

# Module 1 Assignment 1

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.

```
cdac@LAPTOP-FTCDGA7N: ~$ cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ echo "Hello World" > file1.txt
-bash: file1.txt: Permission denied
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ sudo echo "Hello World" > file.txt
-bash: file.txt: Permission denied
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ cd..
cd..: command not found
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ pwd
/home/LinuxAssignment
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ cd..
cd..: command not found
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ cd ~
cdac@LAPTOP-FTCDGA7N:~$ cd ..
cdac@LAPTOP-FTCDGA7N:~/home$ pwd
/home
cdac@LAPTOP-FTCDGA7N:~/home$ cd ..
cdac@LAPTOP-FTCDGA7N:/$$ pwd
/
cdac@LAPTOP-FTCDGA7N:/$$ cd ~
cdac@LAPTOP-FTCDGA7N:~$ pwd
/home/cdac
cdac@LAPTOP-FTCDGA7N:~$ mkdir LinuxAssignment
mkdir: cannot create directory 'LinuxAssignment': File exists
cdac@LAPTOP-FTCDGA7N:~$ cd LinuxAssignment
```

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

```
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ touch file1.txt
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ cd file1.txt
-bash: cd: file1.txt: Not a directory
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ ls
docs  file1.txt
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ touch file2.txt
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ echo "Assignment 1" > file2.txt
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ cat file2.txt
Assignment 1
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ echo "Assignment 1" > file2.txt
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ cat file2.txt
Assignment 1
```

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

```
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ ls
docs  file1.txt
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ touch file2.txt
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ echo "Assignment 1" > file2.txt
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ cat file2.txt
Assignment 1
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ echo "Assignment 1" > file2.txt
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ cat file2.txt
Assignment 1
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ mkdir docs
mkdir: cannot create directory 'docs': File exists
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ mkdir docs1
```

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

```
cp: target '/docs' is not a directory
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ cp file2.txt /home /file3.txt
cp: target '/file3.txt' is not a directory
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ cp file2.txt /home/cdac/docs/file3.txt
cp: cannot create regular file '/home/cdac/docs/file3.txt': No such file or directory
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ cp file2.txt /home/cdac/LinuxAssignment/docs1
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ mv file2.txt file3.txt
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ ls
docs  docs1  file1.txt  file2.txt  file3.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-FTCDGA7N:~/LinuxAssignment$ chmod u+rw file3.txt
chmod: changing permissions of 'file3.txt': Operation not permitted
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ chmod u+rw file2.txt
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ ls -l
total 44
drwxr-xr-x 2 cdac cdac 4096 Aug 28 18:14 docs
drwxr-xr-x 2 cdac cdac 4096 Aug 28 19:06 docs1
drwxr-xr-x 2 cdac cdac 4096 Aug 29 00:00 docs2
-rw-r--r-- 1 cdac cdac 13 Aug 28 18:42 file1.txt
-rwxr--r-- 1 cdac cdac 107 Aug 29 01:19 file2.txt
-rwxr--r-- 1 pranita cdac 13 Aug 28 18:45 file3.txt
-rw-r--r-- 1 cdac cdac 54 Aug 29 09:58 fruits.txt
-rw-r--r-- 1 cdac cdac 74 Aug 29 01:32 input.txt
-rw-r--r-- 1 cdac cdac 42 Aug 29 01:28 numbers.txt
-rw-r--r-- 1 cdac cdac 74 Aug 29 01:33 output.txt
-rw-r--r-- 1 cdac cdac 321 Aug 28 23:14 '-r.zip'
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ whoami
cdac
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ chown cdac file2.txt
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ ls -l
total 44
```

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

```
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ ls -l
total 44
drwxr-xr-x 2 cdac cdac 4096 Aug 28 18:14 docs
drwxr-xr-x 2 cdac cdac 4096 Aug 28 19:06 docs1
drwxr-xr-x 2 cdac cdac 4096 Aug 29 00:00 docs2
-rw-r--r-- 1 cdac cdac 13 Aug 28 18:42 file1.txt
-rwxr--r-- 1 cdac cdac 107 Aug 29 01:19 file2.txt
-rwxr--r-- 1 pranita cdac 13 Aug 28 18:45 file3.txt
-rw-r--r-- 1 cdac cdac 54 Aug 29 09:58 fruits.txt
-rw-r--r-- 1 cdac cdac 74 Aug 29 01:32 input.txt
-rw-r--r-- 1 cdac cdac 42 Aug 29 01:28 numbers.txt
-rw-r--r-- 1 cdac cdac 74 Aug 29 01:33 output.txt
-rw-r--r-- 1 cdac cdac 321 Aug 28 23:14 '-r.zip'
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$
```

G) 1. Search for all files with the extension ".txt" in the current directory and its subdirectories.

```
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ find . -type f -name "*.txt"
./file3.txt
./file1.txt
./docs1/file2.txt
./file2.txt
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ sudo adduser user2
adduser: The user 'user2' already exists.
```

2. Display lines containing a specific word in a file (provide a file name and the specific word to search).

```
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ cat file2.txt
Assignment 1
pranita mane
good morning
hello
hi
how are you?
good afternoon
Laptop
Mobile
Vivek
Pratibha
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ grep how file2.txt
how are you?
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$
```

H) Display the current system date and time.

```

Assignment 1
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ date
Wed Aug 28 22:46:42 IST 2024
cdac@LAPTOP-FTCDGA7N:~/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

```

f) 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-FTCDGA7N:~/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:0b:17:83 brd ff:ff:ff:ff:ff:ff
    inet 172.27.150.74/20 brd 172.27.159.255 scope global eth0
        valid_lft forever preferred_lft forever
    inet6 fe80::215:5dff:fe0b:1783/64 scope link
        valid_lft forever preferred_lft forever

```

```

cdac@LAPTOP-FTCDGA7N:~/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=59 time=13.8 ms
64 bytes from 8.8.8.8: icmp_seq=2 ttl=59 time=15.3 ms
64 bytes from 8.8.8.8: icmp_seq=3 ttl=59 time=206 ms
64 bytes from 8.8.8.8: icmp_seq=4 ttl=59 time=16.8 ms
64 bytes from 8.8.8.8: icmp_seq=5 ttl=59 time=11.3 ms
64 bytes from 8.8.8.8: icmp_seq=6 ttl=59 time=7.68 ms
64 bytes from 8.8.8.8: icmp_seq=7 ttl=59 time=8.34 ms
64 bytes from 8.8.8.8: icmp_seq=8 ttl=59 time=7.83 ms

```

j) File Compression:

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

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

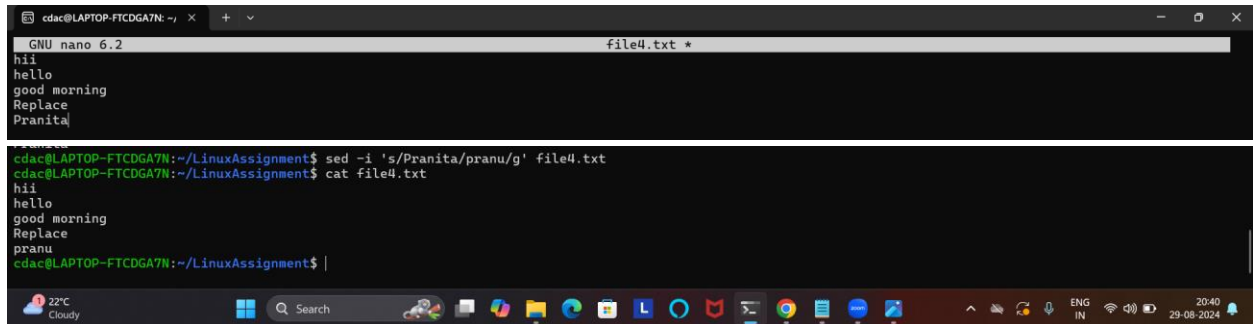
```

cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ zip -r docs1 file2.txt
Command 'zip' not found, but can be installed with:
sudo apt install zip
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ sudo apt install zip
[sudo] password for cdac:
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 128 not upgraded.
Need to get 350 kB of archives.
After this operation, 930 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 6.0-26ubuntu3.2 [175 kB]
Get:2 http://archive.ubuntu.com/ubuntu jammy/main amd64 zip amd64 3.0-12build2 [176 kB]
Fetched 350 kB in 2s (147 kB/s)
Selecting previously unselected package unzip.
(Reading database ... 24208 files and directories currently installed.)
Preparing to unpack .../unzip_6.0-26ubuntu3.2_amd64.deb ...
Unpacking unzip (6.0-26ubuntu3.2) ...
Selecting previously unselected package zip.
Preparing to unpack .../zip_3.0-12build2_amd64.deb ...
Unpacking zip (3.0-12build2) ...
Setting up unzip (6.0-26ubuntu3.2) ...
Setting up zip (3.0-12build2) ...
Processing triggers for man-db (2.10.2-1) ...
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ zip -r docs1 file2.txt
  adding: docs1/ (stored 0%)
  adding: file2.txt (stored 0%)

```

## k) File Editing:

- Open the "file1.txt" file in a text editor and add some text to it.
- Replace a specific word in the "file1.txt" file with another word (provide the original word and the word to replace it with).



The screenshot shows a terminal window with a dark background. At the top, a window title bar indicates the user is in a directory named 'cdac@LAPTOP-FTCDGA7N'. Below this, the 'GNU nano 6.2' editor is open, editing 'file4.txt'. The file's content is: 'hii', 'hello', 'good morning', 'Replace', and 'Pranita'. Below the editor, the terminal shows the command 'sed -i 's/Pranita/pranu/g' file4.txt' being executed, followed by 'cat file4.txt' which displays the updated content: 'hii', 'hello', 'good morning', 'Replace', and 'pranu'. The terminal window has a taskbar at the bottom with various application icons and system status information like '22°C Cloudy' and '29-08-2024'.

## Problem 2:

- 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.



The screenshot shows a terminal window where the command 'head file2.txt' has been executed. The output displays the first 10 lines of the file: 'Assignment 1', 'pranita mane', 'good morning', 'hello', 'hi', 'how are you?', 'good afternoon', 'Laptop', 'Mobile', and a line of dashes.

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



The screenshot shows a terminal window where the command 'tail -5 file2.txt' has been executed. The output displays the last 5 lines of the file: 'good afternoon', 'Laptop', 'Mobile', 'Vivek', and 'Pratibha'. Below this, the command 'touch numbers.txt' is shown, which creates a new file named 'numbers.txt'.

- 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.



The screenshot shows a terminal window where the command 'head -15 numbers.txt' has been executed. The output displays the first 15 lines of the file, which are the numbers 1 through 15, each on a new line.

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

```
15
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ tail -3 numbers.txt
15
16
17
```

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-FTCDGA7N:~/LinuxAssignment$ touch input.txt
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ nano input.txt
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ cat input.txt
good morning
hii
hello
how are you?
tell me about yourself?
cdac mumbai

cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ tr 'a-z' 'A-Z' < input.txt > output.txt
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ cat output.txt
GOOD MORNING
HII
HELLO
HOW ARE YOU?
TELL ME ABOUT YOURSELF?
CDAC MUMBAI
```

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-FTCDGA7N:~/LinuxAssignment$ touch fruits.txt
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ nano fruits.txt
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ sort fruits.txt|uniq -c
1
1 Apple
1 Chiku
1 Grapes
1 Mango
1 Papaya
1 Pineapple
1 Strawberry

cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ sort fruits.txt|uniq -5
cdac@LAPTOP-FTCDGA7N:~/LinuxAssignment$ sort fruits.txt|uniq -4
```

