2.Basic Linux Commands

Study of a terminal based text editor such as Vim or Emacs. (By the end of the course, students are expected to acquire following skills in using the editor: cursor operations, manipulate text, search for patterns, global search and replace)

Basic Linux commands, familiarity with following commands/operations expected

1. man
2. ls, echo, read
3. more, less, cat,
4. cd, mkdir, pwd, find
5. mv, cp, rm ,tar
6. wc, cut, paste
7. head, tail, grep, expr
8. chmod, chown
9. Redirections & Piping
10. useradd, usermod, userdel, passwd
11. df,top, ps
12. ssh, scp, ssh-keygen, ssh-copy-id

1. pwd (Print Working Directory): Use the pwd command to find outthe 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 (/). An example of an absolute path is /home/username.

mits@mits-H610M-H-V2-DDR4:~$ pwd

/home/mits

2. history : When you have been using Linux for a certain period oftime, you will quickly notice that you can run hundreds of commands every day. As such, running history command is particularly useful if you want to review the commands you have entered before.

mits@mits-H610M-H-V2-DDR4:~$ history

2033 clear

2034 cat -n india

2035 cat -n india | head -6 | tail -2

2036 echo "god is love"

2037 man echo

2038 echo -n "god is love"

2039 man echo

2040 echo -e "god\nis\nlove"

2041 history

2042 pwd

2043 man ls

2044 ls

2045 clear

2046 History

3. man :by using this command you can easily learn how to use

mits@mits-H610M-H-V2-DDR4:~$ man ls
NAME

ls - list directory contents

SYNOPSIS

ls [OPTION]... [FILE]...

DESCRIPTION

List information about the FILEs (the current directory by default). Sort entries alphabetically if none of -cftuvSUX nor --sort

is specified.

Mandatory arguments to long options are mandatory for short options too.

-a, --all

do not ignore entries starting with .

-A, --almost-all

do not list implied . and ..

--author

with -l, print the author of each file

-b, --escape

print C-style escapes for nongraphic characters

--block-size=SIZE

with -l, scale sizes by SIZE when printing them; e.g., '--block-size=M'; see SIZE format below

-B, --ignore-backups

do not list implied entries ending with ~

-c with -lt: sort by, and show, ctime (time of last modification of file status information); with -l: show ctime and sort by

name; otherwise: sort by ctime, newest first

-C list entries by columns

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

mits@ mits-H610M-H-V2-DDR4:~$ cd s1mca

mits@mits-H610M-H-V2-DDR4:~/s1mca$ cd s2mca

mits@mits-H610M-H-V2-DDR4:~/s1mca/s2mca$ cd ..
mits@mits-H610M-H-V2-DDR4:~/s1mca$ cd ..

mits@ mits-H610M-H-V2-DDR4:~$

5. ls: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.
mits@mits-H610M-H-V2-DDR4:~$ ls
document.docx document.pdf india snap

There are variations you can use with the ls command:

- ls -R will list all the files in the sub-directories aswell

```
mits@mits-H610M-H-V2-DDR4:~$ ls -R
.:
document.docx  document.pdf  india  snap
```

- ls –l – long listing

```
mits@mits-H610M-H-V2-DDR4:~$ ls -l
total 252
-rw-rw-r-- 1 mits mits  26431 Feb  5 11:36 document.docx
-rw-rw-r-- 1 mits mits 218271 Feb  5 10:16 document.pdf
-rw-rw-r-- 1 mits mits    454 Feb  5 10:48 india
drwx------ 4 mits mits   4096 Feb  5 10:08 snap
```

- ls -a will show the hidden files

```
mits@mits-H610M-H-V2-DDR4:~$ ls -a
.            .bash_logout  .config       .fontconfig  .lesshst            .mca.swp
.profile  .sudo_as_admin_successful
..           .bashrc       document.docx  .gnupg       .local              .mca.txt.swp
snap      .thunderbird
.bash_history  .cache      document.pdf   india        .~lock.document.docx#
.mozilla      .ssh
```

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

```
mits@mits-H610M-H-V2-DDR4:~$ ls -al
total 364
-rw-rw-r--  1 mits mits     84 Feb  5 11:36 .~lock.document.docx#
-rw-------  1 mits mits  12288 Apr 15  2024 .mca.swp
-rw-------  1 mits mits  12288 Apr 15  2024 .mca.txt.swp
drwx------  3 mits mits   4096 Oct 10 15:30 .mozilla
-rw-r--r--  1 mits mits    807 Jan 24  2024 .profile
drwx------  4 mits mits   4096 Feb  5 10:08 snap
drwx------  2 mits mits   4096 Mar  4  2024 .ssh
-rw-r--r--  1 mits mits      0 Jan 24  2024 .sudo_as_admin_successful
drwx------  6 mits mits   4096 Oct 10 15:30 .thunderbird
```

- ls -t lists files sorted in the order of “lastmodified”

```
mits@mits-H610M-H-V2-DDR4:~$ ls -t
document.docx  india  document.pdf  snap
```

- ls -r option will reverse the natural sorting order. Usually used incombination

with other switches such as ls -tr. This will reverse thetime-wise listing.

```
mits@mits-H610M-H-V2-DDR4:~$ ls -r
snap  india  document.pdf  document.docx
```

6. mkdir : Use mkdir command to make a new directory — if you type mkdir Music it will create a directory called Music.To generate a new directory inside another directory, use this Linux basic command

```
mits@mits-H610M-H-V2-DDR4:~$ ls
document.docx  f1  india  kerala  linuxtext  snap
mits@mits-H610M-H-V2-DDR4:~/$ mkdir s1mca
mits@mits-H610M-H-V2-DDR4:~/$ mkdir s2mca
mits@mits-H610M-H-V2-DDR4:~$ ls
document.docx  f1  india  kerala  linuxtext  snap s1mca s2mca
```

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

```
mits@mits-H610M-H-V2-DDR4:~$ ls
document.docx  f1  india  kerala  linuxtext  snap s1mca s2mca
mits@mits-H610M-H-V2-DDR4:~/$ rmdir s2mca
mits@mits-H610M-H-V2-DDR4:~$ ls
document.docx  f1  india  kerala  linuxtext  snap s1mca
```

8. touch: The touch command allows you to create a blank new filethrough the Linux command line.

```
mits@mits-H610M-H-V2-DDR4:~/s2mca$ ls
f1  linux  new
mits@mits-H610M-H-V2-DDR4:~/s2mca$ touch apple orange
mits@mits-H610M-H-V2-DDR4:~/s2mca$ ls
apple  f1  linux  new  orange
```

9. rm : 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. Be very careful with this command and double-check which directory you are in. This will delete everything and there is no undo. To remove a file use rm filename.

```
mits@mits-H610M-H-V2-DDR4:~$ ls
document.docx grapes  india  kerala  linuxtext mca  mint  s2mca  snap  yellow
mits@mits-H610M-H-V2-DDR4:~$ rm mca
rm: cannot remove 'mca': Is a directory
mits@mits-H610M-H-V2-DDR4:~$ rm -r mca
```

```
mits@mits-H610M-H-V2-DDR4:~$ ls
document.docx grapes  india  kerala  linuxtext  mint  s2mca  snap  yellow
```

10. Cat: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 stdout . To run this command, type cat followed by the file's name and its extension.

```
mits@mits-H610M-H-V2-DDR4:~$ cat > india
india is my country
i love my country
all indians are my brothers and sisters
india, officially the Republic of India,[j][20] is a country in South Asia.
^C
mits@mits-H610M-H-V2-DDR4:~$ cat india
india is my country
i love my country
all indians are my brothers and sisters
india, officially the Republic of India,[j][20] is a country in South Asia
mits@mits-H610M-H-V2-DDR4:~$ cat -n  india
     1 india is my country
     2 i love my country
     3 all indians are my brothers and sisters
     4  india, officially the Republic of India,[j][20] is a country in South Asia.
```

11. echo: echo command is used to move some data into a file. If you want to add the text, "Hello, my name is John" into a file called name.txt, you would type echo Hello, my name is John >> name.txt 2. head.

```
mits@mits-H610M-H-V2-DDR4:~$ echo "god is love"
god is love
mits@mits-H610M-H-V2-DDR4:~$ echo -e "god\nis\nlove"
god
is
love
```

12. head: 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. If you only want to show the first five lines, type head -n 5 filename.txt.

```
mits@mits-H610M-H-V2-DDR4:~$ head india
india is my country
i love my country
```

all indians are my brothers and sisters
india, officially the Republic of India,[j][20] is a country in South Asia.
It is the seventh-largest country by area
since its independence in 1947, the world's most populous democracy
Bounded by the Indian Ocean on the south
he Arabian Sea on the southwest
Bay of Bengal on the southeast
shares land borders with Pakistan to the west

mits@mits-H610M-H-V2-DDR4:~$ head -5 india
india is my country
i love my country
all indians are my brothers and sisters
india, officially the Republic of India,[j][20] is a country in South Asia.
It is the seventh-largest country by area

13. tail: 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. tail -n filename.txt.
mits@mits-H610M-H-V2-DDR4:~$ tail india
i love my country
all indians are my brothers and sisters
india, officially the Republic of India,[j][20] is a country in South Asia.
It is the seventh-largest country by area
since its independence in 1947, the world's most populous democracy
Bounded by the Indian Ocean on the south
he Arabian Sea on the southwest
Bay of Bengal on the southeast
shares land borders with Pakistan to the west
China, Nepal, and Bhutan to the north
mits@mits-H610M-H-V2-DDR4:~$ tail -5 india
Bounded by the Indian Ocean on the south
he Arabian Sea on the southwest
Bay of Bengal on the southeast
shares land borders with Pakistan to the west
China, Nepal, and Bhutan to the north

14.read: read the contents of a line into a variable. The read command can be used with and without arguments. read command is used to read [options] [name...] . $read $read var1 var2 var3. $echo "[$var1] [$var2] [$var3].

mits@mits-H610M-H-V2-DDR4:~$ echo "Enter your name:"; read;

Enter your name:

Gokul

mits@mits-H610M-H-V2-DDR4:~$ echo "Enter your name:"; read name;

echo "hello" $name;

Enter your name:

gokul

hello gokul

15.more: Like cat command, more command displays the content of a file. Only difference is that, in case of larger files, ' cat' command output will scroll off your screen while ' more' command displays output one screenful at a time. Enter key
mits@mits-H610M-H-V2-DDR4:~$ more -p india

india is my country

i love my country

all indians are my brothers and sisters

india, officially the Republic of India,[j][20] is a country in South Asia.

It is the seventh-largest country by area

since its independence in 1947, the world's most populous democracy

Bounded by the Indian Ocean on the south

he Arabian Sea on the southwest

Bay of Bengal on the southeast

shares land borders with Pakistan to the west

China, Nepal, and Bhutan to the north

16.less: The 'less' command is same as 'more' command but include some more features. It automatically adjusts with the width and height of the terminal window, while 'more' command cuts the content as the width of the terminal window get shorter

mits@mits-H610M-H-V2-DDR4:~$ less india

india is my country

i love my country

all indians are my brothers and sisters

india, officially the Republic of India,[j][20] is a country in South Asia.

It is the seventh-largest country by area

since its independence in 1947, the world's most populous democracy

Bounded by the Indian Ocean on the south

he Arabian Sea on the southwest

Bay of Bengal on the southeast

shares land borders with Pakistan to the west

China, Nepal, and Bhutan to the north

india (END)

17.cut : The cut command is used for cutting out the sections from each line offiles and writing the result to standard output. It can be used to cut parts of aline by byte position, character and file.

mits@mits-H610M-H-V2-DDR4:~$ cat > state

andhra pradesh

arunachal pradesh

assam

bihar

Chhattisgarh

india

^C

mits@mits-H610M-H-V2-DDR4:~$ cut -b 1,2,3,4 state

andh

arun

assa

biha

Chha

indi

mits@mits-H610M-H-V2-DDR4:~$ cut -b 1-3,6-7 state

anda

aruch

ass

bih

Chhti

ind

mits@mits-H610M-H-V2-DDR4:~$ cut -b 3- state

dhra pradesh

unachal pradesh

sam

har

hattisgarh

dia

18.paste : It is used to join files horizontally (parallel merging) by outputting lines consisting of lines from each file specified, separated by tab as delimiter, to the standard output. paste [OPTION]... [FILES]...$ paste state.txt capital.txt.
mits@mits-H610M-H-V2-DDR4:~$ cat number

1

2

3

4

5

mits@mits-H610M-H-V2-DDR4:~$ cat state

arunachal pradesh

```
assam
andhra pradesh
bihar
chattisgrah
mits@mits-H610M-H-V2-DDR4:~$ cat capital
itanagar
dispur
hyderabad
patna
raipur
mits@mits-H610M-H-V2-DDR4:~$ paste number state capital
1   arunachal pradesh   itanagar
2   assam   dispur
3   andhra pradesh  hyderabad
4   bihar   patna
5   chattisgrah raipur
mits@mits-H610M-H-V2-DDR4:~$ paste -d "|" number state capital
1|arunachal pradesh|itanagar
2|assam|dispur
3|andhra pradesh|hyderabad
4|bihar|patna
5|chattisgrah|raipur
mits@mits-H610M-H-V2-DDR4:~$ paste -d "," number state capital
1,arunachal pradesh,itanagar
2,assam,dispur
3,andhra pradesh,hyderabad
4,bihar,patna
5,chattisgrah,raipur
```

mits@mits-H610M-H-V2-DDR4:~$ paste -d "|," number state capital

1|arunachal pradesh,itanagar

2|assam,dispur

3|andhra pradesh,hyderabad

4|bihar,patna

5|chattisgrah,raipur

mits@mits-H610M-H-V2-DDR4:~$ paste -s number state capital

1 2 3 4 5

arunachal pradesh assam andhra pradesh bihar chattisgrah

itanagar dispur hyderabad patna raipur

mits@mits-H610M-H-V2-DDR4:~$ paste -s -d ":" number state capital

1:2:3:4:5

arunachal pradesh:assam:andhra pradesh:bihar:chattisgrah

itanagar:dispur:hyderabad:patna:raipu

19.uname : The uname command, short for Unix Name, will print detailed information about your Linux system like the machine name, operating system, kernel, and so on $uname, $uname-r

mits@mits-H610M-H-V2-DDR4:~$ uname

Linux

mits@mits-H610M-H-V2-DDR4:~$ uname -r

6.8.0-52-generic

20.cp : cp command issued to copy files from the currentdirectorytoa different directory. For instance, the command cp scenery.jpg
/home/username/Pictures would create a copy of scenery.jpg (from your current directory) into the Pictures directory. cp -i will ask for user's consent in case of a potential file overwrite. cp -p will preserve source files'mode, ownership and timestamp. cp -r will copy directories recursively. cp -u copies files only if the destination fileisnotexistingor thesource file is newer than the destination file.
mits@mits-H610M-H-V2-DDR4:~/gokul$ ls

file1

mits@mits-H610M-H-V2-DDR4:~/gokul$ cp file1 file2

mits@mits-H610M-H-V2-DDR4:~/gokul$ ls

file1 file2

21.mv : The primary use of the mv command is to move files, it can also be used to rename files.The arguments in mv are similar to the cp command. You need to type mv, the file's name, and the destination's directory. mv file.txt /home/username/Documents .To rename files, the Linux is mv oldname.ext newname.ext.

mits@mits-H610M-H-V2-DDR4:~/s2mca$ ls

apple f1 linux new orange

mits@mits-H610M-H-V2-DDR4:~/s2mca$ mv f1 f2

mits@mits-H610M-H-V2-DDR4:~/s2mca$ ls

apple f2 linux new orange

22.locate : To locate a file, just like the search command in Windows. What's more, 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. To search for a file that contains two or more words, use an asterisk (*). For example, locate -i school*note command will search for any file that contains the word "school" and "note", whether it is uppercase or lowercase.

23.Find: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. As an example, find /home/ -name notes.txt command will search for a file called notes.txt within the home directory and its subdirectories. Other variations when using the find are: To find files in the current directory use, find . -name notes.txt .To look for directories use, / -type d -name notes. Txt

mits@mits-H610M-H-V2-DDR4:~$ find ./ -name *.txt

./sample.txt

./mca/sample.txt

mits@mits-H610M-H-V2-DDR4:~$ find ./mca -name sample.txt -exec rm -i {} \;

rm: remove regular empty file './mca/sample.txt'? y

mits@mits-H610M-H-V2-DDR4:~$ find ./ -name sample.txt

./sample.txt

mits@mits-H610M-H-V2-DDR4:~$ find ./ -empty

./s2mca/orange

./s2mca/new

./s2mca/apple

24.grep : 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. To illustrate, grep blue notepad.txt will search for the word blue in the notepad file. Lines that contain the searched word will be displayed fully. Usually output of a previous command is piped into the grep command. For example, ls -l |grep “kernel”.

mits@mits-H610M-H-V2-DDR4:~$ cat exmple

unix is great os. unix was developed in Bell labs.

learn operating system.

Unix linux which one you choose.

uNix is easy to learn.unix is a multiuser os.Learn unix .unix is a powerful.

mits@mits-H610M-H-V2-DDR4:~$ grep -c "unix" exmple

2

mits@mits-H610M-H-V2-DDR4:~$ grep -h "unix" exmple

unix is great os. unix was developed in Bell labs.

uNix is easy to learn.unix is a multiuser os.Learn unix .unix is a powerful.

mits@mits-H610M-H-V2-DDR4:~$ grep -i "unix" exmple

unix is great os. unix was developed in Bell labs.

Unix linux which one you choose.

uNix is easy to learn.unix is a multiuser os.Learn unix .unix is a powerful.

mits@mits-H610M-H-V2-DDR4:~$ grep -l "unix" exmple

exmple

mits@mits-H610M-H-V2-DDR4:~$ grep -n "unix" exmple

1:unix is great os. unix was developed in Bell labs.

4:uNix is easy to learn.unix is a multiuser os.Learn unix .unix is a powerful.

25.df : 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.

mits@mits-H610M-H-V2-DDR4:~$ df

Filesystem	1K-blocks	Used	Available	Use%	Mounted on
tmpfs	789976	2284	787692	1%	/run
/dev/sda5	216888480	16665692	189132664	9%	/
tmpfs	3949860	0	3949860	0%	/dev/shm
tmpfs	5120	4	5116	1%	/run/lock
efivarfs	256	125	127	50%	/sys/firmware/efi/efivars
/dev/sda1	98304	31816	66488	33%	/boot/efi
tmpfs	789972	108	789864	1%	/run/user/1000

26.du : If you want to check how much space a file or a directory takes, the du (Disk Usage) command is the answer. However, the disk usage summary will show disk block numbers instead of the usual size format. If you want to see it in bytes, kilobytes, and megabytes, add the -h argument to the command line.

mits@mits-H610M-H-V2-DDR4:~$ du

4 ./snap/firefox/5783/.config/gtk-3.0

4 ./snap/firefox/5783/.config/ibus

4 ./snap/firefox/5783/.config/dconf

4 ./snap/firefox/5783/.config/gtk-2.0

8 ./snap/firefox/5783/.config/pulse

8 ./snap/firefox/5783/.config/fontconfig

52 ./snap/firefox/5783/.config

4 ./snap/firefox/5783/.local/share/icons

4 ./snap/firefox/5783/.local/share/glib-2.0/schemas

8 ./snap/firefox/5783/.local/share/glib-2.0

24 ./snap/firefox/5783/.local/share

28 ./snap/firefox/5783/.local

88 ./snap/firefox/5783

4 ./snap/firefox/5751/.config/gtk-3.0

4 ./snap/firefox/5751/.config/ibus

4 ./snap/firefox/5751/.config/dconf

4 ./snap/firefox/5751/.config/gtk-2.0

27.useradd : This is available only to system admins .Since Linux is a multi- user system, this means more than one person can interact with the same system at the same time. useradd is used to create a new user, while passwd is adding a password to that user's account. To add a new person named John type, useradd John and then to add his password type, passwd 123456789

mits@mits-H610M-H-V2-DDR4:~$ sudo useradd gokul

[sudo] password for mits:

mits@mits-H610M-H-V2-DDR4:~$ cat /etc/passwd | grep gokul

gokul:x:1003:1003::/home/gokul:/bin/sh

mits@mits-H610M-H-V2-DDR4:~$ cat /etc/passwd | grep "gokul"

gokul:x:1003:1003::/home/gokul:/bin/sh

28.userdel : Remove a user is very similar to adding a new user. To delete theusers account type, userdel UserName

mits@mits-H610M-H-V2-DDR4:~$ sudo userdel gokul

mits@mits-H610M-H-V2-DDR4:~$ cat /etc/passwd | tail -3

mca:x:1001:1001::/home/mca:/bin/sh

mysql:x:128:136:MySQL Server,,,:/nonexistent:/bin/false

exam:x:1002:1002:Exam,,,:/home/exam:/bin/bash

29.sudo : Short for "SuperUser Do", this command enables you to perform tasks that require administrative or root permissions. You must have sufficient permissions to use this command.

mits@mits-H610M-H-V2-DDR4:~$ chown gokul myfile1.txt

chown: changing ownership of 'myfile1.txt': Operation not permitted

mits@mits-H610M-H-V2-DDR4:~$ sudo chown gokul myfile1.txt

30.passwd : Changes passwords for user accounts. A normal user may only change the password for their own account, while the superuser may change the password for any account.

31.usermod : usermod command is used to change the properties of a user in Linux through the command line command-line utility that allows you to modify a user's login information.

mits@mits-H610M-H-V2-DDR4:~$ sudo usermod -l gookul gokul

mits@mits-H610M-H-V2-DDR4:~$ cat /etc/passwd | grep "gookul"

gookul:x:1003:1004::/home/gokul:/bin/sh

32.Groupadd : groupadd command creates a new group account using the values specified on the command line and the default values from the system.

Syntax:

groupadd [option] group_name

mits@mits-H610M-H-V2-DDR4:~$ sudo groupadd s2mca

mits@mits-H610M-H-V2-DDR4:~$ cat /etc/group | grep "s2mca"

s2mca:x:1004:

33.groups : print the groups a user is in#groups alice.

Syntax:

groups [username]...

mits@mits-H610M-H-V2-DDR4:~$ groups mits

mits : mits adm cdrom sudo dip plugdev lpadmin lxd sambashare

34.groupdel : groupdel command modifies the system account files, deleting all entries that refer to group. The named group must exist #groupdel marketin.
Syntax:

groupdel [options] GROUP

mits@mits-H610M-H-V2-DDR4:~$ sudo groupdel s1mca

mits@mits-H610M-H-V2-DDR4:~$ cat /etc/group | tail -3

mysql:x:136:

exam:x:1002:

gokul:x:1003:

35.groupmod : The groupmod command modifies the definition of thespecified group by modifying the appropriate entry in the group database. # groupmod -n group1 group2.
Syntax:

groupmod [option] GROUP

mits@mits-H610M-H-V2-DDR4:~$ sudo groupmod -n s1mca s2mca

[sudo] password for mits:

mits@mits-H610M-H-V2-DDR4:~$ cat /etc/group | tail -3

exam:x:1002:

gokul:x:1003:

s1mca:x:1004:

36.chmod : To change directory permissions of file/ Directory in Linux. #chmod who what which file/directory chmod +rwx filename to add permissions. chmod -rwx directory name to remove permissions. chmod +x filename to allow executable permissions. chmod -wx filename to take out write and executable permissions. #chmod u+x test #chmod g- rwx test #chmod o-r test 4

mits@mits-H610M-H-V2-DDR4:~$ ls -l

drwxrwxr-x 2 mits mits 4096 Feb 20 11:47 mca

-rw-rw-r-- 1 mits mits 18 Feb 6 14:16 mint

-rw-rw-r-- 1 mits mits 148 Mar 5 11:22 myfile1.txt

-rw-rw-r-- 1 mits mits 148 Mar 5 11:22 myfile2.txt

mits@mits-H610M-H-V2-DDR4:~$ chmod 777 myfile1.txt

mits@mits-H610M-H-V2-DDR4:~$ ls -l

drwxrwxr-x 2 mits mits 4096 Feb 20 11:47 mca

-rw-rw-r-- 1 mits mits 18 Feb 6 14:16 mint

-rwxrwxrwx 1 mits mits 148 Mar 5 11:22 myfile1.txt

-rw-rw-r-- 1 mits mits 148 Mar 5 11:22 myfile2.txt

37.chown : The chown command allows you to change the user and/or group ownership of a given file, directory. #chownTom Test

mits@mits-H610M-H-V2-DDR4:~$ ls -l

-rw-rw-r-- 1 mits mits 148 Mar 5 11:22 myfile1.txt

-rw-rw-r-- 1 mits mits 148 Mar 5 11:22 myfile2.txt

mits@mits-H610M-H-V2-DDR4:~$ sudo chown gokul myfile1.txt

mits@mits-H610M-H-V2-DDR4:~$ ls -l

-rwxrwxrwx 1 gokul mits 148 Mar 5 11:22 myfile1.txt

-rw-rw-r-- 1 mits mits 148 Mar 5 11:22 myfile2.txt

38.id : id command in Linux is used to find out user and group names and numeric ID's (UID or group ID) of the current user.

mits@mits-H610M-H-V2-DDR4:~$ id

uid=1000(mits) gid=1000(mits) groups=1000(mits),4(adm),24(cdrom),27(sudo),30(dip),46(plugdev),122(lpadmin),134(lxd),135(sambashare)

mits@mits-H610M-H-V2-DDR4:~$ ps

```
    PID TTY          TIME CMD
   9099 pts/0    00:00:00 bash
  11662 pts/0    00:00:00 ps
```

39.ps : The ps command, short for Process Status, is a command line utility that is used to display or view information related to the processes running in a Linux system. PID – This is the unique process ID TTY– This is the type of terminal that the user is logged in to . TIME – This is the time in minutes and seconds that the process has been running .CMD – The command that launched the process

Syntax:

ps [options]

```
mits@mits-H610M-H-V2-DDR4:~/gokul$ ps
  PID TTY          TIME CMD
 4182 pts/0    00:00:00 bash
 9697 pts/0    00:00:00 ps
```

40.top: top command is used to show the Linux processes. It provides a dynamic real- time view of the running system

Syntax:

top [options]

```
mits@mits-H610M-H-V2-DDR4:~$ top
top - 14:35:28 up  1:28,  1 user,  load average: 0.52, 0.44, 0.39
Tasks: 337 total,   1 running, 336 sleeping,   0 stopped,   0 zombie
%Cpu(s):  1.0 us,  0.7 sy,  0.0 ni, 98.2 id,  0.0 wa,  0.0 hi,  0.1 si,  0.0 st
MiB Mem :   7714.6 total,    447.0 free,   3179.0 used,   4088.6 buff/cache
MiB Swap:   2048.0 total,   2048.0 free,      0.0 used.   3508.2 avail Mem
```

41.wc : wc stands for word count. Used for counting purpose. It is used to find out number of lines, word count, byte and characters count in the files specified in the file arguments. #wc state.txt 6 8 54 state.tx . #wc state.txt capital.txt wc -l state.txt wc -w state.txt capital.txt wc -c state.txt .wc -m state.txt

```
mits@mits-H610M-H-V2-DDR4:~$ cat state
Kerala
Tamil nadu
Goa
mits@mits-H610M-H-V2-DDR4:~$ wc state
3  4 22 state
```

```
mits@mits-H610M-H-V2-DDR4:~$ wc -l state
3 state
mits@mits-H610M-H-V2-DDR4:~$ wc -c state
22 state
mits@mits-H610M-H-V2-DDR4:~$ wc -w state
4
```

42.tar : The Linux 'tar'stands for tape archive, is used to create Archive and extract the Archive files Linux tar command to create compressed or uncompressed Archive files

43.expr : The expr command evaluates a given expression and displays its corresponding output. It is used for: . Basic operations like addition, subtraction, multiplication, division, and modulus on integers. Evaluating regular expressions,string operations like substring, length of strings etc. Performing operations on variables inside a shell script.

```
mits@mits-H610M-H-V2-DDR4:~$ a="20"
mits@mits-H610M-H-V2-DDR4:~$ b="4"
mits@mits-H610M-H-V2-DDR4:~$ expr $a + $b
24
mits@mits-H610M-H-V2-DDR4:~$ expr $a - $b
16
mits@mits-H610M-H-V2-DDR4:~$ expr $a \* $b
80
mits@mits-H610M-H-V2-DDR4:~$ expr $a / $b
5
```

44.Redirections & Piping : A pipe is a form of redirection to send the output of one command/program/process to another command/program/process for further processing. Pipe is used to combine two or more commands, the output of one command acts as input to another command, and this command's output may act as input to the next command and so on.

45.ssh : ssh stands for "Secure Shell". It is a protocol used to securely connect to a remote server/system. ssh is secure in the sense that it transfers the data in encrypted form between the host and the client. It transfers inputs from the client to the host and relays

back the output. ssh runs at TCP/IP port 22
mits@mits-H610M-H-V2-DDR4:~/gokul$ ssh
usage: ssh [-46AaCfGgKkMNnqsTtVvXxYy] [-B bind_interface]
[-b bind_address] [-c cipher_spec] [-D [bind_address:]port]
[-E log_file] [-e escape_char] [-F configfile] [-I pkcs11]
[-i identity_file] [-J [user@]host[:port]] [-L address]
[-l login_name] [-m mac_spec] [-O ctl_cmd] [-o option] [-p port]
[-Q query_option] [-R address] [-S ctl_path] [-W host:port]
[-w local_tun[:remote_tun]] destination [command [argument ...]]

46.scp : SCP (secure copy) is a command-line utility that allows you to securely copy files and directories between two locations. With scp, you can copy a file or directory: From your local system to a remote system. From a remote system to your local system. Between two remote systems from your local system. Remote file system locations are specified in format [user@]host:/path Syntax: scp [OPTION] [user@]SRC_HOST:]file1 [user@]DEST_HOST:]file2 $scp /etc/yum.config /etc/hosts
ServerX:/home/student $scp ServerX:/etc/hostname/home/student
mits@mits-H610M-H-V2-DDR4:~/gokul$ scp
usage: scp [-346ABCOpqRrsTv] [-c cipher] [-D sftp_server_path] [-F ssh_config]
[-i identity_file] [-J destination] [-l limit]
[-o ssh_option] [-P port] [-S program] source ... target

47.ssh-keygen : ssh-keygen command to generate a public/private authentication key pair. Authentication keys allow a user to connect to a remote system without supplying a password. Keys must be generated for each user separately. If you generate key pairs as the root user, only the root can use the keys. $ssh-keygen -t rsa