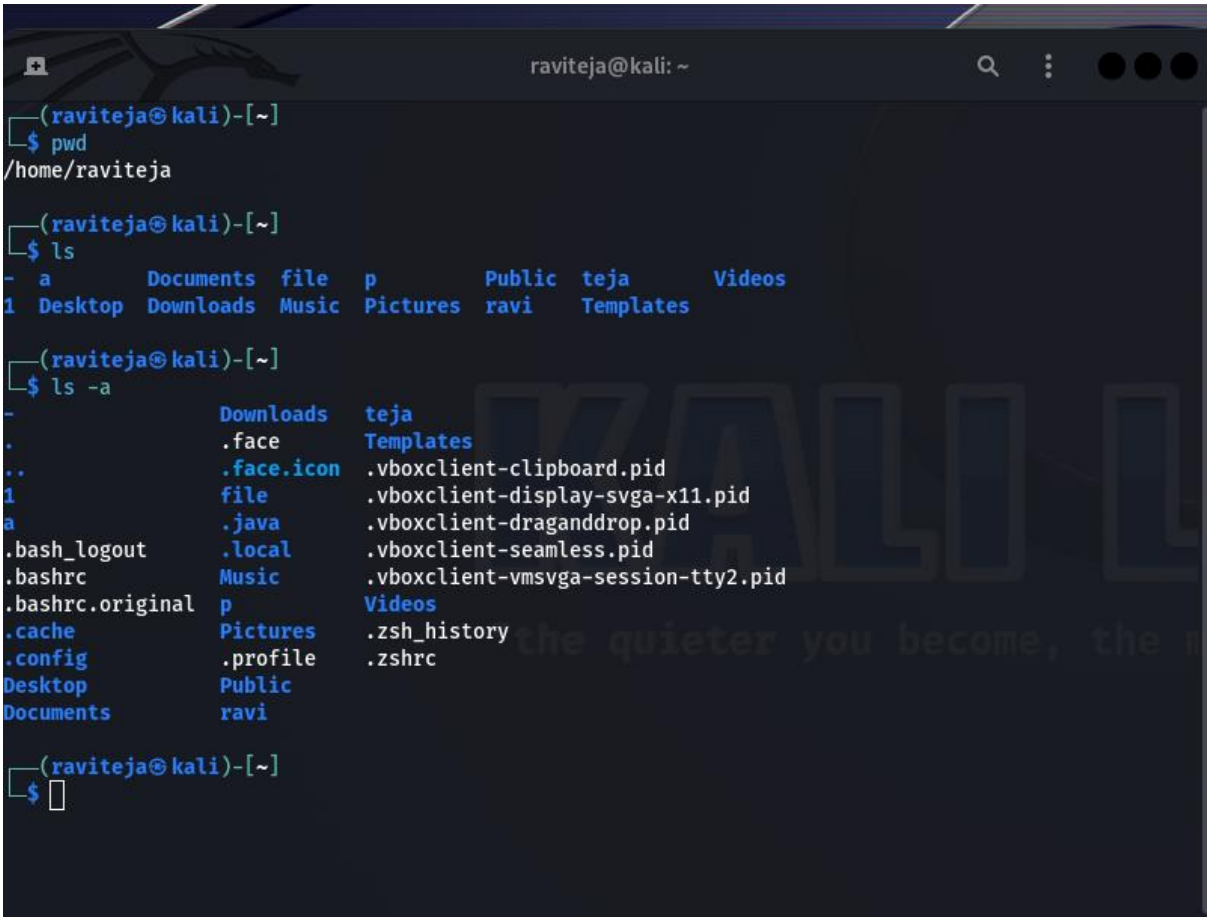
1.

(a.) Display the path of your current directory

(b.) List out the contents of your current directory

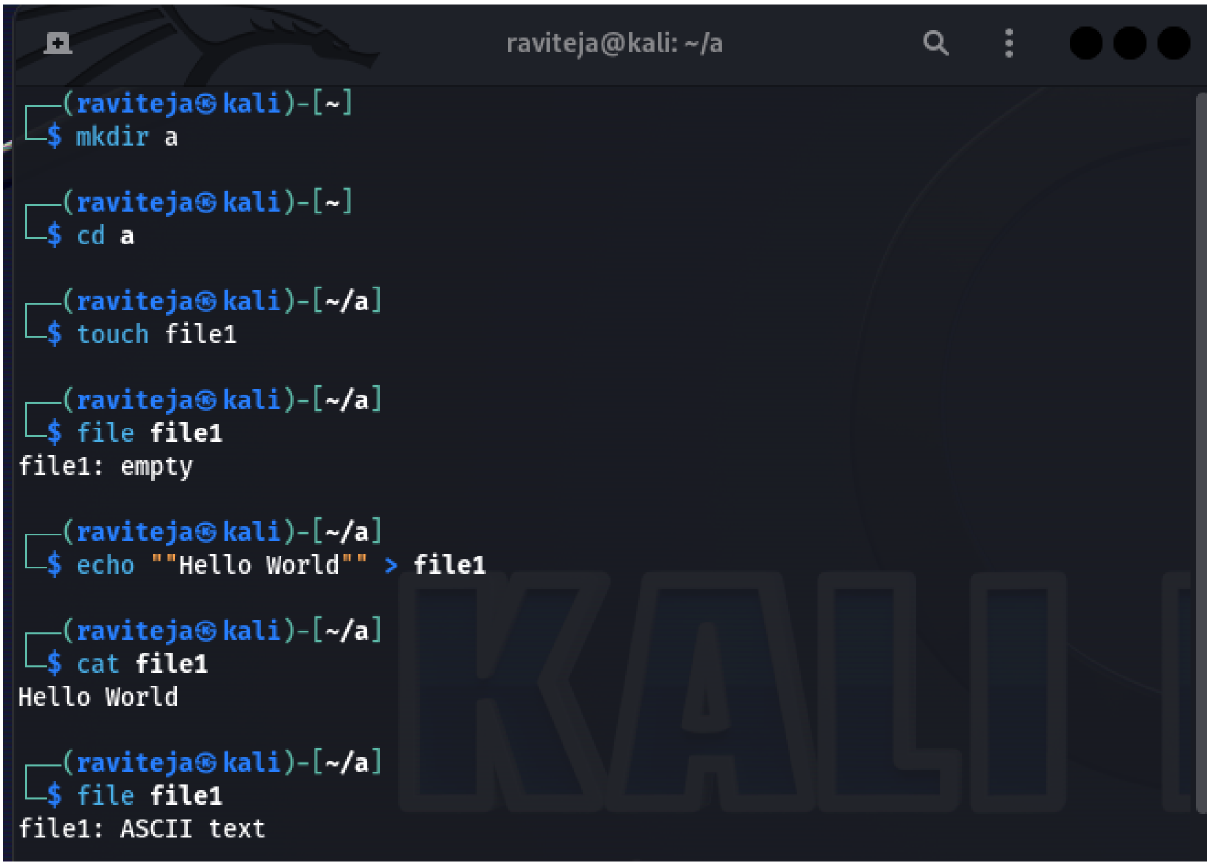
(c.) List out the contents of your current directory including hidden files



```
┌──(raviteja㉿kali)-[~]
└─$ pwd
/home/raviteja

┌──(raviteja㉿kali)-[~]
└─$ ls
-  a        Documents  file   p         Public  teja       Videos
1  Desktop  Downloads  Music  Pictures  ravi    Templates

┌──(raviteja㉿kali)-[~]
└─$ ls -a
-                 Downloads   teja
.                 .face       Templates
..                .face.icon  .vboxclient-clipboard.pid
1                 file        .vboxclient-display-svga-x11.pid
a                 .java       .vboxclient-draganddrop.pid
.bash_logout      .local      .vboxclient-seamless.pid
.bashrc           Music       .vboxclient-vmsvga-session-tty2.pid
.bashrc.original  p           Videos
.cache            Pictures    .zsh_history
.config           .profile    .zshrc
Desktop           Public
Documents         ravi

┌──(raviteja㉿kali)-[~]
└─$ 
```

2.

(a.) Create a new directory named a
(b.) Move to the newly created directory a
(c.) Create a blank file named “file1”
(d.) Display the file type of “file1”
(e.) Add the line “Hello World” to “file1” using the command
(f.) Display the contents of “file1”
(g.) Display the file type of “file1” again



```
┌──(raviteja㉿kali)-[~]
└─$ mkdir a

┌──(raviteja㉿kali)-[~]
└─$ cd a

┌──(raviteja㉿kali)-[~/a]
└─$ touch file1

┌──(raviteja㉿kali)-[~/a]
└─$ file file1
file1: empty

┌──(raviteja㉿kali)-[~/a]
└─$ echo ""Hello World"" > file1

┌──(raviteja㉿kali)-[~/a]
└─$ cat file1
Hello World

┌──(raviteja㉿kali)-[~/a]
└─$ file file1
file1: ASCII text
```

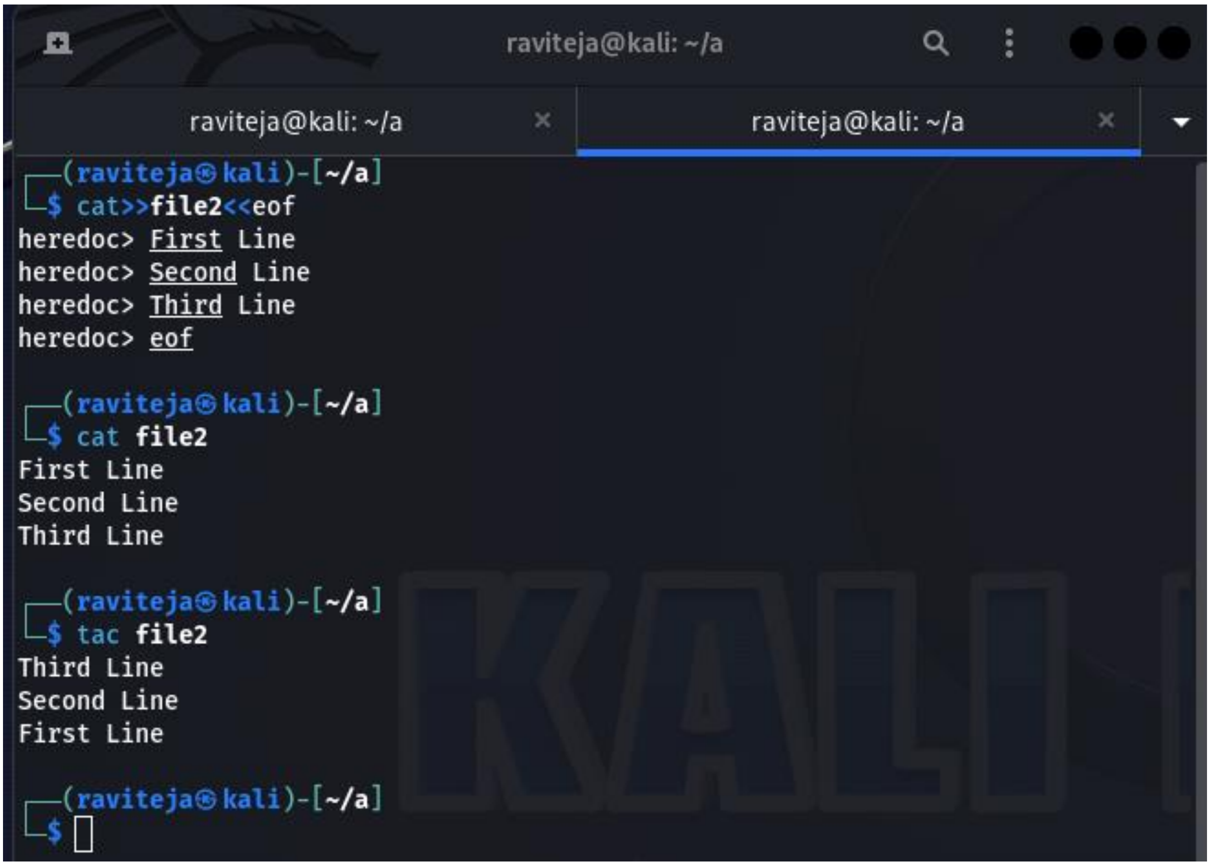
3.

(a.) Stay in directory a. Create a file “file2” and add the contents below using the command cat

First Line Second Line Third Line

(b.) Display the contents of “file2”

(c.) Display the contents of “file2” with the lines reversed

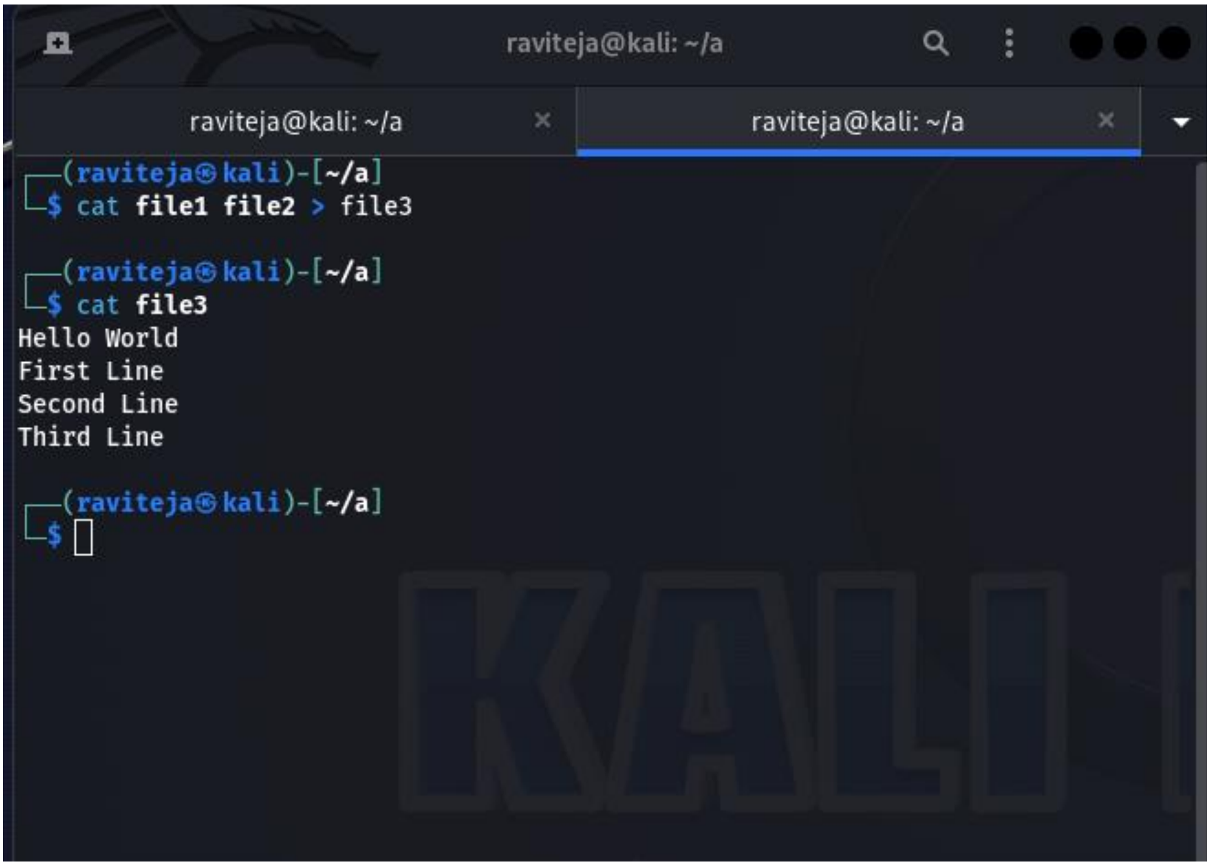


```
┌──(raviteja㉿kali)-[~/a]
└─$ cat>>file2<<eof
heredoc> First Line
heredoc> Second Line
heredoc> Third Line
heredoc> eof

┌──(raviteja㉿kali)-[~/a]
└─$ cat file2
First Line
Second Line
Third Line

┌──(raviteja㉿kali)-[~/a]
└─$ tac file2
Third Line
Second Line
First Line

┌──(raviteja㉿kali)-[~/a]
└─$ 
```

4.

(a.) Stay in directory a. Concatenate the contents of “file1” and “file2” and save them into a new file “file3”

(b.) Display the contents of “file3”



```
┌──(raviteja㉿kali)-[~/a]
└─$ cat file1 file2 > file3

┌──(raviteja㉿kali)-[~/a]
└─$ cat file3
Hello World
First Line
Second Line
Third Line

┌──(raviteja㉿kali)-[~/a]
└─$ 
```

5.

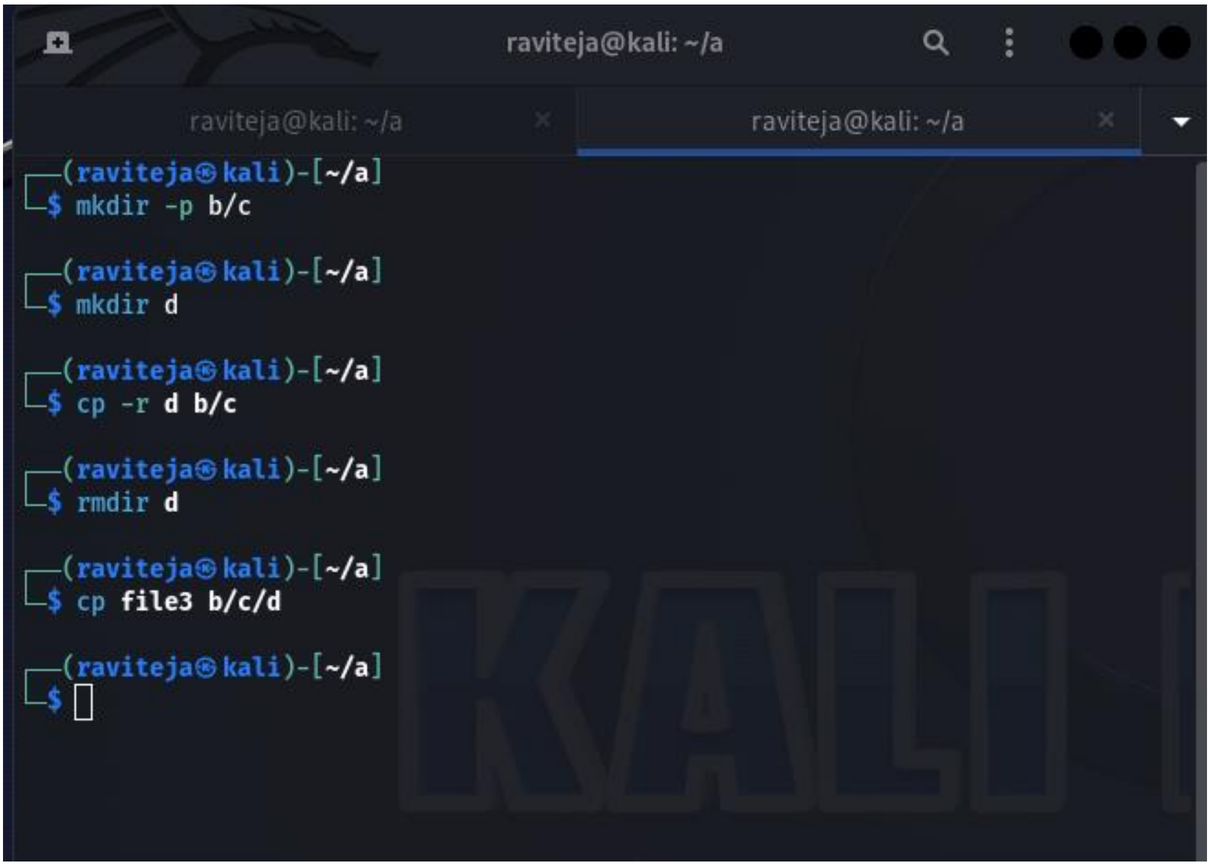
(a.) Stay in directory a. Create 2 directories b/c with a single command

(b.) Create a new directory d

(c.) Copy the directory d to directory c using a single command

(d.) Delete the directory d in the current directory a

(e.) Copy “file3” to the directory d with a single command

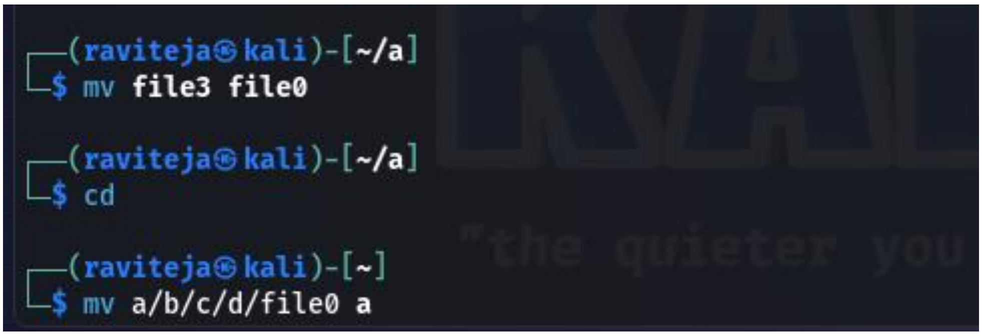


```
┌──(raviteja㉿kali)-[~/a]
└─$ mkdir -p b/c

┌──(raviteja㉿kali)-[~/a]
└─$ mkdir d

┌──(raviteja㉿kali)-[~/a]
└─$ cp -r d b/c

┌──(raviteja㉿kali)-[~/a]
└─$ rmdir d

┌──(raviteja㉿kali)-[~/a]
└─$ cp file3 b/c/d

┌──(raviteja㉿kali)-[~/a]
└─$ 
```

6.

(a.) Go to directory d and rename “file3” to “file0”

(b.) Stay in the same directory and move “file0” to directory a



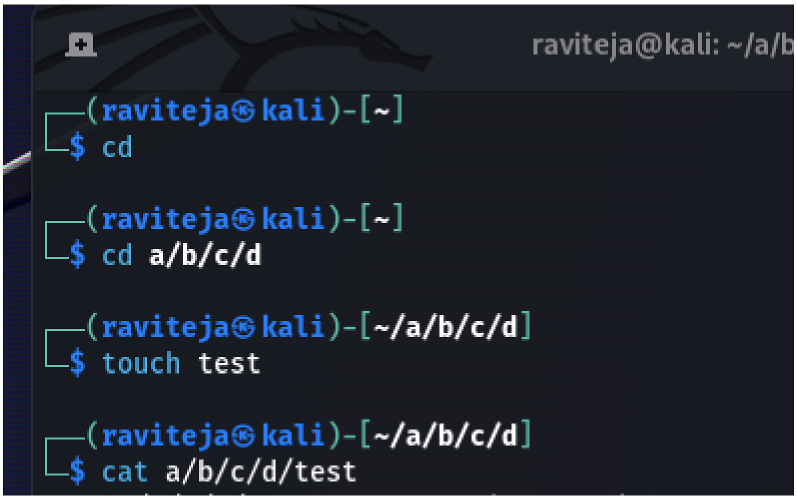
```
┌──(raviteja㉿kali)-[~/a]
└─$ mv file3 file0

┌──(raviteja㉿kali)-[~/a]
└─$ cd

┌──(raviteja㉿kali)-[~]
└─$ mv a/b/c/d/file0 a
```

7.

(a.) Go to your home directory

(b.) Create a file named “test” in the directory a/b/c/d

(c.) Stay in the home directory. Find and display the path of “test”

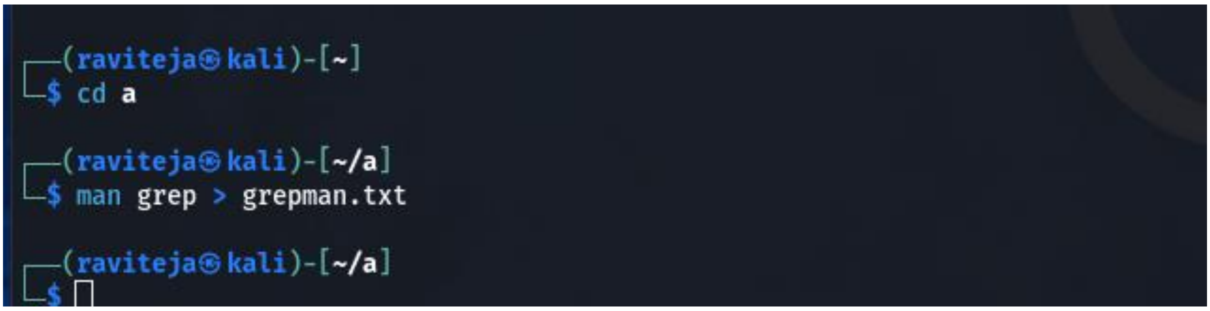


```
┌──(raviteja㉿kali)-[~]
└─$ cd

┌──(raviteja㉿kali)-[~]
└─$ cd a/b/c/d

┌──(raviteja㉿kali)-[~/a/b/c/d]
└─$ touch test

┌──(raviteja㉿kali)-[~/a/b/c/d]
└─$ cat a/b/c/d/test
```

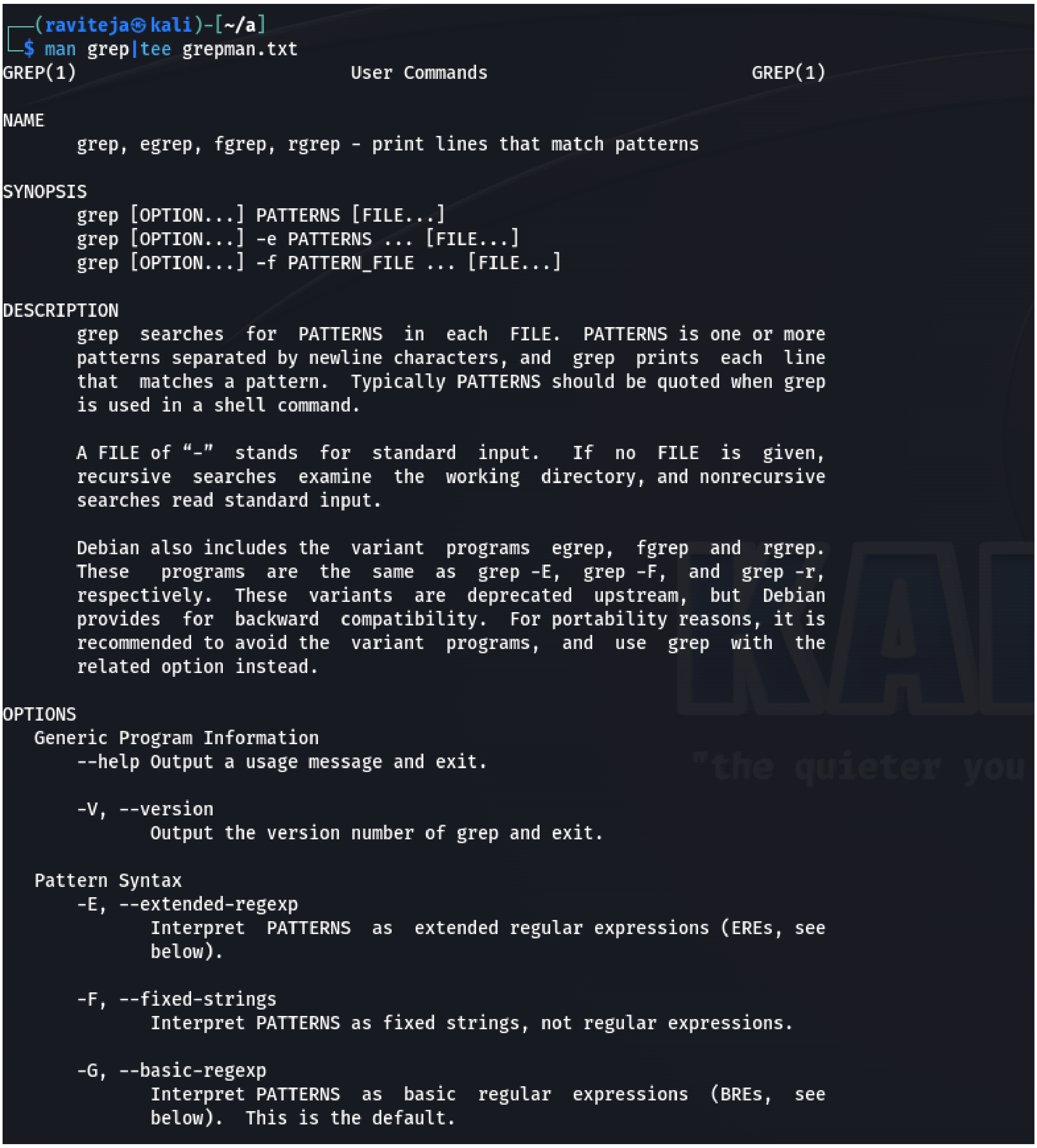
8.

(a.) Go to directory a. Get the man page of grep and save its contents to a file named “grepman.txt”

(b.) Print the lines containing the word “FILE” (Case sensitive) in the file “grepman.txt”



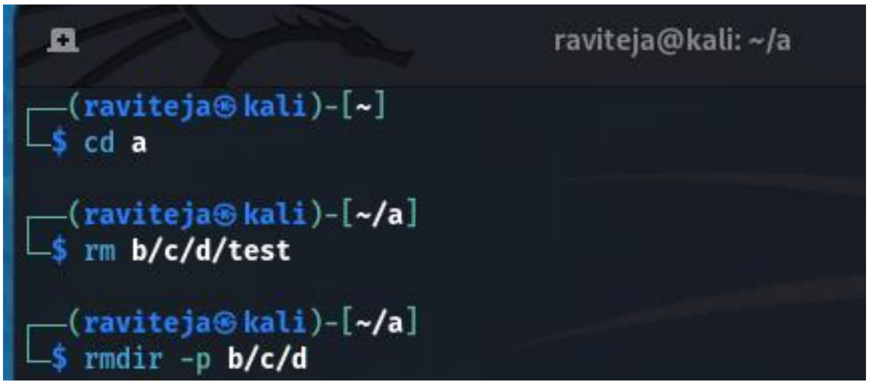
```
┌──(raviteja㉿kali)-[~]
└─$ cd a

┌──(raviteja㉿kali)-[~/a]
└─$ man grep > grepman.txt

┌──(raviteja㉿kali)-[~/a]
└─$ 
```



```
┌──(raviteja㉿kali)-[~/a]
└─$ man grep|tee grepman.txt
GREP(1)                          User Commands                          GREP(1)

NAME
       grep, egrep, fgrep, rgrep - print lines that match patterns

SYNOPSIS
       grep [OPTION...] PATTERNS [FILE...]
       grep [OPTION...] -e PATTERNS ... [FILE...]
       grep [OPTION...] -f PATTERN_FILE ... [FILE...]

DESCRIPTION
       grep  searches  for  PATTERNS  in  each  FILE.  PATTERNS is one or more
       patterns separated by newline characters, and  grep  prints  each  line
       that  matches a pattern.  Typically PATTERNS should be quoted when grep
       is used in a shell command.

       A FILE of “-”  stands  for  standard  input.   If  no  FILE  is  given,
       recursive  searches  examine  the  working  directory, and nonrecursive
       searches read standard input.

       Debian also includes the  variant  programs  egrep,  fgrep  and  rgrep.
       These  programs  are  the  same  as  grep -E,  grep -F,  and  grep -r,
       respectively.  These  variants  are  deprecated  upstream,  but  Debian
       provides  for  backward  compatibility.  For portability reasons, it is
       recommended to avoid the  variant  programs,  and  use  grep  with  the
       related option instead.

OPTIONS
   Generic Program Information
       --help Output a usage message and exit.

       -V, --version
              Output the version number of grep and exit.

   Pattern Syntax
       -E, --extended-regexp
              Interpret  PATTERNS  as  extended regular expressions (EREs, see
              below).

       -F, --fixed-strings
              Interpret PATTERNS as fixed strings, not regular expressions.

       -G, --basic-regexp
              Interpret PATTERNS  as  basic  regular  expressions  (BREs,  see
              below).  This is the default.
```

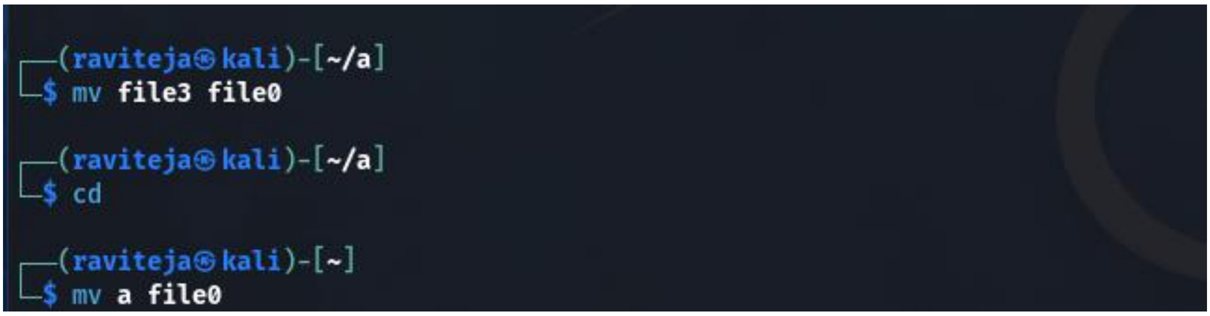
9.

(a.) Go to directory a and remove the directory b with a single command
(b.) Remove the files starting with the word “file” with a single command



```
┌──(raviteja㉿kali)-[~]
└─$ cd a

┌──(raviteja㉿kali)-[~/a]
└─$ rm b/c/d/test

┌──(raviteja㉿kali)-[~/a]
└─$ rmdir -p b/c/d
```

B



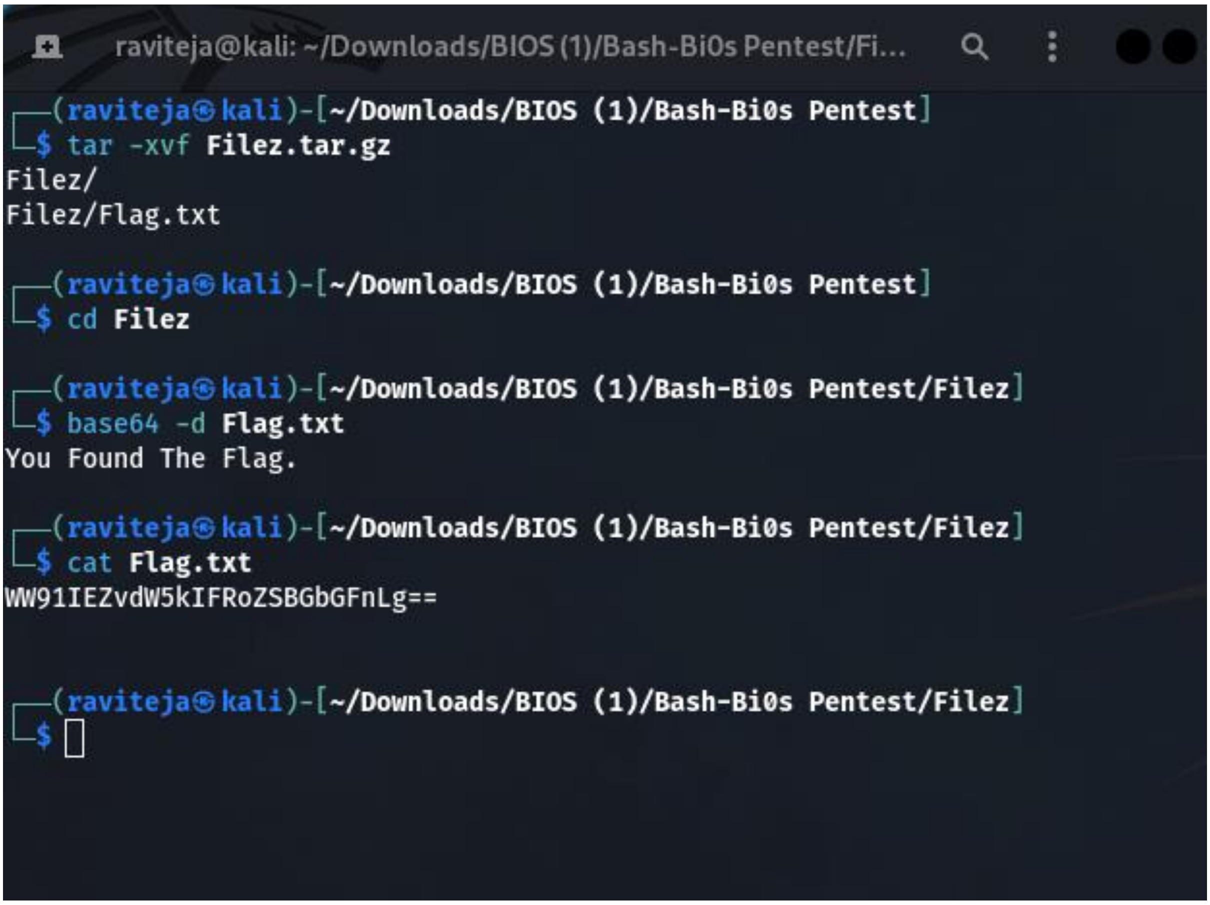
```
┌──(raviteja㉿kali)-[~/a]
└─$ mv file3 file0

┌──(raviteja㉿kali)-[~/a]
└─$ cd

┌──(raviteja㉿kali)-[~]
└─$ mv a file0
```

10.

(a.) Download the compressed file from the drive. https://drive.google.com/drive/folders/1PG3ZlpFu6nQSNjpCNuceoGcNey00bhPP?usp=sharing

(b.) Extract the compressed file using CLI.

(c.) Decode the base64 content and display the content of "Flag.txt"using CLI.

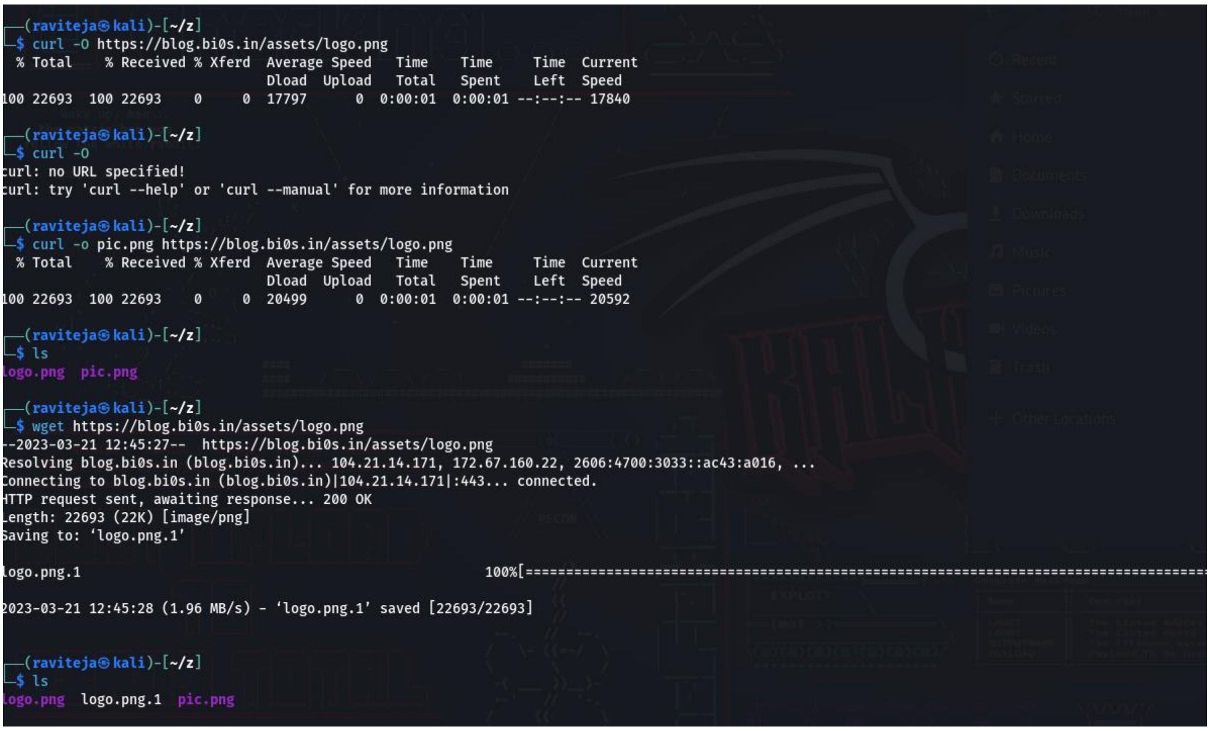


```
┌──(raviteja㉿kali)-[~/Downloads/BIOS (1)/Bash-Bi0s Pentest]
└─$ tar -xvf Filez.tar.gz
Filez/
Filez/Flag.txt

┌──(raviteja㉿kali)-[~/Downloads/BIOS (1)/Bash-Bi0s Pentest]
└─$ cd Filez

┌──(raviteja㉿kali)-[~/Downloads/BIOS (1)/Bash-Bi0s Pentest/Filez]
└─$ base64 -d Flag.txt
You Found The Flag.

┌──(raviteja㉿kali)-[~/Downloads/BIOS (1)/Bash-Bi0s Pentest/Filez]
└─$ cat Flag.txt
WW91IEZvdW5kIFRoZSBGbGFnLg==


┌──(raviteja㉿kali)-[~/Downloads/BIOS (1)/Bash-Bi0s Pentest/Filez]
└─$ 
```

11.

(a.) Go to https://blog.bi0s.in/ and download the logo.png image using wget

(b.) Do the same using curl



```
┌──(raviteja㉿kali)-[~/z]
└─$ curl -O https://blog.bi0s.in/assets/logo.png
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100 22693  100 22693    0     0  17797      0  0:00:01  0:00:01 --:--:-- 17840

┌──(raviteja㉿kali)-[~/z]
└─$ curl -O
curl: no URL specified!
curl: try 'curl --help' or 'curl --manual' for more information

┌──(raviteja㉿kali)-[~/z]
└─$ curl -o pic.png https://blog.bi0s.in/assets/logo.png
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100 22693  100 22693    0     0  20499      0  0:00:01  0:00:01 --:--:-- 20592

┌──(raviteja㉿kali)-[~/z]
└─$ ls
logo.png  pic.png

┌──(raviteja㉿kali)-[~/z]
└─$ wget https://blog.bi0s.in/assets/logo.png
--2023-03-21 12:45:27--  https://blog.bi0s.in/assets/logo.png
Resolving blog.bi0s.in (blog.bi0s.in)... 104.21.14.171, 172.67.160.22, 2606:4700:3033::ac43:a016, ...
Connecting to blog.bi0s.in (blog.bi0s.in)|104.21.14.171|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 22693 (22K) [image/png]
Saving to: ‘logo.png.1’

logo.png.1                                                  100%[=====================================================================================

2023-03-21 12:45:28 (1.96 MB/s) - ‘logo.png.1’ saved [22693/22693]


┌──(raviteja㉿kali)-[~/z]
└─$ ls
logo.png  logo.png.1  pic.png
```

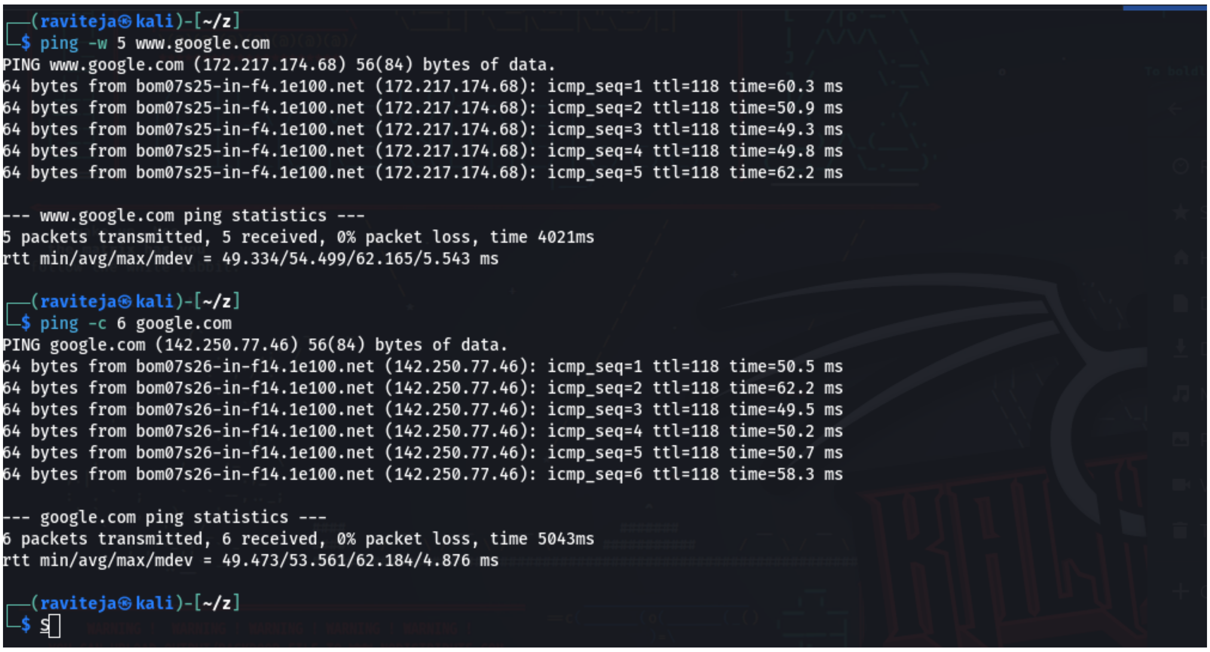
12.

(a.) Ping google.com and find the lowest time taken to get a response (Stop pinging after getting 5 responses)

Ans The lowest time taken to get a response is 49.3 ms third time

(b.) Ping google.com 6 times and find the average time taken to get a response

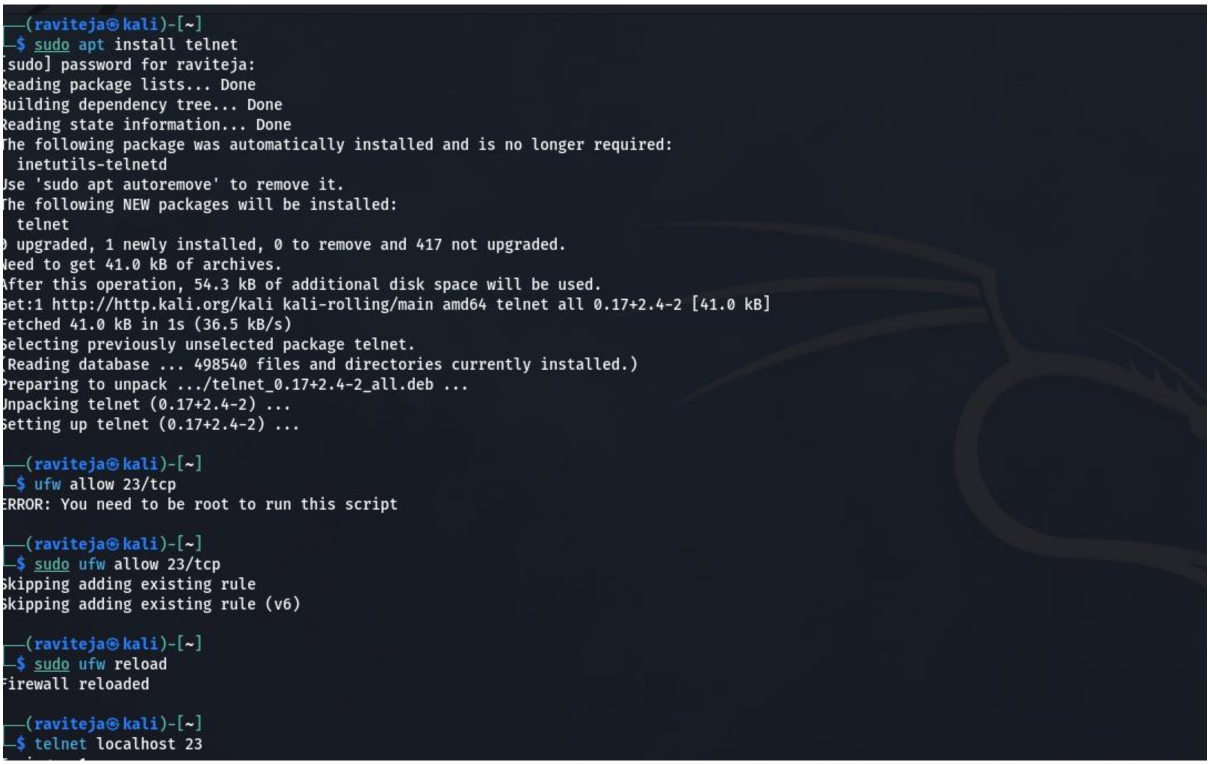
Ans Average timetaken to get a response is 53.561 ms



```
┌──(raviteja㉿kali)-[~/z]
└─$ ping -w 5 www.google.com
PING www.google.com (172.217.174.68) 56(84) bytes of data.
64 bytes from bom07s25-in-f4.1e100.net (172.217.174.68): icmp_seq=1 ttl=118 time=60.3 ms
64 bytes from bom07s25-in-f4.1e100.net (172.217.174.68): icmp_seq=2 ttl=118 time=50.9 ms
64 bytes from bom07s25-in-f4.1e100.net (172.217.174.68): icmp_seq=3 ttl=118 time=49.3 ms
64 bytes from bom07s25-in-f4.1e100.net (172.217.174.68): icmp_seq=4 ttl=118 time=49.8 ms
64 bytes from bom07s25-in-f4.1e100.net (172.217.174.68): icmp_seq=5 ttl=118 time=62.2 ms

--- www.google.com ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4021ms
rtt min/avg/max/mdev = 49.334/54.499/62.165/5.543 ms

┌──(raviteja㉿kali)-[~/z]
└─$ ping -c 6 google.com
PING google.com (142.250.77.46) 56(84) bytes of data.
64 bytes from bom07s26-in-f14.1e100.net (142.250.77.46): icmp_seq=1 ttl=118 time=50.5 ms
64 bytes from bom07s26-in-f14.1e100.net (142.250.77.46): icmp_seq=2 ttl=118 time=62.2 ms
64 bytes from bom07s26-in-f14.1e100.net (142.250.77.46): icmp_seq=3 ttl=118 time=49.5 ms
64 bytes from bom07s26-in-f14.1e100.net (142.250.77.46): icmp_seq=4 ttl=118 time=50.2 ms
64 bytes from bom07s26-in-f14.1e100.net (142.250.77.46): icmp_seq=5 ttl=118 time=50.7 ms
64 bytes from bom07s26-in-f14.1e100.net (142.250.77.46): icmp_seq=6 ttl=118 time=58.3 ms

--- google.com ping statistics ---
6 packets transmitted, 6 received, 0% packet loss, time 5043ms
rtt min/avg/max/mdev = 49.473/53.561/62.184/4.876 ms

┌──(raviteja㉿kali)-[~/z]
└─$ $
```

13.

Connect to your own system using telnet

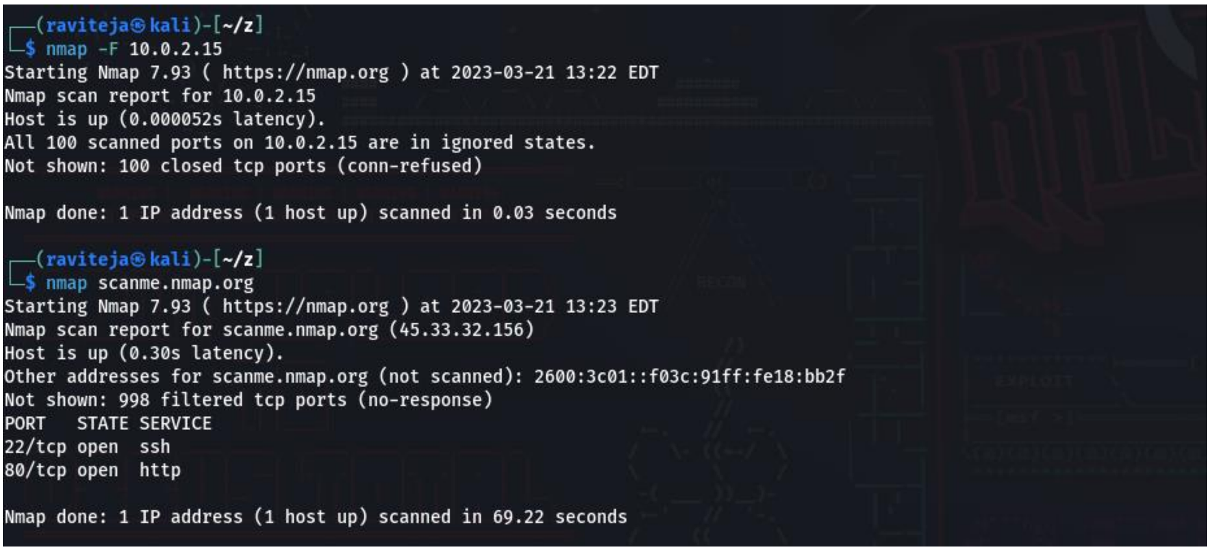


```
┌──(raviteja㉿kali)-[~]
└─$ sudo apt install telnet
[sudo] password for raviteja:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following package was automatically installed and is no longer required:
  inetutils-telnetd
Use 'sudo apt autoremove' to remove it.
The following NEW packages will be installed:
  telnet
0 upgraded, 1 newly installed, 0 to remove and 417 not upgraded.
Need to get 41.0 kB of archives.
After this operation, 54.3 kB of additional disk space will be used.
Get:1 http://http.kali.org/kali kali-rolling/main amd64 telnet all 0.17+2.4-2 [41.0 kB]
Fetched 41.0 kB in 1s (36.5 kB/s)
Selecting previously unselected package telnet.
(Reading database ... 498540 files and directories currently installed.)
Preparing to unpack .../telnet_0.17+2.4-2_all.deb ...
Unpacking telnet (0.17+2.4-2) ...
Setting up telnet (0.17+2.4-2) ...

┌──(raviteja㉿kali)-[~]
└─$ ufw allow 23/tcp
ERROR: You need to be root to run this script

┌──(raviteja㉿kali)-[~]
└─$ sudo ufw allow 23/tcp
Skipping adding existing rule
Skipping adding existing rule (v6)

┌──(raviteja㉿kali)-[~]
└─$ sudo ufw reload
Firewall reloaded

┌──(raviteja㉿kali)-[~]
└─$ telnet localhost 23
```

14.

(a.) Learn about nmap and use that scanner to scan your own machine

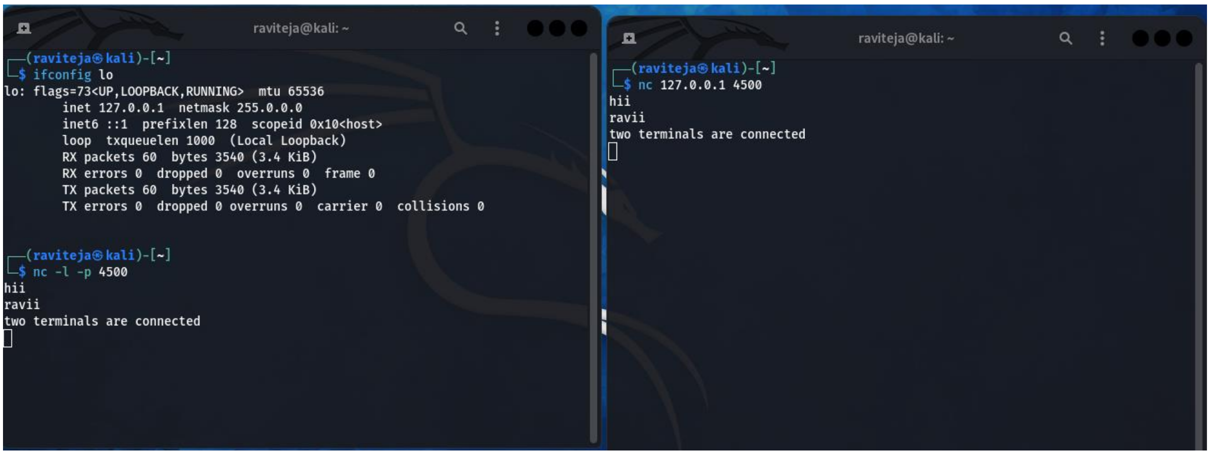
(b.) Use nmap to scan scanme.nmap.org



```
┌──(raviteja㉿kali)-[~/z]
└─$ nmap -F 10.0.2.15
Starting Nmap 7.93 ( https://nmap.org ) at 2023-03-21 13:22 EDT
Nmap scan report for 10.0.2.15
Host is up (0.000052s latency).
All 100 scanned ports on 10.0.2.15 are in ignored states.
Not shown: 100 closed tcp ports (conn-refused)

Nmap done: 1 IP address (1 host up) scanned in 0.03 seconds

┌──(raviteja㉿kali)-[~/z]
└─$ nmap scanme.nmap.org
Starting Nmap 7.93 ( https://nmap.org ) at 2023-03-21 13:23 EDT
Nmap scan report for scanme.nmap.org (45.33.32.156)
Host is up (0.30s latency).
Other addresses for scanme.nmap.org (not scanned): 2600:3c01::f03c:91ff:fe18:bb2f
Not shown: 998 filtered tcp ports (no-response)
PORT   STATE SERVICE
22/tcp open  ssh
80/tcp open  http

Nmap done: 1 IP address (1 host up) scanned in 69.22 seconds
```

15.

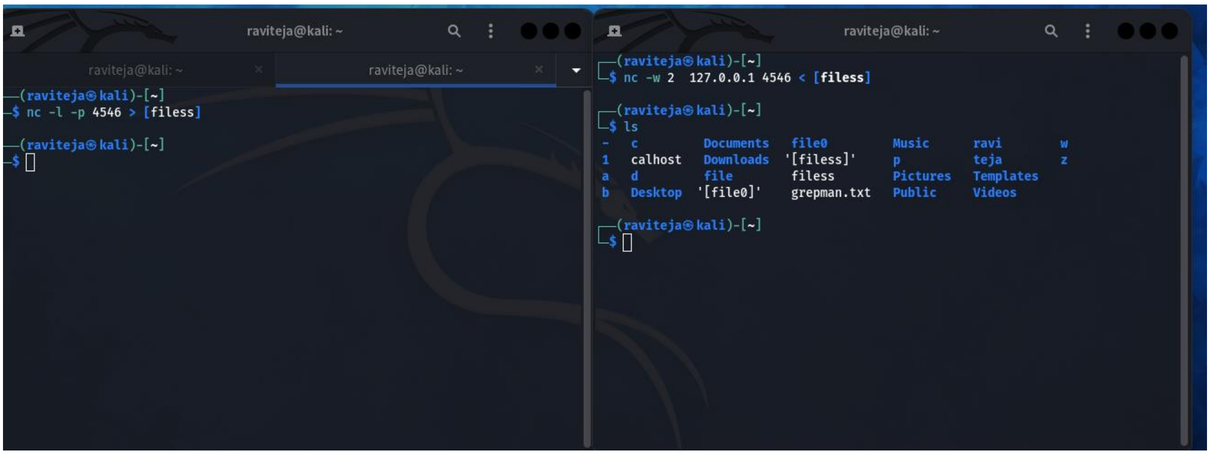
(a.) Create a chat application using nc on your local machine with one terminal as server and other as the client



```
┌──(raviteja㉿kali)-[~]
└─$ ifconfig lo
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 60  bytes 3540 (3.4 KiB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 60  bytes 3540 (3.4 KiB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0


┌──(raviteja㉿kali)-[~]
└─$ nc -l -p 4500
hii
ravii
two terminals are connected
```

```
┌──(raviteja㉿kali)-[~]
└─$ nc 127.0.0.1 4500
hii
ravii
two terminals are connected
```

(b.) Transfer a file from server to client (save that file with another name) and display the file.



```
┌──(raviteja㉿kali)-[~]
└─$ nc -l -p 4546 > [filess]

┌──(raviteja㉿kali)-[~]
└─$ 
```

```
┌──(raviteja㉿kali)-[~]
└─$ nc -w 2  127.0.0.1 4546 < [filess]

┌──(raviteja㉿kali)-[~]
└─$ ls
-   c          Documents   file0          Music      ravi        w
1   calhost    Downloads  '[filess]'      p          teja        z
a   d          file        filess         Pictures   Templates
b   Desktop   '[file0]'    grepman.txt    Public     Videos

┌──(raviteja㉿kali)-[~]
└─$ 
```