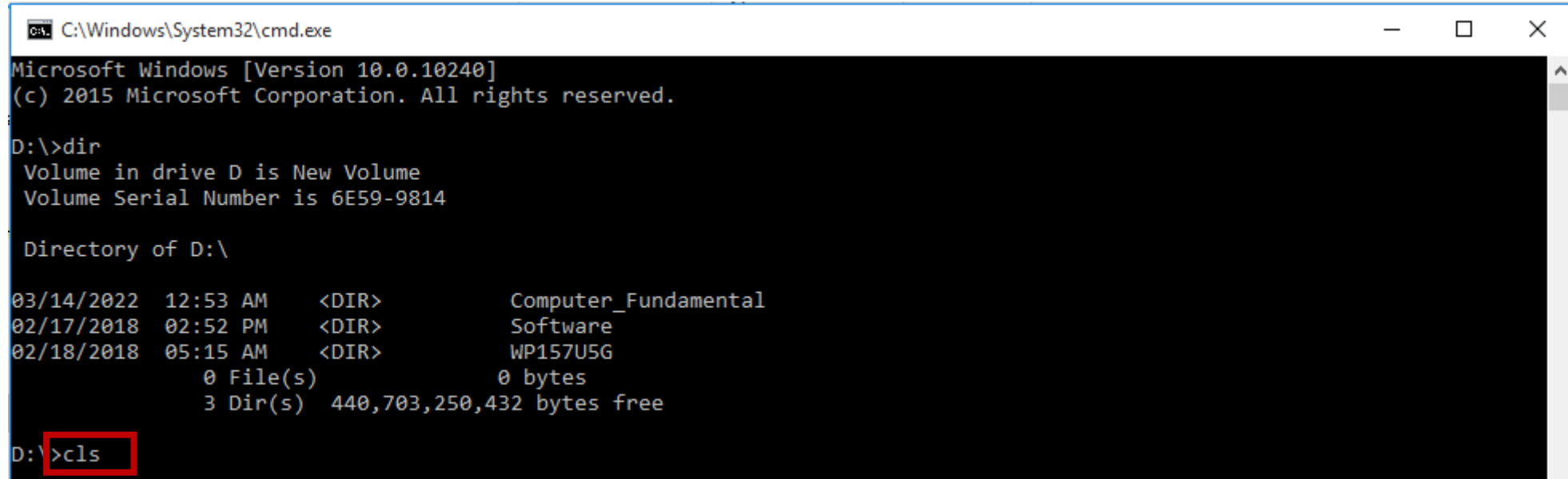
CLS Command

- This is an Internal dos command which is used to clear the output on the screen obtained when executed any basic dos commands.
- These commands clears all the text from the screen and shows user a Command prompt.

Syntax

C:\>cls (Press Enter)

CLS Command



```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.10240]
(c) 2015 Microsoft Corporation. All rights reserved.

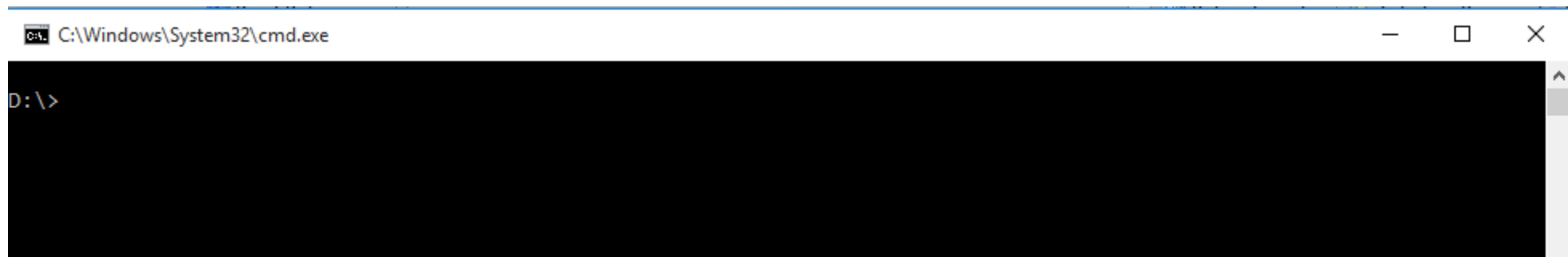
D:\>dir
Volume in drive D is New Volume
Volume Serial Number is 6E59-9814

Directory of D:\

03/14/2022  12:53 AM    <DIR>          Computer_Fundamental
02/17/2018  02:52 PM    <DIR>          Software
02/18/2018  05:15 AM    <DIR>          WP157U5G
               0 File(s)                0 bytes
               3 Dir(s)  440,703,250,432 bytes free

D:\>cls
```

After pressing enter, all the output are cleared.



```
C:\Windows\System32\cmd.exe

D:\>
```

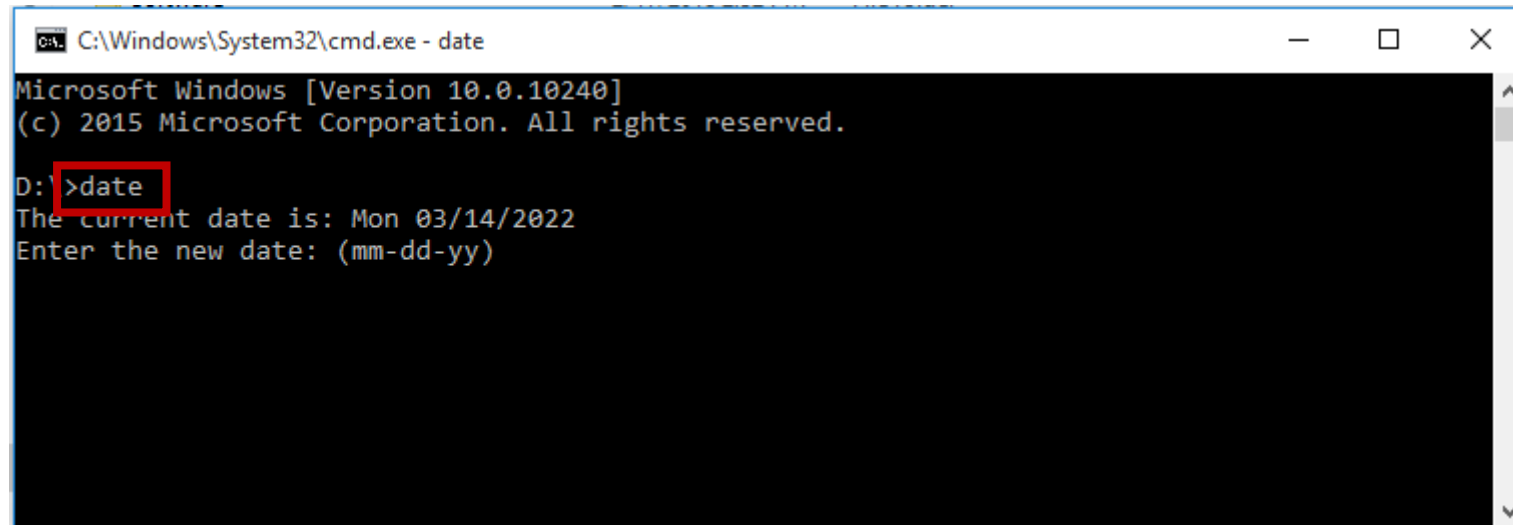
INTERNAL DOS COMMAND

DATE Command

- Date command is a internal basic dos command which is used to display or change current date of system in format of mm/dd/yy.

Syntax

C:\>date (Press Enter)



```
C:\Windows\System32\cmd.exe - date
Microsoft Windows [Version 10.0.10240]
(c) 2015 Microsoft Corporation. All rights reserved.

D:\>date
The current date is: Mon 03/14/2022
Enter the new date: (mm-dd-yy)
```

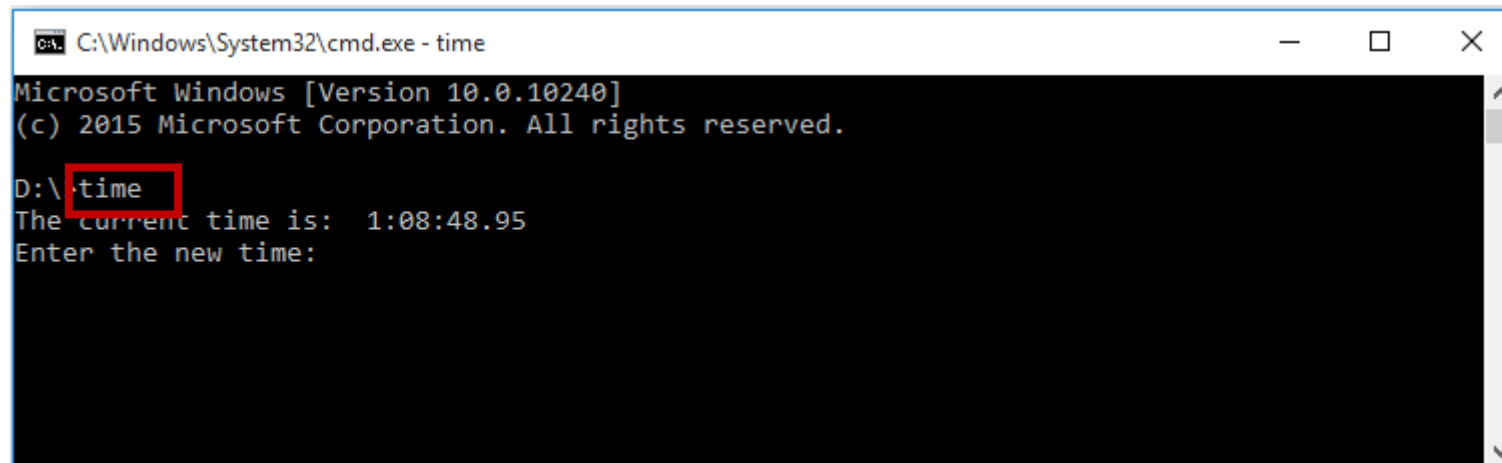
INTERNAL DOS COMMAND

TIME Command

- Time command is used to display or change the current time of Computer system. The format which is used by time command is HH:MM:SS .Where HH stands for hours of the day in 24 hour format , MM for minutes , SS For seconds and CC For hundreds of a second.

Syntax

C:\>time (Press Enter)



```
C:\Windows\System32\cmd.exe - time
Microsoft Windows [Version 10.0.10240]
(c) 2015 Microsoft Corporation. All rights reserved.

D:\>time
The current time is:  1:08:48.95
Enter the new time:
```

INTERNAL DOS COMMAND

COPY CON Command

- This is a very important internal dos command which is used to create text files . The filename used while creating a file using this basic dos command consist of a primary name and a extension which is separated by a dot or commonly called as period.
- While creating a File there are some rules, that a primary file name must not be greater then 8 characters and the extension must be not greater then 3 characters.
- Filename can consist of digits and special symbols such as 0 to 9 or @ # % etc

For more internal DOS command

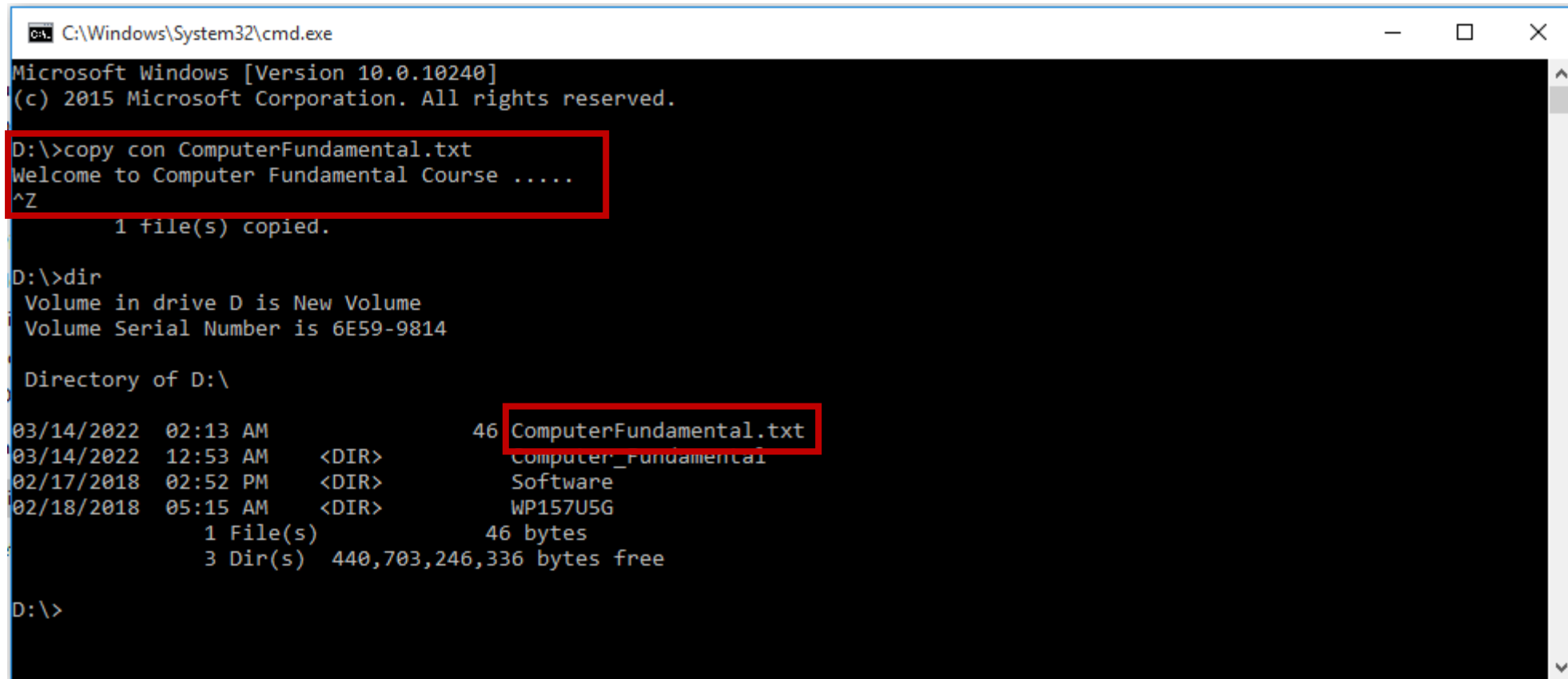
➤ <https://www.youtube.com/watch?v=6EQPJ4rS6W0>

Syntax

C:\>copy con FileName
(Press Enter)

- Every body wants to go to heaven but nobody wants to die.
- To save the file use CTRL+Z OR F6 OR to cancel use CTRL+C from keyboard.

COPY CON Command



The screenshot shows a Windows Command Prompt window titled "C:\Windows\System32\cmd.exe". The window displays the following text:

```
Microsoft Windows [Version 10.0.10240]
(c) 2015 Microsoft Corporation. All rights reserved.

D:\>copy con ComputerFundamental.txt
Welcome to Computer Fundamental Course .....
^Z
        1 file(s) copied.

D:\>dir
Volume in drive D is New Volume
Volume Serial Number is 6E59-9814

Directory of D:\

03/14/2022  02:13 AM                46 ComputerFundamental.txt
03/14/2022  12:53 AM             <DIR>      Computer_Fundamental
02/17/2018  02:52 PM             <DIR>      Software
02/18/2018  05:15 AM             <DIR>      WP157U5G
               1 File(s)                46 bytes
               3 Dir(s)  440,703,246,336 bytes free

D:\>
```

The command prompt shows the execution of the `copy con ComputerFundamental.txt` command, which creates a new file named `ComputerFundamental.txt` in the current directory. The file content is "Welcome to Computer Fundamental Course", followed by a carriage return and a control-Z character (^Z) to signal the end of the file. The prompt then shows the output "1 file(s) copied." and the results of the `dir` command, which lists the files in the directory. The file `ComputerFundamental.txt` is listed with a size of 46 bytes. The directory listing also shows other files and directories, including `Computer_Fundamental`, `Software`, and `WP157U5G`. The free space in the drive is also displayed as 440,703,246,336 bytes.

INTERNAL DOS COMMAND

COPY Command

- This command is used to copy file.

Syntax

```
C:\>copy original-filename new-  
filename(Press Enter)
```

```
C:\Windows\System32\cmd.exe

Directory of D:\

03/14/2022  02:13 AM                46 ComputerFundamental.txt
02/17/2018  02:52 PM            <DIR>         Software
03/14/2022  02:29 AM            <DIR>         Test
03/14/2022  02:43 AM                0 Test.txt
02/18/2018  05:15 AM            <DIR>         WP157U5G
                2 File(s)                46 bytes
                3 Dir(s)  440,703,246,336 bytes free

D:\>copy Test.txt newTest.txt
1 file(s) copied.

D:\>dir
Volume in drive D is New Volume
Volume Serial Number is 6E59-9814

Directory of D:\

03/14/2022  02:13 AM                46 ComputerFundamental.txt
03/14/2022  02:43 AM                0 newTest.txt
02/17/2018  02:52 PM            <DIR>         Software
03/14/2022  02:29 AM            <DIR>         Test
03/14/2022  02:43 AM                0 Test.txt
02/18/2018  05:15 AM            <DIR>         WP157U5G
                3 File(s)                46 bytes
                3 Dir(s)  440,703,246,336 bytes free

D:\>
```


INTERNAL DOS COMMAND

RENAME (REN) Command

- This command is used to rename a file.

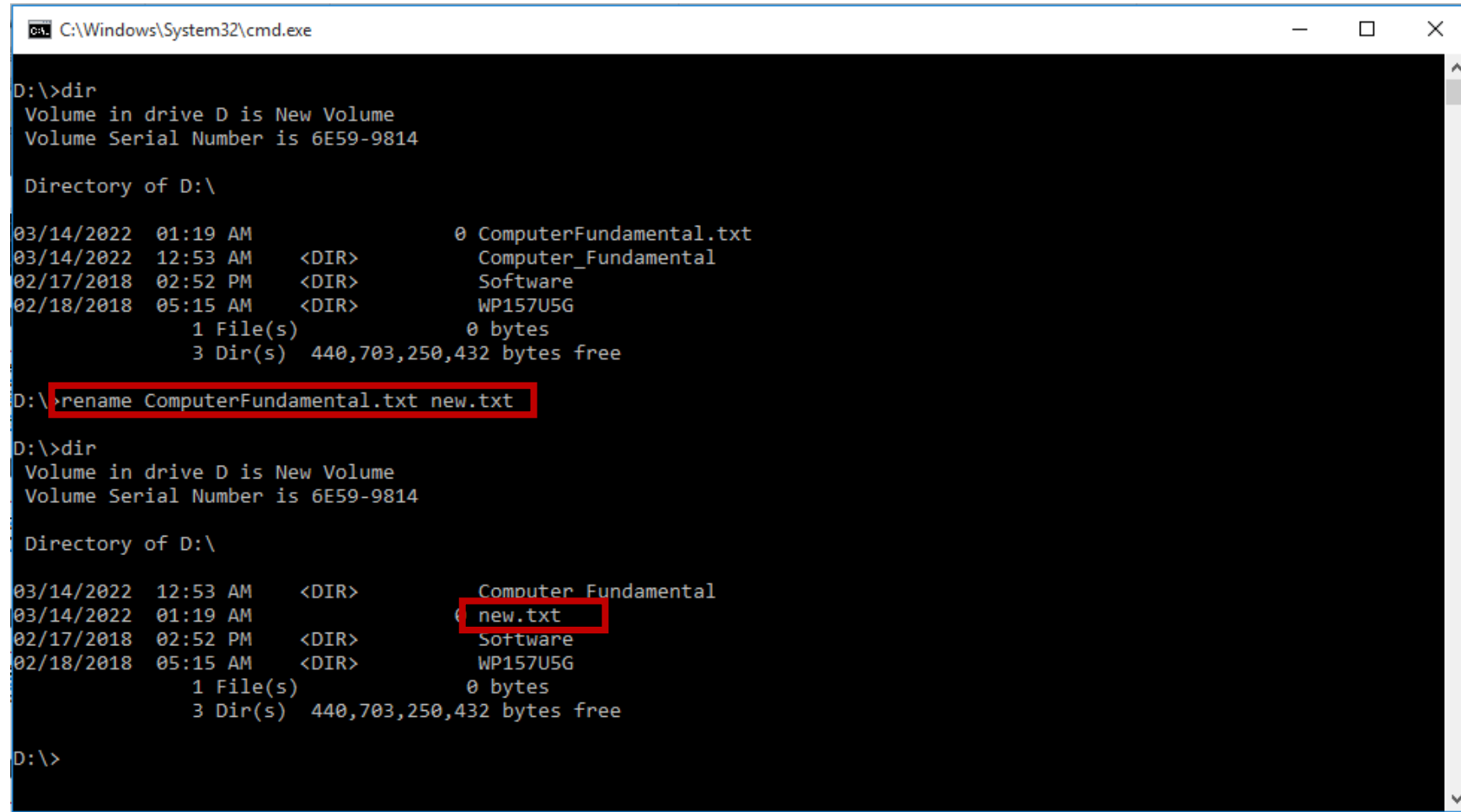
Syntax

C:\>rename original-filename new-filename(Press Enter)

Or

C:\>ren original-filename new-filename(Press Enter)

RENAME (REN) Command



```
C:\Windows\System32\cmd.exe

D:\>dir
Volume in drive D is New Volume
Volume Serial Number is 6E59-9814

Directory of D:\

03/14/2022  01:19 AM                0 ComputerFundamental.txt
03/14/2022  12:53 AM    <DIR>          Computer_Fundamental
02/17/2018  02:52 PM    <DIR>          Software
02/18/2018  05:15 AM    <DIR>          WP157U5G
               1 File(s)                0 bytes
               3 Dir(s)  440,703,250,432 bytes free

D:\>rename ComputerFundamental.txt new.txt

D:\>dir
Volume in drive D is New Volume
Volume Serial Number is 6E59-9814

Directory of D:\

03/14/2022  12:53 AM    <DIR>          Computer_Fundamental
03/14/2022  01:19 AM                0 new.txt
02/17/2018  02:52 PM    <DIR>          Software
02/18/2018  05:15 AM    <DIR>          WP157U5G
               1 File(s)                0 bytes
               3 Dir(s)  440,703,250,432 bytes free

D:\>
```

The screenshot shows a Windows Command Prompt window with the title bar "C:\Windows\System32\cmd.exe". The user enters the command `dir` at the `D:\>` prompt. The output shows the directory contents of drive D, including a file named `ComputerFundamental.txt` and three subdirectories: `Computer_Fundamental`, `Software`, and `WP157U5G`. The user then enters the command `rename ComputerFundamental.txt new.txt`, which is highlighted with a red box. After pressing Enter, the user enters `dir` again. The output shows that the file has been successfully renamed to `new.txt`, which is also highlighted with a red box. The window has standard Windows window controls (minimize, maximize, close) in the top right corner.

INTERNAL DOS COMMAND

Delete (del) Command

- This command is used to delete a file.

Syntax

C:\> del file-name (Press Enter)

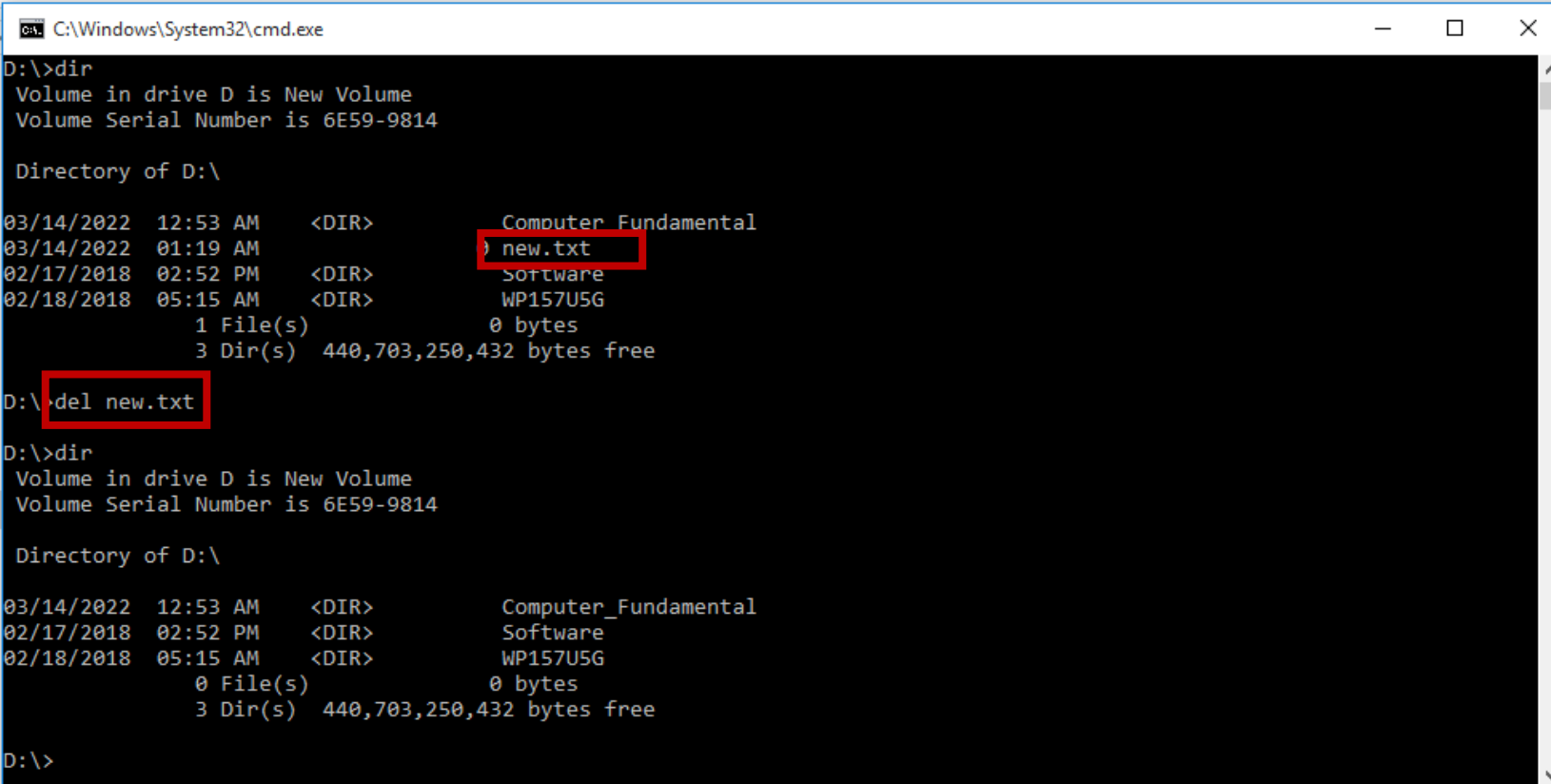
INTERNAL DOS COMMAND

DELETE (DEL) Command

- This command is used to delete a file.

Syntax

C:\>del filename (Press Enter)



```
C:\Windows\System32\cmd.exe
D:\>dir
Volume in drive D is New Volume
Volume Serial Number is 6E59-9814

Directory of D:\

03/14/2022  12:53 AM    <DIR>          Computer Fundamental
03/14/2022  01:19 AM    <DIR>          new.txt
02/17/2018  02:52 PM    <DIR>          Software
02/18/2018  05:15 AM    <DIR>          WP157U5G
               1 File(s)                0 bytes
               3 Dir(s)  440,703,250,432 bytes free

D:\>del new.txt

D:\>dir
Volume in drive D is New Volume
Volume Serial Number is 6E59-9814

Directory of D:\

03/14/2022  12:53 AM    <DIR>          Computer_Fundamental
02/17/2018  02:52 PM    <DIR>          Software
02/18/2018  05:15 AM    <DIR>          WP157U5G
               0 File(s)                0 bytes
               3 Dir(s)  440,703,250,432 bytes free

D:\>
```

The screenshot shows a Windows Command Prompt window with the title bar 'C:\Windows\System32\cmd.exe'. The user is in the D:\ directory. The first 'dir' command shows a directory listing with 'new.txt' highlighted by a red box. The user then enters 'del new.txt', which is also highlighted by a red box. A second 'dir' command is executed, showing that 'new.txt' has been removed from the directory listing.

EXTERNAL DOS COMMAND

FORMAT Command

- Format command is a external command and to run format command you need a supporting file named format.com
- Format command deletes or erase all the data present in the drives , which can be any flash drives , hard drives or floppy disk.
- The format command creates new allocation table and root directory and make the drive use able. The command also checks for bad areas of drives commonly called as bad sectors.

Syntax

C:> format (drive name)
(Press Enter)

C:>format A: (Press Enter)

Switches used in format command.

EXTERNAL DOS COMMAND

DISKCOPY Command

- DISKCOPY is a basic dos commands which comes in a category of external dos command which is used to copy entire content of one drive to another .
- Diskcopy command works only with floppy disk.

Syntax

C:>Diskcopy A: B:
(Press Enter)

EXTERNAL DOS COMMAND

XCOPY Command

- XCOPY DOS COMMAND is used to copy entire files , directories and subdirectories from one location to another.
- xcopy command is executed when xcopy.exe file is present in hard disk or bootable drive .

Syntax

C:>xcopy(source) (destination) (Press Enter)

Example:

C:>xcopy/s/e c:movies d:new (Press Enter)

- In the Example xcopy will copy all files and directories from c:movies to d:new .where /s is used for copying nonempty subdirectories.
- And /e is used for copying directories and subdirectories including empty ones. Switches used in XCOPY COMMAND.use xcopy/? To know all the switches used.

EXTERNAL DOS COMMAND

SYS Command

- SYS COMMAND is another external dos command which is used to transfer system files into destination drive and make the drive bootable .
- Usually sys commands copy three files namely command.com,io.sys and msdos.sys.

For more external DOS Command

- <https://www.youtube.com/watch?v=8vkSneFcsW>

Syntax

C:> sys a: (Press Enter)

A:> sys c: (Press Enter)