

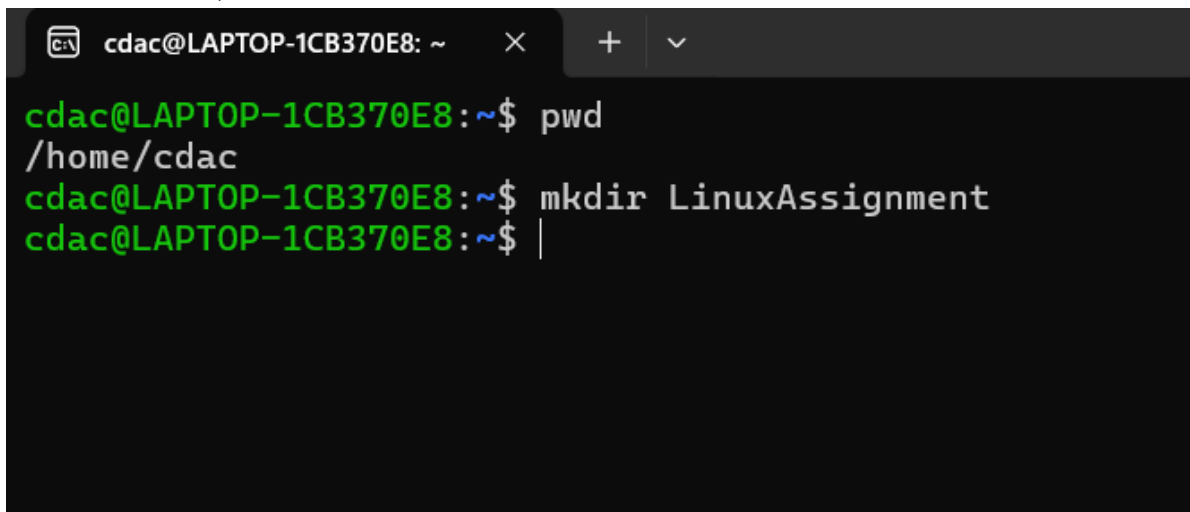
Operating Systems

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 link

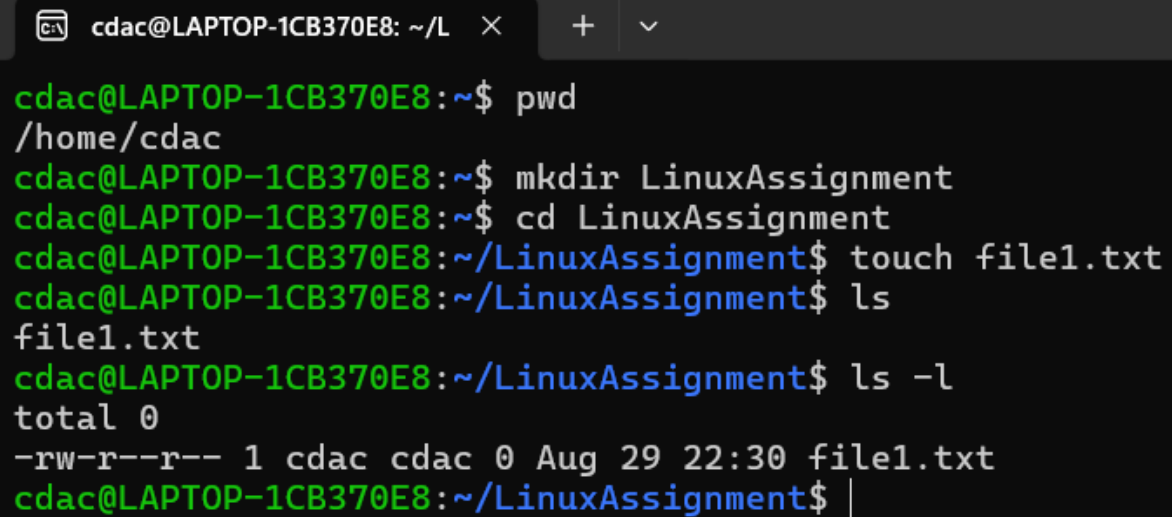
a. Start by navigating to your home directory and list its contents. Then, move into a directory named "LinuxAssignment" if it exists; otherwise, create it.

A terminal window with a dark background and green text. The window title bar shows 'cdac@LAPTOP-1CB370E8: ~' and standard window controls. The terminal shows the following commands and output:

```
cdac@LAPTOP-1CB370E8:~$ pwd
/home/cdac
cdac@LAPTOP-1CB370E8:~$ mkdir LinuxAssignment
cdac@LAPTOP-1CB370E8:~$ |
```

b) File Management:

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

A terminal window with a dark background and light green text. The window title bar shows 'cdac@LAPTOP-1CB370E8: ~/L' and standard window controls. The terminal output shows the user navigating to the 'LinuxAssignment' directory, creating a file named 'file1.txt' using the 'touch' command, and then listing the directory contents with 'ls' and 'ls -l'.

```
cdac@LAPTOP-1CB370E8:~$ pwd
/home/cdac
cdac@LAPTOP-1CB370E8:~$ mkdir LinuxAssignment
cdac@LAPTOP-1CB370E8:~$ cd LinuxAssignment
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ touch file1.txt
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ ls
file1.txt
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ ls -l
total 0
-rw-r--r-- 1 cdac cdac 0 Aug 29 22:30 file1.txt
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ |
```

c) Directory Management:

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

```
cdac@LAPTOP-1CB370E8: ~/L × + v
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ ls
docs  file2.txt
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ sudo cp file1.txt docs
cp: cannot stat 'file1.txt': No such file or directory
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ touch file1.txt
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ sudo cp file1.txt docs
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ cd docs
cdac@LAPTOP-1CB370E8:~/LinuxAssignment/docs$ ls
file1.txt
cdac@LAPTOP-1CB370E8:~/LinuxAssignment/docs$ sudo mv file1.txt file3.txt
cdac@LAPTOP-1CB370E8:~/LinuxAssignment/docs$ ls
file3.txt
cdac@LAPTOP-1CB370E8:~/LinuxAssignment/docs$ |
```

d) Copy and Move Files:

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

```
cdac@LAPTOP-1CB370E8: ~/L x + v
cdac@LAPTOP-1CB370E8:~/LinuxAssignment/docs$ chmod g-w file2.txt
cdac@LAPTOP-1CB370E8:~/LinuxAssignment/docs$ ls -l
total 0
-rwxr--r-- 1 cdac cdac 0 Aug 29 23:55 file2.txt
-rw-r--r-- 1 root root 0 Aug 29 22:57 file3.txt
cdac@LAPTOP-1CB370E8:~/LinuxAssignment/docs$ adduser user1
adduser: Only root may add a user or group to the system.
cdac@LAPTOP-1CB370E8:~/LinuxAssignment/docs$ sudo adduser user1
Adding user `user1' ...
Adding new group `user1' (1001) ...
Adding new user `user1' (1001) with group `user1' ...
Creating home directory `/home/user1' ...
Copying files from `/etc/skel' ...
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for user1
Enter the new value, or press ENTER for the default
    Full Name []: Yugandhar
    Room Number []: 4
    Work Phone []: 9156
    Home Phone []: 1945
    Other []: 1910
Is the information correct? [Y/n] Y
cdac@LAPTOP-1CB370E8:~/LinuxAssignment/docs$ su user1
Password:
user1@LAPTOP-1CB370E8:/home/cdac/LinuxAssignment/docs$ ls -l
total 0
-rwxr--r-- 1 cdac cdac 0 Aug 29 23:55 file2.txt
-rw-r--r-- 1 root root 0 Aug 29 22:57 file3.txt
user1@LAPTOP-1CB370E8:/home/cdac/LinuxAssignment/docs$ sudo chown user1 file2.txt
[sudo] password for user1:
user1 is not in the sudoers file. This incident will be reported.
user1@LAPTOP-1CB370E8:/home/cdac/LinuxAssignment/docs$ su cdac
Password:
cdac@LAPTOP-1CB370E8:~/LinuxAssignment/docs$ sudo chown user1 file2.txt
cdac@LAPTOP-1CB370E8:~/LinuxAssignment/docs$ ls -l
total 0
-rwxr--r-- 1 user1 cdac 0 Aug 29 23:55 file2.txt
-rw-r--r-- 1 root root 0 Aug 29 22:57 file3.txt
cdac@LAPTOP-1CB370E8:~/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.

The image shows a web browser window on the left displaying assignment instructions and a terminal window on the right showing the execution of those instructions.

Assignment Instructions (Left Window):

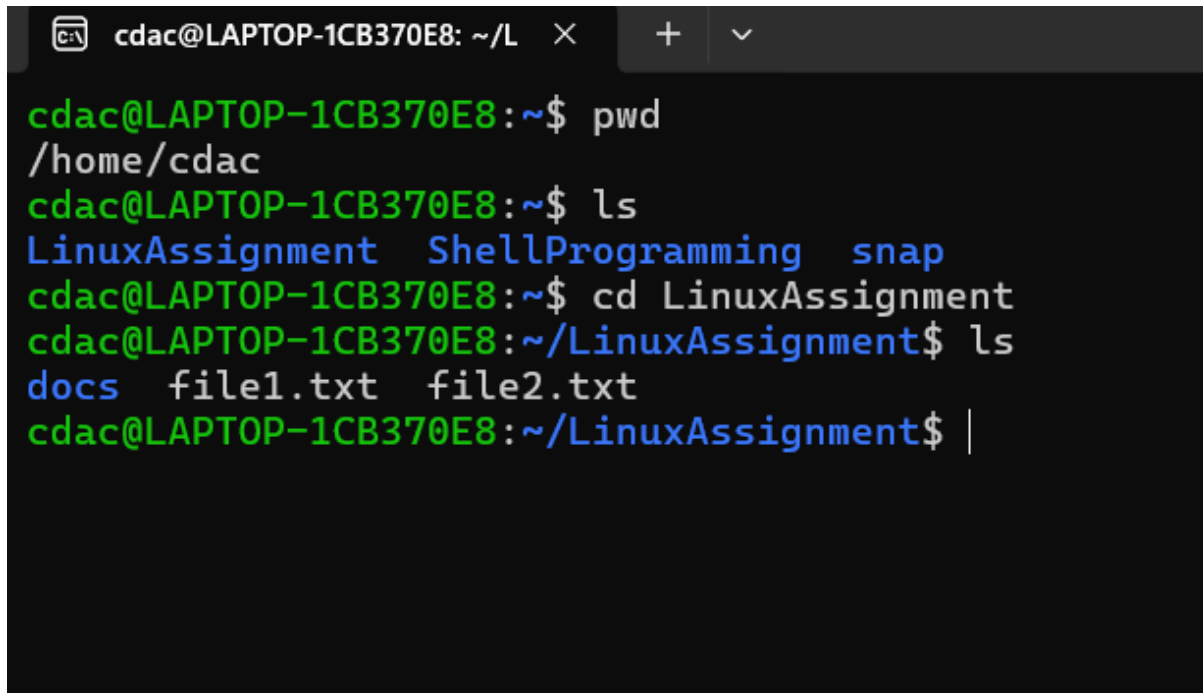
- a. Inside the "LinuxAssignment" directory, create a new file named "file1.txt". Display its contents.
- Directory Management:**
 - a. Create a new directory named "docs" inside the "LinuxAssignment" directory.
- Copy and Move Files:**
 - a. Copy the "file1.txt" file into the "docs" directory and rename it to "file2.txt".
- 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.
- Final Checklist:**
 - a. Finally, list the contents of the "LinuxAssignment" directory and the root directory to ensure that all operations were performed correctly.
- 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).
- System Information:**
 - a. Display the current system date and time.
- Networking:**
 - a. Display the IP address of the system.
 - b. Ping a remote server to check connectivity (provide a remote server address to ping).
- File Compression:**
 - a. Compress the "docs" directory into a zip file.
 - b. Extract the contents of the zip file into a new directory.
- 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).

Terminal Output (Right Window):

```
172.25.228.168
cdac@LAPTOP-1CB370E8:~/LinuxAssignment/docs$ su cdac
Password:
cdac@LAPTOP-1CB370E8:~/LinuxAssignment/docs$ ls -l
total 0
-rw-r--r-- 1 root root 0 Aug 29 22:57 file3.txt
cdac@LAPTOP-1CB370E8:~/LinuxAssignment/docs$ touch file2.txt
cdac@LAPTOP-1CB370E8:~/LinuxAssignment/docs$ ls -l
total 0
-rw-rw-r-- 1 cdac cdac 0 Aug 29 23:55 file2.txt
-rw-r--r-- 1 root root 0 Aug 29 22:57 file3.txt
cdac@LAPTOP-1CB370E8:~/LinuxAssignment/docs$ chmod u+x file2.txt
cdac@LAPTOP-1CB370E8:~/LinuxAssignment/docs$ ls -l
total 0
-rwxr--r-- 1 cdac cdac 0 Aug 29 23:55 file2.txt
-rw-r--r-- 1 root root 0 Aug 29 22:57 file3.txt
cdac@LAPTOP-1CB370E8:~/LinuxAssignment/docs$ chmod g-w file2.txt
cdac@LAPTOP-1CB370E8:~/LinuxAssignment/docs$ ls -l
total 0
-rwxr--r-- 1 cdac cdac 0 Aug 29 23:55 file2.txt
-rw-r--r-- 1 root root 0 Aug 29 22:57 file3.txt
cdac@LAPTOP-1CB370E8:~/LinuxAssignment/docs$ adduser user1
adduser: Only root may add a user or group to the system.
cdac@LAPTOP-1CB370E8:~/LinuxAssignment/docs$ sudo adduser user1
Adding user 'user1' ...
Adding new group 'user1' (1001) ...
Adding new user 'user1' (1001) with group 'user1' ...
Creating home directory '/home/user1' ...
Copying files from '/etc/skel' ...
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for user1
Enter the new value, or press ENTER for the default
Full Name []: Yugandhar
Room Number []: 4
Work Phone []: 9156
Home Phone []: 1945
Other []: 1910
Is the information correct? [Y/n] Y
cdac@LAPTOP-1CB370E8:~/LinuxAssignment/docs$ su user1
```

f) Final Checklist:

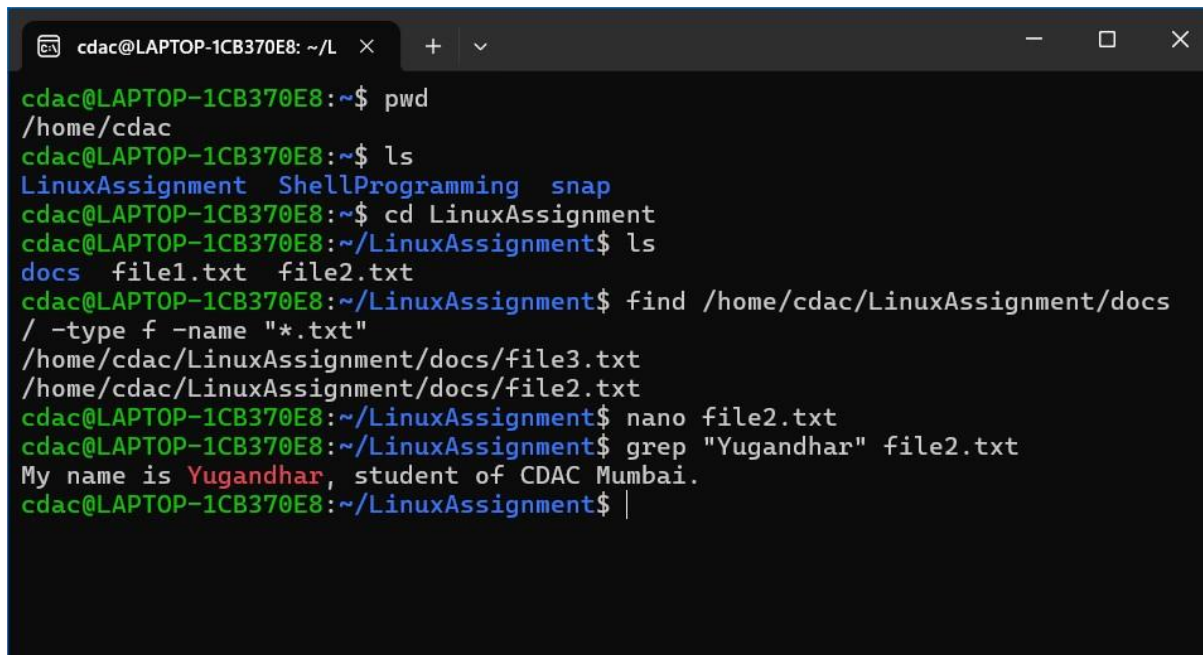
a. Finally, list the contents of the "LinuxAssignment" directory and the root directory to ensure that all operations were performed correctly.

A terminal window with a dark background and light-colored text. The window title bar shows 'cdac@LAPTOP-1CB370E8: ~/L' and standard window controls. The terminal shows a series of commands and their outputs: 'pwd' returns '/home/cdac', 'ls' lists 'LinuxAssignment', 'ShellProgramming', and 'snap', 'cd LinuxAssignment' changes the directory, and 'ls' lists 'docs', 'file1.txt', and 'file2.txt'.

```
cdac@LAPTOP-1CB370E8:~$ pwd
/home/cdac
cdac@LAPTOP-1CB370E8:~$ ls
LinuxAssignment  ShellProgramming  snap
cdac@LAPTOP-1CB370E8:~$ cd LinuxAssignment
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ ls
docs  file1.txt  file2.txt
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ |
```

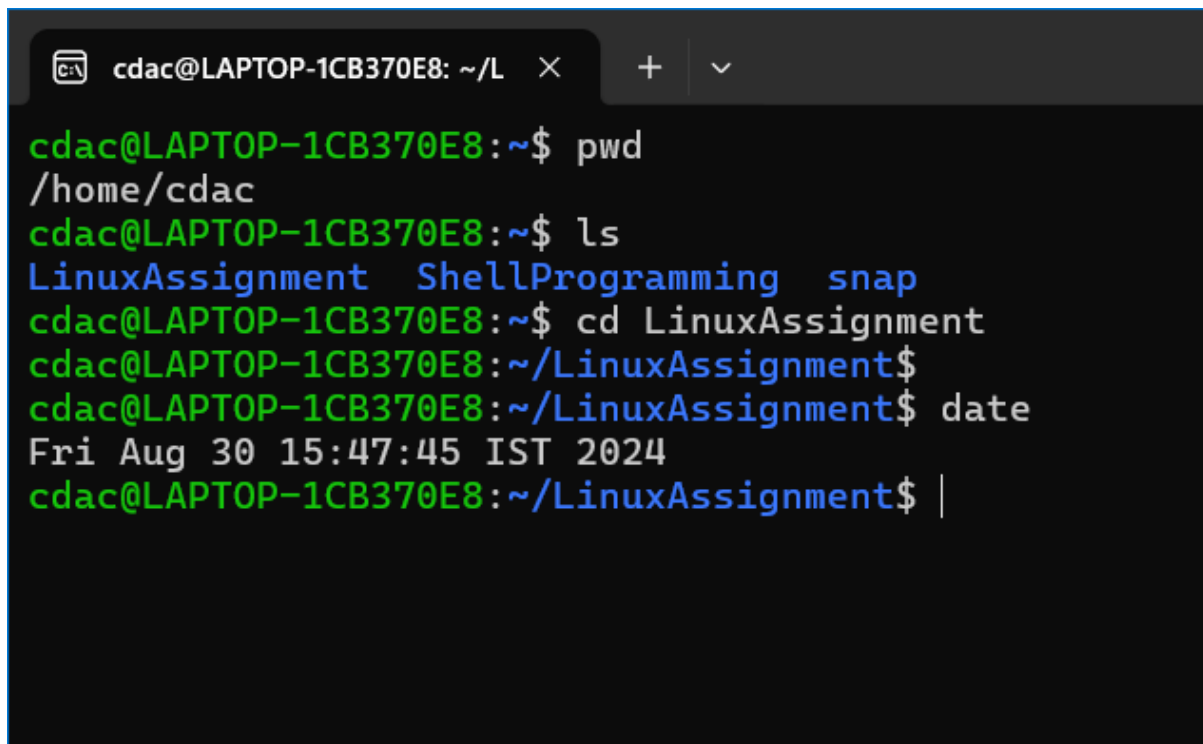
g) File Searching:

- 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).

A terminal window titled 'cdac@LAPTOP-1CB370E8: ~/L' with standard window controls. The terminal shows a series of commands and their outputs. The user starts in the home directory, lists files, navigates to the 'LinuxAssignment' directory, lists its contents, and then uses 'find' to search for all '.txt' files in the 'docs' subdirectory. The results show 'file3.txt' and 'file2.txt'. The user then opens 'file2.txt' with 'nano', and finally uses 'grep' to search for the word 'Yugandhar' in 'file2.txt', which returns a line containing the name. The terminal text is as follows:

```
cdac@LAPTOP-1CB370E8:~$ pwd
/home/cdac
cdac@LAPTOP-1CB370E8:~$ ls
LinuxAssignment  ShellProgramming  snap
cdac@LAPTOP-1CB370E8:~$ cd LinuxAssignment
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ ls
docs  file1.txt  file2.txt
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ find /home/cdac/LinuxAssignment/docs
/ -type f -name "*.txt"
/home/cdac/LinuxAssignment/docs/file3.txt
/home/cdac/LinuxAssignment/docs/file2.txt
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ nano file2.txt
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ grep "Yugandhar" file2.txt
My name is Yugandhar, student of CDAC Mumbai.
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ |
```

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



```
cdac@LAPTOP-1CB370E8: ~/L × + ∨  
cdac@LAPTOP-1CB370E8:~$ pwd  
/home/cdac  
cdac@LAPTOP-1CB370E8:~$ ls  
LinuxAssignment ShellProgramming snap  
cdac@LAPTOP-1CB370E8:~$ cd LinuxAssignment  
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$  
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ date  
Fri Aug 30 15:47:45 IST 2024  
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ |
```


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).

```
cdac@LAPTOP-1CB370E8: ~/L x + v - □ ×
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ ls
docs  file1.txt  file2.txt
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ date
Fri Aug 30 15:56:13 IST 2024
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ hostname -I
172.25.228.168
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ 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=111 time=26.9 ms
64 bytes from 8.8.8.8: icmp_seq=2 ttl=111 time=25.7 ms
64 bytes from 8.8.8.8: icmp_seq=3 ttl=111 time=23.8 ms
64 bytes from 8.8.8.8: icmp_seq=4 ttl=111 time=26.2 ms
64 bytes from 8.8.8.8: icmp_seq=5 ttl=111 time=24.4 ms
64 bytes from 8.8.8.8: icmp_seq=6 ttl=111 time=22.6 ms
64 bytes from 8.8.8.8: icmp_seq=7 ttl=111 time=26.5 ms
64 bytes from 8.8.8.8: icmp_seq=8 ttl=111 time=18.8 ms
64 bytes from 8.8.8.8: icmp_seq=9 ttl=111 time=47.9 ms
64 bytes from 8.8.8.8: icmp_seq=10 ttl=111 time=45.5 ms
^C
--- 8.8.8.8 ping statistics ---
10 packets transmitted, 10 received, 0% packet loss, time 9016ms
rtt min/avg/max/mdev = 18.754/28.836/47.941/9.243 ms
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ |
```

j) File Compression:

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

```

cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ ls
docs  file1.txt  file2.txt
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ $ sudo apt install zip
$: command not found
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ sudo apt install zip
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  unzip
The following NEW packages will be installed:
  unzip zip
0 upgraded, 2 newly installed, 0 to remove and 0 not upgraded.
Need to get 350 kB of archives.
After this operation, 929 kB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 unzip amd64 6.0-26ubuntu3.1 [174 kB]
Get:2 http://archive.ubuntu.com/ubuntu jammy/main amd64 zip amd64 3.0-12build2 [176 kB]
Fetched 350 kB in 1s (254 kB/s)
Selecting previously unselected package unzip.
(Reading database ... 24208 files and directories currently installed.)
Preparing to unpack .../unzip_6.0-26ubuntu3.1_amd64.deb ...
Unpacking unzip (6.0-26ubuntu3.1) ...
Selecting previously unselected package zip.
Preparing to unpack .../zip_3.0-12build2_amd64.deb ...
Unpacking zip (3.0-12build2) ...
Setting up unzip (6.0-26ubuntu3.1) ...
Setting up zip (3.0-12build2) ...
Processing triggers for man-db (2.10.2-1) ...
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ cd docs
cdac@LAPTOP-1CB370E8:~/LinuxAssignment/docs$ cd ..
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ zip docs.zip docs
  adding: docs/ (stored 0%)
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ mkdir yugs
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ unzip docs.zip -r
Archive:  docs.zip
caution: filename not matched:  -r
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ unzip -r docs.zip yugs
UnZip 6.00 of 20 April 2009, by Debian. Original by Info-ZIP.

Usage: unzip [-Z] [-opts[modifiers]] file[.zip] [list] [-x xlist] [-d exdir]

```

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

```

Usage: unzip [-Z] [-opts[modifiers]] file[.zip] [list] [-x xlist] [-d exdir]
Default action is to extract files in list, except those in xlist, to exdir;
file[.zip] may be a wildcard.  -Z => ZipInfo mode ("unzip -Z" for usage).

-p  extract files to pipe, no messages      -l  list files (short format)
-f  freshen existing files, create none     -t  test compressed archive data
-u  update files, create if necessary        -z  display archive comment only
-v  list verbosely/show version info       -T  timestamp archive to latest
-x  exclude files that follow (in xlist)    -d  extract files into exdir

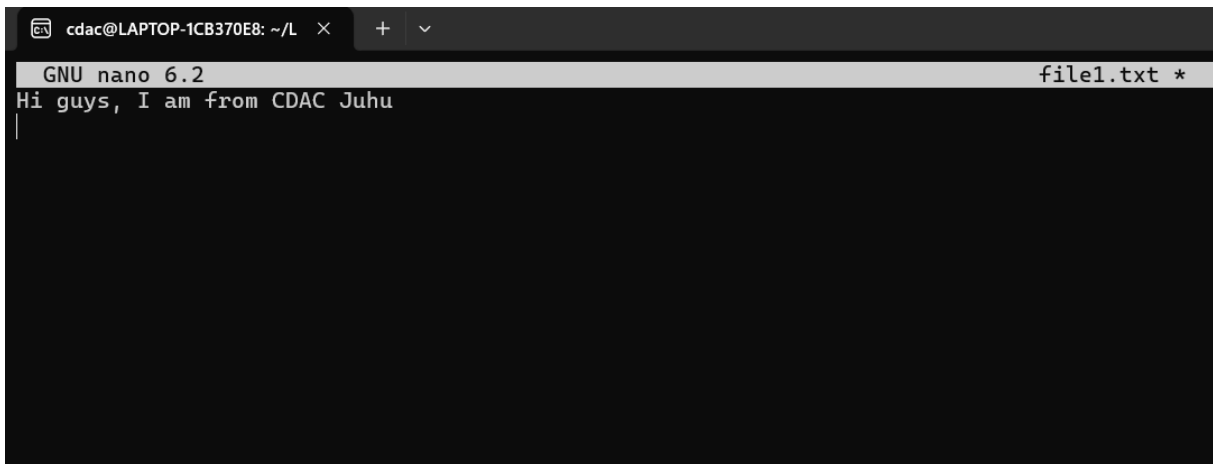
modifiers:
-n  never overwrite existing files          -q  quiet mode (-qq => quieter)
-o  overwrite files WITHOUT prompting       -a  auto-convert any text files
-j  junk paths (do not make directories)   -aa treat ALL files as text
-U  use escapes for all non-ASCII Unicode  -UU ignore any Unicode fields
-C  match filenames case-insensitively     -L  make (some) names lowercase
-X  restore UID/GID info                   -V  retain VMS version numbers
-K  keep setuid/setgid/tacky permissions  -M  pipe through "more" pager
-O CHARSET specify a character encoding for DOS, Windows and OS/2 archives
-I CHARSET specify a character encoding for UNIX and other archives

See "unzip -hh" or unzip.txt for more help.  Examples:
unzip data1 -x joe  => extract all files except joe from zipfile data1.zip
unzip -p foo | more => send contents of foo.zip via pipe into program more
unzip -fo foo ReadMe => quietly replace existing ReadMe if archive file newer
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ unzip docs.zip -d yugs
Archive:  docs.zip
  creating: yugs/docs/
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ cd yugs
cdac@LAPTOP-1CB370E8:~/LinuxAssignment/yugs$ ls
docs

```

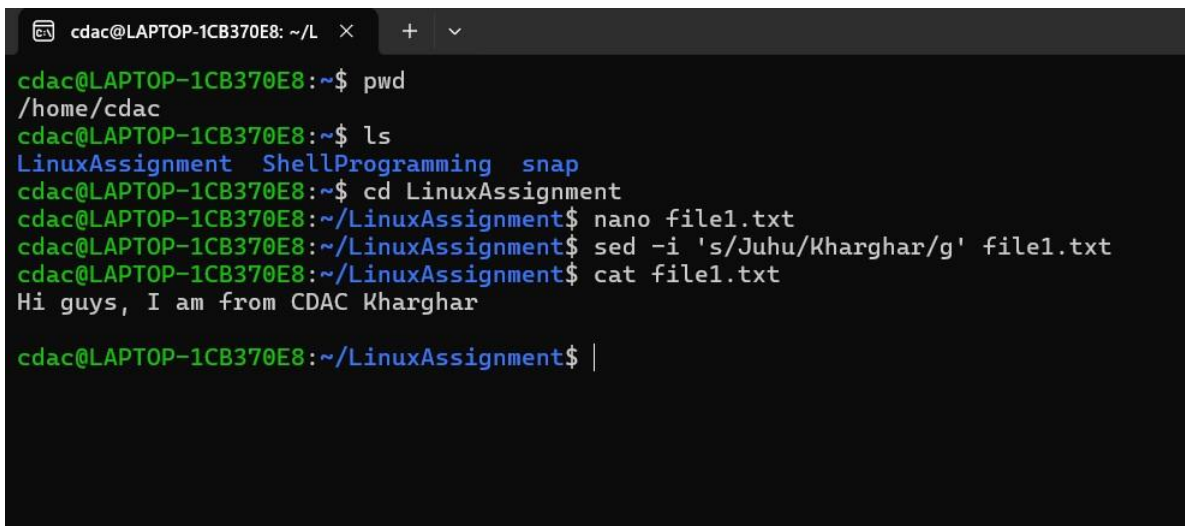
k) File Editing:

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



```
cdac@LAPTOP-1CB370E8: ~/L × + v
GNU nano 6.2 file1.txt *
Hi guys, I am from CDAC Juhu
|
```

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@LAPTOP-1CB370E8: ~$ pwd
/home/cdac
cdac@LAPTOP-1CB370E8: ~$ ls
LinuxAssignment ShellProgramming snap
cdac@LAPTOP-1CB370E8: ~$ cd LinuxAssignment
cdac@LAPTOP-1CB370E8: ~/LinuxAssignment$ nano file1.txt
cdac@LAPTOP-1CB370E8: ~/LinuxAssignment$ sed -i 's/Juhu/Kharghar/g' file1.txt
cdac@LAPTOP-1CB370E8: ~/LinuxAssignment$ cat file1.txt
Hi guys, I am from CDAC Kharghar
cdac@LAPTOP-1CB370E8: ~/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.

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@LAPTOP-1CB370E8: ~/L × + ▾
GNU nano 6.2 data.txt
Car Brands Name:
Audi
BMW
Cooper
DatsunGo
Elvis
Ford
Ferrari
General Motors
Honda
Ikea
Jaguar
Kia
Lamborghini
Mercedes
Nano
Ola
Porsche
Rolls-Royce
Skoda
Tesla
Volkswagen
```

```
cdac@LAPTOP-1CB370E8: ~/L × + ▾
cdac@LAPTOP-1CB370E8:~$ pwd
/home/cdac
cdac@LAPTOP-1CB370E8:~$ ls
LinuxAssignment ShellProgramming snap
cdac@LAPTOP-1CB370E8:~$ cd LinuxAssignment
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ ls
data.txt docs docs.zip duplicate.txt file1.txt file2.txt fruits.txt input.txt input.txt numbers.txt output.txt yugs
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ data.txt
data.txt: command not found
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ nano data.txt
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ nano data.txt
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ head -n 10 data.txt
Car Brands Name:
Audi
BMW
Cooper
DatsunGo
Elvis
Ford
Ferrari
General Motors
Honda
Porsche
Rolls-Royce
Skoda
Tesla
Volkswagen
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ tail -n 5 data.txt
Porsche
Rolls-Royce
Skoda
Tesla
Volkswagen
cdac@LAPTOP-1CB370E8:~/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. d. To focus on the last few numbers of the dataset, display the last 3 lines of "numbers.txt"

```
cdac@LAPTOP-1CB370E8: ~/L × + v
GNU nano 6.2 numbers.txt
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
```

```
cdac@LAPTOP-1CB370E8: ~/LinuxAssignment$ ls
data.txt docs docs.zip file1.txt file2.txt yugs
cdac@LAPTOP-1CB370E8: ~/LinuxAssignment$ touch numbers.txt
cdac@LAPTOP-1CB370E8: ~/LinuxAssignment$ ls
data.txt docs docs.zip file1.txt file2.txt numbers.txt yugs
cdac@LAPTOP-1CB370E8: ~/LinuxAssignment$ nano numbers.txt
cdac@LAPTOP-1CB370E8: ~/LinuxAssignment$ nano numbers.txt
cdac@LAPTOP-1CB370E8: ~/LinuxAssignment$ head -n 15 numbers.txt
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
cdac@LAPTOP-1CB370E8: ~/LinuxAssignment$ tail -n 3 numbers.txt
18
19
20
cdac@LAPTOP-1CB370E8: ~/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@LAPTOP-1CB370E8: ~/L  ×  +  v
GNU nano 6.2                                     input.txt *
sachin tendulkar
virat kohli
ms dhoni
rohit sharma
hardik pandya
jasprit bumrah
```

```
cdac@LAPTOP-1CB370E8: ~/L  ×  +  v
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ ls
data.txt docs docs.zip file1.txt, file2.txt numbers.txt yugs
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ touch input.txt, output.txt
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ ls
data.txt docs docs.zip file1.txt, file2.txt input.txt, numbers.txt output.txt yugs
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ nano input.txt
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ tr 'a-z' 'A-Z' <input.txt> output.txt
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ cd output.txt
-bash: cd: output.txt: Not a directory
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ ls
data.txt docs docs.zip file1.txt, file2.txt input.txt input.txt, numbers.txt output.txt yugs
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ cat output.txt
SACHIN TENDULKAR
VIRAT KOHLI
MS DHONI
ROHIT SHARMA
HARDIK PANDYA
JASPRIT BUMRAH
cdac@LAPTOP-1CB370E8:~/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@LAPTOP-1CB370E8: ~/L × + v
GNU nano 6.2 duplicate.txt *
Table
Chair
Books
TV
Bed
Chair
Photo
Fan
Bulb
Books
Bed
```

```
cdac@LAPTOP-1CB370E8: ~/L × + v
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ ls
data.txt docs docs.zip file1.txt file2.txt input.txt input.txt numbers.txt output.txt yugs
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ touch duplicate.txt
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ ls
data.txt docs docs.zip duplicate.txt file1.txt file2.txt input.txt input.txt numbers.txt output.txt yugs
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ nano duplicate.txt
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ sort duplicate.txt | uniq
Bed
Books
Bulb
Chair
Fan
Photo
TV
Table
cdac@LAPTOP-1CB370E8:~/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."

```
cdac@LAPTOP-1CB370E8: ~/L X + v
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ ls
data.txt docs docs.zip duplicate.txt file1.txt file2.txt input.txt input.txt numbers.txt output.txt yugs
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ touch fruits.txt
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ nano fruits.txt
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ sort fruits.txt
apple
apple
banana
cherry
cherry
chikoo
mango
mango
mango
orange
orange
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ sort fruits | uniq -c
sort: cannot read: fruits: No such file or directory
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ sort fruits.txt | uniq -c
  2 apple
  1 banana
  2 cherry
  1 chikoo
  3 mango
  2 orange
cdac@LAPTOP-1CB370E8:~/LinuxAssignment$ |
```