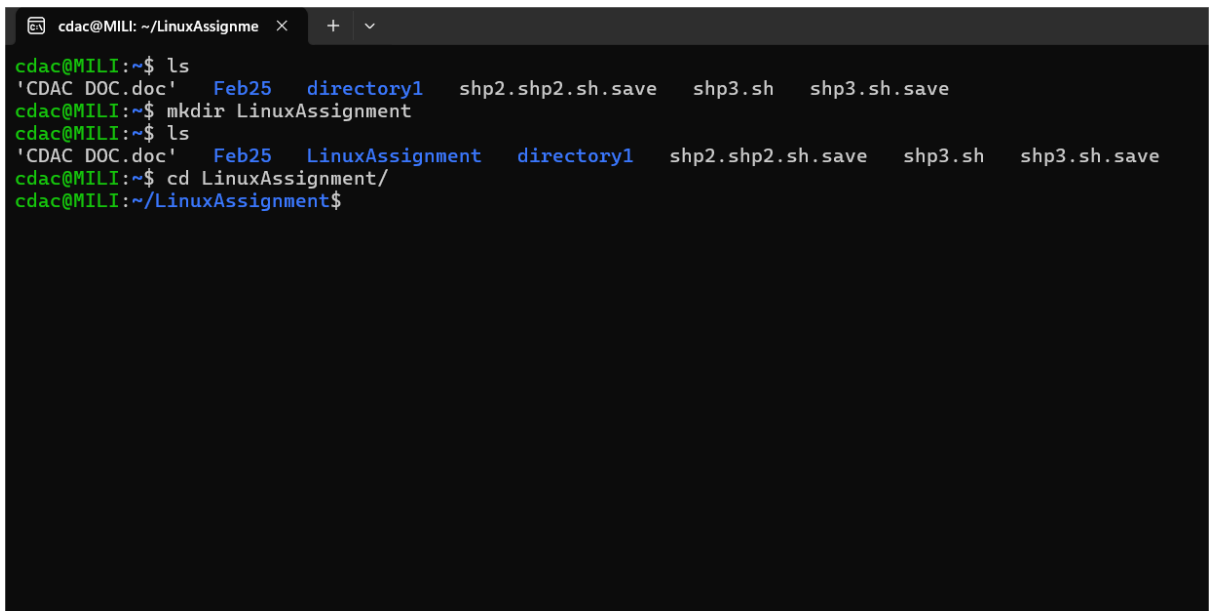


# COS Assignment 1

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 and light green text. The window title is 'cdac@MILI: ~/LinuxAssignme'. The terminal shows the following commands and output:

```
cdac@MILI:~$ ls
'CDAC DOC.doc'  Feb25  directory1  shp2.shp2.sh.save  shp3.sh  shp3.sh.save
cdac@MILI:~$ mkdir LinuxAssignment
cdac@MILI:~$ ls
'CDAC DOC.doc'  Feb25  LinuxAssignment  directory1  shp2.shp2.sh.save  shp3.sh  shp3.sh.save
cdac@MILI:~$ cd LinuxAssignment/
cdac@MILI:~/LinuxAssignment$
```

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

```
cdac@MILI: ~/LinuxAssignme × + v
cdac@MILI:~$ ls
'CDAC DOC.doc'  Feb25  directory1  shp2.shp2.sh.save  shp3.sh  shp3.sh.save
cdac@MILI:~$ mkdir LinuxAssignment
cdac@MILI:~$ ls
'CDAC DOC.doc'  Feb25  LinuxAssignment  directory1  shp2.shp2.sh.save  shp3.sh  shp3.sh.save
cdac@MILI:~$ cd LinuxAssignment/
cdac@MILI:~/LinuxAssignment$ touch file1.txt
cdac@MILI:~/LinuxAssignment$ nano file1.txt
cdac@MILI:~/LinuxAssignment$ pwd
/home/cdac/LinuxAssignment
cdac@MILI:~/LinuxAssignment$ cat file1.txt
HII
HELLO
GOOD MORNING
GOOD DAY
MILI
cdac@MILI:~/LinuxAssignment$ |
```

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

```
cdac@MILI: ~/LinuxAssignme × + v
cdac@MILI:~/LinuxAssignment$ mkdir docs/
cdac@MILI:~/LinuxAssignment$ |
```

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

```
cdac@MILI: ~/LinuxAssignme  ×  +  ∨  
  
cdac@MILI:~/LinuxAssignment$ cp ./file1.txt ./docs  
cdac@MILI:~/LinuxAssignment$  
  
cdac@MILI: ~/LinuxAssignme  ×  +  ∨  
  
cdac@MILI:~/LinuxAssignment/docs$ mv file1.txt file2.txt  
cdac@MILI:~/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@MILI: ~/LinuxAssignme  ×  +  ∨  
  
cdac@MILI:~/LinuxAssignment/docs$ chmod u+rwx file2.txt  
cdac@MILI:~/LinuxAssignment/docs$ chmod o+r file2.txt  
cdac@MILI:~/LinuxAssignment/docs$ |  
  
cdac@MILI: ~/LinuxAssignme  ×  +  ∨  
  
cdac@MILI:~/LinuxAssignment/docs$ chown cdac file2.txt  
cdac@MILI:~/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@MILI: ~/LinuxAssignme  ×  +  ∨  
cdac@MILI:~/LinuxAssignment/docs$ ls  
file2.txt  
cdac@MILI:~/LinuxAssignment/docs$ cat file2.txt  
HII  
HELLO  
GOOD MORNING  
GOOD DAY  
MILI  
cdac@MILI:~/LinuxAssignment/docs$ |
```

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).

```
cdac@MILI: ~/LinuxAssignme  ×  +  ∨  
cdac@MILI:~/LinuxAssignment/docs$ ls | grep -i  
file2.txt  
cdac@MILI:~/LinuxAssignment/docs$ |
```

```
cdac@MILI: ~/LinuxAssignme X + v
cdac@MILI:~/LinuxAssignment/docs$ ls | grep -i ".txt"
file2.txt
cdac@MILI:~/LinuxAssignment/docs$ grep 'GOOD' file2.txt
GOOD MORNING
GOOD DAY
cdac@MILI:~/LinuxAssignment/docs$ |
```

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

```
cdac@MILI: ~/LinuxAssignme X + v
cdac@MILI:~/LinuxAssignment/docs$ date
Fri Feb 28 10:32:08 IST 2025
cdac@MILI:~/LinuxAssignment/docs$ |
```

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

```
cdac@MILI: ~/LinuxAssignme X + v
cdac@MILI:~/LinuxAssignment/docs$ curl ifconfig.me
152.59.58.234cdac@MILI:~/LinuxAssignment/docs$ ping 152.59.58.234
PING 152.59.58.234 (152.59.58.234) 56(84) bytes of data.
|
```

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)

```
cdac@MILI: ~/LinuxAssignme  X  +  v
cdac@MILI:~/LinuxAssignment$ cat file1.txt
HII
HELLO
GOOD MORNING
GOOD DAY
MILI
cdac@MILI:~/LinuxAssignment$ sed -i 's/MILI/MILLI/g' file1.txt
cdac@MILI:~/LinuxAssignment$ cat file1.txt
HII
HELLO
GOOD MORNING
GOOD DAY
MILLI
cdac@MILI:~/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@MILI: ~  
My hobby is Dancing.  
I love HIPHOP style in dancing.  
HIPHOP is very cool dance type.  
Dancing makes you happy.  
cdac@MILI:~$ nano data.txt  
cdac@MILI:~$ cat data.txt  
Hi I am MILI.  
I love Nature.  
I love Travelling.  
I love Swimming.  
I love Dancing.  
I love Animals.  
My hobby is Dancing.  
I love HIPHOP style in dancing.  
HIPHOP is very cool dance type.  
Dancing makes you happy.  
Live your life to the fullest.  
  
cdac@MILI:~$ head -10 data.txt  
Hi I am MILI.  
I love Nature.  
I love Travelling.  
I love Swimming.  
I love Dancing.  
I love Animals.  
My hobby is Dancing.  
I love HIPHOP style in dancing.  
HIPHOP is very cool dance type.  
Dancing makes you happy.  
cdac@MILI:~$ |
```

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

```
Dancing makes you happy.  
cdac@MILI:~$ tail -5 data.txt  
I love HIPHOP style in dancing.  
HIPHOP is very cool dance type.  
Dancing makes you happy.  
Live your life to the fullest.  
  
cdac@MILI:~$ |
```

- 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.



cdac@MILI: ~

×

+

∨

```
cdac@MILI:~$ touch numbers.txt
```

```
cdac@MILI:~$ nano numbers.txt
```

```
cdac@MILI:~$ cat numbers.txt
```

10

22

34

6

2

45

67

79

43

56

89

12

678

000

34

32

45

79

```
cdac@MILI:~$ head -15 numbers.txt
```

10

22

34

6

2

45

67

79

43

56

89

12

678

000

34

```
cdac@MILI:~$ |
```

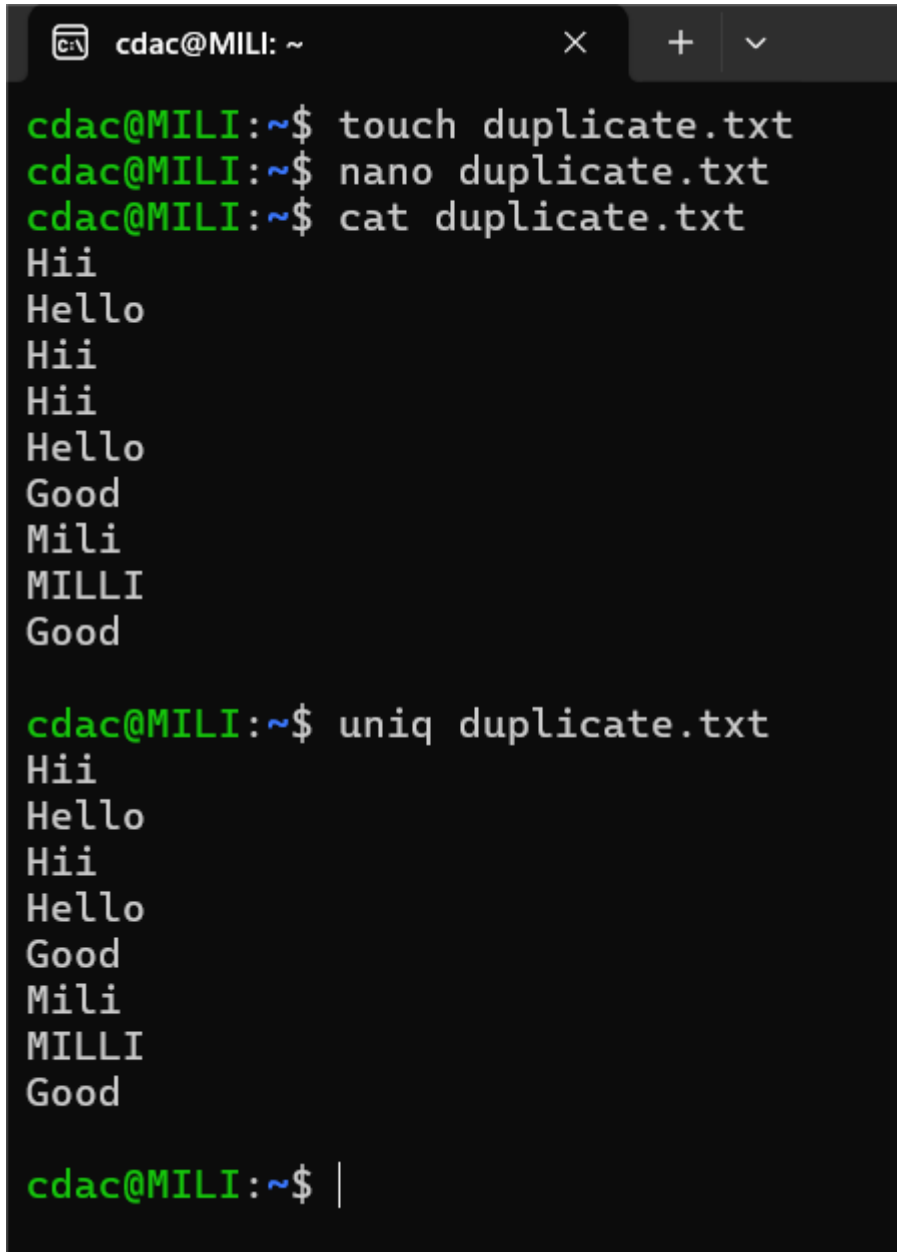
- d. To focus on the last few numbers of the dataset, display the last 3 lines of "numbers.txt".

```
cdac@MILI:~$ tail -3 numbers.txt
32
45
79
cdac@MILI:~$ |
```

- 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@MILI: ~
cdac@MILI:~$ cat input.txt
Hii
Hello
Happy
Morning
Good
DREAM
Fly High
Best WISHES
cdac@MILI:~$ <input.txt tr '[:lower:]' '[:upper:]' >output.txt
cdac@MILI:~$ cat output.txt
HII
HELLO
HAPPY
MORNING
GOOD
DREAM
FLY HIGH
BEST WISHES
cdac@MILI:~$ |
```

- 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."

A terminal window titled 'cdac@MILI: ~' with standard window controls (close, maximize, zoom). The user enters three commands: 'touch duplicate.txt', 'nano duplicate.txt', and 'cat duplicate.txt'. The output of 'cat' shows a list of words: 'Hi', 'Hello', 'Hi', 'Hi', 'Hello', 'Good', 'Mili', 'MILLI', and 'Good'. Then, the user enters 'uniq duplicate.txt', and the output shows the same list of words, but with the second 'Hi' and 'Hello' removed, leaving only one instance of each unique word. The prompt 'cdac@MILI:~\$ |' is visible at the bottom.

```
cdac@MILI:~$ touch duplicate.txt
cdac@MILI:~$ nano duplicate.txt
cdac@MILI:~$ cat duplicate.txt
Hi
Hello
Hi
Hi
Hello
Good
Mili
MILLI
Good

cdac@MILI:~$ uniq duplicate.txt
Hi
Hello
Hi
Hello
Good
Mili
MILLI
Good

cdac@MILI:~$ |
```

- 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."

```
cdac@MILI:~$ touch fruit.txt
cdac@MILI:~$ nano fruit.txt
cdac@MILI:~$ cat fruit.txt
BANANA
BANANA
CHERRY
CHERRY
CHERRY
KIWI
JACKFRUIT
JACKFRUIT
LIME
MANGO
MANGO
MANGO
MANGO
MANGO
cdac@MILI:~$ sort fruit.txt | uniq -c
      2 BANANA
      3 CHERRY
      2 JACKFRUIT
      1 KIWI
      1 LIME
      4 MANGO
      1 MANGO
cdac@MILI:~$ |
```