

1. Create a directory

-> mkdir s

2. Switch to this directory

-> cd s

3. Create a normal text file

-> touch newfile.txt

```
lt-sakshis@lt-sakshis:~$ mkdir s
lt-sakshis@lt-sakshis:~$ cd s
lt-sakshis@lt-sakshis:~/s$ pwd
/home/lt-sakshis/s
lt-sakshis@lt-sakshis:~/s$ touch newfile.txt
```

4. Create a hidden text file

```
lt-sakshis@lt-sakshis:~/s$ touch .hidden.txt
lt-sakshis@lt-sakshis:~/s$ ls -a
.  ..  .hidden_file  .hidden.txt  newfile.txt
lt-sakshis@lt-sakshis:~/s$ ls
newfile.txt
lt-sakshis@lt-sakshis:~/s$
```

5. Modify the access of the hidden text file so that it can be edited only by root user.

```
sudo: s: command not found
lt-sakshis@lt-sakshis:~/s$ pwd
/home/lt-sakshis/s
lt-sakshis@lt-sakshis:~/s$ sudo su
root@lt-sakshis:/home/lt-sakshis/s# chmod 244 .hidden.txt
root@lt-sakshis:/home/lt-sakshis/s# ll
total 8
drwxrwxr-x  2 lt-sakshis lt-sakshis 4096 Apr 10 22:01 ./
drwxr-xr-x 29 lt-sakshis lt-sakshis 4096 Apr 10 20:38 ../
-rw-rw-r--  1 lt-sakshis lt-sakshis   0 Apr 10 21:05 .hidden_file
--w-r--r--  1 lt-sakshis lt-sakshis   0 Apr 10 22:01 .hidden.txt
-rw-rw-r--  1 lt-sakshis lt-sakshis   0 Apr 10 20:40 newfile.txt
root@lt-sakshis:/home/lt-sakshis/s# exit
exit
lt-sakshis@lt-sakshis:~/s$
```

6. Move the hidden file to a your desktop.

```
drwxr-xr-x  2 lt-sakshis lt-sakshis  4096 Apr 10 12:04 .vim/
-rw-----  1 lt-sakshis lt-sakshis  6283 Apr 10 16:26 .viminfo
drwxrwxr-x  3 lt-sakshis lt-sakshis  4096 Mar 31 12:40 .vscode/
lt-sakshis@lt-sakshis:~$ mv .hidden.txt ../Desktop
```

7. Create a directory, add 3 files into it and then remove the whole directory.

```
exit
lt-sakshis@lt-sakshis:~/s$ mkdir d
lt-sakshis@lt-sakshis:~/s$ touch file1.txt
lt-sakshis@lt-sakshis:~/s$ touch file2.txt
lt-sakshis@lt-sakshis:~/s$ touch file3.txt
lt-sakshis@lt-sakshis:~/s$ rm -r
rm: missing operand
Try 'rm --help' for more information.
lt-sakshis@lt-sakshis:~/s$ rm --help
Usage: rm [OPTION]... [FILE]...
```

```
or available locally via: info '(coreutils) rm invocation'
lt-sakshis@lt-sakshis:~/s$ rm -r d
lt-sakshis@lt-sakshis:~/s$ ls
file1.txt file2.txt file3.txt newfile.txt
lt-sakshis@lt-sakshis:~/s$ ll
total 8
drwxrwxr-x  2 lt-sakshis lt-sakshis  4096 Apr 10 22:16 ./
drwxr-xr-x 29 lt-sakshis lt-sakshis  4096 Apr 10 20:38 ../
-rw-rw-r--  1 lt-sakshis lt-sakshis    0 Apr 10 22:13 file1.txt
-rw-rw-r--  1 lt-sakshis lt-sakshis    0 Apr 10 22:13 file2.txt
-rw-rw-r--  1 lt-sakshis lt-sakshis    0 Apr 10 22:13 file3.txt
-rw-rw-r--  1 lt-sakshis lt-sakshis    0 Apr 10 21:05 .hidden_file
--w-r--r--  1 lt-sakshis lt-sakshis    0 Apr 10 22:01 .hidden.txt
-rw-rw-r--  1 lt-sakshis lt-sakshis    0 Apr 10 20:40 newfile.txt
lt-sakshis@lt-sakshis:~/s$
```

8. Create a new user group.

9. Create a new user and assign a new user home and the previously created usergroup to the user.

-> doing it in online terminal, because access was denied.

Terminal (18 minutes, 42 seconds remaining)

```
root@tryit-saved:~# groupadd NewGroup
root@tryit-saved:~# useradd -g NewGroup -d/root/newUser newuser
root@tryit-saved:~#
root@tryit-saved:~# group newuser
bash: group: command not found
root@tryit-saved:~# groups newuser
newuser : NewGroup
root@tryit-saved:~#
```

10. Create a symbolic link in a different location for the file created in step 3.

```
-rw-rw-r-- 1 lt-sakshits lt-sakshits 0 Apr 10 20:40 newfile.txt
lt-sakshits@lt-sakshits:~/s$ mkdir symlink
lt-sakshits@lt-sakshits:~/s$ mv newfile.txt symlink
lt-sakshits@lt-sakshits:~/s$ cd symlink
lt-sakshits@lt-sakshits:~/s/symlink$ ls
newfile.txt
lt-sakshits@lt-sakshits:~/s/symlink$ ln -s ../Documents/newfile.txt symtext.txt
lt-sakshits@lt-sakshits:~/s/symlink$ ls
newfile.txt  symtext.txt
lt-sakshits@lt-sakshits:~/s/symlink$ ll
total 8
drwxrwxr-x 2 lt-sakshits lt-sakshits 4096 Apr 10 22:25 ./
drwxrwxr-x 3 lt-sakshits lt-sakshits 4096 Apr 10 22:23 ../
-rw-rw-r-- 1 lt-sakshits lt-sakshits 0 Apr 10 20:40 newfile.txt
lrwxrwxrwx 1 lt-sakshits lt-sakshits 24 Apr 10 22:25 symtext.txt -> ../Documents/newfile.txt
lt-sakshits@lt-sakshits:~/s/symlink$
```

11. Open google chrome or any other web browser, see its memory usage using top command and end the process using the ps and grep commands.

```
or available locally via: info '(coreutils) ls invocation'
lt-sakshis@lt-sakshis:~/s$ top

top - 21:45:44 up 1 day, 6:25, 1 user, load average: 0.42, 0.41, 0.36
Tasks: 318 total, 1 running, 316 sleeping, 0 stopped, 1 zombie
%Cpu(s): 1.2 us, 0.5 sy, 0.0 ni, 98.3 id, 0.0 wa, 0.0 hi, 0.1 si, 0.0 st
MiB Mem : 31848.2 total, 10950.9 free, 3813.2 used, 17084.1 buff/cache
MiB Swap: 2048.0 total, 2048.0 free, 0.0 used, 26678.1 avail Mem

  PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM    TIME+  COMMAND
 115144 lt-saks+  20   0   20.6g  499168 134888 S   3.7   1.5 100:13.04 chrome
 115158 lt-saks+  20   0   20.5g  296028 106896 S   3.0   0.9 16:06.63 chrome
   230 root      -51   0     0      0      0 S   2.0   0.0  5:22.71 irq/155-DELL0B2
 19868 lt-saks+  20   0  530572  89428  51104 S   2.0   0.3  9:22.20 Xorg
 20586 lt-saks+  20   0  5411244 318932 107536 S   1.3   1.0 12:08.02 gnome-shell
128589 lt-saks+  20   0  818712  54644  39840 S   1.3   0.2  0:38.77 gnome-terminal-
   643 root      -51   0     0      0      0 S   1.0   0.0  9:51.91 irq/159-rtw88_p
   946 root      20   0  484072  21152  16748 S   0.7   0.1  0:20.14 NetworkManager
141848 lt-saks+  20   0   20.6g  405296 153436 S   0.7   1.2  1:46.22 chrome
   991 root      20   0  273892  9372   8524 S   0.3   0.0  1:16.00 thermald
  4119 root      20   0  984304 265648  28808 S   0.3   0.8  4:52.88 ds_agent
 21075 lt-saks+  20   0   16.8g  347652 177380 S   0.3   1.1  9:24.20 chrome
 21120 lt-saks+  20   0   16.3g 115668  87980 S   0.3   0.4  3:31.64 chrome
141599 root      20   0     0      0      0 I   0.3   0.0  0:00.35 kworker/2:0-events
141884 root      0 -20     0      0      0 I   0.3   0.0  0:01.11 kworker/u17:3-rtw_tx_wq
142502 lt-saks+  20   0  12000   3864   3204 R   0.3   0.0  0:00.05 top
142503 root      20   0     0      0      0 I   0.3   0.0  0:00.02 kworker/u16:1-phy0
    1 root      20   0 169848 13504  8508 S   0.0   0.0  0:17.15 systemd
    2 root      20   0     0      0      0 S   0.0   0.0  0:00.07 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
    6 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 mm_percpu_wq
   10 root      20   0     0      0      0 S   0.0   0.0  0:00.00 rcu_tasks_rude_
   11 root      20   0     0      0      0 S   0.0   0.0  0:00.00 rcu_tasks_trace
  12 root      20   0     0      0      0 S   0.0   0.0  0:00.00 kthreadd
```

```
lt-sakshis@lt-sakshis:~/s$ ps
  PID TTY          TIME CMD
128597 pts/1        00:00:00 bash
142595 pts/1        00:00:00 ps
lt-sakshis@lt-sakshis:~/s$
```

12. Use ssh and scp commands to download and modify files on an external machine.

For ssh

```
lt-sakshits@lt-sakshits:~/Documents$ ssh vishalprajapati@172.28.1.93
vishalprajapati@172.28.1.93's password:
Welcome to Ubuntu 20.04.6 LTS (GNU/Linux 5.15.0-69-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

 * Introducing Expanded Security Maintenance for Applications.
   Receive updates to over 25,000 software packages with your
   Ubuntu Pro subscription. Free for personal use.

   https://ubuntu.com/pro

17 updates can be applied immediately.
8 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable

Your Hardware Enablement Stack (HWE) is supported until April 2025.
vishalprajapati@lt-vishalpi:~$ ls
1.txt          dep.sh  Documents  file2.txt  flie.txt  Music      Program  Public  snap  Templates  Training
assignment_solution Desktop Downloads file3.txt  hello.txt Pictures  Programs scp.txt  softlink  text.txt.save  Videos
vishalprajapati@lt-vishalpi:~$ echo "hi" >> 1.txt
-bash: 1.txt: Permission denied
vishalprajapati@lt-vishalpi:~$ echo 'hi' >> flie.txt
vishalprajapati@lt-vishalpi:~$ cat flie.txt
one
two
three
two

hi
vishalprajapati@lt-vishalpi:~$ exit
logout
Connection to 172.28.1.93 closed.
lt-sakshits@lt-sakshits:~/Documents$
```

For scp

```
lt-sakshits@lt-sakshits:~/Documents$ ls
abc.txt f hello.txt home.txt transferscp.txt
lt-sakshits@lt-sakshits:~/Documents$ scp home.txt
usage: scp [-346BCpqrv] [-c cipher] [-F ssh_config] [-i identity_file]
          [-J destination] [-l limit] [-o ssh_option] [-P port]
          [-S program] source ... target
lt-sakshits@lt-sakshits:~/Documents$ scp home.txt vishalprajapati@172.28.1.93
lt-sakshits@lt-sakshits:~/Documents$ scp home.txt vishalprajapati@172.28.1.93:/home/vishalprajapati/
vishalprajapati@172.28.1.93's password:
home.txt
100% 0 0.0KB/s 00:00
```