

Operating System Lab Sheet 1

Practice Problems

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```
sabhishek@s-abhishek:~/OS$ whatis man
man (7)          - macros to format man pages
man (1)          - an interface to the on-line reference manuals
sabhishek@s-abhishek:~/OS$ |
```

```
sabhishek@s-abhishek:~/OS$ pwd
/home/sabhishek/OS
sabhishek@s-abhishek:~/OS$ |
```

```
sabhishek@s-abhishek:~/OS$ ls
temp
sabhishek@s-abhishek:~/OS$ mkdir temp1
sabhishek@s-abhishek:~/OS$ ls
temp  temp1
```

```
sabhishek@s-abhishek:~/OS$ ls
temp
sabhishek@s-abhishek:~/OS$ mkdir temp1
sabhishek@s-abhishek:~/OS$ ls
temp  temp1
sabhishek@s-abhishek:~/OS$ |
```

```

sabhishek@s-abhishek:~/OS$ cd temp
sabhishek@s-abhishek:~/OS/temp$ ls
sabhishek@s-abhishek:~/OS/temp$ cd ..
sabhishek@s-abhishek:~/OS$ cd temp1
sabhishek@s-abhishek:~/OS/temp1$ ls
sabhishek@s-abhishek:~/OS/temp1$ cd ~

```

```

sabhishek@s-abhishek:~$ ls
Desktop      Downloads      Music  Pictures  PycharmProjects  snap      Templates
Documents    examples.desktop  OS      Public    Python            stegdetect  Videos

```

```

sabhishek@s-abhishek:~$ ls -l
total 64
drwxr-xr-x 2 sabhishek sabhishek 4096 Jan 19 08:18 Desktop
drwxr-xr-x 2 sabhishek sabhishek 4096 Jan 19 08:18 Documents
drwxr-xr-x 3 sabhishek sabhishek 4096 Jan 21 10:02 Downloads
-rw-r--r-- 1 sabhishek sabhishek 8980 Jan 19 07:47 examples.desktop
drwxr-xr-x 2 sabhishek sabhishek 4096 Jan 19 08:18 Music
drwxr-xr-x 4 sabhishek sabhishek 4096 Jan 21 15:08 OS
drwxr-xr-x 3 sabhishek sabhishek 4096 Jan 19 20:05 Pictures
drwxr-xr-x 2 sabhishek sabhishek 4096 Jan 19 08:18 Public
drwxrwxr-x 3 sabhishek sabhishek 4096 Jan 21 09:31 PycharmProjects
drwxr-xr-x 2 sabhishek sabhishek 4096 Jan 21 10:01 Python
drwxr-xr-x 6 sabhishek sabhishek 4096 Jan 21 09:30 snap
drwxr-xr-x 6 sabhishek sabhishek 4096 Jan 19 15:41 stegdetect
drwxr-xr-x 2 sabhishek sabhishek 4096 Jan 19 08:18 Templates
drwxr-xr-x 2 sabhishek sabhishek 4096 Jan 19 08:18 Videos
sabhishek@s-abhishek:~$ |

```

```
sabhishek@s-abhishek:~$ cd OS
sabhishek@s-abhishek:~/OS$ ls
temp  temp1
sabhishek@s-abhishek:~/OS$ mkdir -p temp2/temp1/temp0
sabhishek@s-abhishek:~/OS$ ls
temp  temp1  temp2
sabhishek@s-abhishek:~/OS$ cd temp2
sabhishek@s-abhishek:~/OS/temp2$ ls
temp1
sabhishek@s-abhishek:~/OS/temp2$ cd temp1
sabhishek@s-abhishek:~/OS/temp2/temp1$ ls
temp0
sabhishek@s-abhishek:~/OS/temp2/temp1$ cd temp0
sabhishek@s-abhishek:~/OS/temp2/temp1/temp0$ ls
sabhishek@s-abhishek:~/OS/temp2/temp1/temp0$ |
```

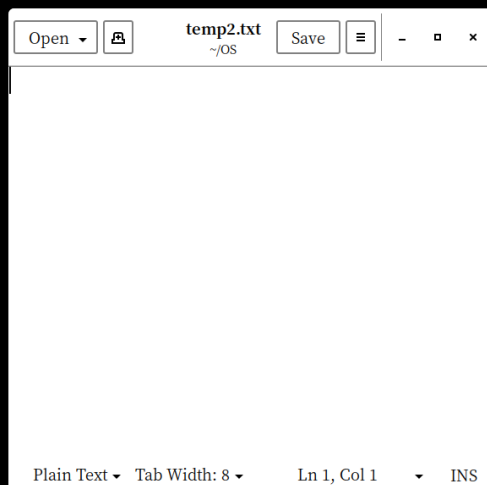
```
sabhishek@s-abhishek:~/OS$ ls
temp  temp1  temp2
sabhishek@s-abhishek:~/OS$ rmdir -p temp2/temp1/temp0
sabhishek@s-abhishek:~/OS$ ls
temp  temp1
sabhishek@s-abhishek:~/OS$ rmdir temp1
sabhishek@s-abhishek:~/OS$ ls
temp
sabhishek@s-abhishek:~/OS$ |
```

```
sabhishek@s-abhishek:~/OS$ cat > temp1.txt
Hai
^C
sabhishek@s-abhishek:~/OS$ ls
temp  temp1.txt
sabhishek@s-abhishek:~/OS$ file temp1.txt
temp1.txt: ASCII text
```

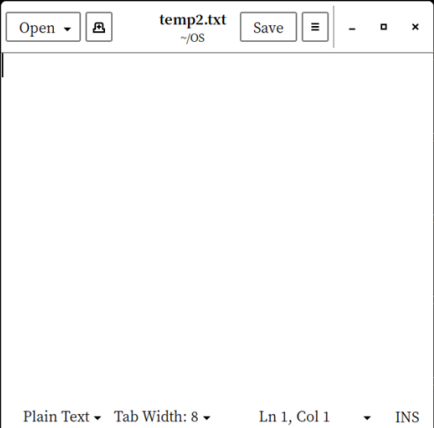
```
sabhishek@s-abhishek: ~/OS$ ls
temp  temp1.txt
sabhishek@s-abhishek: ~/OS$ touch f1
sabhishek@s-abhishek: ~/OS$ touch f2
sabhishek@s-abhishek: ~/OS$ ls
f1  f2  temp  temp1.txt
sabhishek@s-abhishek: ~/OS$ rm f1
sabhishek@s-abhishek: ~/OS$ ls
f2  temp  temp1.txt
sabhishek@s-abhishek: ~/OS$ rm f2
sabhishek@s-abhishek: ~/OS$ ls
temp  temp1.txt
sabhishek@s-abhishek: ~/OS$ |
```

```
sabhishek@s-abhishek: ~/OS$ ls
temp  temp1.txt
sabhishek@s-abhishek: ~/OS$ gedit temp2.txt
```

```
** (gedit:6124): WARNING **: 15:34:08.339:
-x-generic' not present in theme Adwaita
** (gedit:6124): WARNING **: 15:34:08.339:
-x-generic' not present in theme Adwaita
** (gedit:6124): WARNING **: 15:34:08.339:
-x-generic' not present in theme Adwaita
** (gedit:6124): WARNING **: 15:34:08.363:
-x-generic' not present in theme Adwaita
** (gedit:6124): WARNING **: 15:34:08.363:
-x-generic' not present in theme Adwaita
```



```
sabhishek@s-abhishek:~/OS$ gedit temp2.txt &
[1] 6184
sabhishek@s-abhishek:~/OS$
** (gedit:6184): WARNING **: 15:36:40.113: in theme Adwaita
** (gedit:6184): WARNING **: 15:36:40.114: in theme Adwaita
** (gedit:6184): WARNING **: 15:36:40.114: in theme Adwaita
** (gedit:6184): WARNING **: 15:36:40.129: in theme Adwaita
** (gedit:6184): WARNING **: 15:36:40.129: in theme Adwaita
sabhishek@s-abhishek:~/OS$ |
```



```
sabhishek@s-abhishek:~/OS$ ls
temp  temp1.txt
sabhishek@s-abhishek:~/OS$ rm temp1.txt
sabhishek@s-abhishek:~/OS$ ls
temp
sabhishek@s-abhishek:~/OS$ touch f1
sabhishek@s-abhishek:~/OS$ touch f2
sabhishek@s-abhishek:~/OS$ ls
f1  f2  temp
```

```
sabhishek@s-abhishek:~/OS$ ls
f1  f2  temp
sabhishek@s-abhishek:~/OS$ cp f1 f3
sabhishek@s-abhishek:~/OS$ cp f1 f2 temp
sabhishek@s-abhishek:~/OS$ ls
f1  f2  f3  temp
sabhishek@s-abhishek:~/OS$ cd temp
sabhishek@s-abhishek:~/OS/temp$ ls
f1  f2
sabhishek@s-abhishek:~/OS/temp$ |
```

```
sabhishek@s-abhishek: ~/OS$ ls
f1  f2  f3  temp
sabhishek@s-abhishek: ~/OS$ cd temp
sabhishek@s-abhishek: ~/OS/temp$ ls
f1  f2
sabhishek@s-abhishek: ~/OS/temp$ cd ..
sabhishek@s-abhishek: ~/OS$ ls
f1  f2  f3  temp
sabhishek@s-abhishek: ~/OS$ cp -r temp temp1
sabhishek@s-abhishek: ~/OS$ ls
f1  f2  f3  temp  temp1
sabhishek@s-abhishek: ~/OS$ cd temp1
sabhishek@s-abhishek: ~/OS/temp1$ ls
f1  f2
```

```
sabhishek@s-abhishek: ~/OS$ ls
f1  f2  f3  temp  temp1
sabhishek@s-abhishek: ~/OS$ mv f1 f11
sabhishek@s-abhishek: ~/OS$ ls
f11  f2  f3  temp  temp1
sabhishek@s-abhishek: ~/OS$ mv f2 f22
sabhishek@s-abhishek: ~/OS$ ls
f11  f22  f3  temp  temp1
sabhishek@s-abhishek: ~/OS$ mv f3 f33
sabhishek@s-abhishek: ~/OS$ ls
f11  f22  f33  temp  temp1
```

```
sabhishek@s-abhishek: ~/OS$ ls
f11  f22  f33  temp  temp1
sabhishek@s-abhishek: ~/OS$ cd temp1
sabhishek@s-abhishek: ~/OS/temp1$ ls
f1sabhishek@s-abhishek: ~/OS$ ls
saf11  f22  f33  temp1
saf1sabhishek@s-abhishek: ~/OS$ rm -r temp1
f1sabhishek@s-abhishek: ~/OS$ ls
saf11  f22  f33
saf1sabhishek@s-abhishek: ~/OS$ rm f11
f1sabhishek@s-abhishek: ~/OS$ rm f22
saf1sabhishek@s-abhishek: ~/OS$ rm f33
saf1sabhishek@s-abhishek: ~/OS$ ls
f1sabhishek@s-abhishek: ~/OS$ |
sadnishek@s-adnishek: ~/OS/temp1$ |
```

```
sabhishek@s-abhishek: ~/OS$ ls
sabhishek@s-abhishek: ~/OS$ cat > temp.txt
One
Two
Three
Four
Five
Six
Seven
Eight
Nine
Ten
Eleven
Twelve
Thirteen
Fourteen
Fifteen
^C
sabhishek@s-abhishek: ~/OS$ ls
temp.txt
sabhishek@s-abhishek: ~/OS$ |
```



```
sabhi shek@s - abhi shek: ~/OS$ ls
temp.txt
sabhi shek@s - abhi shek: ~/OS$ cat temp.txt
One
Two
Three
Four
Five
Six
Seven
Eight
Nine
Ten
Eleven
Twelve
Thirteen
Fourteen
Fifteen
sabhi shek@s - abhi shek: ~/OS$ |
```

```
sabhi shek@s - abhi shek: ~/OS$ head temp.txt
One
Two
Three
Four
Five
Six
Seven
Eight
Nine
Ten
```

```
sabhishek@s-abhishek:~/OS$ tail temp.txt
Six
Seven
Eight
Nine
Ten
Eleven
Twelve
Thirteen
Fourteen
Fifteen
```

Lab Exercise

1. Display the path of your current directory.
2. Make a new directory named **main**.
3. Now go to the directory **main**.
4. Make the directories in the following hierarchy using a single command.
Dir1 -> Dir 2 -> Dir3
5. Print the path of the current directory.
6. Go to **Dir3** using a single command.

```
sabhishek@s-abhishek:~$ cd main
sabhishek@s-abhishek:~/main$ mkdir -p Dir1/Dir2/Dir3
sabhishek@s-abhishek:~/main$ ls
Dir1
sabhishek@s-abhishek:~/main$ pwd
/home/sabhishek/main
sabhishek@s-abhishek:~/main$ cd Dir1/Dir2/Dir3
```

7. Create a new file **demo1**, type and save the following contents,
This is my first file in shell.
I can edit this file!!!
8. Create a new file **demo2**, type and save the following contents,
Hi !!! This is the second file.
I am doing shell commands.
I can edit this file!!!
9. Display the contents of file **demo1** in terminal.
10. List the files and folders present in **Dir3**.

```
sabhi shek@s-abhi shek: ~/main/Dir1/Dir2/Dir3$ cat > demo1
This is my first file in shell.

I can edit this file!!!
^C
sabhi shek@s-abhi shek: ~/main/Dir1/Dir2/Dir3$ cat > demo2
Hi !!! This is the second file.

I am doing shell commands.

I can edit this file!!!
^C
sabhi shek@s-abhi shek: ~/main/Dir1/Dir2/Dir3$ cat demo1
This is my first file in shell.

I can edit this file!!!
sabhi shek@s-abhi shek: ~/main/Dir1/Dir2/Dir3$ ls
demo1  demo2
```

11. Go to **Dir 2**.
12. Go to your home directory.

```
sabhi shek@s-abhi shek: ~/main/Dir1/Dir2/Dir3$ cd ..
sabhi shek@s-abhi shek: ~/main/Dir1/Dir2$ cd ~
```

13. Stay where you are, and list the contents of **Dir3**.

14. List all the files (including hidden files) in your home directory.

```
sabhi shek@s-abhi shek:~$ ls main/Dir1/Dir2/Dir3
demo1 demo2
sabhi shek@s-abhi shek:~$ ls -a
.          .config      .gnupg      main        .pki        .ssh
..         .dbus        .ICEauthority .mozilla   .profile   stegdetect
.bash_history Desktop      .java       Music       Public      .sudo_as_admin_successful
.bash_logout Documents    'Lab 1.odt' OS          PycharmProjects Templates
.bashrc    Downloads   .local      outfile.txt Python       Videos
.cache     examples.desktop '~lock.Lab 1.odt#' Pictures    snap        .wine
```

15. Create a new file **test1**, type and save the contents into your file.

I am working with linux shell.

Good bye

16. Copy the contents of **test1** to **test2** in the same directory.

17. Rename **test2** as **test3**.

18. Determine the file type of **test3**.

19. Move the file **test3** to the directory Dir3.

```
sabhi shek@s-abhi shek:~$ cat > test1
I am working with linux shell.

Good bye
^C
sabhi shek@s-abhi shek:~$ cp test1 test2
sabhi shek@s-abhi shek:~$ mv test2 test3
sabhi shek@s-abhi shek:~$ file test3
test3: ASCII text
sabhi shek@s-abhi shek:~$ mv test3 main/Dir1/Dir2/Dir3
```

20. Create a file **count**, with content one to twenty in words with one line having only one number using a single command.

```
sabhishek@s-abhishek:~$ cat > count
```

One

Two

Three

Four

Five

Six

Seven

Eight

Nine

Ten

Eleven

Twelve

Thirteen

Fourteen

Fifteen

Sixteen

Seventeen

Eighteen

Nineteen

Twenty

21. Copy the file **count** to **count2** using cat command.

22. Create another file **count3** with numbers twenty one to twenty five (in five lines).

```
sabhishek@s-abhishek:~$ cat count > count2
sabhishek@s-abhishek:~$ cat > count3
Twenty One
Twenty Two
Twenty Three
Twenty Four
Twenty Five
```

23. Concatenate the contents of files **count2** and **count3** and write it into the file **countfinal**.
24. Remove the files **demo1** and **demo2** in directory Dir3.
25. Go to Dir2 and remove the subdirectory Dir3.

```
sabhishek@s-abhishek:~$ cat count2 count3 > countfinal
sabhishek@s-abhishek:~$ rm main/Dir1/Dir2/Dir3/demo*
sabhishek@s-abhishek:~$ cd main/Dir1/Dir2
sabhishek@s-abhishek:~/main/Dir1/Dir2$ rm -r Dir3
sabhishek@s-abhishek:~/main/Dir1/Dir2$ cd ~
sabhishek@s-abhishek:~$ rmdir main/Dir/Dir2
```

26. Come back to your home folder and remove Dir2.
27. Display first 10 lines of the file **countfinal** in terminal.
28. Display last 10 lines of the file **countfinal** in terminal.

```
sabhishek@s-abhishek:~$ rmdir main/Dir1/Dir2
```

```
sabhishek@s-abhishek:~$ head countfinal
```

```
One
```

```
Two
```

```
Three
```

```
Four
```

```
Five
```

```
Six
```

```
Seven
```

```
Eight
```

```
Nine
```

```
Ten
```

```
sabhishek@s-abhishek:~$ tail countfinal
```

```
Sixteen
```

```
Seventeen
```

```
Eighteen
```

```
Nineteen
```

```
Twenty
```

```
Twenty One
```

```
Twenty Two
```

```
Twenty Three
```

```
Twenty Four
```

```
Twenty Five
```

29. Display first 5 lines of the file **countfinal** in terminal.

30. Display last 4 lines of the file **countfinal** in terminal.

```
sabhishek@s-abhishek:~$ head -5 countfinal
```

One

Two

Three

Four

Five

```
sabhishek@s-abhishek:~$ tail -4 countfinal
```

Twenty Two

Twenty Three

Twenty Four

Twenty Five

31. Display the contents of the file **countfinal** in the inverted form.(last line first and first line last)

```
sabhishek@s-abhishek:~$ tac countfinal
Twenty Five
Twenty Four
Twenty Three
Twenty Two
Twenty One
Twenty
Nineteen
Eighteen
Seventeen
Sixteen
Fifteen
Fourteen
Thirteen
Twelve
Eleven
Ten
Nine
Eight
Seven
Six
Five
Four
Three
Two
One
```

Thankyou!!