

**CDAC MUMBAI**  
**CONCEPTS OF OPERATING SYSTEM**  
**ASSIGNMENT 1**

**A –**

```
tarun@hp93:~$ mkdir linuxAssignment
```

```
tarun@hp93:~$ cd linuxAssignment
```

```
tarun@hp93:~/linuxAssignment$ pwd
```

```
/home/tarun/linuxAssignment
```

**B –**

```
tarun@hp93:~/linuxAssignment$ touch file1.txt
```

```
tarun@hp93:~/linuxAssignment$ ls -l file1.txt
```

```
-rw-r--r-- 1 tarun tarun 0 Feb 27 12:47 file1.txt
```

```
tarun@hp93:~/linuxAssignment$ echo "Hello, this is file1.txt" > file1.txt
```

```
tarun@hp93:~/linuxAssignment$ cat file1.txt
```

```
Hello, this is file1.txt
```

**C**

```
tarun@hp93:~/linuxAssignment$ mkdir docs
```

```
tarun@hp93:~/linuxAssignment$ ls -l
```

```
total 8
```

```
drwxr-xr-x 2 tarun tarun 4096 Feb 27 12:50 docs
```

```
-rw-r--r-- 1 tarun tarun 25 Feb 27 12:48 file1.txt
```

```
tarun@hp93:~/linuxAssignment$
```

**D .**

```
tarun@hp93:~/linuxAssignment$ cp file1.txt docs/file2.txt
```

```
tarun@hp93:~/linuxAssignment$ ls -l docs
```

```
total 4
```

```
-rw-r--r-- 1 tarun tarun 25 Feb 27 12:53 file2.txt
```

E

```
tarun@hp93:~/linuxAssignment/docs$ chmod 744 file2.txt
```

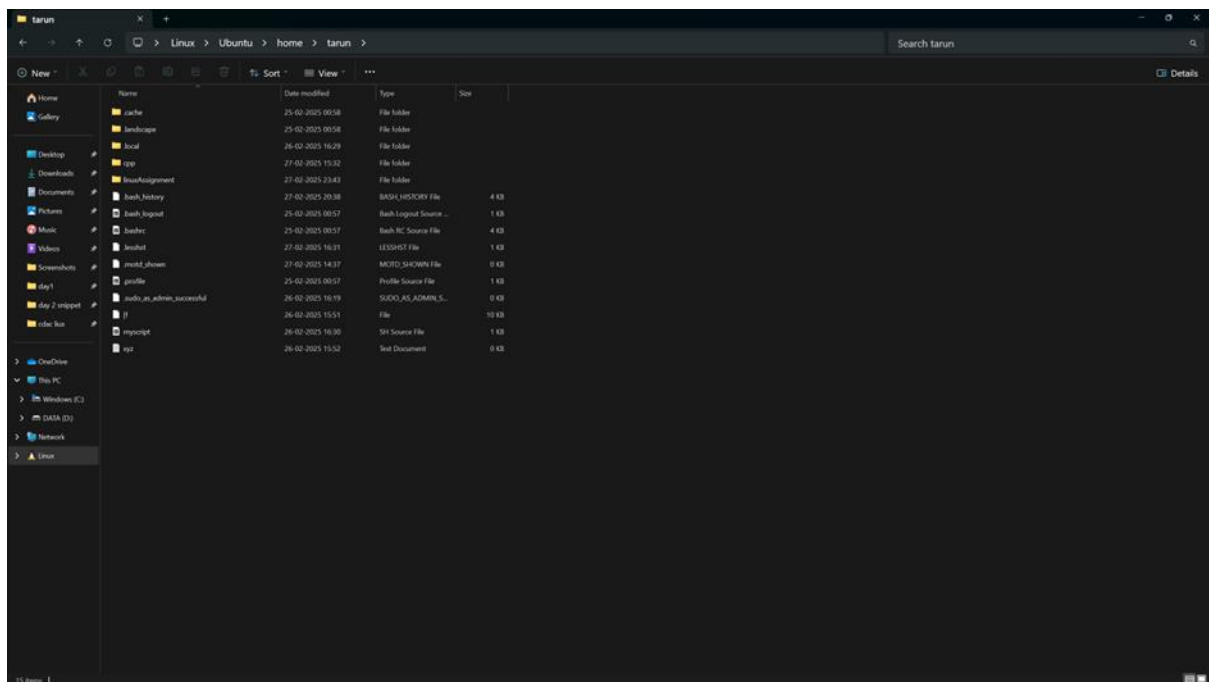
```
tarun@hp93:~/linuxAssignment/docs$ ls -l file2.txt
```

```
-rwxr--r-- 1 tarun tarun 25 Feb 27 12:53 file2.txt
```

```
tarun@hp93:~/linuxAssignment/docs$ chown $USER:$USER file2.txt
```

```
tarun@hp93:~/linuxAssignment/docs$ ls -l file2.txt
```

```
-rwxr--r-- 1 tarun tarun 25 Feb 27 12:53 file2.txt
```

**F**

# G

```
tarun@hp93:~/linuxAssignment/docs$ find . -type f -name "*.txt"
```

```
./file2.txt
```

## H

```
tarun@hp93:~/linuxAssignment/docs$ date
```

Thu Feb 27 13:19:38 UTC 2025

## I

```
tarun@hp93:~/linuxAssignment/docs$ ip a | grep "inet " | awk '{print $2}'
```

127.0.0.1/8

10.255.255.254/32

192.168.206.174/20

```
(b)- tarun@hp93:~/linuxAssignment/docs$ ping -c 4 google.com
```

PING google.com (142.250.192.46) 56(84) bytes of data.

64 bytes from bom12s15-in-f14.1e100.net (142.250.192.46): icmp\_seq=1 ttl=117 time=31.0 ms

64 bytes from bom12s15-in-f14.1e100.net (142.250.192.46): icmp\_seq=2 ttl=117 time=30.9 ms

64 bytes from bom12s15-in-f14.1e100.net (142.250.192.46): icmp\_seq=3 ttl=117 time=36.2 ms

64 bytes from bom12s15-in-f14.1e100.net (142.250.192.46): icmp\_seq=4 ttl=117 time=30.9 ms

--- google.com ping statistics ---

4 packets transmitted, 4 received, 0% packet loss, time 3323ms

rtt min/avg/max/mdev =0.866/32.255/36.182/2.267 ms

## J

```
tarun@hp93: ~/linuxAs × + v
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 12:02 dev
drwxr-xr-x   88 root root    4096 Feb 27 12:02 etc
drwxr-xr-x    3 root root    4096 Feb 24 19:27 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 24 18:34 lost+found
drwxr-xr-x    2 root root    4096 Jan 23 15:57 media
drwxr-xr-x    6 root root    4096 Feb 24 19:27 mnt
drwxr-xr-x    2 root root    4096 Jan 23 15:57 opt
dr-xr-xr-x  200 root root      0 Feb 27 12:02 proc
drwx-----   3 root root    4096 Jan 23 15:59 root
drwxr-xr-x   18 root root     540 Feb 27 12:02 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 24 19:27 snap
drwxr-xr-x    2 root root    4096 Jan 23 15:57 srv
dr-xr-xr-x   11 root root      0 Feb 27 12:02 sys
drwxrwxrwt   11 root root    4096 Feb 27 12:30 tmp
drwxr-xr-x   12 root root    4096 Jan 23 15:57 usr
drwxr-xr-x   13 root root    4096 Feb 24 19:27 var
tarun@hp93:~/linuxAssignment/docs$ |
```

```
tarun@hp93: ~/linuxAs × + v
tarun@hp93:~$ cd~/linuxAssignment
-bash: cd~/linuxAssignment: No such file or directory
tarun@hp93:~$ cd ~/linuxAssignment
tarun@hp93:~/linuxAssignment$ nano ~/linuxAssignment/file1.txt
tarun@hp93:~/linuxAssignment$ sed -i 's/cdac/iit/g' ~/LinuxAssignment/file1.txt
sed: can't read /home/tarun/LinuxAssignment/file1.txt: No such file or directory
tarun@hp93:~/linuxAssignment$ sed -i 's/cdac/iit/g' ~/linuxAssignment/file1.txt
tarun@hp93:~/linuxAssignment$ |
```



K

```
tarun@hp93: ~/linuxAs × + ∨
tarun@hp93:~$ cd~/linuxAssignment
-bash: cd~/linuxAssignment: No such file or directory
tarun@hp93:~$ cd ~/linuxAssignment
tarun@hp93:~/linuxAssignment$ nano ~/linuxAssignment/file1.txt
tarun@hp93:~/linuxAssignment$ sed -i 's/cdac/iit/g' ~/LinuxAssignment/file1.txt
sed: can't read /home/tarun/LinuxAssignment/file1.txt: No such file or directory
tarun@hp93:~/linuxAssignment$ sed -i 's/cdac/iit/g' ~/linuxAssignment/file1.txt
tarun@hp93:~/linuxAssignment$ cat linuxAssignment/file1.txt
cat: linuxAssignment/file1.txt: No such file or directory
tarun@hp93:~/linuxAssignment$ cat ~/linuxAssignment/file1.txt
iit
india
.txt
tarun@hp93:~/linuxAssignment$ |
```

XXXXXXXXXXXXXXXXXXXXXXXXXXXX

pic

```
tarun@hp93: ~/linuxAs × + ∨
tarun@hp93:~/LinuxAssignment$ sudo apt install zip
[sudo] password for tarun:
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 67 not upgraded.
Need to get 350 kB of archives.
After this operation, 913 kB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 unzip amd64 6.0-28ubuntu4.1 [174 kB]
Get:2 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 zip amd64 3.0-13ubuntu0.2 [176 kB]
Fetched 350 kB in 7s (48.7 kB/s)
Selecting previously unselected package unzip.
(Reading database ... 40820 files and directories currently installed.)
Preparing to unpack .../unzip_6.0-28ubuntu4.1_amd64.deb ...
Unpacking unzip (6.0-28ubuntu4.1) ...
Selecting previously unselected package zip.
Preparing to unpack .../zip_3.0-13ubuntu0.2_amd64.deb ...
Unpacking zip (3.0-13ubuntu0.2) ...
Setting up unzip (6.0-28ubuntu4.1) ...
Setting up zip (3.0-13ubuntu0.2) ...
Processing triggers for man-db (2.12.0-4build2) ...
tarun@hp93:~/LinuxAssignment$ zip -r docs.zip docs
adding: docs/ (stored 0%)
adding: docs/file1.txt (stored 0%)
tarun@hp93:~/LinuxAssignment$
```

2 A

```
tarun@hp93: ~/linuxAs × + v
18
19
20
tarun@hp93:~/linuxAssignment$ nano data.txt

tarun@hp93:~/linuxAssignment$ nano data.txt
tarun@hp93:~/linuxAssignment$ head -n 10 data.txt
india
japan
israel
russia
australia
antarctica
france
uzbekistan
tanzania
usa
tarun@hp93:~/linuxAssignment$ |
```

2B

```
uzbekistan
tanzania
usa
tarun@hp93:~/linuxAssignment$ tail -n 5 linuxAssignment/data.txt
tail: cannot open 'linuxAssignment/data.txt' for reading: No such file or directory
tarun@hp93:~/linuxAssignment$ tail -n 5 data.txt
tanzania
usa
uk
italy
germany
tarun@hp93:~/linuxAssignment$ |
```

2C

```
tarun@hp93:~/linuxAssignment$  
tarun@hp93:~/linuxAssignment$  
tarun@hp93:~/linuxAssignment$ head -10 numbers.txt  
1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
tarun@hp93:~/linuxAssignment$ |
```

2 D

```
10  
tarun@hp93:~/linuxAssignment$ tail -n 3 numbers.txt  
18  
19  
20  
tarun@hp93:~/linuxAssignment$ touch input.txt  
tarun@hp93:~/linuxAssignment$ nano input.txt  
tarun@hp93:~/linuxAssignment$ cat input.txt  
there are two types of sacrifice correct one and mine  
tarun@hp93:~/linuxAssignment$ tr 'a-z' 'A-Z' < input.txt > output.txt  
tarun@hp93:~/linuxAssignment$ ls | grep input.txt  
input.txt  
tarun@hp93:~/linuxAssignment$ cat input.txt  
there are two types of sacrifice correct one and mine  
tarun@hp93:~/linuxAssignment$ tr 'a-z' 'A-Z' < input.txt > output.txt  
tarun@hp93:~/linuxAssignment$ cat output.txt  
THERE ARE TWO TYPES OF SACRIFICE CORRECT ONE AND MINE  
tarun@hp93:~/linuxAssignment$ |
```

## 2E

```
10 tarun@hp93:~/linuxAssignment$ tail -n 3 numbers.txt
18
19
20
tarun@hp93:~/linuxAssignment$ touch input.txt
tarun@hp93:~/linuxAssignment$ nano input.txt
tarun@hp93:~/linuxAssignment$ cat input.txt
there are two types of sacrifice correct one and mine
tarun@hp93:~/linuxAssignment$ tr 'a-z' 'A-Z' < input.txt > output.txt
tarun@hp93:~/linuxAssignment$ ls | grep input.txt
input.txt
tarun@hp93:~/linuxAssignment$ cat input.txt
there are two types of sacrifice correct one and mine
tarun@hp93:~/linuxAssignment$ tr 'a-z' 'A-Z' < input.txt > output.txt
tarun@hp93:~/linuxAssignment$ cat output.txt
THERE ARE TWO TYPES OF SACRIFICE CORRECT ONE AND MINE
tarun@hp93:~/linuxAssignment$ |
```

## 2F

```
tarun@hp93: ~/linuxAs × + v
tarun@hp93:~/linuxAssignment$
tarun@hp93:~/linuxAssignment$
tarun@hp93:~/linuxAssignment$
tarun@hp93:~/linuxAssignment$ touch duplicate.txt
tarun@hp93:~/linuxAssignment$ nano duplicate
tarun@hp93:~/linuxAssignment$ uniq duplicate.txt
tarun@hp93:~/linuxAssignment$ sort duplicate.txt | uniq
tarun@hp93:~/linuxAssignment$ cat unique.txt
cat: unique.txt: No such file or directory
tarun@hp93:~/linuxAssignment$ sort duplicate.txt | uniq
tarun@hp93:~/linuxAssignment$ cat duplicate.txt
tarun@hp93:~/linuxAssignment$ bash duplicate.txt
tarun@hp93:~/linuxAssignment$ nano duplicate.txt
tarun@hp93:~/linuxAssignment$ catduplicate.txt
catduplicate.txt: command not found
tarun@hp93:~/linuxAssignment$ cat duplicate.txt
apple
banana
apple
mango
banana
orange
mango
tarun@hp93:~/linuxAssignment$ sort duplicate.txt | uniq
apple
banana
mango
orange
tarun@hp93:~/linuxAssignment$ |
```



2 G

```
orange
tarun@hp93:~/linuxAssignment$ nano fruit.txt
tarun@hp93:~/linuxAssignment$ sort fruit.txt | uniq -c
    3 apple
    4 banana
    1 grape
    2 mango
    2 orange
tarun@hp93:~/linuxAssignment$ cat fruit_count.txt
cat: fruit_count.txt: No such file or directory
tarun@hp93:~/linuxAssignment$ |
```