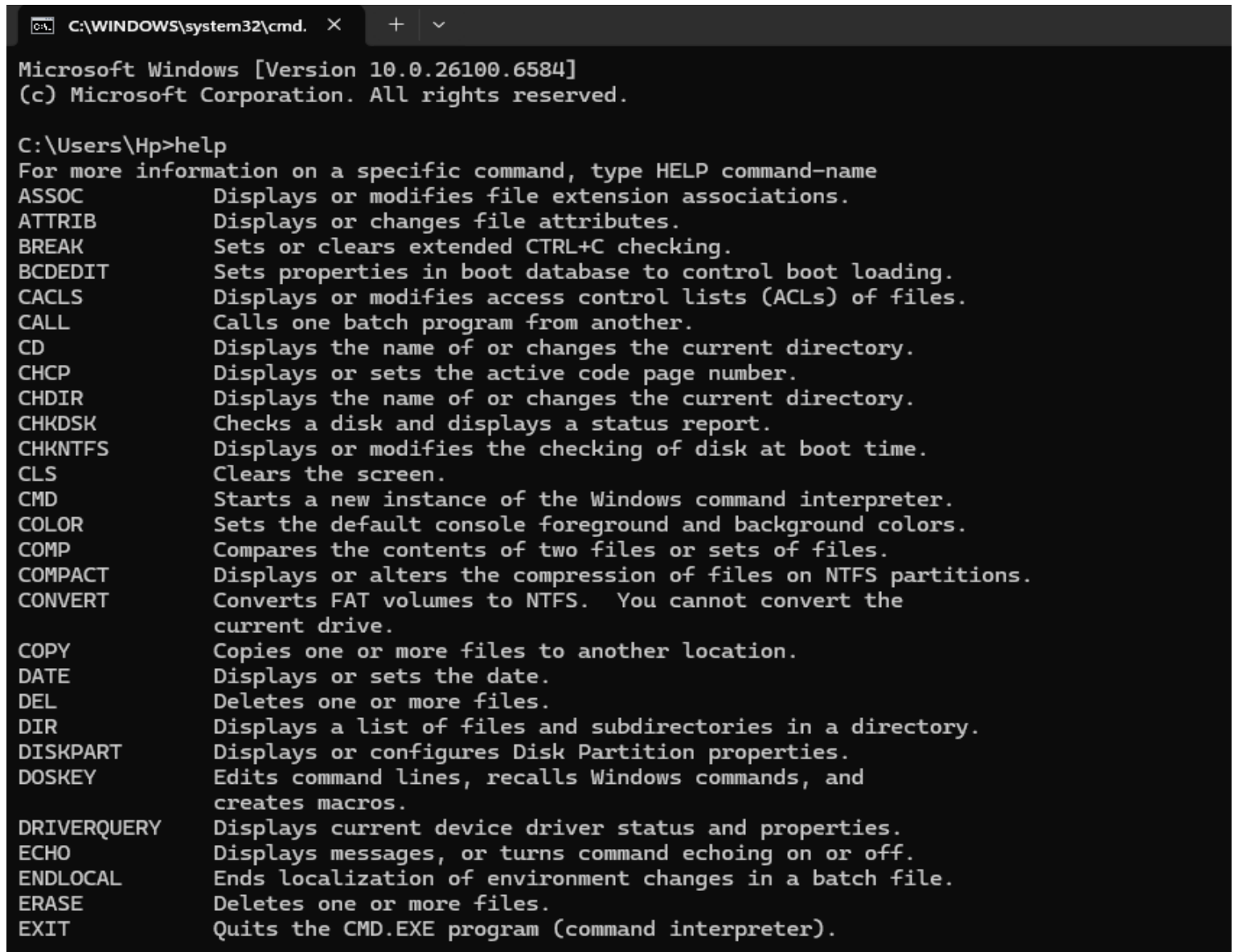# PRACTICAL – 1

John has recently started a new job as system administrator in MNC. He is dealing with computers having different operating systems such as Windows, LINUX and UNIX. How will he be able to interact with the system by using different operating system commands for the following operation?

1. Display the user manual of any command that we can run on the terminal.

```
C:\WINDOWS\system32\cmd.  ×    +   ⌄

Microsoft Windows [Version 10.0.26100.6584]
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C:\Users\Hp>help
For more information on a specific command, type HELP command-name
ASSOC          Displays or modifies file extension associations.
ATTRIB         Displays or changes file attributes.
BREAK          Sets or clears extended CTRL+C checking.
BCDEDIT        Sets properties in boot database to control boot loading.
CACLS          Displays or modifies access control lists (ACLs) of files.
CALL           Calls one batch program from another.
CD             Displays the name of or changes the current directory.
CHCP           Displays or sets the active code page number.
CHDIR          Displays the name of or changes the current directory.
CHKDSK         Checks a disk and displays a status report.
CHKNTFS        Displays or modifies the checking of disk at boot time.
CLS            Clears the screen.
CMD            Starts a new instance of the Windows command interpreter.
COLOR          Sets the default console foreground and background colors.
COMP           Compares the contents of two files or sets of files.
COMPACT        Displays or alters the compression of files on NTFS partitions.
CONVERT        Converts FAT volumes to NTFS.  You cannot convert the
               current drive.
COPY           Copies one or more files to another location.
DATE           Displays or sets the date.
DEL            Deletes one or more files.
DIR            Displays a list of files and subdirectories in a directory.
DISKPART       Displays or configures Disk Partition properties.
DOSKEY         Edits command lines, recalls Windows commands, and
               creates macros.
DRIVERQUERY    Displays current device driver status and properties.
ECHO           Displays messages, or turns command echoing on or off.
ENDLOCAL       Ends localization of environment changes in a batch file.
ERASE          Deletes one or more files.
EXIT           Quits the CMD.EXE program (command interpreter).
```

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C:\WINDOWS\system32\cmd.  ×     +   ∨

EXIT              Quits the CMD.EXE program (command interpreter).
FC                Compares two files or sets of files, and displays the
                  differences between them.
FIND              Searches for a text string in a file or files.
FINDSTR           Searches for strings in files.
FOR               Runs a specified command for each file in a set of files.
FORMAT            Formats a disk for use with Windows.
FSUTIL            Displays or configures the file system properties.
FTYPE             Displays or modifies file types used in file extension
                  associations.
GOTO              Directs the Windows command interpreter to a labeled line in
                  a batch program.
GPRESULT          Displays Group Policy information for machine or user.
HELP              Provides Help information for Windows commands.
ICACLS            Display, modify, backup, or restore ACLs for files and
                  directories.
IF                Performs conditional processing in batch programs.
LABEL             Creates, changes, or deletes the volume label of a disk.
MD                Creates a directory.
MKDIR             Creates a directory.
MKLINK            Creates Symbolic Links and Hard Links
MODE              Configures a system device.
MORE              Displays output one screen at a time.
MOVE              Moves one or more files from one directory to another
                  directory.
OPENFILES         Displays files opened by remote users for a file share.
PATH              Displays or sets a search path for executable files.
PAUSE             Suspends processing of a batch file and displays a message.
POPD              Restores the previous value of the current directory saved by
                  PUSHD.
PRINT             Prints a text file.
PROMPT            Changes the Windows command prompt.
PUSHD             Saves the current directory then changes it.
RD                Removes a directory.
RECOVER           Recovers readable information from a bad or defective disk.
```

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C:\WINDOWS\system32\cmd.  ×     +   ∨

RECOVER           Recovers readable information from a bad or defective disk.
REM               Records comments (remarks) in batch files or CONFIG.SYS.
REN               Renames a file or files.
RENAME            Renames a file or files.
REPLACE           Replaces files.
RMDIR             Removes a directory.
ROBOCOPY          Advanced utility to copy files and directory trees
SET               Displays, sets, or removes Windows environment variables.
SETLOCAL          Begins localization of environment changes in a batch file.
SC                Displays or configures services (background processes).
SCHTASKS          Schedules commands and programs to run on a computer.
SHIFT             Shifts the position of replaceable parameters in batch files.
SHUTDOWN          Allows proper local or remote shutdown of machine.
SORT              Sorts input.
START             Starts a separate window to run a specified program or command.
SUBST             Associates a path with a drive letter.
SYSTEMINFO        Displays machine specific properties and configuration.
TASKLIST          Displays all currently running tasks including services.
TASKKILL          Kill or stop a running process or application.
TIME              Displays or sets the system time.
TITLE             Sets the window title for a CMD.EXE session.
TREE              Graphically displays the directory structure of a drive or
                  path.
TYPE              Displays the contents of a text file.
VER               Displays the Windows version.
VERIFY            Tells Windows whether to verify that your files are written
                  correctly to a disk.
VOL               Displays a disk volume label and serial number.
XCOPY             Copies files and directory trees.
WMIC              Displays WMI information inside interactive command shell.

For more information on tools see the command-line reference in the online help.


C:\Users\Hp> help dir
Displays a list of files and subdirectories in a directory.
```

```
DIR [drive:][path][filename] [/A[[:]attributes]] [/B] [/C] [/D] [/L] [/N]
  [/O[[:]sortorder]] [/P] [/Q] [/R] [/S] [/T[[:]timefield]] [/W] [/X] [/4]

  [drive:][path][filename]
              Specifies drive, directory, and/or files to list.

  /A          Displays files with specified attributes.
  attributes  D  Directories                R  Read-only files
              H  Hidden files               A  Files ready for archiving
              S  System files               I  Not content indexed files
              L  Reparse Points             O  Offline files
              -  Prefix meaning not
  /B          Uses bare format (no heading information or summary).
  /C          Display the thousand separator in file sizes.  This is the
              default.  Use /-C to disable display of separator.
  /D          Same as wide but files are list sorted by column.
  /L          Uses lowercase.
  /N          New long list format where filenames are on the far right.
  /O          List by files in sorted order.
  sortorder   N  By name (alphabetic)       S  By size (smallest first)
              E  By extension (alphabetic)  D  By date/time (oldest first)
              G  Group directories first    -  Prefix to reverse order
  /P          Pauses after each screenful of information.
  /Q          Display the owner of the file.
  /R          Display alternate data streams of the file.
  /S          Displays files in specified directory and all subdirectories.
  /T          Controls which time field displayed or used for sorting
  timefield   C  Creation
              A  Last Access
              W  Last Written
  /W          Uses wide list format.
  /X          This displays the short names generated for non-8dot3 file
              names.  The format is that of /N with the short name inserted
              before the long name. If no short name is present, blanks are
```

2. Change the current working directory of the user

```
Microsoft Windows [Version 10.0.26200.7462]
(c) Microsoft Corporation. All rights reserved.

C:\Users\ASUS>cd Downloads

C:\Users\ASUS\Downloads>
```

3. Lists all the contents in the current working directory

```
C:\Users\Hp>dir
 Volume in drive C is Windows
 Volume Serial Number is 3877-199F

 Directory of C:\Users\Hp

04-01-2026  20:30    <DIR>          .
04-01-2026  20:28    <DIR>          ..
04-01-2026  05:38    <DIR>          .android
19-04-2025  05:53             4,635 .bash_history
15-09-2024  12:31    <DIR>          .cache
15-02-2023  00:59                25 .condarc
15-02-2023  00:59    <DIR>          .continuum
24-11-2024  06:06    <DIR>          .dotnet
15-09-2024  08:33    <DIR>          .EasyOCR
07-06-2024  10:20    <DIR>          .eclipse
10-08-2024  20:58                16 .emulator_console_auth_token
17-09-2024  20:40                60 .gitconfig
07-01-2026  04:47    <DIR>          .gk
09-11-2024  16:27    <DIR>          .gradle
30-07-2023  22:40    <DIR>          .ipynb_checkpoints
15-02-2023  01:04    <DIR>          .ipython
13-11-2025  05:47    <DIR>          .javacpp
19-03-2025  08:18                20 .lesshst
29-10-2023  08:41                 5 .node_repl_history
07-06-2024  10:20    <DIR>          .p2
08-02-2023  20:14               182 .packettracer
29-10-2023  08:46    <DIR>          .quokka
16-11-2023  07:23    <DIR>          .redhat
11-09-2023  19:31    <DIR>          .vscode
09-05-2023  10:30    <DIR>          .vscode-R
29-10-2023  08:46    <DIR>          .wallaby
11-08-2024  16:11    <DIR>          AndroidStudioProjects
17-09-2024  20:36    <DIR>          codecrafters-redis-python
12-12-2025  21:35    <DIR>          Desktop
```

```
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30-07-2023  22:40    <DIR>              .ipynb_checkpoints
15-02-2023  01:04    <DIR>              .ipython
13-11-2025  05:47    <DIR>              .javacpp
19-03-2025  08:18              20 .lesshst
29-10-2023  08:41               5 .node_repl_history
07-06-2024  10:20    <DIR>              .p2
08-02-2023  20:14             182 .packettracer
29-10-2023  08:46    <DIR>              .quokka
16-11-2023  07:23    <DIR>              .redhat
11-09-2023  19:31    <DIR>              .vscode
09-05-2023  10:30    <DIR>              .vscode-R
29-10-2023  08:46    <DIR>              .wallaby
11-08-2024  16:11    <DIR>              AndroidStudioProjects
17-09-2024  20:36    <DIR>              codecrafters-redis-python
12-12-2025  21:35    <DIR>              Desktop
03-01-2026  20:54    <DIR>              Documents
06-01-2026  21:35    <DIR>              Downloads
19-12-2024  07:05      21,080,920 edb_psqlodbc.exe
19-12-2024  07:05      20,326,288 edb_psqlodbc.exe-20241219070515
09-08-2025  12:37    <DIR>              Favorites
13-07-2023  13:43              34 funct.py
09-08-2025  12:37    <DIR>              Links
06-04-2024  06:50    <DIR>              Microsoft
31-01-2022  05:24    <DIR>              New folder
04-03-2023  22:48    <DIR>              OneDrive
09-08-2025  12:37    <DIR>              Pictures
06-01-2023  10:08    <DIR>              Postman
09-08-2025  12:37    <DIR>              Saved Games
09-08-2025  12:37    <DIR>              Searches
09-08-2025  12:37    <DIR>              Videos
14-07-2023  13:07    <DIR>              __pycache__
              10 File(s)      41,412,185 bytes
              35 Dir(s)   11,928,809,472 bytes free
```

4. Read, modify or concatenate text files

- Read a text file:

```
C:\WINDOWS\system32\cmd.   ×      +   ∨

Microsoft Windows [Version 10.0.26100.6584]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Hp>cd Downloads

C:\Users\Hp\Downloads>type Anushka.txt
Anushka here....!
C:\Users\Hp\Downloads>
```
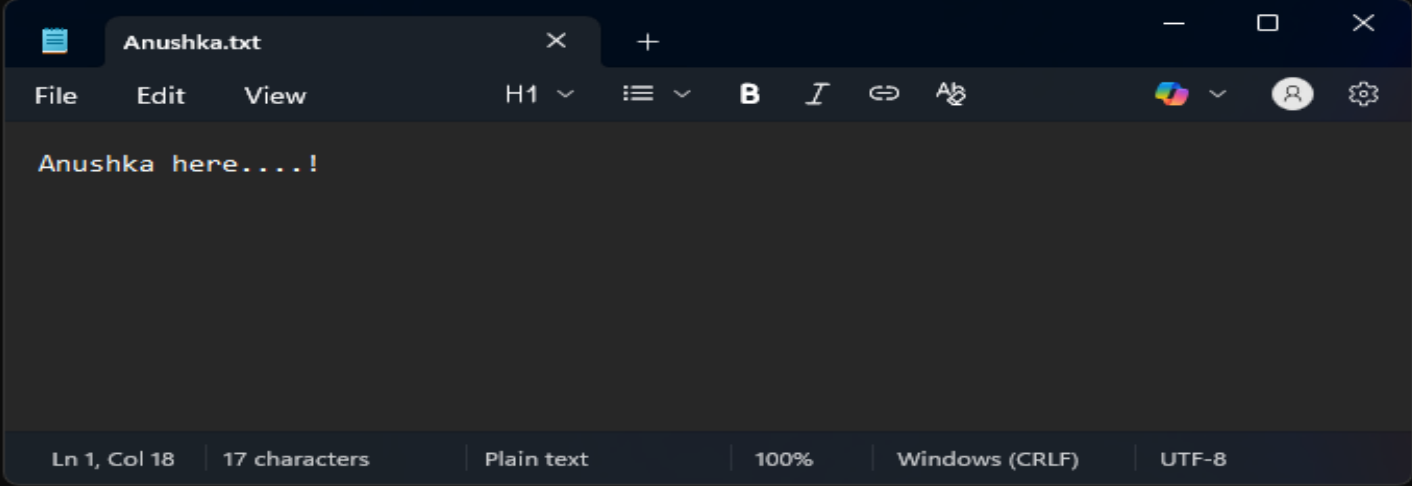
- Modify a text file:

```
C:\Users\Hp>notepad Anushka.txt

C:\Users\Hp>
```

Anushka.txt

File   Edit   View   H1 ∨   ☰ ∨   B I ⊖ A̱

Anushka here....!

Ln 1, Col 18   17 characters   Plain text   100%   Windows (CRLF)   UTF-8
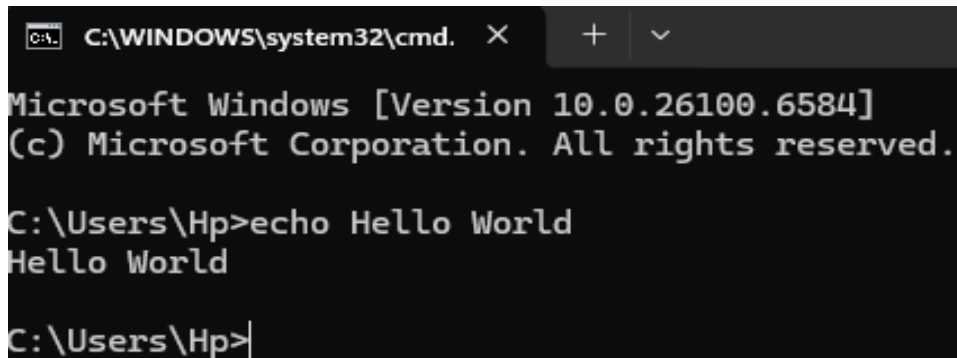
4. Create a new directory under any directory

```
C:\WINDOWS\system32\cmd.  X    +  ∨

Microsoft Windows [Version 10.0.26100.6584]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Hp>mkdir Pawar

C:\Users\Hp>md Pawar
A subdirectory or file Pawar already exists.

C:\Users\Hp>
```

6. Display the current working directory of the terminal

```
C:\Users\Hp> cd
C:\Users\Hp

C:\Users\Hp>
```
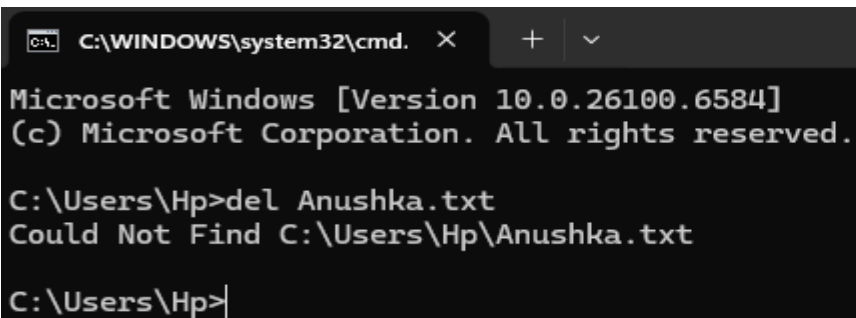
7. Write its arguments to standard output

```
C:\WINDOWS\system32\cmd.  X    +   v

Microsoft Windows [Version 10.0.26100.6584]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Hp>echo Hello World
Hello World

C:\Users\Hp>
```

8. Remove a file

```
C:\WINDOWS\system32\cmd.  X    +   v

Microsoft Windows [Version 10.0.26100.6584]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Hp>del Anushka.txt
Could Not Find C:\Users\Hp\Anushka.txt

C:\Users\Hp>
```

9. Delete a directory

```
C:\Users\Hp>rmdir Pawar

C:\Users\Hp>
```

10. Copy a file or directory

```
C:\Users\Hp>cd Downloads

C:\Users\Hp\Downloads>copy Anushka.txt A_pawar.txt
Overwrite A_pawar.txt? (Yes/No/All): All
        1 file(s) copied.

C:\Users\Hp\Downloads>
```

11. Switch to root-user

```
C:\Users\Hp\Downloads>runas /user:Administrator cmd
Enter the password for Administrator:
Attempting to start cmd as user "LAPTOP-FSJAAHOO\Administrator" ...
RUNAS ERROR: Unable to run - cmd
1327: Account restrictions are preventing this user from signing in. For example: blank passwords aren't allowed, sign-i
n times are limited, or a policy restriction has been enforced.

C:\Users\Hp\Downloads>
```

12. Moves files and directories from one directory to another

```
C:\Users\Hp\Downloads>move Anushka.txt D:/Documents
        1 file(s) moved.

C:\Users\Hp\Downloads>
```

13. Search for a particular string/word in a text file

```
C:\Users\Hp\Downloads>find "System" File.txt

---------- FILE.TXT

C:\Users\Hp\Downloads>
```

14. Print the top N number of data of the given input

```
C:\Users\Hp\Downloads> more A_pawar.txt
Rose
Lotus
Lily
Sunflower
Marigold

C:\Users\Hp\Downloads>
```

15. Print the last N number of data of the given input

```
C:\Users\Hp\Downloads> type A_pawar.txt
Lily
Sunflower
Marigold
Hibiscus
Tulip


C:\Users\Hp\Downloads>
```

16. Remove read permission from owner of the file

```
C:\Users\Hp\Downloads> icacls File.txt /deny %username%:R
processed file: File.txt
Successfully processed 1 files; Failed processing 0 files

C:\Users\Hp\Downloads>
```

17. Add read permission to owner plus remove write permission and add write permission to group

```
C:\Users\Hp\Downloads>icacls File.txt /grant username:R
username: No mapping between account names and security IDs was done.
Successfully processed 0 files; Failed processing 1 files

C:\Users\Hp\Downloads>
```

18. Add write permission to owner no permission to others

```
C:\Users\Hp\Downloads>icacls File.txt /grant username:W
username: No mapping between account names and security IDs was done.
Successfully processed 0 files; Failed processing 1 files

C:\Users\Hp\Downloads>icacls File.txt /remove Everyone
processed file: File.txt
Successfully processed 1 files; Failed processing 0 files

C:\Users\Hp\Downloads>
```

19. Assign permission to users

```
C:\Users\Hp\Downloads>icacls File.txt /grant username:F
username: No mapping between account names and security IDs was done.
Successfully processed 0 files; Failed processing 1 files

C:\Users\Hp\Downloads>
```

20. Assign R/W/X to others

```
\
C:\Users\Hp\Downloads>icacls File.txt /grant Everyone:F
processed file: File.txt
Successfully processed 1 files; Failed processing 0 files

C:\Users\Hp\Downloads>
```

21.Remove all permission from all users

```
C:\Users\Hp\Downloads>icacls File.txt /remove Everyone
processed file: File.txt
Successfully processed 1 files; Failed processing 0 files

C:\Users\Hp\Downloads>
```

22. Remove read permission from user using absolute mode

```
C:\Users\Hp\Downloads>icacls File.txt /deny username:R
username: No mapping between account names and security IDs was done.
Successfully processed 0 files; Failed processing 1 files

C:\Users\Hp\Downloads>
```

23. Add R/w permission to owner no permission to group and no permission to other using absolute mode

```
C:\Users\Hp\Downloads>icacls File.txt /grant username:RW
username: No mapping between account names and security IDs was done.
Successfully processed 0 files; Failed processing 1 files

C:\Users\Hp\Downloads> icacls File.txt /remove Everyone
processed file: File.txt
Successfully processed 1 files; Failed processing 0 files

C:\Users\Hp\Downloads>
```

24. Add execute permission to owner, read permission to group and other

```
C:\Users\Hp\Downloads>icacls File.txt /grant %username%:RX Everyone:R
processed file: File.txt
Successfully processed 1 files; Failed processing 0 files

C:\Users\Hp\Downloads>
```

21. Add execute permission to all user

```
C:\Users\Hp\Downloads>icacls File.txt /grant Everyone:RX
processed file: File.txt
Successfully processed 1 files; Failed processing 0 files

C:\Users\Hp\Downloads>
```