

Bansilal Ramnath Agarwal Charitable Trust's
VISHWAKARMA INSTITUTE OF INFORMATION TECHNOLOGY,
PUNE-48 Department of Information Technology
ITUA32202: CLOUD COMPUTING
Assignment-1

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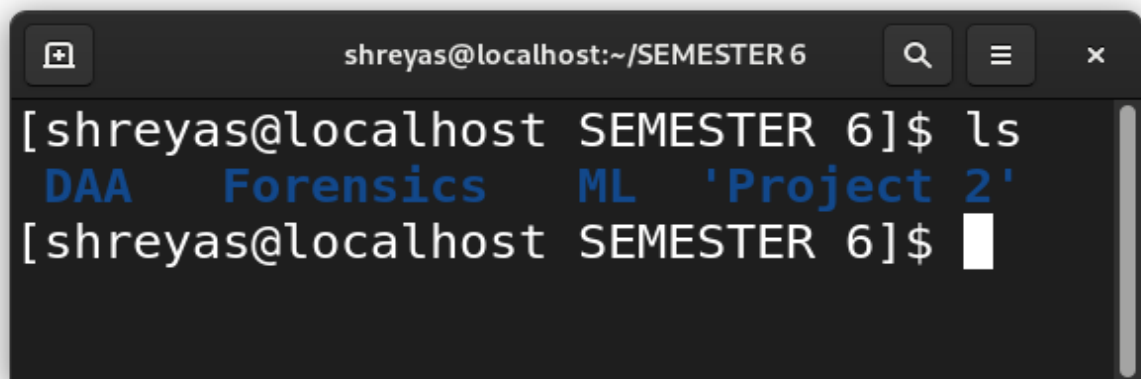
C2 Batch

Roll No.: 333030

PRN: 22010443

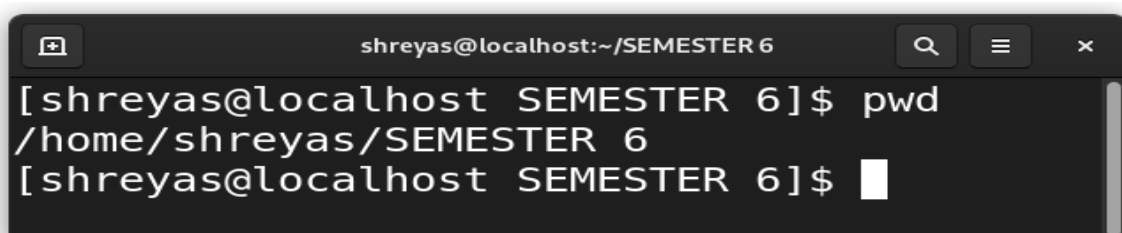
AIM: To learn the top 55 Linux Commands we Must Know as a Cloud & DevOps engineer

01. **ls** — The most frequently used command in Linux to list directories

A terminal window titled 'shreyas@localhost:~/SEMESTER 6' with search, menu, and close icons. The prompt is '[shreyas@localhost SEMESTER 6]\$'. The command 'ls' has been entered, and the output is 'DAA Forensics ML 'Project 2''. The prompt is now '[shreyas@localhost SEMESTER 6]\$' with a cursor.

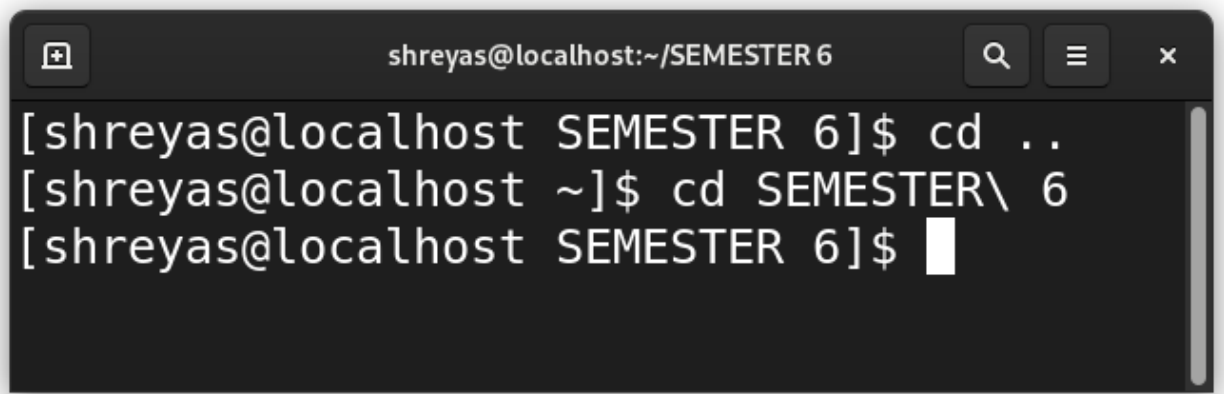
```
shreyas@localhost:~/SEMESTER 6
[shreyas@localhost SEMESTER 6]$ ls
DAA  Forensics  ML  'Project 2'
[shreyas@localhost SEMESTER 6]$
```

02. **pwd** — Print working directory command in Linux

A terminal window titled 'shreyas@localhost:~/SEMESTER 6' with search, menu, and close icons. The prompt is '[shreyas@localhost SEMESTER 6]\$'. The command 'pwd' has been entered, and the output is '/home/shreyas/SEMESTER 6'. The prompt is now '[shreyas@localhost SEMESTER 6]\$' with a cursor.

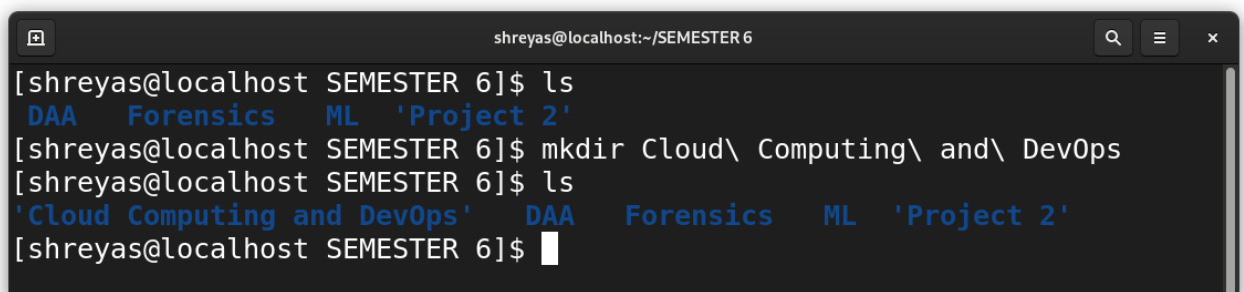
```
shreyas@localhost:~/SEMESTER 6
[shreyas@localhost SEMESTER 6]$ pwd
/home/shreyas/SEMESTER 6
[shreyas@localhost SEMESTER 6]$
```

03. **cd** — Linux command to navigate through directories



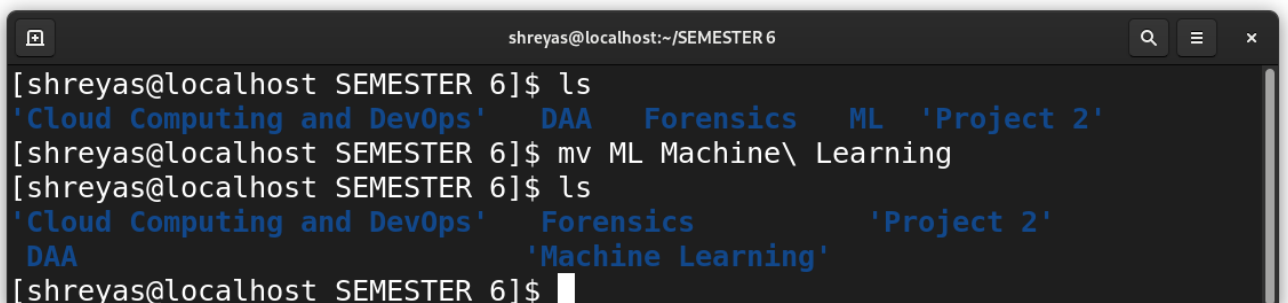
```
shreyas@localhost:~/SEMESTER 6
[shreyas@localhost SEMESTER 6]$ cd ..
[shreyas@localhost ~]$ cd SEMESTER\ 6
[shreyas@localhost SEMESTER 6]$
```

04. **mkdir** — Command used to create directories in Linux



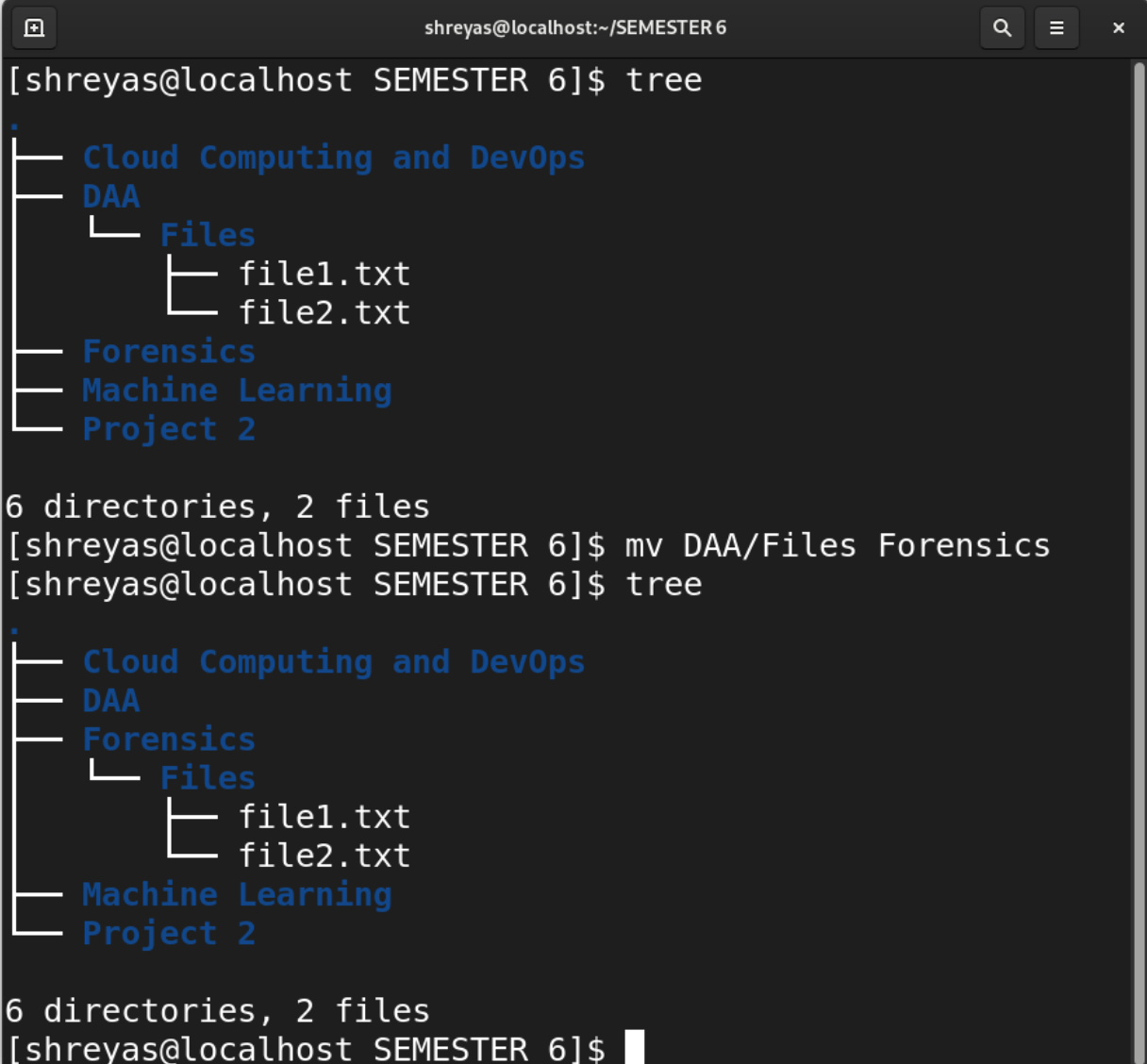
```
shreyas@localhost:~/SEMESTER 6
[shreyas@localhost SEMESTER 6]$ ls
DAA  Forensics  ML  'Project 2'
[shreyas@localhost SEMESTER 6]$ mkdir Cloud\ Computing\ and\ DevOps
[shreyas@localhost SEMESTER 6]$ ls
'Cloud Computing and DevOps'  DAA  Forensics  ML  'Project 2'
[shreyas@localhost SEMESTER 6]$
```

05. **mv** — Move or rename files in Linux



```
shreyas@localhost:~/SEMESTER 6
[shreyas@localhost SEMESTER 6]$ ls
'Cloud Computing and DevOps'  DAA  Forensics  ML  'Project 2'
[shreyas@localhost SEMESTER 6]$ mv ML Machine\ Learning
[shreyas@localhost SEMESTER 6]$ ls
'Cloud Computing and DevOps'  Forensics  'Project 2'
DAA  'Machine Learning'
[shreyas@localhost SEMESTER 6]$
```

06. **cp** — Similar usage as mv but for copying files in Linux

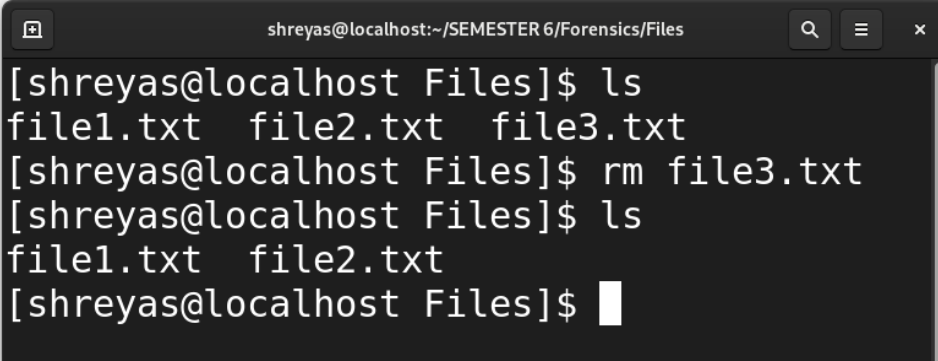
A terminal window titled 'shreyas@localhost:~/SEMESTER 6' showing the execution of the 'tree' command to display the directory structure. The structure includes 'Cloud Computing and DevOps', 'DAA', 'Forensics', 'Machine Learning', and 'Project 2'. The 'DAA' directory contains a 'Files' subdirectory with 'file1.txt' and 'file2.txt'. The output indicates 6 directories and 2 files. Then, the 'mv DAA/Files Forensics' command is executed to move the 'Files' directory into 'Forensics'. A second 'tree' command shows the updated structure where 'Forensics' now contains the 'Files' subdirectory. The output again shows 6 directories and 2 files.

```
shreyas@localhost:~/SEMESTER 6
[shreyas@localhost SEMESTER 6]$ tree
.
├── Cloud Computing and DevOps
├── DAA
│   └── Files
│       ├── file1.txt
│       └── file2.txt
├── Forensics
├── Machine Learning
└── Project 2

6 directories, 2 files
[shreyas@localhost SEMESTER 6]$ mv DAA/Files Forensics
[shreyas@localhost SEMESTER 6]$ tree
.
├── Cloud Computing and DevOps
├── DAA
├── Forensics
│   └── Files
│       ├── file1.txt
│       └── file2.txt
├── Machine Learning
└── Project 2

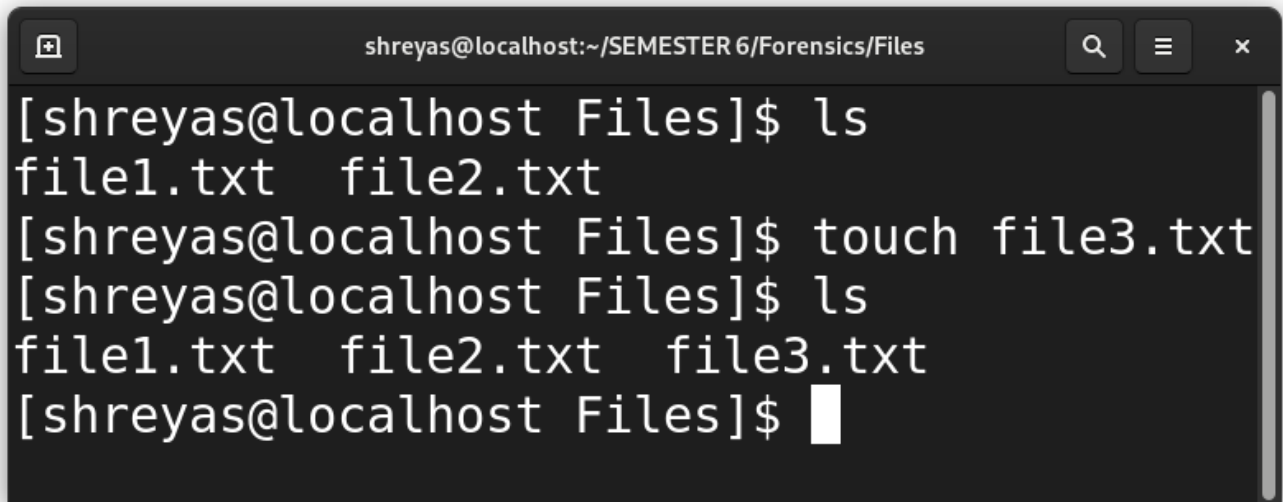
6 directories, 2 files
[shreyas@localhost SEMESTER 6]$
```

07. **rm** — Delete files or directories

A terminal window titled 'shreyas@localhost:~/SEMESTER 6/Forensics/Files' showing the execution of 'ls' to list files: 'file1.txt', 'file2.txt', and 'file3.txt'. Then, the 'rm file3.txt' command is used to delete 'file3.txt'. A final 'ls' command shows that only 'file1.txt' and 'file2.txt' remain.

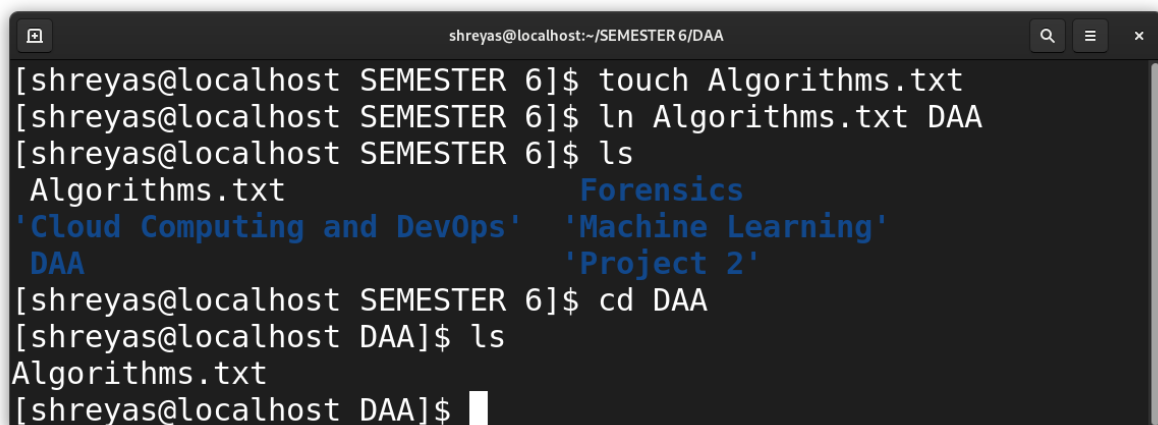
```
shreyas@localhost:~/SEMESTER 6/Forensics/Files
[shreyas@localhost Files]$ ls
file1.txt  file2.txt  file3.txt
[shreyas@localhost Files]$ rm file3.txt
[shreyas@localhost Files]$ ls
file1.txt  file2.txt
[shreyas@localhost Files]$
```

08. **touch** — Create blank/empty files



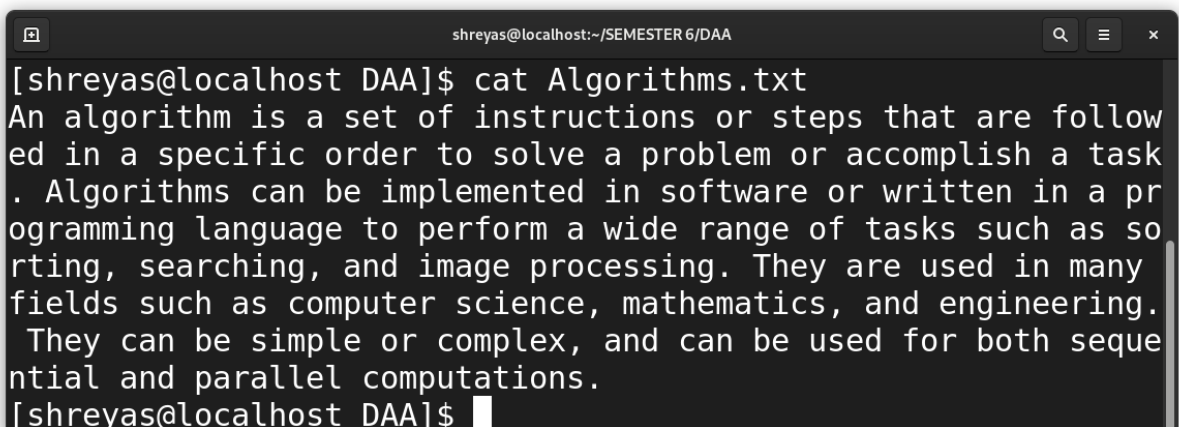
```
shreyas@localhost:~/SEMESTER 6/Forensics/Files
[shreyas@localhost Files]$ ls
file1.txt  file2.txt
[shreyas@localhost Files]$ touch file3.txt
[shreyas@localhost Files]$ ls
file1.txt  file2.txt  file3.txt
[shreyas@localhost Files]$
```

09. **ln** — Create symbolic links (shortcuts) to other files



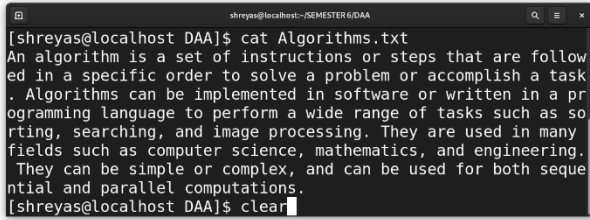
```
shreyas@localhost:~/SEMESTER 6/DAA
[shreyas@localhost SEMESTER 6]$ touch Algorithms.txt
[shreyas@localhost SEMESTER 6]$ ln Algorithms.txt DAA
[shreyas@localhost SEMESTER 6]$ ls
Algorithms.txt          Forensics
'Cloud Computing and DevOps' 'Machine Learning'
DAA                     'Project 2'
[shreyas@localhost SEMESTER 6]$ cd DAA
[shreyas@localhost DAA]$ ls
Algorithms.txt
[shreyas@localhost DAA]$
```

10. **cat** — Display file contents on the terminal



```
shreyas@localhost:~/SEMESTER 6/DAA
[shreyas@localhost DAA]$ cat Algorithms.txt
An algorithm is a set of instructions or steps that are follow
ed in a specific order to solve a problem or accomplish a task
. Algorithms can be implemented in software or written in a pr
ogramming language to perform a wide range of tasks such as so
rting, searching, and image processing. They are used in many
fields such as computer science, mathematics, and engineering.
They can be simple or complex, and can be used for both seque
ntial and parallel computations.
[shreyas@localhost DAA]$
```

11. **clear** — Clear the terminal display



```
[shreyas@localhost DAA]$ cat Algorithms.txt
An algorithm is a set of instructions or steps that are followed in a specific order to solve a problem or accomplish a task. Algorithms can be implemented in software or written in a programming language to perform a wide range of tasks such as sorting, searching, and image processing. They are used in many fields such as computer science, mathematics, and engineering. They can be simple or complex, and can be used for both sequential and parallel computations.
[shreyas@localhost DAA]$ clear
```

->



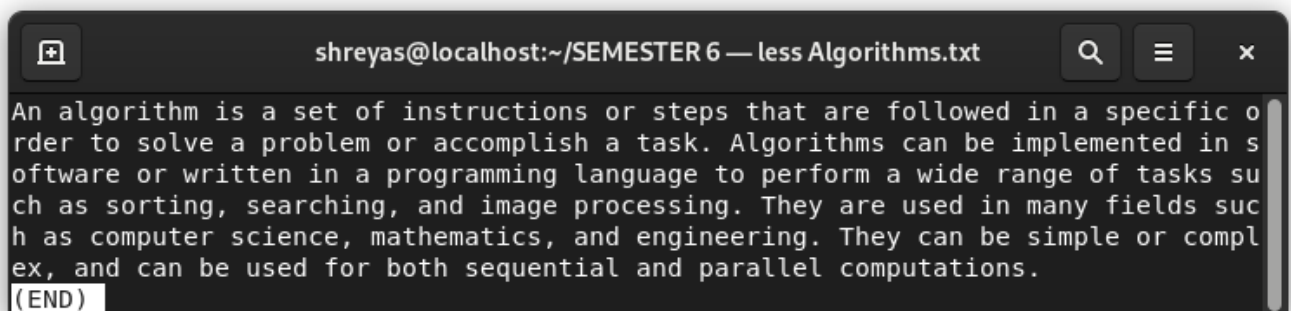
```
[shreyas@localhost DAA]$
```

12. **echo** — Print any text that follows the command



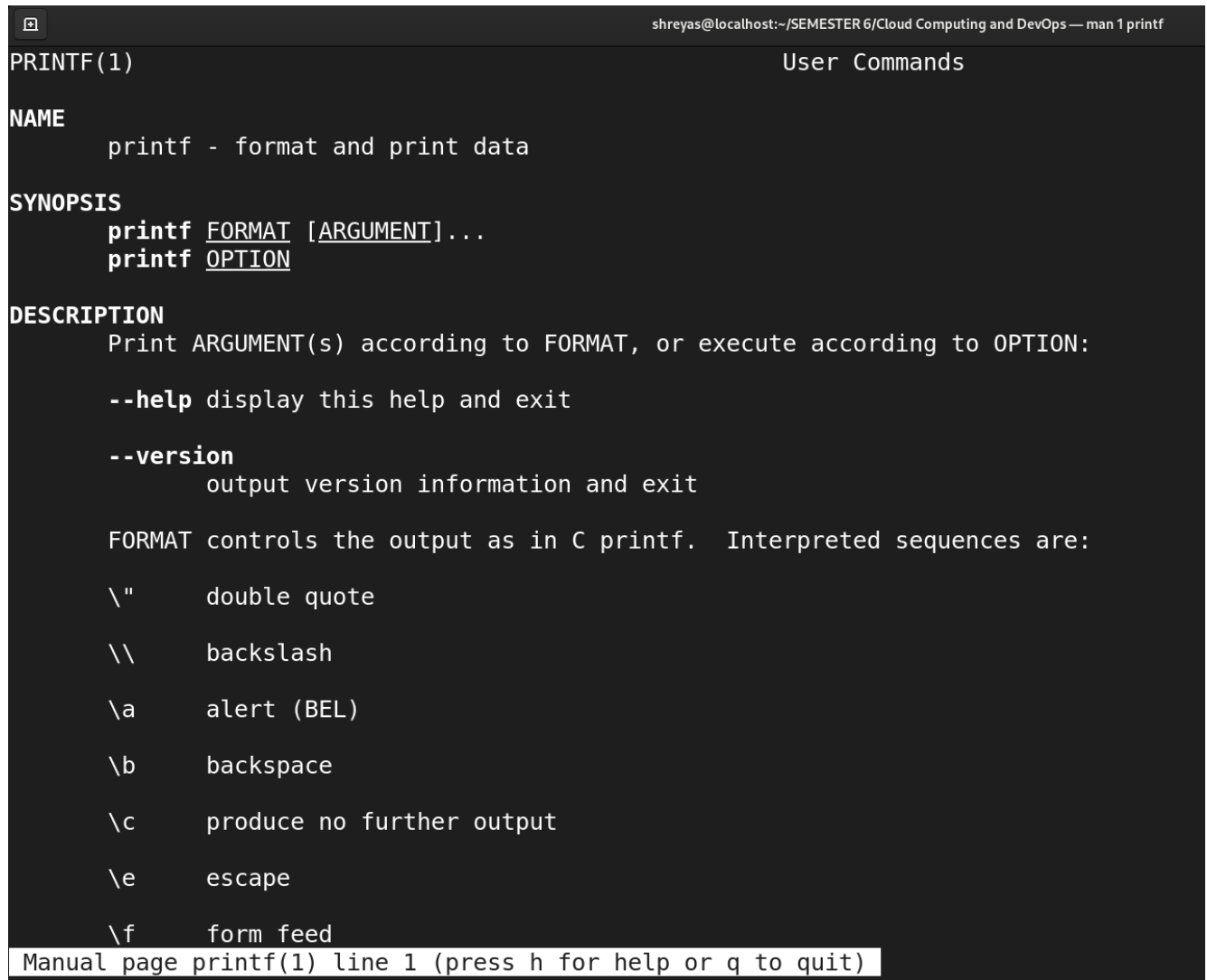
```
shreyas@localhost:~/SEMESTER 6/Cloud Computing and DevOps
[shreyas@localhost Cloud Computing and DevOps]$ echo "Hello"
Hello
[shreyas@localhost Cloud Computing and DevOps]$
```

13. **less** — Linux command to display paged outputs in the terminal



```
shreyas@localhost:~/SEMESTER 6 — less Algorithms.txt
An algorithm is a set of instructions or steps that are followed in a specific order to solve a problem or accomplish a task. Algorithms can be implemented in software or written in a programming language to perform a wide range of tasks such as sorting, searching, and image processing. They are used in many fields such as computer science, mathematics, and engineering. They can be simple or complex, and can be used for both sequential and parallel computations.
(END)
```

14. **man** — Access manual pages for all Linux commands



```
shreyas@localhost:~/SEMESTER 6/Cloud Computing and DevOps — man 1 printf
PRINTF(1) User Commands

NAME
    printf - format and print data

SYNOPSIS
    printf FORMAT [ARGUMENT]...
    printf OPTION

DESCRIPTION
    Print ARGUMENT(s) according to FORMAT, or execute according to OPTION:

    --help display this help and exit

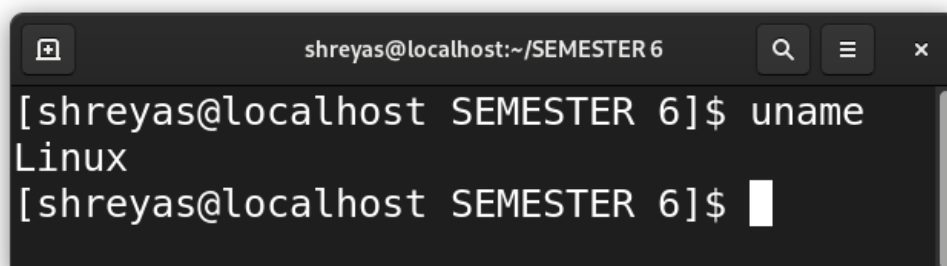
    --version
        output version information and exit

    FORMAT controls the output as in C printf.  Interpreted sequences are:

    \"    double quote
    \\    backslash
    \\a    alert (BEL)
    \\b    backspace
    \\c    produce no further output
    \\e    escape
    \\f    form feed

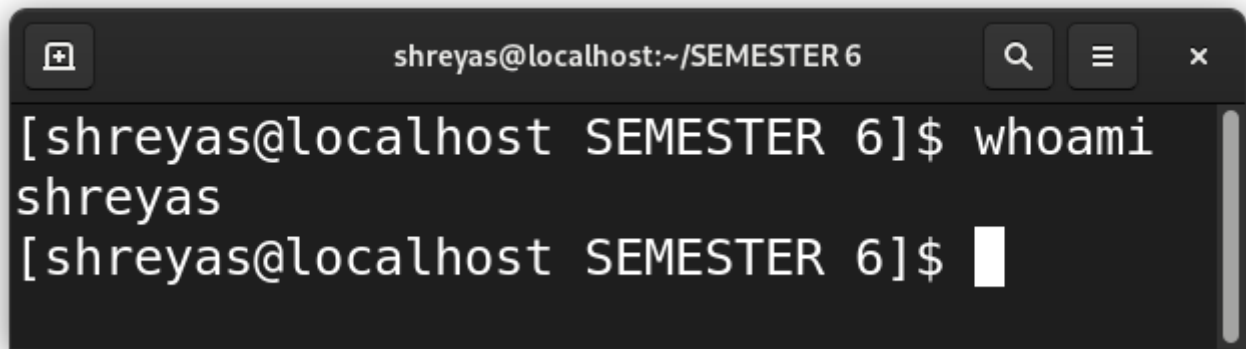
Manual page printf(1) line 1 (press h for help or q to quit)
```

15. **uname** — Linux command to get basic information about the OS



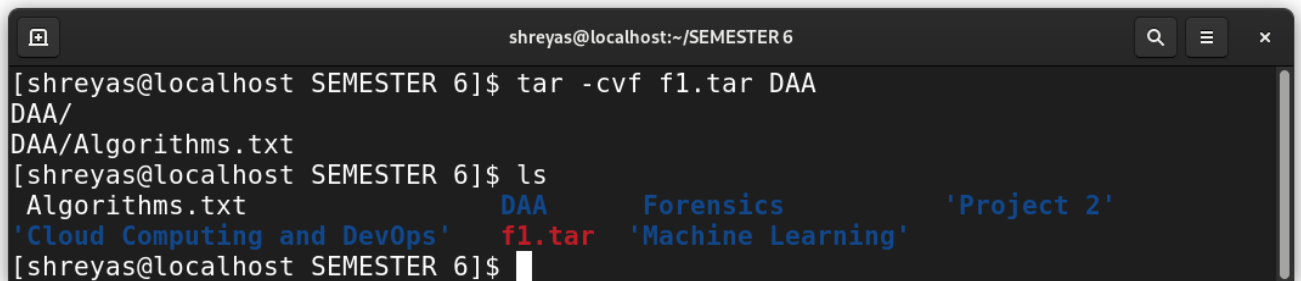
```
shreyas@localhost:~/SEMESTER 6
[shreyas@localhost SEMESTER 6]$ uname
Linux
[shreyas@localhost SEMESTER 6]$
```

16. **whoami** — Get the active username

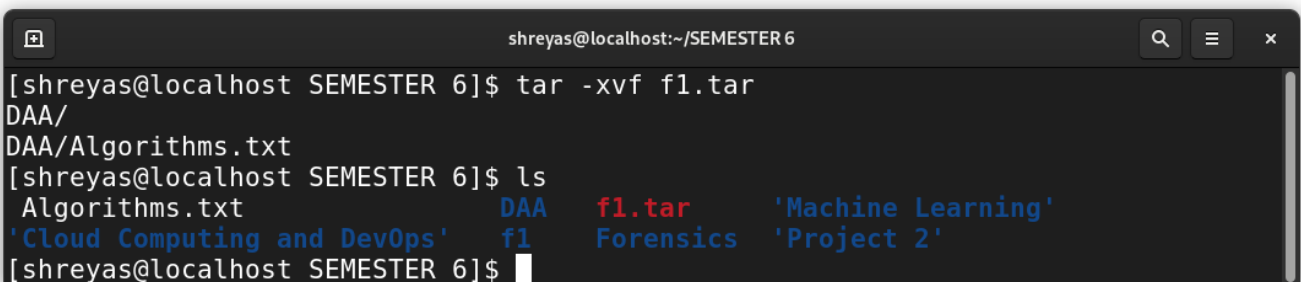


```
shreyas@localhost:~/SEMESTER 6
[shreyas@localhost SEMESTER 6]$ whoami
shreyas
[shreyas@localhost SEMESTER 6]$
```

17. **tar** — Command to extract and compress files in Linux

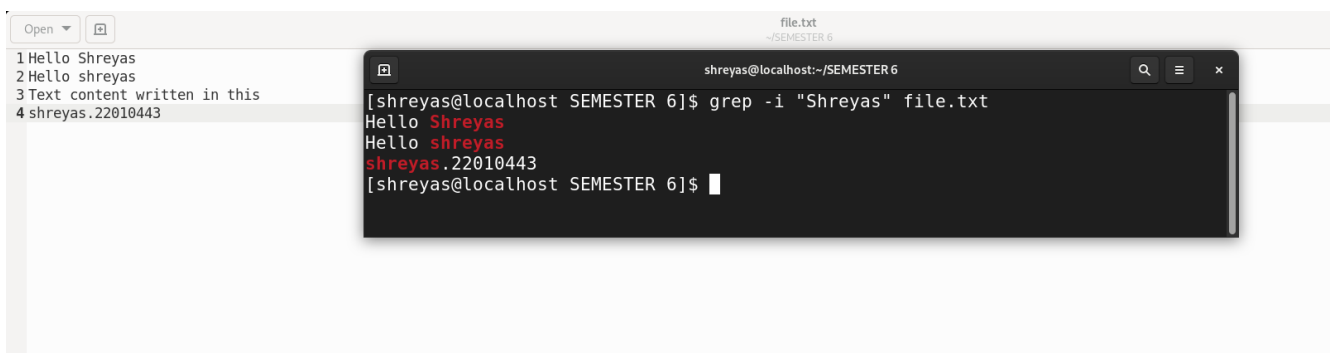


```
shreyas@localhost:~/SEMESTER 6
[shreyas@localhost SEMESTER 6]$ tar -cvf f1.tar DAA
DAA/
DAA/Algorithms.txt
[shreyas@localhost SEMESTER 6]$ ls
Algorithms.txt      DAA      Forensics      'Project 2'
'Cloud Computing and DevOps'  f1.tar  'Machine Learning'
```



```
shreyas@localhost:~/SEMESTER 6
[shreyas@localhost SEMESTER 6]$ tar -xvf f1.tar
DAA/
DAA/Algorithms.txt
[shreyas@localhost SEMESTER 6]$ ls
Algorithms.txt      DAA      f1.tar      'Machine Learning'
'Cloud Computing and DevOps'  fl      Forensics  'Project 2'
```

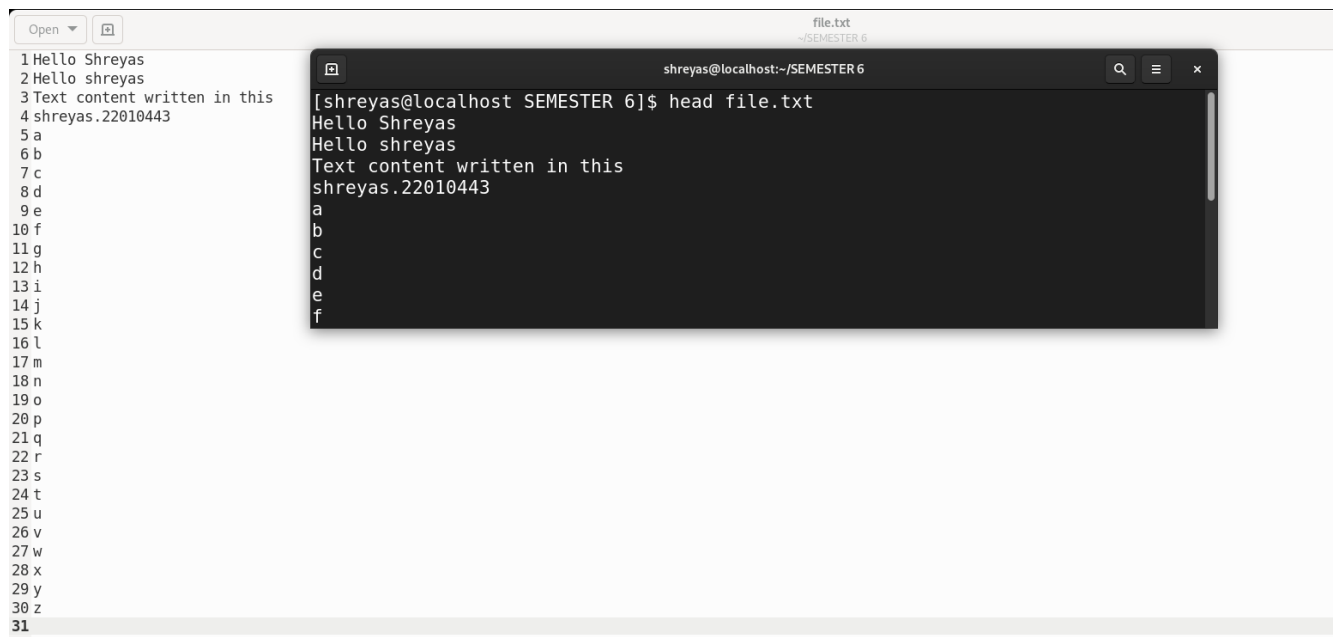
18. **grep** — Search for a string within an output



```
file.txt
1 Hello Shreyas
2 Hello shreyas
3 Text content written in this
4 shreyas.22010443

shreyas@localhost:~/SEMESTER 6
[shreyas@localhost SEMESTER 6]$ grep -i "Shreyas" file.txt
Hello Shreyas
Hello shreyas
shreyas.22010443
[shreyas@localhost SEMESTER 6]$
```

19. **head** — Return the specified number of lines from the top



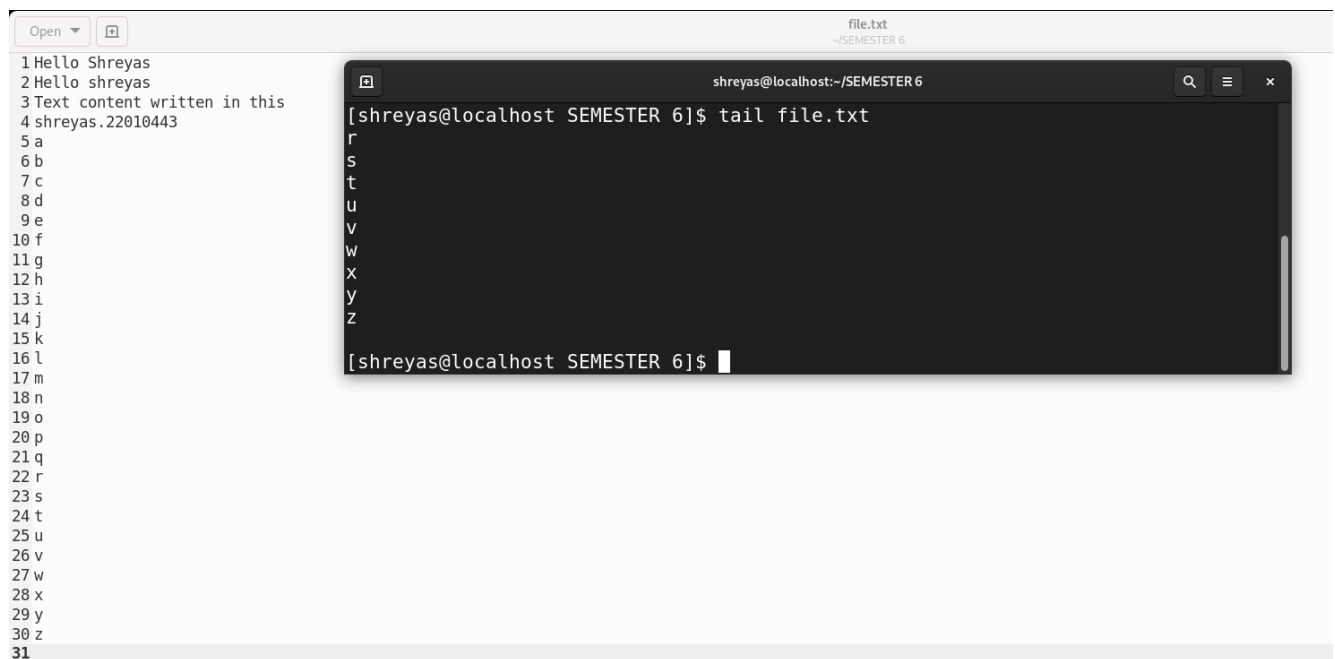
The screenshot shows a file editor window titled 'file.txt' with the following content:

```
1 Hello Shreyas
2 Hello shreyas
3 Text content written in this
4 shreyas.22010443
5 a
6 b
7 c
8 d
9 e
10 f
11 g
12 h
13 i
14 j
15 k
16 l
17 m
18 n
19 o
20 p
21 q
22 r
23 s
24 t
25 u
26 v
27 w
28 x
29 y
30 z
31
```

Overlaid on the editor is a terminal window titled 'shreyas@localhost:~/SEMESTER 6'. It shows the command `head file.txt` being executed, with the output displaying the first six lines of the file:

```
[shreyas@localhost SEMESTER 6]$ head file.txt
Hello Shreyas
Hello shreyas
Text content written in this
shreyas.22010443
a
b
```

20. **tail** — Return the specified number of lines from the bottom



The screenshot shows the same file editor window as above. The terminal window now shows the command `tail file.txt` being executed, with the output displaying the last six lines of the file:

```
[shreyas@localhost SEMESTER 6]$ tail file.txt
r
s
t
u
v
w
x
y
z

[shreyas@localhost SEMESTER 6]$
```


21. **diff** — Find the difference between two files

```
shreyas@localhost:~/SEMESTER 6
[shreyas@localhost SEMESTER 6]$ ls -l | wc -l
[shreyas@localhost SEMESTER 6]$ sudo iptables -t filter --append INPUT -j DROP
[sudo] password for shreyas:
[shreyas@localhost SEMESTER 6]$ sudo iptables -t filter --list
# Warning: iptables-legacy tables present, use iptables-legacy to see them
Chain INPUT (policy ACCEPT)
target     prot opt source                destination
DROP      all  --  anywhere              anywhere
DROP      all  --  anywhere              anywhere

Chain FORWARD (policy ACCEPT)
target     prot opt source                destination

Chain OUTPUT (policy ACCEPT)
target     prot opt source                destination
[shreyas@localhost SEMESTER 6]$
```

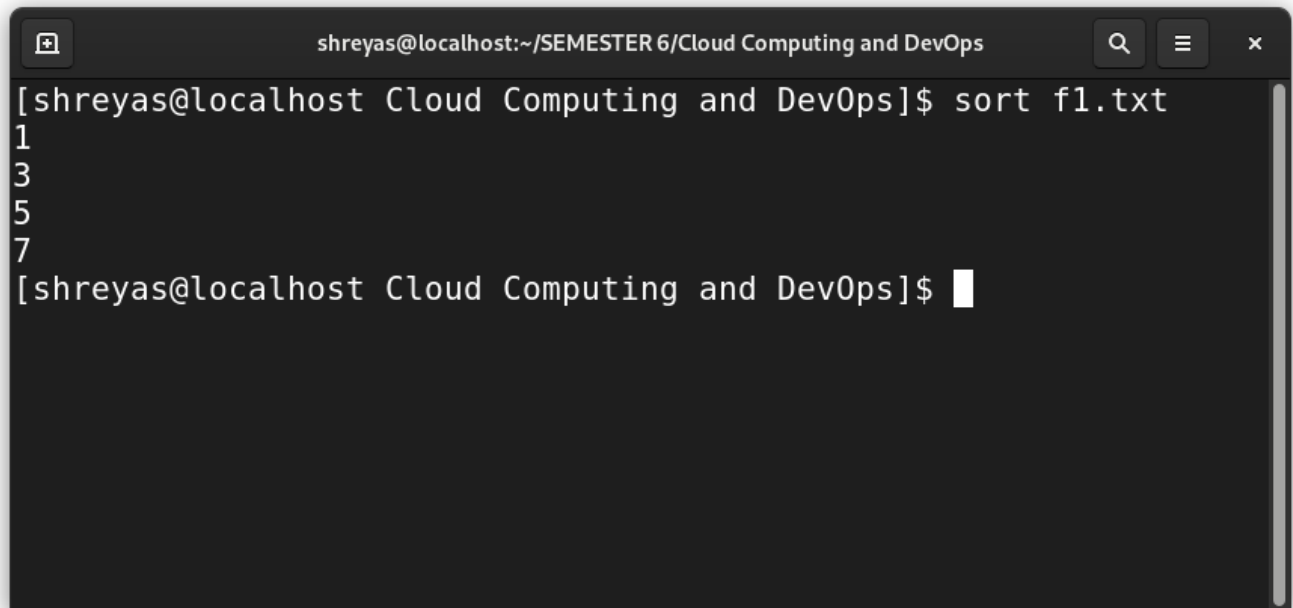
22. **cmp** — Allows you to check if two files are identical

```
shreyas@localhost:~/SEMESTER 6
[shreyas@localhost SEMESTER 6]$ cmp -b Algorithms.txt file.txt
Algorithms.txt file.txt differ: byte 1, line 1 is 101 A 110 H
[shreyas@localhost SEMESTER 6]$
```

23. **comm** — Combines the functionality of ediff and cmp

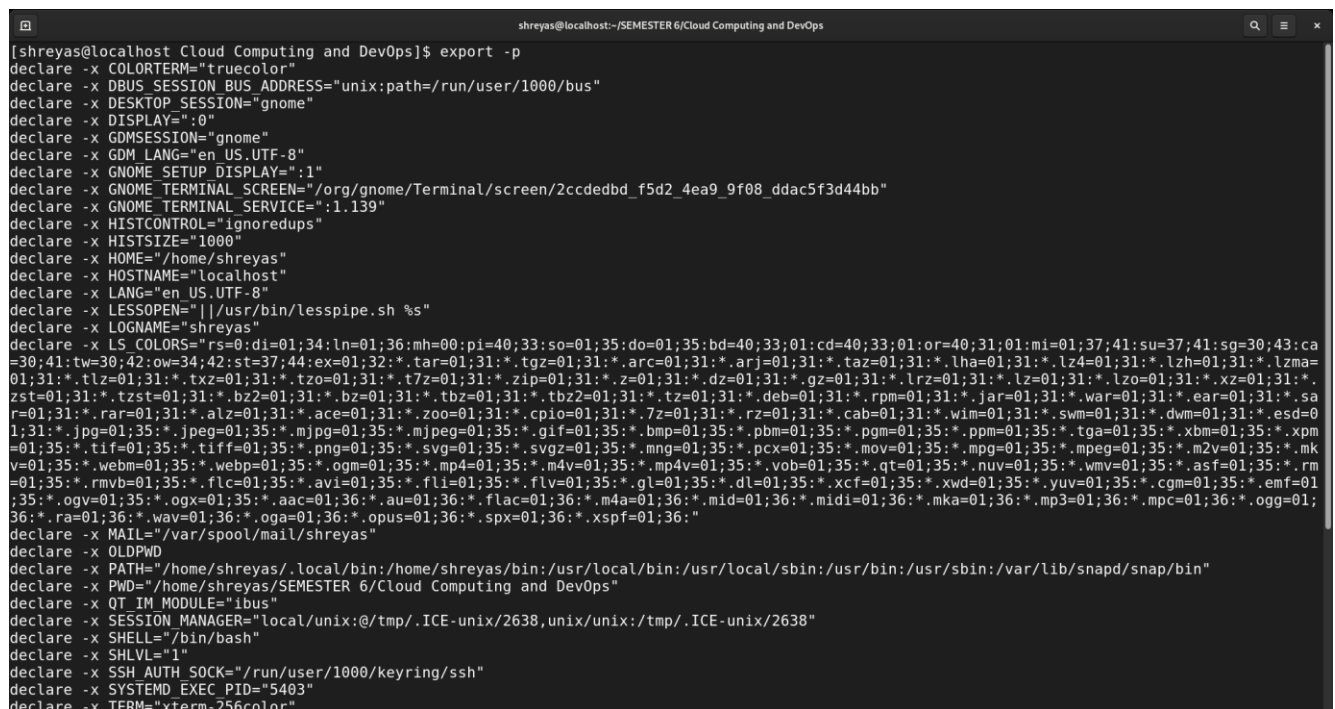
```
shreyas@localhost:~/SEMESTER 6/Cloud Computing and DevOps
[shreyas@localhost Cloud Computing and DevOps]$ comm f1.txt f2.txt
1
      2
3
      4
5
      6
7
      8
[shreyas@localhost Cloud Computing and DevOps]$
```

24. **sort** — Linux command to sort the content of a file while outputting



```
shreyas@localhost:~/SEMESTER 6/Cloud Computing and DevOps
[shreyas@localhost Cloud Computing and DevOps]$ sort f1.txt
1
3
5
7
[shreyas@localhost Cloud Computing and DevOps]$
```

25. **export** — Export environment variables in Linux



```
shreyas@localhost:~/SEMESTER 6/Cloud Computing and DevOps
[shreyas@localhost Cloud Computing and DevOps]$ export -p
declare -x COLORTERM="truecolor"
declare -x DBUS_SESSION_BUS_ADDRESS="unix:path=/run/user/1000/bus"
declare -x DESKTOP_SESSION="gnome"
declare -x DISPLAY=":0"
declare -x GDMSESSION="gnome"
declare -x GDM_LANG="en_US.UTF-8"
declare -x GNOME_SETUP_DISPLAY="1"
declare -x GNOME_TERMINAL_SCREEN="/org/gnome/Terminal/screen/2ccdedbd_f5d2_4ea9_9f08_ddac5f3d44bb"
declare -x GNOME_TERMINAL_SERVICE="1.139"
declare -x HISTCONTROL="ignoredups"
declare -x HISTSIZE="1000"
declare -x HOME="/home/shreyas"
declare -x HOSTNAME="localhost"
declare -x LANG="en_US.UTF-8"
declare -x LESSOPEN="||/usr/bin/lesspipe.sh %s"
declare -x LOGNAME="shreyas"
declare -x LS_COLORS="rs=0:di=01;34:ln=01;36:mh=00:pi=40;33:so=01;35:do=01;35:bd=40;33:cd=40;33:or=40;31:01:mi=01;37:41:su=37;41:sg=30;43:ca=30;41:tw=30;42:ow=34;42:st=37;44:ex=01;32:*.tar=01;31:*.tgz=01;31:*.arc=01;31:*.arj=01;31:*.taz=01;31:*.lha=01;31:*.lz4=01;31:*.lzh=01;31:*.lzma=01;31:*.tlz=01;31:*.txz=01;31:*.tzo=01;31:*.t7z=01;31:*.zip=01;31:*.z=01;31:*.dz=01;31:*.gz=01;31:*.lrz=01;31:*.lz=01;31:*.lzo=01;31:*.xz=01;31:*.zst=01;31:*.tztst=01;31:*.bz2=01;31:*.bz=01;31:*.tbz=01;31:*.tbz2=01;31:*.tz=01;31:*.deb=01;31:*.rpm=01;31:*.jar=01;31:*.war=01;31:*.ear=01;31:*.sar=01;31:*.rar=01;31:*.alz=01;31:*.ace=01;31:*.zoo=01;31:*.cpio=01;31:*.7z=01;31:*.rz=01;31:*.cab=01;31:*.wim=01;31:*.swm=01;31:*.dwm=01;31:*.esd=01;31:*.jpg=01;35:*.jpeg=01;35:*.mjpg=01;35:*.mjpeg=01;35:*.gif=01;35:*.bmp=01;35:*.pbm=01;35:*.pgm=01;35:*.ppm=01;35:*.tga=01;35:*.xbm=01;35:*.xpm=01;35:*.tif=01;35:*.tiff=01;35:*.png=01;35:*.svg=01;35:*.svgz=01;35:*.mng=01;35:*.pcx=01;35:*.mov=01;35:*.mpg=01;35:*.mpeg=01;35:*.m2v=01;35:*.mkv=01;35:*.webm=01;35:*.webp=01;35:*.ogm=01;35:*.mp4=01;35:*.m4v=01;35:*.mp4v=01;35:*.vob=01;35:*.qt=01;35:*.nuv=01;35:*.wmv=01;35:*.asf=01;35:*.rm=01;35:*.rmvb=01;35:*.flc=01;35:*.avi=01;35:*.fli=01;35:*.flv=01;35:*.gl=01;35:*.dl=01;35:*.xcf=01;35:*.xwd=01;35:*.yuv=01;35:*.cgm=01;35:*.emf=01;35:*.ogv=01;35:*.ogx=01;35:*.aac=01;36:*.au=01;36:*.flac=01;36:*.m4a=01;36:*.mid=01;36:*.midi=01;36:*.mka=01;36:*.mp3=01;36:*.mpc=01;36:*.ogg=01;36:*.ra=01;36:*.wav=01;36:*.oga=01;36:*.opus=01;36:*.spx=01;36:*.xspf=01;36:"
declare -x MAIL="/var/spool/mail/shreyas"
declare -x OLDPWD
declare -x PATH="/home/shreyas/.local/bin:/home/shreyas/bin:/usr/local/bin:/usr/sbin:/usr/bin:/usr/sbin:/var/lib/snapd/snap/bin"
declare -x PWD="/home/shreyas/SEMESTER 6/Cloud Computing and DevOps"
declare -x QT_IM_MODULE="ibus"
declare -x SESSION_MANAGER="local/unix:@/tmp/.ICE-unix/2638,unix/unix:/tmp/.ICE-unix/2638"
declare -x SHELL="/bin/bash"
declare -x SHLVL="1"
declare -x SSH_AUTH_SOCK="/run/user/1000/keyring/ssh"
declare -x SYSTEMD_EXEC_PID="5403"
declare -x TERM="xterm-256color"
```

26. **zip** — Zip files in Linux

```
shreyas@localhost:~/SEMESTER 6/Cloud Computing and DevOps
[shreyas@localhost Cloud Computing and DevOps]$ zip zipfile.zip f1.txt f2.txt
  adding: f1.txt (stored 0%)
  adding: f2.txt (stored 0%)
[shreyas@localhost Cloud Computing and DevOps]$ ls
f1.txt  f2.txt  zipfile.zip
[shreyas@localhost Cloud Computing and DevOps]$
```

27. **unzip** — Unzip files in Linux

```
shreyas@localhost:~/SEMESTER 6/Project 2
[shreyas@localhost Project 2]$ unzip zipfile.zip
Archive:  zipfile.zip
  extracting: f1.txt
  extracting: f2.txt
[shreyas@localhost Project 2]$ ls
f1.txt  f2.txt  zipfile.zip
[shreyas@localhost Project 2]$
```

28. **ssh** — Secure Shell command in Linux

```
shreyas@localhost:~ — ssh localhost
[shreyas@localhost ~]$ ssh localhost
shreyas@localhost's password:
Web console: https://localhost:9090/ or https://192.168.206.128:9090/

Last login: Mon Jan 23 19:51:58 2023
[shreyas@localhost ~]$
```

29. **service** — Linux command to start and stop services

```
shreyas@localhost:~/SEMESTER 6/Project 2 — sudo systemctl list-unit-files --type service --all
[shreyas@localhost Project 2]$ sudo systemctl list-unit-files --type service --all
[sudo] password for shreyas:
UNIT FILE                                STATE                                >
accounts-daemon.service                 enabled                             >
alsa-restore.service                   static                             >
alsa-state.service                     static                             >
arp-ethers.service                     disabled                           >
atd.service                             enabled                             >
lines 1-6

UNIT FILE                                STATE                                >
accounts-daemon.service                 enabled                             >
alsa-restore.service                   static                             >
alsa-state.service                     static                             >
arp-ethers.service                     disabled                           >
atd.service                             enabled                             >
lines 1-6
```

30. **ps** — Display active processes

```
shreyas@localhost:~/SEMESTER 6/Project 2
[shreyas@localhost Project 2]$ ps
  PID TTY          TIME CMD
  4120 pts/1        00:00:00 bash
  4210 pts/1        00:00:00 ps
[shreyas@localhost Project 2]$
```

31. **kill** and **killall** — Kill active processes by process ID or name

```
shreyas@localhost:~/SEMESTER 6/Project 2
[shreyas@localhost Project 2]$ sudo kill 1337
[shreyas@localhost Project 2]$ sudo kill 1234
kill: sending signal to 1234 failed: No such process
[shreyas@localhost Project 2]$
```

32. **df** — Display disk filesystem information

```
shreyas@localhost:~/SEMESTER 6/Project 2
[shreyas@localhost Project 2]$ df
Filesystem            1K-blocks      Used Available Use% Mounted on
devtmpfs                4096          0        4096   0% /dev
tmpfs                  3918792         0    3918792   0% /dev/shm
tmpfs                   1567520       9984    1557536   1% /run
/dev/mapper/rhel-root 27245572 9134524 18111048 34% /
/dev/nvme0n1p1         1038336 475908    562428 46% /boot
/dev/loop1              768        768          0 100% /var/lib/snapd/snap/ufw/560
/dev/loop0             119552 119552          0 100% /var/lib/snapd/snap/core/14447
tmpfs                   783756        120    783636   1% /run/user/1000
[shreyas@localhost Project 2]$
```

33. mount — Mount file systems in Linux

```
[shreyas@localhost Project 2]$ mount
proc on /proc type proc (rw,nosuid,nodev,noexec,relatime)
sysfs on /sys type sysfs (rw,nosuid,nodev,noexec,relatime,seclabel)
devtmpfs on /dev type devtmpfs (rw,nosuid,seclabel,size=4096k,nr_inodes=1048576,mode=755,inode64)
securityfs on /sys/kernel/security type securityfs (rw,nosuid,nodev,noexec,relatime)
tmpfs on /dev/shm type tmpfs (rw,nosuid,nodev,seclabel,inode64)
devpts on /dev/pts type devpts (rw,nosuid,noexec,relatime,seclabel,gid=5,mode=620,ptmxmode=000)
tmpfs on /run type tmpfs (rw,nosuid,nodev,seclabel,size=1567520k,nr_inodes=819200,mode=755,inode64)
cgroup2 on /sys/fs/cgroup type cgroup2 (rw,nosuid,nodev,noexec,relatime,seclabel,nsdelegate,memory_recursiveprot)
pstore on /sys/fs/pstore type pstore (rw,nosuid,nodev,noexec,relatime,seclabel)
none on /sys/fs/bpf type bpf (rw,nosuid,nodev,noexec,relatime,mode=700)
/dev/mapper/rhel-root on / type xfs (rw,relatime,seclabel,attr2,inode64,logbufs=8,logbsize=32k,noquota)
selinuxfs on /sys/fs/selinux type selinuxfs (rw,nosuid,noexec,relatime)
systemd-1 on /proc/sys/fs/binfmt_misc type autofs (rw,relatime,fd=31,pgpr=1,timeout=0,minproto=5,maxproto=5,direct,pipe_ino=16851)
mqueue on /dev/mqueue type mqueue (rw,nosuid,nodev,noexec,relatime,seclabel)
hugetlbfs on /dev/hugepages type hugetlbfs (rw,relatime,seclabel,pagesize=2M)
debugfs on /sys/kernel/debug type debugfs (rw,nosuid,nodev,noexec,relatime,seclabel)
tracefs on /sys/kernel/tracing type tracefs (rw,nosuid,nodev,noexec,relatime,seclabel)
fusectl on /sys/fs/fuse/connections type fusectl (rw,nosuid,nodev,noexec,relatime)
configfs on /sys/kernel/config type configfs (rw,nosuid,nodev,noexec,relatime)
vmware-vmblock on /run/vmblock-fuse type fuse.vmware-vmblock (rw,relatime,user_id=0,group_id=0,default_permissions,allow_other)
/dev/mmcblk0n1p1 on /boot type xfs (rw,relatime,seclabel,attr2,inode64,logbufs=8,logbsize=32k,noquota)
/var/lib/napd/snaps/ufw_560.snap on /var/lib/napd/snap/ufw/560 type squashfs (ro,nodev,relatime,context=system_u:object_r:snappy_snap_t:s0,error=continue,x-gdu.hide)
/var/lib/napd/snaps/core_14447.snap on /var/lib/napd/snap/core/14447 type squashfs (ro,nodev,relatime,context=system_u:object_r:snappy_snap_t:s0,errors=continue,x-gdu.hide)
sunrpc on /var/lib/nfs/rpc_pipefs type rpc_pipefs (rw,relatime)
binfmt_misc on /proc/sys/fs/binfmt_misc type binfmt_misc (rw,nosuid,nodev,noexec,relatime)
tmpfs on /run/napd/ns type tmpfs (rw,nosuid,nodev,seclabel,size=1567520k,nr_inodes=819200,mode=755,inode64)
nsfs on /run/napd/ns/ufw.mnt type nsfs (rw)
tmpfs on /run/user/1000 type tmpfs (rw,nosuid,nodev,relatime,seclabel,size=783756k,nr_inodes=195939,mode=700,uid=1000,gid=1000,inode64)
gvfsd-fuse on /run/user/1000/gvfs type fuse.gvfsd-fuse (rw,nosuid,nodev,relatime,user_id=1000,group_id=1000)
portal on /run/user/1000/doc type fuse.portal (rw,nosuid,nodev,relatime,user_id=1000,group_id=1000)
[shreyas@localhost Project 2]$
```

34. **chmod** — Command to change file permissions

```
shreyas@localhost:~/SEMESTER 6/Project 2
[shreyas@localhost Project 2]$ ./f1.txt
bash: ./f1.txt: Permission denied
[shreyas@localhost Project 2]$ chmod +x f1.txt
[shreyas@localhost Project 2]$ ./f1.txt
[shreyas@localhost Project 2]$
```

35. **chown** — Command for granting ownership of files or folders

```
shreyas@localhost:~/SEMESTER 6/Cloud Computing and DevOps
[shreyas@localhost Cloud Computing and DevOps]$ ls -l f1.txt
-rw-rw-r--. 1 shreyas shreyas 8 Jan 23 19:35 f1.txt
[shreyas@localhost Cloud Computing and DevOps]$ chown shreyas f1.txt
[shreyas@localhost Cloud Computing and DevOps]$ ls -l f1.txt
-rw-rw-r--. 1 shreyas shreyas 8 Jan 23 19:35 f1.txt
[shreyas@localhost Cloud Computing and DevOps]$ chown localhost f1.txt
chown: invalid user: 'localhost'
[shreyas@localhost Cloud Computing and DevOps]$ chown root f1.txt
chown: changing ownership of 'f1.txt': Operation not permitted
[shreyas@localhost Cloud Computing and DevOps]$
```

36. **ifconfig** — Display network interfaces and IP addresses

```
shreyas@localhost:~/SEMESTER 6
[shreyas@localhost SEMESTER 6]$ ifconfig
ens160: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.206.128 netmask 255.255.255.0 broadcast 192.168.206.255
    inet6 fe80::20c:29ff:fee8:88ee prefixlen 64 scopeid 0x20<link>
    ether 00:0c:29:e8:88:ee txqueuelen 1000 (Ethernet)
    RX packets 43668 bytes 59670840 (56.9 MiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 14006 bytes 853948 (833.9 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 47 bytes 5451 (5.3 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 47 bytes 5451 (5.3 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

[shreyas@localhost SEMESTER 6]$
```

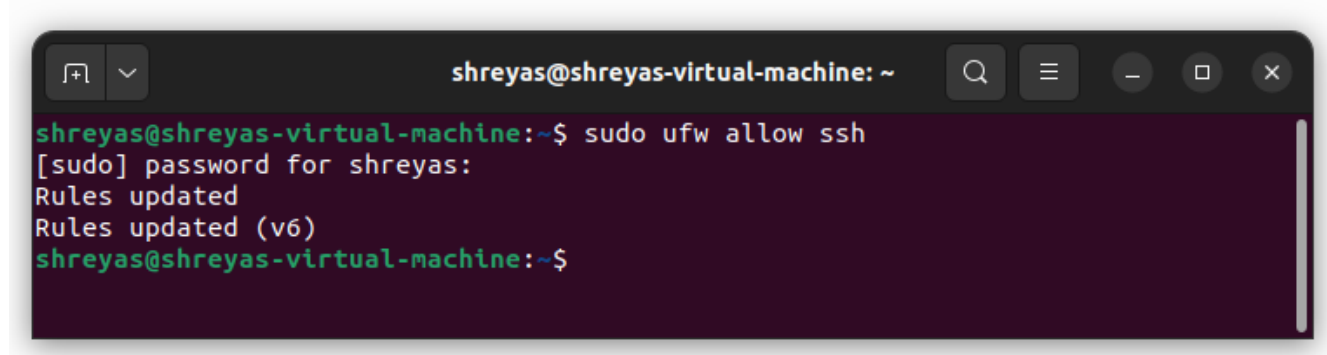
37. **traceroute** — Trace all the network hops to reach the destination

```
shreyas@localhost:~  
[shreyas@localhost ~]$ traceroute viit.ac.in  
traceroute to viit.ac.in (65.1.183.206), 30 hops max, 60 byte packets  
 1 _gateway (192.168.206.2)  0.899 ms  0.806 ms  0.710 ms  
 2 * * *  
 3 * * *  
 4 * * *  
 5 * * *  
 6 * * *  
 7 * * *  
 8 * * *  
 9 * * *  
10 * * *  
11 * * *  
12 * * *  
13 * * *  
14 * * *  
15 * * *  
16 * * *  
17 * * *  
18 * * *  
19 * * *  
20 * * *  
21 * * *  
22 * * *  
23 * * *  
24 * * *  
25 * * *  
26 * * *  
27 * * *  
28 * * *  
29 * * *  
30 * * *  
[shreyas@localhost ~]$
```

38. **wget** — Direct download files from the internet

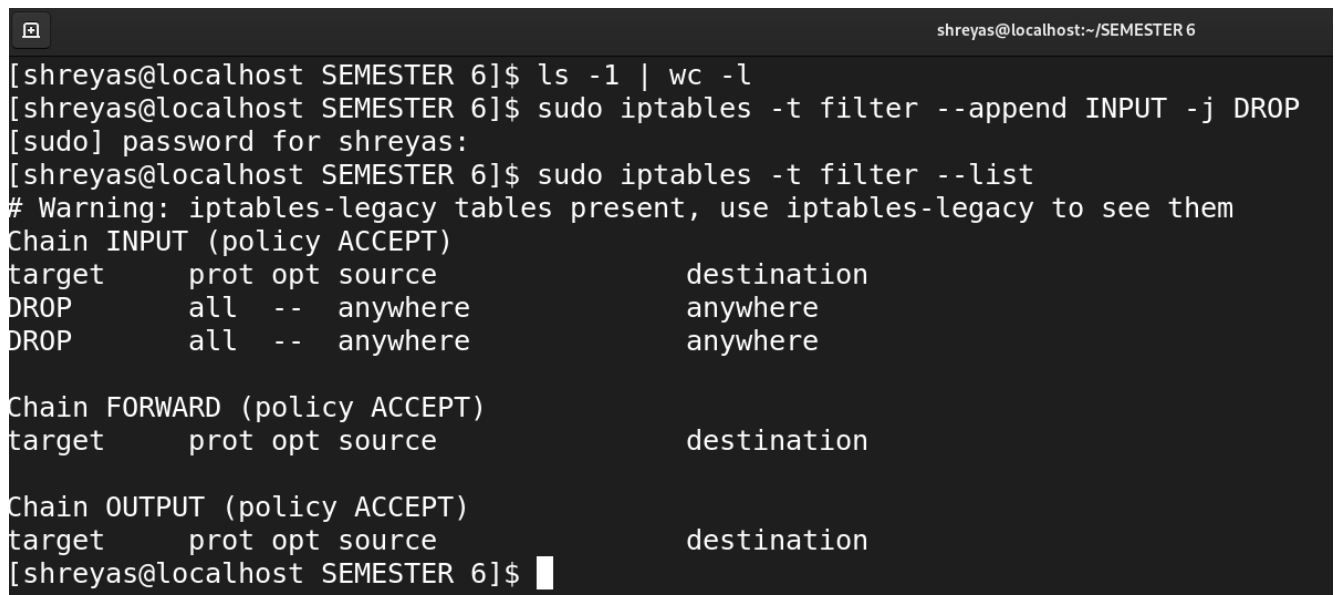
```
shreyas@localhost:~  
[shreyas@localhost ~]$ sudo iptables -t filter --append INPUT -j DROP  
[sudo] password for shreyas:  
[shreyas@localhost ~]$ sudo iptables -t filter --list  
# Warning: iptables-legacy tables present, use iptables-legacy to see them  
Chain INPUT (policy ACCEPT)  
target      prot opt source                destination  
DROP        all  --  anywhere              anywhere  
  
Chain FORWARD (policy ACCEPT)  
target      prot opt source                destination  
  
Chain OUTPUT (policy ACCEPT)  
target      prot opt source                destination  
[shreyas@localhost ~]$
```


39. **ufw** — Firewall command

A terminal window titled 'shreyas@shreyas-virtual-machine: ~' with search, menu, and window control icons. The terminal shows the command 'sudo ufw allow ssh' being executed. The output is: '[sudo] password for shreyas: Rules updated Rules updated (v6) shreyas@shreyas-virtual-machine:~\$'.

```
shreyas@shreyas-virtual-machine:~$ sudo ufw allow ssh
[sudo] password for shreyas:
Rules updated
Rules updated (v6)
shreyas@shreyas-virtual-machine:~$
```

40. **iptables** — Base firewall for all other firewall utilities to interface with

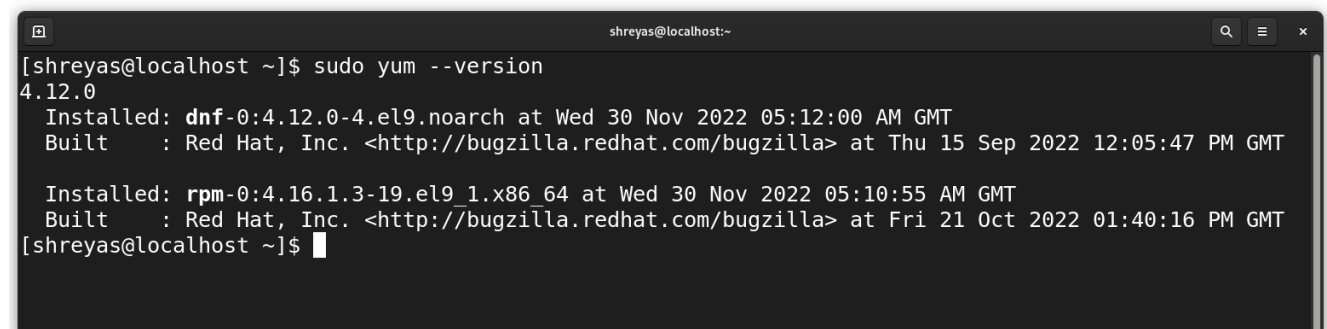
A terminal window titled 'shreyas@localhost:~/SEMESTER 6' with search, menu, and window control icons. The terminal shows the command 'ls -l | wc -l' followed by 'sudo iptables -t filter --append INPUT -j DROP'. The output is: '[shreyas@localhost SEMESTER 6]\$ ls -l | wc -l [shreyas@localhost SEMESTER 6]\$ sudo iptables -t filter --append INPUT -j DROP [sudo] password for shreyas: [shreyas@localhost SEMESTER 6]\$ sudo iptables -t filter --list # Warning: iptables-legacy tables present, use iptables-legacy to see them Chain INPUT (policy ACCEPT) target prot opt source destination DROP all -- anywhere anywhere DROP all -- anywhere anywhere Chain FORWARD (policy ACCEPT) target prot opt source destination Chain OUTPUT (policy ACCEPT) target prot opt source destination [shreyas@localhost SEMESTER 6]\$'.

```
[shreyas@localhost SEMESTER 6]$ ls -l | wc -l
[shreyas@localhost SEMESTER 6]$ sudo iptables -t filter --append INPUT -j DROP
[sudo] password for shreyas:
[shreyas@localhost SEMESTER 6]$ sudo iptables -t filter --list
# Warning: iptables-legacy tables present, use iptables-legacy to see them
Chain INPUT (policy ACCEPT)
target    prot opt source          destination
DROP      all  --  anywhere        anywhere
DROP      all  --  anywhere        anywhere

Chain FORWARD (policy ACCEPT)
target    prot opt source          destination

Chain OUTPUT (policy ACCEPT)
target    prot opt source          destination
[shreyas@localhost SEMESTER 6]$
```

41. **apt**, **pacman**, **yum**, **rpm** — Package managers depending on the distro

A terminal window titled 'shreyas@localhost:~' with search, menu, and window control icons. The terminal shows the command 'sudo yum --version'. The output is: '[shreyas@localhost ~]\$ sudo yum --version 4.12.0 Installed: dnf-0:4.12.0-4.el9.noarch at Wed 30 Nov 2022 05:12:00 AM GMT Built : Red Hat, Inc. <http://bugzilla.redhat.com/bugzilla> at Thu 15 Sep 2022 12:05:47 PM GMT Installed: rpm-0:4.16.1.3-19.el9_1.x86_64 at Wed 30 Nov 2022 05:10:55 AM GMT Built : Red Hat, Inc. <http://bugzilla.redhat.com/bugzilla> at Fri 21 Oct 2022 01:40:16 PM GMT [shreyas@localhost ~]\$'.

```
[shreyas@localhost ~]$ sudo yum --version
4.12.0
Installed: dnf-0:4.12.0-4.el9.noarch at Wed 30 Nov 2022 05:12:00 AM GMT
Built      : Red Hat, Inc. <http://bugzilla.redhat.com/bugzilla> at Thu 15 Sep 2022 12:05:47 PM GMT

Installed: rpm-0:4.16.1.3-19.el9_1.x86_64 at Wed 30 Nov 2022 05:10:55 AM GMT
Built      : Red Hat, Inc. <http://bugzilla.redhat.com/bugzilla> at Fri 21 Oct 2022 01:40:16 PM GMT
[shreyas@localhost ~]$
```


42. **sudo** — Command to escalate privileges in Linux

```
shreyas@localhost:~$ sudo yum --version
4.12.0
Installed: dnf-0:4.12.0-4.el9.noarch at Wed 30 Nov 2022 05:12:00 AM GMT
Built      : Red Hat, Inc. <http://bugzilla.redhat.com/bugzilla> at Thu 15 Sep 2022 12:05:47 PM GMT

Installed: rpm-0:4.16.1.3-19.el9_1.x86_64 at Wed 30 Nov 2022 05:10:55 AM GMT
Built      : Red Hat, Inc. <http://bugzilla.redhat.com/bugzilla> at Fri 21 Oct 2022 01:40:16 PM GMT
[shreyas@localhost ~]$
```

43. **cal** — View a command-line calendar

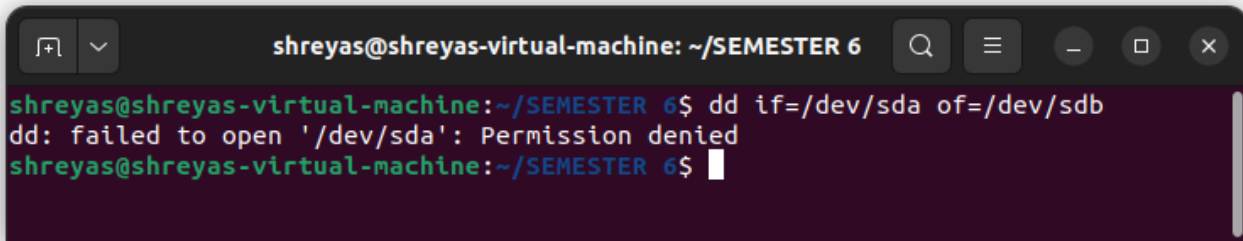
```
shreyas@localhost:~$ cal
      January 2023
Su Mo Tu We Th Fr Sa
 1  2  3  4  5  6  7
 8  9 10 11 12 13 14
15 16 17 18 19 20 21
22 23 24 25 26 27 28
29 30 31

[shreyas@localhost ~]$
```

44. **alias** — Create custom shortcuts for your regularly used commands

```
shreyas@localhost:~/SEMESTER 6/Cloud Computing and DevOps$ alias al='cd SEMESTER\ 6'
[shreyas@localhost Cloud Computing and DevOps]$ al
bash: cd: SEMESTER 6: No such file or directory
[shreyas@localhost Cloud Computing and DevOps]$ alias -p
alias al='cd SEMESTER\ 6'
alias egrep='egrep --color=auto'
alias fgrep='fgrep --color=auto'
alias grep='grep --color=auto'
alias l.='ls -d .* --color=auto'
alias ll='ls -l --color=auto'
alias ls='ls --color=auto'
alias xzegrep='xzegrep --color=auto'
alias xzfgrep='xzfgrep --color=auto'
alias xzgrep='xzgrep --color=auto'
alias zegrep='zegrep --color=auto'
alias zfgrep='zfgrep --color=auto'
alias zgrep='zgrep --color=auto'
[shreyas@localhost Cloud Computing and DevOps]$
```

45. **dd** — Majorly used for creating bootable USB sticks



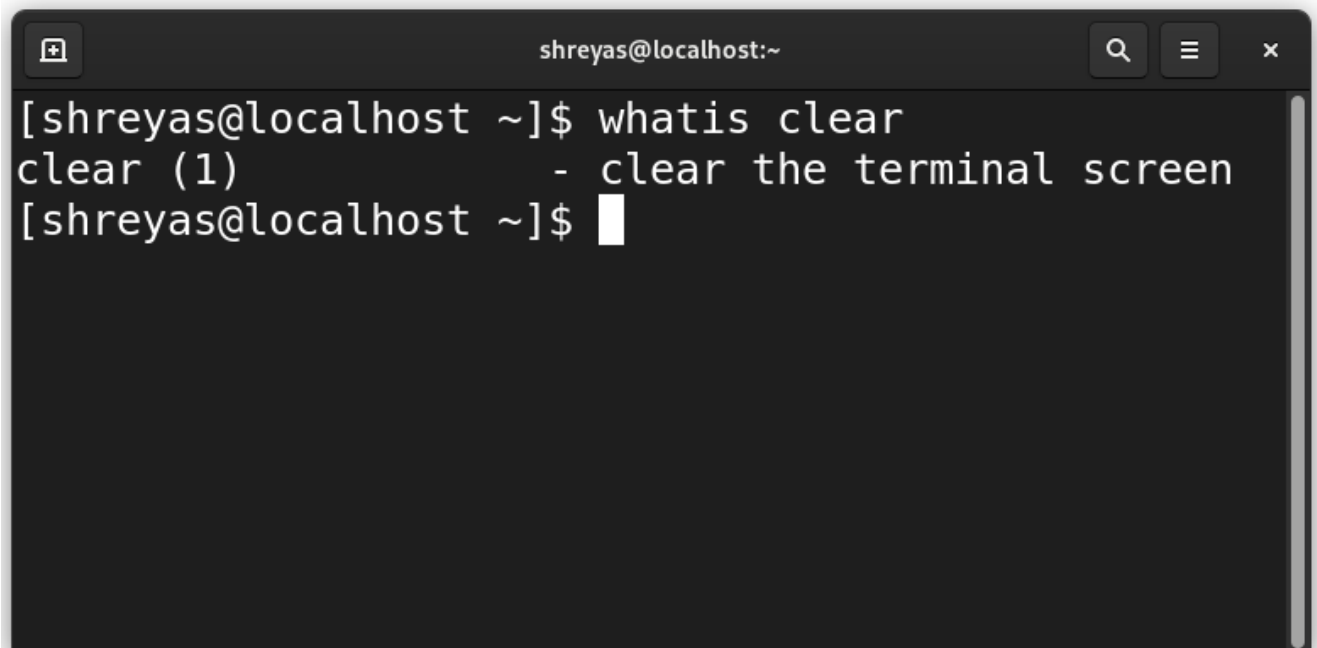
```
shreyas@shreyas-virtual-machine: ~/SEMESTER 6
shreyas@shreyas-virtual-machine:~/SEMESTER 6$ dd if=/dev/sda of=/dev/sdb
dd: failed to open '/dev/sda': Permission denied
shreyas@shreyas-virtual-machine:~/SEMESTER 6$
```

46. **whereis** — Locate the binary, source, and manual pages for a command



```
shreyas@localhost:~/SEMESTER 6/Cloud Computing and DevOps
[shreyas@localhost Cloud Computing and DevOps]$ whereis kill
kill: /usr/bin/kill /usr/share/man/man1/kill.1.gz /usr/share/man/man1p/kill.1p.gz /usr/share/man/man2/kill.2.gz /usr/share/man/man3p/kill.3p.gz
[shreyas@localhost Cloud Computing and DevOps]$
```

47. **whatis** — Find what a command is used for



```
shreyas@localhost:~
[shreyas@localhost ~]$ whatis clear
clear (1) - clear the terminal screen
[shreyas@localhost ~]$
```

48. **top** — View active processes live with their system usage

```
shreyas@localhost:~  
Tasks: 402 total,  2 running, 399 sleeping,  1 stopped,  0 zombie  
%Cpu(s):  0.1 us,  0.3 sy,  0.0 ni, 98.9 id,  0.0 wa,  0.3 hi,  0.4 si,  0.0 st  
MiB Mem :  7653.9 total,  3465.4 free,  3101.0 used,  1438.4 buff/cache  
MiB Swap:  3072.0 total,  2898.0 free,  174.0 used.  4552.9 avail Mem  
  
  PID USER      PR  NI  VIRT  RES  SHR  S  %CPU  %MEM    TIME+  COMMAND  
 2779 shreyas   9  -11 327824 13420 6320 S   38.2   0.2   15:31.48 pipewire  
 3035 shreyas  20   0 540596 38708 28564 S    8.0   0.5    3:15.26 vmtoolsd  
 1078 root      20   0 456360 7712  6256 S    5.0   0.1    3:22.74 vmtoolsd  
 2668 shreyas  20   0 5390892 279704 166212 S    1.3   3.6    1:11.33 gnome-shell  
 5016 shreyas  20   0 779568 57976 44032 S    1.0   0.7    0:09.49 gnome-terminal-  
 1322 mysql     20   0 2369628 238044 25384 S    0.3   3.0    0:14.26 mysqld  
 2781 shreyas   9  -11 262560 26148  5648 S    0.3   0.3    0:05.75 pipewire-pulse  
 3495 shreyas  20   0 3743616 483084 201580 S    0.3   6.2    2:57.40 firefox  
    1 root      20   0 173204 16000  8992 S    0.0   0.2    0:03.33 systemd  
    2 root      20   0      0      0      0 S    0.0   0.0    0:00.09 kthreadd  
    3 root      0 -20      0      0      0 I    0.0   0.0    0:00.00 rcu_gp  
    4 root      0 -20      0      0      0 I    0.0   0.0    0:00.00 rcu_par_gp  
    5 root      0 -20      0      0      0 I    0.0   0.0    0:00.00 netns  
    7 root      0 -20      0      0      0 I    0.0   0.0    0:00.00 kworker/0:0H-events_highpri  
    9 root      0 -20      0      0      0 I    0.0   0.0    0:00.00 kworker/0:1H-events_highpri  
   10 root      0 -20      0      0      0 I    0.0   0.0    0:00.00 mm_percpu_wq  
   12 root      20   0      0      0      0 I    0.0   0.0    0:00.00 rcu_tasks_kthre  
   13 root      20   0      0      0      0 I    0.0   0.0    0:00.00 rcu_tasks_rude_  
   14 root      20   0      0      0      0 I    0.0   0.0    0:00.00 rcu_tasks_trace  
   15 root      20   0      0      0      0 S    0.0   0.0    0:00.01 ksoftirqd/0  
   16 root      20   0      0      0      0 R    0.0   0.0    0:01.23 rcu_preempt  
   17 root      rt   0      0      0      0 S    0.0   0.0    0:00.00 migration/0  
   19 root      20   0      0      0      0 S    0.0   0.0    0:00.00 cpuhp/0  
   20 root      20   0      0      0      0 S    0.0   0.0    0:00.00 cpuhp/1  
   21 root      rt   0      0      0      0 S    0.0   0.0    0:00.86 migration/1  
   22 root      20   0      0      0      0 S    0.0   0.0    0:03.81 ksoftirqd/1  
[shreyas@localhost ~]$
```

49. **useradd** and **usermod** — Add new user or change existing users data

```
shreyas@localhost:~/SEMESTER 6/Cloud Computing and DevOps  
[shreyas@localhost Cloud Computing and DevOps]$ sudo useradd kulkarni  
[sudo] password for shreyas:  
[shreyas@localhost Cloud Computing and DevOps]$ cat /etc/passwd | grep kulkarni  
kulkarni:x:1002:1002::/home/kulkarni:/bin/bash  
[shreyas@localhost Cloud Computing and DevOps]$
```

50. **passwd** — Create or update passwords for existing users

```
shreyas@localhost:~/SEMESTER 6/Cloud Computing and DevOps  
[shreyas@localhost Cloud Computing and DevOps]$ passwd  
Changing password for user shreyas.  
Current password:  
New password:  
Retype new password:  
passwd: all authentication tokens updated successfully.  
[shreyas@localhost Cloud Computing and DevOps]$
```

51. **ls -l | wc -l** — Command to get the count of the files present into directory.

```
shreyas@localhost:~/SEMESTER 6
[shreyas@localhost SEMESTER 6]$ ls -l | wc -l
9
[shreyas@localhost SEMESTER 6]$
```

52. **kill --**Command to kill the process (PID)

```
shreyas@localhost:~
%Cpu(s):  0.1 us,  0.2 sy,  0.0 ni, 99.0 id,  0.0 wa,  0.4 hi,  0.3 si,  0.0 st
MiB Mem : 7653.9 total, 3612.0 free, 2946.0 used, 1455.9 buff/cache
MiB Swap: 3072.0 total, 3063.7 free,  8.2 used. 4707.9 avail Mem

  PID USER      PR  NI   VIRT   RES   SHR  S  %CPU  %MEM     TIME+ COMMAND
 2779 shreyas    9  -11  327824  13424  6320  S   38.2   0.2   16:56.49 pipewire
 1078 root       20   0   456360   7712   6256  S    7.3   0.1    3:38.01 vmtotlsd
 3035 shreyas   20   0   540596   38708  28564  S    7.3   0.5    3:30.44 vmtotlsd
 2668 shreyas  20   0  5395680  289576 174392  S    0.7   3.7    1:15.19 gnome-shell
 5016 shreyas  20   0   779928   60876  44080  S    0.3   0.8    0:11.19 gnome-terminal-
    1 root      20   0   173204   16000   8992  S    0.0   0.2    0:03.37 systemd
    2 root      20   0         0         0        0  S    0.0   0.0    0:00.10 kthreadd
    3 root       0 -20         0         0        0  S    0.0   0.0    0:00.00 rcu_gp
    4 root       0 -20         0         0        0  S    0.0   0.0    0:00.00 rcu_par_gp
    5 root       0 -20         0         0        0  S    0.0   0.0    0:00.00 netns
    7 root       0 -20         0         0        0  S    0.0   0.0    0:00.00 kworker/0:0H-events_highpri
    9 root       0 -20         0         0        0  S    0.0   0.0    0:00.00 kworker/0:1H-events_highpri
   10 root       0 -20         0         0        0  S    0.0   0.0    0:00.00 mm_percpu_wq
   12 root      20   0         0         0        0  S    0.0   0.0    0:00.00 rcu_tasks_kthre
   13 root      20   0         0         0        0  S    0.0   0.0    0:00.00 rcu_tasks_rude_
   14 root      20   0         0         0        0  S    0.0   0.0    0:00.00 rcu_tasks_trace
   15 root      20   0         0         0        0  S    0.0   0.0    0:00.01 ksoftirqd/0
   16 root      20   0         0         0        0  S    0.0   0.0    0:01.29 rcu_preempt
   17 root      rt   0         0         0        0  S    0.0   0.0    0:00.00 migration/0
   19 root      20   0         0         0        0  S    0.0   0.0    0:00.00 cpuhp/0
   20 root      20   0         0         0        0  S    0.0   0.0    0:00.00 cpuhp/1
   21 root      rt   0         0         0        0  S    0.0   0.0    0:00.86 migration/1
   22 root      20   0         0         0        0  S    0.0   0.0    0:03.81 ksoftirqd/1
   24 root       0 -20         0         0        0  S    0.0   0.0    0:00.00 kworker/1:0H-events_highpri
   25 root      20   0         0         0        0  S    0.0   0.0    0:00.00 cpuhp/2
   26 root      rt   0         0         0        0  S    0.0   0.0    0:00.86 migration/2
[shreyas@localhost ~]$ sudo kill 2779
```

```
shreyas@localhost:~  
Tasks: 403 total, 1 running, 401 sleeping, 1 stopped, 0 zombie  
%Cpu(s): 0.5 us, 0.5 sy, 0.0 ni, 99.0 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st  
MiB Mem : 7653.9 total, 3605.4 free, 2950.5 used, 1457.9 buff/cache  
MiB Swap: 3072.0 total, 3063.7 free, 8.2 used, 4703.4 avail Mem  
  
  PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM    TIME+  COMMAND  
 3215 shreyas   20   0   527204   13308   5820 S   6.2   0.2   0:03.89 ibus-daemon  
 6391 shreyas   20   0   226172    4436   3548 R   6.2   0.1   0:00.01 top  
    1 root      20   0   173204   16000   8992 S   0.0   0.2   0:03.38 systemd  
    2 root      20   0         0         0        0 S   0.0   0.0   0:00.10 kthreadd  
    3 root      0 -20         0         0        0 I   0.0   0.0   0:00.00 rcu_gp  
    4 root      0 -20         0         0        0 I   0.0   0.0   0:00.00 rcu_par_gp  
    5 root      0 -20         0         0        0 I   0.0   0.0   0:00.00 netns  
    7 root      0 -20         0         0        0 I   0.0   0.0   0:00.00 kworker/0:0H-events_highpri  
    9 root      0 -20         0         0        0 I   0.0   0.0   0:00.00 kworker/0:1H-events_highpri  
   10 root      0 -20         0         0        0 I   0.0   0.0   0:00.00 mm_percpu_wq  
   12 root      20   0         0         0        0 I   0.0   0.0   0:00.00 rcu_tasks_kthre  
   13 root      20   0         0         0        0 I   0.0   0.0   0:00.00 rcu_tasks_rude_  
   14 root      20   0         0         0        0 I   0.0   0.0   0:00.00 rcu_tasks_trace  
   15 root      20   0         0         0        0 S   0.0   0.0   0:00.01 ksoftirqd/0  
   16 root      20   0         0         0        0 I   0.0   0.0   0:01.31 rcu_preempt  
   17 root      rt    0         0         0        0 S   0.0   0.0   0:00.00 migration/0  
   19 root      20   0         0         0        0 S   0.0   0.0   0:00.00 cpuhp/0  
   20 root      20   0         0         0        0 S   0.0   0.0   0:00.00 cpuhp/1  
   21 root      rt    0         0         0        0 S   0.0   0.0   0:00.86 migration/1  
   22 root      20   0         0         0        0 S   0.0   0.0   0:03.81 ksoftirqd/1  
   24 root      0 -20         0         0        0 I   0.0   0.0   0:00.00 kworker/1:0H-events_highpri  
   25 root      20   0         0         0        0 S   0.0   0.0   0:00.00 cpuhp/2  
   26 root      rt    0         0         0        0 S   0.0   0.0   0:00.86 migration/2  
   27 root      20   0         0         0        0 S   0.0   0.0   0:00.00 ksoftirqd/2  
   29 root      0 -20         0         0        0 I   0.0   0.0   0:00.00 kworker/2:0H-events_highpri  
   30 root      20   0         0         0        0 S   0.0   0.0   0:00.00 cpuhp/3  
[shreyas@localhost ~]$
```

53. **w** -- to check how many users logged into the linux

```
shreyas@localhost:~  
[shreyas@localhost ~]$ w  
19:12:13 up 40 min, 1 user, load average: 0.09, 0.16, 0.26  
USER      TTY      LOGIN@  IDLE   JCPU   PCPU WHAT  
shreyas   tty2      18:31   40:39   0.06s   0.05s /usr/libexec/gnome-session-binary  
[shreyas@localhost ~]$
```

54. **date** -- used to check the current date, time in linux

```
shreyas@localhost:~  
[shreyas@localhost ~]$ date  
Mon Jan 23 07:12:46 PM IST 2023  
[shreyas@localhost ~]$
```

55. **ls -a** --List the hidden files in directory (hidden files are denoted as ..)

```
shreyas@localhost:~$ ls -a
.      .bashrc      Downloads    mysql80-community-release-sles12-6.noarch.rpm  Public  Videos
..     .cache       hello.cpp    .mysql_history                                QRY     .vscode
a.out  .config      .lessshst   OS                                              'QUERIES_ASSG1.txt'  wget-hsts
.bash_history  DBMS        .local      'OS PBL'                                       'SEMESTER 6'        wget-log
.bash_logout  Desktop     .mozilla    Pictures                                       temp.txt             x.txt
.bash_profile Documents    Music       .pki
shreyas@localhost ~]$
```

56. **ls -l** --Use to check the permissions on all the files

```
shreyas@localhost:~$ ls -l
total 68
-rwxrwxr-x.  1 shreyas shreyas 27408 Sep 16 20:35 a.out
drwxr-xr-x.  3 shreyas shreyas  171 Nov 17 00:29 DBMS
drwxrwxrwx.  2 shreyas shreyas   6 Sep 16 20:15 Desktop
drwxrwxrwx.  2 shreyas shreyas  53 Jan 23 18:30 Documents
drwxrwxrwx.  2 shreyas shreyas 4096 Jan 22 11:56 Downloads
-rw-r--r--.  1 shreyas shreyas   79 Sep 16 20:34 hello.cpp
drwxrwxrwx.  2 shreyas shreyas   6 Sep 16 20:15 Music
-rw-rw-r--.  1 shreyas shreyas 10929 Apr 24 2022 mysql80-community-release-sles12-6.noarch.rpm
drwxr-xr-x. 10 shreyas shreyas  110 Nov 28 19:47 OS
drwxr-xr-x.  2 shreyas shreyas   33 Dec  5 14:52 'OS PBL'
drwxrwxrwx.  2 shreyas shreyas  147 Jan 23 15:22 Pictures
drwxrwxrwx.  2 shreyas shreyas   6 Sep 16 20:15 Public
-rw-r--r--.  1 shreyas shreyas 5833 Oct 20 18:25 QRY
-rw-r--r--.  1 shreyas shreyas 3880 Nov 16 00:15 'QUERIES_ASSG1.txt'
drwxr-xr-x.  8 shreyas shreyas  186 Jan 23 18:10 'SEMESTER 6'
drwxrwxrwx.  2 shreyas shreyas   6 Sep 16 20:15 Templates
-rw-rw-r--.  1 shreyas shreyas  106 Dec 13 16:48 temp.txt
drwxrwxrwx.  2 shreyas shreyas   6 Sep 16 20:15 Videos
-rw-rw-r--.  1 shreyas shreyas  361 Sep 21 11:51 wget-log
-rw-rw-r--.  1 shreyas shreyas   0 Jan 20 19:15 x.txt
shreyas@localhost ~]$
```

57. **ls -R** -- used to list information about files and directories within the file system.

```
shreyas@localhost:~$ ls -R
.:
a.out  Documents  Music      'OS PBL'  QRY  Templates  wget-log
DBMS   Downloads  mysql80-community-release-sles12-6.noarch.rpm  Pictures  'QUERIES_ASSG1.txt'  temp.txt  x.txt
Desktop hello.cpp  OS        'SEMESTER 6'

./DBMS:
Assg1.txt Assg2.txt Assg3.txt Assg4.txt Create_db.txt OP QRY2.txt QRY3.txt QRY4.txt Unit-1.rar

./DBMS/OP:
2.txt Create.txt

./Desktop:

./Documents:
x.txt y.rtf

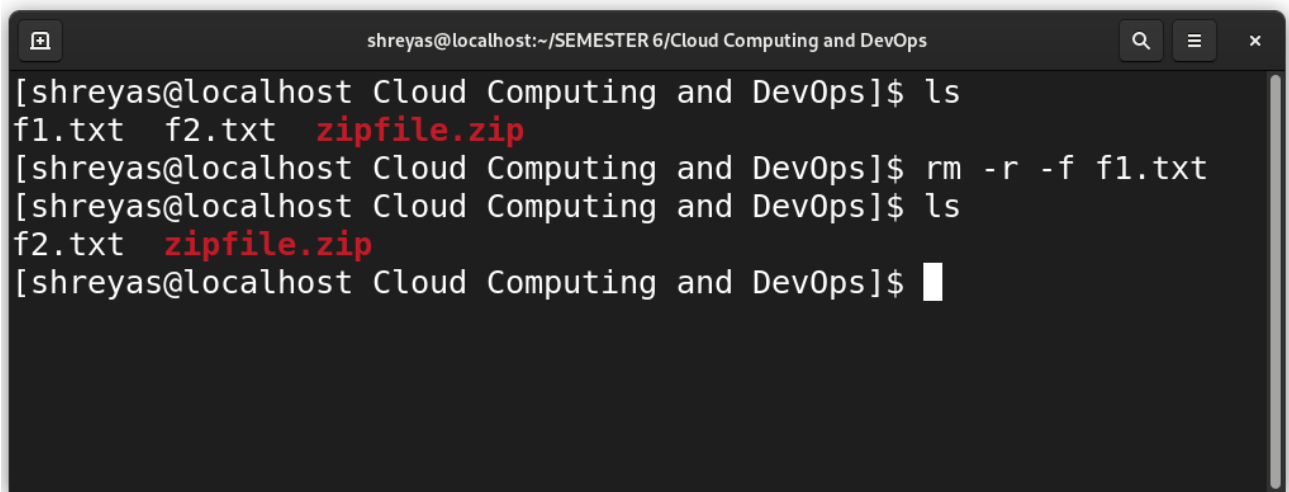
./Downloads:
a      'Database System Concepts-korth-4th edition.pdf' 'PPT 1 - Introduction to DBMS.ppt' rr.sh
fcfs.sh 'Input database tables.ppt' 'PPT 1 - SQL and PL-SQL.ppt' t.c
'Linux Commands for DevOps Engineer' 'PPT 2 - E-R Model.ppt' tut1
rr.c 'PPT 2 - Introduction to Relational Algebra.ppt'

./Music:

./OS:
Assg1 Assg2 Assg3 Assg4 Assg5 Assg6 Assg7 Assg8

./OS/Assg1:
address_book.txt assg1.sh
```

58. **rm -rf** -- remove directory with the files



```
shreyas@localhost:~/SEMESTER 6/Cloud Computing and DevOps
[shreyas@localhost Cloud Computing and DevOps]$ ls
f1.txt  f2.txt  zipfile.zip
[shreyas@localhost Cloud Computing and DevOps]$ rm -r -f f1.txt
[shreyas@localhost Cloud Computing and DevOps]$ ls
f2.txt  zipfile.zip
[shreyas@localhost Cloud Computing and DevOps]$
```

CONCLUSION: We have successfully understood and implemented the basic Linux Commands.