Problem 1

1.

```
cdac@FLASH:~$ ls -l
total 0
cdac@FLASH:~$ mkdir LinuxAssignment
cdac@FLASH:~$ cd LinuxAssignment
cdac@FLASH:~/LinuxAssignment$ |
```

    a. First checked if there are any existing directories in the root directory.
    b. With the shell command **mkdir** created a **LinuxAssignment** directory in root directory.

2.

```
cdac@FLASH:~/LinuxAssignment$ touch file1.txt
cdac@FLASH:~/LinuxAssignment$ nano file1.txt
cdac@FLASH:~/LinuxAssignment$ cat file1.txt
Hello.
My name is Peeyush Kothekar.
I am a student of PG-DAC at CDAC Mumbai.
My goal is to bag a good package at a nice company at the end of the course.
cdac@FLASH:~/LinuxAssignment$ |
```

    a. Using **touch** command created a file **file1.txt** and with **nano** command opened the editor to fill in text inside this file.
    b. Using **cat** command displayed the content inside the file **file1.txt**.

3.

```
cdac@FLASH:~/LinuxAssignment$ mkdir docs
cdac@FLASH:~/LinuxAssignment$ |
```

    a. Entered inside **LinuxAssignment** directory with **cd** command.
    b. With **mkdir** made a directory **docs**.

4.

```
cdac@FLASH:~/LinuxAssignment$ cat file1.txt > docs/file2.txt
cdac@FLASH:~/LinuxAssignment$ cd docs
cdac@FLASH:~/LinuxAssignment/docs$ cat file2.txt
Hello.
My name is Peeyush Kothekar.
I am a student of PG-DAC at CDAC Mumbai.
My goal is to bag a good package at a nice company at the end of the course.
cdac@FLASH:~/LinuxAssignment/docs$ |
```

    a. Using **cat** command on **file1.txt** and redirecting its content **">"** using redirection command in new file **file2.txt** in **docs** directory.
    b. Entering in **docs** directory using **cd** command.
    c. Displaying its content of **files2.txt** using **cat** command.

5.

```
cdac@FLASH:~/LinuxAssignment/docs$ chmod 744 file2.txt
```

    a. Using **chmod 744** command changed the permission of **file2.txt** such that user has complete read, write and execution access, group and others have read access only.

    b. I was not able to perform the second task.

6.

```
cdac@FLASH:~/LinuxAssignment$ ls -l
total 8
drwxr-xr-x 2 cdac cdac 4096 Feb 27 18:53 docs
-rw-r--r-- 1 cdac cdac  154 Feb 27 18:38 file1.txt
cdac@FLASH:~/LinuxAssignment$
```

    a. **ls –l** command lists out the all the content inside the **LinuxAssignment** in detail.

    b. It has listed out all the information such as is it a directory or a file, is it readable, writeable and executable, creation date and time.

    c. I was not able to perform second task.

7.

```
cdac@FLASH:~/LinuxAssignment$ find . -type f -name "*.txt"
./docs/file2.txt
./file1.txt
cdac@FLASH:~/LinuxAssignment$ grep -i "Peeyush" file1.txt
My name is Peeyush Kothekar.
cdac@FLASH:~/LinuxAssignment$
```

    a. **find** command is used to search files or directories. **"."** represent current directory.

    b. **–type f** specifies that it is searching files and not directories.

    c. **–name "*.txt"** searches the files with .txt in its name.

    d. **grep** command is used to search for a specific text in file.

    e. **–i** was used to enable case sensitive search.

8.

```
cdac@FLASH:~/LinuxAssignment$ date
Thu Feb 27 19:23:52 IST 2025
cdac@FLASH:~/LinuxAssignment$
```

date command is used to provide system's current date and time.

9.

```
cdac@FLASH:~/LinuxAssignment$ hostname -I
172.26.217.101
cdac@FLASH:~/LinuxAssignment$ ping -c 4 www.google.com
PING www.google.com (142.250.199.164) 56(84) bytes of data.
64 bytes from bom07s37-in-f4.1e100.net (142.250.199.164): icmp_seq=1 ttl=117 time=6.56 ms
64 bytes from bom07s37-in-f4.1e100.net (142.250.199.164): icmp_seq=2 ttl=117 time=6.66 ms
64 bytes from bom07s37-in-f4.1e100.net (142.250.199.164): icmp_seq=3 ttl=117 time=6.48 ms
64 bytes from bom07s37-in-f4.1e100.net (142.250.199.164): icmp_seq=4 ttl=117 time=6.41 ms

--- www.google.com ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3144ms
rtt min/avg/max/mdev = 6.407/6.526/6.656/0.092 ms
cdac@FLASH:~/LinuxAssignment$
```

a. The command **hostname –I** is used to get the IP Address of the system.
b. The command **ping** is used to check network connectivity of between host and server.
c. **–c 4 www.google.com** was to send 4 packets to Google's server.

10.

```
cdac@FLASH:~/LinuxAssignment$ zip -r docs.zip docs
  adding: docs/ (stored 0%)
  adding: docs/file2.txt (deflated 21%)
cdac@FLASH:~/LinuxAssignment$ lz
Command 'lz' not found, but can be installed with:
sudo apt install mtools
cdac@FLASH:~/LinuxAssignment$ ls
docs  docs.zip  file1.txt
cdac@FLASH:~/LinuxAssignment$ mkdir unzippeddocs
cdac@FLASH:~/LinuxAssignment$ unzip docs.zip -d unzippeddocs
Archive:  docs.zip
   creating: unzippeddocs/docs/
  inflating: unzippeddocs/docs/file2.txt
cdac@FLASH:~/LinuxAssignment$
```

a. **zip** the command used to create archives.
b. **–r** stands for recursive, meaning to include all files and subdirectories inside the directory.
c. **docs.zip** is name of the zip file.
d. **docs** is the directory to be compressed.
e. The **mkdir** was used to create a new directory **unzippeddocs** where the unzipped content of **docs.zip** are to be stored.
f. **Unzip** command is used to unzip the directory.
g. **–d** specifies the target directory where the files are to be extracted.
h. Here I had to install the **zip** package to use the command.

11.

```
cdac@FLASH:~/LinuxAssignment$ ls
docs  docs.zip  file1.txt  unzippeddocs
cdac@FLASH:~/LinuxAssignment$ nano file1.txt
cdac@FLASH:~/LinuxAssignment$ sed 's/CDAC/C-DAC/g' file1.txt
Hello.
My name is Peeyush Kothekar.
I am a student of PG-DAC at C-DAC Mumbai.
My goal is to bag a good package at a nice company at the end of the course.
cdac@FLASH:~/LinuxAssignment$
```

a. **sed 's/initial_name/final_name/g'** command was used to change the content inside the file **file1.txt**.
b. The **CDAC** was replaced with **C-DAC.**

Problem 2

1.

```
cdac@FLASH:~/LinuxAssignment$ ls
docs  docs.zip  file1.txt  unzippeddocs
cdac@FLASH:~/LinuxAssignment$ nano data.txt
cdac@FLASH:~/LinuxAssignment$ head -10 data.txt
India
Australia
Denmark
Ireland
US
Pakistan
Bangladesh
Singapore
Malaysia
China
cdac@FLASH:~/LinuxAssignment$ 
```

    a.   Using **nano** created and wrote list of countries in the file **data.txt**.
    b.   Using **head -10 data.txt** printed names of first 10 countries.

2.

```
cdac@FLASH:~/LinuxAssignment$ tail -5 data.txt
New Zealand
Peru
Holland
Greenland
Iceland
cdac@FLASH:~/LinuxAssignment$ 
```

Using **tail -5 data.txt** printed names of last 5 countries from **data.txt**.

3.

```
cdac@FLASH:~/LinuxAssignment$ nano numbers.txt
cdac@FLASH:~/LinuxAssignment$ head -15 numbers.txt
20
12
3
45
67
65
89
72
11
56
43
90
75
12
41
cdac@FLASH:~/LinuxAssignment$ 
```

Using **head -15 numbers.txt** printed names of first 15 entries of numbers.

4.

```
cdac@FLASH:~$ ls
LinuxAssignment
cdac@FLASH:~$ cd LinuxAssignment
cdac@FLASH:~/LinuxAssignment$ ls
data.txt  docs  docs.zip  duplicate.txt  file1.txt  fruits.txt  input.txt  numbers.txt  output.txt  unzippeddocs
cdac@FLASH:~/LinuxAssignment$ nano numbers.txt
cdac@FLASH:~/LinuxAssignment$ tail -3 numbers.txt
79
72
94
cdac@FLASH:~/LinuxAssignment$
```

Using **tail -3 numbers.txt** printed names of last 3 entries of numbers.

5.

```
cdac@FLASH:~/LinuxAssignment$ nano input.txt
cdac@FLASH:~/LinuxAssignment$ tr '[a-z]' '[A-Z]' < input.txt > output.txt
cdac@FLASH:~/LinuxAssignment$ cat output.txt
HE WAS MOST FIFTY, AND HE LOOKED IT.
HIS HAIR WAS LONG AND TANGLES AND GREASY, AND HUNG, DOWN, AND YOU COULD SEE HIS EYES SHINNING
THROUGH LIKE HE WAS BEHIND VINES.
I WAS ALL BLACK, NO GRAY; SO WA HIS LONG, MIXERD-UP WHISKERS.
cdac@FLASH:~/LinuxAssignment$ cat input.txt
He was most fifty, and he looked it.
His hair was long and tangles and greasy, and hung, down, and you could see his eyes shinning
through like he was behind vines.
I was all black, no gray; so wa his long, mixerd-up whiskers.
cdac@FLASH:~/LinuxAssignment$
```

    a.   Using **nano** editor created and entered a small para in it.
    b.   **tr** command is used for transforming characters.
    c.   **'[a-z] [A-z]'** define the transformation.
    d.   **< input.txt** redirects the contents of **input.txt** as input for the **tr** command.
    e.   **> output.txt** redirects the transformed output to **output.txt**.

6.

```
cdac@FLASH:~/LinuxAssignment$ nano duplicate.txt
cdac@FLASH:~/LinuxAssignment$ cat duplicate.txt
There once was a myth-buster on his way to for a myth-busting.
He was walking through a dark path towards his goal.
Then he heard something on the dark path towards his goal.
He turned around to see nothing.
He continued forward in his rythm.
He heard something again.
He turned around to see nothing.
He continued forward in his rythm.
Again, he heard something, and this time it was some odd thing he could see.
But, it was nothing.
cdac@FLASH:~/LinuxAssignment$ cat duplicate.txt | sort | uniq
Again, he heard something, and this time it was some odd thing he could see.
But, it was nothing.
He continued forward in his rythm.
He heard something again.
He turned around to see nothing.
He was walking through a dark path towards his goal.
Then he heard something on the dark path towards his goal.
There once was a myth-buster on his way to for a myth-busting.
cdac@FLASH:~/LinuxAssignment$
```

    a. Using **nano duplicate.txt** editor created and entered a small para in it.

    b. Using **cat duplicate.txt** displayed the original content.

    c. The by using **cat duplicate.txt | sort | uniq** sorted and displayed the unique lines from the paragraph.

7.

```
cdac@FLASH:~/LinuxAssignment$ nano fruits.txt
cdac@FLASH:~/LinuxAssignment$ man sort
cdac@FLASH:~/LinuxAssignment$ man uniq
cdac@FLASH:~/LinuxAssignment$ sort fruits.txt | uniq -c
      4 Apple
      3 Banana
      1 Blueberry
      1 Custard Apple
      2 Dragon-fruit
      1 Grapes
      3 Guava
      1 Jackfruit
      2 Kiwi
      3 Lime
      2 Mullberry
      2 Orange
      1 Pineapple
      1 Strawberry
      1 Tangarine
      2 Tomato
cdac@FLASH:~/LinuxAssignment$
```

    a. Using **nano fruits.txt** created and added name of fruits with few names repeated.

    b. The with **sort fruits.txt | uniq –c** sorted out the fruits alphabetically and counted out the unique fruits.

    c. Used **man sort** & **man uniq** to check the manual of respective commands for information.