

CDAC Chennai - Linux Test - 8th March 2025

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Scenario

Marks -10

1. Create file test3, test4, test5 into the TEST_DIR
2. Give 755 permissions to the test4/5
3. push the content into the file of test3 by using vi editor, save and uit file.
Name Domain
Deepak Banking
Neha Telecom
Vijay Finance
Guru Migration
4. Pull data of firs segmentation by using awk(awk '{print \$1}' file1 like)
5. Pull data of second Coolum in above file with awk
6. Search for the 'Neha' replace with RAM into test3
7. Add the extra Coolum into the existing file front 'SNO'(hint: sed 's/^/Fruit: /' sample1.txt)

Answer:

```
kuhan@kuhan-virtual-machine: ~/CDAC
kuhan@kuhan-virtual-machine:~$ ls -l
total 40
drwxr-xr-x 2 kuhan kuhan 4096 Feb 25 11:43 Desktop
drwxr-xr-x 2 kuhan kuhan 4096 Feb 25 11:43 Documents
drwxr-xr-x 2 kuhan kuhan 4096 Mar  8 09:28 Downloads
drwxrwxr-x 3 kuhan kuhan 4096 Feb 26 12:50 learning
drwxr-xr-x 2 kuhan kuhan 4096 Feb 25 11:43 Music
drwxr-xr-x 2 kuhan kuhan 4096 Feb 25 11:43 Pictures
drwxr-xr-x 2 kuhan kuhan 4096 Feb 25 11:43 Public
drwx----- 4 kuhan kuhan 4096 Mar  8 09:14 snap
drwxr-xr-x 2 kuhan kuhan 4096 Feb 25 11:43 Templates
drwxr-xr-x 2 kuhan kuhan 4096 Feb 25 11:43 Videos
kuhan@kuhan-virtual-machine:~$ mkdir CDAC
kuhan@kuhan-virtual-machine:~$ ls -l
total 44
drwxrwxr-x 2 kuhan kuhan 4096 Mar  8 09:44 CDAC
drwxr-xr-x 2 kuhan kuhan 4096 Feb 25 11:43 Desktop
drwxr-xr-x 2 kuhan kuhan 4096 Feb 25 11:43 Documents
drwxr-xr-x 2 kuhan kuhan 4096 Mar  8 09:28 Downloads
drwxrwxr-x 3 kuhan kuhan 4096 Feb 26 12:50 learning
drwxr-xr-x 2 kuhan kuhan 4096 Feb 25 11:43 Music
drwxr-xr-x 2 kuhan kuhan 4096 Feb 25 11:43 Pictures
drwxr-xr-x 2 kuhan kuhan 4096 Feb 25 11:43 Public
drwx----- 4 kuhan kuhan 4096 Mar  8 09:14 snap
drwxr-xr-x 2 kuhan kuhan 4096 Feb 25 11:43 Templates
drwxr-xr-x 2 kuhan kuhan 4096 Feb 25 11:43 Videos
kuhan@kuhan-virtual-machine:~$ cd CDAC/
kuhan@kuhan-virtual-machine:~/CDAC$ mkdir -p TEST_DIR
kuhan@kuhan-virtual-machine:~/CDAC$ touch TEST_DIR/test3 TEST_DIR/test4 TEST_DIR/test5
```

```
kuhan@kuhan-virtual-machine: ~/CDAC
drwxr-xr-x 2 kuhan kuhan 4096 Feb 25 11:43 Templates
drwxr-xr-x 2 kuhan kuhan 4096 Feb 25 11:43 Videos
kuhan@kuhan-virtual-machine:~$ cd CDAC/
kuhan@kuhan-virtual-machine:~/CDAC$ mkdir -p TEST_DIR
kuhan@kuhan-virtual-machine:~/CDAC$ touch TEST_DIR/test3 TEST_DIR/test4 TEST_DIR/test5
kuhan@kuhan-virtual-machine:~/CDAC$ chmod 755 TEST_DIR/test4 TEST_DIR/test5
kuhan@kuhan-virtual-machine:~/CDAC$ vi TEST_DIR/test3
kuhan@kuhan-virtual-machine:~/CDAC$ vi TEST_DIR/test3
kuhan@kuhan-virtual-machine:~/CDAC$ awk '{print $1}' TEST_DIR/test3
Name
Deepak
Neha
Vijay
Guru
kuhan@kuhan-virtual-machine:~/CDAC$ awk '{print $2}' TEST_DIR/test3
Domain
Banking
Telecom
Finance
Migration
kuhan@kuhan-virtual-machine:~/CDAC$ sed -i 's/Neha/Ram/g' TEST_DIR/test3
kuhan@kuhan-virtual-machine:~/CDAC$ cat TEST_DIR/test3
Name Domain
Deepak Banking
Ram Telecom
Vijay Finance
Guru Migration
kuhan@kuhan-virtual-machine:~/CDAC$ sed -i 's/^/SNO /' TEST_DIR/test3
kuhan@kuhan-virtual-machine:~/CDAC$ cat test3
cat: test3: No such file or directory
```

Scenario marks -15

>Create college system

Dir: principal

- D: staff

- D: male-staff

- R: give rwx permissions to test1 (chmod

- R: give x permissions to test3 for group

- D: Femalestaff

- F: staff1, staff2,staff3

- R:staff1 group should be test3

- staff3: user and group is test3:test3

- give 655 permissions to staff2

- R: give r permissions to test3 for group

- R: give wx permissions to test3 for others

- D: students

- F: stude1, stu2, stu3

- R: student 1 should have primary group test user, secondary root

- University

- D: Degree

- D:BSC

- R: give r permissions to test3

- R: give wx permissions to test3

- F:stu1,stu2,stu3,

- R: change group of stu3 test3

- give 600 permissions to stu3

- D: Commerce

- R: give r permissions to test3

- R: give wx permissions to test3

- F:st2,stu3,stu4

- R: change group of stu3 test3

- give 755 permissions to stu3

Answer:

```
kuhan@kuhan-virtual-machine: ~/CDAC
kuhan@kuhan-virtual-machine:~/CDAC$ sed -i 's/^/SNO /' TEST_DIR/test3
kuhan@kuhan-virtual-machine:~/CDAC$ cat test3
cat: test3: No such file or directory
kuhan@kuhan-virtual-machine:~/CDAC$ cat TEST_DIR/test3
SNO Name Domain
SNO Deepak Banking
SNO Ram Telecom
SNO Vijay Finance
SNO Guru Migration
kuhan@kuhan-virtual-machine:~/CDAC$ mkdir -p college/principal/staff/male-staff
kuhan@kuhan-virtual-machine:~/CDAC$ mkdir -p college/principal/staff/Femalestaff
kuhan@kuhan-virtual-machine:~/CDAC$ mkdir -p college/principal/students
kuhan@kuhan-virtual-machine:~/CDAC$ mkdir -p college/University/Degree/BSC
kuhan@kuhan-virtual-machine:~/CDAC$ mkdir -p college/University/Degree/Commerce
kuhan@kuhan-virtual-machine:~/CDAC$ tree college
Command 'tree' not found, but can be installed with:
sudo snap install tree # version 2.1.3+pkg-5852, or
sudo apt install tree # version 2.0.2-1
See 'snap info tree' for additional versions.
kuhan@kuhan-virtual-machine:~/CDAC$ sudo apt install tree -y
[sudo] password for kuhan:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  tree
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 47.9 kB of archives.
After this operation, 116 kB of additional disk space will be used.
Get:1 http://in.archive.ubuntu.com/ubuntu jammy/universe amd64 tree amd64 2.0.2-1 [47.9 kB]
```

```
kuhan@kuhan-virtual-machine: ~/CDAC
See 'snap info tree' for additional versions.
kuhan@kuhan-virtual-machine:~/CDAC$ sudo apt install tree -y
[sudo] password for kuhan:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  tree
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 47.9 kB of archives.
After this operation, 116 kB of additional disk space will be used.
Get:1 http://in.archive.ubuntu.com/ubuntu jammy/universe amd64 tree amd64 2.0.2-1 [47.9 kB]
Fetched 47.9 kB in 1s (43.3 kB/s)
Selecting previously unselected package tree.
(Reading database ... 209241 files and directories currently installed.)
Preparing to unpack .../tree_2.0.2-1_amd64.deb ...
Unpacking tree (2.0.2-1) ...
Setting up tree (2.0.2-1) ...
Processing triggers for man-db (2.10.2-1) ...
kuhan@kuhan-virtual-machine:~/CDAC$ tree college
college
├── principal
│   ├── staff
│   │   ├── Femalestaff
│   │   └── male-staff
│   └── students
└── University
    ├── Degree
    │   ├── BSC
    │   └── Commerce
```



```
kuhan@kuhan-virtual-machine: ~/CDAC
Processing triggers for man-db (2.10.2-1) ...
kuhan@kuhan-virtual-machine:~/CDAC$ tree college
college
├── principal
│   ├── staff
│   │   ├── Femalestaff
│   │   └── male-staff
│   └── students
└── University
    ├── Degree
    │   ├── BSC
    │   └── Commerce
    └── stu1
        ├── stu2
        └── stu3

9 directories, 0 files
kuhan@kuhan-virtual-machine:~/CDAC$ chmod 755 college/principal/staff
kuhan@kuhan-virtual-machine:~/CDAC$ chmod 755 college/principal/students
kuhan@kuhan-virtual-machine:~/CDAC$ chmod 755 college/University/Degree
kuhan@kuhan-virtual-machine:~/CDAC$ touch college/principal/staff/Femalestaff/staff1
kuhan@kuhan-virtual-machine:~/CDAC$ touch college/principal/staff/Femalestaff/staff2
kuhan@kuhan-virtual-machine:~/CDAC$ touch college/principal/staff/Femalestaff/staff3
kuhan@kuhan-virtual-machine:~/CDAC$ touch college/principal/staff/students/
kuhan@kuhan-virtual-machine:~/CDAC$ touch college/principal/staff/students/stu1
kuhan@kuhan-virtual-machine:~/CDAC$ touch college/principal/students/stu2
kuhan@kuhan-virtual-machine:~/CDAC$ touch college/principal/students/stu3
kuhan@kuhan-virtual-machine:~/CDAC$ ls -l college/principal/students
total 0
```

```
kuhan@kuhan-virtual-machine: ~/CDAC
kuhan@kuhan-virtual-machine:~/CDAC$ ls -l college/principal/students
total 0
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:15 stu1
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:15 stu2
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:15 stu3
kuhan@kuhan-virtual-machine:~/CDAC$ ls -l college/principal/staff/Femalestaff/
total 0
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:14 staff1
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:14 staff2
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:14 staff3
kuhan@kuhan-virtual-machine:~/CDAC$ touch college/University/Degree/BSC/stu1
kuhan@kuhan-virtual-machine:~/CDAC$ touch college/University/Degree/BSC/stu2
kuhan@kuhan-virtual-machine:~/CDAC$ touch college/University/Degree/BSC/stu3
kuhan@kuhan-virtual-machine:~/CDAC$ touch college/University/Degree/Commerce/stu2
kuhan@kuhan-virtual-machine:~/CDAC$ touch college/University/Degree/Commerce/stu3
kuhan@kuhan-virtual-machine:~/CDAC$ touch college/University/Degree/Commerce/stu4
kuhan@kuhan-virtual-machine:~/CDAC$ ls -l
total 8
drwxrwxr-x 4 kuhan kuhan 4096 Mar  8 09:54 college
drwxrwxr-x 2 kuhan kuhan 4096 Mar  8 09:52 TEST_DIR
kuhan@kuhan-virtual-machine:~/CDAC$ ls -l college/University/Degree/Commerce
total 0
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:17 stu2
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:17 stu3
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:17 stu4
kuhan@kuhan-virtual-machine:~/CDAC$ ls -l college/University/Degree/BSC/
total 0
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:17 stu1
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:17 stu2
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:17 stu3
```

```
kuhan@kuhan-virtual-machine: ~/CDAC
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:17 stu4
kuhan@kuhan-virtual-machine:~/CDAC$ ls -l college/University/Degree/BSC/
total 0
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:17 stu1
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:17 stu2
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:17 stu3
kuhan@kuhan-virtual-machine:~/CDAC$ chgrp test3 college/principal/st
staff/  students/
kuhan@kuhan-virtual-machine:~/CDAC$ chgrp test3 college/principal/staff/Femalestaff/staff
staff1 staff2 staff3
kuhan@kuhan-virtual-machine:~/CDAC$ chgrp test3 college/principal/staff/Femalestaff/staff1
chgrp: invalid group: 'test3'
kuhan@kuhan-virtual-machine:~/CDAC$ cat /etc/gr
groff/ group group- grub.d/
kuhan@kuhan-virtual-machine:~/CDAC$ cat /etc/group | grep group_name
kuhan@kuhan-virtual-machine:~/CDAC$ grep group_name /etc/group
kuhan@kuhan-virtual-machine:~/CDAC$ cut-d: -f1 /etc/group
cut-d:: command not found
kuhan@kuhan-virtual-machine:~/CDAC$ cut -d: -f1 /etc/group
root
daemon
bin
sys
adm
tty
disk
lp
mail
news
news
```

```
kuhan@kuhan-virtual-machine: ~/CDAC
nm-openvpn
scanner
saned
colord
geoclue
pulse
pulse-access
gdm
lxd
kuhan
sambashare
plocate
kuhan@kuhan-virtual-machine:~/CDAC$ sudo groupadd test3
[sudo] password for kuhan:
kuhan@kuhan-virtual-machine:~/CDAC$ getent group test3
test3:x:1001:
kuhan@kuhan-virtual-machine:~/CDAC$ chgrp test3 college/principal/st
staff/  students/
kuhan@kuhan-virtual-machine:~/CDAC$ chgrp test3 college/principal/staff/Femalestaff/staff1
chgrp: changing group of 'college/principal/staff/Femalestaff/staff1': Operation not permitted
kuhan@kuhan-virtual-machine:~/CDAC$ sudo chgrp test3 college/principal/staff/Femalestaff/staff1
kuhan@kuhan-virtual-machine:~/CDAC$ sudo chown test3:test3 college/principal/st
staff/  students/
kuhan@kuhan-virtual-machine:~/CDAC$ sudo chown test3:test3 college/principal/staff/Femalestaff/staff3
chown: invalid user: 'test3:test3'
kuhan@kuhan-virtual-machine:~/CDAC$ getent group test3
test3:x:1001:
kuhan@kuhan-virtual-machine:~/CDAC$ sudo groupadd test3
groupadd: group 'test3' already exists
kuhan@kuhan-virtual-machine:~/CDAC$ sudo useradd -m -s /bin/bash test3
useradd: user 'test3' already exists
```

```
kuhan@kuhan-virtual-machine: ~/CDAC
kuhan@kuhan-virtual-machine:~/CDAC$ sudo groupadd test3
groupadd: group 'test3' already exists
kuhan@kuhan-virtual-machine:~/CDAC$ sudo useradd -m -g test3 test3
kuhan@kuhan-virtual-machine:~/CDAC$ sudo passwd test3
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
Sorry, passwords do not match.
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
passwd: password updated successfully
kuhan@kuhan-virtual-machine:~/CDAC$ sudo chown test3:test3 college/principal/staff/Femalestaff/staff3
kuhan@kuhan-virtual-machine:~/CDAC$ chgrp test3 college/University/Degree/BSC/stu3
chgrp: changing group of 'college/University/Degree/BSC/stu3': Operation not permitted
kuhan@kuhan-virtual-machine:~/CDAC$ sudo chgrp test3 college/University/Degree/BSC/stu3
kuhan@kuhan-virtual-machine:~/CDAC$ chmod 600 college/University/Degree/BSC/stu3
kuhan@kuhan-virtual-machine:~/CDAC$ chmod 755 college/University/Degree/Commerce/stu3
kuhan@kuhan-virtual-machine:~/CDAC$ tree -p college
[drwxrwxr-x] college
├── [drwxrwxr-x] principal
│   └── [drwxr-xr-x] staff
│       ├── [drwxrwxr-x] Femalestaff
│       │   ├── [-rw-rw-r--] staff1
│       │   ├── [-rw-rw-r--] staff2
│       │   └── [-rw-rw-r--] staff3
│       └── [drwxrwxr-x] male-staff
├── [drwxr-xr-x] students
│   ├── [-rw-rw-r--] stu1
│   └── [-rw-rw-r--] stu2
```

```
kuhan@kuhan-virtual-machine: ~/CDAC
kuhan@kuhan-virtual-machine:~/CDAC$ tree -p college
[drwxrwxr-x] college
├── [drwxrwxr-x] principal
│   └── [drwxr-xr-x] staff
│       ├── [drwxrwxr-x] Femalestaff
│       │   ├── [-rw-rw-r--] staff1
│       │   ├── [-rw-rw-r--] staff2
│       │   └── [-rw-rw-r--] staff3
│       └── [drwxrwxr-x] male-staff
├── [drwxr-xr-x] students
│   ├── [-rw-rw-r--] stu1
│   ├── [-rw-rw-r--] stu2
│   └── [-rw-rw-r--] stu3
└── [drwxrwxr-x] University
    ├── [drwxr-xr-x] Degree
    │   ├── [drwxrwxr-x] BSC
    │   │   ├── [-rw-rw-r--] stu1
    │   │   ├── [-rw-rw-r--] stu2
    │   │   └── [-rw-rw-r--] stu3
    │   └── [drwxrwxr-x] Commerce
    │       ├── [-rw-rw-r--] stu2
    │       ├── [-rwxr-xr-x] stu3
    │       └── [-rw-rw-r--] stu4
    └── [drwxrwxr-x] ...

9 directories, 12 files
kuhan@kuhan-virtual-machine:~/CDAC$ ls -lR college
```



```
kuhan@kuhan-virtual-machine: ~/CDAC
9 directories, 12 files
kuhan@kuhan-virtual-machine:~/CDAC$ ls -lR college
college:
total 8
drwxrwxr-x 4 kuhan kuhan 4096 Mar  8 09:54 principal
drwxrwxr-x 3 kuhan kuhan 4096 Mar  8 09:54 University

college/principal:
total 8
drwxr-xr-x 4 kuhan kuhan 4096 Mar  8 09:54 staff
drwxr-xr-x 2 kuhan kuhan 4096 Mar  8 10:15 students

college/principal/staff:
total 8
drwxrwxr-x 2 kuhan kuhan 4096 Mar  8 10:14 Femalestaff
drwxrwxr-x 2 kuhan kuhan 4096 Mar  8 09:53 male-staff

college/principal/staff/Femalestaff:
total 0
-rw-rw-r-- 1 kuhan test3 0 Mar  8 10:14 staff1
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:14 staff2
-rw-rw-r-- 1 test3 test3 0 Mar  8 10:14 staff3

college/principal/staff/male-staff:
total 0

college/principal/students:
total 0
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:15 stu1
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:15 stu2
```

```
kuhan@kuhan-virtual-machine: ~/CDAC
total 0

college/principal/students:
total 0
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:15 stu1
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:15 stu2
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:15 stu3

college/University:
total 4
drwxr-xr-x 4 kuhan kuhan 4096 Mar  8 09:54 Degree

college/University/Degree:
total 8
drwxrwxr-x 2 kuhan kuhan 4096 Mar  8 10:17 BSC
drwxrwxr-x 2 kuhan kuhan 4096 Mar  8 10:17 Commerce

college/University/Degree/BSC:
total 0
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:17 stu1
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:17 stu2
-rw-rw-r-- 1 kuhan test3 0 Mar  8 10:17 stu3

college/University/Degree/Commerce:
total 0
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:17 stu2
-rwxr-xr-x 1 kuhan kuhan 0 Mar  8 10:17 stu3
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:17 stu4
kuhan@kuhan-virtual-machine:~/CDAC$ find college -printf "%M %u %g %p\n"
```

```
kuhan@kuhan-virtual-machine: ~/CDAC
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:17 stu4
kuhan@kuhan-virtual-machine:~/CDAC$ find college -printf "%M %u %g %p\n"
drwxrwxr-x kuhan kuhan college
drwxrwxr-x kuhan kuhan college/University
drwxr-xr-x kuhan kuhan college/University/Degree
drwxrwxr-x kuhan kuhan college/University/Degree/BSC
-rw-rw-r-- kuhan kuhan college/University/Degree/BSC/stu1
-rw-rw-r-- kuhan kuhan college/University/Degree/BSC/stu2
-rw-rw-r-- kuhan test3 college/University/Degree/BSC/stu3
drwxrwxr-x kuhan kuhan college/University/Degree/Commerce
-rw-rw-r-- kuhan kuhan college/University/Degree/Commerce/stu4
-rw-rw-r-- kuhan kuhan college/University/Degree/Commerce/stu2
drwxr-xr-x kuhan kuhan college/University/Degree/Commerce/stu3
drwxrwxr-x kuhan kuhan college/principal
drwxr-xr-x kuhan kuhan college/principal/students
-rw-rw-r-- kuhan kuhan college/principal/students/stu1
-rw-rw-r-- kuhan kuhan college/principal/students/stu2
-rw-rw-r-- kuhan kuhan college/principal/students/stu3
drwxr-xr-x kuhan kuhan college/principal/staff
drwxrwxr-x kuhan kuhan college/principal/staff/male-staff
drwxrwxr-x kuhan kuhan college/principal/staff/Femalestaff
-rw-rw-r-- kuhan kuhan college/principal/staff/Femalestaff/staff2
-rw-rw-r-- test3 test3 college/principal/staff/Femalestaff/staff3
-rw-rw-r-- kuhan test3 college/principal/staff/Femalestaff/staff1
kuhan@kuhan-virtual-machine:~/CDAC$ mkdir -p CHEERS
kuhan@kuhan-virtual-machine:~/CDAC$ touch CHEERS/Hello
kuhan@kuhan-virtual-machine:~/CDAC$ pwd
/home/kuhan/CDAC
kuhan@kuhan-virtual-machine:~/CDAC$ ls CHEERS
Hello
```

Scenarios: --10 M

=====

1. Create the file with name Hello in CHEERS directory.
2. Check the present working directory and list files in CHEERS
3. list which user you logged in server.
4. Fill the 5 lines of content into Hello file.
5. User tail command to list first 5 line in Hello file.
6. List last 2 lines in Hello.
7. Schedule job in server by using at (any time as per your need)
8. list the jobs which are scheduled in server.
9. Create new file into CHEERS directory Hello1 with numerical content minimum of 10 lines
- 10 use sort command to list data in Hello1.
- 11.list the file system usage .
12. Display the log file content by using 'less' command
13. use 'wc' command to check how many lines there in log file.
- 14.by using 'grep' command search any word in file and palely use 'wc' command also list lines.
- 15.display memory info of server.
- 16.display 'date' and schedule job 'mkdir qtq_test' by using at command.

Answers


```
kuhan@kuhan-virtual-machine: ~/CDAC
kuhan@kuhan-virtual-machine:~/CDAC$ mkdir -p CHEERS
kuhan@kuhan-virtual-machine:~/CDAC$ touch CHEERS/Hello
kuhan@kuhan-virtual-machine:~/CDAC$ pwd
/home/kuhan/CDAC
kuhan@kuhan-virtual-machine:~/CDAC$ ls CHEERS
Hello
kuhan@kuhan-virtual-machine:~/CDAC$ whoami
kuhan
kuhan@kuhan-virtual-machine:~/CDAC$ echo -e "Line1\nLine2\nLine3\nLine4\nLine5" > CHEERS/Hello
kuhan@kuhan-virtual-machine:~/CDAC$ cat CHEERS/Hello
Line1
Line2
Line3
Line4
Line5
kuhan@kuhan-virtual-machine:~/CDAC$ tail -n 5 CHEERS/Hello
Line1
Line2
Line3
Line4
Line5
kuhan@kuhan-virtual-machine:~/CDAC$ tail -n 2 CHEERS/Hello
Line4
Line5
kuhan@kuhan-virtual-machine:~/CDAC$ echo "echo 'Job Executed' > Job_output.txt" | at now +1 minute
Command 'at' not found, but can be installed with:
sudo apt install at
kuhan@kuhan-virtual-machine:~/CDAC$ sudo apt install at
Reading package lists... Done
Building dependency tree...
```

```
kuhan@kuhan-virtual-machine: ~/CDAC
kuhan@kuhan-virtual-machine:~/CDAC$ echo "echo 'Job Executed' > Job_output.txt" | at now +1 minute
Command 'at' not found, but can be installed with:
sudo apt install at
kuhan@kuhan-virtual-machine:~/CDAC$ sudo apt install at
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Suggested packages:
  default-mta | mail-transport-agent
The following NEW packages will be installed:
  at
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 41.1 kB of archives.
After this operation, 166 kB of additional disk space will be used.
Get:1 http://in.archive.ubuntu.com/ubuntu jammy/universe amd64 at amd64 3.2.5-1ubuntu1 [41.1 kB]
Fetched 41.1 kB in 1s (60.1 kB/s)
Selecting previously unselected package at.
(Reading database ... 209249 files and directories currently installed.)
Preparing to unpack .../at_3.2.5-1ubuntu1_amd64.deb ...
Unpacking at (3.2.5-1ubuntu1) ...
Setting up at (3.2.5-1ubuntu1) ...
Created symlink /etc/systemd/system/multi-user.target.wants/atd.service → /lib/systemd/system/atd.service.
Processing triggers for man-db (2.10.2-1) ...
kuhan@kuhan-virtual-machine:~/CDAC$ echo "echo 'Job Executed' > Job_output.txt" | at now +1 minute
warning: commands will be executed using /bin/sh
job 1 at Sat Mar  8 10:37:00 2025
kuhan@kuhan-virtual-machine:~/CDAC$ atq
1          Sat Mar  8 10:37:00 2025 a kuhan
kuhan@kuhan-virtual-machine:~/CDAC$ ls -l
```

```
kuhan@kuhan-virtual-machine: ~/CDAC
warning: commands will be executed using /bin/sh
job 1 at Sat Mar 8 10:37:00 2025
kuhan@kuhan-virtual-machine:~/CDAC$ atq
1      Sat Mar 8 10:37:00 2025 a kuhan
kuhan@kuhan-virtual-machine:~/CDAC$ ls -l
total 16
drwxrwxr-x 2 kuhan kuhan 4096 Mar 8 10:33 CHEERS
drwxrwxr-x 4 kuhan kuhan 4096 Mar 8 09:54 college
-rw-rw-r-- 1 kuhan kuhan 13 Mar 8 10:37 Job_output.txt
drwxrwxr-x 2 kuhan kuhan 4096 Mar 8 09:52 TEST_DIR
kuhan@kuhan-virtual-machine:~/CDAC$ cat Job_output.txt
Job Executed
kuhan@kuhan-virtual-machine:~/CDAC$ seq 1 10 > CHEERS/Hello1
kuhan@kuhan-virtual-machine:~/CDAC$ cat CHEERS/Hello
Hello Hello
kuhan@kuhan-virtual-machine:~/CDAC$ cat CHEERS/Hello1
1
2
3
4
5
6
7
8
9
10
kuhan@kuhan-virtual-machine:~/CDAC$ sort CHEERS/Hello1
1
10
```

```
kuhan@kuhan-virtual-machine: ~/CDAC
9
10
kuhan@kuhan-virtual-machine:~/CDAC$ sort CHEERS/Hello1
1
10
2
3
4
5
6
7
8
9
kuhan@kuhan-virtual-machine:~/CDAC$ sort -n CHEERS/Hello1
1
2
3
4
5
6
7
8
9
10
kuhan@kuhan-virtual-machine:~/CDAC$ sort -nr CHEERS/Hello1
10
9
8
7
```

```
kuhan@kuhan-virtual-machine: ~/CDAC
kuhan@kuhan-virtual-machine:~/CDAC$ sort -nr CHEERS/Hello1
10
9
8
7
6
5
4
3
2
1
kuhan@kuhan-virtual-machine:~/CDAC$ df -h
Filesystem      Size  Used Avail Use% Mounted on
tmpfs            387M  2.0M  385M   1% /run
/dev/sda3        34G   17G   16G  51% /
tmpfs            1.9G   0  1.9G   0% /dev/shm
tmpfs            5.0M  4.0K  5.0M   1% /run/lock
/dev/sda2        512M   6.1M  506M   2% /boot/efi
tmpfs            387M  120K  387M   1% /run/user/1000
/dev/sr0         157M  157M   0 100% /media/kuhan/CDROM
/dev/sr1         4.5G  4.5G   0 100% /media/kuhan/Ubuntu 22.04.5 LTS amd64
kuhan@kuhan-virtual-machine:~/CDAC$ less /var/log/syslog
kuhan@kuhan-virtual-machine:~/CDAC$ wc -l /var/lo
local/ lock/ log/
kuhan@kuhan-virtual-machine:~/CDAC$ wc -l /var/log/syslog
wc: invalid option -- '1'
Try 'wc --help' for more information.
kuhan@kuhan-virtual-machine:~/CDAC$ wc -l /var/log/syslog
9585 /var/log/syslog
kuhan@kuhan-virtual-machine:~/CDAC$ grep "error" /var/log/syslog
```

```
kuhan@kuhan-virtual-machine: ~/CDAC
kuhan@kuhan-virtual-machine:~/CDAC$ wc -l /var/log/syslog
wc: invalid option -- '1'
Try 'wc --help' for more information.
kuhan@kuhan-virtual-machine:~/CDAC$ wc -l /var/log/syslog
9585 /var/log/syslog
kuhan@kuhan-virtual-machine:~/CDAC$ grep "error" /var/log/syslog
syslog  syslog.1
kuhan@kuhan-virtual-machine:~/CDAC$ grep "error" /var/log/syslog | wc -l
27
kuhan@kuhan-virtual-machine:~/CDAC$ free -h
              total        used        free      shared  buff/cache   available
Mem:           3.8Gi        1.4Gi        267Mi        50Mi        2.1Gi        2.0Gi
Swap:          3.7Gi        1.0Mi        3.7Gi
kuhan@kuhan-virtual-machine:~/CDAC$ echo "mkdir qtq_test" | at now +2 minutes
warning: commands will be executed using /bin/sh
job 2 at Sat Mar  8 10:43:00 2025
kuhan@kuhan-virtual-machine:~/CDAC$ atq
2          Sat Mar  8 10:43:00 2025 a kuhan
kuhan@kuhan-virtual-machine:~/CDAC$ sudo useradd OS
kuhan@kuhan-virtual-machine:~/CDAC$ getent passwd OS
OS:x:1002:1002::/home/OS:/bin/sh
kuhan@kuhan-virtual-machine:~/CDAC$ sudo chsh -s /bin/sh OS
kuhan@kuhan-virtual-machine:~/CDAC$ sudo groupadd AI
kuhan@kuhan-virtual-machine:~/CDAC$ sudo useradd -m -g AI Hello
kuhan@kuhan-virtual-machine:~/CDAC$ id Hello
uid=1003(Hello) gid=1003(AI) groups=1003(AI)
kuhan@kuhan-virtual-machine:~/CDAC$ sudo passwd OS
New password:
BAD PASSWORD: The password is shorter than 8 characters
```

Scenarios:-- 5 M

- 1.create user with OS.
2. change the default shell to /bin/sh
3. Create group AI
4. Create User Hello with /home/Hello home directory and part of AI
5. validate user details its added to group(id)
6. provide password for the user OS
7. validate changes in /etc/shadow for OS user

Answers:


```
kuhan@kuhan-virtual-machine: ~/CDAC
syslog syslog.1
kuhan@kuhan-virtual-machine:~/CDAC$ grep "error" /var/log/syslog | wc -l
27
kuhan@kuhan-virtual-machine:~/CDAC$ free -h
              total        used        free      shared  buff/cache   available
Mem:           3.8Gi        1.4Gi        267Mi        50Mi         2.1Gi         2.0Gi
Swap:          3.7Gi        1.0Mi        3.7Gi
kuhan@kuhan-virtual-machine:~/CDAC$ echo "mkdir qtq_test" | at now +2 minutes
warning: commands will be executed using /bin/sh
job 2 at Sat Mar  8 10:43:00 2025
kuhan@kuhan-virtual-machine:~/CDAC$ atq
2          Sat Mar  8 10:43:00 2025 a kuhan
kuhan@kuhan-virtual-machine:~/CDAC$ sudo useradd OS
kuhan@kuhan-virtual-machine:~/CDAC$ getent passwd OS
OS:x:1002:1002::/home/OS:/bin/sh
kuhan@kuhan-virtual-machine:~/CDAC$ sudo chsh -s /bin/sh OS
kuhan@kuhan-virtual-machine:~/CDAC$ sudo groupadd AI
kuhan@kuhan-virtual-machine:~/CDAC$ sudo useradd -m -g AI Hello
kuhan@kuhan-virtual-machine:~/CDAC$ id Hello
uid=1003(Hello) gid=1003(AI) groups=1003(AI)
kuhan@kuhan-virtual-machine:~/CDAC$ sudo passwd OS
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
passwd: password updated successfully
kuhan@kuhan-virtual-machine:~/CDAC$ sudo cat /etc/shadow | grep OS
OS:$y$j9T$4AemTxVSBnQfvXadXOXRL1$UL10IrwMDtXqdgml5Fh8n2cPlUwL54zsHIUqg71Qv39:20155:0:99999:7:::
kuhan@kuhan-virtual-machine:~/CDAC$ ^C
kuhan@kuhan-virtual-machine:~/CDAC$
```

```
kuhan@kuhan-virtual-machine: ~/CDAC
syslog syslog.1
kuhan@kuhan-virtual-machine:~/CDAC$ grep "error" /var/log/syslog | wc -l
27
kuhan@kuhan-virtual-machine:~/CDAC$ free -h
              total        used        free      shared  buff/cache   available
Mem:           3.8Gi        1.4Gi        267Mi        50Mi         2.1Gi         2.0Gi
Swap:          3.7Gi        1.0Mi        3.7Gi
kuhan@kuhan-virtual-machine:~/CDAC$ echo "mkdir qtq_test" | at now +2 minutes
warning: commands will be executed using /bin/sh
job 2 at Sat Mar  8 10:43:00 2025
kuhan@kuhan-virtual-machine:~/CDAC$ atq
2          Sat Mar  8 10:43:00 2025 a kuhan
kuhan@kuhan-virtual-machine:~/CDAC$ sudo useradd OS
kuhan@kuhan-virtual-machine:~/CDAC$ getent passwd OS
OS:x:1002:1002::/home/OS:/bin/sh
kuhan@kuhan-virtual-machine:~/CDAC$ sudo chsh -s /bin/sh OS
kuhan@kuhan-virtual-machine:~/CDAC$ sudo groupadd AI
kuhan@kuhan-virtual-machine:~/CDAC$ sudo useradd -m -g AI Hello
kuhan@kuhan-virtual-machine:~/CDAC$ id Hello
uid=1003(Hello) gid=1003(AI) groups=1003(AI)
kuhan@kuhan-virtual-machine:~/CDAC$ sudo passwd OS
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
passwd: password updated successfully
kuhan@kuhan-virtual-machine:~/CDAC$ sudo cat /etc/shadow | grep OS
OS:$y$j9T$4AemTxVSBnQfvXadXOXRL1$UL10IrwMDtXqdgml5Fh8n2cPlUwL54zsHIUqg71Qv39:20155:0:99999:7:::
kuhan@kuhan-virtual-machine:~/CDAC$ ^C
kuhan@kuhan-virtual-machine:~/CDAC$
```

CDAC - Linux command Test - 8th March 2025

08 March 2025 10:45

Submitted by Kuhan K

(Copied in text format)

```
kuhan@kuhan-virtual-machine:~$ ls -l
total 40
drwxr-xr-x 2 kuhan kuhan 4096 Feb 25 11:43 Desktop
drwxr-xr-x 2 kuhan kuhan 4096 Feb 25 11:43 Documents
drwxr-xr-x 2 kuhan kuhan 4096 Mar  8 09:28 Downloads
drwxrwxr-x 3 kuhan kuhan 4096 Feb 26 12:50 learning
drwxr-xr-x 2 kuhan kuhan 4096 Feb 25 11:43 Music
drwxr-xr-x 2 kuhan kuhan 4096 Feb 25 11:43 Pictures
drwxr-xr-x 2 kuhan kuhan 4096 Feb 25 11:43 Public
drwx----- 4 kuhan kuhan 4096 Mar  8 09:14 snap
drwxr-xr-x 2 kuhan kuhan 4096 Feb 25 11:43 Templates
drwxr-xr-x 2 kuhan kuhan 4096 Feb 25 11:43 Videos
kuhan@kuhan-virtual-machine:~$ mkdir CDAC
kuhan@kuhan-virtual-machine:~$ ls -l
total 44
drwxrwxr-x 2 kuhan kuhan 4096 Mar  8 09:44 CDAC
drwxr-xr-x 2 kuhan kuhan 4096 Feb 25 11:43 Desktop
drwxr-xr-x 2 kuhan kuhan 4096 Feb 25 11:43 Documents
drwxr-xr-x 2 kuhan kuhan 4096 Mar  8 09:28 Downloads
drwxrwxr-x 3 kuhan kuhan 4096 Feb 26 12:50 learning
drwxr-xr-x 2 kuhan kuhan 4096 Feb 25 11:43 Music
drwxr-xr-x 2 kuhan kuhan 4096 Feb 25 11:43 Pictures
drwxr-xr-x 2 kuhan kuhan 4096 Feb 25 11:43 Public
drwx----- 4 kuhan kuhan 4096 Mar  8 09:14 snap
drwxr-xr-x 2 kuhan kuhan 4096 Feb 25 11:43 Templates
drwxr-xr-x 2 kuhan kuhan 4096 Feb 25 11:43 Videos
kuhan@kuhan-virtual-machine:~$ cd CDAC/
kuhan@kuhan-virtual-machine:~/CDAC$ mkdir -p TEST_DIR
kuhan@kuhan-virtual-machine:~/CDAC$ touch TEST_DIR/test3 TEST_DIR/test4 TEST_DIR/test5
kuhan@kuhan-virtual-machine:~/CDAC$ chmod 755 TEST_DIR/test4 TEST_DIR/test5
kuhan@kuhan-virtual-machine:~/CDAC$ vi TEST_DIR/test3
kuhan@kuhan-virtual-machine:~/CDAC$ vi TEST_DIR/test3
kuhan@kuhan-virtual-machine:~/CDAC$ awk '{print $1}' TEST_DIR/test3
Name
Deepak
Neha
Vijay
Guru
kuhan@kuhan-virtual-machine:~/CDAC$ awk '{print $2}' TEST_DIR/test3
Domain
Banking
Telecom
Finance
Migration
kuhan@kuhan-virtual-machine:~/CDAC$ sed -i 's/Neha/Ram/g' TEST_DIR/test3
kuhan@kuhan-virtual-machine:~/CDAC$ cat TEST_DIR/test3
Name Domain
```

```

Deepak Banking
Ram Telecom
Vijay Finance
Guru Migration
kuhan@kuhan-virtual-machine:~/CDAC$ sed -i 's/^/SNO /' TEST_DIR/test3
kuhan@kuhan-virtual-machine:~/CDAC$ cat test3
cat: test3: No such file or directory
kuhan@kuhan-virtual-machine:~/CDAC$ cat TEST_DIR/test3
SNO Name Domain
SNO Deepak Banking
SNO Ram Telecom
SNO Vijay Finance
SNO Guru Migration
kuhan@kuhan-virtual-machine:~/CDAC$ mkdir -p college/principal/staff/male-staff
kuhan@kuhan-virtual-machine:~/CDAC$ mkdir -p college/principal/staff/Femalestaff
kuhan@kuhan-virtual-machine:~/CDAC$ mkdir -p college/principal/students
kuhan@kuhan-virtual-machine:~/CDAC$ mkdir -p college/University/Degree/BSC
kuhan@kuhan-virtual-machine:~/CDAC$ mkdir -p college/University/Degree/Commerce
kuhan@kuhan-virtual-machine:~/CDAC$ tree college
Command 'tree' not found, but can be installed with:
sudo snap install tree # version 2.1.3+pkg-5852, or
sudo apt install tree # version 2.0.2-1
See 'snap info tree' for additional versions.
kuhan@kuhan-virtual-machine:~/CDAC$ sudo apt install tree -y
[sudo] password for kuhan:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  tree
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 47.9 kB of archives.
After this operation, 116 kB of additional disk space will be used.
Get:1 http://in.archive.ubuntu.com/ubuntu/jammy/universe amd64 tree amd64 2.0.2-1 [47.9 kB]
Fetched 47.9 kB in 1s (43.3 kB/s)
Selecting previously unselected package tree.
(Reading database ... 209241 files and directories currently installed.)
Preparing to unpack .../tree_2.0.2-1_amd64.deb ...
Unpacking tree (2.0.2-1) ...
Setting up tree (2.0.2-1) ...
Processing triggers for man-db (2.10.2-1) ...
kuhan@kuhan-virtual-machine:~/CDAC$ tree college
college
├── principal
│   ├── staff
│   │   ├── Femalestaff
│   │   └── male-staff
│   └── students
└── University
    ├── Degree
    │   ├── BSC
    │   └── Commerce

```

9 directories, 0 files

```

kuhan@kuhan-virtual-machine:~/CDAC$ chmod 755 college/principal/staff
kuhan@kuhan-virtual-machine:~/CDAC$ chmod 755 college/principal/students

```



```

kuhan@kuhan-virtual-machine:~/CDAC$ chmod 755 college/University/Degree
kuhan@kuhan-virtual-machine:~/CDAC$ touch college/principal/staff/Femalestaff/staff1
kuhan@kuhan-virtual-machine:~/CDAC$ touch college/principal/staff/Femalestaff/staff2
kuhan@kuhan-virtual-machine:~/CDAC$ touch college/principal/staff/Femalestaff/staff3
kuhan@kuhan-virtual-machine:~/CDAC$ touch college/principal/st
staff/ students/
kuhan@kuhan-virtual-machine:~/CDAC$ touch college/principal/st
staff/ students/
kuhan@kuhan-virtual-machine:~/CDAC$ touch college/principal/students/stu1
kuhan@kuhan-virtual-machine:~/CDAC$ touch college/principal/students/stu2
kuhan@kuhan-virtual-machine:~/CDAC$ touch college/principal/students/stu3
kuhan@kuhan-virtual-machine:~/CDAC$ ls -l college/principal/students
total 0
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:15 stu1
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:15 stu2
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:15 stu3
kuhan@kuhan-virtual-machine:~/CDAC$ ls -l college/principal/staff/Femalestaff/
total 0
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:14 staff1
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:14 staff2
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:14 staff3
kuhan@kuhan-virtual-machine:~/CDAC$ touch college/University/Degree/BSC/stu1
kuhan@kuhan-virtual-machine:~/CDAC$ touch college/University/Degree/BSC/stu2
kuhan@kuhan-virtual-machine:~/CDAC$ touch college/University/Degree/BSC/stu3
kuhan@kuhan-virtual-machine:~/CDAC$ touch college/University/Degree/Commerce/stu2
kuhan@kuhan-virtual-machine:~/CDAC$ touch college/University/Degree/Commerce/stu3
kuhan@kuhan-virtual-machine:~/CDAC$ touch college/University/Degree/Commerce/stu4
kuhan@kuhan-virtual-machine:~/CDAC$ ls -l
total 8
drwxrwxr-x 4 kuhan kuhan 4096 Mar  8 09:54 college
drwxrwxr-x 2 kuhan kuhan 4096 Mar  8 09:52 TEST_DIR
kuhan@kuhan-virtual-machine:~/CDAC$ ls -l college/University/Degree/Commerce
total 0
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:17 stu2
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:17 stu3
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:17 stu4
kuhan@kuhan-virtual-machine:~/CDAC$ ls -l college/University/Degree/BSC/
total 0
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:17 stu1
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:17 stu2
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:17 stu3
kuhan@kuhan-virtual-machine:~/CDAC$ chgrp test3 college/principal/st
staff/ students/
kuhan@kuhan-virtual-machine:~/CDAC$ chgrp test3 college/principal/staff/Femalestaff/staff
staff1 staff2 staff3
kuhan@kuhan-virtual-machine:~/CDAC$ chgrp test3 college/principal/staff/Femalestaff/staff1
chgrp: invalid group: 'test3'
kuhan@kuhan-virtual-machine:~/CDAC$ cat /etc/gr
groff/ group group- grub.d/
kuhan@kuhan-virtual-machine:~/CDAC$ cat /etc/group | grep group_name
kuhan@kuhan-virtual-machine:~/CDAC$ grep group_name /etc/group
kuhan@kuhan-virtual-machine:~/CDAC$ cut-d: -f1 /etc/group
cut-d:: command not found
kuhan@kuhan-virtual-machine:~/CDAC$ cut -d: -f1 /etc/group
root
daemon
bin

```

sys
adm
tty
disk
lp
mail
news
uucp
man
proxy
kmem
dialout
fax
voice
cdrom
floppy
tape
sudo
audio
dip
www-data
backup
operator
list
irc
src
gnats
shadow
utmp
video
sasl
plugdev
staff
games
users
nogroup
systemd-journal
systemd-network
systemd-resolve
crontab
messagebus
systemd-timesync
input
sgx
kvm
render
syslog
_ssh
tss
bluetooth
ssl-cert
uidd
systemd-oom
tcpdump
avahi-autoipd
netdev
avahi

```

lpadmin
rtkit
whoopsie
sssd
fwupd-refresh
nm-openvpn
scanner
saned
colord
geoclue
pulse
pulse-access
gdm
lxd
kuhan
smbshare
plocate
kuhan@kuhan-virtual-machine:~/CDAC$ sudo groupadd test3
[sudo] password for kuhan:
kuhan@kuhan-virtual-machine:~/CDAC$ getent group test3
test3:x:1001:
kuhan@kuhan-virtual-machine:~/CDAC$ chgrp test3 college/principal/st
staff/ students/
kuhan@kuhan-virtual-machine:~/CDAC$ chgrp test3 college/principal/staff/Femalestaff/staff1
chgrp: changing group of 'college/principal/staff/Femalestaff/staff1': Operation not permitted
kuhan@kuhan-virtual-machine:~/CDAC$ sudo chgrp test3 college/principal/staff/Femalestaff/staff1
kuhan@kuhan-virtual-machine:~/CDAC$ sudo chown test3:test3 college/principal/st
staff/ students/
kuhan@kuhan-virtual-machine:~/CDAC$ sudo chown test3:test3 college/principal/staff/Femalestaff/staff3
chown: invalid user: 'test3:test3'
kuhan@kuhan-virtual-machine:~/CDAC$ getent group test3
test3:x:1001:
kuhan@kuhan-virtual-machine:~/CDAC$ sudo groupadd test3
groupadd: group 'test3' already exists
kuhan@kuhan-virtual-machine:~/CDAC$ sudo useradd -m -g test3 test3
kuhan@kuhan-virtual-machine:~/CDAC$ sudo passwd test3
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
Sorry, passwords do not match.
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
passwd: password updated successfully
kuhan@kuhan-virtual-machine:~/CDAC$ sudo chown test3:test3 college/principal/staff/Femalestaff/staff3
kuhan@kuhan-virtual-machine:~/CDAC$ chgrp test3 college/University/Degree/BSC/stu3
chgrp: changing group of 'college/University/Degree/BSC/stu3': Operation not permitted
kuhan@kuhan-virtual-machine:~/CDAC$ sudo chgrp test3 college/University/Degree/BSC/stu3
kuhan@kuhan-virtual-machine:~/CDAC$ chmod 600 college/University/Degree/BSC/stu3
kuhan@kuhan-virtual-machine:~/CDAC$ chmod 755 college/University/Degree/Commerce/stu3
kuhan@kuhan-virtual-machine:~/CDAC$ tree -p college
[drwxrwxr-x] college
├── [drwxrwxr-x] principal
│   ├── [drwxr-xr-x] staff
│   │   ├── [drwxrwxr-x] Femalestaff
│   │   └── [-rw-rw-r--] staff1

```



```

| | | |--- [-rw-rw-r--] staff2
| | | |--- [-rw-rw-r--] staff3
| | | |--- [drwxrwxr-x] male-staff
| | | |--- [drwxr-xr-x] students
| | | |--- [-rw-rw-r--] stu1
| | | |--- [-rw-rw-r--] stu2
| | | |--- [-rw-rw-r--] stu3
| | | |--- [drwxrwxr-x] University
| | | |--- [drwxr-xr-x] Degree
| | | |--- [drwxrwxr-x] BSC
| | | |--- [-rw-rw-r--] stu1
| | | |--- [-rw-rw-r--] stu2
| | | |--- [-rw-----] stu3
| | | |--- [drwxrwxr-x] Commerce
| | | |--- [-rw-rw-r--] stu2
| | | |--- [-rwxr-xr-x] stu3
| | | |--- [-rw-rw-r--] stu4

```

9 directories, 12 files

kuhan@kuhan-virtual-machine:~/CDAC\$ ls -lR college

college:

total 8

drwxrwxr-x 4 kuhan kuhan 4096 Mar 8 09:54 principal

drwxrwxr-x 3 kuhan kuhan 4096 Mar 8 09:54 University

college/principal:

total 8

drwxr-xr-x 4 kuhan kuhan 4096 Mar 8 09:54 staff

drwxr-xr-x 2 kuhan kuhan 4096 Mar 8 10:15 students

college/principal/staff:

total 8

drwxrwxr-x 2 kuhan kuhan 4096 Mar 8 10:14 Femalestaff

drwxrwxr-x 2 kuhan kuhan 4096 Mar 8 09:53 male-staff

college/principal/staff/Femalestaff:

total 0

-rw-rw-r-- 1 kuhan test3 0 Mar 8 10:14 staff1

-rw-rw-r-- 1 kuhan kuhan 0 Mar 8 10:14 staff2

-rw-rw-r-- 1 test3 test3 0 Mar 8 10:14 staff3

college/principal/staff/male-staff:

total 0

college/principal/students:

total 0

-rw-rw-r-- 1 kuhan kuhan 0 Mar 8 10:15 stu1

-rw-rw-r-- 1 kuhan kuhan 0 Mar 8 10:15 stu2

-rw-rw-r-- 1 kuhan kuhan 0 Mar 8 10:15 stu3

college/University:

total 4

drwxr-xr-x 4 kuhan kuhan 4096 Mar 8 09:54 Degree

college/University/Degree:

```
total 8
drwxrwxr-x 2 kuhan kuhan 4096 Mar  8 10:17 BSC
drwxrwxr-x 2 kuhan kuhan 4096 Mar  8 10:17 Commerce
```

```
college/University/Degree/BSC:
```

```
total 0
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:17 stu1
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:17 stu2
-rw----- 1 kuhan test3 0 Mar  8 10:17 stu3
```

```
college/University/Degree/Commerce:
```

```
total 0
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:17 stu2
-rwxr-xr-x 1 kuhan kuhan 0 Mar  8 10:17 stu3
-rw-rw-r-- 1 kuhan kuhan 0 Mar  8 10:17 stu4
kuhan@kuhan-virtual-machine:~/CDAC$ find college -printf "%M %u %g %p\n"
drwxrwxr-x kuhan kuhan college
drwxrwxr-x kuhan kuhan college/University
drwxr-xr-x kuhan kuhan college/University/Degree
drwxrwxr-x kuhan kuhan college/University/Degree/BSC
-rw-rw-r-- kuhan kuhan college/University/Degree/BSC/stu1
-rw-rw-r-- kuhan kuhan college/University/Degree/BSC/stu2
-rw----- kuhan test3 college/University/Degree/BSC/stu3
drwxrwxr-x kuhan kuhan college/University/Degree/Commerce
-rw-rw-r-- kuhan kuhan college/University/Degree/Commerce/stu4
-rw-rw-r-- kuhan kuhan college/University/Degree/Commerce/stu2
-rwxr-xr-x kuhan kuhan college/University/Degree/Commerce/stu3
drwxrwxr-x kuhan kuhan college/principal
drwxr-xr-x kuhan kuhan college/principal/students
-rw-rw-r-- kuhan kuhan college/principal/students/stu1
-rw-rw-r-- kuhan kuhan college/principal/students/stu2
-rw-rw-r-- kuhan kuhan college/principal/students/stu3
drwxr-xr-x kuhan kuhan college/principal/staff
drwxrwxr-x kuhan kuhan college/principal/staff/male-staff
drwxrwxr-x kuhan kuhan college/principal/staff/Femalestaff
-rw-rw-r-- kuhan kuhan college/principal/staff/Femalestaff/staff2
-rw-rw-r-- test3 test3 college/principal/staff/Femalestaff/staff3
-rw-rw-r-- kuhan test3 college/principal/staff/Femalestaff/staff1
kuhan@kuhan-virtual-machine:~/CDAC$ mkdir -p CHEERS
kuhan@kuhan-virtual-machine:~/CDAC$ touch CHEERS/Hello
kuhan@kuhan-virtual-machine:~/CDAC$ pwd
/home/kuhan/CDAC
kuhan@kuhan-virtual-machine:~/CDAC$ ls CHEERS
Hello
kuhan@kuhan-virtual-machine:~/CDAC$ whoami
kuhan
kuhan@kuhan-virtual-machine:~/CDAC$ echo -e "Line1\nLine2\nLine3\nLine4\nLine5" > CHEERS/Hello
kuhan@kuhan-virtual-machine:~/CDAC$ cat CHEERS/Hello
Line1
Line2
Line3
Line4
Line5
kuhan@kuhan-virtual-machine:~/CDAC$ tail -n 5 CHEERS/Hello
Line1
Line2
Line3
```

```

Line4
Line5
kuhan@kuhan-virtual-machine:~/CDAC$ tail -n 2 CHEERS/Hello
Line4
Line5
kuhan@kuhan-virtual-machine:~/CDAC$ echo "echo 'Job Executed' > Job_output.txt" | at now +1 minute
Command 'at' not found, but can be installed with:
sudo apt install at
kuhan@kuhan-virtual-machine:~/CDAC$ sudo apt install at
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Suggested packages:
  default-mta | mail-transport-agent
The following NEW packages will be installed:
  at
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 41.1 kB of archives.
After this operation, 166 kB of additional disk space will be used.
Get:1 http://in.archive.ubuntu.com/ubuntu/jammy/universe amd64 at amd64 3.2.5-1ubuntu1 [41.1 kB]
Fetched 41.1 kB in 1s (60.1 kB/s)
Selecting previously unselected package at.
(Reading database ... 209249 files and directories currently installed.)
Preparing to unpack .../at_3.2.5-1ubuntu1_amd64.deb ...
Unpacking at (3.2.5-1ubuntu1) ...
Setting up at (3.2.5-1ubuntu1) ...
Created symlink /etc/systemd/system/multi-user.target.wants/atd.service → /lib/systemd/system/atd.service.
Processing triggers for man-db (2.10.2-1) ...
kuhan@kuhan-virtual-machine:~/CDAC$ echo "echo 'Job Executed' > Job_output.txt" | at now +1 minute
warning: commands will be executed using /bin/sh
job 1 at Sat Mar 8 10:37:00 2025
kuhan@kuhan-virtual-machine:~/CDAC$ atq
1          Sat Mar 8 10:37:00 2025 a kuhan
kuhan@kuhan-virtual-machine:~/CDAC$ ls -l
total 16
drwxrwxr-x 2 kuhan kuhan 4096 Mar 8 10:33 CHEERS
drwxrwxr-x 4 kuhan kuhan 4096 Mar 8 09:54 college
-rw-rw-r-- 1 kuhan kuhan 13 Mar 8 10:37 Job_output.txt
drwxrwxr-x 2 kuhan kuhan 4096 Mar 8 09:52 TEST_DIR
kuhan@kuhan-virtual-machine:~/CDAC$ cat Job_output.txt
Job Executed
kuhan@kuhan-virtual-machine:~/CDAC$ seq 1 10 > CHEERS/Hello1
kuhan@kuhan-virtual-machine:~/CDAC$ cat CHEERS/Hello
Hello Hello1
kuhan@kuhan-virtual-machine:~/CDAC$ cat CHEERS/Hello1
1
2
3
4
5
6
7
8
9
10
kuhan@kuhan-virtual-machine:~/CDAC$ sort CHEERS/Hello1
1

```

```

10
2
3
4
5
6
7
8
9
kuhan@kuhan-virtual-machine:~/CDAC$ sort -n CHEERS/Hello1
1
2
3
4
5
6
7
8
9
10
kuhan@kuhan-virtual-machine:~/CDAC$ sort -nr CHEERS/Hello1
10
9
8
7
6
5
4
3
2
1
kuhan@kuhan-virtual-machine:~/CDAC$ df -h
Filesystem      Size  Used Avail Use% Mounted on
tmpfs           387M  2.0M  385M   1% /run
/dev/sda3       34G   17G   16G  51% /
tmpfs           1.9G   0  1.9G   0% /dev/shm
tmpfs           5.0M  4.0K  5.0M   1% /run/lock
/dev/sda2       512M  6.1M  506M   2% /boot/efi
tmpfs           387M 120K  387M   1% /run/user/1000
/dev/sr0        157M 157M   0 100% /media/kuhan/CDROM
/dev/sr1        4.5G  4.5G   0 100% /media/kuhan/Ubuntu 22.04.5 LTS amd64
kuhan@kuhan-virtual-machine:~/CDAC$ less /var/log/syslog
kuhan@kuhan-virtual-machine:~/CDAC$ wc -l /var/lo
local/ lock/ log/
kuhan@kuhan-virtual-machine:~/CDAC$ wc -l /var/log/syslog
wc: invalid option -- '1'
Try 'wc --help' for more information.
kuhan@kuhan-virtual-machine:~/CDAC$ wc -l /var/log/syslog
9585 /var/log/syslog
kuhan@kuhan-virtual-machine:~/CDAC$ grep "error" /var/log/syslog
syslog  syslog.1
kuhan@kuhan-virtual-machine:~/CDAC$ grep "error" /var/log/syslog | wc -l
27
kuhan@kuhan-virtual-machine:~/CDAC$ free -h
              total        used        free      shared  buff/cache   available
Mem:           3.8Gi       1.4Gi       267Mi       50Mi       2.1Gi       2.0Gi
Swap:          3.7Gi       1.0Mi       3.7Gi

```



```
kuhan@kuhan-virtual-machine:~/CDAC$ echo "mkdir qtq_test" | at now +2 minutes
warning: commands will be executed using /bin/sh
job 2 at Sat Mar 8 10:43:00 2025
kuhan@kuhan-virtual-machine:~/CDAC$ atq
2      Sat Mar 8 10:43:00 2025 a kuhan
kuhan@kuhan-virtual-machine:~/CDAC$ sudo useradd OS
kuhan@kuhan-virtual-machine:~/CDAC$ getent passwd OS
OS:x:1002:1002::/home/OS:/bin/sh
kuhan@kuhan-virtual-machine:~/CDAC$ sudo chsh -s /bin/sh OS
kuhan@kuhan-virtual-machine:~/CDAC$ sudo groupadd AI
kuhan@kuhan-virtual-machine:~/CDAC$ sudo useradd -m -g AI Hello
kuhan@kuhan-virtual-machine:~/CDAC$ id Hello
uid=1003(Hello) gid=1003(AI) groups=1003(AI)
kuhan@kuhan-virtual-machine:~/CDAC$ sudo passwd OS
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
passwd: password updated successfully
kuhan@kuhan-virtual-machine:~/CDAC$ sudo cat /etc/shadow | grep OS
OS:$y$j9T$4AemTxVSBNqfvXadxOXRI1$UL10lrwMDtXqdgm1SFh8n2cPIUwL54zsHIUqg71Qv39:20155:0:99999:7:::
kuhan@kuhan-virtual-machine:~/CDAC$ ^C
kuhan@kuhan-virtual-machine:~/CDAC$
```