

Operating System

Lab Report

Lab 03



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Class	Operating System (BCE-5B)
Instructor's Name	Sir Wasif

In Lab Tasks

Question 1: Activity 1:

This activity is related to file permission. Perform the following tasks

1. Create a new directory named test in root directory as superuser
2. Make this directory public for all
3. Create a file “testfile.txt” in /test directory
4. Change its permissions that no boy can write the file, but the owner can read it.
5. Create another user “Usama”
6. Run the shell with user Usama
7. Try to read the “testfile.txt”
8. Logout as Usama
9. Change the permission of testfile.txt so that everyone can read, write and execute it
10. Run shell as Usama again
11. Now, read the file.

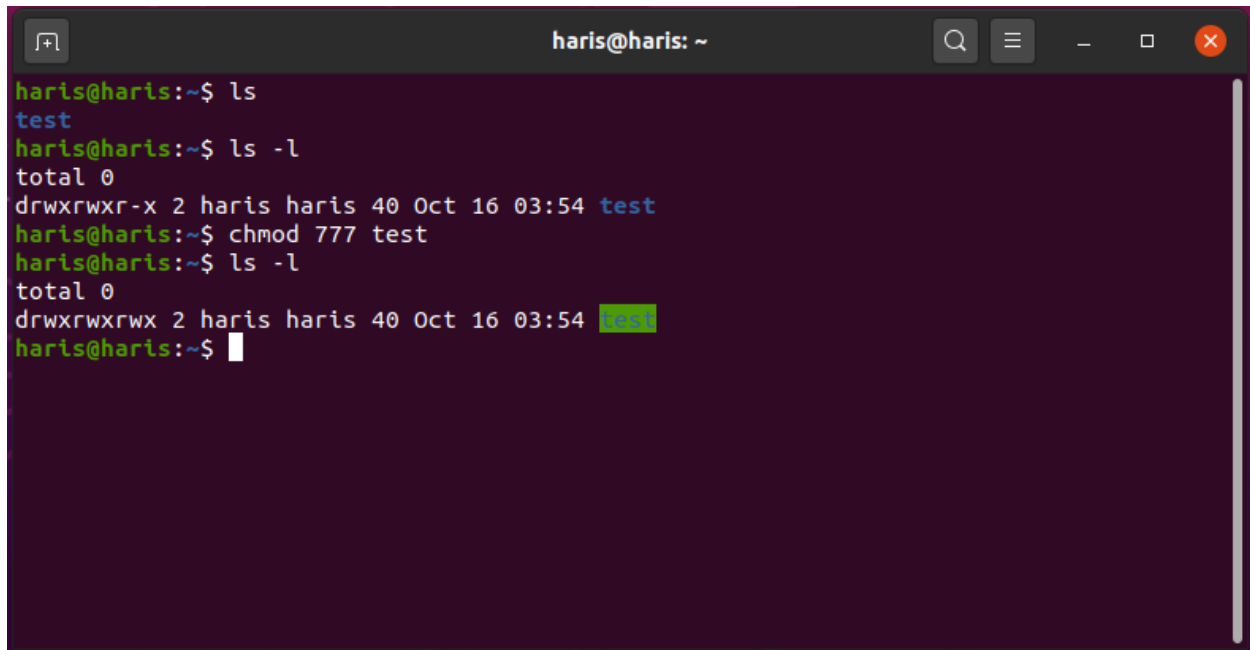
Solution:

1) The Terminal Output is given below,



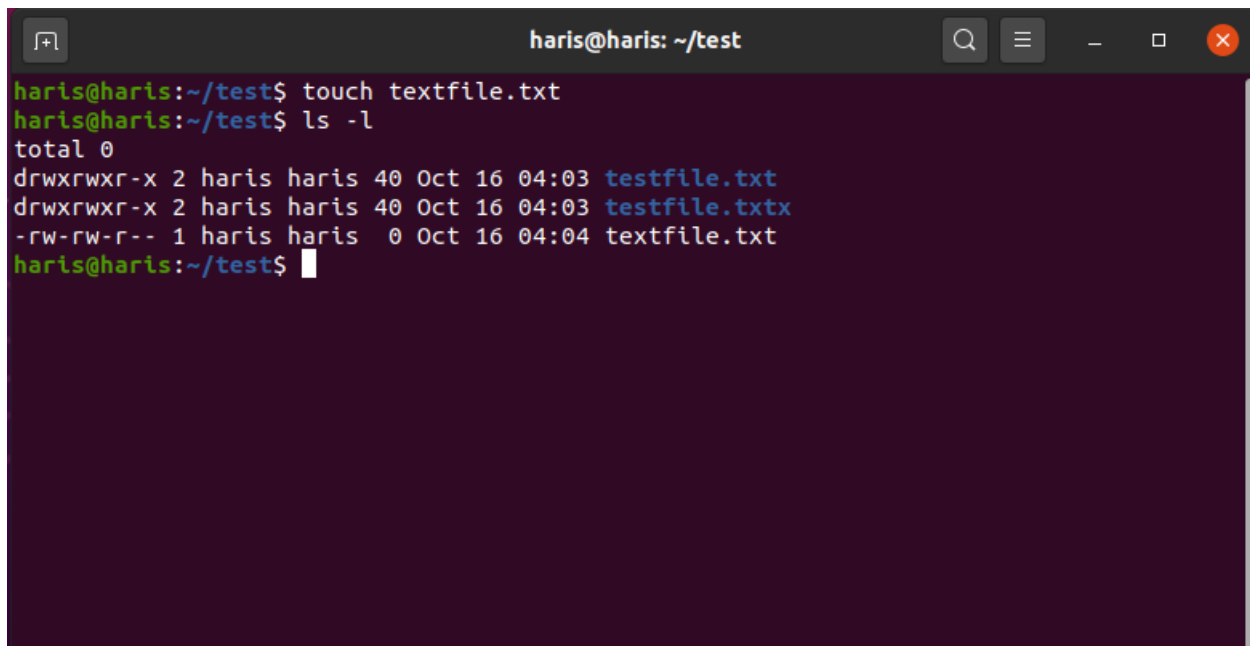
```
haris@haris: ~  
ubuntu@haris:~$ mkdir test  
ubuntu@haris:~$ cd  
ubuntu@haris:~$ su - haris  
Password:  
haris@haris:~$ mkdir test  
haris@haris:~$
```

2) The Terminal Output is given below,



```
haris@haris: ~  
haris@haris:~$ ls  
test  
haris@haris:~$ ls -l  
total 0  
drwxrwxr-x 2 haris haris 40 Oct 16 03:54 test  
haris@haris:~$ chmod 777 test  
haris@haris:~$ ls -l  
total 0  
drwxrwxrwx 2 haris haris 40 Oct 16 03:54 test  
haris@haris:~$
```

3) The Terminal Output is given below,



```
haris@haris: ~/test  
haris@haris:~/test$ touch textfile.txt  
haris@haris:~/test$ ls -l  
total 0  
drwxrwxr-x 2 haris haris 40 Oct 16 04:03 testfile.txt  
drwxrwxr-x 2 haris haris 40 Oct 16 04:03 testfile.txtx  
-rw-rw-r-- 1 haris haris  0 Oct 16 04:04 textfile.txt  
haris@haris:~/test$
```

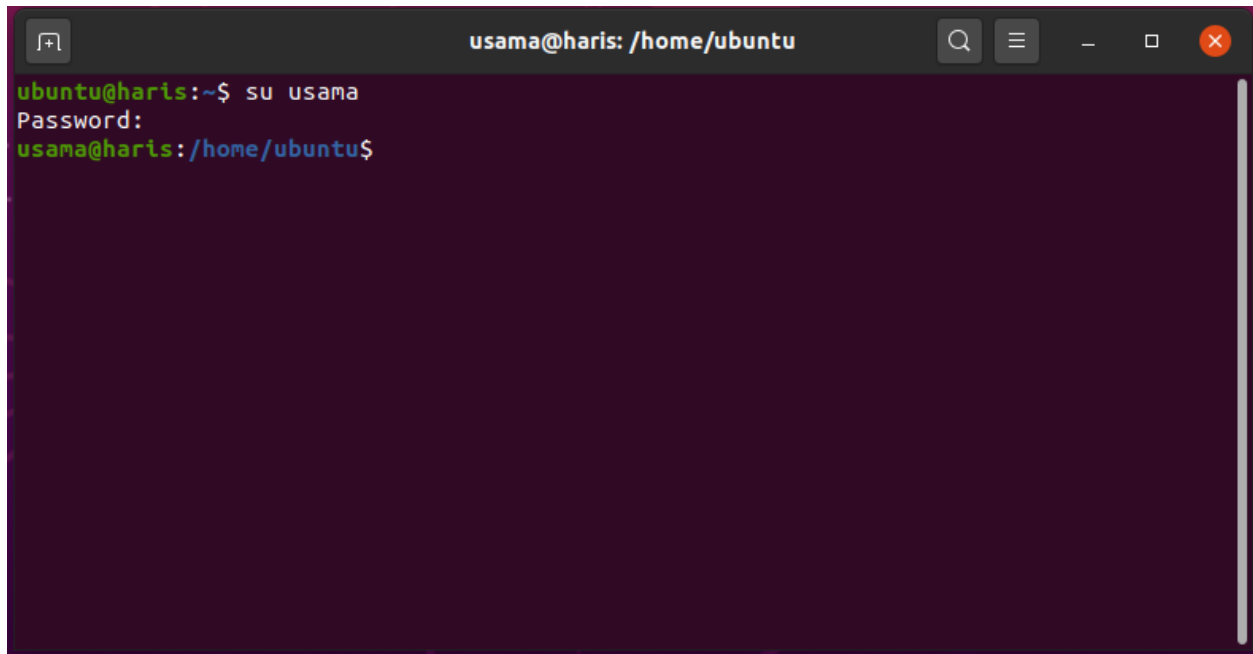
4) The Terminal Output is given below,

```
haris@haris: ~/test
haris@haris:~/test$ chmod 444 testfile.txt
haris@haris:~/test$ ls -l
total 0
dr--r--r-- 2 haris haris 40 Oct 16 04:03 testfile.txt
drwxrwxr-x 2 haris haris 40 Oct 16 04:03 testfile.txtx
-rw-rw-r-- 1 haris haris  0 Oct 16 04:04 textfile.txt
haris@haris:~/test$
```

5) The Terminal Output is given below,

```
ubuntu@haris: ~
ubuntu@haris:~$ sudo adduser usama
Adding user `usama' ...
Adding new group `usama' (1001) ...
Adding new user `usama' (1001) with group `usama' ...
Creating home directory `/home/usama' ...
Copying files from `/etc/skel' ...
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for usama
Enter the new value, or press ENTER for the default
    Full Name []:
    Room Number []:
    Work Phone []:
    Home Phone []:
    Other []:
Is the information correct? [Y/n] Y
ubuntu@haris:~$
```

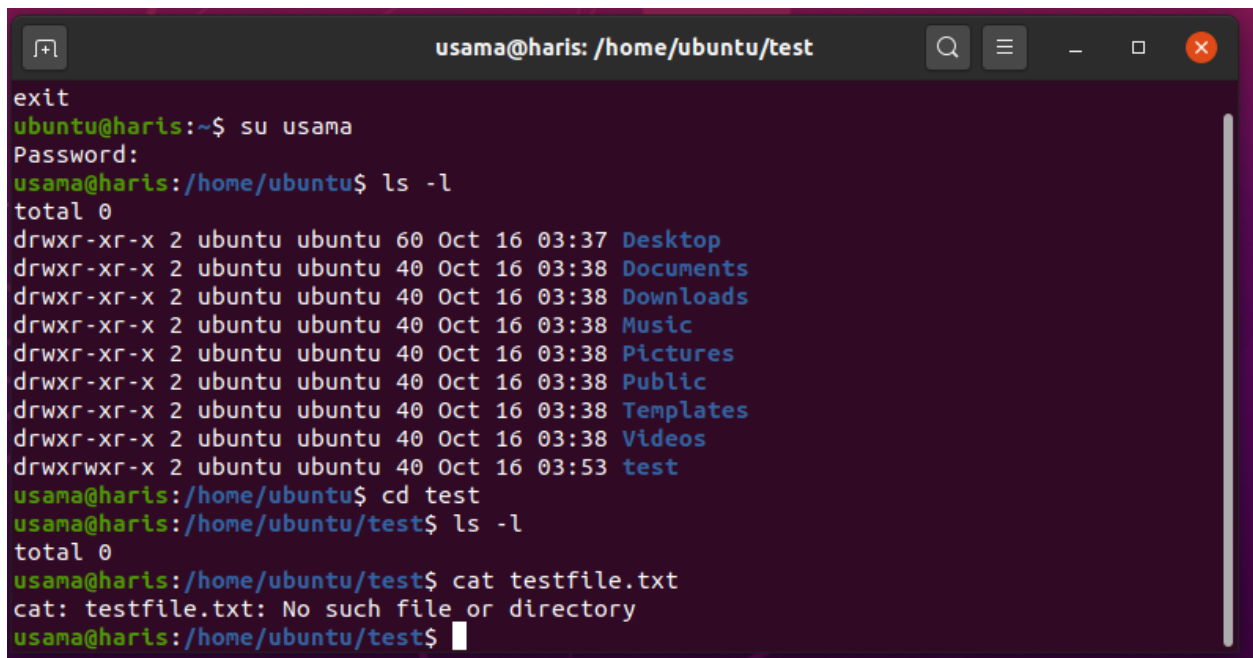
6) The Terminal Output is given below,



```
usama@haris: /home/ubuntu
ubuntu@haris:~$ su usama
Password:
usama@haris: /home/ubuntu$
```

A terminal window with a dark purple background. The title bar shows 'usama@haris: /home/ubuntu'. The terminal content shows a user switch from 'ubuntu' to 'usama' using the 'su' command. The prompt changes from 'ubuntu@haris:~\$' to 'usama@haris: /home/ubuntu\$'.

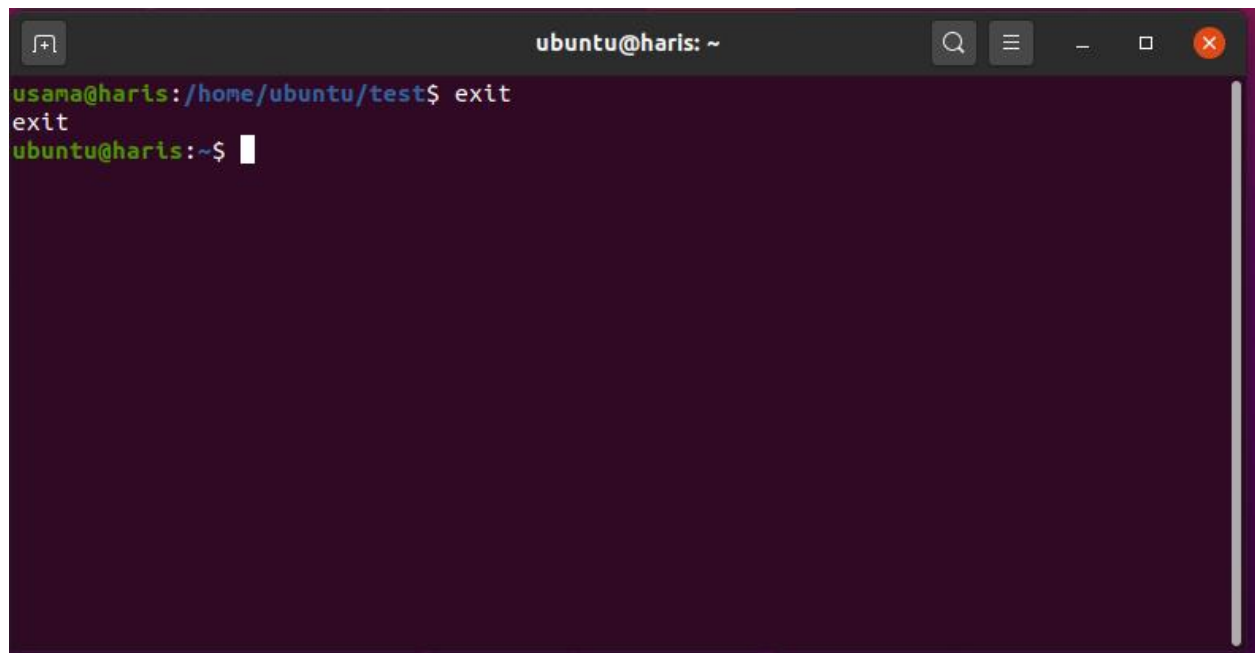
7) The Terminal Output is given below,



```
usama@haris: /home/ubuntu/test
exit
ubuntu@haris:~$ su usama
Password:
usama@haris: /home/ubuntu$ ls -l
total 0
drwxr-xr-x 2 ubuntu ubuntu 60 Oct 16 03:37 Desktop
drwxr-xr-x 2 ubuntu ubuntu 40 Oct 16 03:38 Documents
drwxr-xr-x 2 ubuntu ubuntu 40 Oct 16 03:38 Downloads
drwxr-xr-x 2 ubuntu ubuntu 40 Oct 16 03:38 Music
drwxr-xr-x 2 ubuntu ubuntu 40 Oct 16 03:38 Pictures
drwxr-xr-x 2 ubuntu ubuntu 40 Oct 16 03:38 Public
drwxr-xr-x 2 ubuntu ubuntu 40 Oct 16 03:38 Templates
drwxr-xr-x 2 ubuntu ubuntu 40 Oct 16 03:38 Videos
drwxrwxr-x 2 ubuntu ubuntu 40 Oct 16 03:53 test
usama@haris: /home/ubuntu$ cd test
usama@haris: /home/ubuntu/test$ ls -l
total 0
usama@haris: /home/ubuntu/test$ cat testfile.txt
cat: testfile.txt: No such file or directory
usama@haris: /home/ubuntu/test$
```

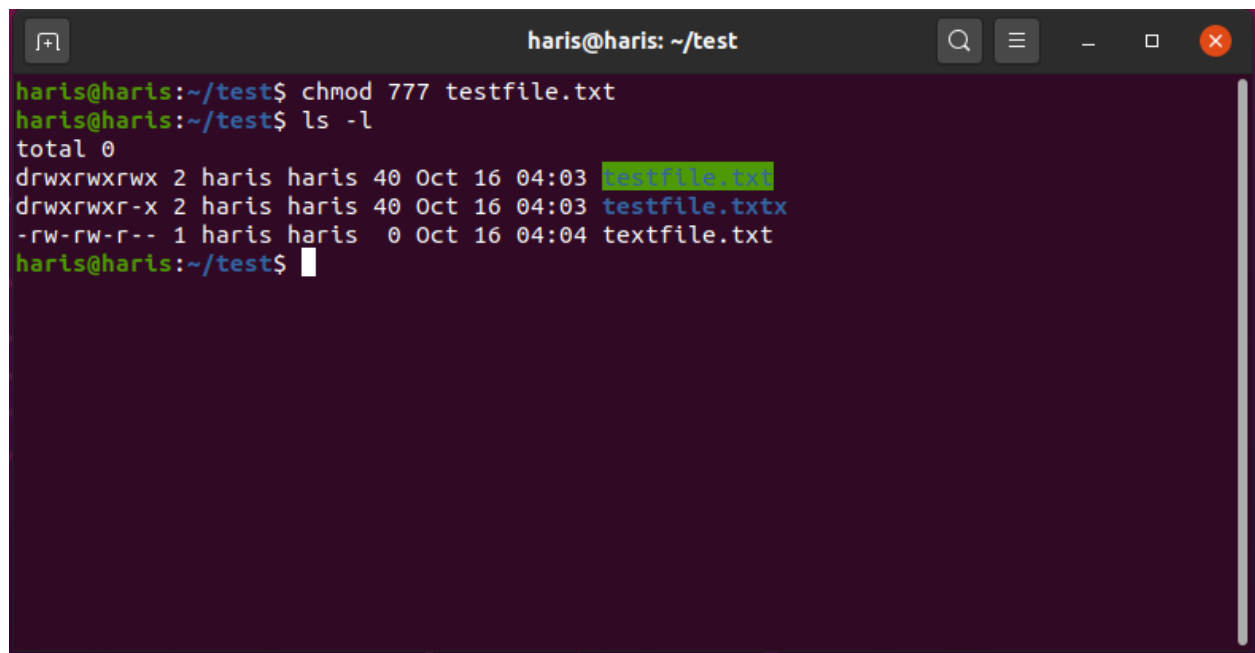
A terminal window with a dark purple background. The title bar shows 'usama@haris: /home/ubuntu/test'. The terminal content shows the user switching from 'ubuntu' to 'usama', listing the contents of the home directory with 'ls -l', changing to the 'test' directory with 'cd test', and attempting to view a file with 'cat testfile.txt', which results in an error message 'cat: testfile.txt: No such file or directory'.

8) The Terminal Output is given below,

A terminal window titled 'ubuntu@haris: ~' with search, menu, and window control icons. The prompt is 'usama@haris:/home/ubuntu/test\$'. The user enters 'exit', and the prompt changes to 'ubuntu@haris:~\$' with a cursor.

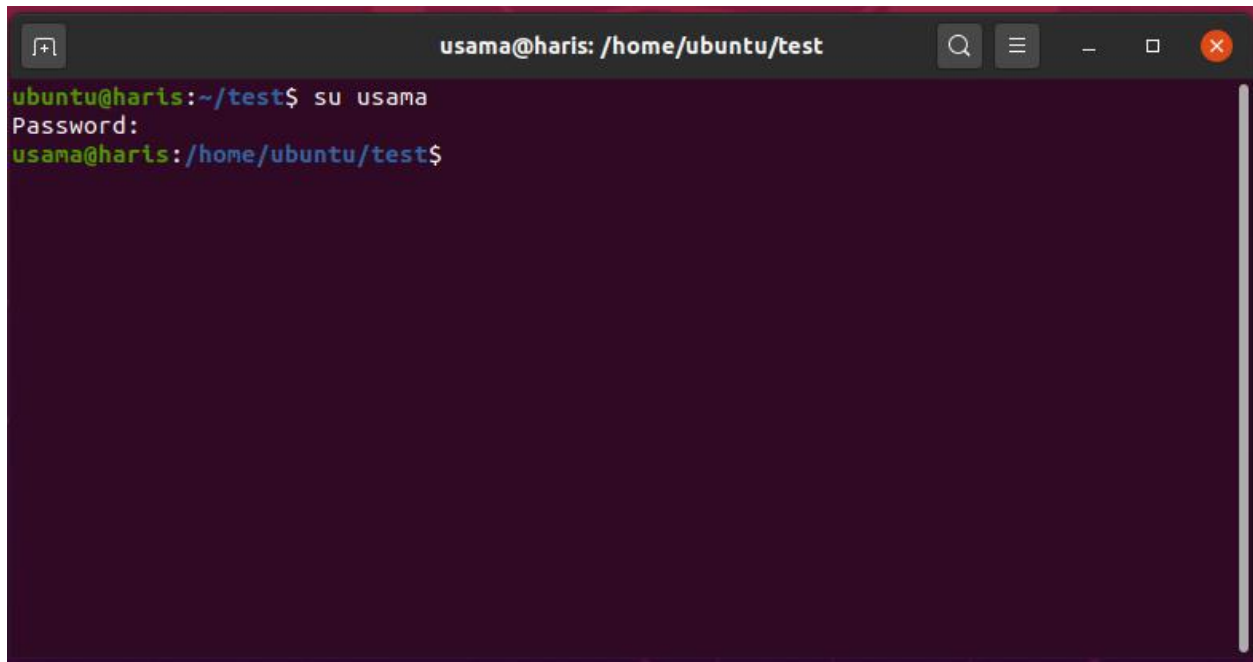
```
ubuntu@haris: ~
usama@haris:/home/ubuntu/test$ exit
exit
ubuntu@haris:~$
```

9) The Terminal Output is given below,

A terminal window titled 'haris@haris: ~/test' with search, menu, and window control icons. The prompt is 'haris@haris:~/test\$'. The user enters 'chmod 777 testfile.txt'. Then the user enters 'ls -l', and the output shows three files: 'testfile.txt' with permissions 'drwxrwxrwx', 'testfile.txtx' with permissions 'drwxrwxr-x', and 'textfile.txt' with permissions '-rw-rw-r--'.

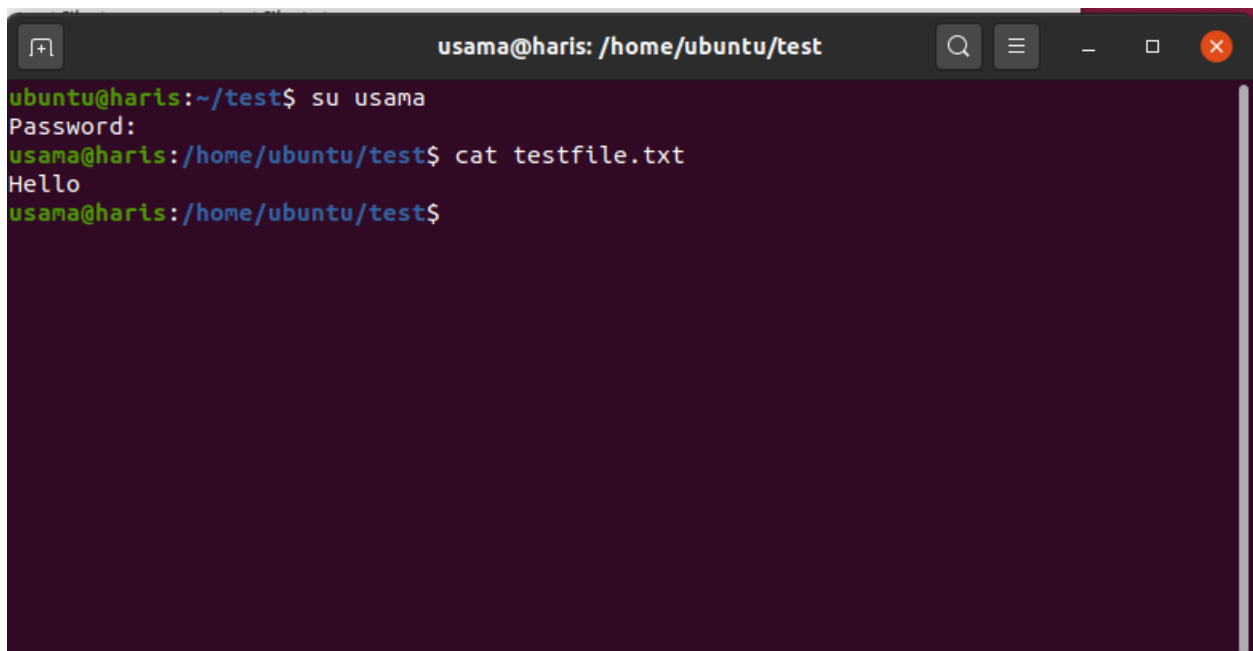
```
haris@haris: ~/test
haris@haris:~/test$ chmod 777 testfile.txt
haris@haris:~/test$ ls -l
total 0
drwxrwxrwx 2 haris haris 40 Oct 16 04:03 testfile.txt
drwxrwxr-x 2 haris haris 40 Oct 16 04:03 testfile.txtx
-rw-rw-r-- 1 haris haris  0 Oct 16 04:04 textfile.txt
haris@haris:~/test$
```

10) The Terminal Output is given below,



```
usama@haris: /home/ubuntu/test
ubuntu@haris:~/test$ su usama
Password:
usama@haris: /home/ubuntu/test$
```

11) The Terminal Output is given below,



```
usama@haris: /home/ubuntu/test
ubuntu@haris:~/test$ su usama
Password:
usama@haris: /home/ubuntu/test$ cat testfile.txt
Hello
usama@haris: /home/ubuntu/test$
```

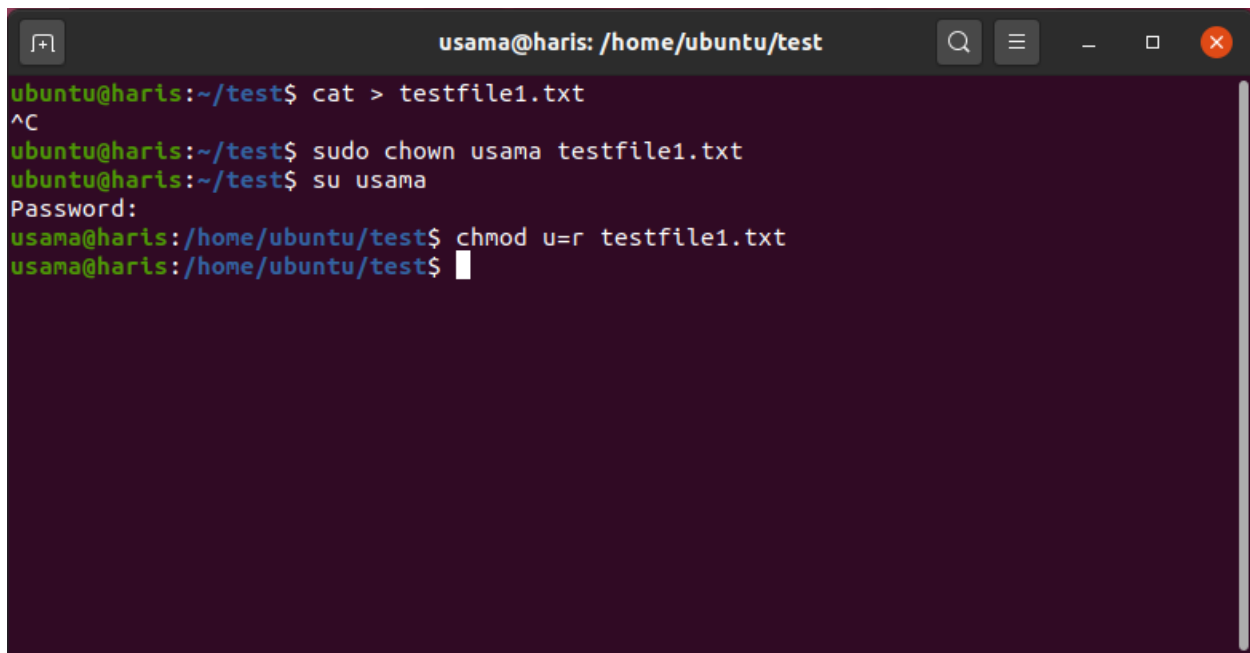
Question 2: Activity 2:

Perform the following tasks

1. Set the permission such that a newly created file is readable only to the owner
2. Create a text file “act.txt” in /test directory created in previous activity
3. Run the shell as user “usama” (created previously)
4. Access the file “act.txt”
5. Logout as usama
6. Now change the ownership of the file from ubuntu to usama
7. Run the shell again as usama
8. Read the file “act.txt” using cat command
9. Logout as usama
10. Now access the act.txt with user ubuntu

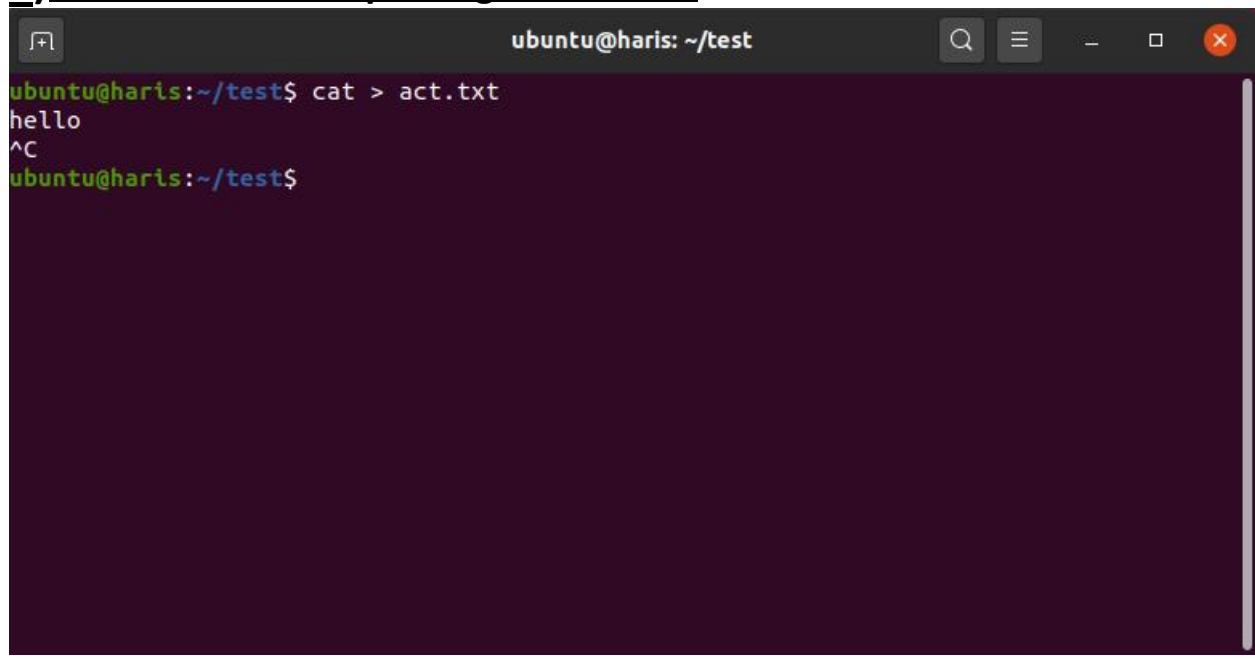
Solution:

1) The Terminal Output is given below,



```
usama@haris: /home/ubuntu/test
ubuntu@haris:~/test$ cat > testfile1.txt
^C
ubuntu@haris:~/test$ sudo chown usama testfile1.txt
ubuntu@haris:~/test$ su usama
Password:
usama@haris:/home/ubuntu/test$ chmod u=r testfile1.txt
usama@haris:/home/ubuntu/test$
```

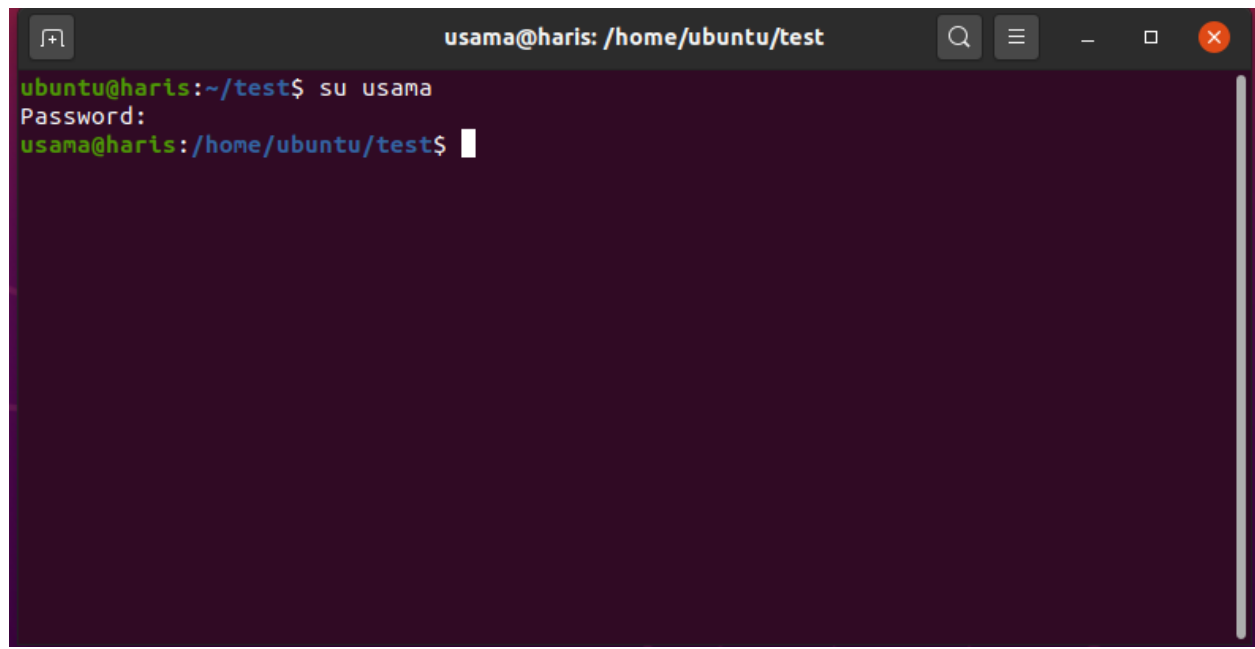

2) The Terminal Output is given below,



```
ubuntu@haris: ~/test
ubuntu@haris:~/test$ cat > act.txt
hello
^C
ubuntu@haris:~/test$
```

A terminal window titled 'ubuntu@haris: ~/test' with standard Ubuntu window controls. The user enters the command 'cat > act.txt', types 'hello', and then presses Ctrl-C (^C). The prompt returns to 'ubuntu@haris:~/test\$'.

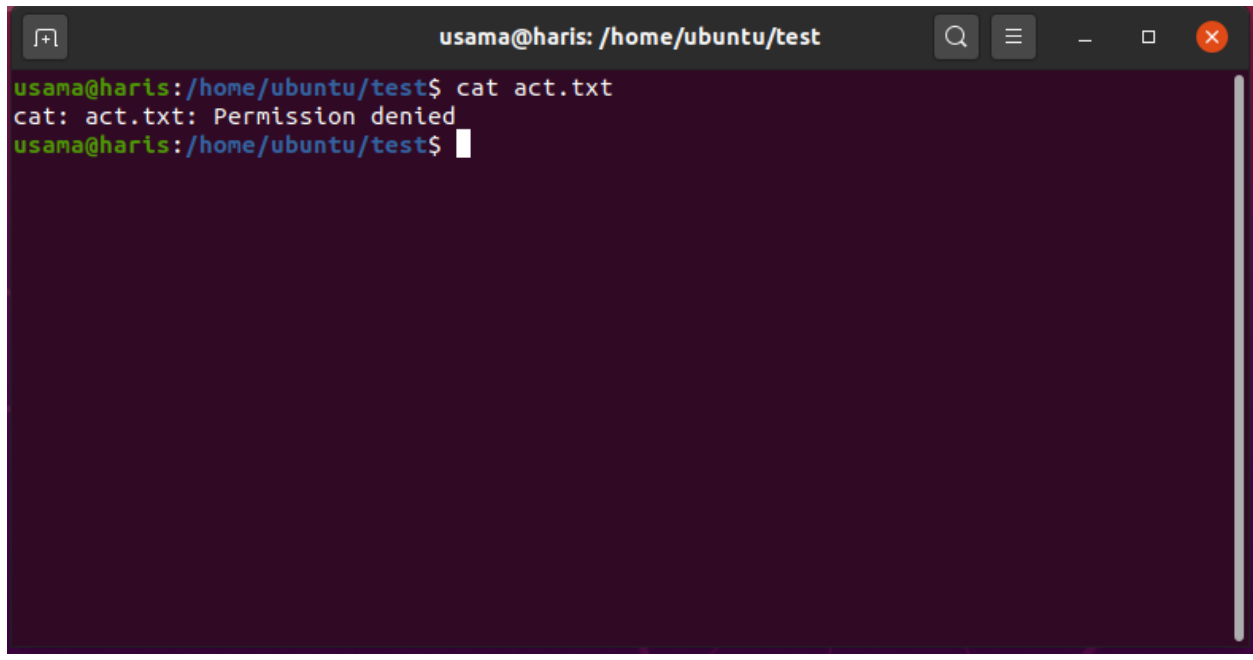
3) The Terminal Output is given below,



```
usama@haris: /home/ubuntu/test
ubuntu@haris:~/test$ su usama
Password:
usama@haris: /home/ubuntu/test$
```

A terminal window titled 'usama@haris: /home/ubuntu/test' with standard Ubuntu window controls. The user enters the command 'su usama', followed by a password prompt 'Password:'. After entering the password, the prompt changes to 'usama@haris: /home/ubuntu/test\$'.

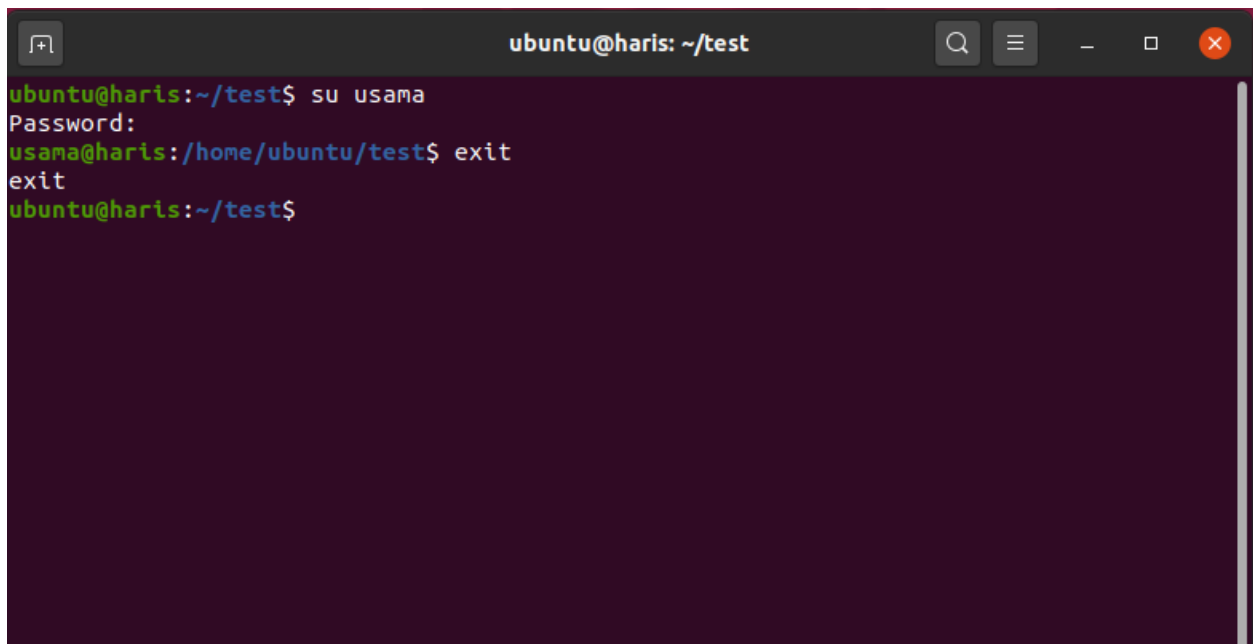
4) The Terminal Output is given below,



```
usama@haris: /home/ubuntu/test
usama@haris:/home/ubuntu/test$ cat act.txt
cat: act.txt: Permission denied
usama@haris:/home/ubuntu/test$
```

A terminal window with a dark purple background. The title bar shows 'usama@haris: /home/ubuntu/test'. The command 'cat act.txt' is entered, resulting in the output 'cat: act.txt: Permission denied'. The prompt returns to 'usama@haris:/home/ubuntu/test\$'.

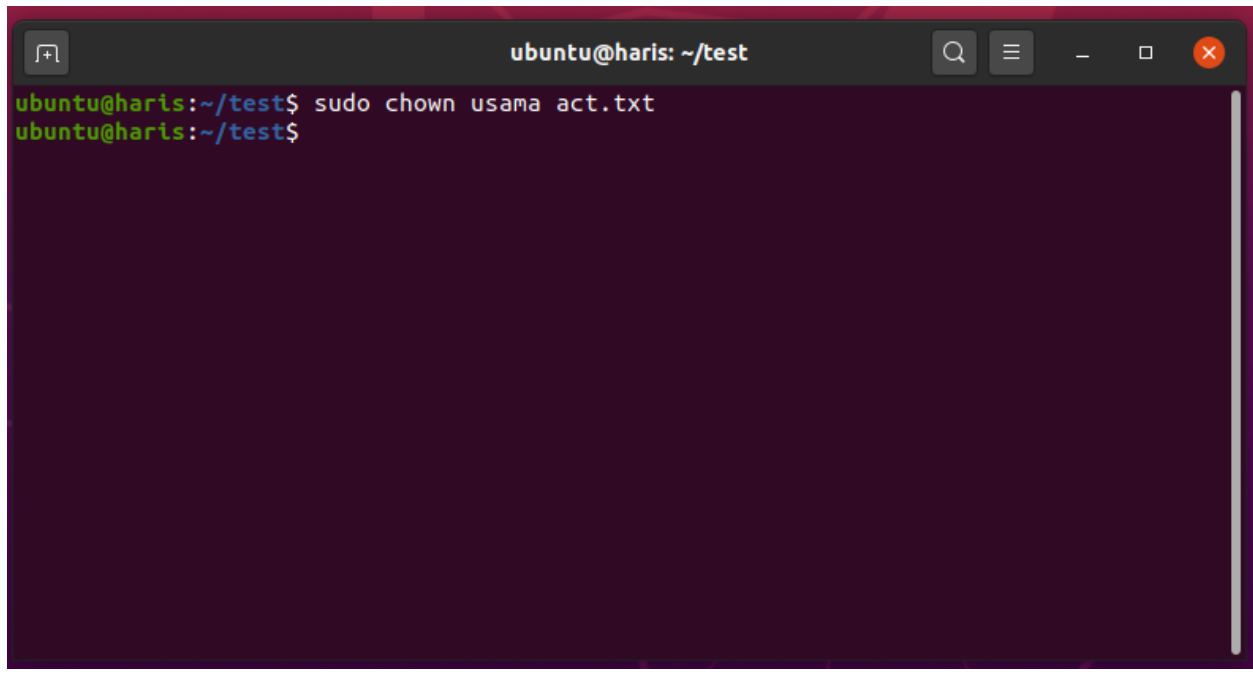
5) The Terminal Output is given below,



```
ubuntu@haris: ~/test
ubuntu@haris:~/test$ su usama
Password:
usama@haris:/home/ubuntu/test$ exit
exit
ubuntu@haris:~/test$
```

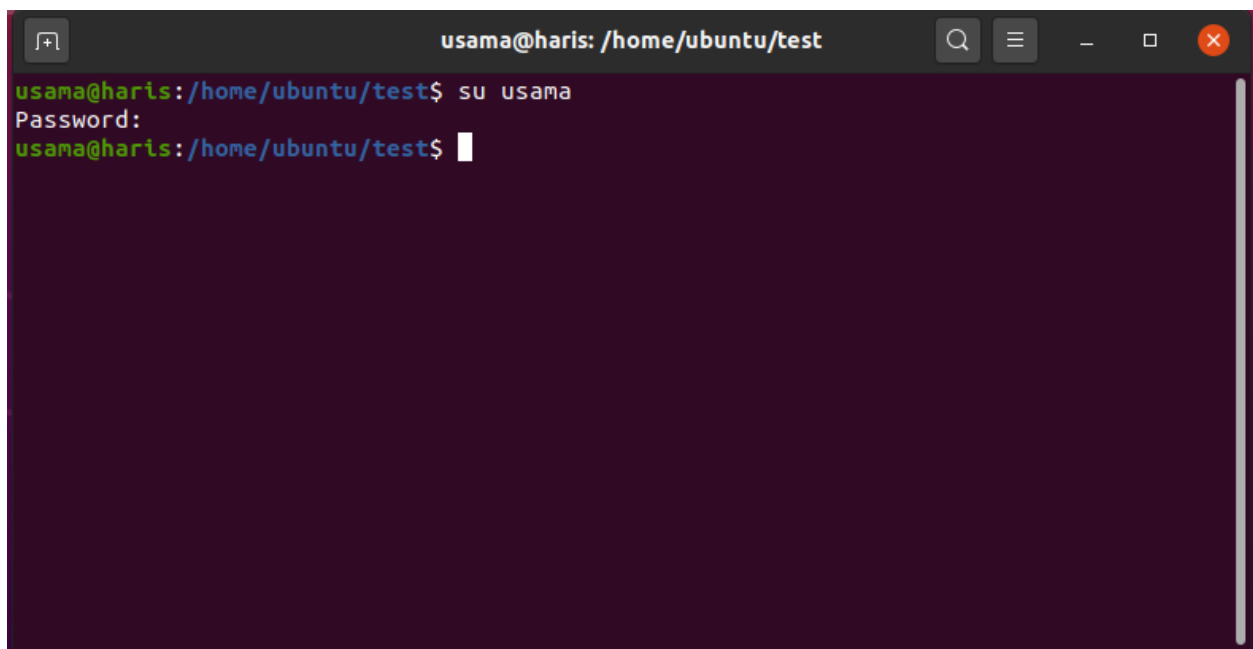
A terminal window with a dark purple background. The title bar shows 'ubuntu@haris: ~/test'. The command 'su usama' is entered, followed by a password prompt. After successful authentication, the prompt changes to 'usama@haris:/home/ubuntu/test\$'. The command 'exit' is entered, returning the prompt to 'ubuntu@haris:~/test\$'.

6) The Terminal Output is given below,

A terminal window with a dark background and a title bar that reads 'ubuntu@haris: ~/test'. The terminal shows the command 'sudo chown usama act.txt' being entered and executed. The prompt changes from 'ubuntu@haris:~/test\$' to 'ubuntu@haris:~/test\$' after the command is run.

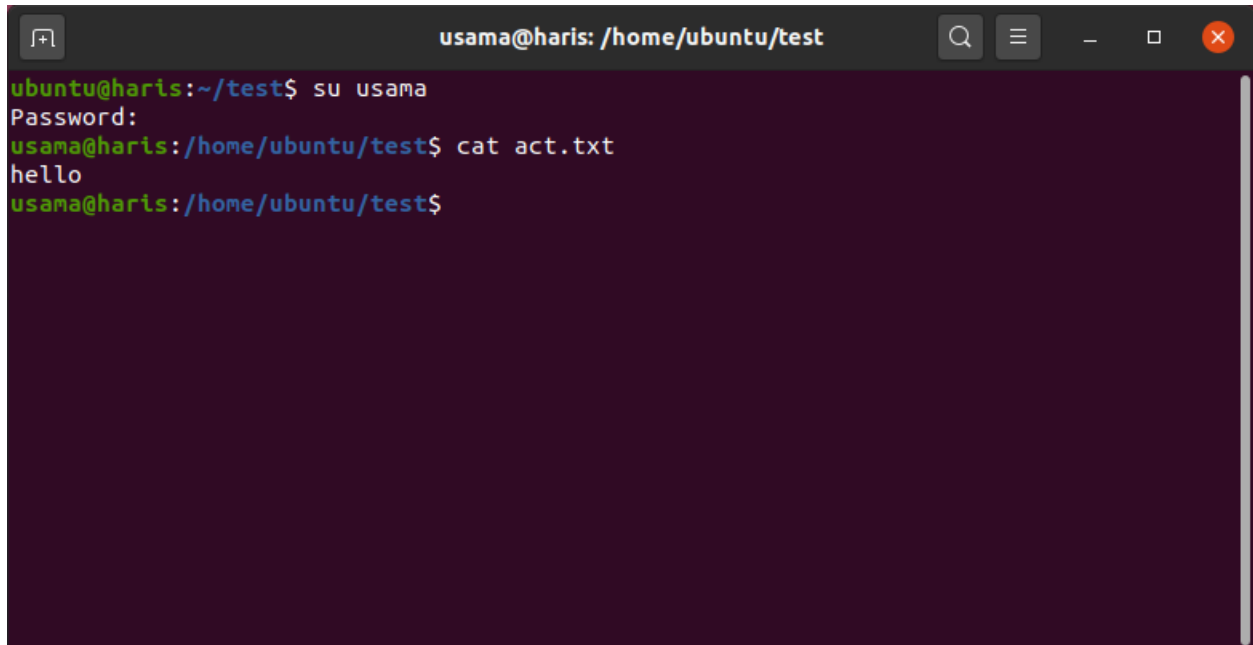
```
ubuntu@haris:~/test$ sudo chown usama act.txt
ubuntu@haris:~/test$
```

7) The Terminal Output is given below,

A terminal window with a dark background and a title bar that reads 'usama@haris: /home/ubuntu/test'. The terminal shows the command 'su usama' being entered. The prompt changes from 'usama@haris:/home/ubuntu/test\$' to 'usama@haris:/home/ubuntu/test\$' after the command is run. The prompt 'usama@haris:/home/ubuntu/test\$' is shown again on the next line.

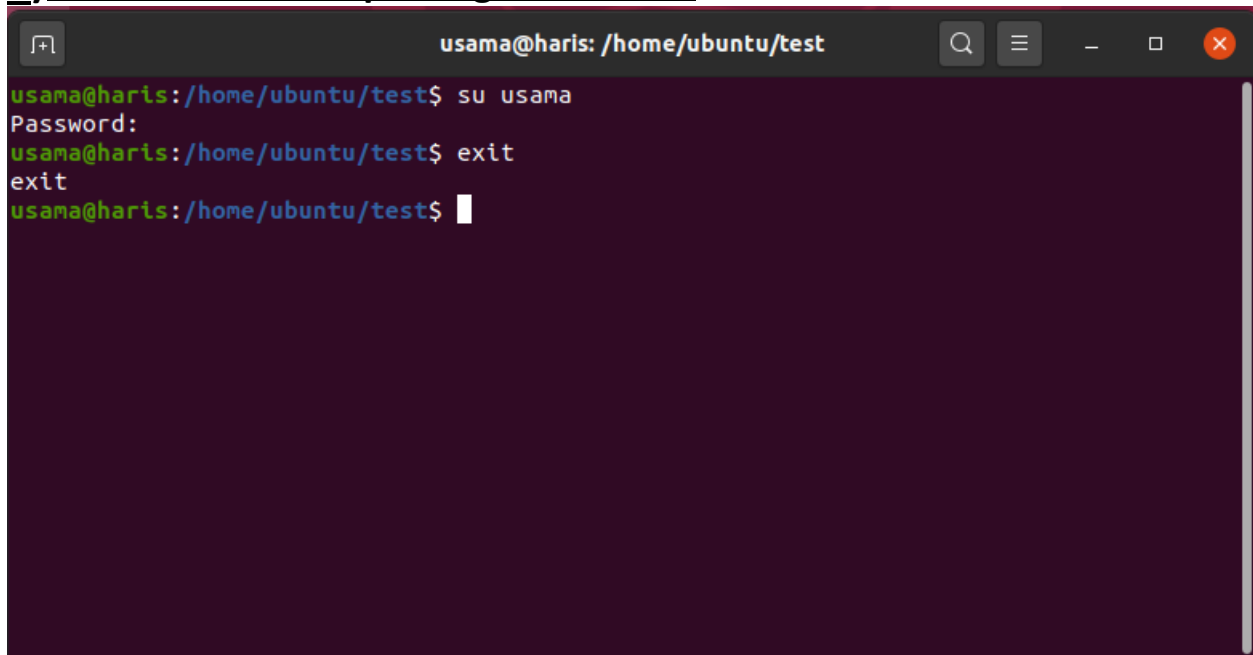
```
usama@haris:/home/ubuntu/test$ su usama
Password:
usama@haris:/home/ubuntu/test$
```

8) The Terminal Output is given below,




```
usama@haris: /home/ubuntu/test
ubuntu@haris:~/test$ su usama
Password:
usama@haris:/home/ubuntu/test$ cat act.txt
hello
usama@haris:/home/ubuntu/test$
```

9) The Terminal Output is given below,



```
usama@haris:/home/ubuntu/test$ su usama
Password:
usama@haris:/home/ubuntu/test$ exit
exit
usama@haris:/home/ubuntu/test$
```

10) The Terminal Output is given below,

A terminal window with a dark purple background. The title bar at the top reads 'ubuntu@haris: ~/test'. The terminal shows the command 'cat act.txt' being entered, followed by the output 'cat: act.txt: Permission denied'. The prompt 'ubuntu@haris:~/test\$' is visible at the end of the line.

```
ubuntu@haris:~/test$ cat act.txt
cat: act.txt: Permission denied
ubuntu@haris:~/test$
```

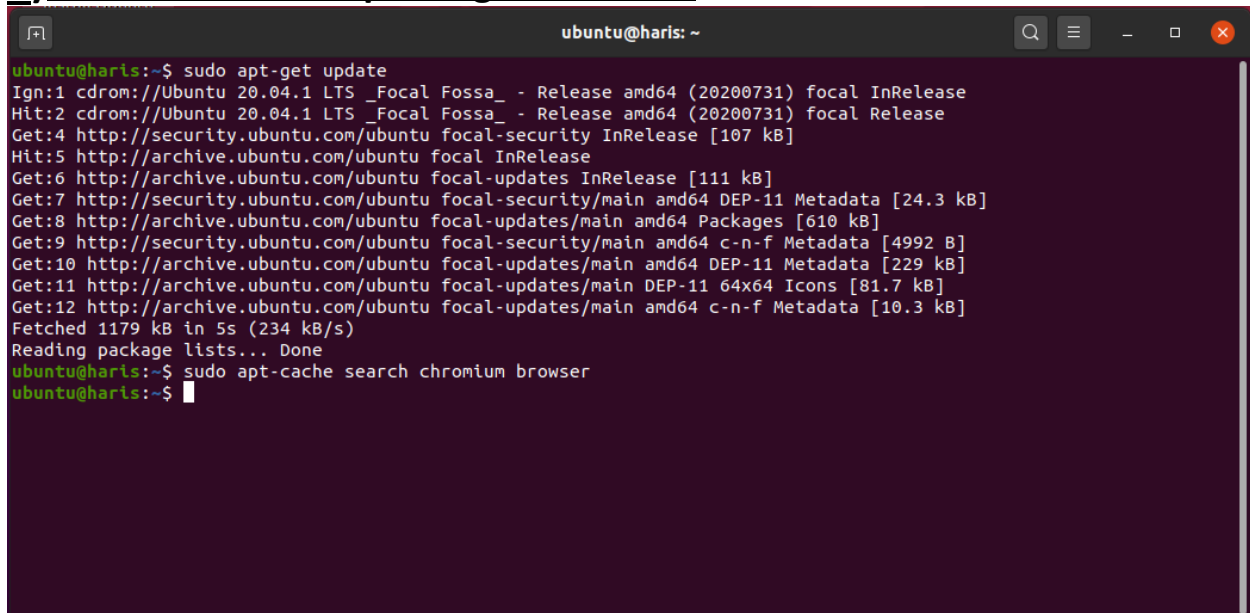
Question 3: Activity 3:

Perform the following tasks

1. search apt repository for the chromium browser
2. install the chromium browser using command line
3. write the command to update and upgrade the repository
4. list the software installed on your machine and write output on a file list.txt
5. read the list.txt file using cat command

Solution:

1) The Terminal Output is given below,

A terminal window titled 'ubuntu@haris: ~' with standard Ubuntu window controls. The terminal shows the output of two commands. The first command is 'sudo apt-get update', which outputs a series of status messages including 'Ign:1 cdrom://Ubuntu 20.04.1 LTS _Focal Fossa_ - Release amd64 (20200731) focal InRelease', 'Hit:2 cdrom://Ubuntu 20.04.1 LTS _Focal Fossa_ - Release amd64 (20200731) focal Release', 'Get:4 http://security.ubuntu.com/ubuntu focal-security InRelease [107 kB]', 'Hit:5 http://archive.ubuntu.com/ubuntu focal InRelease', 'Get:6 http://archive.ubuntu.com/ubuntu focal-updates InRelease [111 kB]', 'Get:7 http://security.ubuntu.com/ubuntu focal-security/main amd64 DEP-11 Metadata [24.3 kB]', 'Get:8 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 Packages [610 kB]', 'Get:9 http://security.ubuntu.com/ubuntu focal-security/main amd64 c-n-f Metadata [4992 B]', 'Get:10 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 DEP-11 Metadata [229 kB]', 'Get:11 http://archive.ubuntu.com/ubuntu focal-updates/main DEP-11 64x64 Icons [81.7 kB]', 'Get:12 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 c-n-f Metadata [10.3 kB]', 'Fetched 1179 kB in 5s (234 kB/s)', and 'Reading package lists... Done'. The second command is 'sudo apt-cache search chromium browser', which results in a blank line.

```
ubuntu@haris:~$ sudo apt-get update
Ign:1 cdrom://Ubuntu 20.04.1 LTS _Focal Fossa_ - Release amd64 (20200731) focal InRelease
Hit:2 cdrom://Ubuntu 20.04.1 LTS _Focal Fossa_ - Release amd64 (20200731) focal Release
Get:4 http://security.ubuntu.com/ubuntu focal-security InRelease [107 kB]
Hit:5 http://archive.ubuntu.com/ubuntu focal InRelease
Get:6 http://archive.ubuntu.com/ubuntu focal-updates InRelease [111 kB]
Get:7 http://security.ubuntu.com/ubuntu focal-security/main amd64 DEP-11 Metadata [24.3 kB]
Get:8 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 Packages [610 kB]
Get:9 http://security.ubuntu.com/ubuntu focal-security/main amd64 c-n-f Metadata [4992 B]
Get:10 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 DEP-11 Metadata [229 kB]
Get:11 http://archive.ubuntu.com/ubuntu focal-updates/main DEP-11 64x64 Icons [81.7 kB]
Get:12 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 c-n-f Metadata [10.3 kB]
Fetched 1179 kB in 5s (234 kB/s)
Reading package lists... Done
ubuntu@haris:~$ sudo apt-cache search chromium browser
ubuntu@haris:~$
```

2) The Terminal Output is given below,

```
ubuntu@haris: /
InRelease
Hit:2 cdrom://Ubuntu 20.04.1 LTS _Focal Fossa_ - Release amd64 (20200731) focal
Release
Hit:4 http://archive.ubuntu.com/ubuntu focal InRelease
Hit:5 http://security.ubuntu.com/ubuntu focal-security InRelease
Hit:6 http://archive.ubuntu.com/ubuntu focal-updates InRelease
Reading package lists... Done
ubuntu@haris:/$ sudo apt install chromium-browser
Reading package lists... Done
Building dependency tree
Reading state information... Done
E: Unable to locate package chromium-browser
ubuntu@haris:/$ sudo apt install chromium-bsu
Reading package lists... Done
Building dependency tree
Reading state information... Done
E: Unable to locate package chromium-bsu
ubuntu@haris:/$ sudo apt install chromium browser
Reading package lists... Done
Building dependency tree
Reading state information... Done
E: Unable to locate package chromium
E: Unable to locate package browser
ubuntu@haris:/$
```

3) The Terminal Output is given below,

```
ubuntu@haris: /
ubuntu@haris:/$ sudo apt-get update
Ign:1 cdrom://Ubuntu 20.04.1 LTS _Focal Fossa_ - Release amd64 (20200731) focal InRelease
Hit:2 cdrom://Ubuntu 20.04.1 LTS _Focal Fossa_ - Release amd64 (20200731) focal Release
Hit:4 http://archive.ubuntu.com/ubuntu focal InRelease
Hit:5 http://security.ubuntu.com/ubuntu focal-security InRelease
Hit:6 http://archive.ubuntu.com/ubuntu focal-updates InRelease
Reading package lists... Done
ubuntu@haris:/$
```

4) The Terminal Output is given below,

```
ubuntu@haris: ~/Desktop
ubuntu@haris:~/Desktop$ dpkg --get-architecture > list.txt
ubuntu@haris:~/Desktop$
```

5) The Terminal Output is given below,

```
ubuntu@haris: ~/Desktop
ubuntu@haris:~/Desktop$ dpkg --get-architecture > list.txt
ubuntu@haris:~/Desktop$ cat list.txt
Desired=Unknown/Install/Remove/Purge/Hold
| Status=Not/Inst/Conf-files/Unpacked/halF-conf/Half-inst/trig-aWait/Trig-pend
|/ Err?=(none)/Reinst-required (Status,Err: uppercase=bad)
||/ Name                               Version                               Architecture Description
+++-----
ii  accountsservice                     0.6.55-0ubuntu12~20.04.1             amd64          query and manip
ulate user account information
ii  acl                                  2.2.53-6                             amd64          access control
list - utilities
ii  acpi-support                         0.143                                amd64          scripts for han
dling many ACPI events
ii  acpid                                1:2.0.32-1ubuntu1                    amd64          Advanced Config
uration and Power Interface event daemon
ii  adduser                              3.118ubuntu2                          all            add and remove
users and groups
ii  adwaita-icon-theme                  3.36.1-2ubuntu0.20.04.2              all            default icon th
eme of GNOME (small subset)
ii  aisleriot                            1:3.22.9-1                            amd64          GNOME solitaire
card game collection
ii  alsa-base                            1.0.25+dfsg-0ubuntu5                 all            ALSA driver con
figuration files
ii  alsa-topology-conf                  1.2.2-1                              all            ALSA topology c
onfiguration files
ii  alsa-ucm-conf                       1.2.2-1ubuntu0.1                     all            ALSA Use Case M
anager configuration files
```


_____THE END_____

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