a) Navigate and List:

Start by navigating to your home directory and list its contents. Then, move into a

directory named "LinuxAssignment" if it exists; otherwise, create it.

```
cdac@LAPTOP-2EL00BUG:~$ cd ~
cdac@LAPTOP-2EL00BUG:~$ ls
LinuxAssignment  abc.txt  sh1  sh2  sh3  sh4
cdac@LAPTOP-2EL00BUG:~$ cd LinuxAssignment
cdac@LAPTOP-2EL00BUG:~/LinuxAssignment$
```
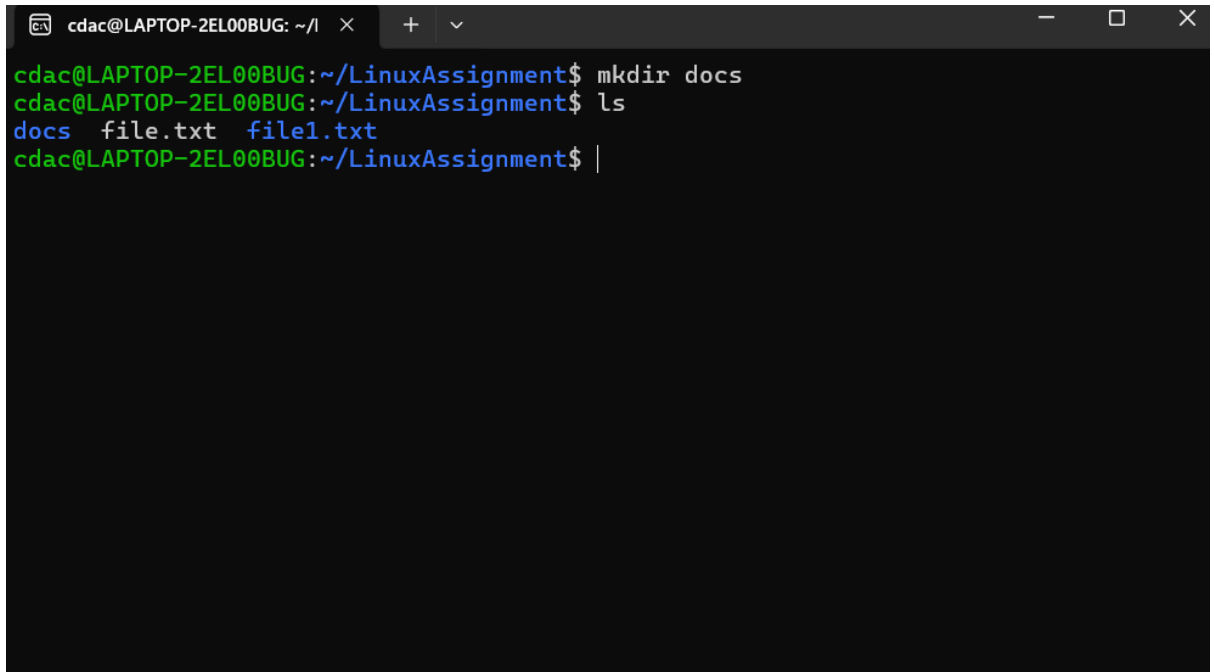
b) File Management:

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

contents.

```
cdac@LAPTOP-2EL00BUG:~/LinuxAssignment$ ls
file.txt  file1.txt
cdac@LAPTOP-2EL00BUG:~/LinuxAssignment$ nano file.txt
cdac@LAPTOP-2EL00BUG:~/LinuxAssignment$ cat file.txt
hello
hi
bye
good
bad
cdac@LAPTOP-2EL00BUG:~/LinuxAssignment$
```
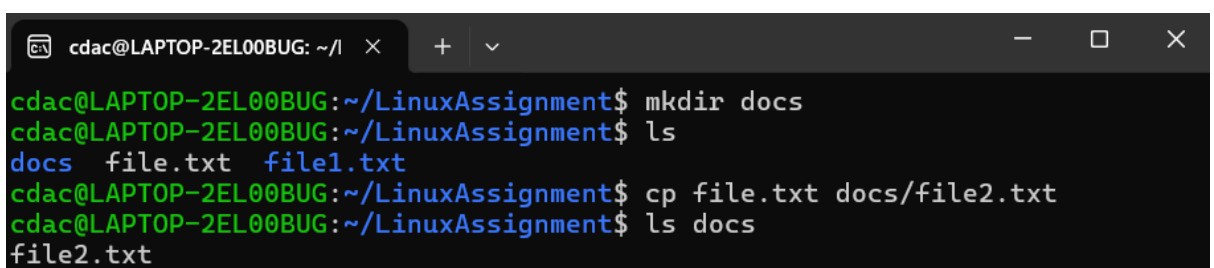
c) Directory Management:

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

```
cdac@LAPTOP-2EL00BUG:~/LinuxAssignment$ mkdir docs
cdac@LAPTOP-2EL00BUG:~/LinuxAssignment$ ls
docs   file.txt   file1.txt
cdac@LAPTOP-2EL00BUG:~/LinuxAssignment$
```

d) Copy and Move Files:

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

```
cdac@LAPTOP-2EL00BUG:~/LinuxAssignment$ mkdir docs
cdac@LAPTOP-2EL00BUG:~/LinuxAssignment$ ls
docs   file.txt   file1.txt
cdac@LAPTOP-2EL00BUG:~/LinuxAssignment$ cp file.txt docs/file2.txt
cdac@LAPTOP-2EL00BUG:~/LinuxAssignment$ ls docs
file2.txt
```

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@LAPTOP-2EL00BUG: ~/l  ×    +    ∨

cdac@LAPTOP-2EL00BUG:~/LinuxAssignment$ ls
docs  file.txt  file1.txt
cdac@LAPTOP-2EL00BUG:~/LinuxAssignment$ ls docs
file2.txt
cdac@LAPTOP-2EL00BUG:~/LinuxAssignment$ chmod u=rwx,o=r file2.txt
chmod: cannot access 'file2.txt': No such file or directory
cdac@LAPTOP-2EL00BUG:~/LinuxAssignment$ bash
cdac@LAPTOP-2EL00BUG:~/LinuxAssignment$ ls
docs  file.txt  file1.txt
cdac@LAPTOP-2EL00BUG:~/LinuxAssignment$ cd ~/LinuxAssignment/docs
cdac@LAPTOP-2EL00BUG:~/LinuxAssignment/docs$ chmod u=rwx,o=r file2.txt
cdac@LAPTOP-2EL00BUG:~/LinuxAssignment/docs$ chown $(whoami) file2.txt
cdac@LAPTOP-2EL00BUG:~/LinuxAssignment/docs$ ls -l file2.txt
-rwxr--r-- 1 cdac cdac 22 Feb 27 17:11 file2.txt
cdac@LAPTOP-2EL00BUG:~/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@LAPTOP-2EL00BUG: ~/l  ×    +    ∨

drwxr-xr-x 2 cdac cdac 4096 Feb 27 17:11 docs
-rw-r--r-- 1 cdac cdac   22 Feb 27 16:41 file.txt
drwxr-xr-x 2 cdac cdac 4096 Feb 27 16:36 file1.txt
cdac@LAPTOP-2EL00BUG:~/LinuxAssignment/docs$ ls -l /
total 2448
lrwxrwxrwx   1 root root        7 Apr 22  2024 bin -> usr/bin
drwxr-xr-x   2 root root     4096 Feb 26  2024 bin.usr-is-merged
drwxr-xr-x   2 root root     4096 Apr 22  2024 boot
drwxr-xr-x  16 root root     3580 Feb 27 16:02 dev
drwxr-xr-x  88 root root     4096 Feb 27 16:02 etc
drwxr-xr-x   3 root root     4096 Feb 26 02:33 home
-rwxrwxrwx   1 root root 2424984 Feb 12 00:59 init
lrwxrwxrwx   1 root root        7 Apr 22  2024 lib -> usr/lib
drwxr-xr-x   2 root root     4096 Apr  8  2024 lib.usr-is-merged
lrwxrwxrwx   1 root root        9 Apr 22  2024 lib64 -> usr/lib64
drwx------   2 root root    16384 Feb 26 02:32 lost+found
drwxr-xr-x   2 root root     4096 Feb 15 08:09 media
drwxr-xr-x   6 root root     4096 Feb 26 02:33 mnt
drwxr-xr-x   2 root root     4096 Feb 15 08:09 opt
dr-xr-xr-x 232 root root        0 Feb 27 16:02 proc
drwx------   3 root root     4096 Feb 27 13:23 root
drwxr-xr-x  18 root root      540 Feb 27 16:02 run
lrwxrwxrwx   1 root root        8 Apr 22  2024 sbin -> usr/sbin
drwxr-xr-x   2 root root     4096 Mar 31  2024 sbin.usr-is-merged
drwxr-xr-x   2 root root     4096 Feb 26 02:33 snap
drwxr-xr-x   2 root root     4096 Feb 15 08:09 srv
dr-xr-xr-x  11 root root        0 Feb 27 15:41 sys
drwxrwxrwt  11 root root     4096 Feb 27 16:28 tmp
drwxr-xr-x  12 root root     4096 Feb 15 08:09 usr
drwxr-xr-x  13 root root     4096 Feb 26 02:33 var
cdac@LAPTOP-2EL00BUG:~/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).

h) System Information:

a. Display the current system date and time.

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-2EL00BUG:~/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:4b:bc:21 brd ff:ff:ff:ff:ff:ff
    inet 172.20.87.206/20 brd 172.20.95.255 scope global eth0
       valid_lft forever preferred_lft forever
    inet6 fe80::215:5dff:fe4b:bc21/64 scope link
       valid_lft forever preferred_lft forever
cdac@LAPTOP-2EL00BUG:~/LinuxAssignment$ ping remote_server_address
ping: remote_server_address: Temporary failure in name resolution
cdac@LAPTOP-2EL00BUG:~/LinuxAssignment$
```

j) File Compression:

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

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

```
cdac@LAPTOP-2EL00BUG:~/LinuxAssignment$ cd ~/LinuxAssignment
cdac@LAPTOP-2EL00BUG:~/LinuxAssignment$ zip -r docs.zip docs
  adding: docs/ (stored 0%)
  adding: docs/file2.txt (stored 0%)
cdac@LAPTOP-2EL00BUG:~/LinuxAssignment$ ls
docs  docs.zip  file.txt  file1.txt  file2.txt
cdac@LAPTOP-2EL00BUG:~/LinuxAssignment$ mkdir extracted_docs
cdac@LAPTOP-2EL00BUG:~/LinuxAssignment$ unzip docs.zip -d extracted_docs
Archive:  docs.zip
   creating: extracted_docs/docs/
 extracting: extracted_docs/docs/file2.txt
cdac@LAPTOP-2EL00BUG:~/LinuxAssignment$ ls extracted_docs
docs
cdac@LAPTOP-2EL00BUG:~/LinuxAssignment$
```