

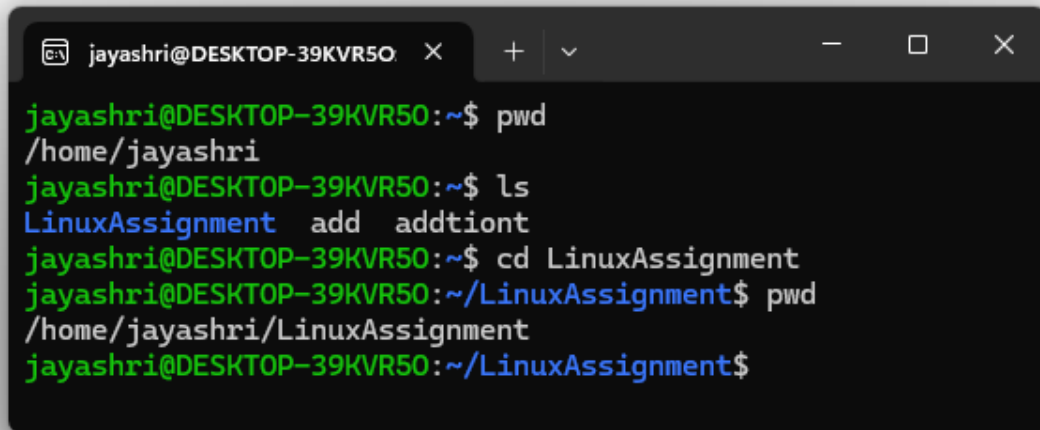
Assignment 1

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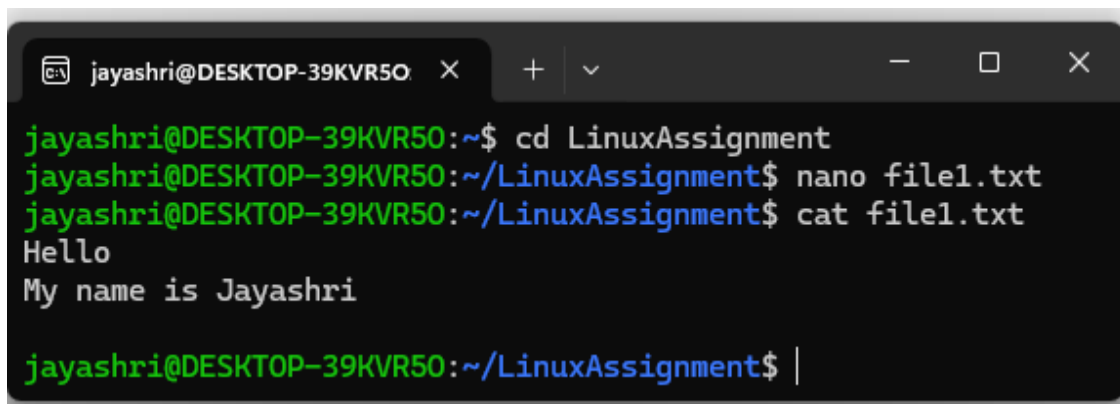
Module :Operating System

- 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.



```
jayashri@DESKTOP-39KVR5O x + v - □ X
jayashri@DESKTOP-39KVR5O:~$ pwd
/home/jayashri
jayashri@DESKTOP-39KVR5O:~$ ls
LinuxAssignment add addtiont
jayashri@DESKTOP-39KVR5O:~$ cd LinuxAssignment
jayashri@DESKTOP-39KVR5O:~/LinuxAssignment$ pwd
/home/jayashri/LinuxAssignment
jayashri@DESKTOP-39KVR5O:~/LinuxAssignment$
```

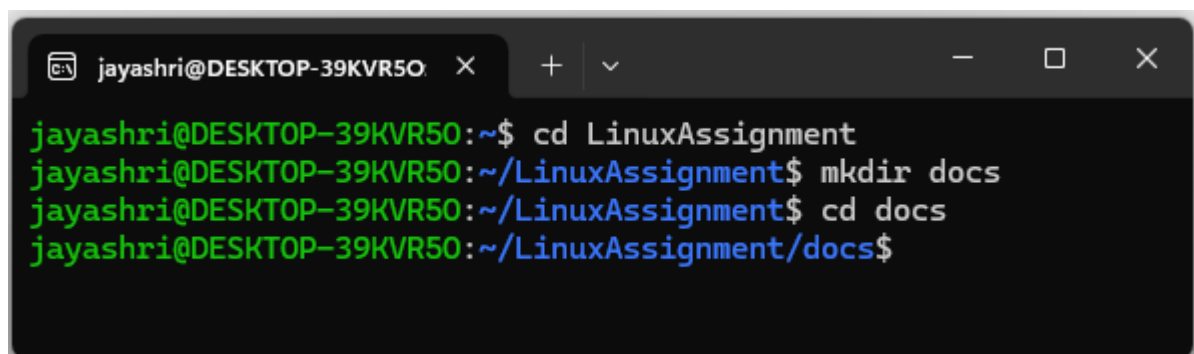
- b) File Management: a. Inside the "LinuxAssignment" directory, create a new file named "file1.txt". Display its contents.



```
jayashri@DESKTOP-39KVR5O x + v - □ X
jayashri@DESKTOP-39KVR5O:~$ cd LinuxAssignment
jayashri@DESKTOP-39KVR5O:~/LinuxAssignment$ nano file1.txt
jayashri@DESKTOP-39KVR5O:~/LinuxAssignment$ cat file1.txt
Hello
My name is Jayashri
jayashri@DESKTOP-39KVR5O:~/LinuxAssignment$ |
```

- c) Directory Management:

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



```
jayashri@DESKTOP-39KVR5O x + v - □ X
jayashri@DESKTOP-39KVR5O:~$ cd LinuxAssignment
jayashri@DESKTOP-39KVR5O:~/LinuxAssignment$ mkdir docs
jayashri@DESKTOP-39KVR5O:~/LinuxAssignment$ cd docs
jayashri@DESKTOP-39KVR5O:~/LinuxAssignment/docs$
```

d) Copy and Move Files:

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

```
jayashri@DESKTOP-39KVR5O: ~/LinuxAssignment$ cp file1.txt docs
jayashri@DESKTOP-39KVR5O: ~/LinuxAssignment$ cd docs
jayashri@DESKTOP-39KVR5O: ~/LinuxAssignment/docs$ ls
file1.txt
jayashri@DESKTOP-39KVR5O: ~/LinuxAssignment/docs$ mv file1.txt file2.txt
jayashri@DESKTOP-39KVR5O: ~/LinuxAssignment/docs$ ls
file2.txt
jayashri@DESKTOP-39KVR5O: ~/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.

```
jija@DESKTOP-39KVR5O: /home/jayashri/LinuxAssignment/docs$ chmod 744 file2.txt
jayashri@DESKTOP-39KVR5O: ~/LinuxAssignment/docs$ ls -l
total 4
-rwxr--r-- 1 jayashri jayashri 27 Feb 27 17:40 file2.txt
jayashri@DESKTOP-39KVR5O: ~/LinuxAssignment/docs$ su jija
Password:
jija@DESKTOP-39KVR5O: /home/jayashri/LinuxAssignment/docs$ ls
file2.txt
jija@DESKTOP-39KVR5O: /home/jayashri/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.

```
jaya@DESKTOP-39KVR50:~$ su jayashri
Password:
jayashri@DESKTOP-39KVR50:/home/jija$ cd
jayashri@DESKTOP-39KVR50:~$ ls
LinuxAssignment  add  addtiont
jayashri@DESKTOP-39KVR50:~$ cd LinuxAssignment
jayashri@DESKTOP-39KVR50:~/LinuxAssignment$ ls
docs  file.txt  file1.txt
jayashri@DESKTOP-39KVR50:~/LinuxAssignment$ rm file.txt
jayashri@DESKTOP-39KVR50:~/LinuxAssignment$ ls
docs  file1.txt
jayashri@DESKTOP-39KVR50:~/LinuxAssignment$ cd docs
jayashri@DESKTOP-39KVR50:~/LinuxAssignment/docs$ ls
file2.txt
jayashri@DESKTOP-39KVR50:~/LinuxAssignment/docs$
```

g) File Searching:

- a. Search for all files with the extension ".txt" in the current directory and its subdirectories.

```
jayashri@DESKTOP-39KVR50:~$ cd LinuxAssignment
jayashri@DESKTOP-39KVR50:~/LinuxAssignment$ find '*.txt'
file1.txt: command not found
.
./docs
./docs/file2.txt
./file1.txt
jayashri@DESKTOP-39KVR50:~/LinuxAssignment$ cd docs
jayashri@DESKTOP-39KVR50:~/LinuxAssignment/docs$ find '*.txt'
file2.txt: command not found
.
./file2.txt
jayashri@DESKTOP-39KVR50:~/LinuxAssignment/docs$
```

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

```
jaya@DESKTOP-39KVR50:~$ su jayashri
Password:
jayashri@DESKTOP-39KVR50:~/LinuxAssignment$ grep name file1.txt
My name is Jayashri
jayashri@DESKTOP-39KVR50:~/LinuxAssignment$
```

h) System Information:

- a. Display the current system date and time.

```
jayashri@DESKTOP-39KVR50 x + - □ ×
jayashri@DESKTOP-39KVR50:~$ date
Thu Feb 27 20:16:22 IST 2025
jayashri@DESKTOP-39KVR50:~$ time

real    0m0.000s
user    0m0.000s
sys     0m0.000s
jayashri@DESKTOP-39KVR50:~$
```

i) Networking:

a. Display the IP address of the system.

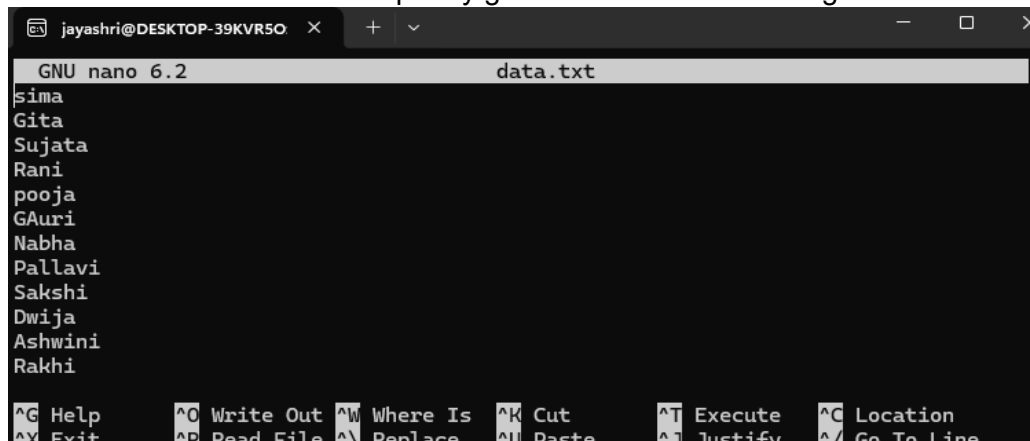
```
jayashri@DESKTOP-39KVR50 x + - □
jayashri@DESKTOP-39KVR50:~$ ip address
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft 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:4e:eb:bc brd ff:ff:ff:ff:ff:ff
    inet 172.29.217.186/20 brd 172.29.223.255 scope global eth0
        valid_lft forever preferred_lft forever
    inet6 fe80::215:5dff:fe4e:ebbc/64 scope link
        valid_lft forever preferred_lft forever
jayashri@DESKTOP-39KVR50:~$
```

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

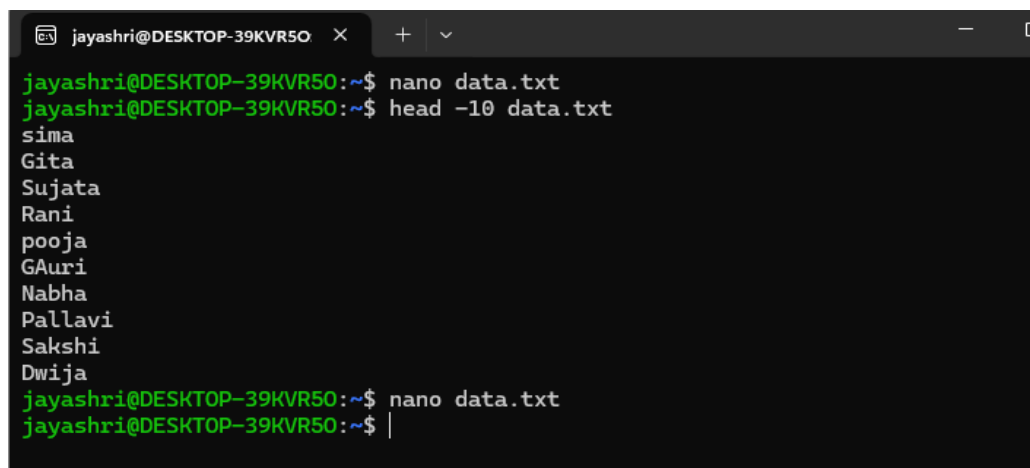
```
jayashri@DESKTOP-39KVR50 x + - □
jayashri@DESKTOP-39KVR50:~$ ping www.gmail.com
PING www.gmail.com (142.251.42.101) 56(84) bytes of data.
64 bytes from bom07s45-in-f5.1e100.net (142.251.42.101): icmp_seq=1 ttl=58 time=2.61 ms
64 bytes from bom07s45-in-f5.1e100.net (142.251.42.101): icmp_seq=2 ttl=58 time=3.21 ms
64 bytes from bom07s45-in-f5.1e100.net (142.251.42.101): icmp_seq=3 ttl=58 time=2.94 ms
64 bytes from bom07s45-in-f5.1e100.net (142.251.42.101): icmp_seq=4 ttl=58 time=5.91 ms
64 bytes from bom07s45-in-f5.1e100.net (142.251.42.101): icmp_seq=5 ttl=58 time=3.84 ms
^C
--- www.gmail.com ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4448ms
rtt min/avg/max/mdev = 2.607/3.701/5.909/1.175 ms
jayashri@DESKTOP-39KVR50:~$
```

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.

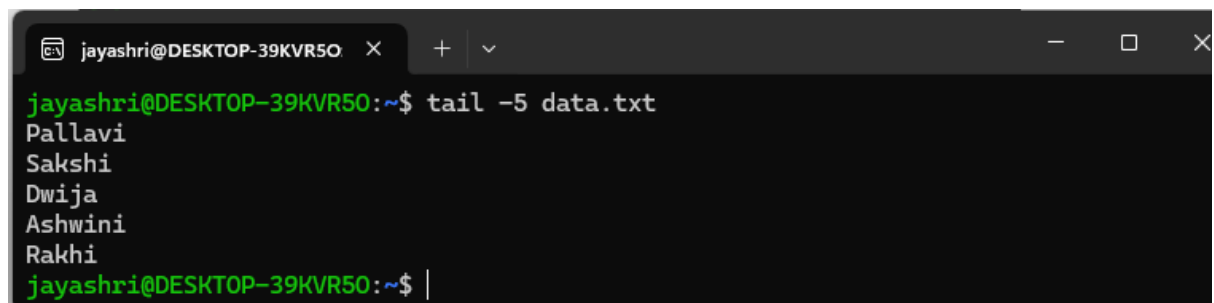


```
GNU nano 6.2 data.txt
sima
Gita
Sujata
Rani
pooja
GAuri
Nabha
Pallavi
Sakshi
Dwija
Ashwini
Rakhi
^G Help      ^O Write Out ^W Where Is  ^K Cut       ^T Execute  ^C Location
^X Exit      ^R Read File ^N Replace   ^U Paste     ^J Justify  ^_ Go To Line
```



```
jayashri@DESKTOP-39KVR5O:~$ nano data.txt
jayashri@DESKTOP-39KVR5O:~$ head -10 data.txt
sima
Gita
Sujata
Rani
pooja
GAuri
Nabha
Pallavi
Sakshi
Dwija
jayashri@DESKTOP-39KVR5O:~$ nano data.txt
jayashri@DESKTOP-39KVR5O:~$ |
```

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



```
jayashri@DESKTOP-39KVR5O:~$ tail -5 data.txt
Pallavi
Sakshi
Dwija
Ashwini
Rakhi
jayashri@DESKTOP-39KVR5O:~$ |
```

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.

```
jayashri@DESKTOP-39KVR50 x + v - □
GNU nano 6.2 numbers.txt
15
21
14
74
45
69
52
35
21
55
33
88
86
45
98
102
54
```

```
jayashri@DESKTOP-39KVR50:~$ nano numbers.txt
jayashri@DESKTOP-39KVR50:~$ head -15 numbers.txt
15
21
14
74
45
69
52
35
21
55
33
88
86
45
98
jayashri@DESKTOP-39KVR50:~$ |
```

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

```
jayashri@DESKTOP-39KVR50 x + v - □ x
jayashri@DESKTOP-39KVR50:~$ tail -3 numbers.txt
98
102
54
jayashri@DESKTOP-39KVR50:~$
```

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."

```
jayashri@DESKTOP-39KVR50 x + v - □ ×
GNU nano 6.2 input.txt *
what is your name
whare are you from|

^G Help      ^O Write Out ^W Where Is  ^K Cut       ^T Execute
^X Exit      ^R Read File ^\ Replace  ^U Paste     ^J Justify

jayashri@DESKTOP-39KVR50:~$ cat input.txt | tr '[:lower:]' '[:upper:]' > output.txt
jayashri@DESKTOP-39KVR50:~$ nano input.txt
jayashri@DESKTOP-39KVR50:~$ nano output.txt
jayashri@DESKTOP-39KVR50:~$ |
```

```
jayashri@DESKTOP-39KVR50 x + v - □ ×
GNU nano 6.2 output.txt
WHAT IS YOUR NAME
WHARE ARE YOU FROM

[ Read 2 lines ]

^G Help      ^O Write Out ^W Where Is  ^K Cut       ^T Execute
^X Exit      ^R Read File ^\ Replace  ^U Paste     ^J Justify
```

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."

```
jayashri@DESKTOP-39KVR50 x + v
jayashri@DESKTOP-39KVR50:~$ cat duplicate.txt
sita
gita
sita
rima
rani
shalu
puja
puja
jayashri@DESKTOP-39KVR50:~$ cat duplicate.txt|sort
gita
puja
puja
rani
rima
shalu
sita
sita
jayashri@DESKTOP-39KVR50:~$ cat duplicate.txt|sort|uniq
gita
puja
rani
rima
shalu
sita
jayashri@DESKTOP-39KVR50:~$ |
```

//NOTE:- uniq command should be use always after sort command

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."

```
jayashri@DESKTOP-39KVR50 x + v
jayashri@DESKTOP-39KVR50:~$ cat fruit.txt
Apple
Banana
Grapes
Orange
Mango
Pine-apple
Apple
plum
Orange
jayashri@DESKTOP-39KVR50:~$ cat fruit.txt|sort
Apple
Apple
Banana
Grapes
Mango
Orange
Orange
Pine-apple
plum
jayashri@DESKTOP-39KVR50:~$ cat fruit.txt|sort|uniq -c
  2 Apple
  1 Banana
  1 Grapes
  1 Mango
  2 Orange
  1 Pine-apple
  1 plum
jayashri@DESKTOP-39KVR50:~$ |
```