q1

```
lt-rishabhr@lt-rishabhr:~$ cd Desktop
lt-rishabhr@lt-rishabhr:~/Desktop$ mkdir testdir
lt-rishabhr@lt-rishabhr:~/Desktop$ ls
testdir
lt-rishabhr@lt-rishabhr:~/Desktop$
```

q2,3,4

```
lt-rishabhr@lt-rishabhr:~/Desktop$ ls
q1.png  testdir
lt-rishabhr@lt-rishabhr:~/Desktop$ cd testdir/
lt-rishabhr@lt-rishabhr:~/Desktop/testdir$ touch visible.txt
lt-rishabhr@lt-rishabhr:~/Desktop/testdir$ touch .hidden.txt
lt-rishabhr@lt-rishabhr:~/Desktop/testdir$ ls
visible.txt
lt-rishabhr@lt-rishabhr:~/Desktop/testdir$ ls -a
.  ..   .hidden.txt  visible.txt
lt-rishabhr@lt-rishabhr:~/Desktop/testdir$
```

q5,6

```
lt-rishabhr@lt-rishabhr:~/Desktop/testdir$ ls -lart
total 8
-rw-rw-r-- 1 lt-rishabhr lt-rishabhr    0 Apr 10 15:40 visible.txt
-rw-rw-r-- 1 lt-rishabhr lt-rishabhr    0 Apr 10 15:41 .hidden.txt
drwxrwxr-x 2 lt-rishabhr lt-rishabhr 4096 Apr 10 15:41 .
drwxr-xr-x 3 lt-rishabhr lt-rishabhr 4096 Apr 10 15:41 ..
lt-rishabhr@lt-rishabhr:~/Desktop/testdir$ sudo chown root:root .hidden.txt
[sudo] password for lt-rishabhr:
lt-rishabhr@lt-rishabhr:~/Desktop/testdir$ ls -lart
total 8
-rw-rw-r-- 1 lt-rishabhr lt-rishabhr    0 Apr 10 15:40 visible.txt
-rw-rw-r-- 1 root        root          0 Apr 10 15:41 .hidden.txt
drwxrwxr-x 2 lt-rishabhr lt-rishabhr 4096 Apr 10 15:41 .
drwxr-xr-x 3 lt-rishabhr lt-rishabhr 4096 Apr 10 15:41 ..
lt-rishabhr@lt-rishabhr:~/Desktop/testdir$ mv .hidden.txt ~/Desktop/
lt-rishabhr@lt-rishabhr:~/Desktop/testdir$ ls -lart
total 8
-rw-rw-r-- 1 lt-rishabhr lt-rishabhr    0 Apr 10 15:40 visible.txt
drwxr-xr-x 3 lt-rishabhr lt-rishabhr 4096 Apr 10 15:43 ..
drwxrwxr-x 2 lt-rishabhr lt-rishabhr 4096 Apr 10 15:43 .
lt-rishabhr@lt-rishabhr:~/Desktop/testdir$ cd ..
lt-rishabhr@lt-rishabhr:~/Desktop$ ls -lart
total 72
drwxr-xr-x 23 lt-rishabhr lt-rishabhr  4096 Apr 10 15:22 ..
-rw-rw-r--  1 lt-rishabhr lt-rishabhr 12926 Apr 10 15:39 q1.png
-rw-rw-r--  1 root        root            0 Apr 10 15:41 .hidden.txt
-rw-rw-r--  1 lt-rishabhr lt-rishabhr 41115 Apr 10 15:41 q234.png
drwxrwxr-x  2 lt-rishabhr lt-rishabhr  4096 Apr 10 15:43 testdir
drwxr-xr-x  3 lt-rishabhr lt-rishabhr  4096 Apr 10 15:43 .
lt-rishabhr@lt-rishabhr:~/Desktop$
```

q7

```
lt-rishabhr@lt-rishabhr:~/Desktop$ touch a.txt b.txt c.txt
lt-rishabhr@lt-rishabhr:~/Desktop$ ls
a.txt  b.txt  c.txt  q1.png  q234.png  q56.png  testdir
lt-rishabhr@lt-rishabhr:~/Desktop$ mkdir newfiles
lt-rishabhr@lt-rishabhr:~/Desktop$ mv a.txt b.txt c.txt newfiles/
lt-rishabhr@lt-rishabhr:~/Desktop$ ls
newfiles  q1.png  q234.png  q56.png  testdir
lt-rishabhr@lt-rishabhr:~/Desktop$ cd newfiles/
lt-rishabhr@lt-rishabhr:~/Desktop/newfiles$ ls
a.txt  b.txt  c.txt
lt-rishabhr@lt-rishabhr:~/Desktop/newfiles$
```

q8,9

```
lt-rishabhr@lt-rishabhr:~/Desktop$ sudo groupadd newgroup
lt-rishabhr@lt-rishabhr:~/Desktop$ cat /etc/group/ | grep "newgroup"
cat: /etc/group/: Not a directory
lt-rishabhr@lt-rishabhr:~/Desktop$ cat /etc/group | grep "newgroup"
newgroup:x:1002:
lt-rishabhr@lt-rishabhr:~/Desktop$ sudo useradd -g newgroup -d /home/newuser1 newuser
1
lt-rishabhr@lt-rishabhr:~/Desktop$ cat /etc/passwd | grep "newuser1"
newuser1:x:1002:1002::/home/newuser1:/bin/sh
lt-rishabhr@lt-rishabhr:~/Desktop$
```

q10

```
lt-rishabhr@lt-rishabhr:~$ cd Desktop/
lt-rishabhr@lt-rishabhr:~/Desktop$ ls
newfiles   q1.png   q234.png   q56.png   q7.png   q89.png   testdir
lt-rishabhr@lt-rishabhr:~/Desktop$ ln -s testdir/visible.txt visiblelink
lt-rishabhr@lt-rishabhr:~/Desktop$ ls -lart
total 304
drwxr-xr-x 23 lt-rishabhr lt-rishabhr   4096 Apr 10 15:22 ..
-rw-rw-r--  1 lt-rishabhr lt-rishabhr  12926 Apr 10 15:39 q1.png
-rw-rw-r--  1 root        root             0 Apr 10 15:41 .hidden.txt
-rw-rw-r--  1 lt-rishabhr lt-rishabhr  41115 Apr 10 15:41 q234.png
drwxrwxr-x  2 lt-rishabhr lt-rishabhr   4096 Apr 10 15:43 testdir
-rw-rw-r--  1 lt-rishabhr lt-rishabhr 127518 Apr 10 15:46 q56.png
drwxrwxr-x  2 lt-rishabhr lt-rishabhr   4096 Apr 10 15:47 newfiles
-rw-rw-r--  1 lt-rishabhr lt-rishabhr  49758 Apr 10 15:48 q7.png
-rw-rw-r--  1 lt-rishabhr lt-rishabhr  46092 Apr 10 15:51 q89.png
lrwxrwxrwx  1 lt-rishabhr lt-rishabhr     19 Apr 10 15:52 visiblelink -> testdir/visible.txt
drwxr-xr-x  4 lt-rishabhr lt-rishabhr   4096 Apr 10 15:52 .
```

q11a

```
lt-rishabhr@lt-rishabhr:~/Desktop$ top

top - 15:53:53 up 1 day, 11 min,  1 user,  load average: 0.39, 0.33, 0.34
Tasks: 317 total,   1 running, 310 sleeping,   0 stopped,   6 zombie
%Cpu(s):  0.7 us,  0.2 sy,  0.0 ni, 98.8 id,  0.0 wa,  0.0 hi,  0.2 si,  0.0 st
MiB Mem :  31841.5 total,  13846.6 free,   2634.1 used,  15360.9 buff/cache
MiB Swap:   2048.0 total,   2048.0 free,      0.0 used.  28255.3 avail Mem

    PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM     TIME+ COMMAND
  31615 lt-rish+  20   0 1139.0g 442372 121524 S   3.3   1.4   1:00.76 chrome
    731 root     -51   0       0      0      0 S   2.7   0.0   4:36.19 irq/159-rtw8+
   1140 avahi     20   0    9872   5268   3424 S   0.7   0.0   1:15.94 avahi-daemon
   2817 root      20   0 4785752 182380  42388 S   0.7   0.6  30:22.00 ds_am
   5668 lt-rish+  20   0   32.9g 448672 329996 S   0.7   1.4   7:30.29 chrome
   1184 root      20   0 3520508  11900  10404 S   0.3   0.0   0:04.10 confighandler
   2134 root      20   0 1051656 235548  28812 S   0.3   0.7   2:39.99 ds_agent
   3570 lt-rish+  20   0  356828  22948  20468 S   0.3   0.1   0:03.06 fortitray
   5778 lt-rish+  20   0   32.6g 181612 108860 S   0.3   0.6   4:20.77 chrome
  33671 lt-rish+  20   0 1130.9g 129680  97324 S   0.3   0.4   0:00.46 brave
```

q11b

```
lt-rishabhr@lt-rishabhr:~/Desktop$ ps aux | grep brave
lt-rish+   33481  0.2  0.0   7332  3536 ?        S    15:53   0:00 /bin/bash /snap/brave/222/opt/brave.c
lt-rish+   33576  6.7  0.8 34124596 271052 ?     Sl   15:53   0:03 /snap/brave/222/opt/brave.com/brave/
lt-rish+   33579  0.0  0.0 33575948 3400 ?       Sl   15:53   0:00 /snap/brave/222/opt/brave.com/brave/c
r-self-annotation=ptype=crashpad-handler --database=/home/lt-rishabhr/snap/brave/222/.config/BraveSoftwa
r.brave.com --annotation=lsb-release=Ubuntu Core 22 --annotation=plat=Linux --annotation=prod=Chrome_Lin
ent-fd=5 --shared-client-connection
lt-rish+   33581  0.0  0.0 33567736 3172 ?       Sl   15:53   0:00 /snap/brave/222/opt/brave.com/brave/c
onitor-self-annotation=ptype=crashpad-handler --database=/home/lt-rishabhr/snap/brave/222/.config/BraveS
s://cr.brave.com --annotation=lsb-release=Ubuntu Core 22 --annotation=plat=Linux --annotation=prod=Chrom
l-client-fd=4 --shared-client-connection
lt-rish+   33587  0.0  0.2 33865352 67572 ?      S    15:53   0:00 /snap/brave/222/opt/brave.com/brave/
pad-handler-pid=33579 --enable-crash-reporter=, --change-stack-guard-on-fork=enable
lt-rish+   33588  0.0  0.2 33865344 67872 ?      S    15:53   0:00 /snap/brave/222/opt/brave.com/brave/
```

q11c

```
lt-rishabhr@lt-rishabhr:~/Desktop$ killall -9 brave
lt-rishabhr@lt-rishabhr:~/Desktop$ ps aux | grep brave
lt-rish+   33808  0.0  0.0   8908   648 pts/0    S+   15:54   0:00 grep --color=auto brave
lt-rishabhr@lt-rishabhr:~/Desktop$
```

q12

```
lt-rishabhr@lt-rishabhr:~/Desktop$ ssh lt-shivamg1@172.28.1.107
lt-shivamg1@172.28.1.107'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

Expanded Security Maintenance for Applications is not enabled.

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

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

Your Hardware Enablement Stack (HWE) is supported until April 2025.
Last login: Mon Apr 10 14:38:51 2023 from 172.28.1.81
lt-shivamg1@lt-shivamg1:~$ exit
logout
Connection to 172.28.1.107 closed.
lt-rishabhr@lt-rishabhr:~/Desktop$ scp newfiles/
newfiles/a.txt   newfiles/b.txt   newfiles/c.txt
lt-rishabhr@lt-rishabhr:~/Desktop$ scp newfiles/a.txt lt-shivamg1@172.28.1.107:/home/
lt-shivamg1/Desktop/
lt-shivamg1@172.28.1.107's password:
a.txt                                          100%    0     0.0KB/s   00:00
lt-rishabhr@lt-rishabhr:~/Desktop$ sudo systemctl stop ssh
```