Assignment No. 1

Aim :- Study of Basic Linux Commands: echo, ls, read, cat, touch, test, loops, arithmetic comparison,conditional loops, grep,sed etc.

Theory:-

1) pwd command :-

Use the pwd command to find out the path of the current working directory (folder) you're in.The command will return an absolute (full) path, which is basically a path of all the directories
that starts with a forward slash (/).

Ex :-

```
viraj@DESKTOP-SFSMDHJ:~/Os$ pwd
/home/viraj/Os
```

2) cd command:-

To navigate through the Linux files and directories, use the cd command. It either the full path or the name of the directory, depending on the current working directory that you're in.

Ex:-

```
viraj@DESKTOP-SFSMDHJ:~$ cd Os
viraj@DESKTOP-SFSMDHJ:~/Os$
```

3) ls command

The ls command is used to view the contents of a directory. By default, this command will display the contents of your current working directory.

If you want to see the content of other directories, type ls and then the directory's path**.**

Ex :-

```
viraj@DESKTOP-SFSMDHJ:~/Os$ ls
```

Output.txt Theory Viraj.txt Viraj2.txt expres.sh forl.sh ifelse.sh practise.sh whilel.sh xyz.sh

1) ls -R will list all the files in the sub-directories as well

```
viraj@DESKTOP-SFSMDHJ:~/Os$ ls -R
```

```
.:
Output.txt  Theory  Viraj.txt  Viraj2.txt  expres.sh  forl.sh  ifelse.sh  practise.sh  whilel.sh
xyz.sh

./Theory:
First.sh  array.sh  expression.sh  input.sh  script.sh  try.sh
```

2) ls -a will show the hidden files

```
viraj@DESKTOP-SFSMDHJ:~/Os$ ls -a
. ..  Output.txt  Theory  Viraj.txt  Viraj2.txt  expres.sh  forl.sh  ifelse.sh  practise.sh
whilel.sh  xyz.sh
```

3) ls -al will list the files and directories with detailed information like the permissions, size, owner, etc.

```
viraj@DESKTOP-SFSMDHJ:~/Os$ ls -a
. ..  Output.txt  Theory  Viraj.txt  Viraj2.txt  expres.sh  forl.sh  ifelse.sh  practise.sh
whilel.sh  xyz.sh
viraj@DESKTOP-SFSMDHJ:~/Os$ ls -al
total 48
drwxr-xr-x  3 viraj viraj 4096 Jul 23 11:40 .
drwxr-x--- 27 viraj viraj 4096 Jul 20 12:36 ..
-rw-r--r--  1 viraj viraj   35 Jul 22 12:39 Output.txt
drwxr-xr-x  2 viraj viraj 4096 Jul 22 18:00 Theory
-rwxr-xr-x  1 viraj viraj   15 Jul 22 12:29 Viraj.txt
-rw-r--r--  1 viraj viraj   20 Jul 22 12:38 Viraj2.txt
-rwxr-xr-x  1 viraj viraj  206 Jul 23 10:47 expres.sh
-rwxr-xr-x  1 viraj viraj   50 Jul 23 11:28 forl.sh
-rwxr-xr-x  1 viraj viraj  287 Jul 23 11:13 ifelse.sh
-rwxr-xr-x  1 viraj viraj   80 Jul 23 10:57 practise.sh
-rwxr-xr-x  1 viraj viraj   79 Jul 23 11:40 whilel.sh
-rwxr-xr-x  1 viraj viraj   32 Jul 14 09:52 xyz.sh
```

4) cat command

cat (short for concatenate) is one of the most frequently used commands in Linux. It is used to list the contents of a file on the standard output (sdout).

Ex:-

```
viraj@DESKTOP-SFSMDHJ:~/Os$ cat > vir.txt
Hello pict
viraj@DESKTOP-SFSMDHJ:~/Os$ cat vir.txt
Hello pict
```

cat filename1 filename2>filename3 joins two files (1 and 2) and stores the output of them in anew file (3)

```
viraj@DESKTOP-SFSMDHJ:~/Os$ cat Viraj.txt Viraj2.txt>Output.txt
```

viraj@DESKTOP-SFSMDHJ:~/Os$ cat Output.txt

Hello Viraj..!

\n Welcome to Shell

5) cp command

Use the cp command to copy files from the current directory to a different directory.

Ex:-

viraj@DESKTOP-SFSMDHJ:~/Os$ cp vir.txt /home/viraj/Practise

viraj@DESKTOP-SFSMDHJ:~/Os$ cd ..

viraj@DESKTOP-SFSMDHJ:~$ cd Practise

viraj@DESKTOP-SFSMDHJ:~/Practise$ ls

- Assignment-2 bresenhamMouse.cpp circleb line trans **vir.txt**

2 OpenGLExample bresnLineMouse.cpp ddaM.cpp line1 transform.cpp

Assignment bresenham.cpp circle.cpp koch.cpp linepattern.cpp tryyy.cpp

6) mv command

The primary use of the mv command is to move files, although it can also be used to rename files.

Ex:

viraj@DESKTOP-SFSMDHJ:~/Os$ mv vir.txt /home/viraj/Practise

viraj@DESKTOP-SFSMDHJ:~/Os$ cd ..

viraj@DESKTOP-SFSMDHJ:~$ cd Practise

viraj@DESKTOP-SFSMDHJ:~/Practise$ ls

- Assignment-2 bresenhamMouse.cpp circleb line trans **vir.txt**

2 OpenGLExample bresnLineMouse.cpp ddaM.cpp line1 transform.cpp

Assignment bresenham.cpp circle.cpp koch.cpp linepattern.cpp tryyy.cpp

7) mkdir command

Use mkdir command to make a new directory

Ex :-

viraj@DESKTOP-SFSMDHJ:~/Os$ ls

Output.txt Theory Viraj.txt Viraj2.txt expres.sh forl.sh ifelse.sh practise.sh try whilel.sh xyz.sh

8) rmdir command

If you need to delete a directory, use the rmdir command. However, rmdir only allows you to delete empty directories.

Ex:-

viraj@DESKTOP-SFSMDHJ:~/Os$ rmdir try

viraj@DESKTOP-SFSMDHJ:~/Os$ ls

Output.txt Theory Viraj.txt Viraj2.txt expres.sh forl.sh ifelse.sh practise.sh whilel.sh xyz.sh

9) rm command

The rm command is used to delete directories and the contents within them. If you only want to delete the directory — as an alternative to rmdir — use rm -r.

Ex:-

viraj@DESKTOP-SFSMDHJ:~$ rm -r try1

viraj@DESKTOP-SFSMDHJ:~$ ls

2 Assignment2 Sample-OpenGL-Programs clip niranjanstore.sql:Zone.Identifier try Assignment Assignment4

10) touch command

The touch command allows you to create a blank new file through the Linux command line.

Ex :

viraj@DESKTOP-SFSMDHJ:~/Os$ touch index.html

viraj@DESKTOP-SFSMDHJ:~/Os$ ls

Output.txt Theory Viraj.txt Viraj2.txt expres.sh forl.sh ifelse.sh **index.html** practise.sh whilel.sh xyz.sh

11) locate command

You can use this command to locate a file, just like the search command in Windows. What'smore, using the -i argument along with this command will make it case-insensitive, so you can search for a file even if you don't remember its exact name.

Ex :-

viraj@DESKTOP-SFSMDHJ:~$ locate -i index.html

/home/viraj/Os

12) find command

Similar to the locate command, using find also searches for files and directories. The difference is, you use the find command to locate files within a given directory.

Ex :-

```
viraj@DESKTOP-SFSMDHJ:~$ find /home/ -name vir.txt
/home/viraj/Os
```

13. grep command

Another basic Linux command that is undoubtedly helpful for everyday use is grep. It lets you search through all the text in a given file.

Ex :-

```
viraj@DESKTOP-SFSMDHJ:~/Os$ cat forl.sh
#!/bin/bash
for i in 1 2 3 4 5
do
echo "$i"
done
viraj@DESKTOP-SFSMDHJ:~/Os$ grep for forl.sh
for i in 1 2 3 4 5
```

14) sudo command

Short for “SuperUser Do”, this command enables you to perform tasks that require administrative or root permissions.

Ex:

```
viraj@DESKTOP-SFSMDHJ:~$ sudo apt install plocate
[sudo] password for viraj:
Waiting for cache lock: Could not get lock /var/lib/dpkg/lock-frontend. It is held by process 100 (apt)
```

15) df command

Use df command to get a report on the system’s disk space usage, shown in percentage and KBs. If you want to see the report in megabytes, type df -m.

Ex:-

```
viraj@DESKTOP-SFSMDHJ:~/Os$ df
Filesystem     1K-blocks     Used Available Use% Mounted on
none             954248        4    954244   1% /mnt/wsl
none          249416004 160875348  88540656  65% /usr/lib/wsl/drivers
```

```
none            954248        0    954248   0% /usr/lib/wsl/lib
/dev/sdc       1055762868   2697744 999361652    1% /
none            954248       80    954168   1% /mnt/wslg
rootfs          951004      1936    949068   1% /init
none            954248        4    954244   1% /run
none            954248        0    954248   0% /run/lock
none            954248        0    954248   0% /run/shm
none            954248        0    954248   0% /run/user
tmpfs           954248        0    954248   0% /sys/fs/cgroup
none            954248       72    954176   1% /mnt/wslg/versions.txt
none            954248       72    954176   1% /mnt/wslg/doc
drvfs         249416004 160875348  88540656  65% /mnt/c
```

16) du command

If you want to check how much space a file or a directory takes, the du (Disk Usage) command is the answer.

Ex:-

```
viraj@DESKTOP-SFSMDHJ:~/Os$ du
28      ./Theory
68      .
```

17) head command

The head command is used to view the first lines of any text file. By default, it will show the first ten lines, but you can change this number to your liking.

Ex:

```
viraj@DESKTOP-SFSMDHJ:~/Os$ cat ifelse.sh
#!/bin/bash


# Input number from the user
read -p "Enter a number: " num


# Check if the number is positive, negative, or zero
if [ $num -gt 0 ]; then
   echo "The number is positive."
elif [ $num -lt 0 ]; then
```

```
    echo "The number is negative."
else
    echo "The number is zero."
fi


viraj@DESKTOP-SFSMDHJ:~/Os$ head ifelse.sh
#!/bin/bash

# Input number from the user
read -p "Enter a number: " num

# Check if the number is positive, negative, or zero
if [ $num -gt 0 ]; then
    echo "The number is positive."
elif [ $num -lt 0 ]; then
    echo "The number is negative."
```

18) tail command

This one has a similar function to the head command, but instead of showing the first lines, the tail command will display the last ten lines of a text file.

Ex:-

```
viraj@DESKTOP-SFSMDHJ:~/Os$ tail ifelse.sh

# Check if the number is positive, negative, or zero
if [ $num -gt 0 ]; then
    echo "The number is positive."
elif [ $num -lt 0 ]; then
    echo "The number is negative."
else
    echo "The number is zero."
Fi
```

19) diff command

Short for difference, the diff command compares the contents of two files line by line. After analyzing the files, it will output the lines that do not match.

Ex :-

```
3,6c3,14
< for i in 1 2 3 4 5
< do
< echo "$i"
< done
---
> # Input number from the user
> read -p "Enter a number: " num
>
> # Check if the number is positive, negative, or zero
> if [ $num -gt 0 ]; then
>     echo "The number is positive."
> elif [ $num -lt 0 ]; then
>     echo "The number is negative."
> else
>     echo "The number is zero."
> fi
>
```

20) tar command

The tar command is the most used command to archive multiple files into a tarball— a common Linux file format that is similar to zip format, with compression being optional.

Ex:-

```
viraj@DESKTOP-SFSMDHJ:~/Os$ tar -cvf my_files.tar Viraj.txt folder/
Viraj.txt
```

21) chmod command

chmod is another Linux command, used to change the read, write, and execute permissions of files and directories.

Ex :

```
viraj@DESKTOP-SFSMDHJ:~/Os/Theory$ chmod +x input.sh
viraj@DESKTOP-SFSMDHJ:~/Os/Theory$ ./input.sh
```

22) chown command

In Linux, all files are owned by a specific user. The chown command enables you to change or transfer the ownership of a file to the specified username.

Ex :-

viraj@DESKTOP-SFSMDHJ:~/Os$ chown linuxuser2 Viraj.txt

23) kill command

If you have an unresponsive program, you can terminate it manually by usingthe kill command. It will send a certain signal to the misbehaving app and instructs the app to terminate itself.

Ex :-

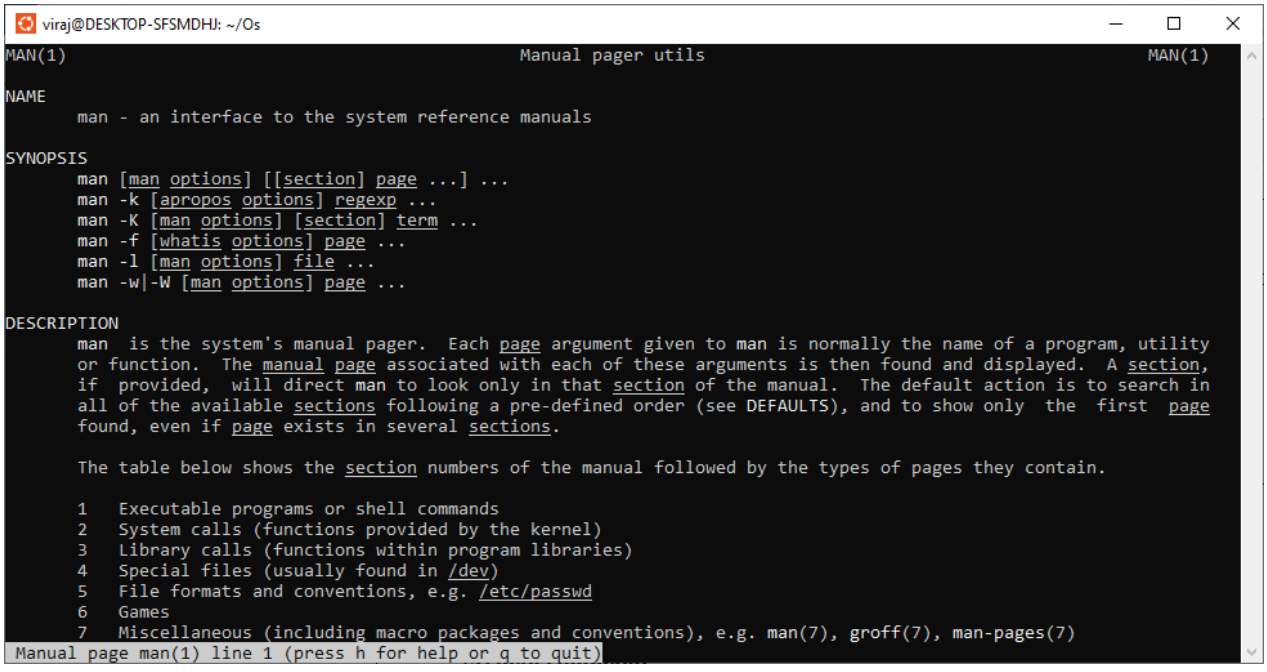
viraj@DESKTOP-SFSMDHJ:~/Os$ kill Viraj.txt

24) man command

Confused about the function of certain Linux commands? Don’t worry, you can easily learn how to use them right from Linux’s shell by using the man command.

Ex:-

viraj@DESKTOP-SFSMDHJ:~/Os$ man man



Conclusion :-

We have Successfully studied and performed parcticals on Basic Linux Commands: echo, ls, read, cat, touch, test, loops, arithmetic comparison,conditional loops, grep,sed etc.