**********Assignment 1 **********

Problem 1:

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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.

ans:

a)cd ~ - go to home directory

ls -la - using it i print all detailed file and hidden file

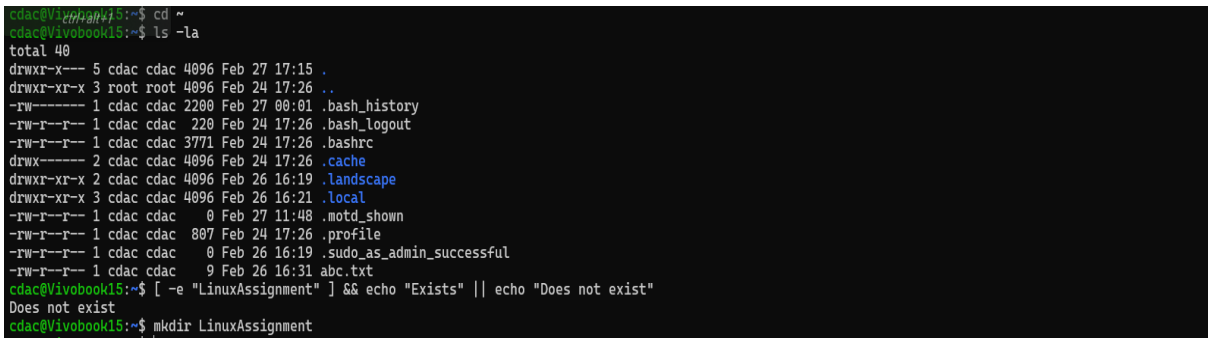
it give result

b)[-e "LinuxAssignment"] && echo "Exists" || echo "Does not exist"

using it i check file exist or not

then,

mkdir LinuxAssignment - create directory



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b) File Management:

a. Inside the "LinuxAssignment" directory, create a new file named "file1.txt". Display its contents.

ans :

touch file1.txt - create file1

cat file1.txt - display content

```
cdac@Vivobook15:~$ cd LinuxAssignment
cdac@Vivobook15:~/LinuxAssignment$ touch file1.txt
cdac@Vivobook15:~/LinuxAssignment$ cat file1.txt
cdac@Vivobook15:~/LinuxAssignment$ ls
file1.txt
cdac@Vivobook15:~/LinuxAssignment$
```

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c) Directory Management:

a. Create a new directory named "docs" inside the "LinuxAssignment" directory.

ans:

mkdir docs - create docs directory

```
cdac@Vivobook15:~/LinuxAssignment$ mkdir docs
cdac@Vivobook15:~/LinuxAssignment$
```

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d) Copy and Move Files:

a. Copy the "file1.txt" file into the "docs" directory and rename it to "file2.txt".

ans :

cp file1.txt LinuxAssignment/docs - copy and paste the file

cd docs - go to docs directory

mv file1.txt file2.txt - rename using mv command

```
cdac@Vivobook15:~/LinuxAssignment$ cp file1.txt LinuxAssignment/docs
cp: cannot create regular file 'LinuxAssignment/docs': No such file or directory
cdac@Vivobook15:~/LinuxAssignment$ cp file1.txt /docs
cp: cannot create regular file '/docs': Permission denied
cdac@Vivobook15:~/LinuxAssignment$ cp file1.txt docs
cdac@Vivobook15:~/LinuxAssignment$ cd docs
cdac@Vivobook15:~/LinuxAssignment/docs$ ls
file1.txt
cdac@Vivobook15:~/LinuxAssignment/docs$ mv file1.txt file2.txt
cdac@Vivobook15:~/LinuxAssignment/docs$ ls
file2.txt
cdac@Vivobook15:~/LinuxAssignment/docs$
```

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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.

ans :

chmod 744 file2.txt ->change permission owner-7(read, write, and execute) group and other -4 (only read)

chown $(whoami) file2.txt -> chown-change owner $(whoami) - current user

ls -l -> file details check

give output:

```
cdac@Vivobook15:~/LinuxAssignment$ cd docs
cdac@Vivobook15:~/LinuxAssignment/docs$ ls -l
total 0
-rw-r--r-- 1 cdac cdac 0 Feb 27 17:21 file2.txt
cdac@Vivobook15:~/LinuxAssignment/docs$ chmod 744 file2.txt
cdac@Vivobook15:~/LinuxAssignment/docs$ ls -l
total 0
-rwxr--r-- 1 cdac cdac 0 Feb 27 17:21 file2.txt
cdac@Vivobook15:~/LinuxAssignment/docs$ chown $(whoami) file2.txt
cdac@Vivobook15:~/LinuxAssignment/docs$ ls -l
total 0
-rwxr--r-- 1 cdac cdac 0 Feb 27 17:21 file2.txt
```

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f) Final Checklist:

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

ans:

ls -l -> list all content of directory /LinuxAssignment

cd ~ -> go to home directory

ls -l -> list all content of home directory

```
cdac@Vivobook15:~/LinuxAssignment$ ls -l
total 8
drwxr-xr-x 2 cdac cdac 4096 Feb 27 17:21 docs
-rw-r--r-- 1 cdac cdac   10 Feb 27 17:23 file1.txt
cdac@Vivobook15:~/LinuxAssignment$ cd ~
cdac@Vivobook15:~$ ls -l
total 8
drwxr-xr-x 3 cdac cdac 4096 Feb 27 17:23 LinuxAssignment
-rw-r--r-- 1 cdac cdac    9 Feb 26 16:31 abc.txt
```

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g) File Searching:

a. Search for all files with the extension ".txt" in the current directory and its subdirectories.

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

ans :

a)find . -type f -name "*.txt" -> .- for all directory and subdirectory and -type f - Look for files

b) grep -i "Hii" file2.txt -> it check hii word in file2.txt

output:

```
cdac@Vivobook15:~$ find . -type f -name "*.txt"
./abc.txt
./LinuxAssignment/docs/file2.txt
./LinuxAssignment/file1.txt
cdac@Vivobook15:~$ nano file2.txt
cdac@Vivobook15:~$ grep -i "cdac" file2.txt
cdac
cdac@Vivobook15:~$
```

---

h) System Information:

a. Display the current system date and time.

ans:

date -> this command display the current system date and time

output:

```
cdac@Vivobook15:~$  date
Thu Feb 27 18:32:32 IST 2025
cdac@Vivobook15:~$
```

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i) Networking:

a. Display the IP address of the system.

b. Ping a remote server to check connectivity (provide a remote server address to ping).

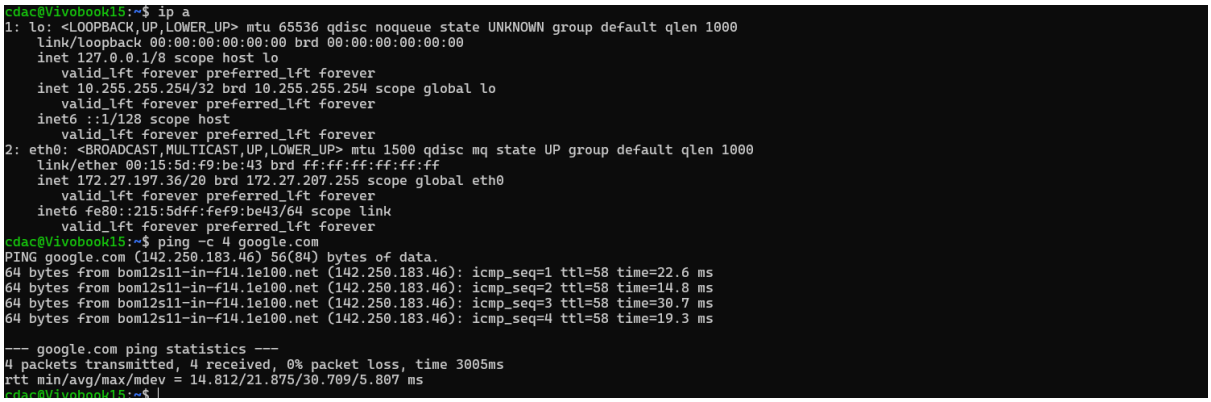
ans :

a)ip a -> show ipv4 v6 add

output:

b) ping -c 4 google.com ->sends 4 packets to Google and checks if your internet is working.

output :



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j) File Compression:

a. Compress the "docs" directory into a zip file.

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

ans :

a)zip -r docs.zip docs -> this will compress it in zip file

b) mkdir docs_unzip ->creat new directory

unzip docs.zip -d docs_unzip -> extract zip file

```
cdac@Vivobook15:~$ cd LinuxAssignment
cdac@Vivobook15:~/LinuxAssignment$ zip -r docs.zip docs
  adding: docs/ (stored 0%)
  adding: docs/file2.txt (stored 0%)
cdac@Vivobook15:~/LinuxAssignment$ mkdir docs_unzip
cdac@Vivobook15:~/LinuxAssignment$ unzip docs.zip -d docs_unzip
Archive:  docs.zip
   creating: docs_unzip/docs/
 extracting: docs_unzip/docs/file2.txt
cdac@Vivobook15:~/LinuxAssignment$
```

---

k) File Editing:

a. Open the "file1.txt" file in a text editor and add some text to it.

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

ans :

a)nano file1.txt -> open editor and i add text "it's a 1st class of cdac"

b)sed -i 's/cdac/cdacKhargar/g' file1.txt -> it change cdac to cdacKhargar

output :

```
cdac@Vivobook15:~/LinuxAssignment$ nano file1.txt
cdac@Vivobook15:~/LinuxAssignment$ cat file1.txt
hii
cdacKhargarKhargar

cdac@Vivobook15:~/LinuxAssignment$  sed -i 's/cdac/cdac/g' file1.txt
cdac@Vivobook15:~/LinuxAssignment$ cat file1.txt
hii
cdacKhargarKhargar

cdac@Vivobook15:~/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.

Ans:

1)touch for creating data.txt

2)nano for adding line in it

3)cat for geeting content from it

4)head -n 10 data.txt -> getting 1st 10 line

```
cdac@Vivobook15:~/LinuxAssignment$ touch data.txt
cdac@Vivobook15:~/LinuxAssignment$ nano data.txt
cdac@Vivobook15:~/LinuxAssignment$ cat data.txt
hii it 1st cdac assignment
cdac
cdac khargar
it's a unbuntu editor
i like cricket
i like to listen music
write now i am using ubuntu shell
now i am in meeting
sincerly doing classes
i am huge fan of MSD
i libe to watch movies and web series

cdac@Vivobook15:~/LinuxAssignment$ head -n 10 data.txt
hii it 1st cdac assignment
cdac
cdac khargar
it's a unbuntu editor
i like cricket
i like to listen music
```

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

Ans:

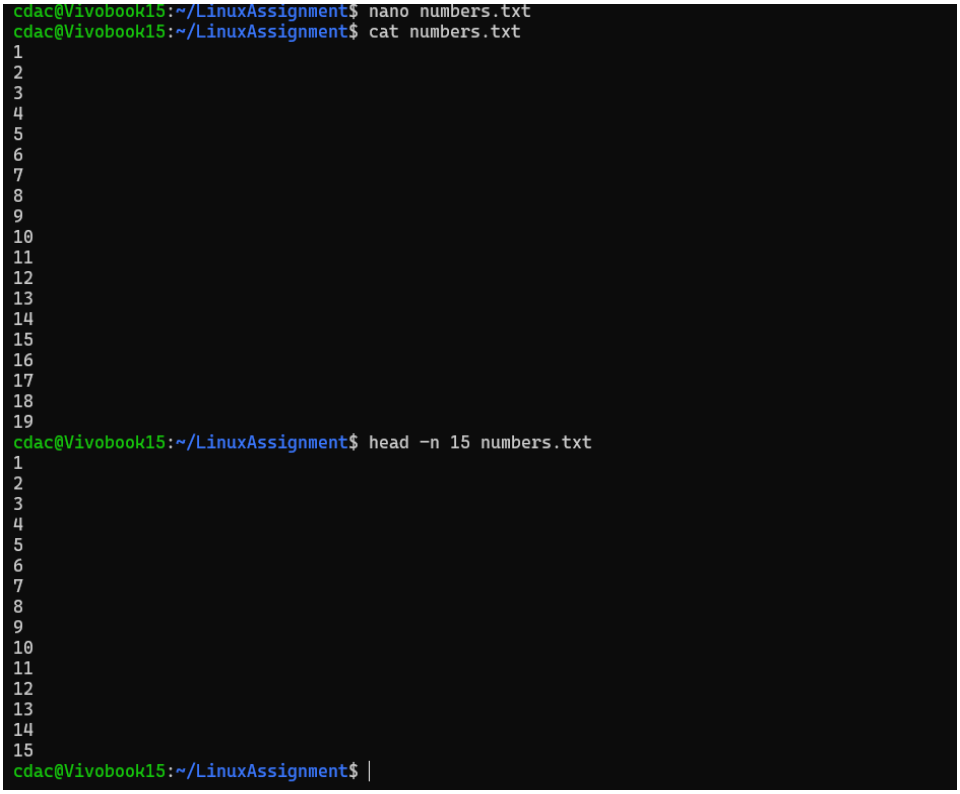
tail -n 5 data.txt -> it print last 5 line of file

```
cdac@Vivobook15:~/LinuxAssignment$ tail -n 5 data.txt
write now i am using ubuntu shell
now i am in meeting
sincerly doing classes
i am huge fan of MSD
i libe to watch movies and web series
cdac@Vivobook15:~/LinuxAssignment$
```

c. 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.

Ans:

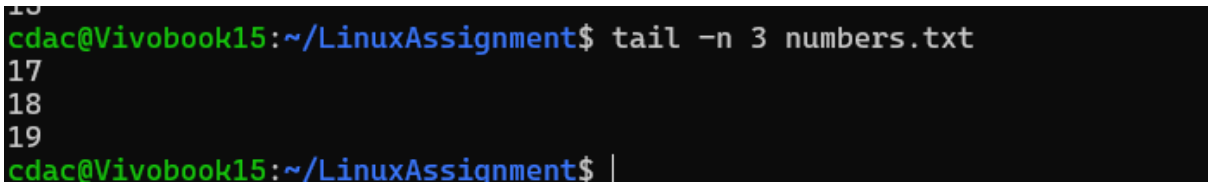
head -n 15 numbers.txt -> print 15 lines of numbers.txt



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

Ans:

tail -n 3 numbers.txt -> it givs last 3 lines



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.

Ans:

cat input.txt | tr 'a-z' 'A-Z' > output.txt -> this will get input.txt file data translate it in lower case and the redirect in output.txt

```
cdac@Vivobook15:~/LinuxAssignment$ cat input.txt | tr 'a-z' 'A-Z' > output.txt
cdac@Vivobook15:~/LinuxAssignment$ cat output.txt
DATA.TXT
HII IT 1ST CDAC ASSIGNMENT
CDAC
CDAC KHARGAR
IT'S A UNBUNTU EDITOR
I LIKE CRICKET
I LIKE TO LISTEN MUSIC
WRITE NOW I AM USING UBUNTU SHELL
NOW I AM IN MEETING
SINCERLY DOING CLASSES
I AM HUGE FAN OF MSD
I LIBE TO WATCH MOVIES AND WEB SERIES
cdac@Vivobook15:~/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."

Ans:
cat duplicate.txt | sort | uniq -> using it i get uniq line from file

```
cdac@Vivobook15:~/LinuxAssignment$ cat duplicate.txt
data.txt
hii it 1st cdac assignment
cdac
cdac khargar
it's a unbuntu editor
i like cricket
i like to listen music
write now i am using ubuntu shell
now i am in meeting
sincerly doing classes
i am huge fan of MSD
i libe to watch movies and web series
cdac khargar
write now i am using ubuntu shell
write now i am using ubuntu shell
i am huge fan of MSD
cdac@Vivobook15:~/LinuxAssignment$ cat duplicate.txt | sort | uniq
cdac
cdac khargar
data.txt
hii it 1st cdac assignment
i am huge fan of MSD
i libe to watch movies and web series
i like cricket
i like to listen music
it's a unbuntu editor
now i am in meeting
sincerly doing classes
write now i am using ubuntu shell
cdac@Vivobook15:~/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."

Ans:
cat fruit.txt | sort | uniq -c -> Sorts the file and Counts occurrences of each unique line