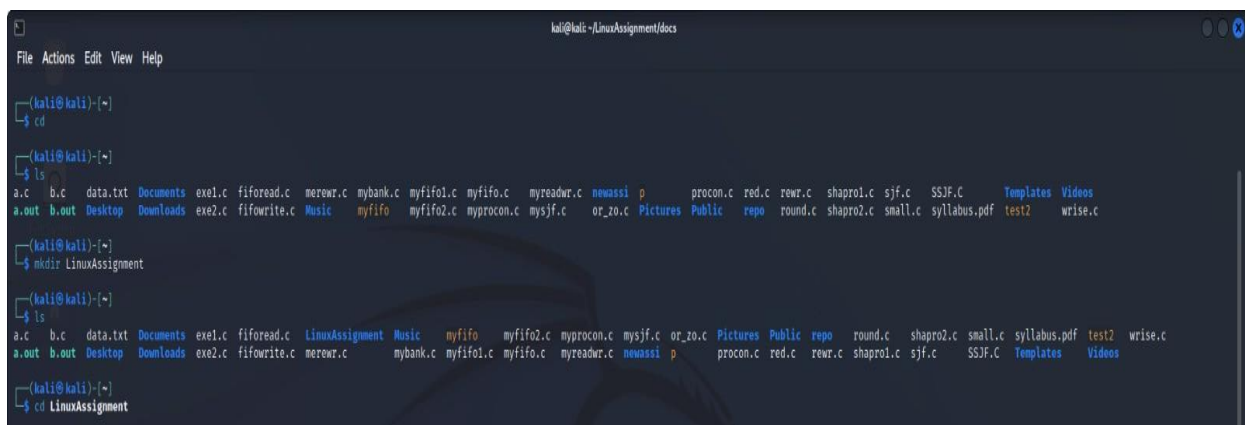


Problem –1:

Ans - a ->

- 1> Use the **cd** command. This will redirect you to the home directory.
- 2> Use **ls** to list all directories present in the home directory.
- 3> Create a new directory named "assignment" using: **mkdir LinuxAssignment**.
- 4> Use the **cd** command to enter the newly created directory.



```
kali@kali: ~/LinuxAssignment/docs
File Actions Edit View Help

(kali@kali)-[~]
$ cd

(kali@kali)-[~]
$ ls
a.c  b.c  data.txt  Documents  exe1.c  fforead.c  merewr.c  mybank.c  myfifol.c  myfif.c  myreadwr.c  newassi  p  procon.c  red.c  rewr.c  shaprol.c  sjf.c  SSJF.C  Templates  Videos
a.out  b.out  Desktop  Downloads  exe2.c  fifowrite.c  Music  myfif  myfifol2.c  myprocon.c  mysjf.c  or_20.c  Pictures  Public  repo  round.c  shapro2.c  small.c  syllabus.pdf  test2  wrise.c

(kali@kali)-[~]
$ mkdir LinuxAssignment

(kali@kali)-[~]
$ ls
a.c  b.c  data.txt  Documents  exe1.c  fforead.c  LinuxAssignment  Music  myfif  myfifol2.c  myprocon.c  mysjf.c  or_20.c  Pictures  Public  repo  round.c  shapro2.c  small.c  syllabus.pdf  test2  wrise.c
a.out  b.out  Desktop  Downloads  exe2.c  fifowrite.c  merewr.c  mybank.c  myfifol.c  myfif.c  myreadwr.c  newassi  p  procon.c  red.c  rewr.c  shaprol.c  sjf.c  SSJF.C  Templates  Videos

(kali@kali)-[~]
$ cd LinuxAssignment
```

Ans - b ->

- 1> Moved to the LinuxAssignment directory using **cd LinuxAssignment**.
- 2> Created a new file in the LinuxAssignment directory using **touch file1.txt**.
- 3> Used the **cat** command to display the content of the file. After creating the file, added content using the echo command: **echo "This is my first file" > file1.txt**.

Ans - c ->

- 1> Created a new directory inside the LinuxAssignment directory using **mkdir docs**.

```
kali@kali: ~/LinuxAssignment/docs
File Actions Edit View Help

kali@kali:~$ cd
kali@kali:~$ ls
a.c  b.c  data.txt  Documents  exe1.c  fiforead.c  merewr.c  mybank.c  myfifo1.c  myfifo.c  myreadwr.c  newassl  p  procon.c  red.c  rewr.c  shapro1.c  sjf.c  SSJF.C  Templates  Videos
a.out  b.out  Desktop  Downloads  exe2.c  fifowrite.c  Music  myfifo  myfifo2.c  myprocon.c  mysjf.c  or_2o.c  Pictures  Public  repo  round.c  shapro2.c  small.c  syllabus.pdf  test2  wrise.c

kali@kali:~$ mkdir LinuxAssignment
kali@kali:~$ cd LinuxAssignment
kali@kali:~/LinuxAssignment$ touch file1.txt
kali@kali:~/LinuxAssignment$ cat file1.txt
kali@kali:~/LinuxAssignment$ echo "This is my first file" > file1.txt
kali@kali:~/LinuxAssignment$ cat file1.txt
This is my first file
kali@kali:~/LinuxAssignment$ mkdir docs
kali@kali:~/LinuxAssignment$ ls
docs  file1.txt
kali@kali:~/LinuxAssignment$ cp file1.txt docs/file2.txt
kali@kali:~/LinuxAssignment$ ls
docs  file1.txt
kali@kali:~/LinuxAssignment$ cd docs
kali@kali:~/LinuxAssignment/docs$
```

Ans - D ->

1>Copied and moved the file to the docs directory from the LinuxAssignment directory using cp file1.txt docs/file2.txt.

cp → Command to copy files.

file1.txt → Source file.

docs/file2.txt → Destination (inside docs with a new name).

```
kali@kali:~/LinuxAssignment$ cp file1.txt docs/file2.txt
kali@kali:~/LinuxAssignment$ ls
docs  file1.txt
kali@kali:~/LinuxAssignment$ cd docs
kali@kali:~/LinuxAssignment/docs$ ls
file2.txt
kali@kali:~/LinuxAssignment/docs$
```

Ans - E ->

1>Used the **chmod** command to set the permissions of file2.txt :**chmod 744 docs/file2.txt**

7 → Owner (rwx: read, write, execute).

4 → Group (r--: read only).

4 → Others (r--: read only).

-read, write, and execute permissions for

-the owner and only read permissions for others.

To verify the permissions, run: **ls -l docs/file2.txt**

```
kali@kali: ~/LinuxAssignment/docs
File Actions Edit View Help

(kali@kali)~/LinuxAssignment
$ cd docs

(kali@kali)~/LinuxAssignment/docs
$ ls
file2.txt

(kali@kali)~/LinuxAssignment/docs
$ chmod 744 docs/file2.txt

chmod: cannot access 'docs/file2.txt': No such file or directory

(kali@kali)~/LinuxAssignment/docs
$ sudo chown $USER docs/file2.txt
[sudo] password for kali:
chown: cannot access 'docs/file2.txt': No such file or directory

(kali@kali)~/LinuxAssignment/docs
$ sudo chown $USER docs/file2.txt
chown: cannot access 'docs/file2.txt': No such file or directory

(kali@kali)~/LinuxAssignment/docs
$

(kali@kali)~/LinuxAssignment/docs
$ ls -l

total 4
-rw-r--r-- 1 kali kali 22 Feb 27 10:11 file2.txt

(kali@kali)~/LinuxAssignment/docs
$ chmod 744 file2.txt

(kali@kali)~/LinuxAssignment/docs
$ ls -l

total 4
-rwxr--r-- 1 kali kali 22 Feb 27 10:11 file2.txt

(kali@kali)~/LinuxAssignment/docs
$ sudo chown $USER file2.txt

(kali@kali)~/LinuxAssignment/docs
$ ls -l file2.txt

-rwxr--r-- 1 kali kali 22 Feb 27 10:11 file2.txt

(kali@kali)~/LinuxAssignment/docs
$
```

Ans - F ->

1>List the contents of the **LinuxAssignment** directory :**cd ..**

2>To list the contest : **ls**

```
kali@kali: ~/LinuxAssignment
File Actions Edit View Help
kali@kali:~/LinuxAssignment/docs
$ cd ..
kali@kali:~/LinuxAssignment
$ ls -l
total 8
drwxr-xr-x 2 kali kali 4096 Feb 27 10:11 docs
-rw-r--r-- 1 kali kali 22 Feb 27 10:07 file1.txt
kali@kali:~/LinuxAssignment
$ ls -l docs
total 4
-rw-r--r-- 1 kali kali 22 Feb 27 10:11 file2.txt
kali@kali:~/LinuxAssignment
$ ls -l /
total 1848648
-rw-r--r-- 1 root root 0 Aug 8 2022 0
lrwxrwxrwx 1 root root 7 Aug 8 2022 bin -> usr/bin
drwxr-xr-x 3 root root 4096 Aug 8 2022 boot
drwxr-xr-x 17 root root 3200 Feb 27 10:25 dev
drwxr-xr-x 167 root root 12288 Feb 27 11:04 etc
drwxr-xr-x 3 root root 4096 Aug 8 2022 home
lrwxrwxrwx 1 root root 36 Aug 8 2022 initrd.img -> boot/initrd.img-5.10.0-kali5-amd64
lrwxrwxrwx 1 root root 36 Aug 8 2022 initrd.img.ubid -> boot/initrd.img-5.10.0-kali5-amd64
lrwxrwxrwx 1 root root 7 Aug 8 2022 lib -> usr/lib
lrwxrwxrwx 1 root root 9 Aug 8 2022 lib64 -> usr/lib64
lrwxrwxrwx 1 root root 9 Aug 8 2022 libx32 -> usr/libx32
drwxr-xr-x 2 root root 16384 Aug 8 2022 lost+found
drwxr-xr-x 2 root root 4096 Aug 8 2022 media
drwxr-xr-x 2 root root 4096 Aug 8 2022 mnt
drwxr-xr-x 3 root root 4096 Aug 8 2022 opt
dr-xr-xr-x 211 root root 0 Feb 27 09:47 proc
drwxr-xr-x 3 root root 4096 Feb 27 09:47 root
drwxr-xr-x 31 root root 780 Feb 27 09:48 run
lrwxrwxrwx 1 root root 8 Aug 8 2022/sbin -> usr/sbin
drwxr-xr-x 3 root root 4096 Aug 8 2022 srs
lrwxrwxrwx 1 root root 1973741824 Aug 8 2022 swapfile
dr-xr-xr-x 13 root root 0 Feb 27 09:47 sys
drwxrwxrwt 12 root root 4096 Feb 27 11:35 tmp
drwxr-xr-x 16 root root 4096 Aug 8 2022 usr
drwxr-xr-x 12 root root 4096 Aug 8 2022 var
lrwxrwxrwx 1 root root 31 Aug 8 2022 vmlinuz -> boot/vmlinuz-5.10.0-kali5-amd64
lrwxrwxrwx 1 root root 31 Aug 8 2022 vmlinuz.ubid -> boot/vmlinuz-5.10.0-kali5-amd64
kali@kali:~/LinuxAssignment
$
```

Ans - G ->

1>Use **find . -type f -name "*.txt"** to Search for all .txt files in the current directory and its subdirectories.

find → Command to search for files.

. → Represents the current directory.

-type f → Searches for files (not directories).

-name "*.txt" → Looks for files ending with .txt.

2>Search for lines containing a specific word in a file:**grep "This" file.txt**

```
kali@kali:~/LinuxAssignment
$ find . -type f -name "*.txt"
./file1.txt
./docs/file2.txt
kali@kali:~/LinuxAssignment
$ grep "This" file2.txt
grep: file2.txt: No such file or directory
kali@kali:~/LinuxAssignment
$ grep "This" docs/file2.txt
This is my first file
kali@kali:~/LinuxAssignment
$
```

Ans - H ->

1>To display the current system date and time: **date**

```
kali@kali:~/LinuxAssignment
$ date
Thu Feb 27 11:42:58 AM EST 2025
kali@kali:~/LinuxAssignment
$
```

Ans - i ->

1>Display the IP address of the system use **ip a**

2>Ping a remote server to check connectivity use :**ping -c 4 google.com**

```
kali@kali:~/LinuxAssignment$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 00:00:27:22:46:a4 brd ff:ff:ff:ff:ff:ff
    inet 10.10.10.2/24 brd 10.10.10.255 scope global dynamic noprefixroute eth0
        valid_lft 85264sec preferred_lft 85264sec
    inet6 fe80::ba51:31fa:a879:98bb/64 scope link noprefixroute
        valid_lft forever preferred_lft forever

kali@kali:~/LinuxAssignment$ ping -c 4 google.com
PING google.com (142.250.75.110) 56(84) bytes of data:
64 bytes from pbomb-ad-in-f14.1e100.net (142.250.75.110): icmp_seq=1 ttl=115 time=19.1 ms
64 bytes from pbomb-ad-in-f14.1e100.net (142.250.75.110): icmp_seq=2 ttl=115 time=18.6 ms
64 bytes from pbomb-ad-in-f14.1e100.net (142.250.75.110): icmp_seq=3 ttl=115 time=18.3 ms
64 bytes from pbomb-ad-in-f14.1e100.net (142.250.75.110): icmp_seq=4 ttl=115 time=17.3 ms

--- google.com ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 300ms
rtt min/avg/max/mdev = 17.266/18.433/19.893/0.693 ms

kali@kali:~/LinuxAssignment$
```

Ans - j ->

1>Compress the **docs** directory into a zip file: **tar -cvzf NameofArchive.tar.gz directory**

2>Extracted the contents of the zip file into a new directory :**mkdir extracted_docs**

unzip docs.zip -d extracted_docs

mkdir extracted_docs → Creates a new directory named extracted_docs.

unzip docs.zip -d extracted_docs → Extracts the docs.zip file into the extracted_docs directory.

```
kali@kali:~/LinuxAssignment$ tar -cvzf docs.tar.gz docs
docs/
docs/file2.txt

kali@kali:~/LinuxAssignment$ mkdir extracted_docs
kali@kali:~/LinuxAssignment$ tar -xvzf docs.tar.gz -C extracted_docs
docs/
docs/file2.txt

kali@kali:~/LinuxAssignment$ ls -l extracted_docs
total 4
drwxr-xr-x 2 kali 4096 Feb 27 10:11 docs

kali@kali:~/LinuxAssignment$
```

Ans - k ->

1>Use **sed** command to replace a specific word in **file1.txt** :**sed -i 's/first/new/g' file1.txt**

```
kali@kali:~/LinuxAssignment$ cat file1.txt
This is my first file

kali@kali:~/LinuxAssignment$ sed -i 's/first/new/g' file1.txt

kali@kali:~/LinuxAssignment$ cat file1.txt
This is my new file

kali@kali:~/LinuxAssignment$
```

Problem2:

Ans - A->

1> use echo and >> (append operator) or seq and tee to quickly add 15 lines:
for i in {1..15}; do echo "This is line \$i" >> data.txt; done

2> Display the first 10 lines of data.txt → Use the head command: head -n 10 data.txt

```
(kali@kali):~/LinuxAssignment
$ for i in {1..15}; do echo "This is line $i" >> data.txt; done

(kali@kali):~/LinuxAssignment
$ cat data.txt
This is line 1
This is line 2
This is line 3
This is line 4
This is line 5
This is line 6
This is line 7
This is line 8
This is line 9
This is line 10
This is line 11
This is line 12
This is line 13
This is line 14
This is line 15

(kali@kali):~/LinuxAssignment
$ head -n 10 data.txt
This is line 1
This is line 2
This is line 3
This is line 4
This is line 5
This is line 6
This is line 7
This is line 8
This is line 9
This is line 10
```

Ans - B->

1> use “tail -n 5 data.txt “ command to display the last 5 lines of data.txt

```
(kali@kali):~/LinuxAssignment
$ tail -n 5 data.txt
This is line 11
This is line 12
This is line 13
This is line 14
This is line 15
```

Ans - C->

1> Create the file and add numbers: seq 1 30 > numbers.txt

2> Display the first 15 lines of the file: head -15 numbers.txt

```
(kali@kali):~/LinuxAssignment
$ seq 1 30 > numbers.txt

(kali@kali):~/LinuxAssignment
$ head -15 numbers.txt
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
```

Ans - D->

1> To display the last 3 lines of numbers.txt, use: tail -3 numbers.txt

```
(kali@kali):~/LinuxAssignment
$ tail -3 numbers.txt
28
29
30
```

Ans - E->

1> Create a file named input.txt and add content

2> Convert lowercase to uppercase and save in output.txt

```
(kali@kali):~/LinuxAssignment
$ echo -e 'Hello, this is a test file.\nThis file contains lowercase letters.\nLet us convert them to uppercase!' > input.txt

(kali@kali):~/LinuxAssignment
$ tr 'a-z' 'A-Z' < input.txt > output.txt

(kali@kali):~/LinuxAssignment
$ cat output.txt
HELLO, THIS IS A TEST FILE.
THIS FILE CONTAINS LOWERCASE LETTERS.
LET US CONVERT THEM TO UPPERCASE!
```

Ans – F ->

- 1> Create duplicate.txt with some duplicate lines
- 2> Display only unique lines

```
(kali@kali)~/.LinuxAssignment
$ echo -e 'Hello, World!\nThis is a test.\nHello, World!\nLinux is great.\nThis is a test.\nUnique line here.' > duplicate.txt

(kali@kali)~/.LinuxAssignment
$ sort duplicate.txt | uniq

Hello, World!
Linux is great.
This is a test.
Unique line here.
```

Ans – G->

- 1> Create fruit.txt with repeated fruit names
- 2> Display each unique fruit along with its count

```
(kali@kali)~/.LinuxAssignment
$ echo -e 'apple\nbanana\napple\norange\nbanana\ngrape\napple\norange\ngrape\ngrape' > fruit.txt

(kali@kali)~/.LinuxAssignment
$ sort fruit.txt | uniq -c

 3 apple
 2 banana
 3 grape
 2 orange

(kali@kali)~/.LinuxAssignment
```