Problem 1: Read the instructions carefully and answer accordingly. If there is any need to insert some data then do that as well.

1. 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:- In my device there is no directory LinuxAssignment is created so I create that directory by using below commands

mkdir LinuxAssignment

cd LinuxAssignment

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

ANS:- touch file1.txt

cat file1.txt

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

ANS:- In same directory I have added below command

mkdir docs

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

ANS:-To copy file from file1 directory I have to come to the linuxAssignment directory first then I copy it

Pwd

cd ~/LinuxAssignment

ls

cp file1.txt docs/file2.txt

e) Permissions and Ownership:

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 docs/file2.txt

Whoami

chown cdac docs/file2.txt

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 ~/LinuxAssignment

ls -l /

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:-

grep "some" ~/LinuxA

ssignment/file1.txt

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

ANS :-

date

i) Networking: a. Display the IP address of the system.

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

ANS:- ip addr show

hostname -I

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:-here first I have to download zip package to perform command

sudo apt install zip

zip -r docs.zip ~/LinuxAssignment/docs

mkdir extracted\_docs

1. unzip docs.zip -d extracted\_docs

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:- nano ~/LinuxAssignment/file1.txt

sed -i 's/sample/example/g' ~/LinuxAssignment/file1.txt

output:-

cdac@LAPTOP-2P1HBQDT:~$ cd ~

cdac@LAPTOP-2P1HBQDT:~$ ls

LinuxAssignment test1.text test1.text.save testdir

cdac@LAPTOP-2P1HBQDT:~$ mkdir LinuxAssigment

cdac@LAPTOP-2P1HBQDT:~$ cd LinuxAssignment

cdac@LAPTOP-2P1HBQDT:~/LinuxAssignment$ touch file1.txt

cdac@LAPTOP-2P1HBQDT:~/LinuxAssignment$ cat file1.txt

cdac@LAPTOP-2P1HBQDT:~/LinuxAssignment$ mkdir docs

mkdir: cannot create directory ‘docs’: File exists

cdac@LAPTOP-2P1HBQDT:~/LinuxAssignment$ cd docs

cdac@LAPTOP-2P1HBQDT:~/LinuxAssignment/docs$ cp file1.txt docs/file2.txt

cp: cannot stat 'file1.txt': No such file or directory

cdac@LAPTOP-2P1HBQDT:~/LinuxAssignment/docs$ pwd

/home/cdac/LinuxAssignment/docs

cdac@LAPTOP-2P1HBQDT:~/LinuxAssignment/docs$ cd ~/LinuxAssignment

cdac@LAPTOP-2P1HBQDT:~/LinuxAssignment$ ls

docs file1.txt

cdac@LAPTOP-2P1HBQDT:~/LinuxAssignment$ cp file1.txt docs/file2.txt

cdac@LAPTOP-2P1HBQDT:~/LinuxAssignment$ chmod 744 docs/file2.txt

cdac@LAPTOP-2P1HBQDT:~/LinuxAssignment$ whoami

cdac

cdac@LAPTOP-2P1HBQDT:~/LinuxAssignment$ chown cdac docs/file2.txt

cdac@LAPTOP-2P1HBQDT:~/LinuxAssignment$ ls -l ~/LinuxAssignment

total 4

drwxr-xr-x 2 cdac cdac 4096 Aug 29 21:00 docs

-rw-r--r-- 1 cdac cdac 0 Aug 29 21:04 file1.txt

cdac@LAPTOP-2P1HBQDT:~/LinuxAssignment$ ls -l ~/LinuxAssignment/docs

total 0

-rwxr--r-- 1 cdac cdac 0 Aug 29 21:09 file2.txt

cdac@LAPTOP-2P1HBQDT:~/LinuxAssignment$ ls -l /

total 2144

lrwxrwxrwx 1 root root 7 May 31 2023 bin -> usr/bin

drwxr-xr-x 2 root root 4096 May 31 2023 boot

drwxr-xr-x 16 root root 3560 Aug 29 20:51 dev

drwxr-xr-x 99 root root 4096 Aug 29 20:55 etc

drwxr-xr-x 3 root root 4096 Aug 27 23:54 home

-rwxrwxrwx 1 root root 2127224 Apr 25 23:47 init

lrwxrwxrwx 1 root root 7 May 31 2023 lib -> usr/lib

lrwxrwxrwx 1 root root 9 May 31 2023 lib32 -> usr/lib32

lrwxrwxrwx 1 root root 9 May 31 2023 lib64 -> usr/lib64

lrwxrwxrwx 1 root root 10 May 31 2023 libx32 -> usr/libx32

drwx------ 2 root root 16384 Aug 27 23:53 lost+found

drwxr-xr-x 2 root root 4096 May 31 2023 media

drwxr-xr-x 6 root root 4096 Aug 27 23:53 mnt

drwxr-xr-x 2 root root 4096 May 31 2023 opt

dr-xr-xr-x 212 root root 0 Aug 29 20:51 proc

drwx------ 3 root root 4096 Aug 27 23:54 root

drwxr-xr-x 23 root root 700 Aug 29 20:51 run

lrwxrwxrwx 1 root root 8 May 31 2023 sbin -> usr/sbin

drwxr-xr-x 6 root root 4096 May 31 2023 snap

drwxr-xr-x 2 root root 4096 May 31 2023 srv

dr-xr-xr-x 11 root root 0 Aug 29 20:51 sys

drwxrwxrwt 11 root root 4096 Aug 29 20:57 tmp

drwxr-xr-x 14 root root 4096 May 31 2023 usr

drwxr-xr-x 13 root root 4096 May 31 2023 var

cdac@LAPTOP-2P1HBQDT:~/LinuxAssignment$ echo "This is some

text for file1.txt" > ~/LinuxAssignment/file1.txt

cdac@LAPTOP-2P1HBQDT:~/LinuxAssignment$ echo "This is some text for file2.txt" > ~/LinuxAssignment/docs/file2.txt

cdac@LAPTOP-2P1HBQDT:~/LinuxAssignment$ find . -type f -name "\*.txt"

./docs/file2.txt

./file1.txt

cdac@LAPTOP-2P1HBQDT:~/LinuxAssignment$ grep "<word>" <filename>

-bash: syntax error near unexpected token `newline'

cdac@LAPTOP-2P1HBQDT:~/LinuxAssignment$ grep "<some>" <file2

.text>

-bash: syntax error near unexpected token `newline'

cdac@LAPTOP-2P1HBQDT:~/LinuxAssignment$ grep "some" ~/LinuxA

ssignment/file1.txt

This is some text for file1.txt

cdac@LAPTOP-2P1HBQDT:~/LinuxAssignment$ grep "is" ~/LinuxAss

ignment/file2.txt

grep: /home/cdac/LinuxAssignment/file2.txt: No such file or directory

cdac@LAPTOP-2P1HBQDT:~/LinuxAssignment$ date

Thu Aug 29 21:28:58 IST 2024

cdac@LAPTOP-2P1HBQDT:~/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 1492 qdisc mq state UP group default qlen 1000

link/ether 00:15:5d:3f:9b:0a brd ff:ff:ff:ff:ff:ff

inet 172.20.75.17/20 brd 172.20.79.255 scope global eth0

valid\_lft forever preferred\_lft forever

inet6 fe80::215:5dff:fe3f:9b0a/64 scope link

valid\_lft forever preferred\_lft forever

cdac@LAPTOP-2P1HBQDT:~/LinuxAssignment$ hostname -I

172.20.75.17

cdac@LAPTOP-2P1HBQDT:~/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=118 time=18.8 ms

64 bytes from 8.8.8.8: icmp\_seq=2 ttl=118 time=41.3 ms

64 bytes from 8.8.8.8: icmp\_seq=3 ttl=118 time=18.0 ms

64 bytes from 8.8.8.8: icmp\_seq=4 ttl=118 time=34.6 ms

64 bytes from 8.8.8.8: icmp\_seq=5 ttl=118 time=49.3 ms

64 bytes from 8.8.8.8: icmp\_seq=6 ttl=118 time=27.7 ms

64 bytes from 8.8.8.8: icmp\_seq=7 ttl=118 time=48.9 ms

64 bytes from 8.8.8.8: icmp\_seq=8 ttl=118 time=20.4 ms

64 bytes from 8.8.8.8: icmp\_seq=9 ttl=118 time=42.3 ms

64 bytes from 8.8.8.8: icmp\_seq=10 ttl=118 time=64.1 ms

64 bytes from 8.8.8.8: icmp\_seq=11 ttl=118 time=20.2 ms

64 bytes from 8.8.8.8: icmp\_seq=12 ttl=118 time=18.4 ms

64 bytes from 8.8.8.8: icmp\_seq=13 ttl=118 time=19.8 ms

64 bytes from 8.8.8.8: icmp\_seq=14 ttl=118 time=18.4 ms

64 bytes from 8.8.8.8: icmp\_seq=15 ttl=118 time=22.4 ms

64 bytes from 8.8.8.8: icmp\_seq=16 ttl=118 time=20.3 ms

64 bytes from 8.8.8.8: icmp\_seq=17 ttl=118 time=21.6 ms

64 bytes from 8.8.8.8: icmp\_seq=18 ttl=118 time=37.6 ms

64 bytes from 8.8.8.8: icmp\_seq=19 ttl=118 time=60.1 ms

64 bytes from 8.8.8.8: icmp\_seq=20 ttl=118 time=21.0 ms

64 bytes from 8.8.8.8: icmp\_seq=21 ttl=118 time=53.0 ms

64 bytes from 8.8.8.8: icmp\_seq=22 ttl=118 time=24.2 ms

64 bytes from 8.8.8.8: icmp\_seq=23 ttl=118 time=46.4 ms

64 bytes from 8.8.8.8: icmp\_seq=24 ttl=118 time=21.8 ms

64 bytes from 8.8.8.8: icmp\_seq=25 ttl=118 time=19.5 ms

64 bytes from 8.8.8.8: icmp\_seq=26 ttl=118 time=21.7 ms

64 bytes from 8.8.8.8: icmp\_seq=27 ttl=118 time=32.3 ms

64 bytes from 8.8.8.8: icmp\_seq=28 ttl=118 time=54.4 ms

64 bytes from 8.8.8.8: icmp\_seq=29 ttl=118 time=27.2 ms

64 bytes from 8.8.8.8: icmp\_seq=30 ttl=118 time=37.8 ms

64 bytes from 8.8.8.8: icmp\_seq=31 ttl=118 time=20.7 ms

64 bytes from 8.8.8.8: icmp\_seq=32 ttl=118 time=18.7 ms

64 bytes from 8.8.8.8: icmp\_seq=33 ttl=118 time=20.6 ms

64 bytes from 8.8.8.8: icmp\_seq=34 ttl=118 time=35.5 ms

64 bytes from 8.8.8.8: icmp\_seq=35 ttl=118 time=57.6 ms

64 bytes from 8.8.8.8: icmp\_seq=36 ttl=118 time=29.0 ms

64 bytes from 8.8.8.8: icmp\_seq=37 ttl=118 time=50.8 ms

64 bytes from 8.8.8.8: icmp\_seq=38 ttl=118 time=20.1 ms

64 bytes from 8.8.8.8: icmp\_seq=39 ttl=118 time=21.0 ms

64 bytes from 8.8.8.8: icmp\_seq=40 ttl=118 time=68.7 ms

64 bytes from 8.8.8.8: icmp\_seq=41 ttl=118 time=39.6 ms

64 bytes from 8.8.8.8: icmp\_seq=42 ttl=118 time=63.9 ms

64 bytes from 8.8.8.8: icmp\_seq=43 ttl=118 time=34.7 ms

64 bytes from 8.8.8.8: icmp\_seq=44 ttl=118 time=46.6 ms

64 bytes from 8.8.8.8: icmp\_seq=45 ttl=118 time=23.0 ms

64 bytes from 8.8.8.8: icmp\_seq=46 ttl=118 time=53.4 ms

64 bytes from 8.8.8.8: icmp\_seq=47 ttl=118 time=24.9 ms

64 bytes from 8.8.8.8: icmp\_seq=48 ttl=118 time=34.5 ms

64 bytes from 8.8.8.8: icmp\_seq=49 ttl=118 time=20.8 ms

64 bytes from 8.8.8.8: icmp\_seq=50 ttl=118 time=43.5 ms

64 bytes from 8.8.8.8: icmp\_seq=51 ttl=118 time=67.3 ms

64 bytes from 8.8.8.8: icmp\_seq=52 ttl=118 time=20.6 ms

64 bytes from 8.8.8.8: icmp\_seq=53 ttl=118 time=61.7 ms

64 bytes from 8.8.8.8: icmp\_seq=54 ttl=118 time=18.9 ms

64 bytes from 8.8.8.8: icmp\_seq=55 ttl=118 time=56.3 ms

64 bytes from 8.8.8.8: icmp\_seq=56 ttl=118 time=19.6 ms

64 bytes from 8.8.8.8: icmp\_seq=57 ttl=118 time=50.8 ms

64 bytes from 8.8.8.8: icmp\_seq=58 ttl=118 time=20.5 ms

64 bytes from 8.8.8.8: icmp\_seq=59 ttl=118 time=20.0 ms

64 bytes from 8.8.8.8: icmp\_seq=60 ttl=118 time=21.3 ms

^C

--- 8.8.8.8 ping statistics ---

60 packets transmitted, 60 received, 0% packet loss, time 59085ms

rtt min/avg/max/mdev = 18.006/34.132/68.659/15.694 ms

cdac@LAPTOP-2P1HBQDT:~/LinuxAssignment$ zip -r docs.zip ~/LinuxAssignment/docs

Command 'zip' not found, but can be installed with:

sudo apt install zip

cdac@LAPTOP-2P1HBQDT:~/LinuxAssignment$ sudo apt install zip

[sudo] password for cdac:

Sorry, try again.

[sudo] password for cdac:

Reading package lists... Done

Building dependency tree

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 335 kB of archives.

After this operation, 1231 kB of additional disk space will be used.

Do you want to continue? [Y/n] y

Get:1 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 unzip amd64 6.0-25ubuntu1.1 [168 kB]

Get:2 http://archive.ubuntu.com/ubuntu focal/main amd64 zip amd64 3.0-11build1 [167 kB]

Fetched 335 kB in 4s (75.7 kB/s)

Selecting previously unselected package unzip.

(Reading database ... 32701 files and directories currently installed.)

Preparing to unpack .../unzip\_6.0-25ubuntu1.1\_amd64.deb ...

Unpacking unzip (6.0-25ubuntu1.1) ...

Selecting previously unselected package zip.

Preparing to unpack .../zip\_3.0-11build1\_amd64.deb ...

Unpacking zip (3.0-11build1) ...

Setting up unzip (6.0-25ubuntu1.1) ...

Setting up zip (3.0-11build1) ...

Processing triggers for man-db (2.9.1-1) ...

Processing triggers for mime-support (3.64ubuntu1) ...

cdac@LAPTOP-2P1HBQDT:~/LinuxAssignment$ zip -r docs.zip ~/LinuxAssignment/docs

adding: home/cdac/LinuxAssignment/docs/ (stored 0%)

adding: home/cdac/LinuxAssignment/docs/file2.txt (stored 0%)

cdac@LAPTOP-2P1HBQDT:~/LinuxAssignment$ mkdir extracted\_docs

cdac@LAPTOP-2P1HBQDT:~/LinuxAssignment$ unzip docs.zip -d extracted\_docs

Archive: docs.zip

creating: extracted\_docs/home/cdac/LinuxAssignment/docs/

extracting: extracted\_docs/home/cdac/LinuxAssignment/docs/file2.txt

cdac@LAPTOP-2P1HBQDT:~/LinuxAssignment$ nano ~/LinuxAssignment/file1.txt

Use "fg" to return to nano.

[1]+ Stopped nano ~/LinuxAssignment/file1.txt

cdac@LAPTOP-2P1HBQDT:~/LinuxAssignment$ nano ~/LinuxAssignment/file1.txt

cdac@LAPTOP-2P1HBQDT:~/LinuxAssignment$ sed -i 's/<original\_word>/<new\_word>/g' ~/LinuxAssignment/file1.txt

cdac@LAPTOP-2P1HBQDT:~/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.**

**Answer:**  
head -n 10 data.txt

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

**Answer:**  
tail -n 5 data.txt

**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.**

**Answer:**  
head -n 15 numbers.txt

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

**Answer:**  
tail -n 3 numbers.txt

**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."**

**Answer:**  
tr '[:lower:]' '[:upper:]' < input.txt > output.txt

**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."**

**Answer:**  
sort duplicate.txt | uniq

**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."**

**Answer:**  
sort fruit.txt | uniq -c