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**Ahmedabad University**

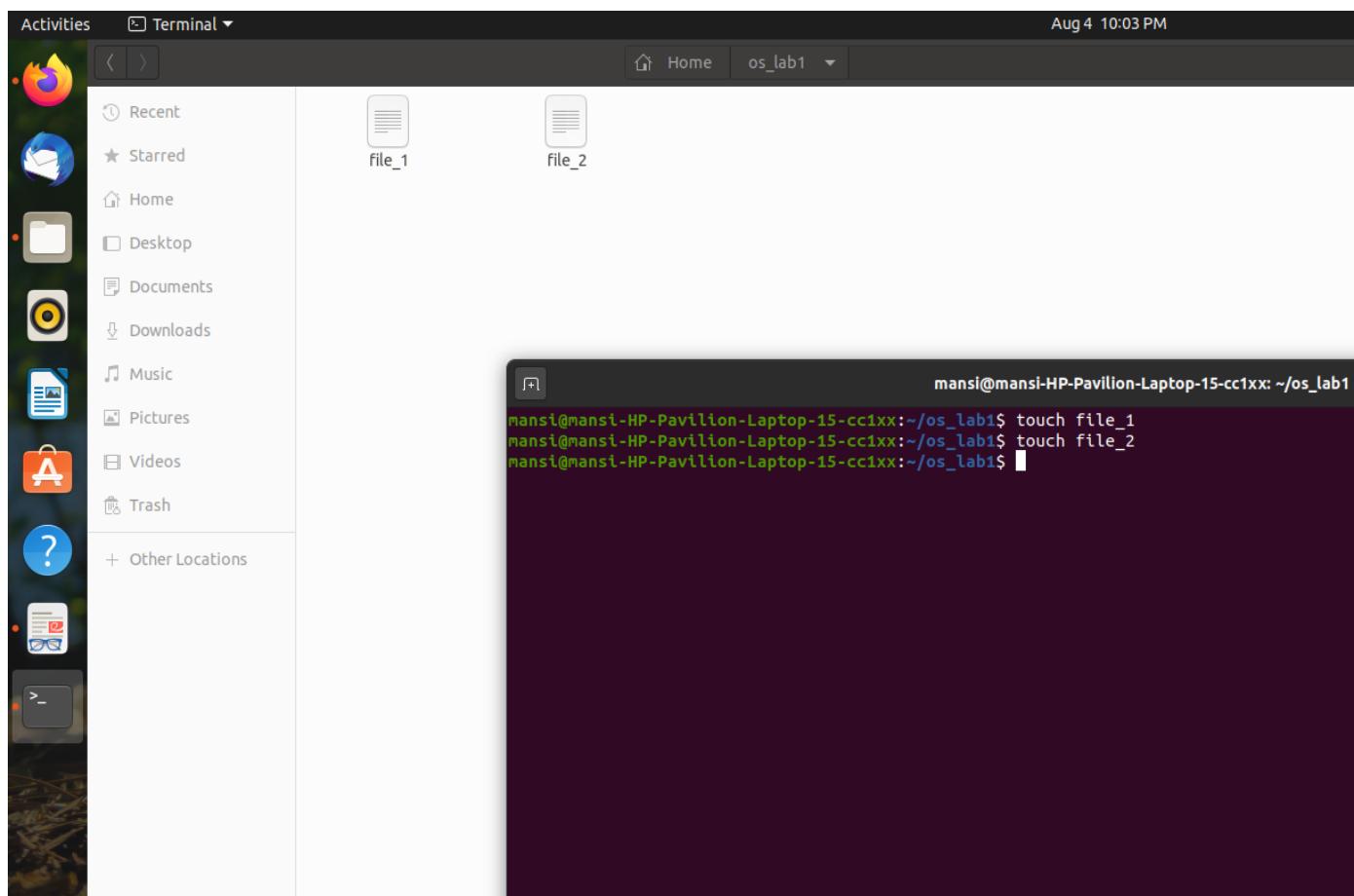
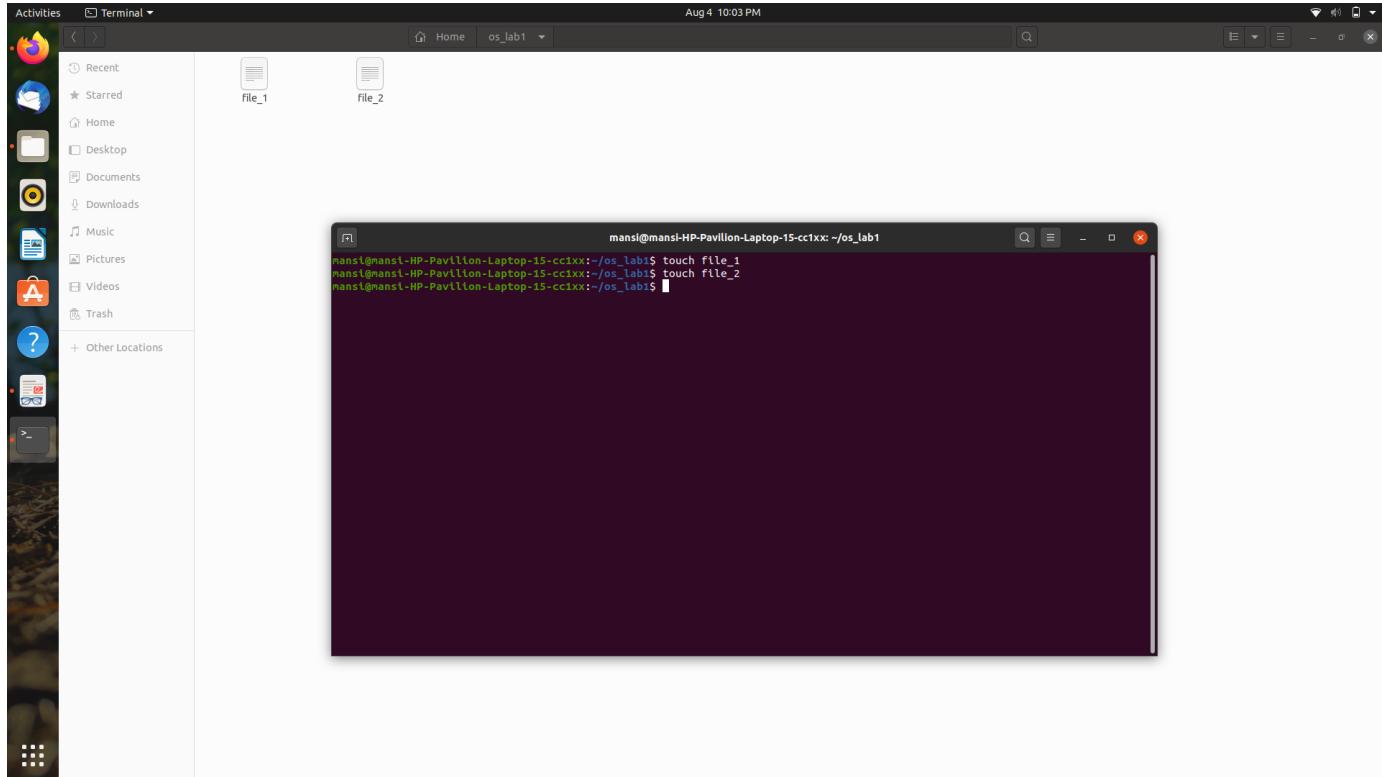
**School of Engineering and Applied Science**

**B.Tech (ICT), Semester - V**

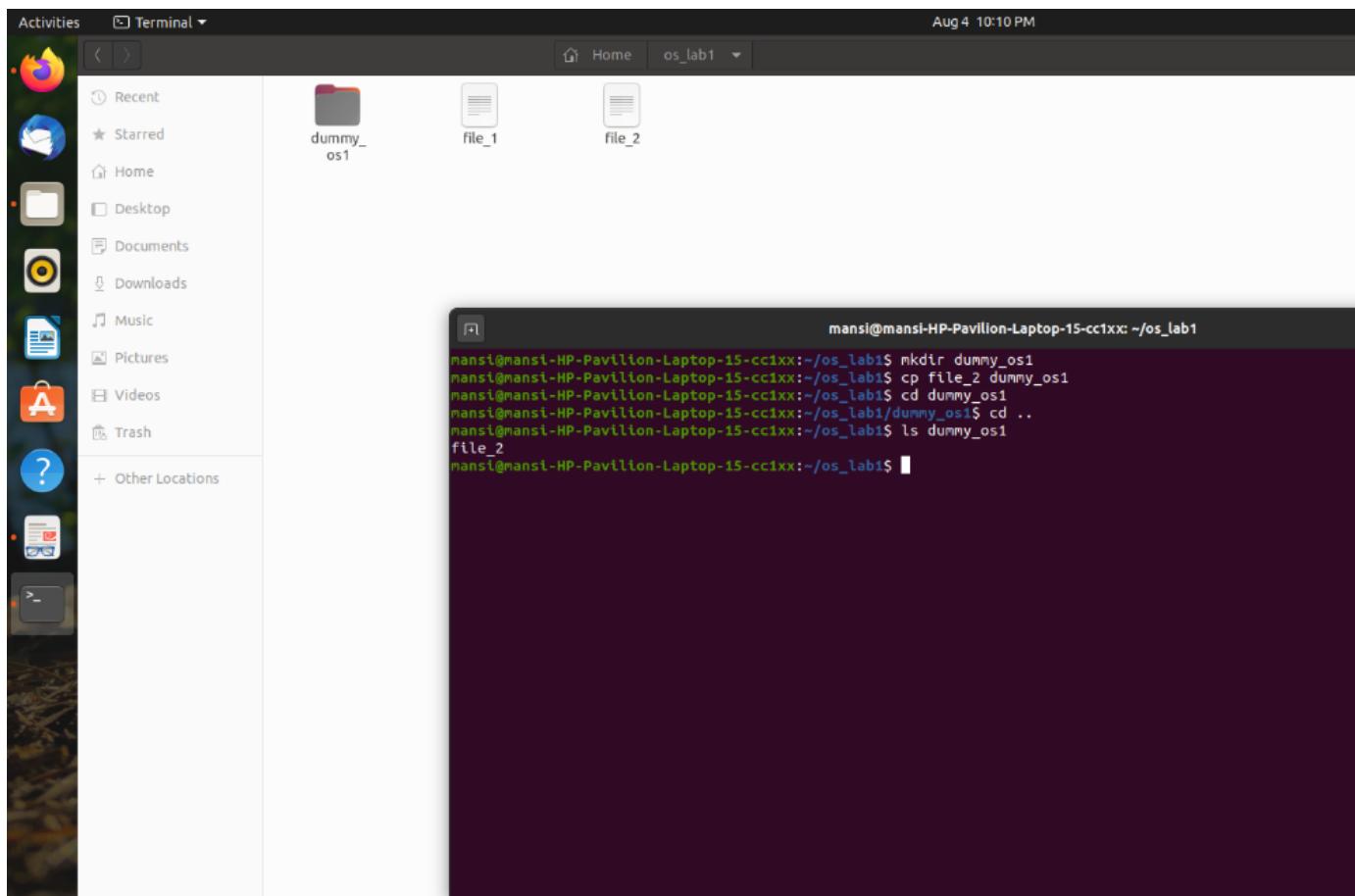
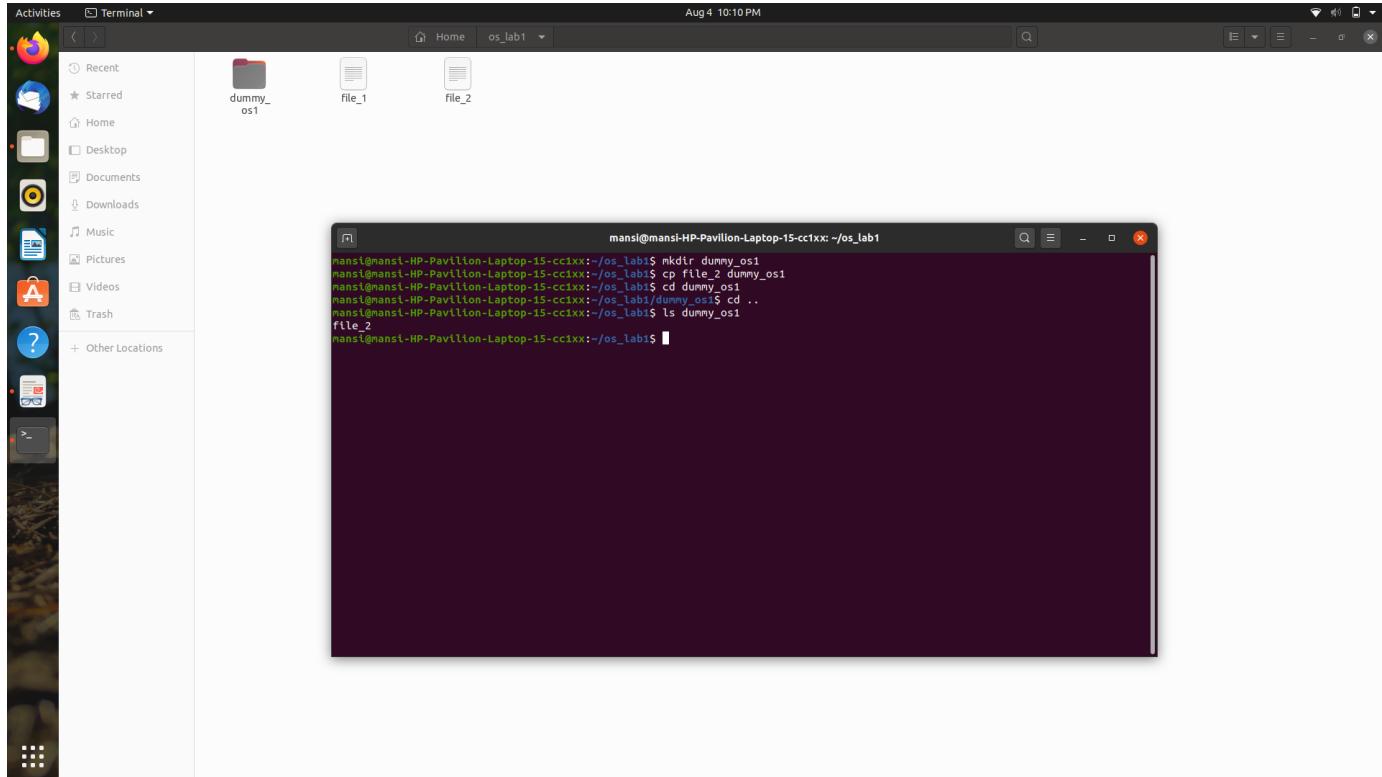
**Course: CSE341- Operating Systems Lab**

**Lab 1**

## 1) touch – create new file touch filename

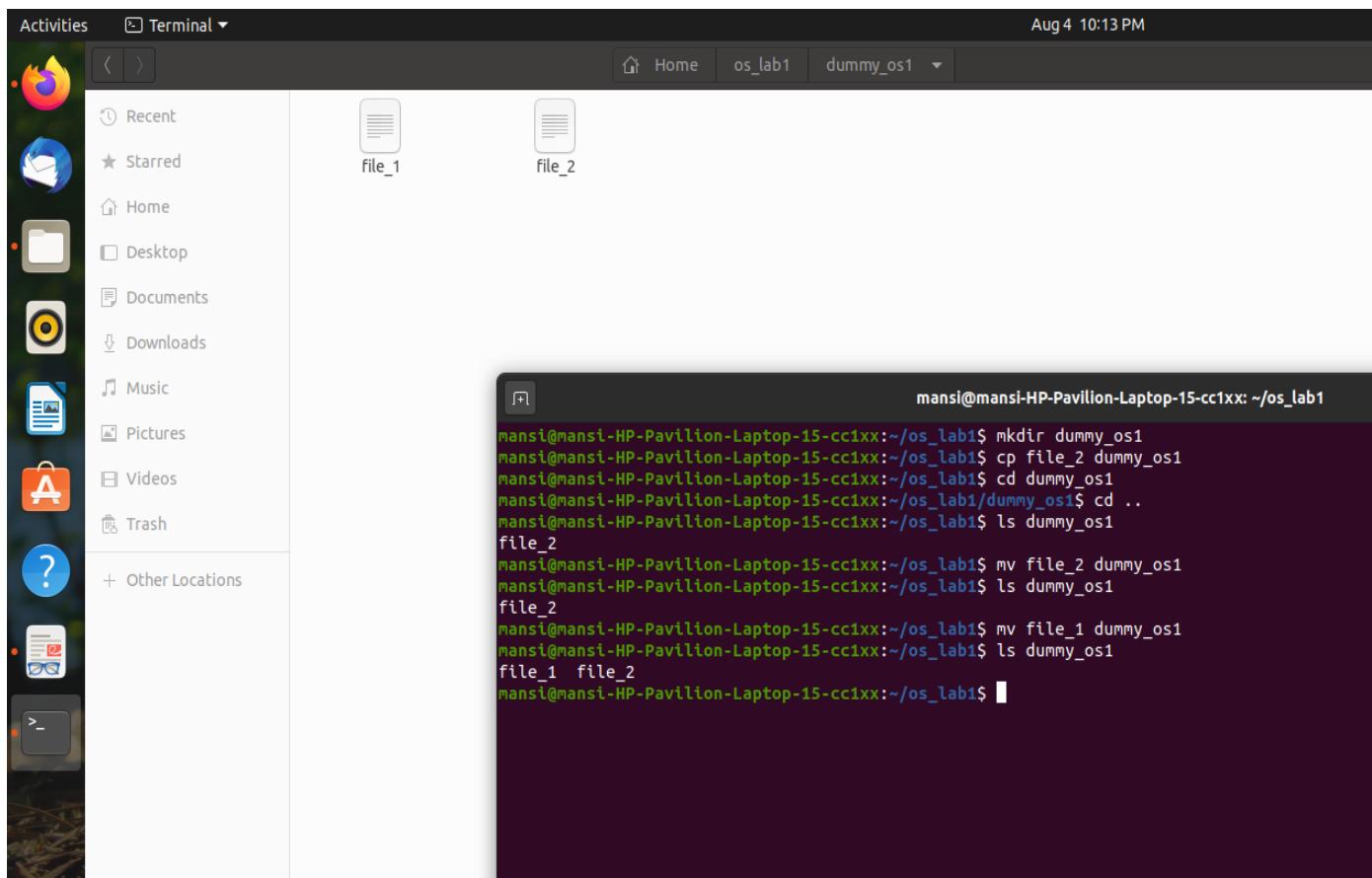
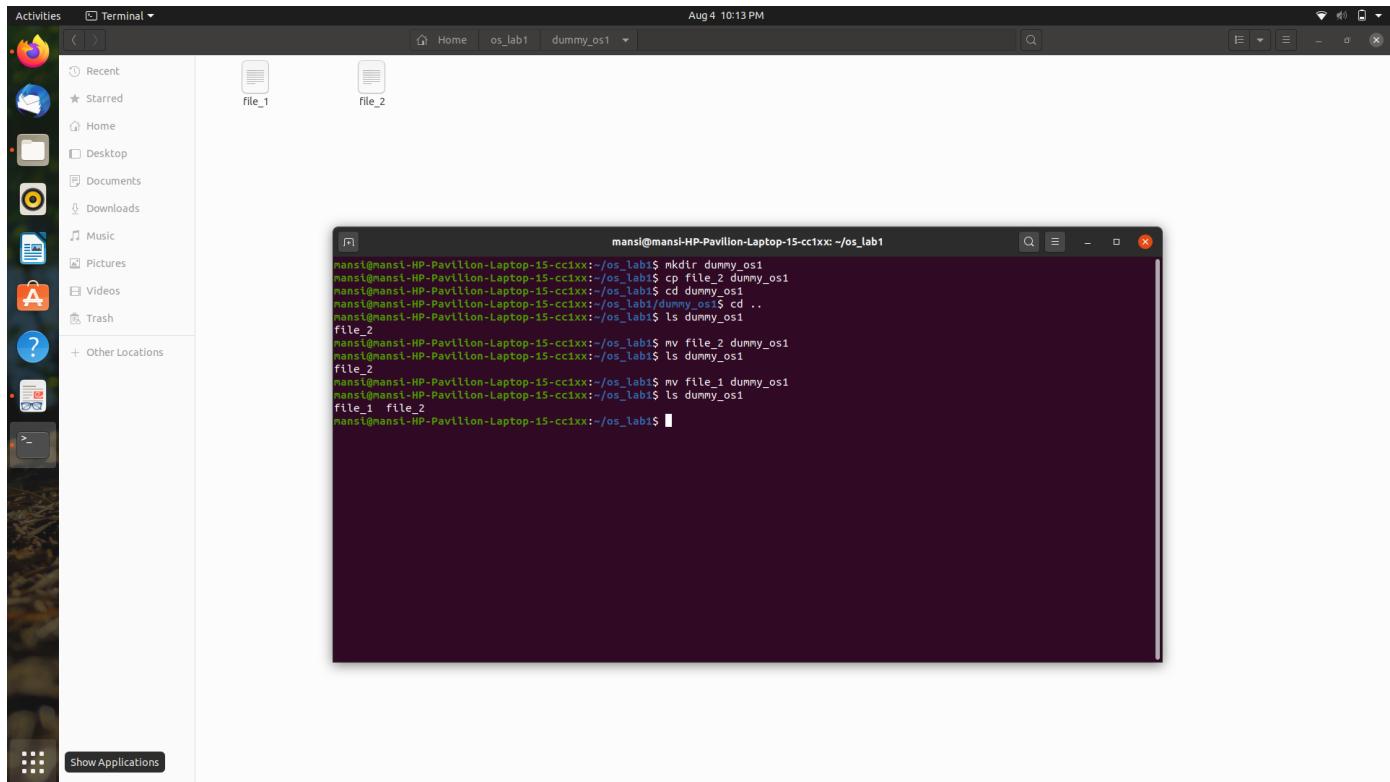


## 2) cp – copy files cp source destination



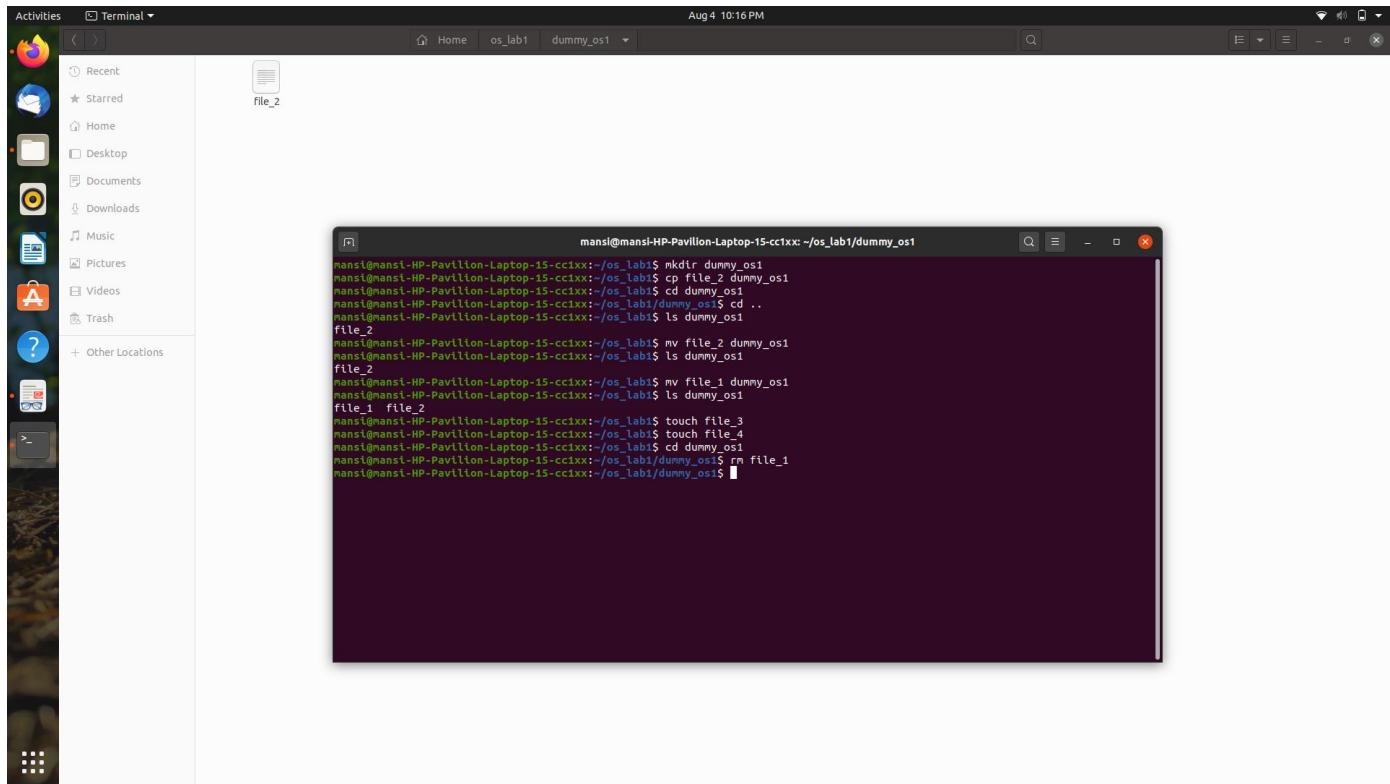
### 3) mv – move or rename files

#### mv source destination



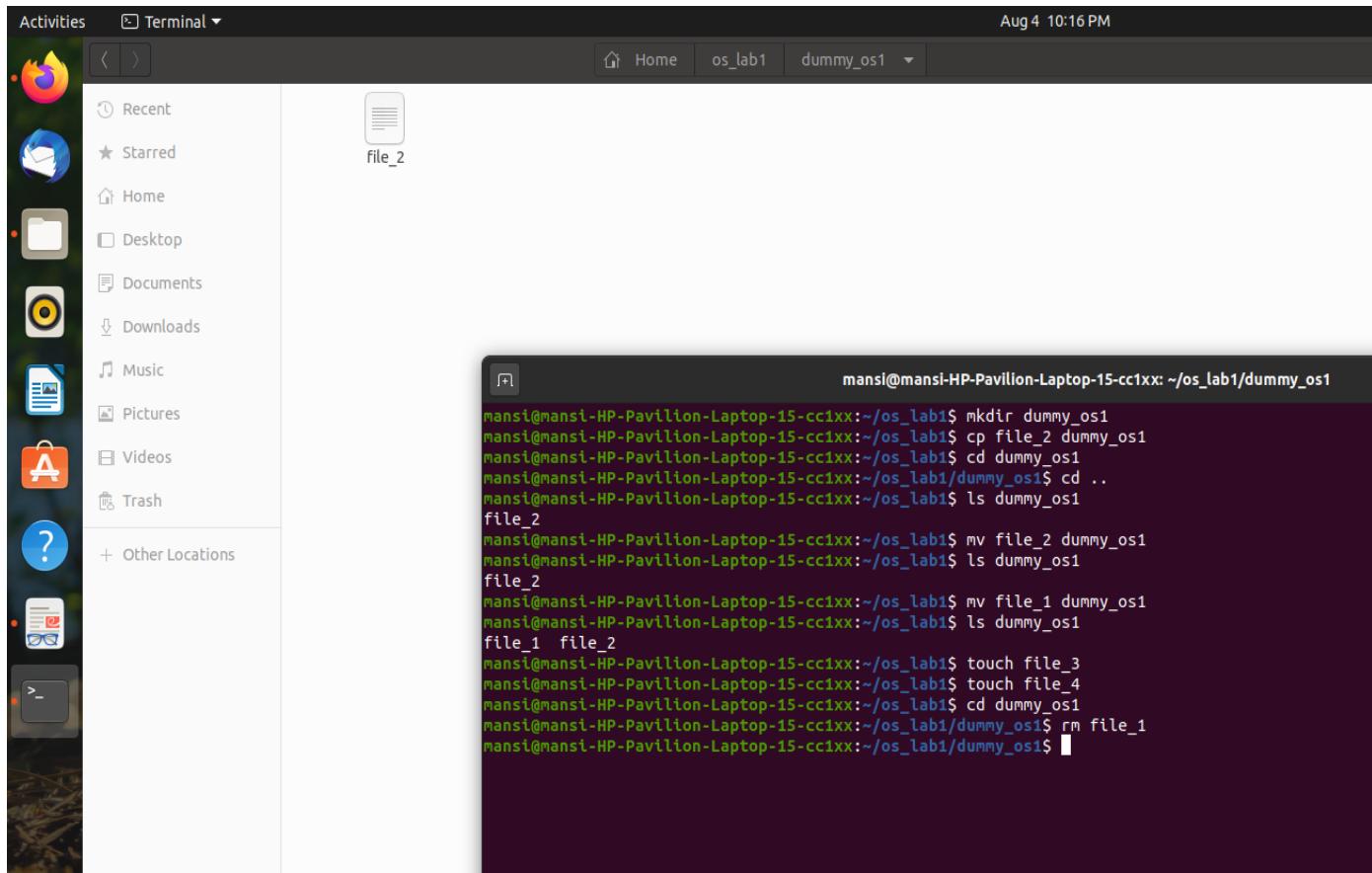
## 4) rm – remove files

### rm filename



A screenshot of a Linux desktop environment. On the left is a vertical dock with icons for various applications like a browser, email, file manager, and terminal. The main area shows a desktop with a few icons. A terminal window is open in the center, displaying a command-line session:

```
mansl@mansl-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1/dummy_os1
mansl@mansl-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1$ mkdir dummy_os1
mansl@mansl-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1$ cp file_2 dummy_os1
mansl@mansl-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1$ cd dummy_os1
mansl@mansl-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1/dummy_os1$ cd ..
mansl@mansl-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1$ ls dummy_os1
file_2
mansl@mansl-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1$ mv file_2 dummy_os1
mansl@mansl-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1$ ls dummy_os1
file_1
mansl@mansl-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1$ mv file_1 dummy_os1
mansl@mansl-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1$ ls dummy_os1
file_2
mansl@mansl-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1$ touch file_3
mansl@mansl-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1$ touch file_4
mansl@mansl-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1$ cd dummy_os1
mansl@mansl-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1/dummy_os1$ rm file_1
mansl@mansl-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1/dummy_os1$
```



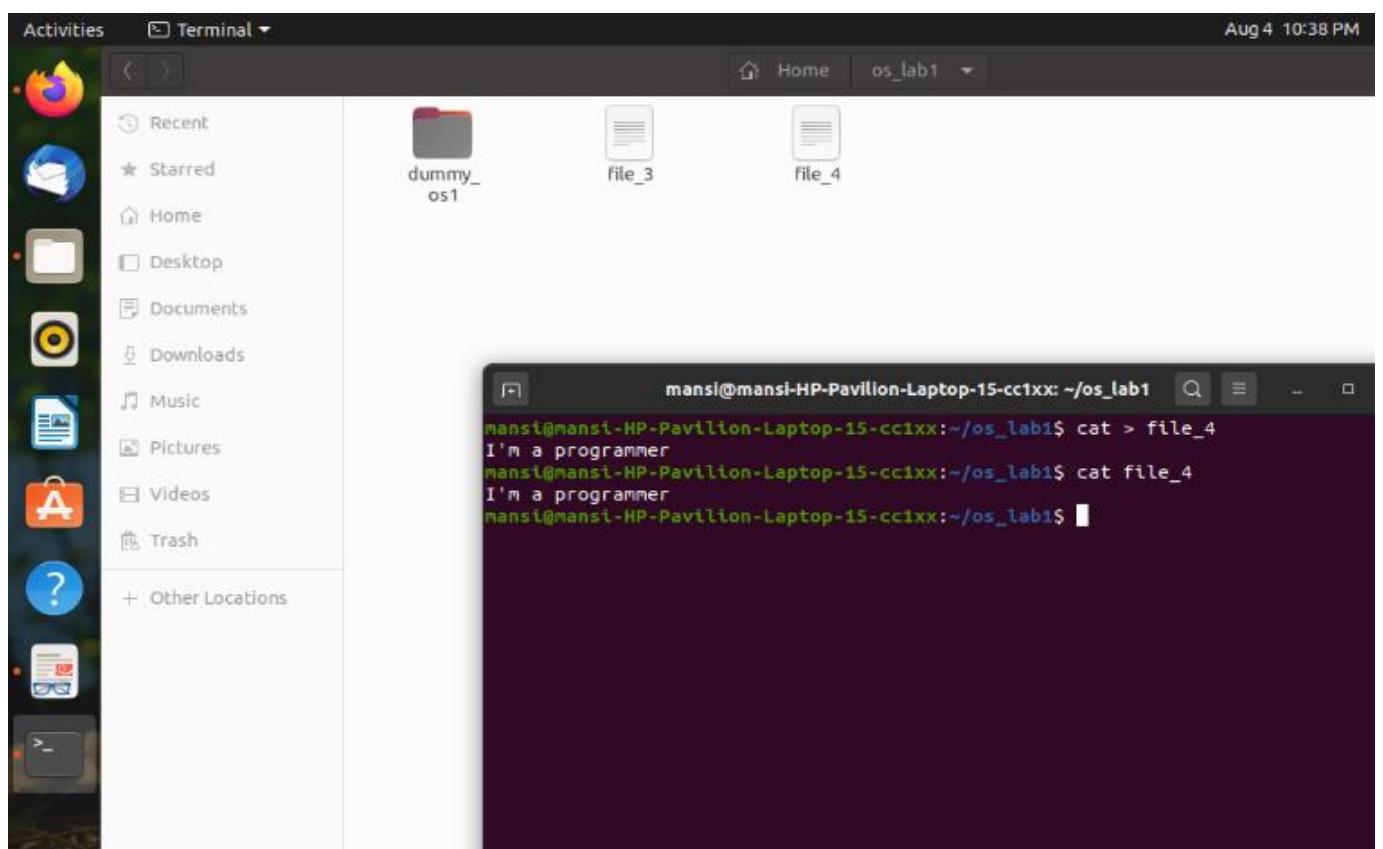
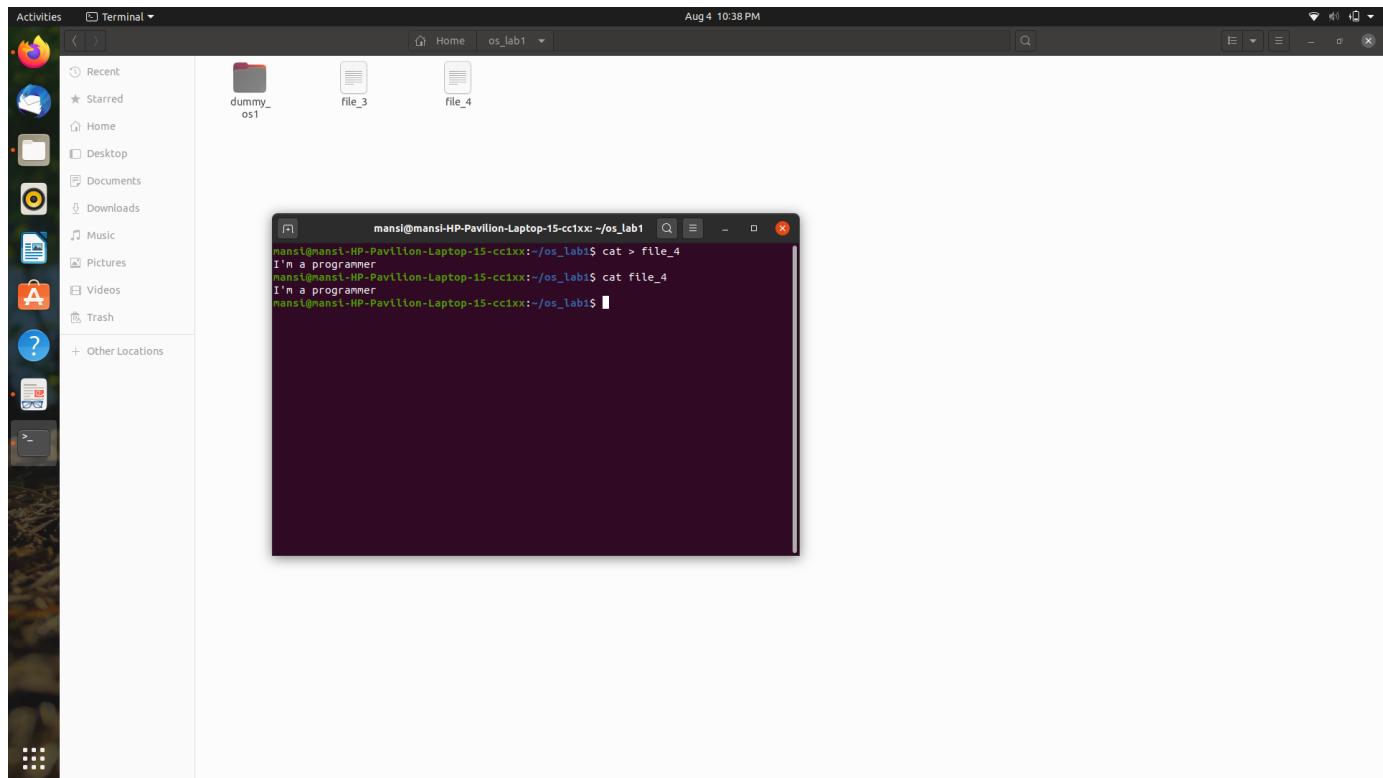
A screenshot of a Linux desktop environment, identical to the one above. It shows a terminal window with the same command-line session, indicating that the previous session has been copied.

```
mansl@mansl-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1/dummy_os1
mansl@mansl-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1$ mkdir dummy_os1
mansl@mansl-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1$ cp file_2 dummy_os1
mansl@mansl-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1$ cd dummy_os1
mansl@mansl-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1/dummy_os1$ cd ..
mansl@mansl-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1$ ls dummy_os1
file_2
mansl@mansl-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1$ mv file_2 dummy_os1
mansl@mansl-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1$ ls dummy_os1
file_1
mansl@mansl-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1$ mv file_1 dummy_os1
mansl@mansl-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1$ ls dummy_os1
file_2
mansl@mansl-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1$ touch file_3
mansl@mansl-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1$ touch file_4
mansl@mansl-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1$ cd dummy_os1
mansl@mansl-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1/dummy_os1$ rm file_1
mansl@mansl-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1/dummy_os1$
```

## 5) cat – view complete file content

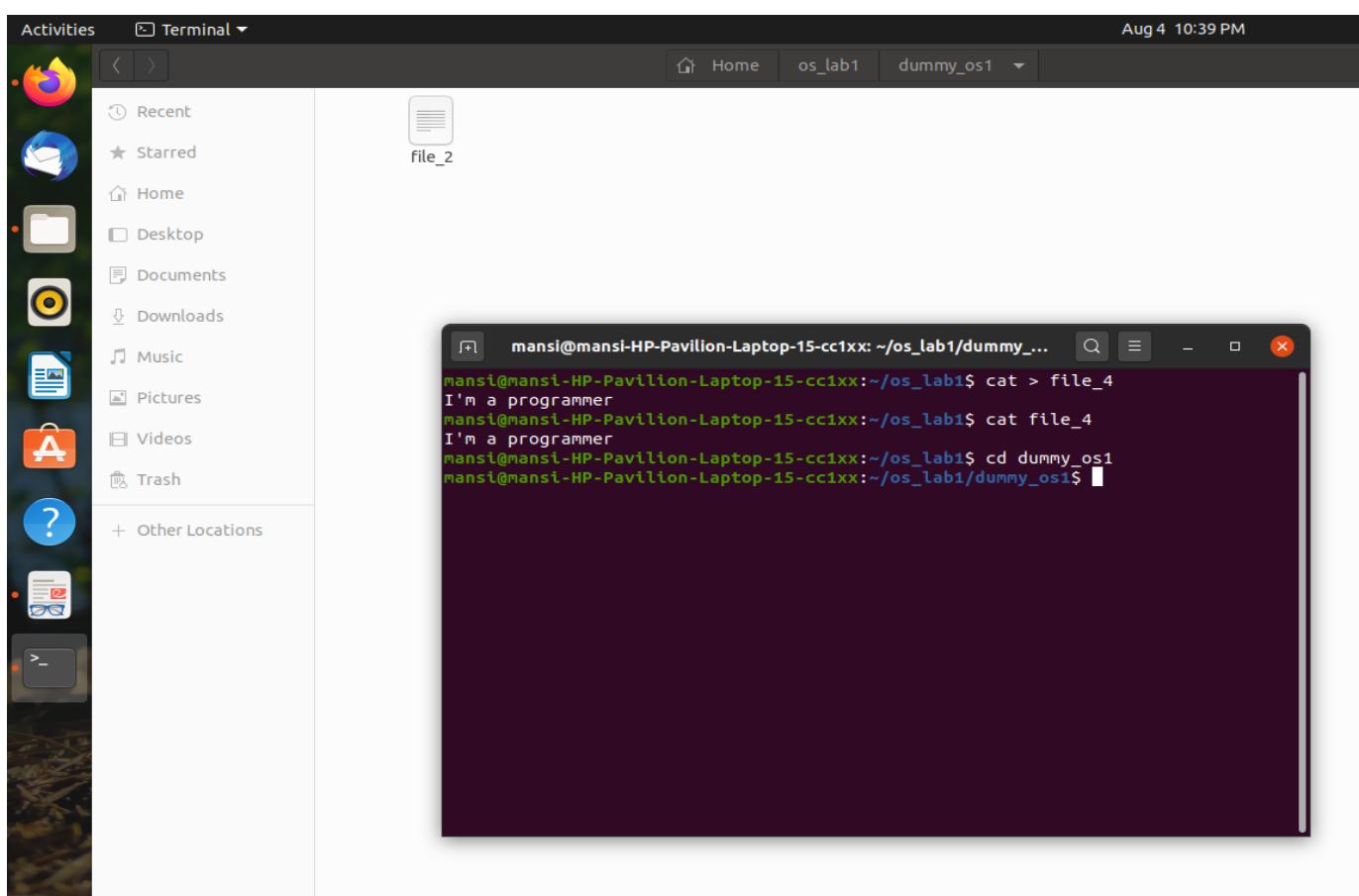
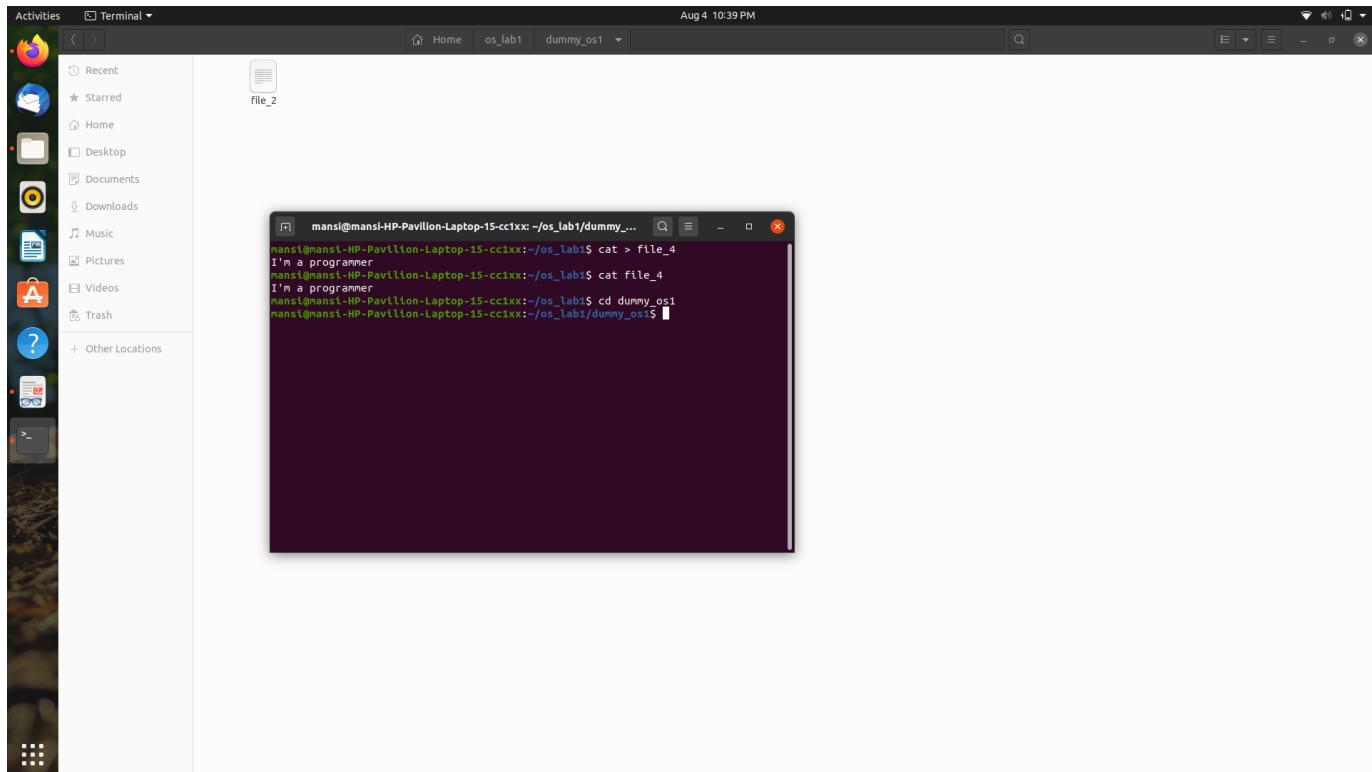
**cat filename**

**cat > filename {for writing content}**



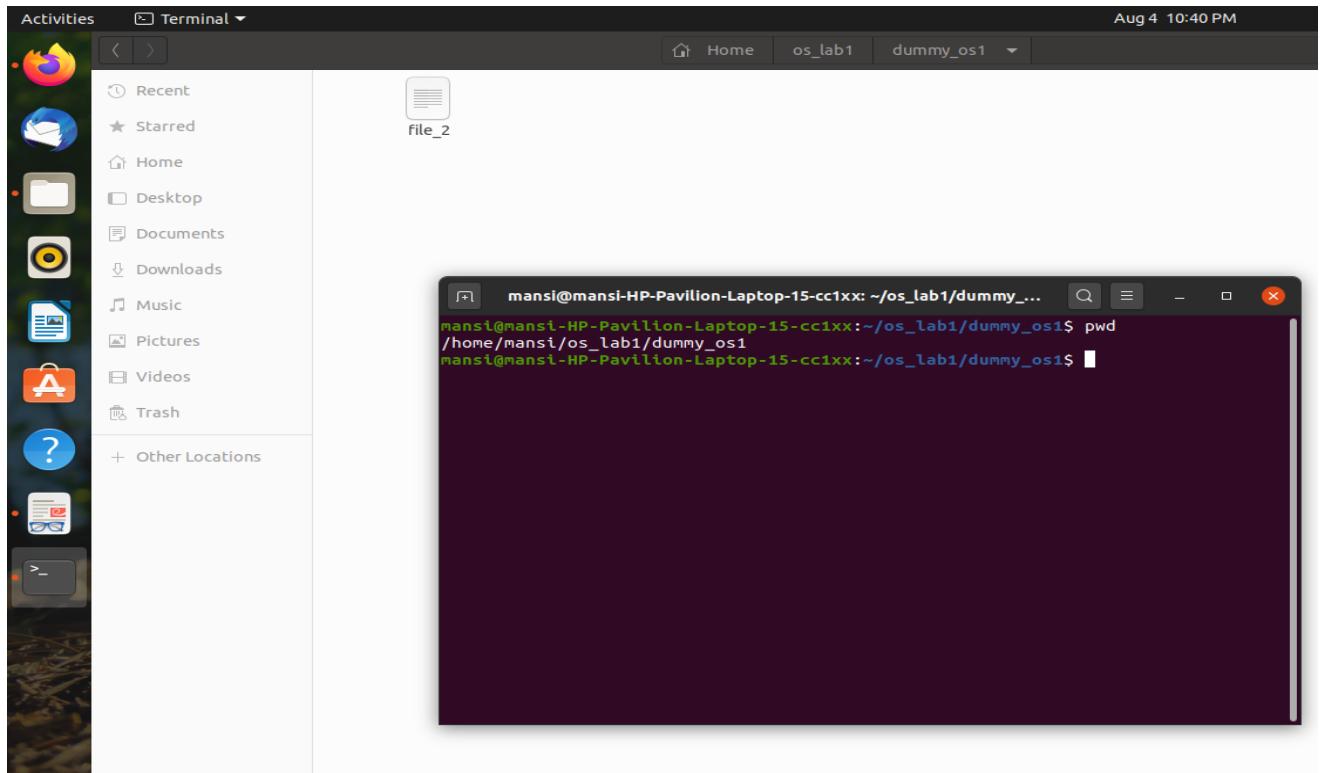
## 6) cd – change directory

`cd dirname`

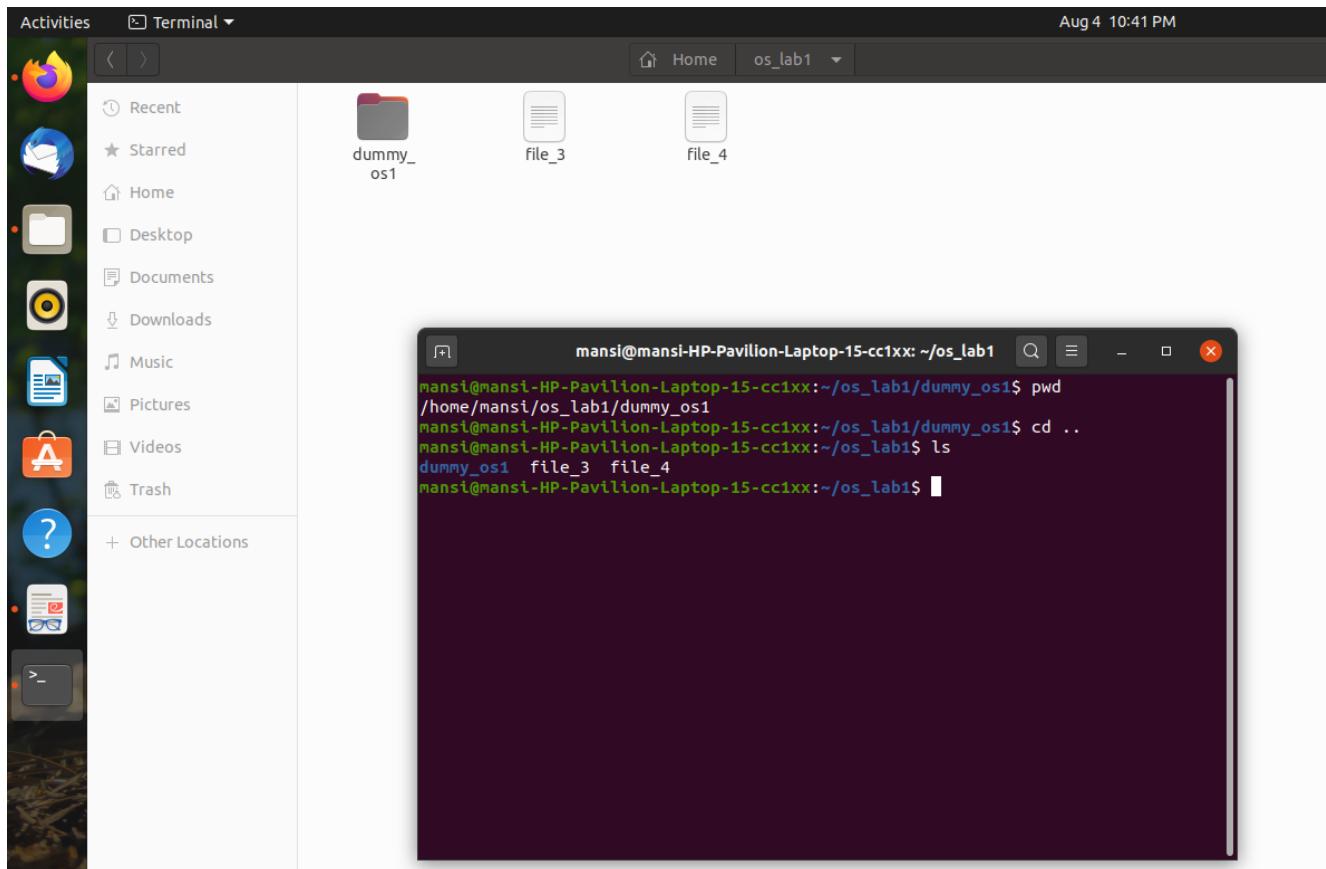


## 7) pwd – print working directory

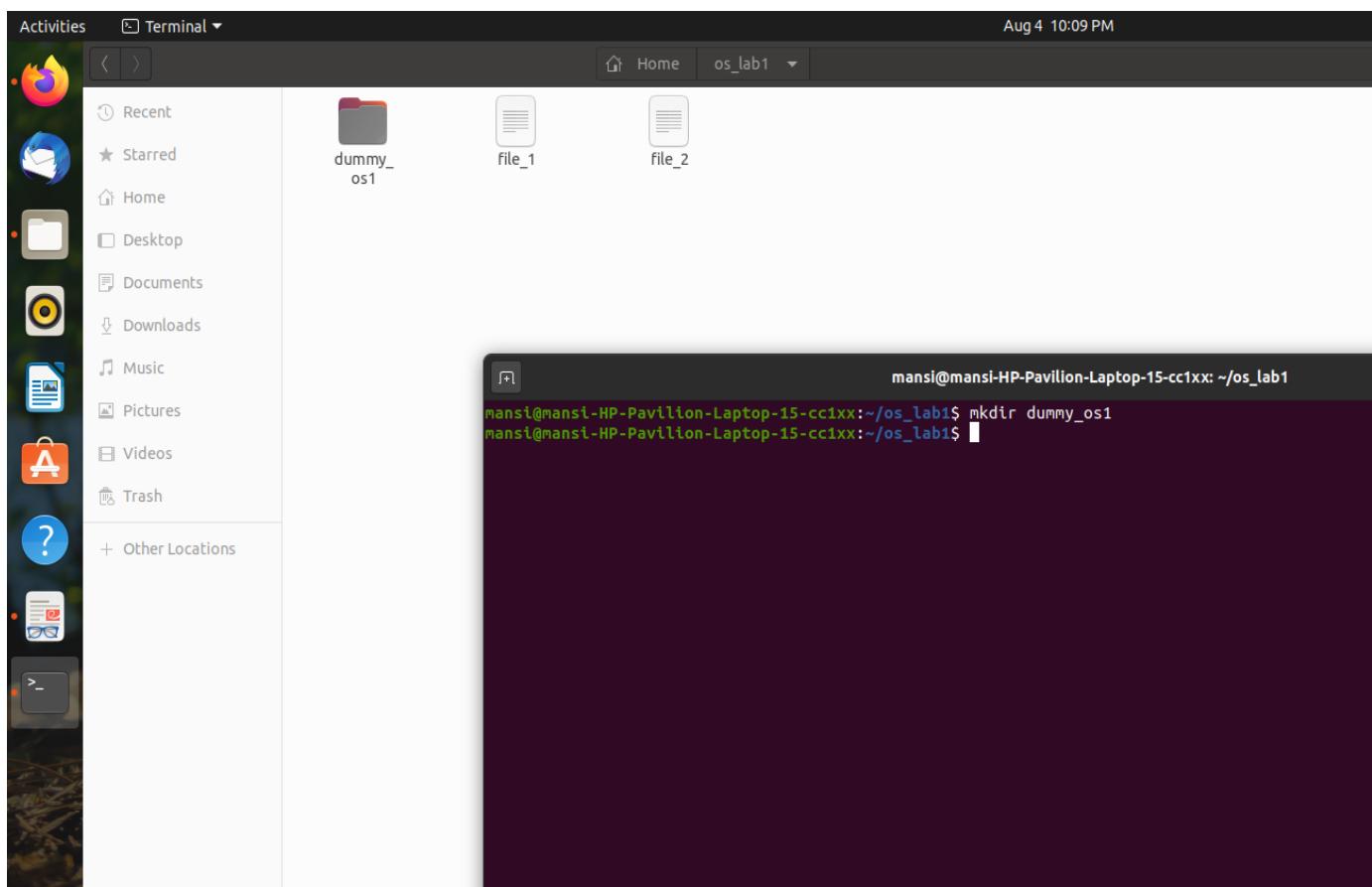
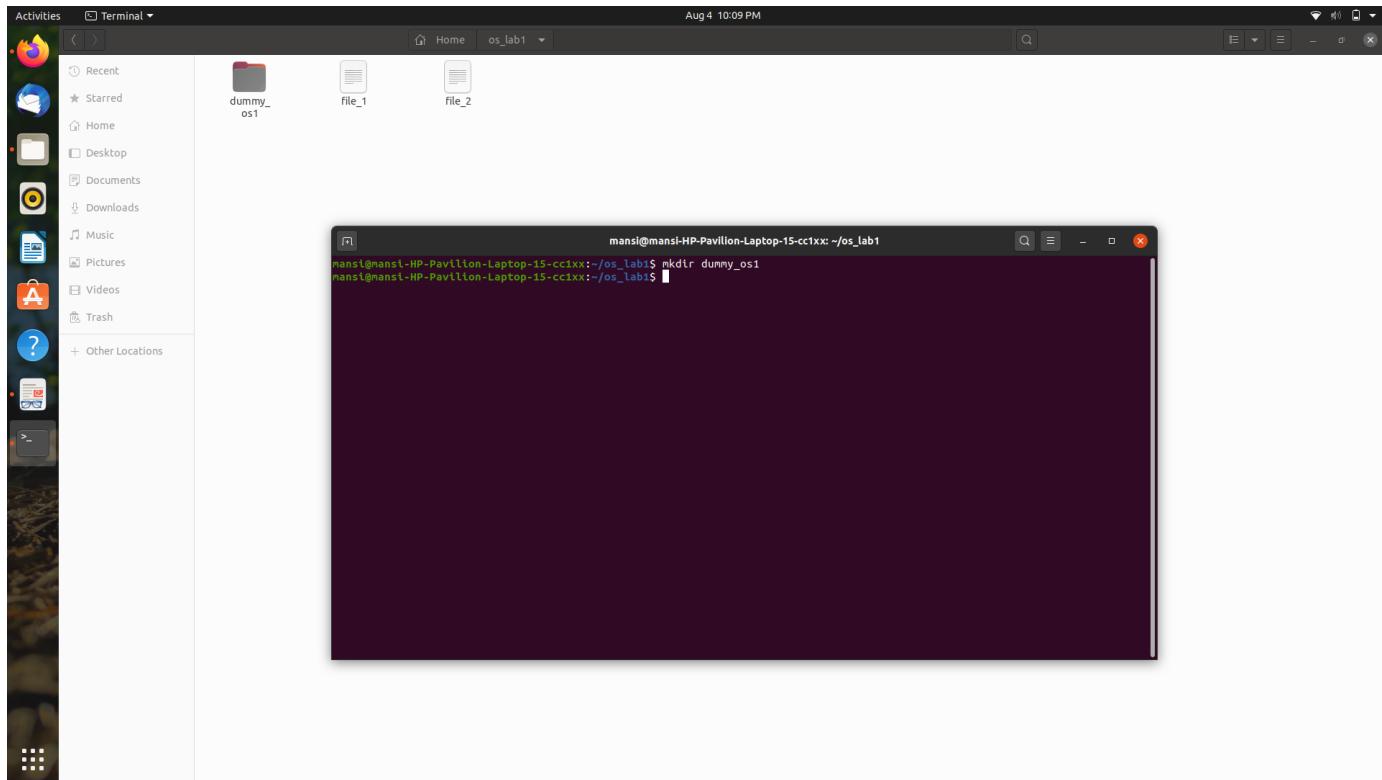
pwd



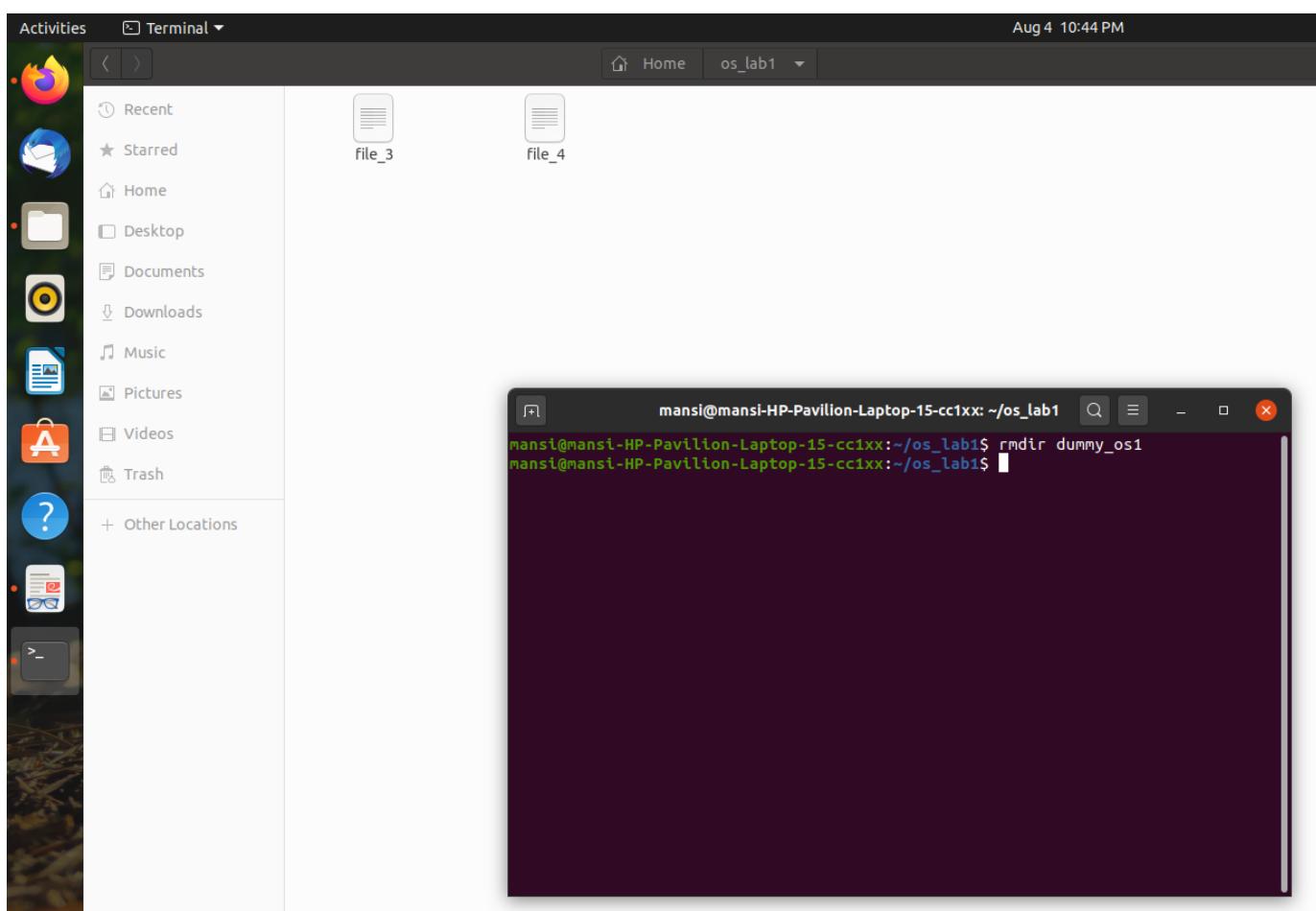
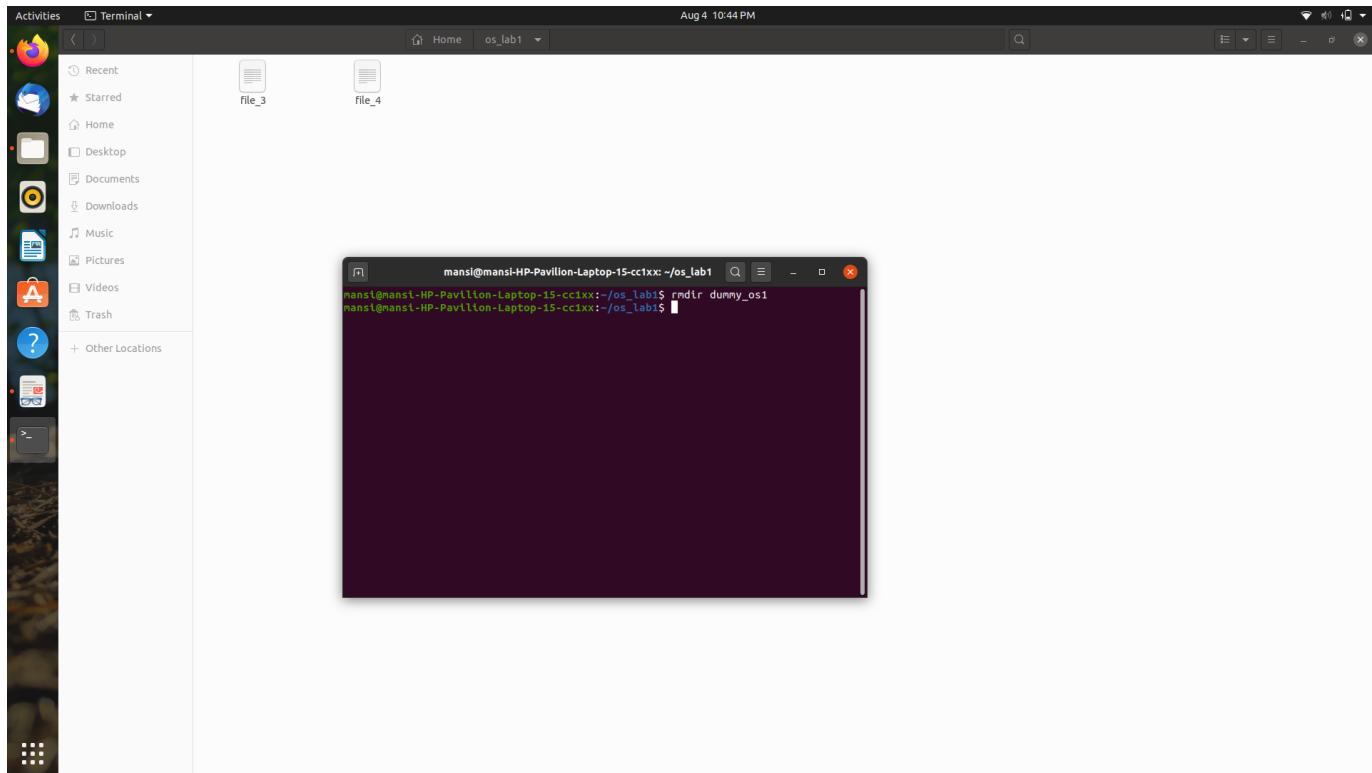
## 8) ls - list the content of a directory



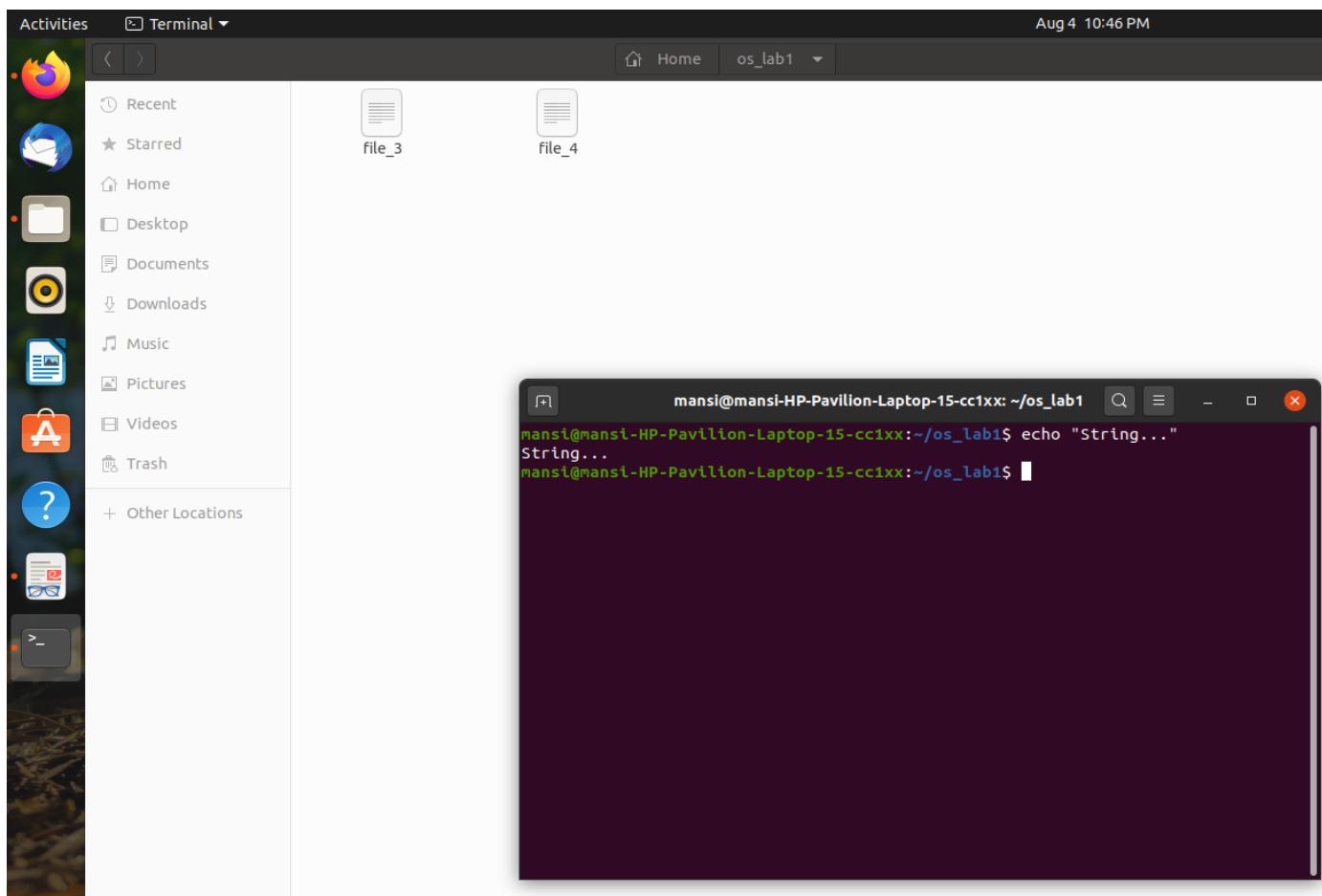
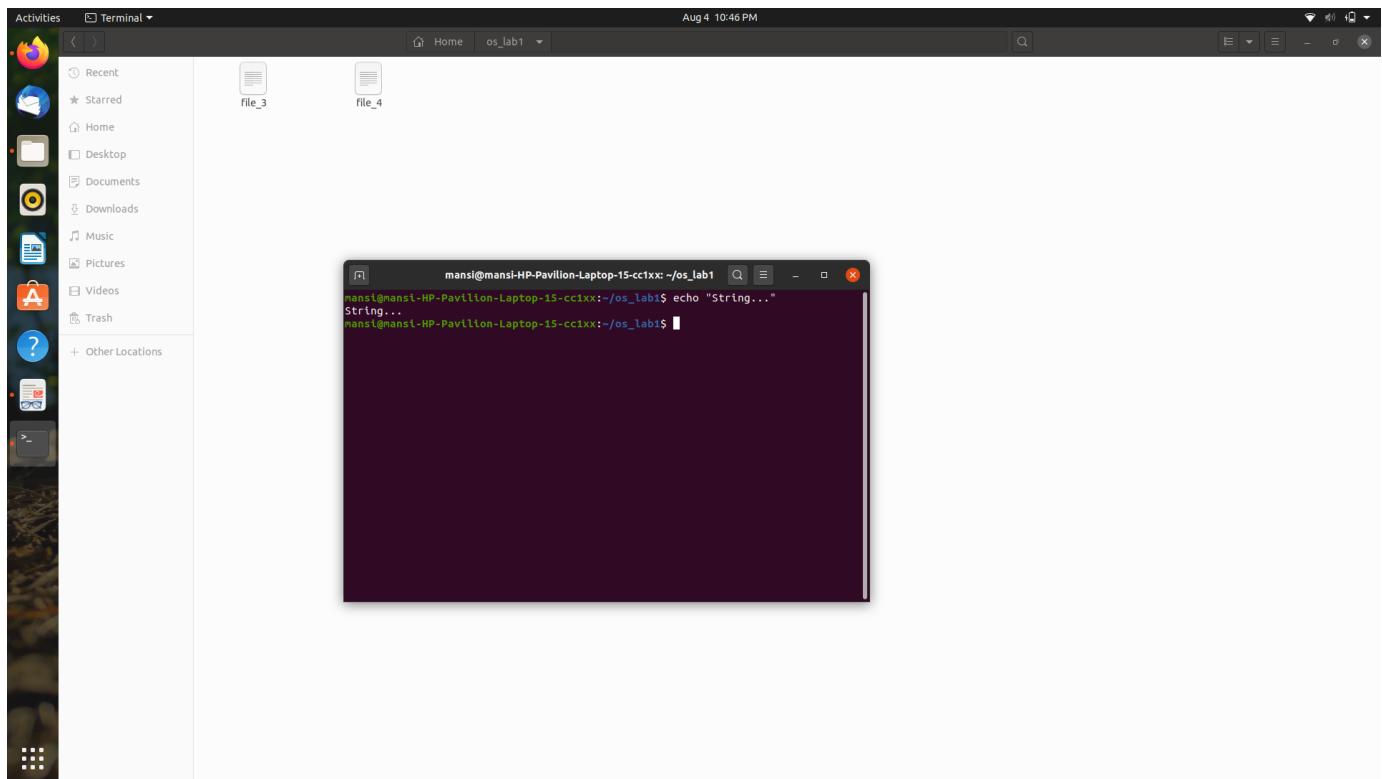
## 9) mkdir – create a new directory mkdir name



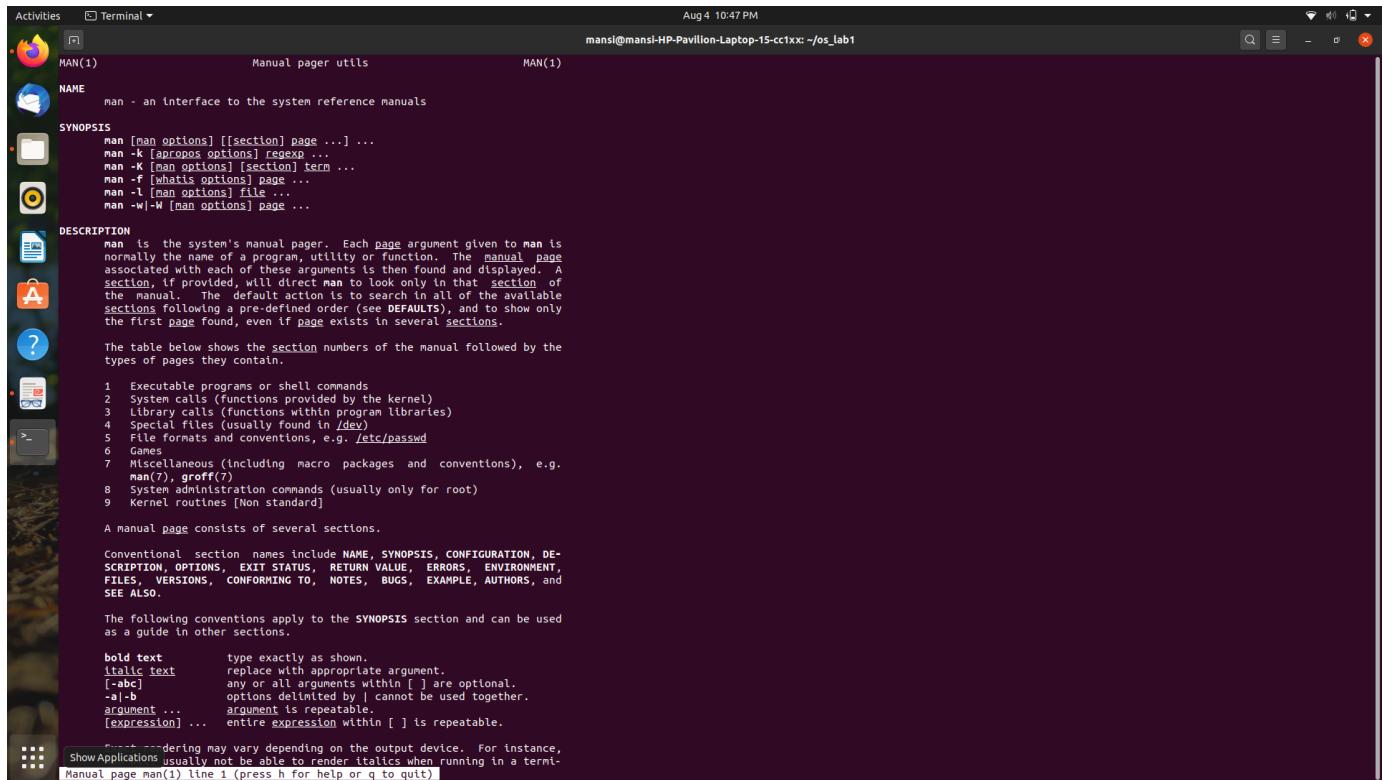
## 10) rmdir – remove directory rmdir name



## 11) echo - write a string to standard output



## 12) man - displays the manual page for the selected command.



The screenshot shows a terminal window with the title "Terminal". The command "man(1)" was run, displaying the manual page for the "man" command. The page includes sections for NAME, SYNOPSIS, DESCRIPTION, and conventions for bold, italic, and optional arguments. The terminal window has a dark theme with icons on the left.

```
Aug 4 10:47 PM
mansi@mansi-HP-Pavilion-Laptop-15-cc1xx: ~/os_lab1

MAN(1)          Manual pager utils          MAN(1)

NAME
    man - an interface to the system reference manuals

SYNOPSIS
    man [man options] [[section] page ...] ...
    man -k [apropos options] regexp ...
    man -K [man options] [section] term ...
    man -f [whatis options] page ...
    man -l [man options] file ...
    man -w|-W [man options] page ...

DESCRIPTION
    man is the system's manual pager. Each page argument given to man is normally the name of a program, utility or function. The manual page associated with each of these arguments is then found and displayed. A section provided with certain man pages can be used to search in all of the available sections following a pre-defined order (see DEFAULTS), and to show only the first page found, even if page exists in several sections.

    The table below shows the section numbers of the manual followed by the types of pages they contain.

    1 Executable programs or shell commands
    2 System calls (functions provided by the kernel)
    3 Library functions (functions within program libraries)
    4 Special files (usually found in /dev)
    5 File formats and conventions, e.g. /etc/passwd
    6 Games
    7 Miscellaneous (including macro packages and conventions), e.g.
        mm(7), groff(7)
    8 System administration commands (usually only for root)
    9 Kernel routines [Non standard]

    A manual page consists of several sections.

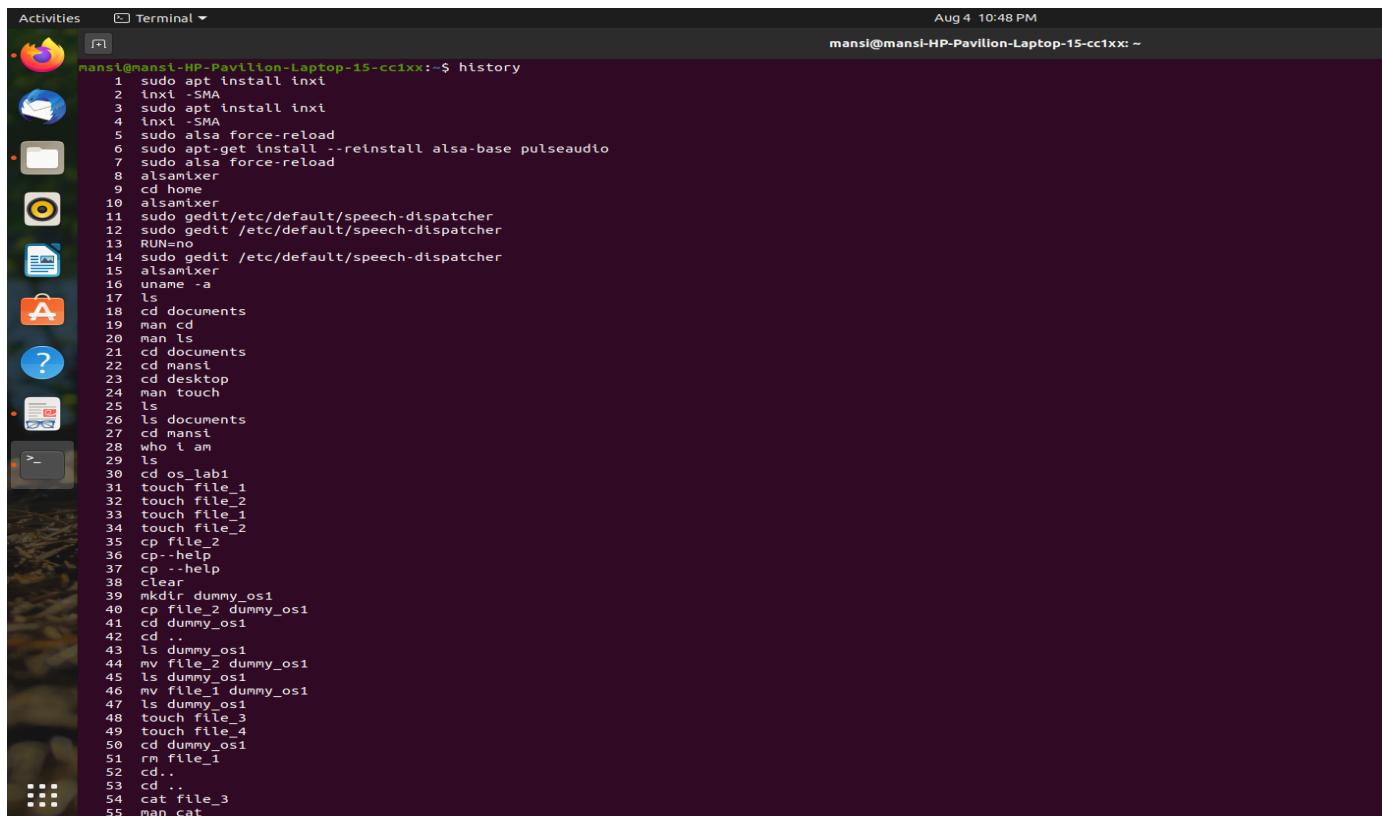
    Conventional section names include NAME, SYNOPSIS, CONFIGURATION, DESCRIPTION, OPTIONS, EXIT STATUS, RETURN VALUE, ERRORS, ENVIRONMENT, FILES, VERSIONS, CONFORMING TO, NOTES, BUGS, EXAMPLE, AUTHORS, and SEE ALSO.

    The following conventions apply to the SYNOPSIS section and can be used as a guide in other sections.

    bold text      type exactly as shown.
    italic text    replace with appropriate argument.
    [-abc]         any or all arguments within [ ] are optional.
    -a|-b         options delimited by | cannot be used together.
    argument ...   argument is repeatable.
    [expression] ... entire expression within [ ] is repeatable.

    ----- rendering may vary depending on the output device. For instance,
Show Applications usually not be able to render italics when running in a termi-
Manual page man(1) line 1 (press h for help or q to quit)
```

## 13) history - lists the commands typed during the session



The screenshot shows a terminal window with the title "Terminal". The command "history" was run, displaying a list of 55 commands executed during the session. The history includes various system calls like sudo, apt, and cp, as well as local file operations like touch and mv. The terminal window has a dark theme with icons on the left.

```
Aug 4 10:48 PM
mansi@mansi-HP-Pavilion-Laptop-15-cc1xx: ~

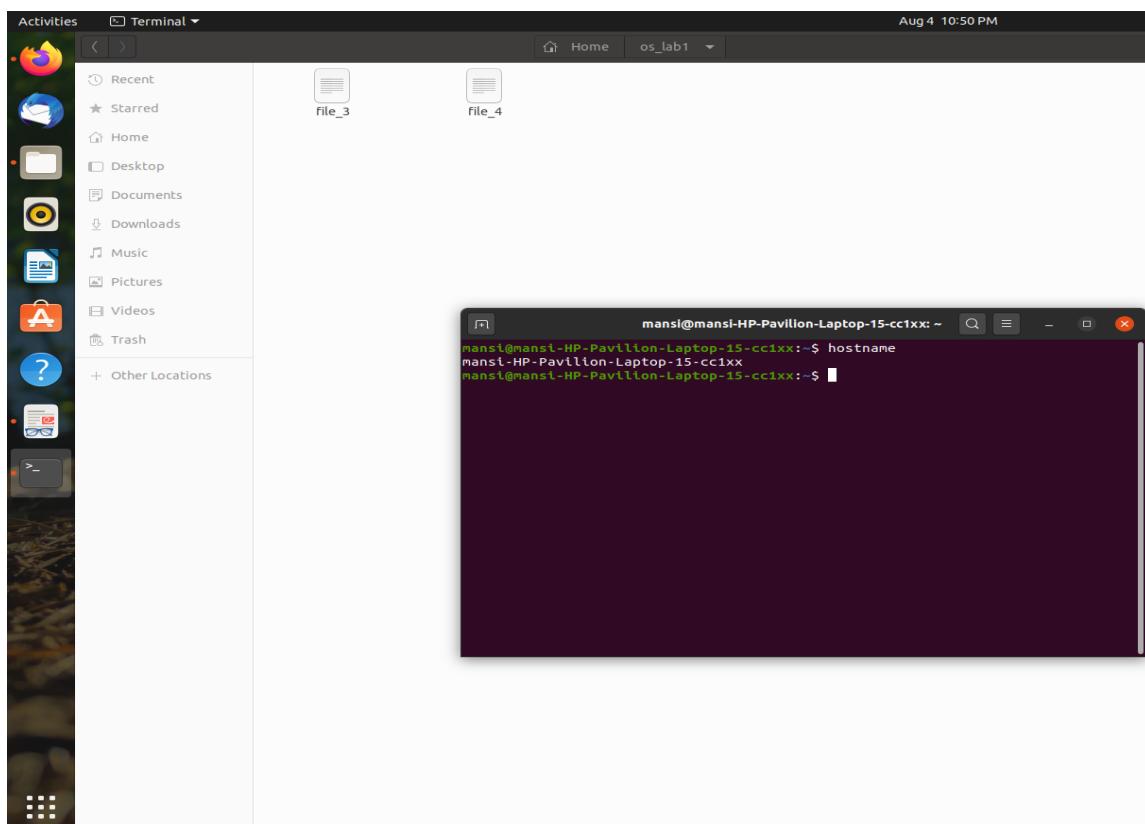
1 sudo apt install inxi
2 inxi -SMA
3 sudo apt install inxi
4 inxi -SMA
5 sudo alsamixer
6 sudo apt-get install --reinstall alsa-base pulseaudio
7 sudo alsamixer
8 alsamixer
9 cd home
10 alsamixer
11 sudo gedit /etc/default/speech-dispatcher
12 sudo gedit /etc/default/speech-dispatcher
13 RUN=no
14 sudo gedit /etc/default/speech-dispatcher
15 alsamixer
16 uname -a
17 ls
18 cd documents
19 man cd
20 man ls
21 cd documents
22 cd mansi
23 cd desktop
24 man touch
25 ls
26 ls documents
27 cd mansi
28 who i am
29 ls
30 cd os_lab1
31 touch file_1
32 touch file_2
33 touch file_1
34 touch file_2
35 cp file_2
36 cp--help
37 cp --help
38 clear
39 mkdir dummy_os1
40 cp file_2 dummy_os1
41 cd dummy_os1
42 cd ..
43 ls dummy os1
44 mv file_2 dummy_os1
45 ls dummy os1
46 mv file_1 dummy_os1
47 ls dummy os1
48 touch file_3
49 touch file_4
50 cd dummy os1
51 rm file_1
52 cd..
53 cd ..
54 cat file_3
55 man cat
```

Activities Terminal Aug 4 10:49 PM  
mansli@mansli-HP-Pavilion-Laptop-15-cc1xx: ~

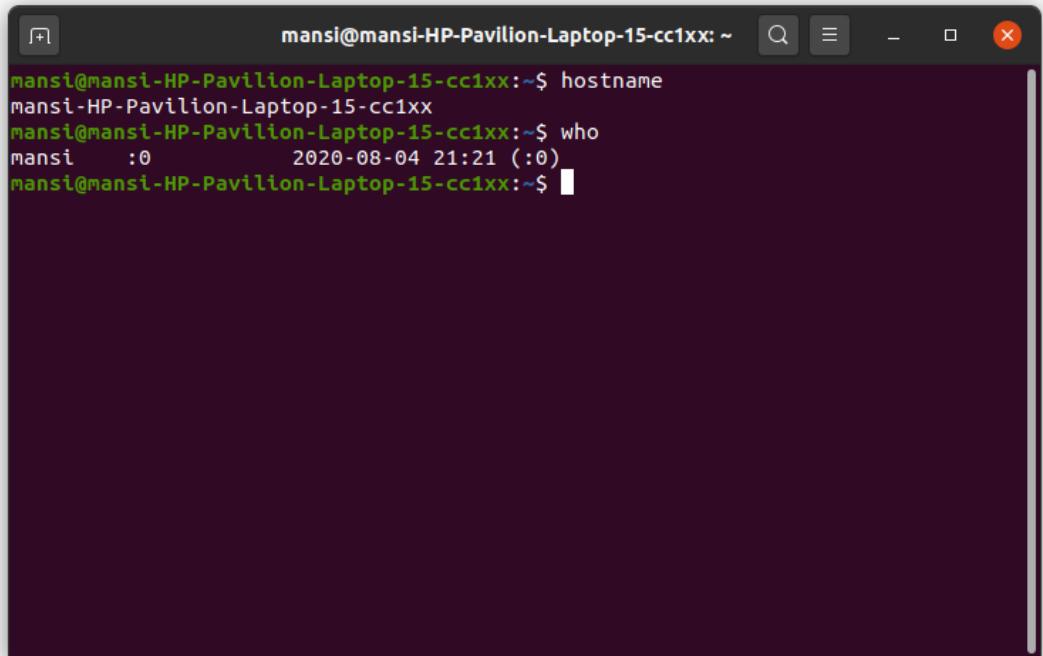
```
51 rm file_1
52 cd ..
53 cd ..
54 cat file_3
55 man cat
56 cat dummy_os1
57 cat file_2
58 cd dummy_os1
59 cat file_2
60 clear
61 cd ..
62 cat dummy_os1
63 clear
64 cat dummy_os1
65 cd dummy_os1
66 cat dummy_os1
67 man cat
68 cat - file_3
69 cd ..
70 cat file_3.txt
71 cat
72 cd os_lab1
73 cat
74 cd dummy_os1
75 cat
76 cat file_2
77 cat file_2.txt
78 cat
79 cat dummy_os1
80 cd ..
81 cat file_4
82 clear
83 cat > file_4
84 cat file_4
85 clear
86 cat > file_4
87 cat file_4
88 cd dummy_os1
89 pwd
90 clear
91 pwd
92 cd ..
93 ls
94 rmdir dummy_os1
95 clear
96 cd dummy_os1
97 rm file_2
98 cd dummy_os1
99 rmdir dummy_os1
100 man echo
101 clear
102 echo "String..."
103 man
104
```

Show Applications mansli@mansli-HP-Pavilion-Laptop-15-cc1xx:~\$

## 14) hostname - displays the computer's or server's name

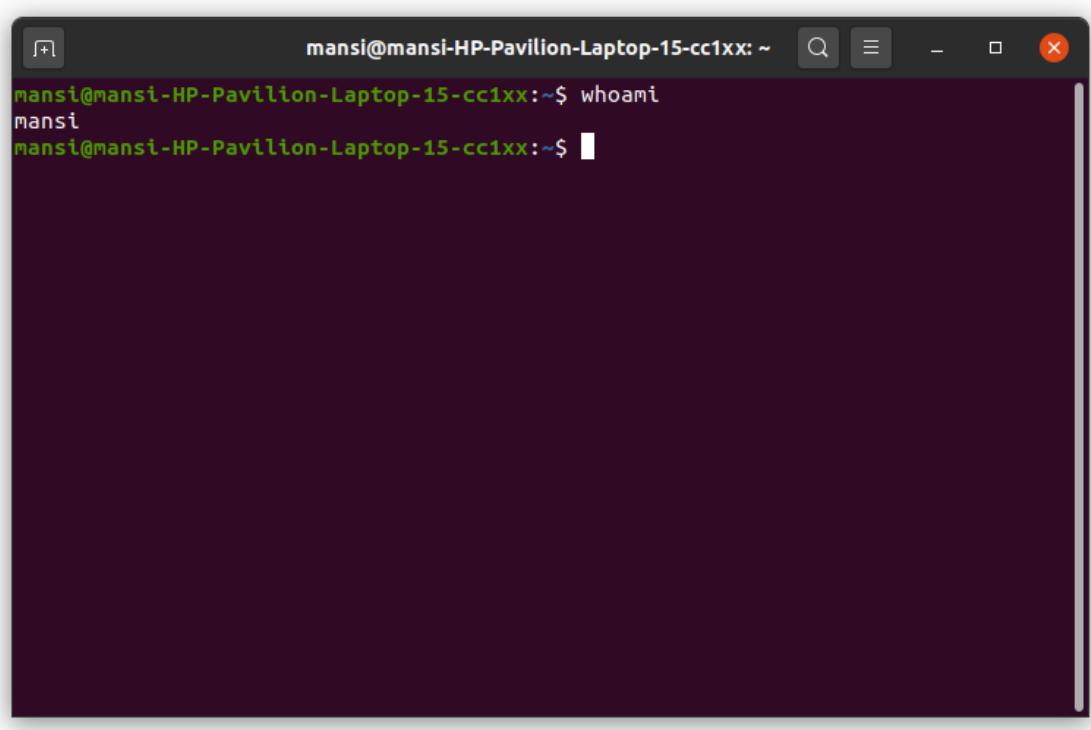


**15) who - displays who is on the system**



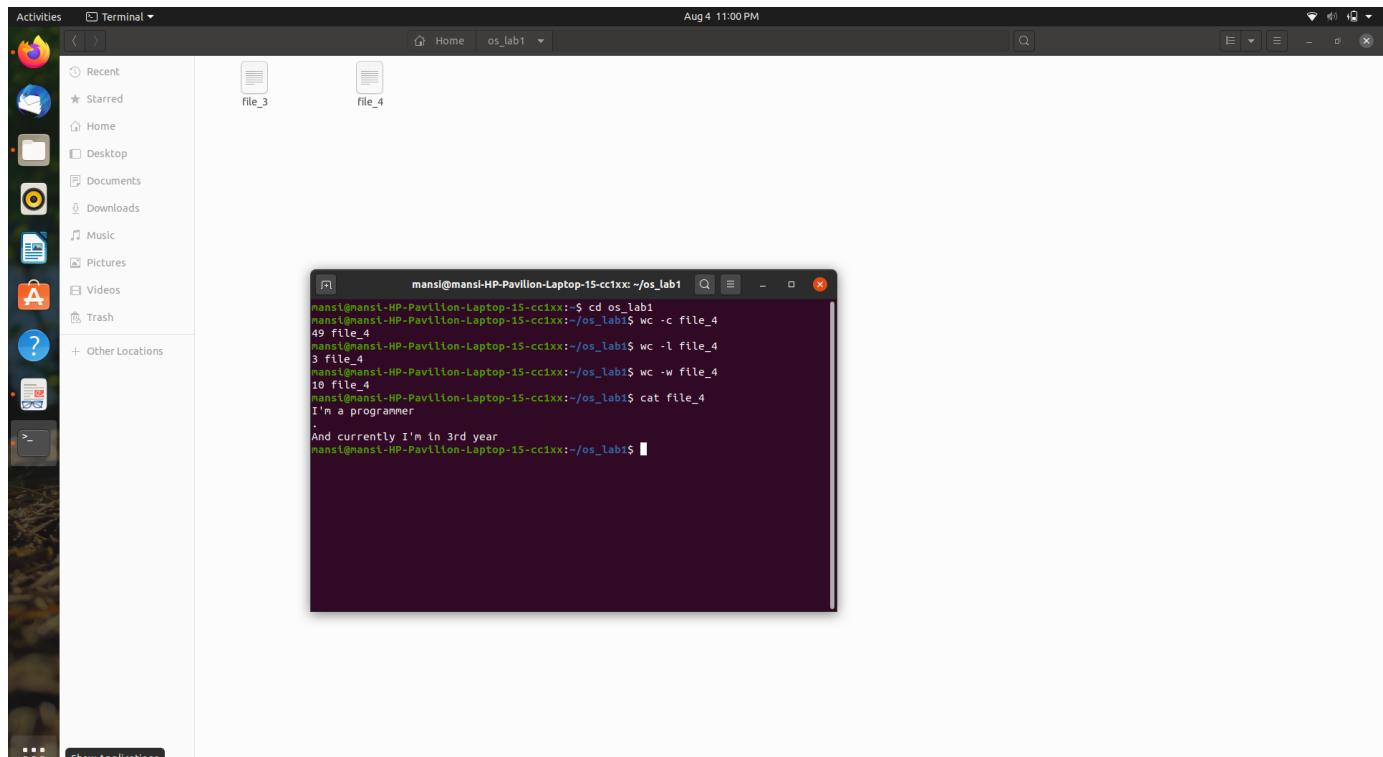
```
mansi@mansi-HP-Pavilion-Laptop-15-cc1xx:~$ hostname  
mansi-HP-Pavilion-Laptop-15-cc1xx  
mansi@mansi-HP-Pavilion-Laptop-15-cc1xx:~$ who  
mansi :0 2020-08-04 21:21 (:0)  
mansi@mansi-HP-Pavilion-Laptop-15-cc1xx:~$
```

**16) whoami – displaying invoking user**



```
mansi@mansi-HP-Pavilion-Laptop-15-cc1xx:~$ whoami  
mansi  
mansi@mansi-HP-Pavilion-Laptop-15-cc1xx:~$
```

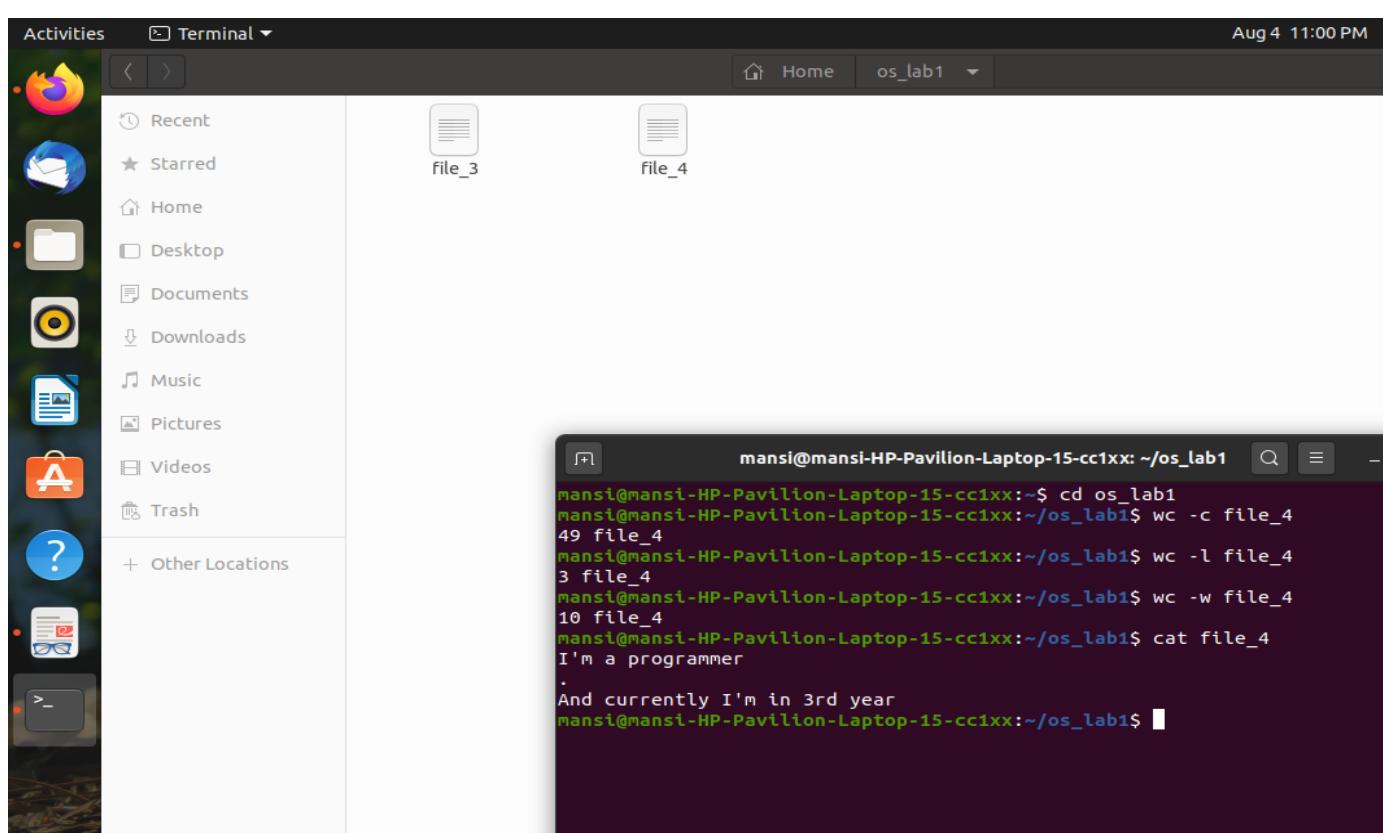
## 17) wc – counts and displays the number of line, words and characters of a file



The screenshot shows a Linux desktop environment with a terminal window open. The terminal window title is "Terminal" and it displays the following command and its output:

```
mansi@mansi-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1$ cd os_lab1
mansi@mansi-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1$ wc -c file_4
49 file_4
mansi@mansi-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1$ wc -l file_4
3 file_4
mansi@mansi-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1$ wc -w file_4
10 file_4
mansi@mansi-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1$ cat file_4
I'm a programmer
.
And currently I'm in 3rd year
mansi@mansi-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1$
```

The desktop interface includes a sidebar with icons for Home, Desktop, Documents, Downloads, Music, Pictures, Videos, and Trash. Two files, "file\_3" and "file\_4", are visible on the desktop.

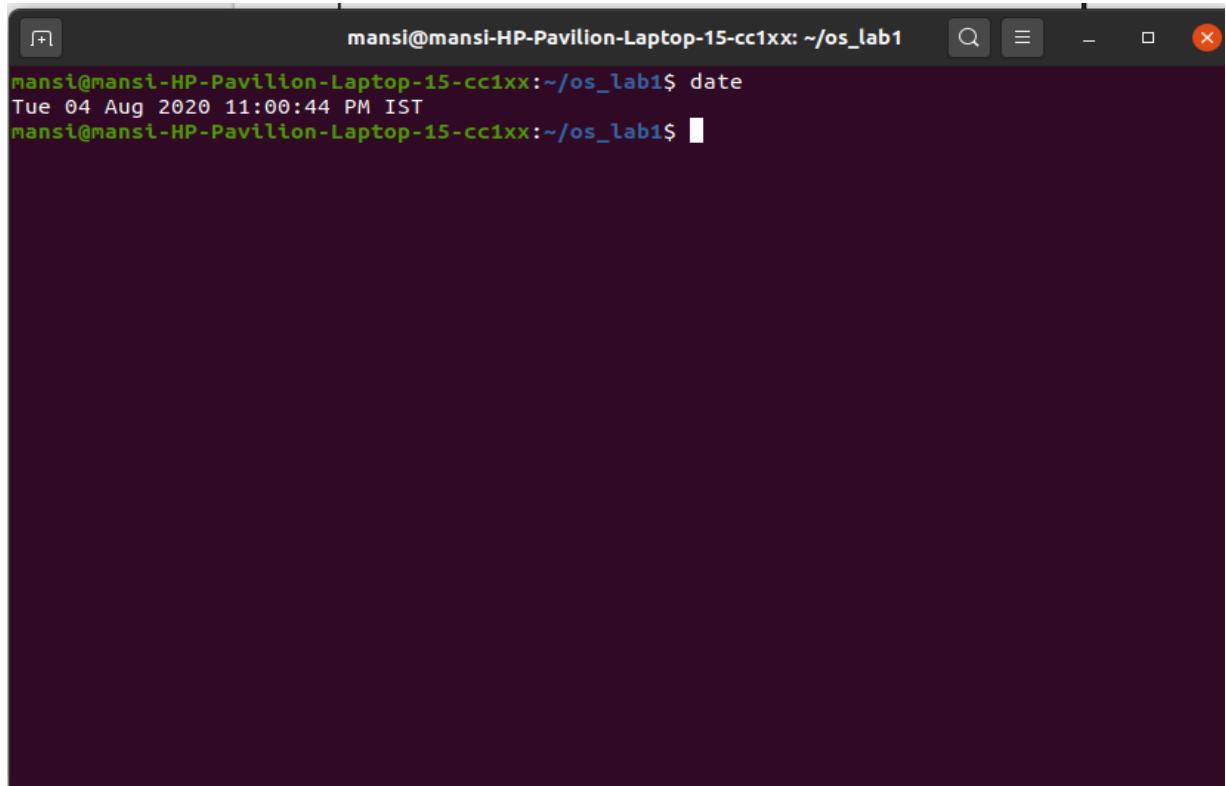
  


The second screenshot shows the same Linux desktop environment and terminal window. The terminal window title is "Terminal" and it displays the same command and output as the first screenshot.

```
mansi@mansi-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1$ cd os_lab1
mansi@mansi-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1$ wc -c file_4
49 file_4
mansi@mansi-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1$ wc -l file_4
3 file_4
mansi@mansi-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1$ wc -w file_4
10 file_4
mansi@mansi-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1$ cat file_4
I'm a programmer
.
And currently I'm in 3rd year
mansi@mansi-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1$
```

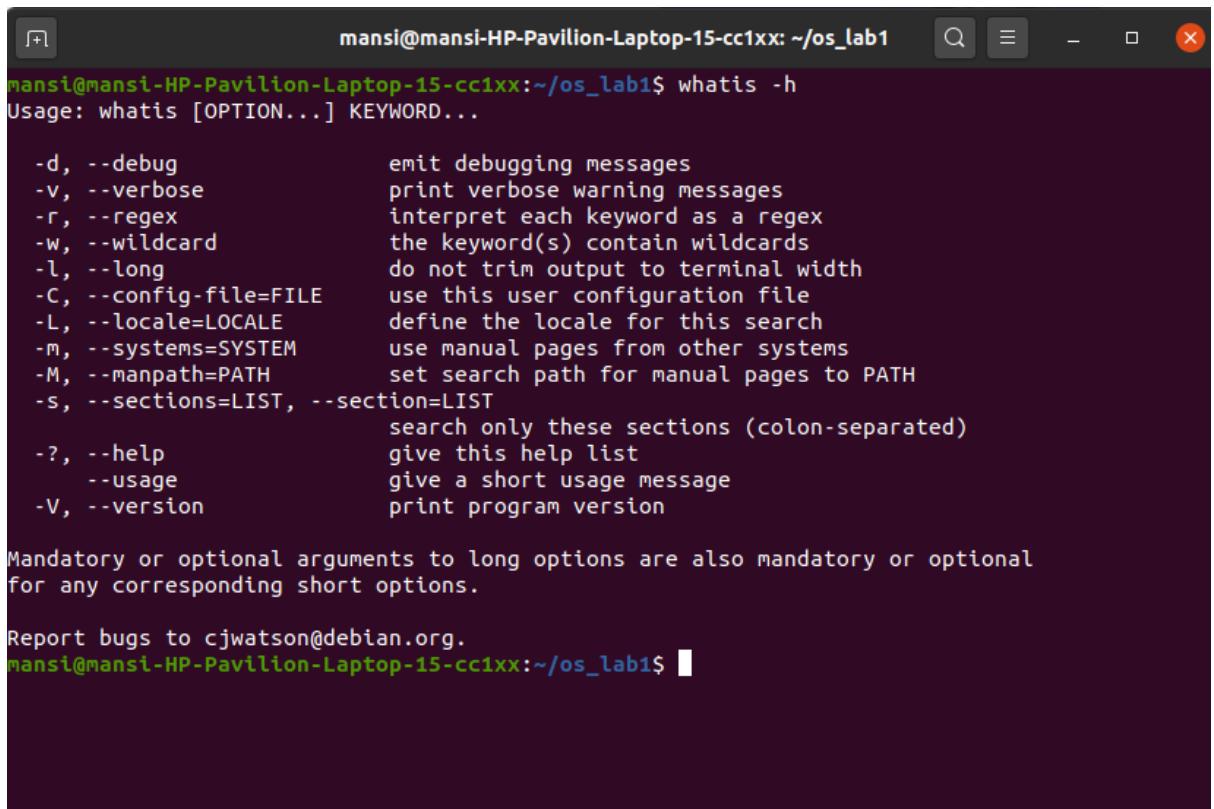
The desktop interface is identical to the first screenshot, showing the sidebar and the two files "file\_3" and "file\_4" on the desktop.

## 18) date - print or set the system date and time



```
mansi@mansi-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1$ date
Tue 04 Aug 2020 11:00:44 PM IST
mansi@mansi-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1$
```

## 19) whatis - displays the command description



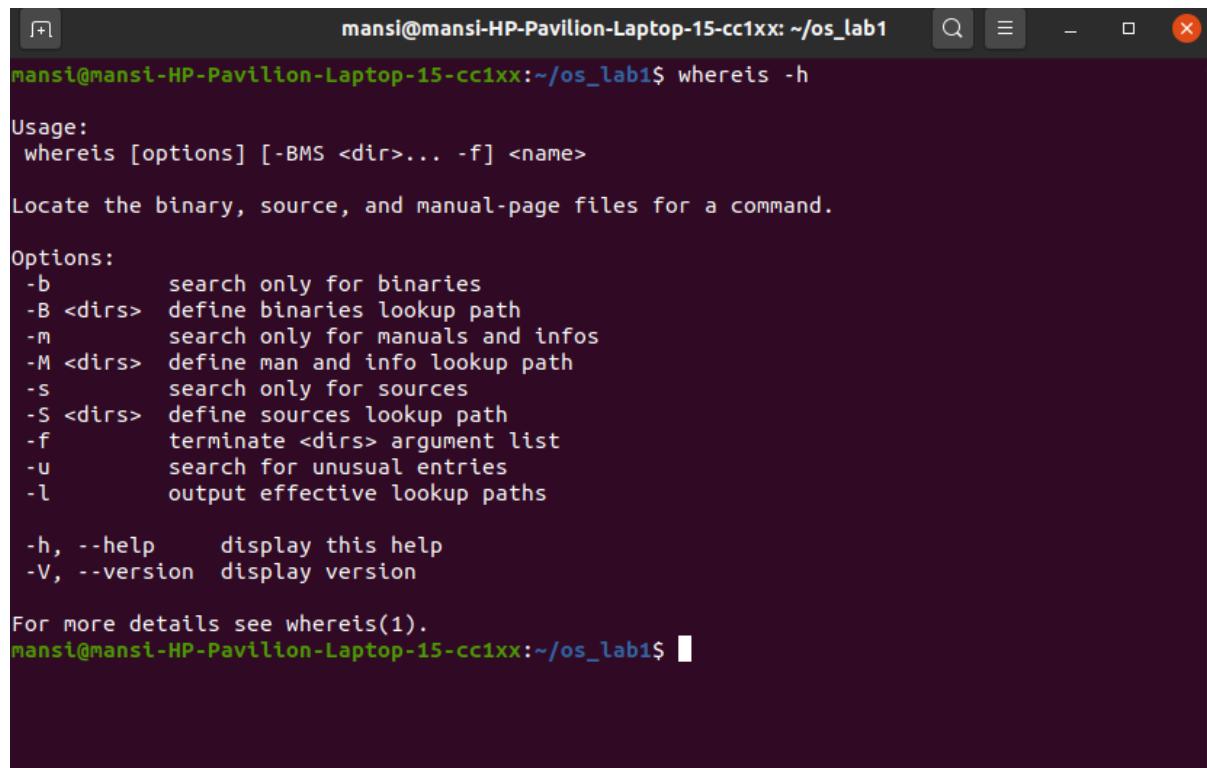
```
mansi@mansi-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1$ whatis -h
Usage: whatis [OPTION...] KEYWORD...

-d, --debug          emit debugging messages
-v, --verbose         print verbose warning messages
-r, --regex           interpret each keyword as a regex
-w, --wildcard        the keyword(s) contain wildcards
-l, --long            do not trim output to terminal width
-C, --config-file=FILE use this user configuration file
-L, --locale=LOCALE   define the locale for this search
-m, --systems=SYSTEM  use manual pages from other systems
-M, --manpath=PATH    set search path for manual pages to PATH
-s, --sections=LIST, --section=LIST
                     search only these sections (colon-separated)
-?, --help             give this help list
--usage              give a short usage message
-V, --version          print program version

Mandatory or optional arguments to long options are also mandatory or optional
for any corresponding short options.

Report bugs to cjwtson@debian.org.
mansi@mansi-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1$
```

## 20) whereis - locate the binary, source, and manual page files for a command



```
mansi@mansi-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1
mansi@mansi-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1$ whereis -h

Usage:
  whereis [options] [-BMS <dir>... -f] <name>

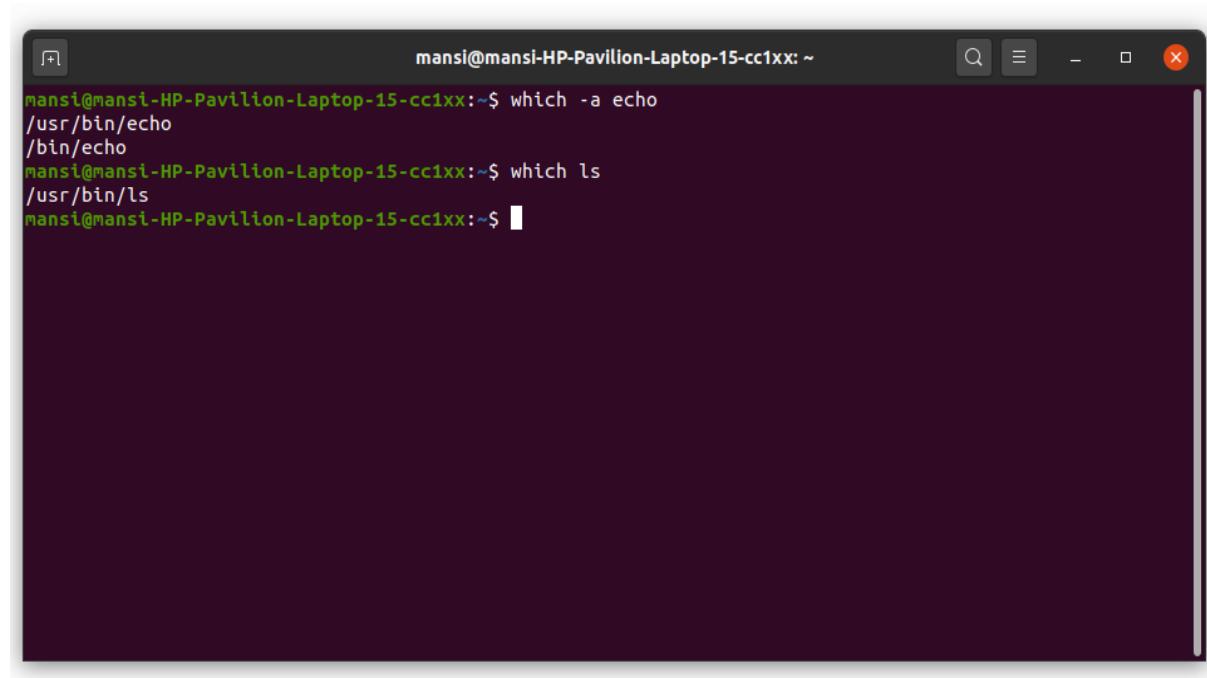
Locate the binary, source, and manual-page files for a command.

Options:
  -b          search only for binaries
  -B <dirs>   define binaries lookup path
  -m          search only for manuals and infos
  -M <dirs>   define man and info lookup path
  -s          search only for sources
  -S <dirs>   define sources lookup path
  -f          terminate <dirs> argument list
  -u          search for unusual entries
  -l          output effective lookup paths

  -h, --help    display this help
  -V, --version display version

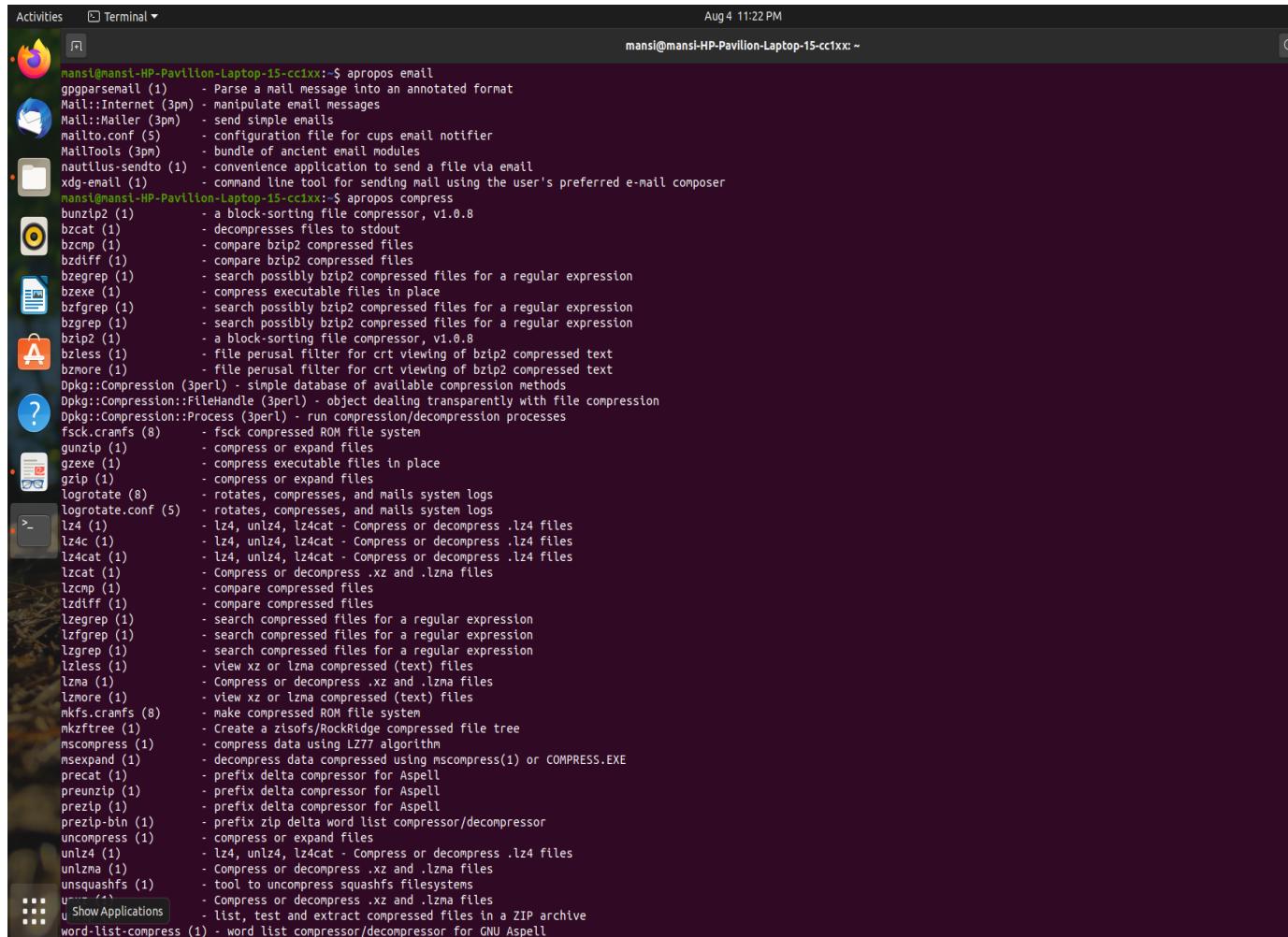
For more details see whereis(1).
mansi@mansi-HP-Pavilion-Laptop-15-cc1xx:~/os_lab1$
```

## 21) which – locate a command



```
mansi@mansi-HP-Pavilion-Laptop-15-cc1xx:~$ which -a echo
/usr/bin/echo
/bin/echo
mansi@mansi-HP-Pavilion-Laptop-15-cc1xx:~$ which ls
/usr/bin/ls
mansi@mansi-HP-Pavilion-Laptop-15-cc1xx:~$
```

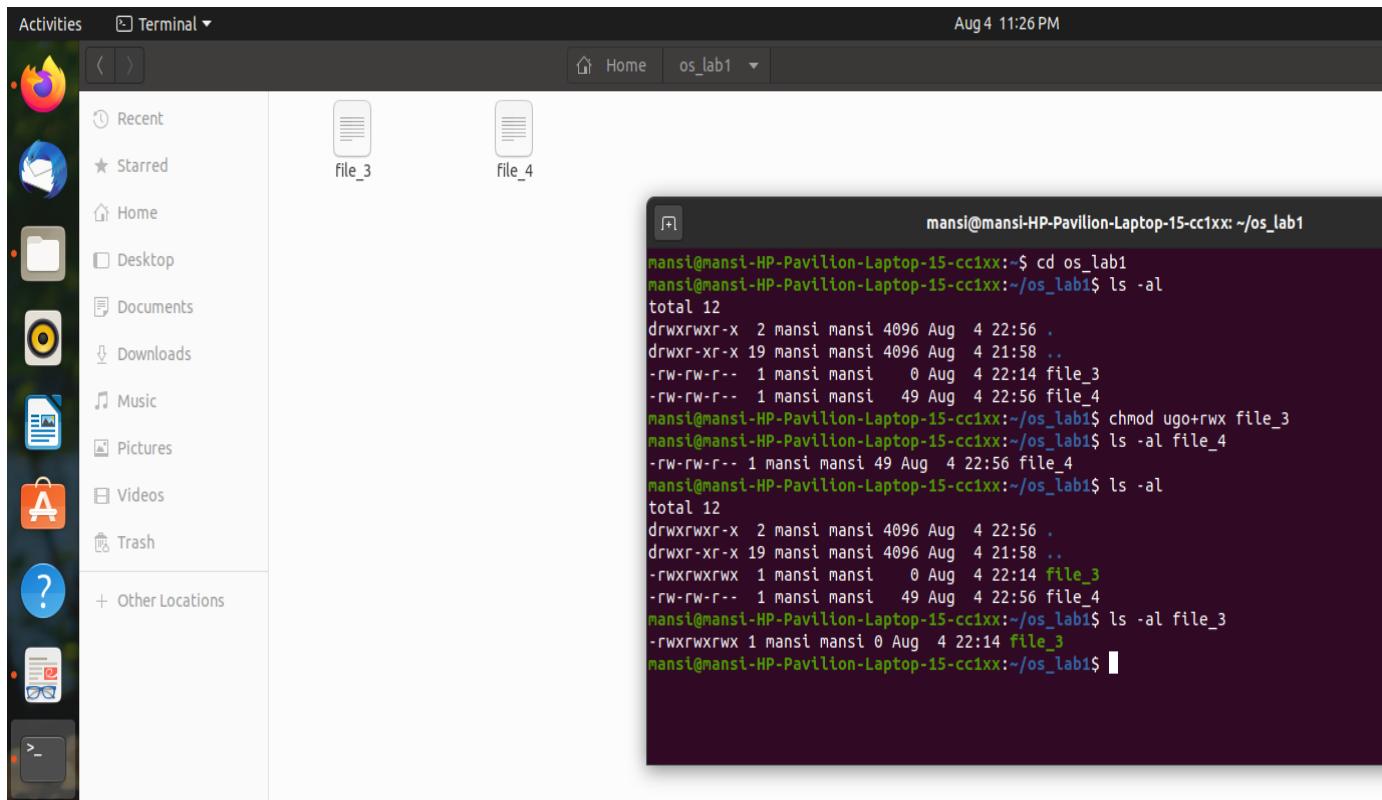
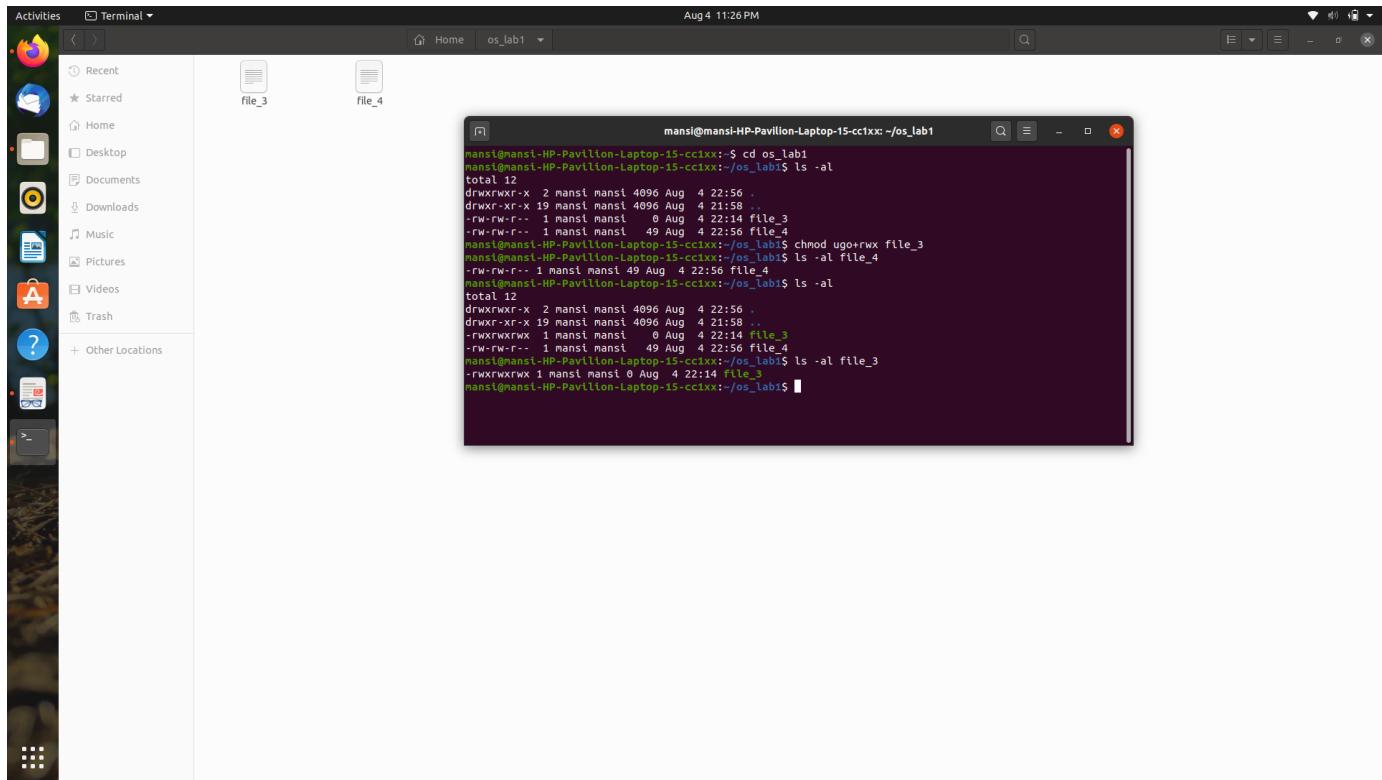
## 22) apropos - search the manual page names and descriptions



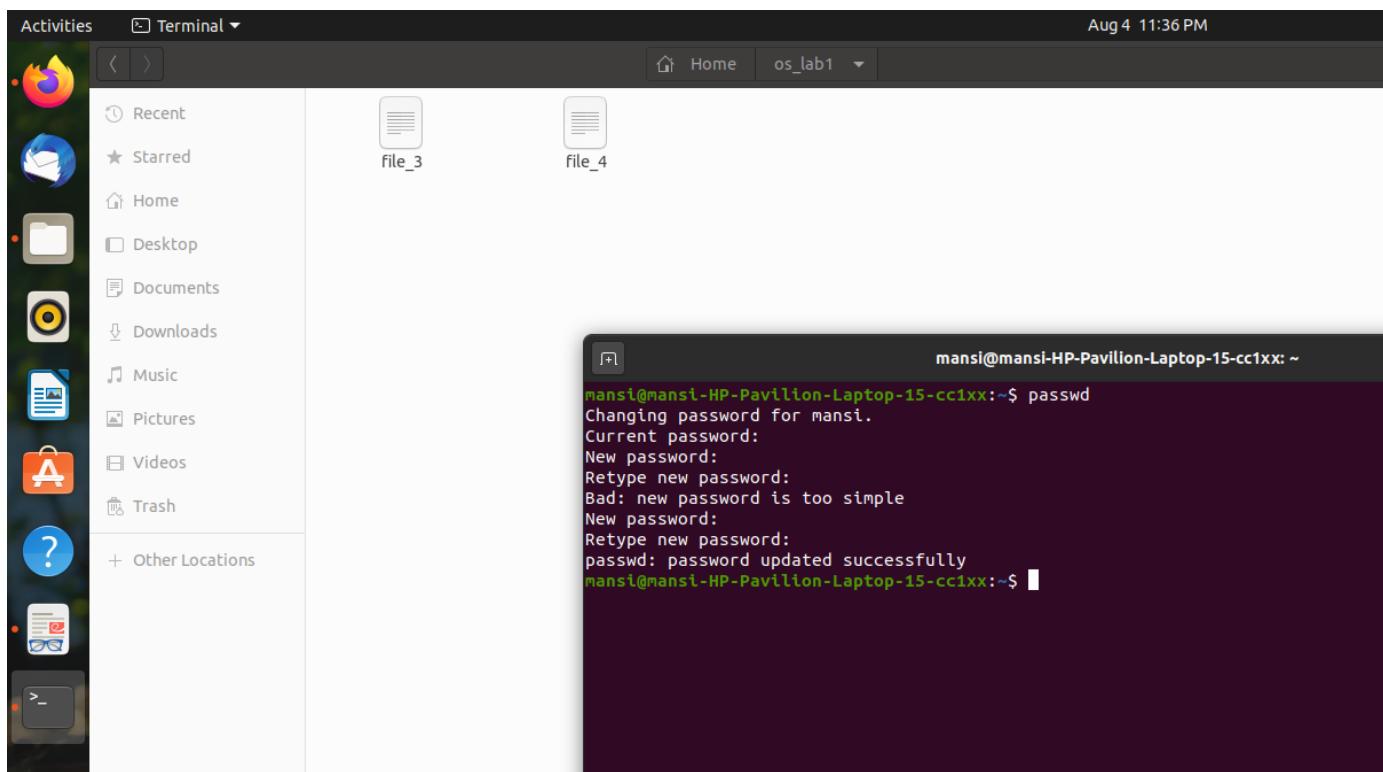
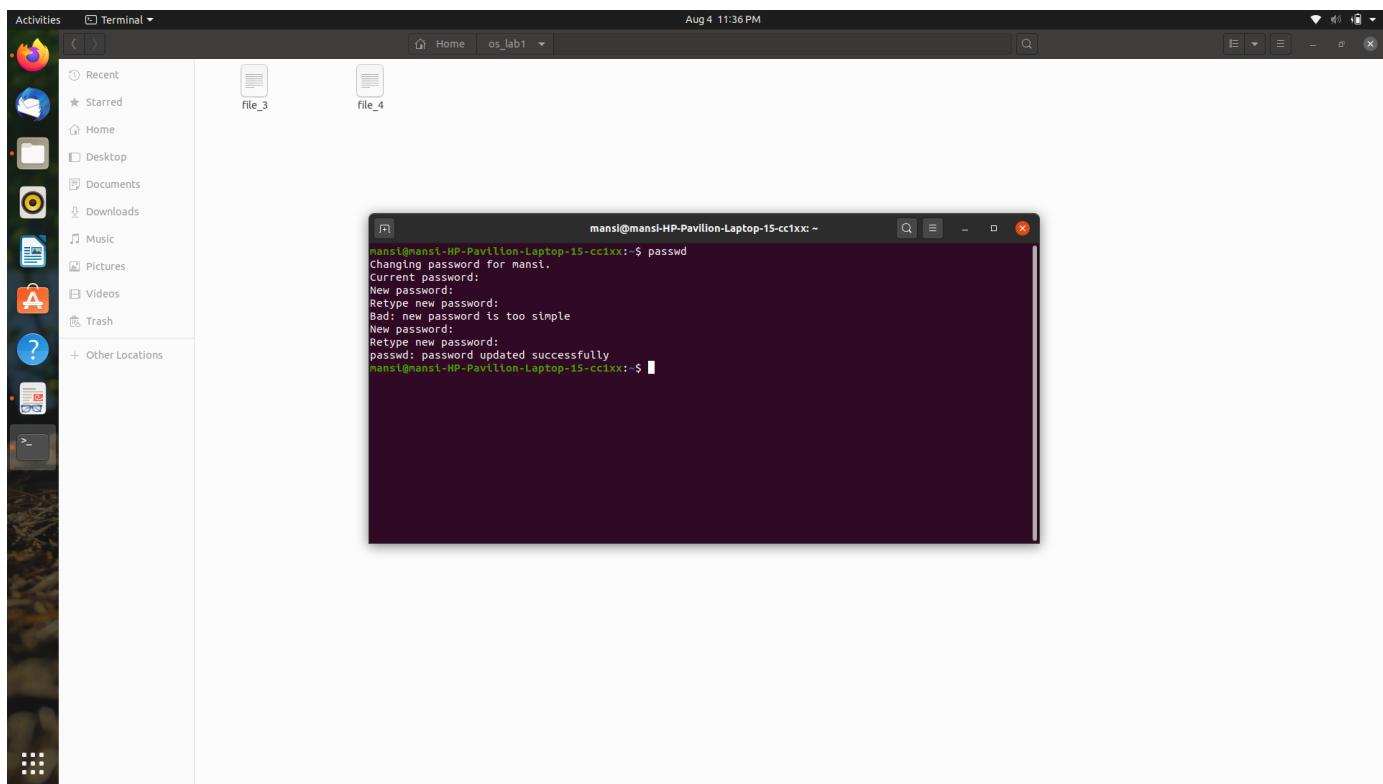
The screenshot shows a terminal window titled "Terminal" with the command "apropos" run. The output lists various commands related to email and compression. The terminal window is part of the Unity desktop interface, with the Unity dock visible at the bottom.

```
mansi@mansi-HP-Pavilion-Laptop-15-cc1xx:~$ apropos email
gpparsemail (1)      - Parse a mail message into an annotated format
Mail::Internet (3pm) - manipulate email messages
Mail::Mailer (3pm)   - send simple emails
mailto.conf (5)       - configuration file for cups email notifier
MailTools (3pm)      - bundle of ancient email modules
nautilus-sendto (1)  - convenience application to send a file via email
xdg-email (1)        - command line tool for sending mail using the user's preferred e-mail composer
mansi@mansi-HP-Pavilion-Laptop-15-cc1xx:~$ apropos compress
bunzip2 (1)          - a block-sorting file compressor, v1.0.8
bzipcat (1)          - decompresses files to stdout
bzcmp (1)            - compare bzip2 compressed files
bzdiff (1)           - compare bzip2 compressed files
bzgrep (1)           - search possibly bzip2 compressed files for a regular expression
bzexe (1)            - compress executable files in place
bzfgrep (1)          - search possibly bzip2 compressed files for a regular expression
bzgrep (1)            - search possibly bzip2 compressed files for a regular expression
bzip2 (1)             - a block-sorting file compressor, v1.0.8
bzless (1)            - file perusal filter for crt viewing of bzip2 compressed text
bzmore (1)            - file perusal filter for crt viewing of bzip2 compressed text
Dpkg::Compression (3perl) - simple database of available compression methods
Dpkg::Compression::FileHandle (3perl) - object dealing transparently with file compression
Dpkg::Compression::Process (3perl) - run compression/decompression processes
fsck.cramfs (8)      - fsck compressed ROM file system
gunzip (1)            - compress or expand files
gzexe (1)             - compress executable files in place
gzip (1)              - compress or expand files
logrotate (8)          - rotates, compresses, and mails system logs
logrotate.conf (5)     - rotates, compresses, and mails system logs
lz4 (1)                - lz4, unlz4, lz4cat - Compress or decompress .lz4 files
lz4c (1)               - lz4, unlz4, lz4cat - Compress or decompress .lz4 files
lz4cat (1)             - lz4, unlz4, lz4cat - Compress or decompress .lz4 files
lzcat (1)              - Compress or decompress .xz and .lzma files
lzcmp (1)              - compare compressed files
lzdiff (1)             - compare compressed files
lzgrep (1)             - search compressed files for a regular expression
lzfgrep (1)            - search compressed files for a regular expression
lzgrep (1)              - search compressed files for a regular expression
lzless (1)              - view xz or lzma compressed (text) files
lzma (1)                - Compress or decompress .xz and .lzma files
lzmore (1)              - view xz or lzma compressed (text) files
mkfs.cramfs (8)        - make compressed ROM file system
mkzftree (1)            - Create a zfsofs/RockRidge compressed file tree
mscompress (1)          - compress data using LZ77 algorithm
msexpand (1)            - decompress data compressed using mscompress(1) or COMPRESS.EXE
precat (1)              - prefix delta compressor for Aspell
preunzip (1)            - prefix delta compressor for Aspell
prezip (1)              - prefix delta compressor for Aspell
prezip-bin (1)          - prefix zip delta word list compressor/decompressor
uncompress (1)           - compress or expand files
unlz4 (1)                - lz4, unlz4, lz4cat - Compress or decompress .lz4 files
unlzma (1)              - Compress or decompress .xz and .lzma files
unsquashfs (1)          - tool to uncompress squashfs filesystems
uzip (1)                - Compress or decompress .xz and .lzma files
uShowApplications (1)    - list, test and extract compressed files in a ZIP archive
word-list-compress (1)  - word list compressor/decompressor for GNU Aspell
```

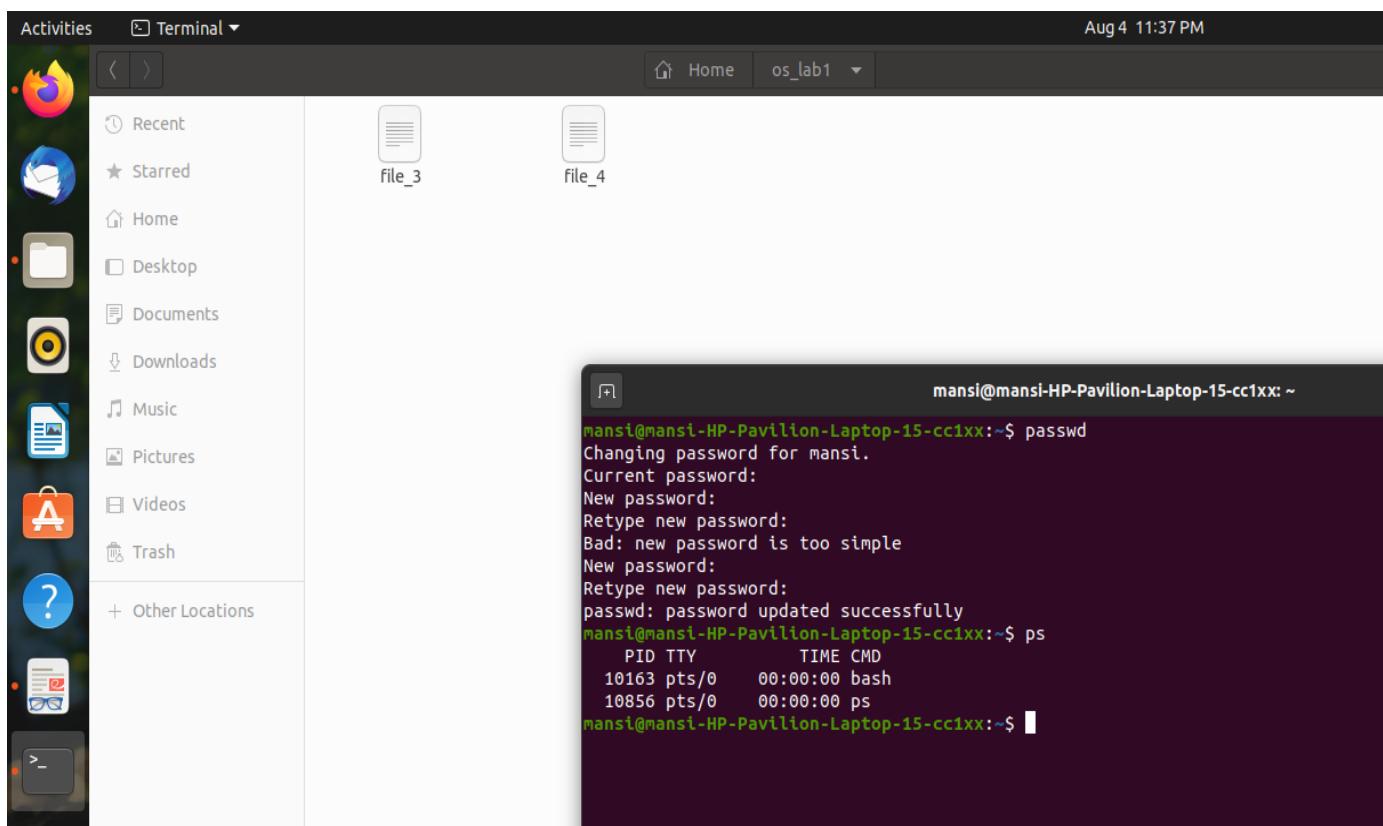
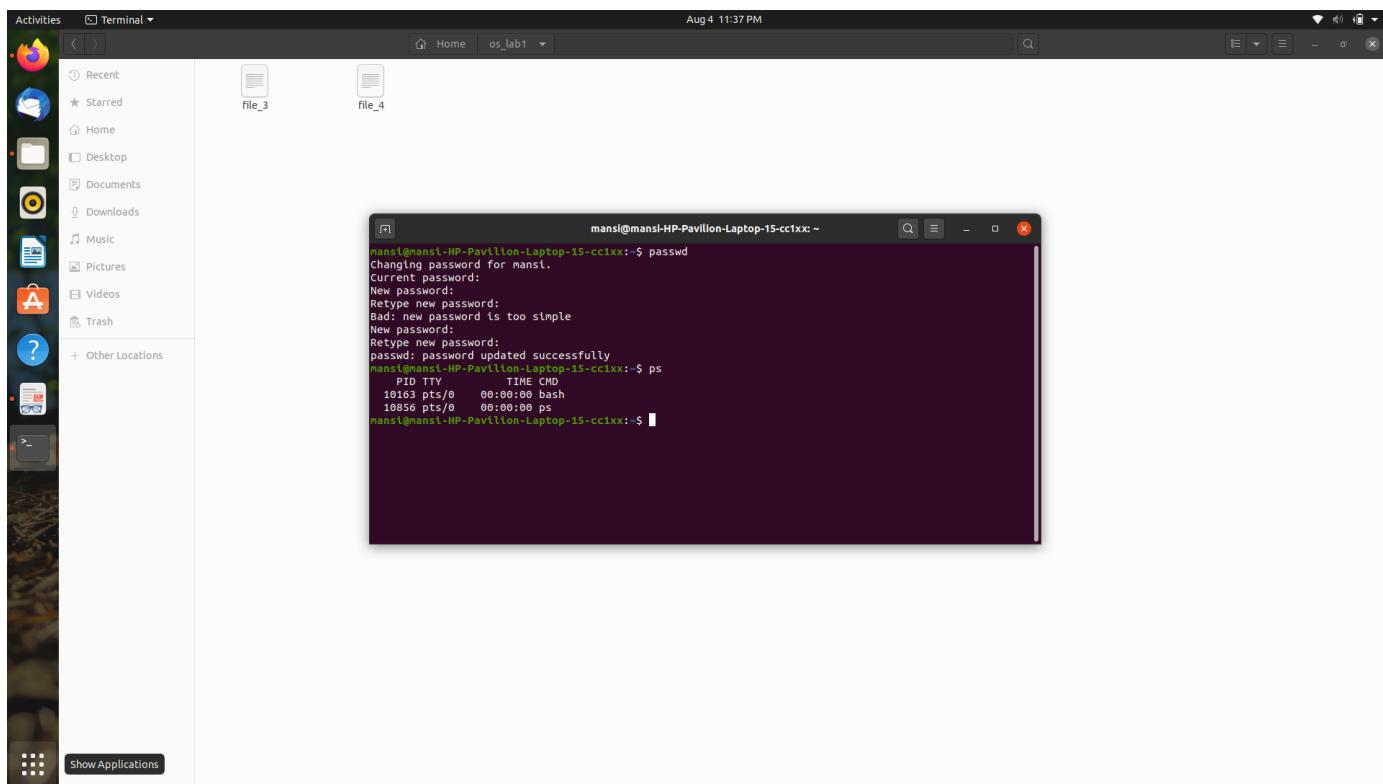
## 23) chmod - set the permission on a file or a directory



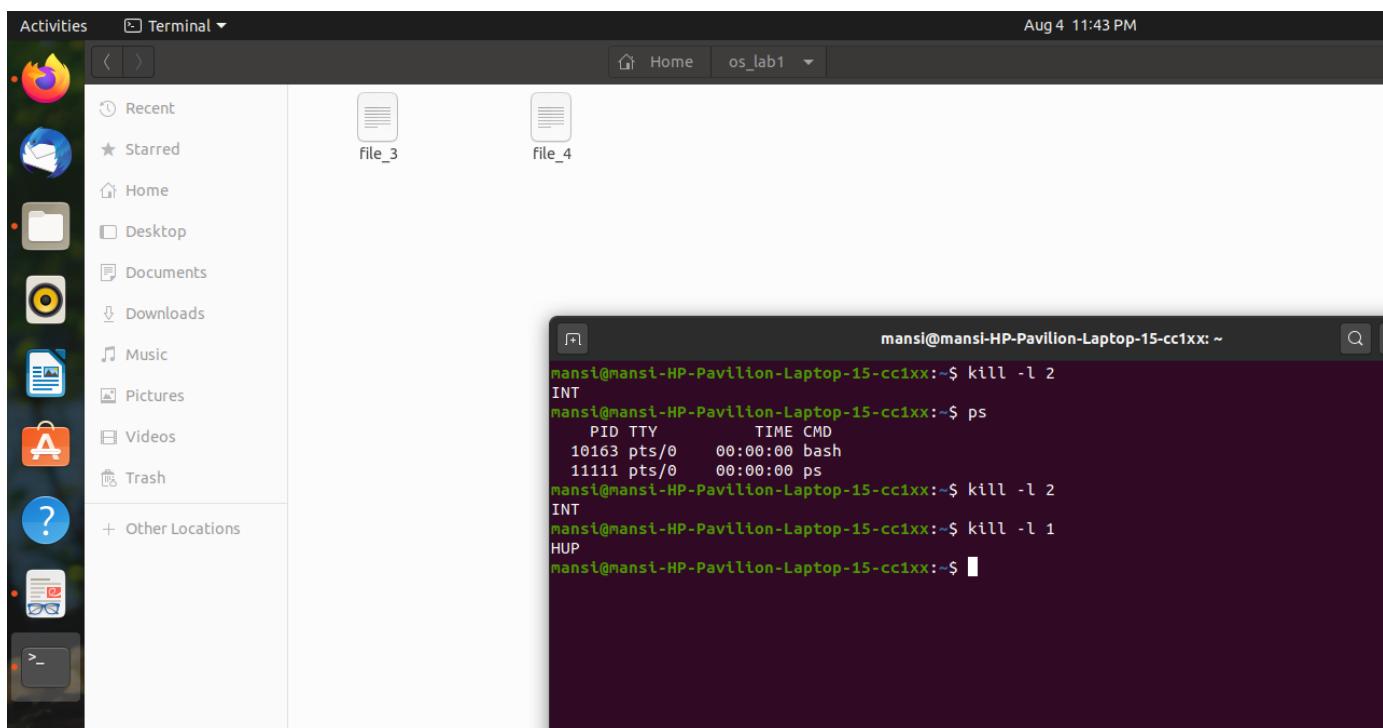
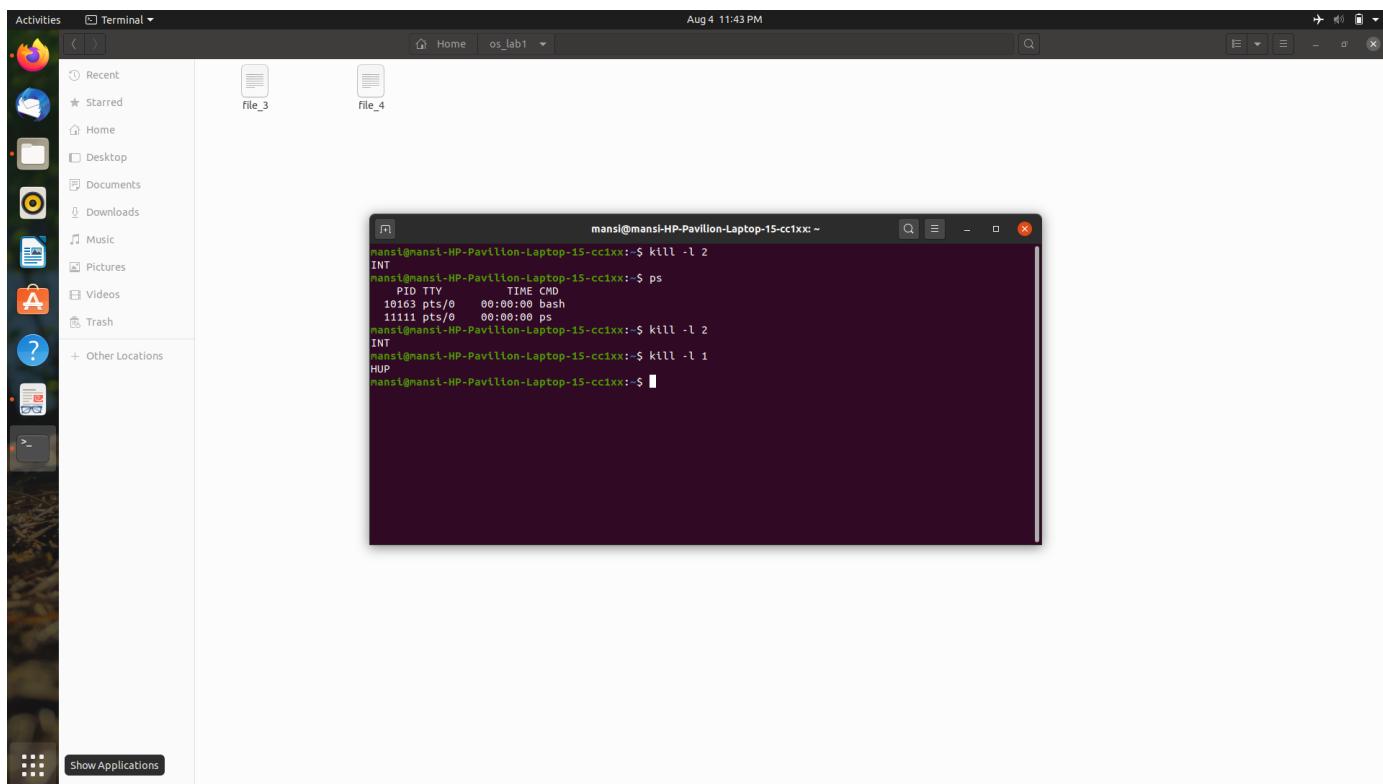
## 24) passwd – change password



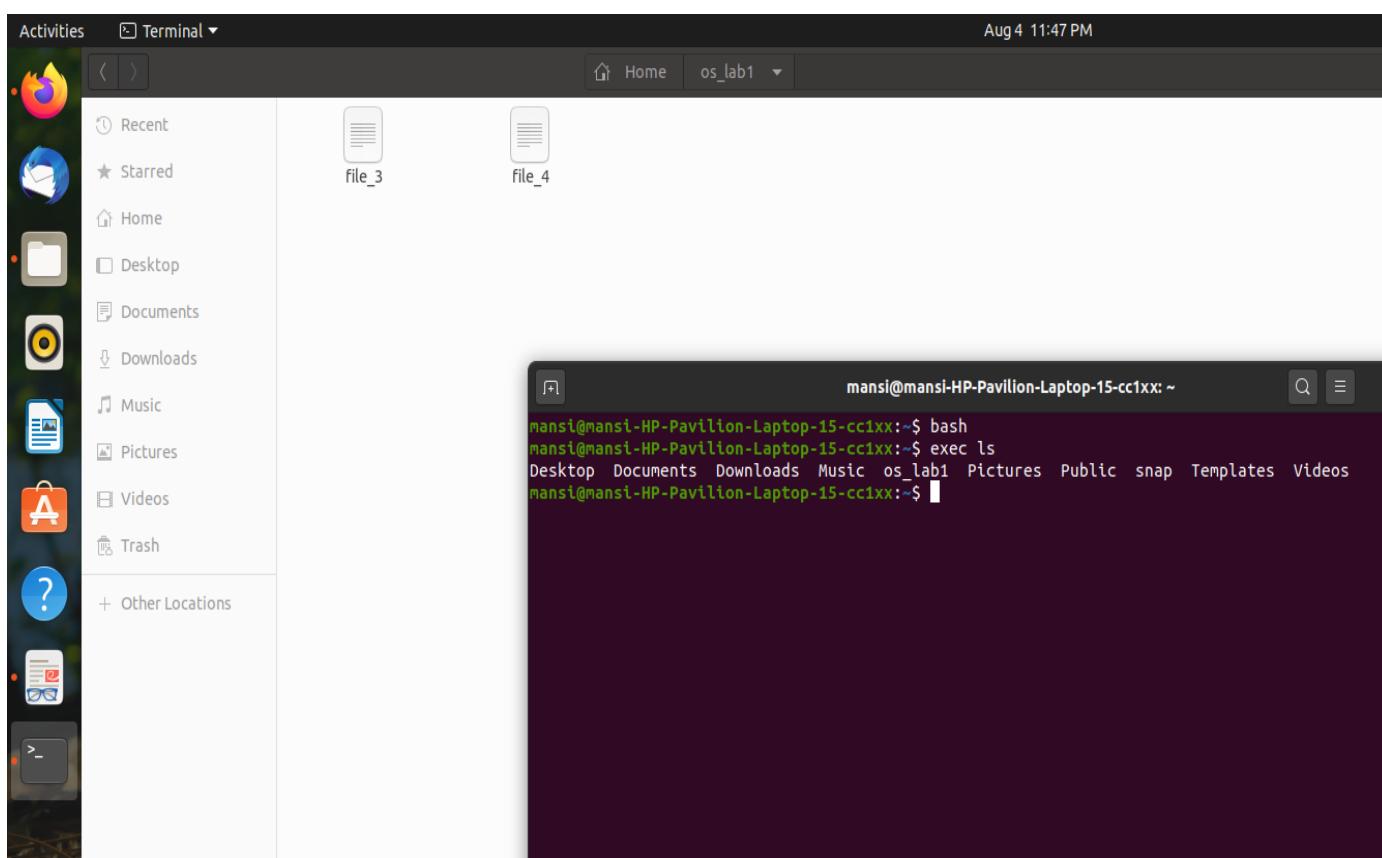
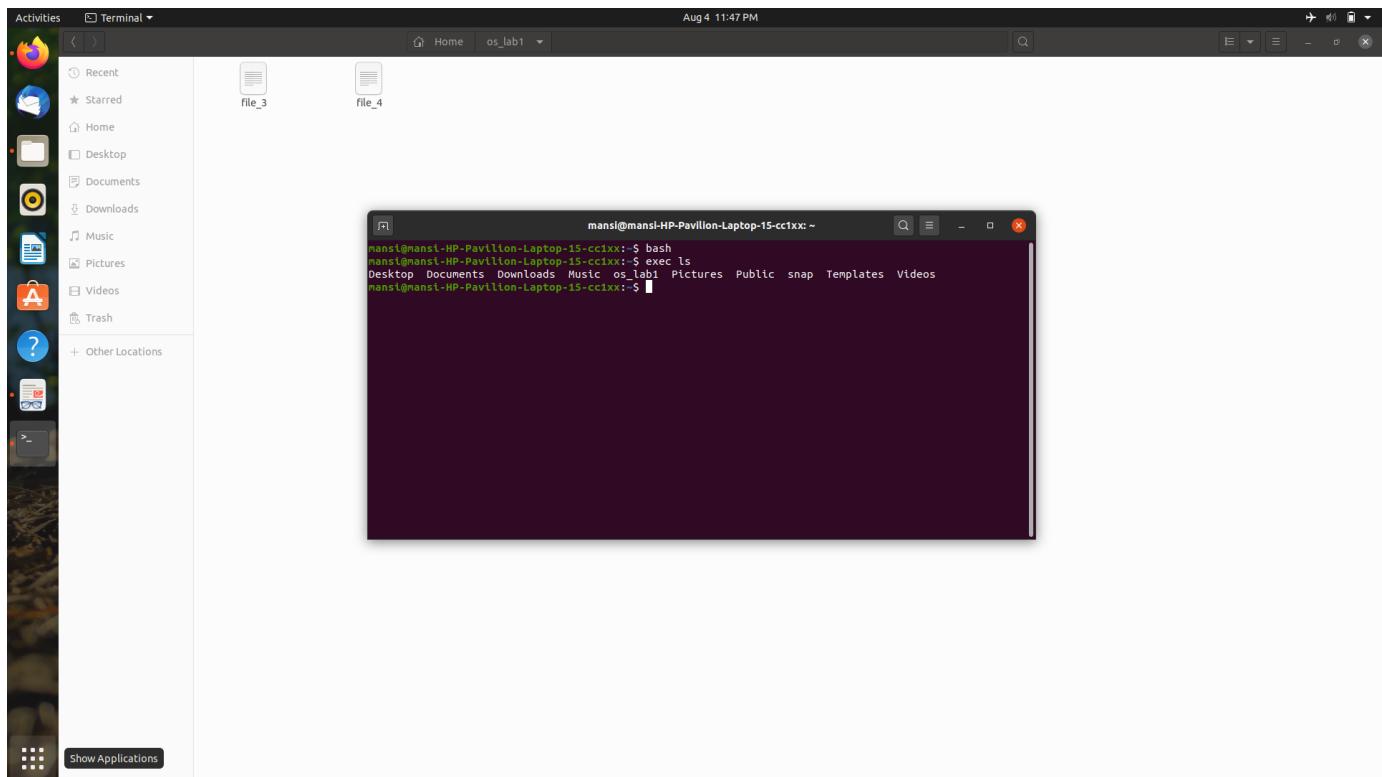
## 25) ps – display active processes



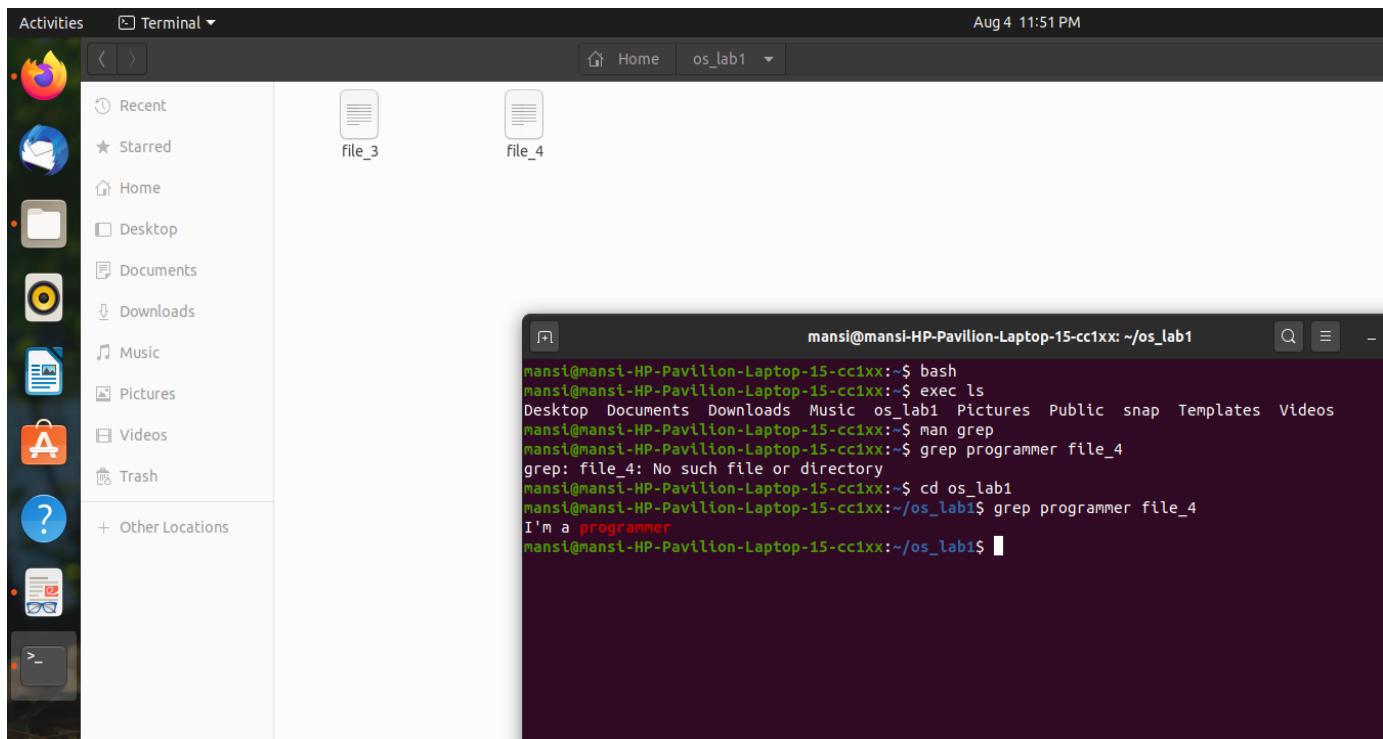
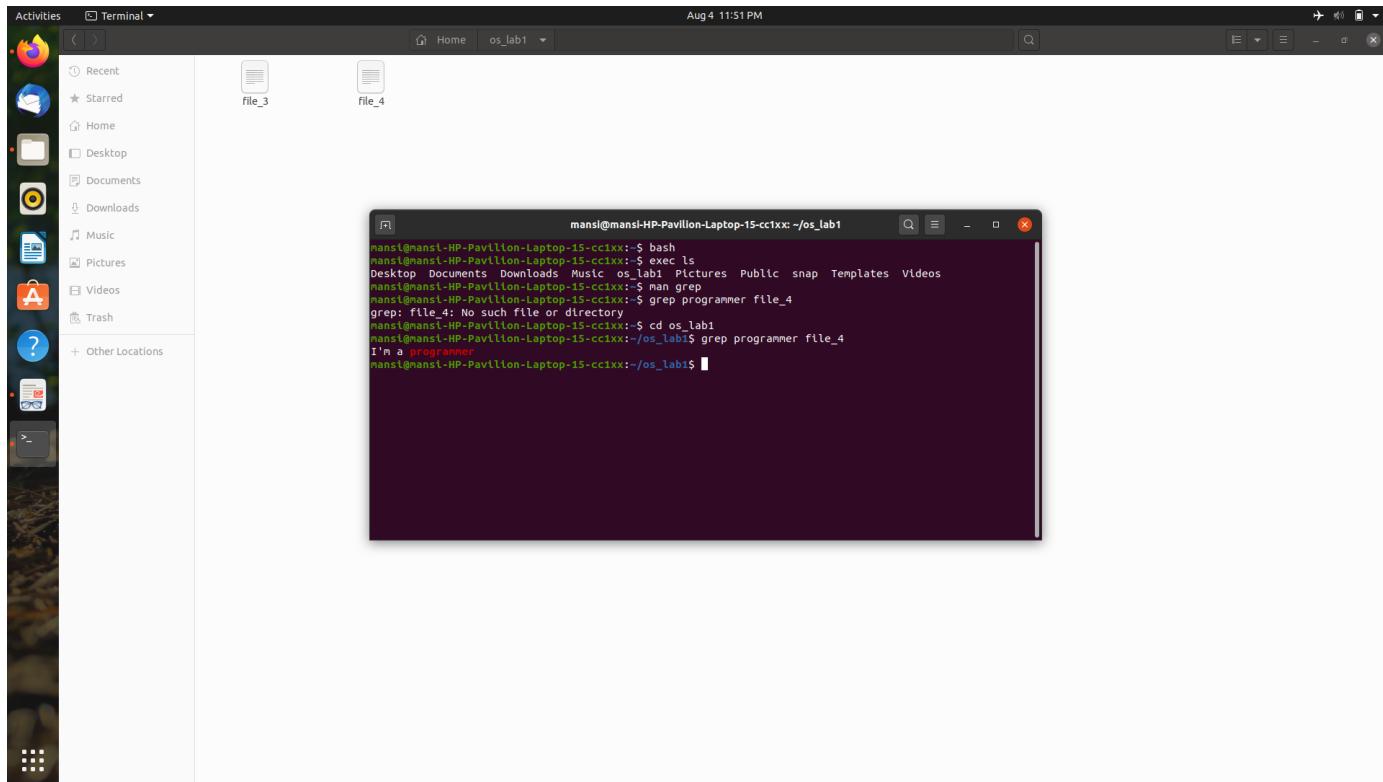
## 26) kill – terminate process



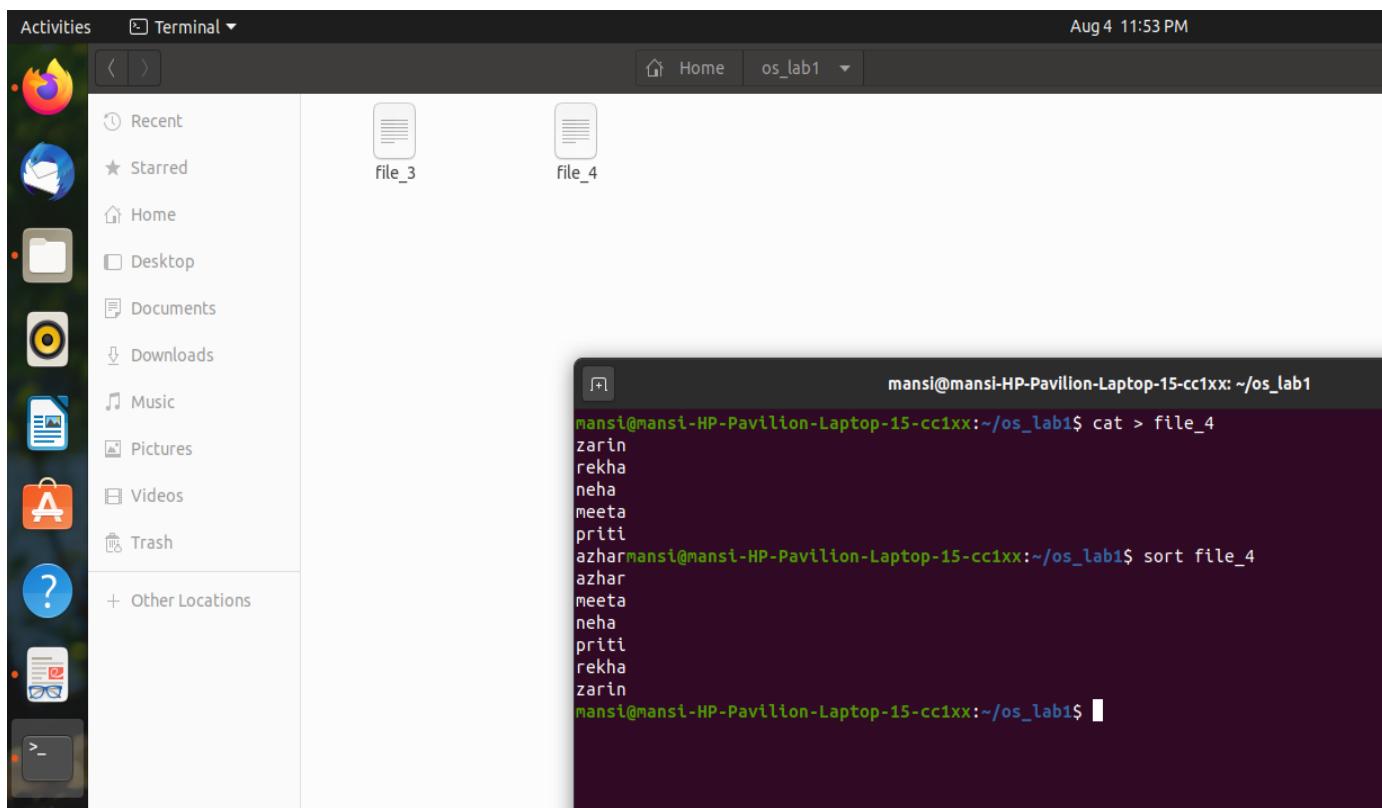
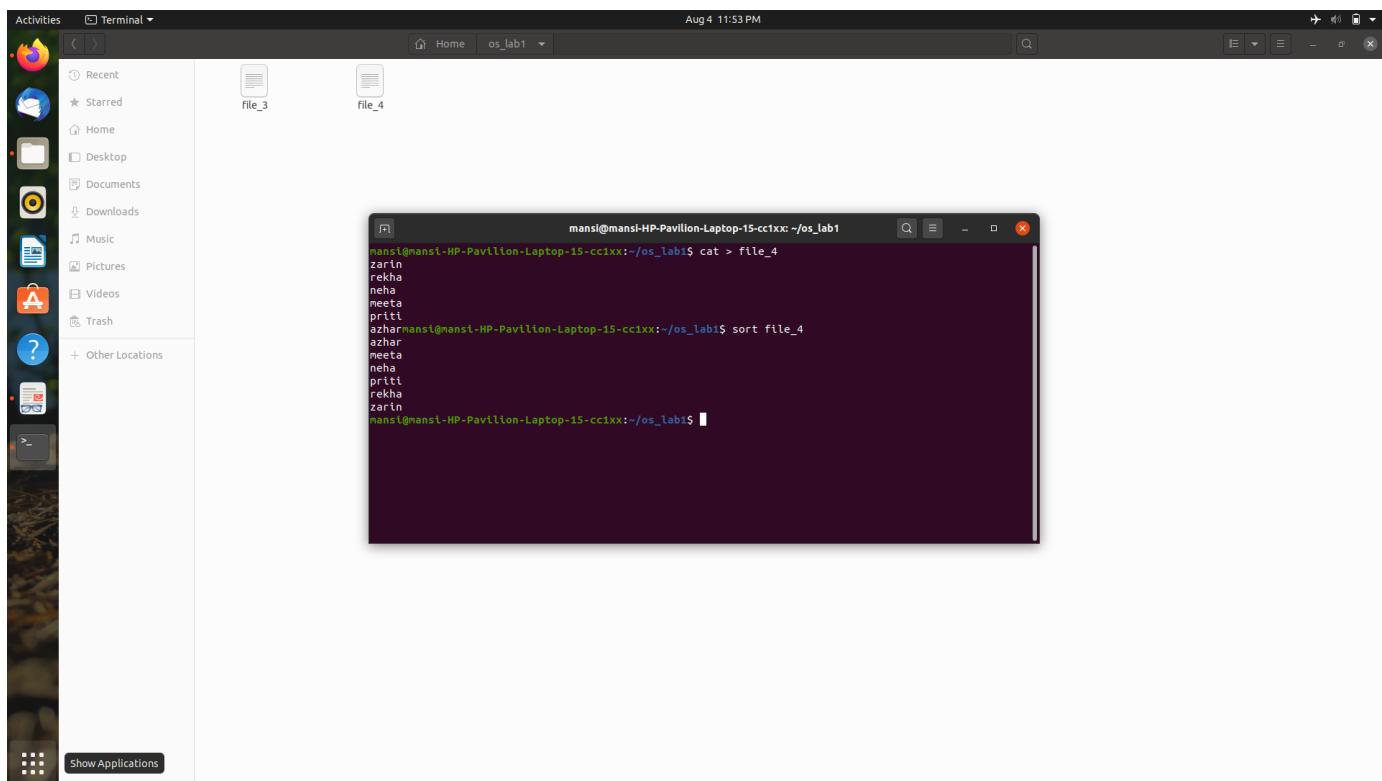
**27) exec - executes a command in place of the current shell which terminates.**



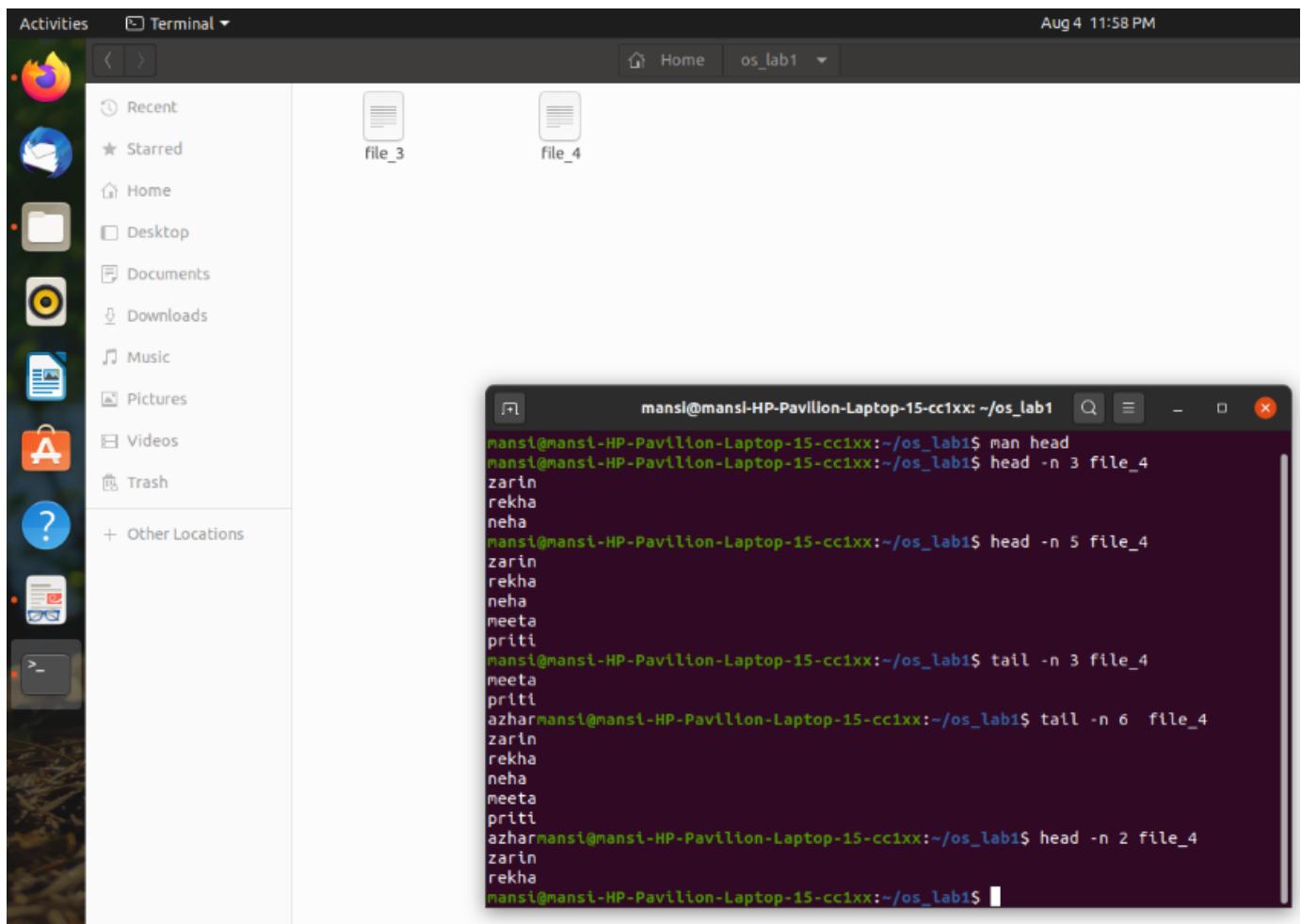
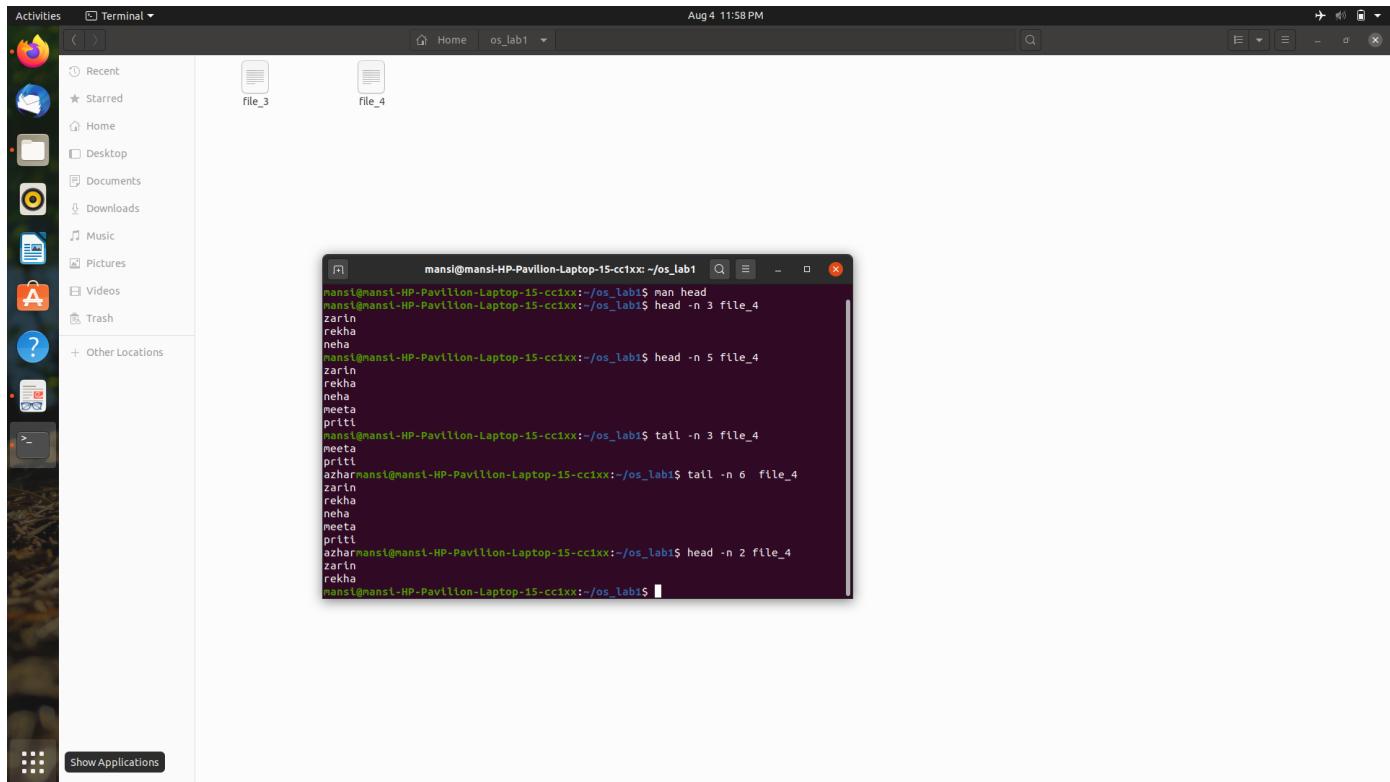
## 28) grep - search a file for a matching pattern or regular expression



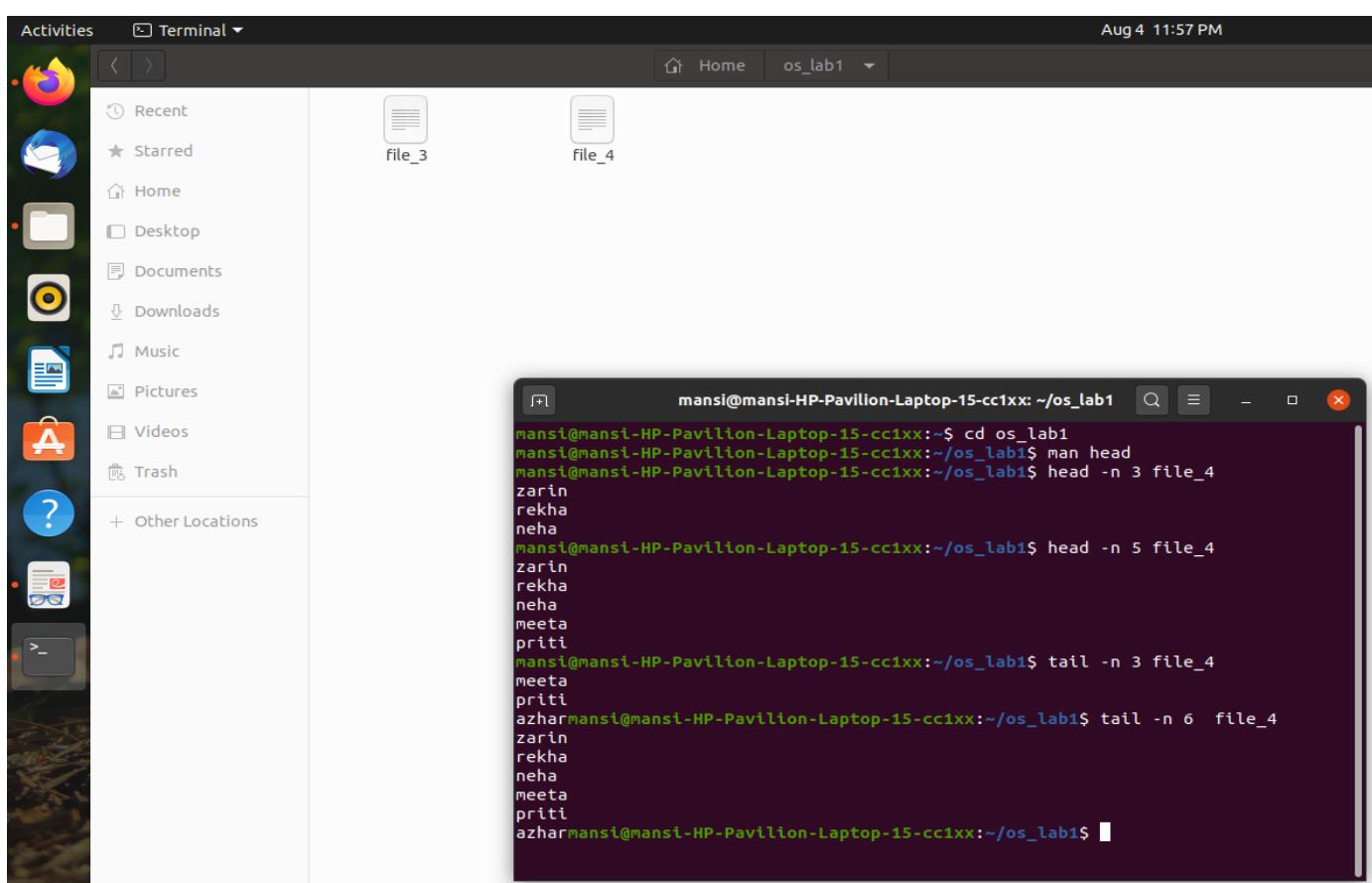
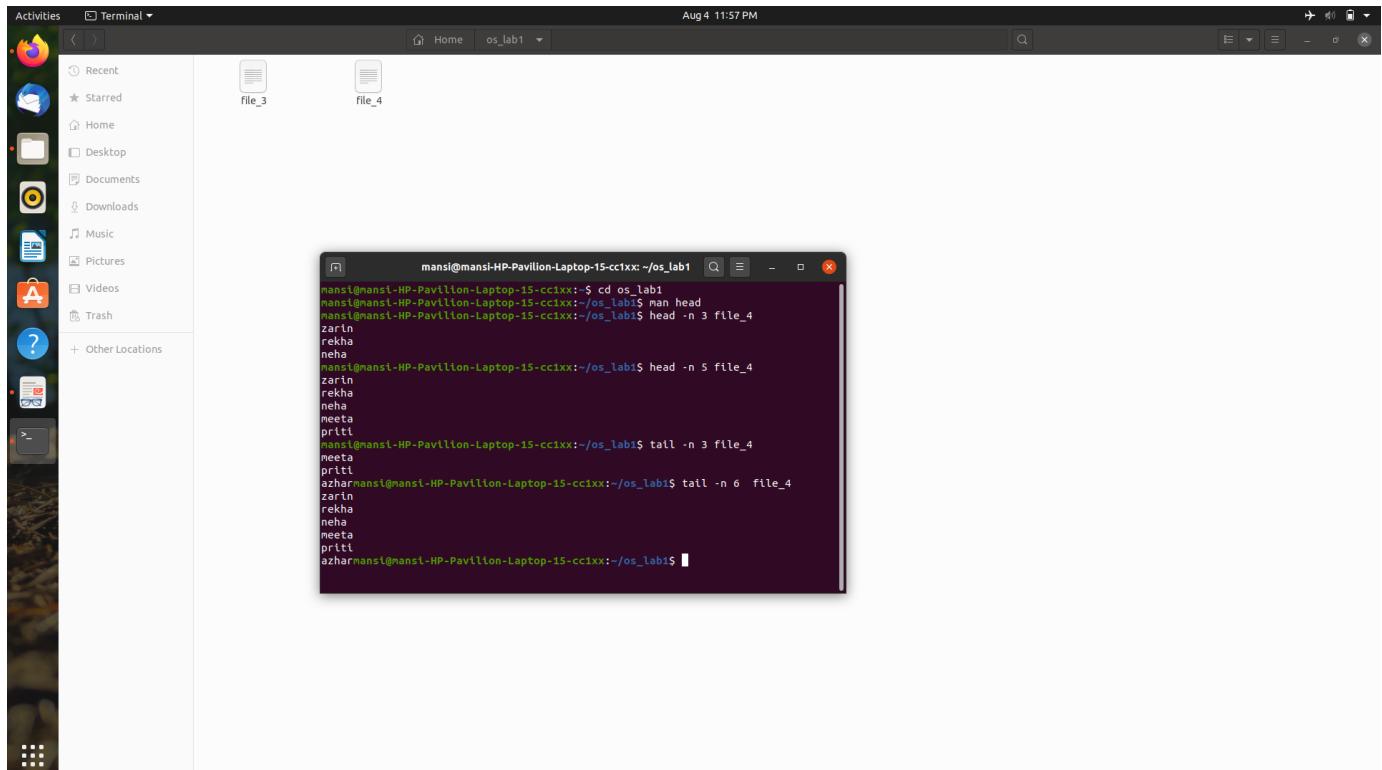
## 29) sort – sort line of file



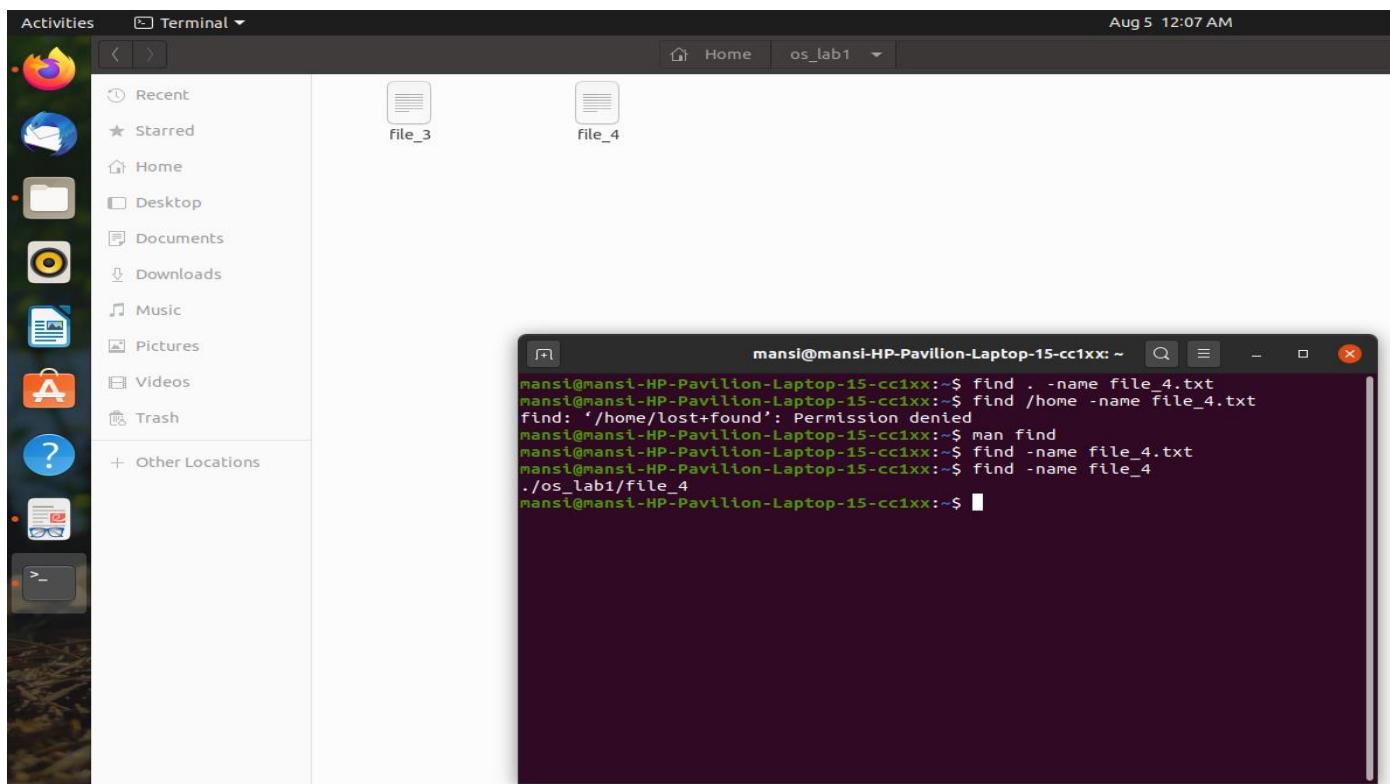
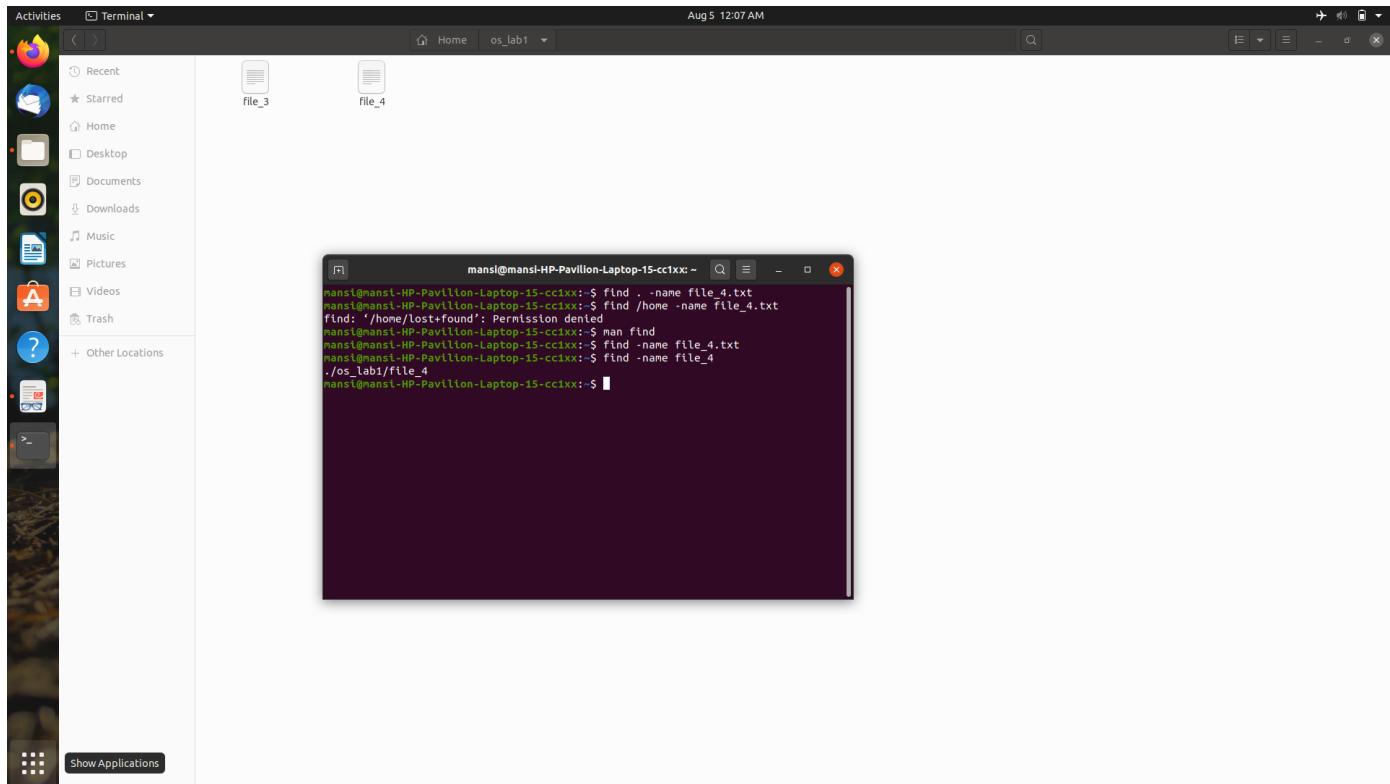
### 30) head - output the first part of files



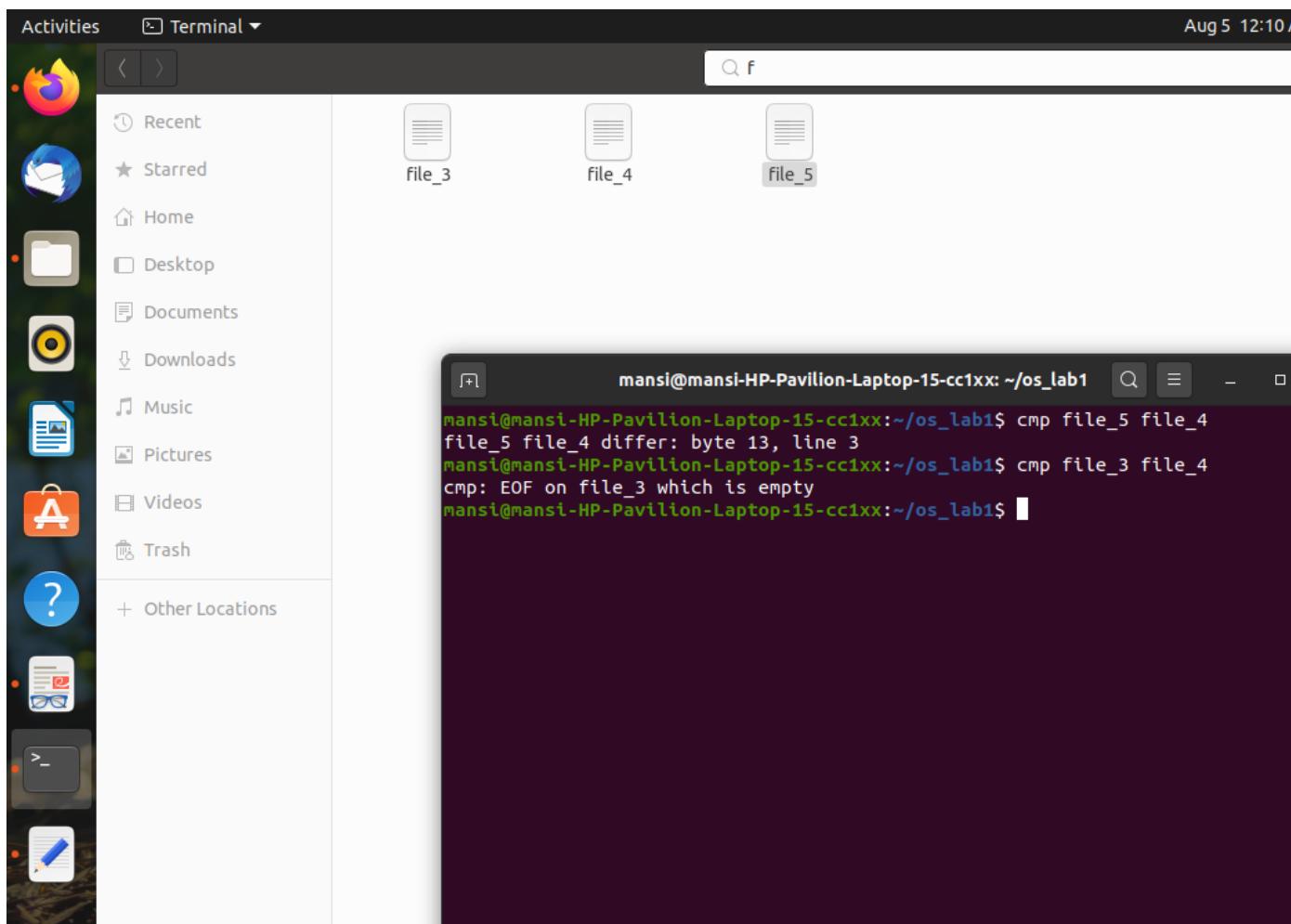
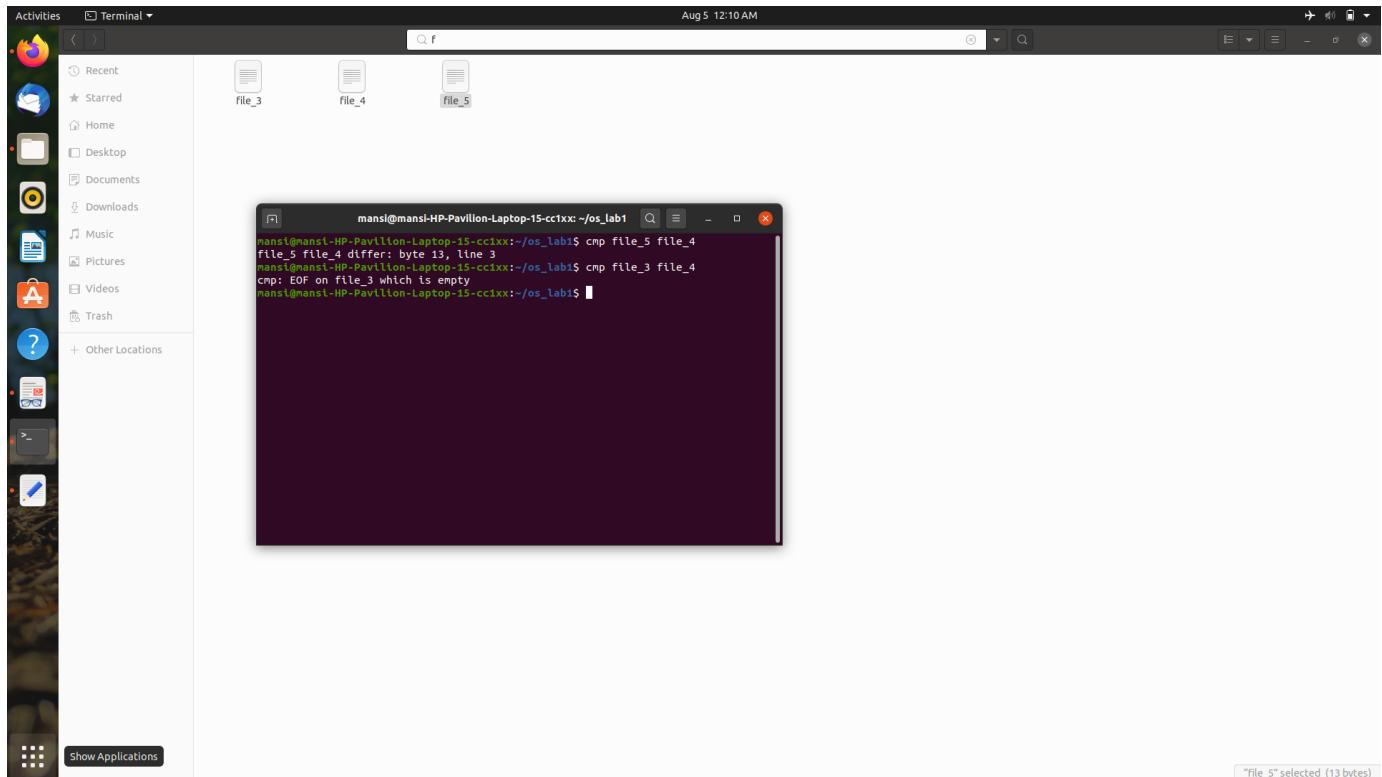
### 31) tail - output the last part of files.



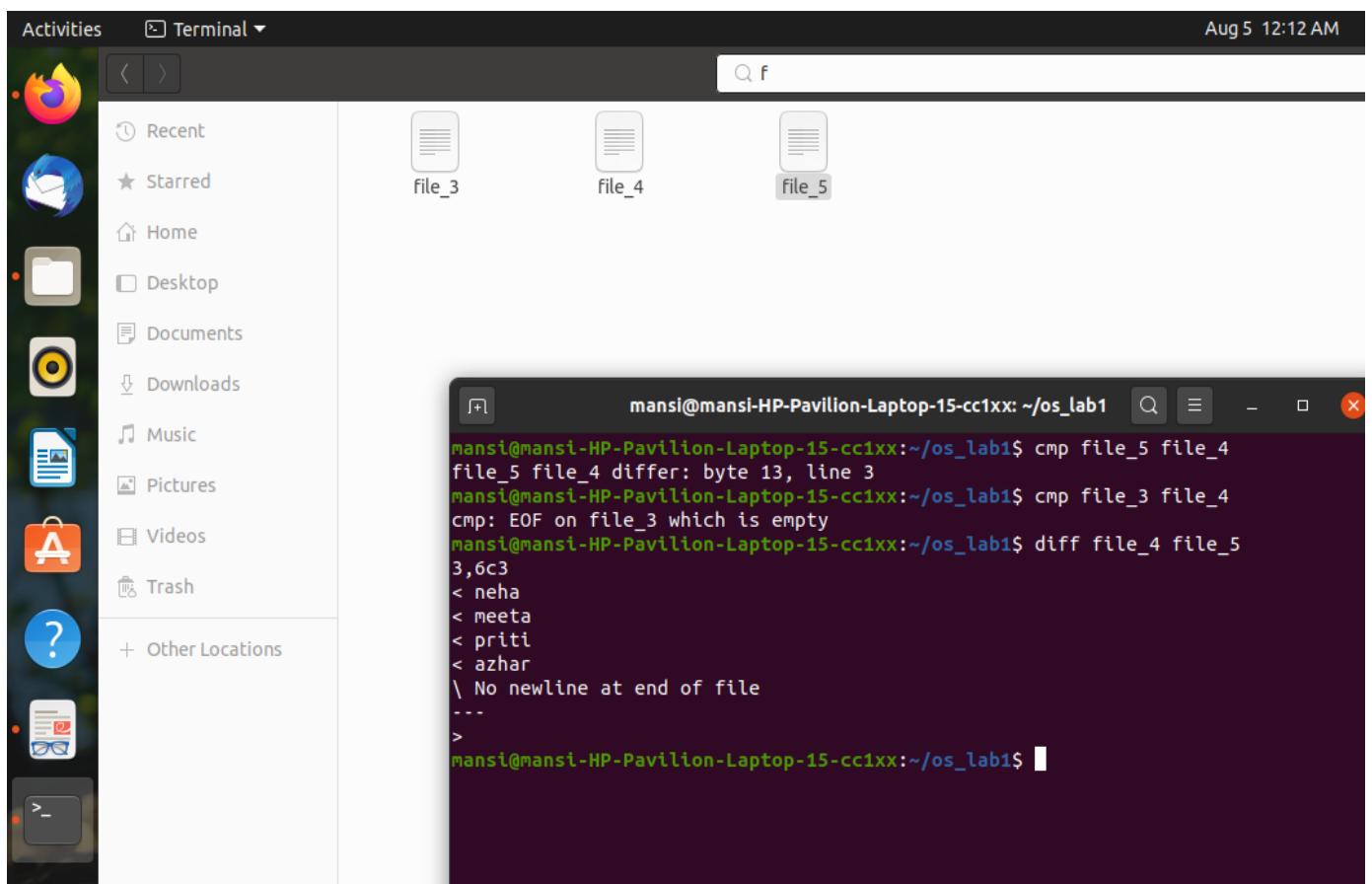
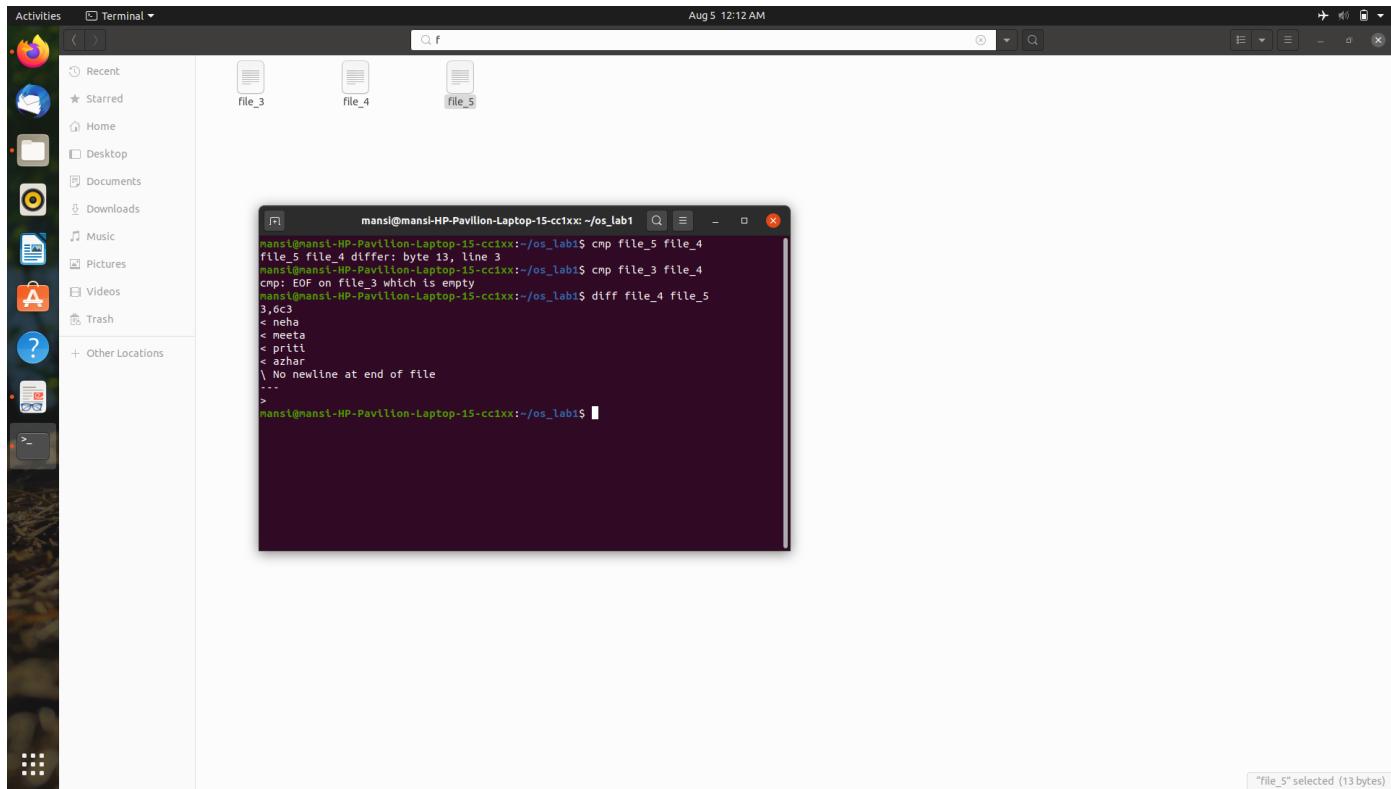
## 32) find - search the system for filenames



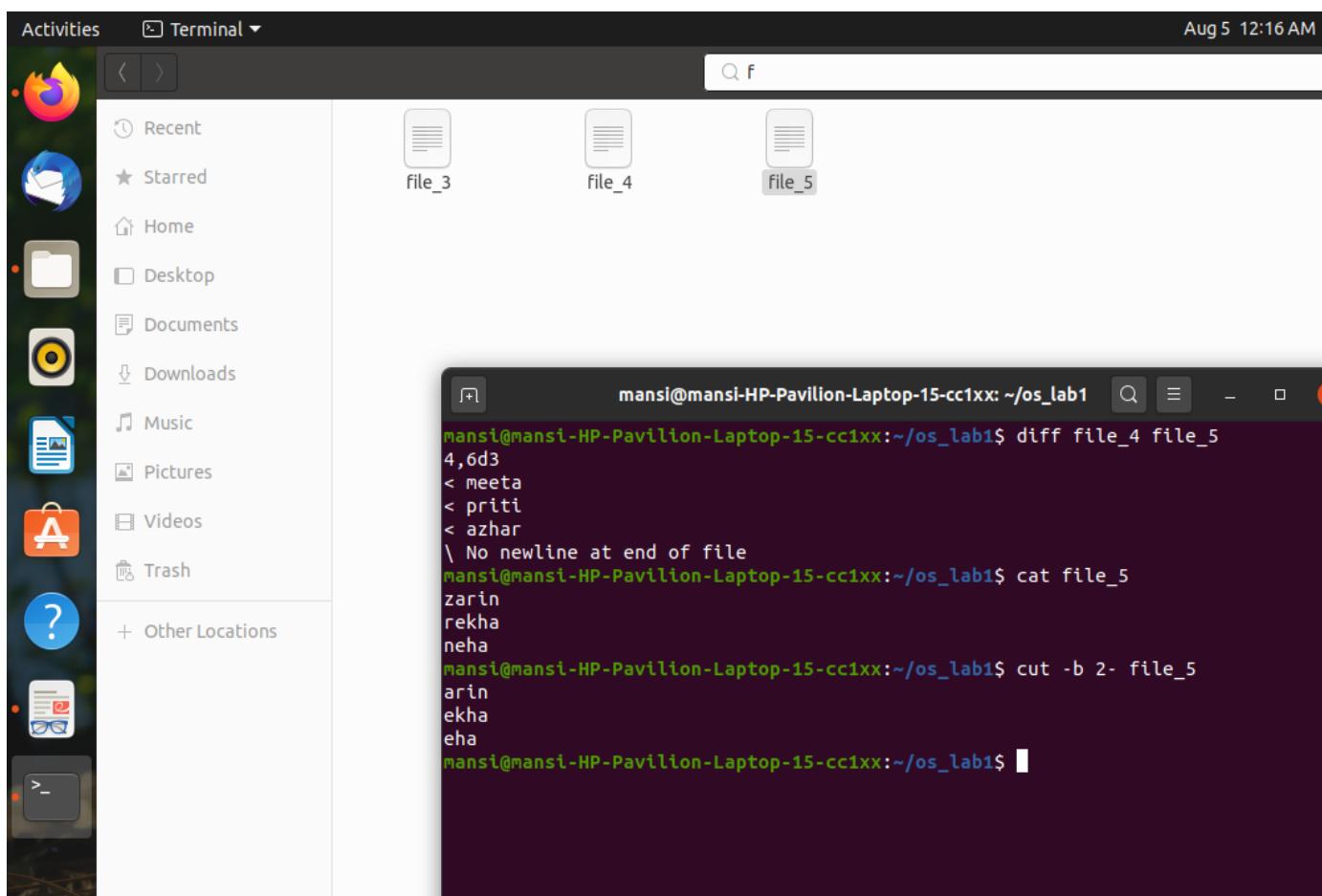
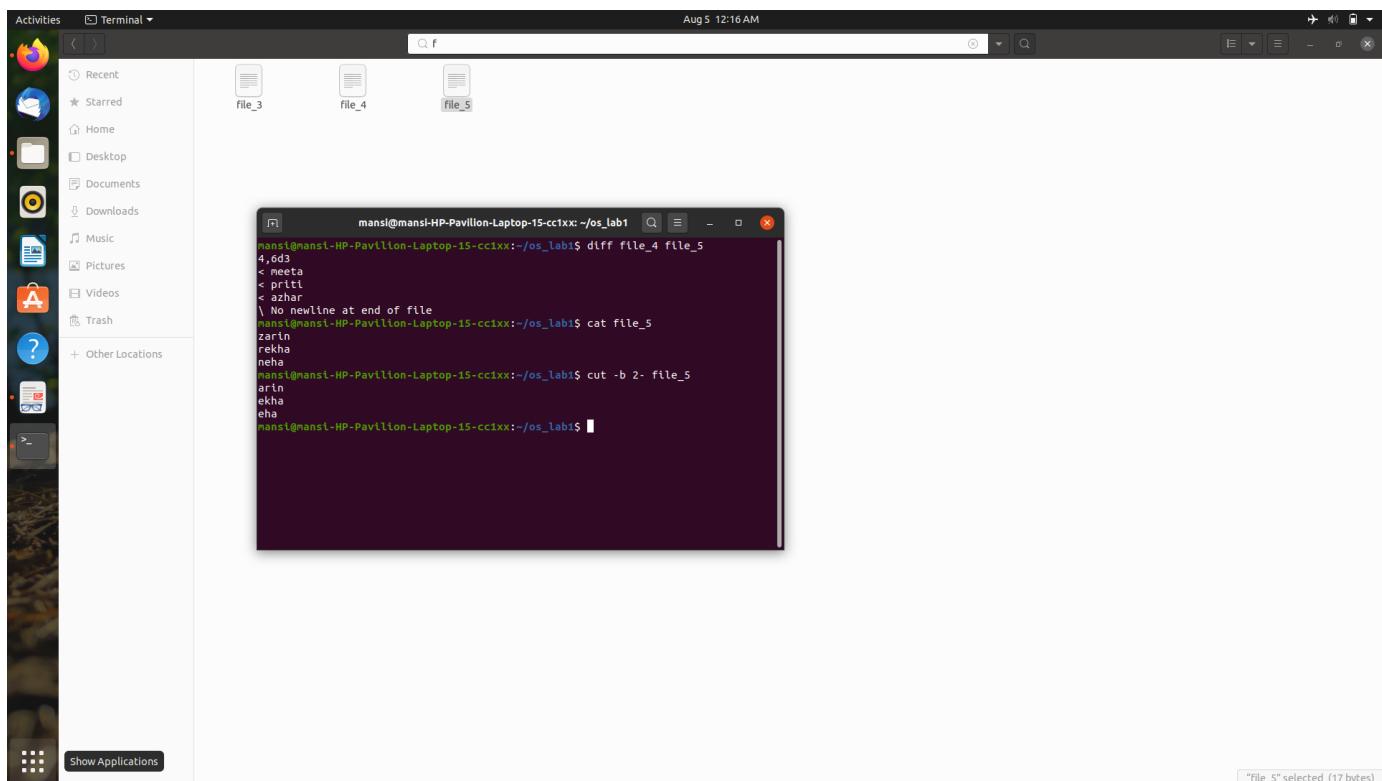
### 33) cmp – compare two files



### 34) diff - reports the lines that differ between 2 files.



### 35) cut - remove sections from each line of files



36)

## uniq - report or omit repeated lines

