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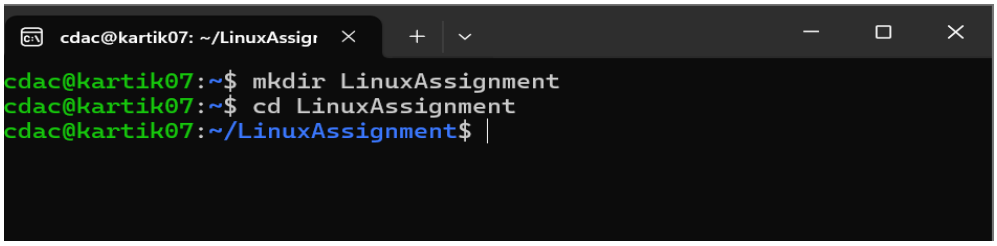
Problem 1: Read the instructions carefully and answer accordingly. If there is

any need to insert some data then do that as well.

a) Navigate and List:

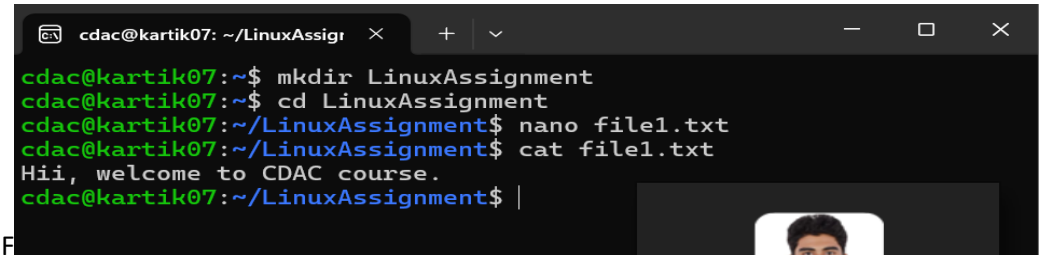
We can navigate to home directory by using the “cd” command.

To create a new directory we use “mkdir” command.



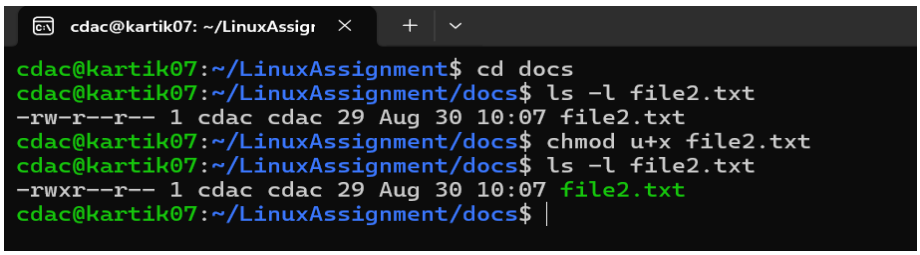
b. Inside the "LinuxAssignment" directory, create a new file named "file1.txt". Display its contents.

To create new file and enter content we can use “nano” command and to display the content we use cat .

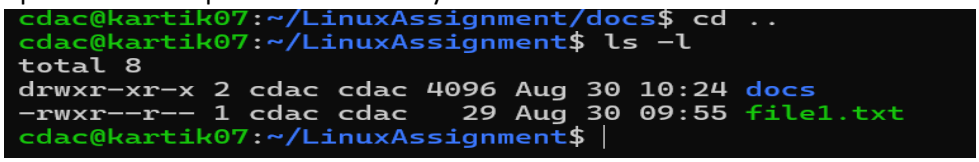


F

c. Change the permissions of "file2.txt" to allow read, write, and execute permissions for the owner and only read permissions for others.



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



f. 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).

```
-rwxr--r-- 1 cdac cdac   29 Aug 30 09:55 file1.txt
cdac@kartik07:~/LinuxAssignment$ find . -type f -name "*.txt"
./file1.txt
./docs/file2.txt
cdac@kartik07:~/LinuxAssignment$ grep "cdac" filename.txt
grep: filename.txt: No such file or directory
cdac@kartik07:~/LinuxAssignment$ grep "Hii" filename.txt
grep: filename.txt: No such file or directory
cdac@kartik07:~/LinuxAssignment$ cat file1.txt
Hii, welcome to CDAC course.
cdac@kartik07:~/LinuxAssignment$ grep "error" *.txt
cdac@kartik07:~/LinuxAssignment$ grep "CDAC" *.txt
Hii, welcome to CDAC course.
cdac@kartik07:~/LinuxAssignment$
```

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

```
cdac@kartik07:~/LinuxAssignment$ date
Fri Aug 30 17:38:20 UTC 2024
cdac@kartik07:~/LinuxAssignment$
```

Networking: a. Display the IP address of the system. b. Ping a remote server to check connectivity.

```
cdac@kartik07:~/LinuxAssignment$ ip addr show
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
    inet 10.255.255.254/32 brd 10.255.255.254 scope global 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 mq state UP group default qlen 1000
    link/ether 00:15:5d:fd:49:b6 brd ff:ff:ff:ff:ff:ff
    inet 172.22.66.139/20 brd 172.22.79.255 scope global eth0
       valid_lft forever preferred_lft forever
    inet6 fe80::215:5dff:fefd:49b6/64 scope link
       valid_lft forever preferred_lft forever
```

```
64 bytes from bom07s35-in-f14.1e100.net (142.250.66.14): icmp_seq=48
64 bytes from bom07s35-in-f14.1e100.net (142.250.66.14): icmp_seq=49
^C
--- google.com ping statistics ---
49 packets transmitted, 49 received, 0% packet loss, time 48130ms
rtt min/avg/max/mdev = 9.266/11.538/15.269/1.683 ms
cdac@kartik07:~/LinuxAssignment$
```

File Compression: a. Compress the "docs" directory into a zip file. b. Extract the contents of the zip file into a new director

```
cdac@kartik07:~/LinuxAssignment/docs$ zip file2.zip file2.txt
  adding: file2.txt (stored 0%)
cdac@kartik07:~/LinuxAssignment/docs$ cat file2.txt
Hii, welcome to CDAC course.
cdac@kartik07:~/LinuxAssignment/docs$ ls -l
total 8
-rwxr--r-- 1 cdac cdac  29 Aug 30 10:07 file2.txt
-rw-r--r-- 1 cdac cdac 197 Aug 30 17:47 file2.zip
cdac@kartik07:~/LinuxAssignment/docs$
```

```
cdac@kartik07:~/LinuxAssignment/docs$ unzip file2.zip -d LinuxAssignment
Archive:  file2.zip
 extracting: LinuxAssignment/file2.txt
cdac@kartik07:~/LinuxAssignment/docs$
```

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

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. 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@kartik07:~/LinuxAssignment$ head -n 10 data.txt
hii
hello
hola
howdy
heyya
whats up
sup
namaste
welcome

cdac@kartik07:~/LinuxAssignment$ tail -n 5 data.txt
sup
namaste
welcome
```

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

```
cdac@kartik07:~/LinuxAssignment$ head -n 15 Numbers.txt
1
2
3
4
5
6
7
8
5
4
3
55
4
332
22
cdac@kartik07:~/LinuxAssignment$ tail -n 3 Numbers.txt
22
333
```

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." 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."

```
This message is shown once a day. To disable it please create the
/home/cdac/.hushlogin file.
cdac@kartik07:~$ cd
cdac@kartik07:~$ cd LinuxAssignment
cdac@kartik07:~/LinuxAssignment$ nano Duplicate.txt
cdac@kartik07:~/LinuxAssignment$ sort Duplicate.txt | uniq
astroid belt
earth
jupiter
mars
mercury
naptune
pluto
saturn
sun
uranus
cdac@kartik07:~/LinuxAssignment$ sort Duplicate.txt | uniq -c | awk '{$1=$1;print}'
1 astroid belt
1 earth
1 jupiter
2 mars
1 mercury
1 naptune
2 pluto
1 saturn
1 sun
1 uranus
1 venus
cdac@kartik07:~/LinuxAssignment$ cat Duplicate.txt
```