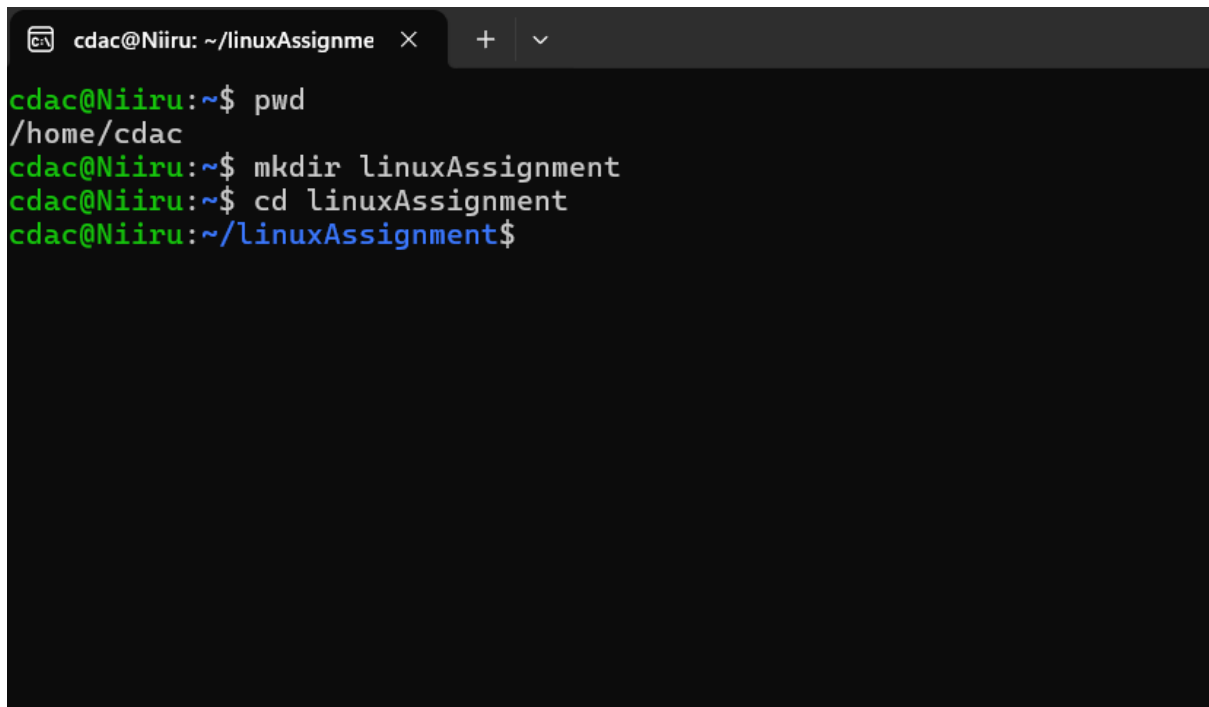


Problem 1: Read the instructions carefully and answer accordingly. If there is any need to insert some data then do that as well.

- a) Navigate and List: a. Start by navigating to your home directory and list its contents. Then, move into a directory named "LinuxAssignment" if it exists; otherwise, create it.

A terminal window with a dark background. The title bar shows 'cdac@Niiru: ~/linuxAssignme' with a close button and window controls. The terminal text shows the user running 'pwd' which returns '/home/cdac', then 'mkdir linuxAssignment', then 'cd linuxAssignment', and finally the prompt changes to '~/linuxAssignment\$'.

```
cdac@Niiru:~$ pwd
/home/cdac
cdac@Niiru:~$ mkdir linuxAssignment
cdac@Niiru:~$ cd linuxAssignment
cdac@Niiru:~/linuxAssignment$
```

- b) File Management: a. Inside the "LinuxAssignment" directory, create a new file named "file1.txt". Display its contents.

```
cdac@Niiru: ~/linuxAssignme × + v
cdac@Niiru:~$ pwd
/home/cdac
cdac@Niiru:~$ mkdir linuxAssignment
cdac@Niiru:~$ cd linuxAssignment
cdac@Niiru:~/linuxAssignment$ touch file1.txt
cdac@Niiru:~/linuxAssignment$ nano file1.txt
cdac@Niiru:~/linuxAssignment$ cat file1.txt
kranti
from cdac2025
Juhu
cdac@Niiru:~/linuxAssignment$ |
```

- b) Directory Management: a. Create a new directory named "docs" inside the "LinuxAssignment" directory

```
cdac@Niiru: ~/linuxAssignme × + v
cdac@Niiru:~/linuxAssignment$ pwd
/home/cdac/linuxAssignment
cdac@Niiru:~/linuxAssignment$ mkdir docs
cdac@Niiru:~/linuxAssignment$ ls
docs  file1.txt
cdac@Niiru:~/linuxAssignment$ |
```

d) Copy and Move Files: a. Copy the "file1.txt" file into the "docs" directory and rename it to "file2.txt".

```
cdac@Niiru:~/LinuxAssignment$ mkdir docs
cdac@Niiru:~/LinuxAssignment$ cd docs
cdac@Niiru:~/LinuxAssignment/docs$ cat file1.txt
cat: file1.txt: No such file or directory
cdac@Niiru:~/LinuxAssignment/docs$ touch file1.txt
cdac@Niiru:~/LinuxAssignment/docs$ nano file1.txt
cdac@Niiru:~/LinuxAssignment/docs$ cat file1.txt
Hi
This is first assignment of os
Commands
create new directory-mkdir
create new file -touch filename
cdac@Niiru:~/LinuxAssignment/docs$ |
```

```
cdac@Niiru:~/LinuxAssignment/docs$ cat file1.txt cp file2.txt
Hi
This is first assignment of os
Commands
create new directory-mkdir
create new file -touch filename
cat: cp: No such file or directory
cdac@Niiru:~/LinuxAssignment/docs$ cp file1.txt docs/file2.txt
cp: cannot create regular file 'docs/file2.txt': No such file or directory
cdac@Niiru:~/LinuxAssignment/docs$ cd ..
cdac@Niiru:~/LinuxAssignment$ cp file1.txt docs/file2.txt
cdac@Niiru:~/LinuxAssignment$ cd docs
cdac@Niiru:~/LinuxAssignment/docs$ ls
file1.txt  file2.txt
cdac@Niiru:~/LinuxAssignment/docs$ |
```

e) Permissions and Ownership: a. Change the permissions of "file2.txt" to allow read, write, and execute permissions for the owner and only read permissions for others. Then, change the owner of "file2.txt" to the current user.

```
cdac@Niiru:~/LinuxAssignment/docs$ ls
file1.txt  file2.txt
cdac@Niiru:~/LinuxAssignment/docs$ chmod 744 file2.txt
cdac@Niiru:~/LinuxAssignment/docs$ chmod 704 file2.txt
cdac@Niiru:~/LinuxAssignment/docs$ ls -l
total 8
-rw-r--r-- 1 cdac cdac 103 Feb 28 21:07 file1.txt
-rwx---r-- 1 cdac cdac   8 Feb 28 21:24 file2.txt
cdac@Niiru:~/LinuxAssignment/docs$ |
```

f) Final Checklist: a. Finally, list the contents of the "LinuxAssignment" directory and the root directory to ensure that all operations were performed correctly

```
cdac@Niiru:~$ pwd
/home/cdac
cdac@Niiru:~$ ls
LinusAssignments  LinuxAssignment  abc.txt  file1      file1.txt  linuxAssignment
linuxAssignent    LunixAssignment  cpp      file1.save  file2      linuxAssignmenttr
cdac@Niiru:~$ ls -l
total 44
-rwxr-xr-x 2 cdac cdac 4096 Feb 28 19:45 LinusAssignments
-rwxr-xr-x 2 cdac cdac 4096 Feb 28 21:00 LinuxAssignent
-rwxr-xr-x 3 cdac cdac 4096 Feb 28 21:03 LinuxAssignment
-rwxr-xr-x 2 cdac cdac 4096 Feb 28 20:14 LunixAssignment
-rw-r--r-- 1 cdac cdac  18 Feb 26 16:29 abc.txt
-rwxr-xr-x 2 cdac cdac 4096 Feb 27 15:34 cpp
-rw-r--r-- 1 cdac cdac  6 Feb 28 17:23 file1
-rw-r--r-- 1 cdac cdac  35 Feb 28 17:25 file1.save
-rw-r--r-- 1 cdac cdac  0 Feb 28 19:50 file1.txt
-rw-r--r-- 1 cdac cdac  16 Feb 28 17:26 file2
-rwxr-xr-x 3 cdac cdac 4096 Feb 28 20:28 linuxAssignment
-rwxr-xr-x 2 cdac cdac 4096 Feb 28 19:35 linuxAssignmenttr
cdac@Niiru:~$
```

b. Display lines containing a specific word in a file (provide a file name and the specific word to search).

```
cdac@Niiru:~$ cat ~/linuxAssignment/file1.txt
kranti
from cdac2025
Juhu
cdac@Niiru:~$ grep -i "cdac" ~/linuxAssignment/file1.txt
from cdac2025
cdac@Niiru:~$ |
```

h) System Information: a. Display the current system date and time.

```
cdac@Niiru: ~  
cdac@Niiru:~$ date  
Fri Feb 28 22:15:19 IST 2025  
cdac@Niiru:~$ |
```

i) Networking: a. Display the IP address of the system.

```
cdac@Niiru:~$ date  
Fri Feb 28 22:15:19 IST 2025  
cdac@Niiru:~$ hostname -I  
172.30.132.38  
cdac@Niiru:~$ |
```

a. Display the IP address of the system. b. Ping a remote server to check connectivity (provide a remote server address to ping).

```
cdac@Niiru: ~  
cdac@Niiru:~$ ping 8.8.8.8  
PING 8.8.8.8 (8.8.8.8) 56(84) bytes of data.  
64 bytes from 8.8.8.8: icmp_seq=1 ttl=52 time=77.6 ms  
64 bytes from 8.8.8.8: icmp_seq=2 ttl=52 time=91.8 ms  
64 bytes from 8.8.8.8: icmp_seq=3 ttl=52 time=90.8 ms  
64 bytes from 8.8.8.8: icmp_seq=4 ttl=52 time=84.7 ms  
^C  
--- 8.8.8.8 ping statistics ---  
4 packets transmitted, 4 received, 0% packet loss, time 3005ms  
rtt min/avg/max/mdev = 77.580/86.234/91.790/5.680 ms  
cdac@Niiru:~$ |
```

j) File Compression: a. Compress the "docs" directory into a zip file.

```
cdac@Niiru:~$ zip -r LinuxAssignment.zip LinuxAssignment  
adding: LinuxAssignment/ (stored 0%)  
adding: LinuxAssignment/docs/ (stored 0%)  
adding: LinuxAssignment/docs/file2.txt (stored 0%)  
adding: LinuxAssignment/docs/file1.txt (deflated 18%)  
adding: LinuxAssignment/file1.txt (stored 0%)  
cdac@Niiru:~$ cd docs  
-bash: cd: docs: No such file or directory  
cdac@Niiru:~$ cd linuxAssignment  
cdac@Niiru:~/linuxAssignment$ pwd  
/home/cdac/linuxAssignment  
cdac@Niiru:~/linuxAssignment$ mkdir docs  
mkdir: cannot create directory 'docs': File exists  
cdac@Niiru:~/linuxAssignment$ pwd  
/home/cdac/linuxAssignment  
cdac@Niiru:~/linuxAssignment$ zip -r docs.zip docs  
adding: docs/ (stored 0%)  
adding: docs/file2.txt (stored 0%)  
adding: docs/file1.txt (stored 0%)  
cdac@Niiru:~/linuxAssignment$ |
```

b. Extract the contents of the zip file into a new directory.

```
cdac@Niiru:~/linuxAssignment$ zip -r docs.zip docs
  adding: docs/ (stored 0%)
  adding: docs/file2.txt (stored 0%)
  adding: docs/file1.txt (stored 0%)
cdac@Niiru:~/linuxAssignment$ unzip -d doc1 docs.zip
Archive:  docs.zip
  creating: doc1/docs/
  extracting: doc1/docs/file2.txt
  extracting: doc1/docs/file1.txt
cdac@Niiru:~/linuxAssignment$ |
```

k) File Editing: a. Open the "file1.txt" file in a text editor and add some text to it.

```
cdac@Niiru:~/linuxAssignment$ touch file.txt
cdac@Niiru:~/linuxAssignment$ nano file.txt
cdac@Niiru:~/linuxAssignment$ cat file.txt
cat: file.txt: No such file or directory
cdac@Niiru:~/linuxAssignment$ cat file.txt
commands of os
mkdir
pwd
cd
ls
ls -l

cdac@Niiru:~/linuxAssignment$ |
```

b. Replace a specific word in the "file1.txt" file with another word (provide the original word and the word to replace it with).

```
cat: file.txt: No such file or directory
cdac@Niiru:~/linuxAssignment$ cat file.txt
commands of os
mkdir
pwd
cd
ls
ls -l

cdac@Niiru:~/linuxAssignment$ sed -i 's/ls/lls/g' file.txt
cdac@Niiru:~/linuxAssignment$ cat file.txt
commands of os
mkdir
pwd
cd
lls
lls -l

cdac@Niiru:~/linuxAssignment$ |
```

Problem 2: Read the instructions carefully and answer accordingly. If there is any need to insert some data then do that as well.

- a. Suppose you have a file named "data.txt" containing important information. Display the first 10 lines of this file to quickly glance at its contents using a command.

```
cdac@Niiru:~/linuxAssignment$ head -10 data.txt
Get help ^g
G Get Help
^O Write Out
^W Where Is
^K Cut Text
^J Justify
^C Cur Pos
M-U Undo
M-A Mark Text
^X Exit
cdac@Niiru:~/linuxAssignment$ |
```



b. Now, to check the end of the file for any recent additions, display the last 5 lines of "data.txt" using another command.

```
cdac@Niiru:~/linuxAssignment$ cat data.txt
Get help ^g
G Get Help
  ^O Write Out
  ^W Where Is
^K Cut Text
^J Justify
  ^C Cur Pos
M-U Undo
  M-A Mark Text
^X Exit
^R Read File
  ^\ Replace
  ^U Paste Text  ^T To Spell
  ^_ Go To Line
cdac@Niiru:~/linuxAssignment$ tail -5 data.txt
^X Exit
^R Read File
  ^\ Replace
  ^U Paste Text  ^T To Spell
  ^_ Go To Line
cdac@Niiru:~/linuxAssignment$ |
```

b. In a file named "numbers.txt," there are a series of numbers. Display the first 15 lines of this file to analyze the initial data set.

```
78
67
45
2
67
90
78
56
35
98
23
45
78
cdac@Niiru:~/linuxAssignment$ head -15 number.text
243
35
56
23
12
67
78
67
45
2
67
90
78
56
35
cdac@Niiru:~/linuxAssignment$ |
```

- c. To focus on the last few numbers of the dataset, display the last 3 lines of "numbers.txt".

```

cdac@Niiru:~/linuxAssignment$ head -15 number.text
243
35
56
23
12
67
78
67
45
2
67
90
78
56
35
cdac@Niiru:~/linuxAssignment$ tail -3 number.text
23
45
78
cdac@Niiru:~/linuxAssignment$ |

```

e. Imagine you have a file named "input.txt" with text content. Use a command to translate all lowercase letters to uppercase in "input.txt" and save the modified text in a new file named "output.txt."

```

cdac@Niiru:~/linuxAssignment$ touch input.txt
cdac@Niiru:~/linuxAssignment$ nano input.txt
cdac@Niiru:~/linuxAssignment$ cat input.txt
the sentence is in lowercase
UPPER One
cdac@Niiru:~/linuxAssignment$ tr '[:lower:]' '[:upper:]' < input.txt > output.txt
> ^C
cdac@Niiru:~/linuxAssignment$ tr '[:lower:]' '[:upper:]' < input.txt > output.txt
cdac@Niiru:~/linuxAssignment$ cat input.txt
the sentence is in lowercase
UPPER One
cdac@Niiru:~/linuxAssignment$ cat output.txt
THE SENTENCE IS IN LOWERCASE
UPPER ONE
cdac@Niiru:~/linuxAssignment$ |

```

f. In a file named "duplicate.txt," there are several lines of text, some of which are duplicates. Use a command to display only the unique lines from "duplicate.txt."

```
cdac@Niiru:~/linuxAssignment$ nano duplicate.txt
cdac@Niiru:~/linuxAssignment$ cat duplicate.txt
mango
banana
pear
graps

mango
watermelon
apple
apple

cdac@Niiru:~/linuxAssignment$ cat duplicate.txt | sort | uniq
apple
banana
graps
mango
pear
watermelon
cdac@Niiru:~/linuxAssignment$ |
```

g. In a file named "fruit.txt," there is a list of fruits, but some fruits are repeated. Use a command to display each unique fruit along with the count of its occurrences in "fruit.txt."

```
mango
pear
watermelon
cdac@Niiru:~/linuxAssignment$ touch fruit.txt
cdac@Niiru:~/linuxAssignment$ nano fruit.txt
cdac@Niiru:~/linuxAssignment$ cat fruit.txt
banana
apple
grape
strawberry
blueberry
apple
watermelon
banana
kiwi
pair
apple

cdac@Niiru:~/linuxAssignment$ cat fruit.txt |sort |uniq

apple
banana
blueberry
grape
kiwi
pair
strawberry
watermelon
cdac@Niiru:~/linuxAssignment$ grep -c fruit.txt |sort |uniq
|
```

g. In a file named "fruit.txt," there is a list of fruits, but some fruits are repeated. Use the `grep -c` command to display each unique fruit along with the count of its occurrences.