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Class :- D6AD

Exp 1: Linux Commands and system calls

Aim :- Exploring basic commands of Unix/LinuxGeneral

Purpose Utilities , Working With Directories File Handling

Commands ,Changing File Attributes, Exploring basic

commands of Unix/LinuxSimple Filters ,Pattern matching

,Advanced pattern matching ,Creating and managing group.

Linux commands & system calls for file, directory & process management.

- 1] `mkdir` :- It will attempt to create a ~~parent~~ directory, if they do not already exist.
- 2) ~~cat~~ `cat` :- (concatenate) command is very frequently used in linux. It reads data from the file and gives their content as output. It helps to create, view, concatenate files.
 - 1) To view a single file
 - 2) To view multiple files
 - 3) To view a file with the line numbers
 - 4) to create a file
 - 5) Copy contents of one file to another etc.
- 3] `ls` - list (to view the list of files in the given directory)
- 4] `chown` :- This command is used to change the owner of the given file or directory for that we need to be logged into the root environment with the command '`sudo su`'. The root shell ~~get~~ allows us to change the ownership of the file.
- 5] `chmod` :- This command is used to change the permissions on a file.
It can be done numerically or symbolically
for numerically :-

r (read) is 4 in numeric value

w (write) is 2 &

x (execute) is 1

no permission is 0

For e.g

To give the permission of
read write and execute the numeric value
will be rwt \rightarrow $4+2+1 = 7$

The ordered list is

① Owner

② Group

③ Others

and the default permissions of a directory
are 754 i.e

Owner -7, Group 5 & Others 4
(rwx) (r-x) (r-)

and to symbolically change the permissions

(-) is to remove the specific permissions

(+) is to add.

(=) change the permissions to the stated
if nothing is added after = all the
permissions are revoked.

chgrp :- (Change group) command alters the
group name that a file or
directory belongs to. We need to
have superuser permissions to use
chgrp command

Syntax chgrp [Group Name] [Directory/filename]

ps :- It gives the current running processes, display the information of the active processes and

Syntax :- ps ps

sort :- it is used to sort a file, arranging the records in a particular order.

Syntax :- sort [filename]

The options with sort command are :-

-r

Syntax :- sort -r new.txt

to rearrange the content in reverse order

-n

numerically rearrange the content

sort -n n [filename]

-c

to check if file is in sorted format or not

sort -c [filename]

Grep :- It filters the search a file for the particular character & displays all the lines that contains the pattern pattern / characters.

Syntax :- grep "character" [filename]

-i is for the ignoring the case (capital, small)

-c prints only the count of line that match a pattern.

awk :- awk is used for generating reports & manipulating data.

awk operations :- It scans the file line by line

Syntax awk '{print}' [filename]

awk '/specific character/{print}' [filename]
to search specific character in a file
and display it.

Open :- The open() system calls opens the file specified by pathname. If the specific file is not in existence it optionally is created by open()

read :- It attempts to read up to count bytes from file descriptor fd into the buffer.

If the count is zero, read() returns zero and has no other results. and if the count exceeds SIZE_MAX the result is unspecified.

Write :- It writes data from a buffer declared by a user to a given ~~device~~ device, such as file

close :- It is used to close a file descriptor by the kernel

getpid :- It returns the process ID (PID) of the calling process.

getppid :- It returns the process ID of the parent of the calling process.

setpgid :- It sets the process ID of the process specified by pid to pgid. It is also used to transfer a process from one user to another user (ID of the same group).

getuid :- It returns the user ID of the calling process.

getgid :- It returns the real group ID of the current process.

getegid :- It returns the effective group ID of the current ongoing process.

who :- This command lets you display the user currently logged in to your LINUX OS.

whoami :- This command basically is 'who' + 'am' 'I'. It gives the name of the user (username) who is currently logged in.

which :- Linux which command is used to identify the location of a given executable that is executed when you type in the executable name, it searches for the executable specified as an argument in the directories.

uname :- It displays a information about the system

-a :- kernel name, network node, kernel version etc is displayed

-s :- gives the kernel name

-n :- gives the host name (owner name)

-m :- machine hardware name.

tty :- tty is the short form of teletype it prints the information of the system related to the terminal

tty --version.

cal :- shows the calendar whole of the month which coloring out the date of today.

date :- It shows the day, date, month, year, time (with seconds) and also the time zone.

bc :- basic calculator, it is a command which allows us to use the terminal as a calculator & perform basic operations on it.

cd :- change directory (to access different directories).

rm :- to remove file, directory present on the file system of linux.

the
+ mv :- To move 1 document to any directory.

wc :- It allows you to count the no. of lines, words, characters etc.

- l → no of lines
- w → no. of words
- m → no. of characters
- L → length of the longest line.

cmp :- used to compare 2 files.

diff :- diff command analyzes two files and prints the lines that are different in both the files.

comm :- compares two sorted files line by line & gives the output in columns of sorted or unsorted two unique & same lines or words.

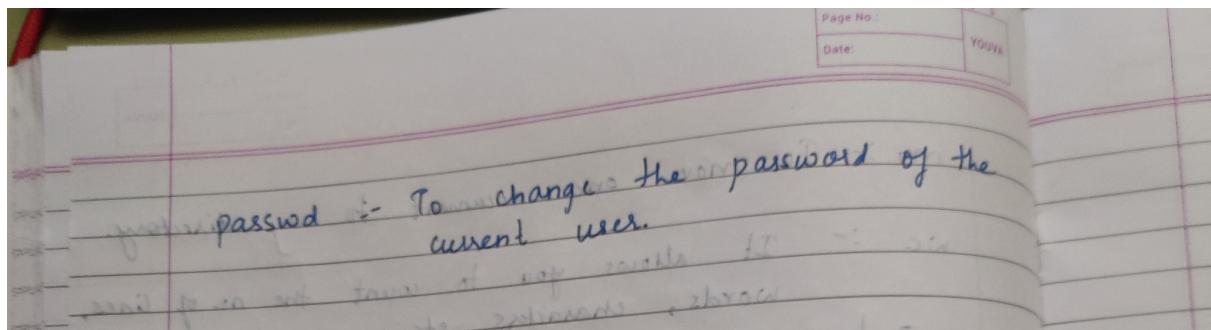
cut :- It is used to cut down the file line by line & gives the result as output.

- b > byte wise cutting down the file line by line.

- c :- To cut by character.

sudo & su :- it logs into the root with the environment which is password protected.

adduser :- It is to add a new user.

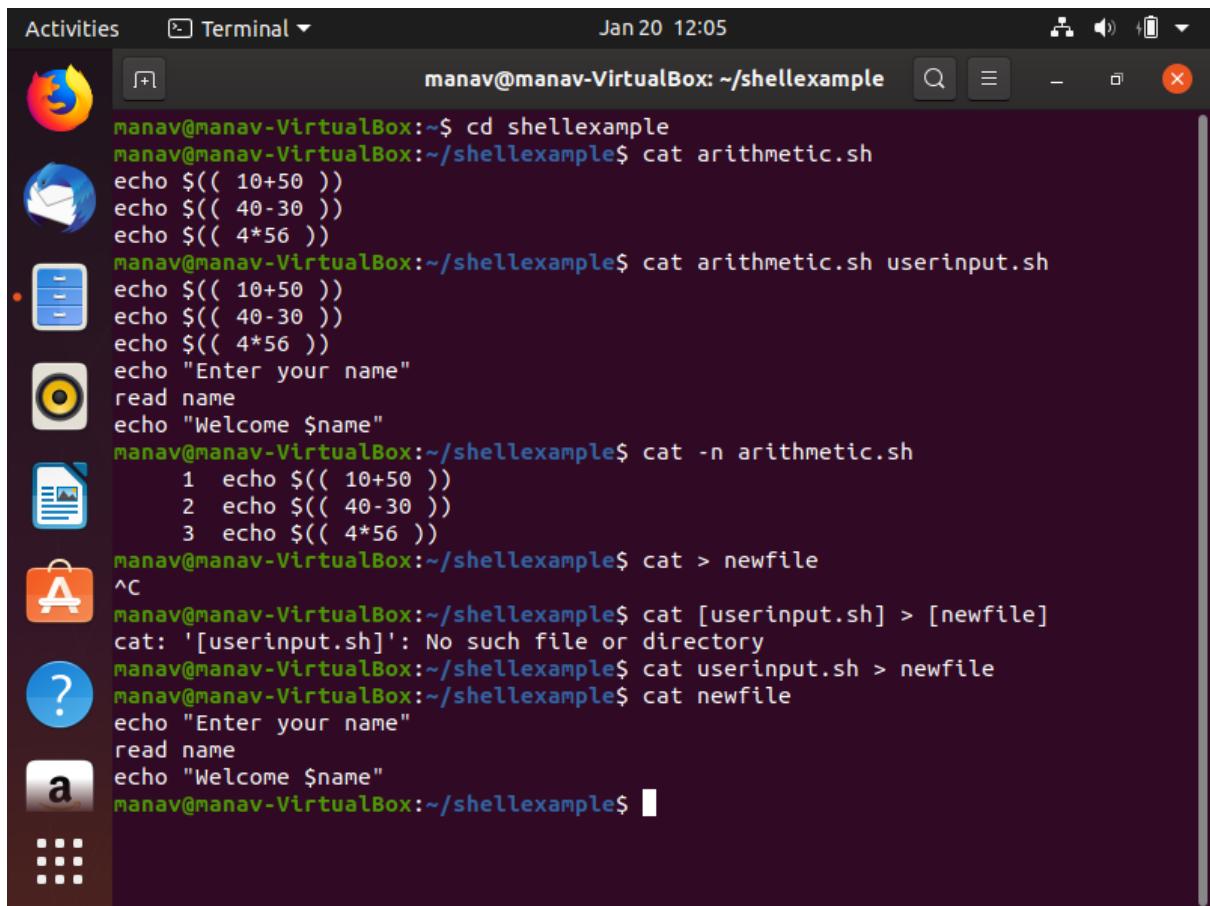


Snippets :-

Mkdir :-

```
Activities Terminal manav@manav-VirtualBox: ~
drwxr-xr-x 2 manav    manav 4096 Jan 10 23:09 Pictures
drwxr-xr-x 2 manav    manav 4096 Jan 10 23:09 Public
-rw-r--r-- 1 manav    manav 191 Jan 18 14:47 sc1.cpp
drwxr-xr-x 3 manav    manav 4096 Jan 18 14:16 shellexample
drwxr-xr-x 2 manav    manav 4096 Jan 10 23:09 Templates
drwxrwxrwx 4 Hamilton manav 4096 Jan 11 14:43 try
drwxr-xr-x 2 manav    manav 4096 Jan 10 23:09 Videos
manav@manav-VirtualBox:~$ mkdir New
manav@manav-VirtualBox:~$ ls -l
ls-l: command not found
manav@manav-VirtualBox:~$ ls -l
total 80
drwxr-xr-x 2 manav    manav 4096 Jan 10 23:09 Desktop
drwxr-xr-x 2 manav    manav 4096 Jan 10 23:09 Documents
drwxr-xr-x 2 manav    manav 4096 Jan 10 23:09 Downloads
drwxr-xr-x 2 manav    try   4096 Jan 11 14:24 lab1
drwxr-xr-x 2 manav    manav 4096 Jan 10 23:09 Music
drwxr-xr-x 2 manav    manav 4096 Jan 20 11:45 New
-rw-r--r-- 1 manav    manav 68 Jan 13 10:56 new.txt
-rw-r--r-- 1 manav    manav 17448 Jan 18 14:47 out
-rw-r--r-- 1 manav    manav 68 Jan 13 11:05 output.txt
drwxr-xr-x 2 manav    manav 4096 Jan 10 23:09 Pictures
drwxr-xr-x 2 manav    manav 4096 Jan 10 23:09 Public
-rw-r--r-- 1 manav    manav 191 Jan 18 14:47 sc1.cpp
drwxr-xr-x 3 manav    manav 4096 Jan 18 14:16 shellexample
drwxr-xr-x 2 manav    manav 4096 Jan 10 23:09 Templates
drwxrwxrwx 4 Hamilton manav 4096 Jan 11 14:43 try
drwxr-xr-x 2 manav    manav 4096 Jan 10 23:09 Videos
manav@manav-VirtualBox:~$
```

Cat (all) :-

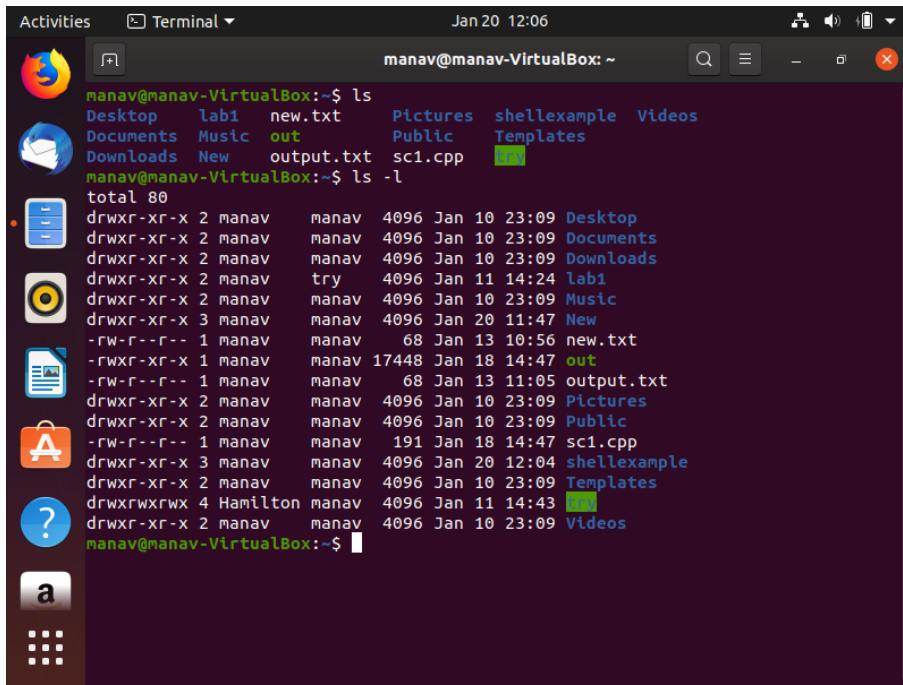


A screenshot of a Linux desktop environment, likely Ubuntu, showing a terminal window. The terminal window title is "Terminal" and the status bar shows the date and time as "Jan 20 12:05". The terminal content displays several commands related to the "cat" command:

```
manav@manav-VirtualBox:~/shellexample$ cd shellexample
manav@manav-VirtualBox:~/shellexample$ cat arithmetic.sh
echo $(( 10+50 ))
echo $(( 40-30 ))
echo $(( 4*56 ))
manav@manav-VirtualBox:~/shellexample$ cat arithmetic.sh userinput.sh
echo $(( 10+50 ))
echo $(( 40-30 ))
echo $(( 4*56 ))
echo "Enter your name"
read name
echo "Welcome $name"
manav@manav-VirtualBox:~/shellexample$ cat -n arithmetic.sh
 1 echo $(( 10+50 ))
 2 echo $(( 40-30 ))
 3 echo $(( 4*56 ))
manav@manav-VirtualBox:~/shellexample$ cat > newfile
^C
manav@manav-VirtualBox:~/shellexample$ cat [userinput.sh] > [newfile]
cat: '[userinput.sh]': No such file or directory
manav@manav-VirtualBox:~/shellexample$ cat userinput.sh > newfile
manav@manav-VirtualBox:~/shellexample$ cat newfile
echo "Enter your name"
read name
echo "Welcome $name"
manav@manav-VirtualBox:~/shellexample$
```

ls :-

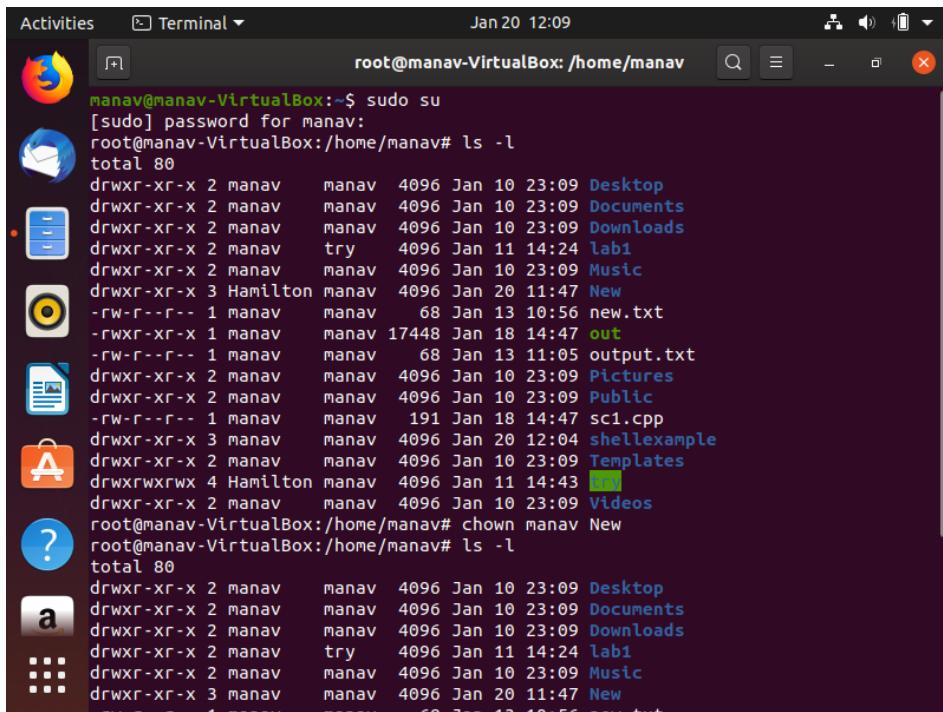
Activities Terminal ▾ manav@manav-VirtualBox: ~ Jan 20 12:06



```
manav@manav-VirtualBox:~$ ls
Desktop  lab1  new.txt  Pictures  shellexample  Videos
Documents  Music  out  Public  Templates
Downloads  New  output.txt  sc1.cpp  try
manav@manav-VirtualBox:~$ ls -l
total 80
drwxr-xr-x 2 manav  manav  4096 Jan 10 23:09 Desktop
drwxr-xr-x 2 manav  manav  4096 Jan 10 23:09 Documents
drwxr-xr-x 2 manav  manav  4096 Jan 10 23:09 Downloads
drwxr-xr-x 2 manav  try   4096 Jan 11 14:24 lab1
drwxr-xr-x 2 manav  manav  4096 Jan 10 23:09 Music
drwxr-xr-x 3 manav  manav  4096 Jan 20 11:47 New
-rw-r--r-- 1 manav  manav   68 Jan 13 10:56 new.txt
-rw-r--r-- 1 manav  manav 17448 Jan 18 14:47 out
-rw-r--r-- 1 manav  manav   68 Jan 13 11:05 output.txt
drwxr-xr-x 2 manav  manav  4096 Jan 10 23:09 Pictures
drwxr-xr-x 2 manav  manav  4096 Jan 10 23:09 Public
-rw-r--r-- 1 manav  manav  191 Jan 18 14:47 sc1.cpp
drwxr-xr-x 3 manav  manav  4096 Jan 20 12:04 shellexample
drwxr-xr-x 2 manav  manav  4096 Jan 10 23:09 Templates
drwxrwxrwx 4 Hamilton manav  4096 Jan 11 14:43 try
drwxr-xr-x 2 manav  manav  4096 Jan 10 23:09 Videos
manav@manav-VirtualBox:~$
```

Chown :-

Activities Terminal ▾ root@manav-VirtualBox: /home/manav Jan 20 12:09



```
manav@manav-VirtualBox:~$ sudo su
[sudo] password for manav:
root@manav-VirtualBox:/home/manav# ls -l
total 80
drwxr-xr-x 2 manav  manav  4096 Jan 10 23:09 Desktop
drwxr-xr-x 2 manav  manav  4096 Jan 10 23:09 Documents
drwxr-xr-x 2 manav  manav  4096 Jan 10 23:09 Downloads
drwxr-xr-x 2 manav  try   4096 Jan 11 14:24 lab1
drwxr-xr-x 2 manav  manav  4096 Jan 10 23:09 Music
drwxr-xr-x 3 Hamilton manav  4096 Jan 20 11:47 New
-rw-r--r-- 1 manav  manav   68 Jan 13 10:56 new.txt
-rw-r--r-- 1 manav  manav 17448 Jan 18 14:47 out
-rw-r--r-- 1 manav  manav   68 Jan 13 11:05 output.txt
drwxr-xr-x 2 manav  manav  4096 Jan 10 23:09 Pictures
drwxr-xr-x 2 manav  manav  4096 Jan 10 23:09 Public
-rw-r--r-- 1 manav  manav  191 Jan 18 14:47 sc1.cpp
drwxr-xr-x 3 manav  manav  4096 Jan 20 12:04 shellexample
drwxr-xr-x 2 manav  manav  4096 Jan 10 23:09 Templates
drwxrwxrwx 4 Hamilton manav  4096 Jan 11 14:43 try
drwxr-xr-x 2 manav  manav  4096 Jan 10 23:09 Videos
root@manav-VirtualBox:/home/manav# chown manav New
root@manav-VirtualBox:/home/manav# ls -l
total 80
drwxr-xr-x 2 manav  manav  4096 Jan 10 23:09 Desktop
drwxr-xr-x 2 manav  manav  4096 Jan 10 23:09 Documents
drwxr-xr-x 2 manav  manav  4096 Jan 10 23:09 Downloads
drwxr-xr-x 2 manav  try   4096 Jan 11 14:24 lab1
drwxr-xr-x 2 manav  manav  4096 Jan 10 23:09 Music
drwxr-xr-x 3 manav  manav  4096 Jan 20 11:47 New
```

Chmod :-

Activities Terminal ▾ Jan 20 12:24

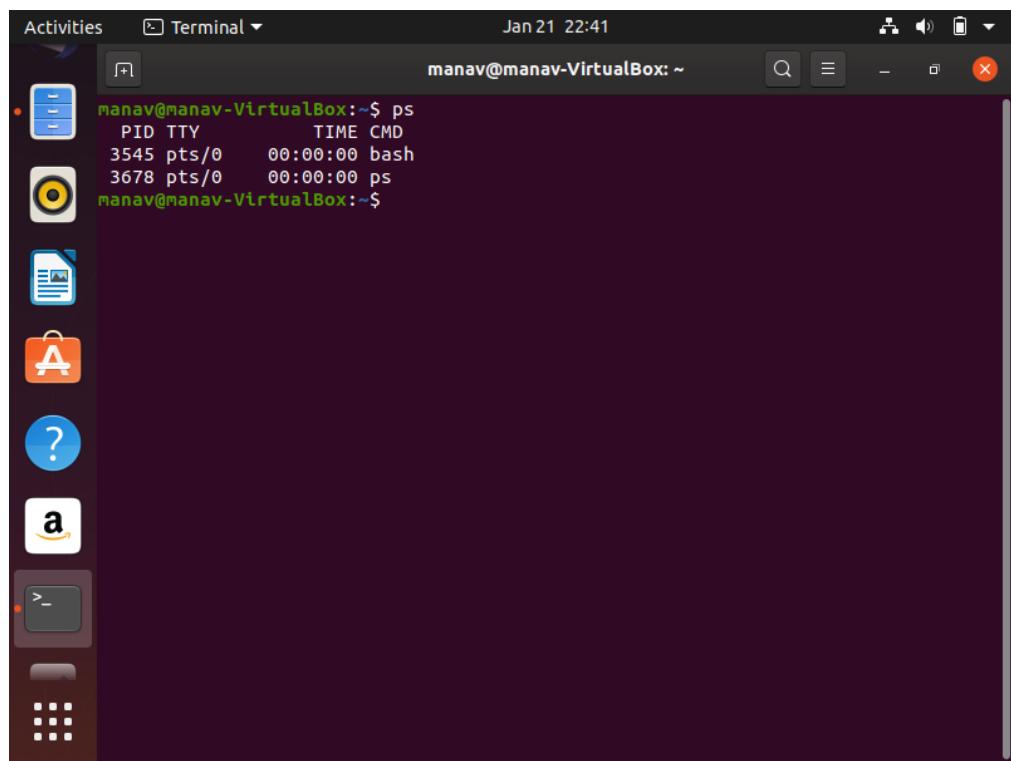
```
root@manav-VirtualBox: /home/manav
-rwxr-xr-x 1 manav manav 17448 Jan 18 14:47 out
-rw-r--r-- 1 manav manav 68 Jan 13 11:05 output.txt
drwxr-xr-x 2 manav manav 4096 Jan 10 23:09 Pictures
drwxr-xr-x 2 manav manav 4096 Jan 10 23:09 Public
-rw-r--r-- 1 manav manav 191 Jan 18 14:47 sc1.cpp
drwxr-xr-x 3 manav manav 4096 Jan 20 12:04 shellexample
drwxr-xr-x 2 manav manav 4096 Jan 10 23:09 Templates
drwxrwxrwx 4 manav manav 4096 Jan 11 14:43 try
drwxr-xr-x 2 manav manav 4096 Jan 10 23:09 Videos
root@manav-VirtualBox:/home/manav# chmod ugo+++rwx try
root@manav-VirtualBox:/home/manav# ls -l
total 80
drwxr-xr-x 2 manav manav 4096 Jan 10 23:09 Desktop
drwxr-xr-x 2 manav manav 4096 Jan 10 23:09 Documents
drwxr-xr-x 2 manav manav 4096 Jan 10 23:09 Downloads
drwxr-xr-x 2 manav try 4096 Jan 11 14:24 lab1
drwxr-xr-x 2 manav manav 4096 Jan 10 23:09 Music
drwxr-xr-x 3 manav manav 4096 Jan 20 11:47 New
-rw-r--r-- 1 manav manav 68 Jan 13 10:56 new.txt
-rw-r--r-- 1 manav manav 17448 Jan 18 14:47 out
drwxr-xr-x 2 manav manav 4096 Jan 10 23:09 Pictures
drwxr-xr-x 2 manav manav 4096 Jan 10 23:09 Public
-rw-r--r-- 1 manav manav 191 Jan 18 14:47 sc1.cpp
drwxr-xr-x 3 manav manav 4096 Jan 20 12:04 shellexample
drwxr-xr-x 2 manav manav 4096 Jan 10 23:09 Templates
drwxrwxrwx 4 manav manav 4096 Jan 11 14:43 try
drwxr-xr-x 2 manav manav 4096 Jan 10 23:09 Videos
root@manav-VirtualBox:/home/manav#
```

Chgrp :-

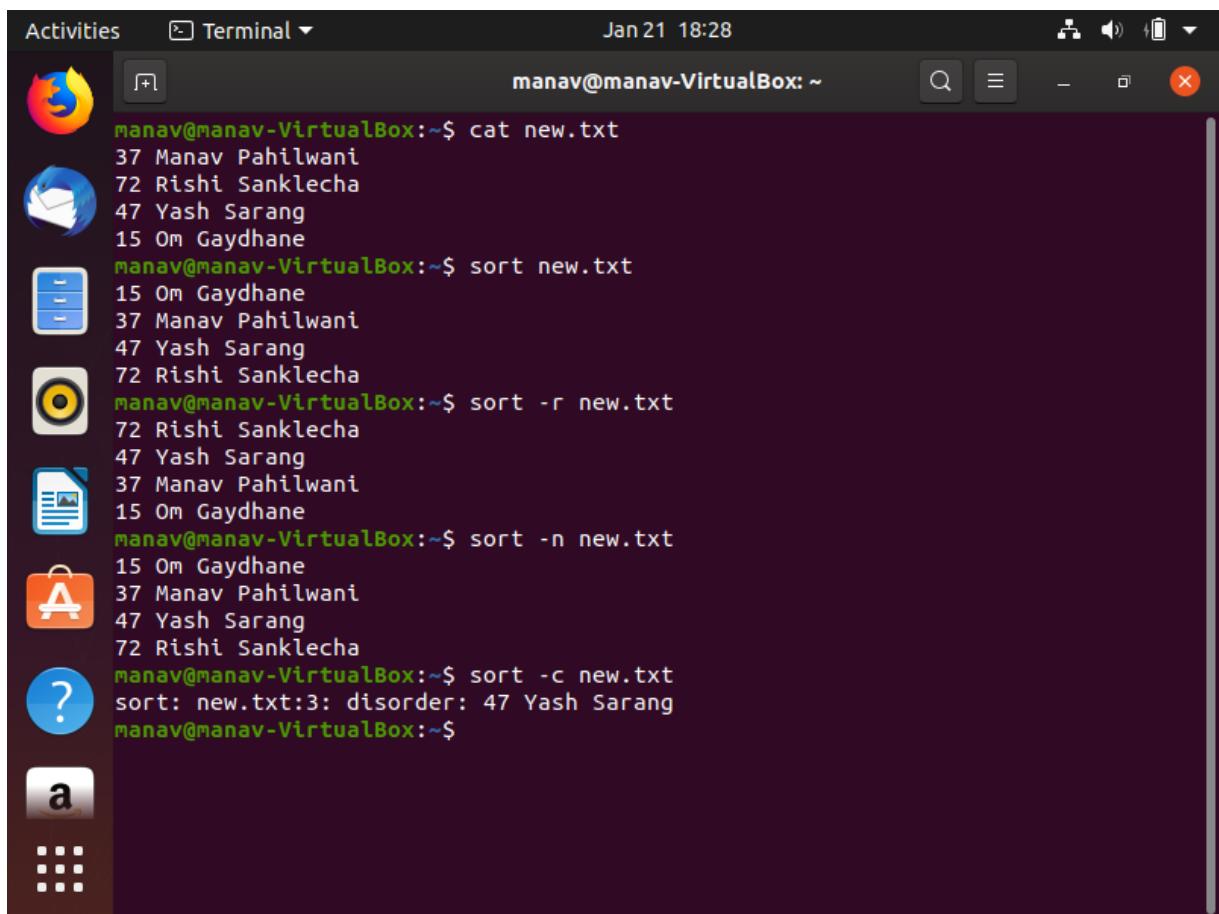
Activities Terminal ▾ Jan 21 18:09

```
root@manav-VirtualBox:/home/manav# chgrp newgrp try
root@manav-VirtualBox:/home/manav# ls -l
total 80
drwxr-xr-x 2 manav manav 4096 Jan 10 23:09 Desktop
drwxr-xr-x 2 manav manav 4096 Jan 10 23:09 Documents
drwxr-xr-x 2 manav manav 4096 Jan 10 23:09 Downloads
drwxr-xr-x 2 manav try 4096 Jan 11 14:24 lab1
drwxr-xr-x 2 manav manav 4096 Jan 10 23:09 Music
drwxr-xr-x 3 manav manav 4096 Jan 20 11:47 New
-rw-r--r-- 1 manav manav 68 Jan 13 10:56 new.txt
-rw-r--r-- 1 manav manav 17448 Jan 18 14:47 out
-rw-r--r-- 1 manav manav 68 Jan 13 11:05 output.txt
drwxr-xr-x 2 manav manav 4096 Jan 10 23:09 Pictures
d LibreOffice Writer v manav 4096 Jan 10 23:09 Public
drwxr-xr-x 3 manav manav 4096 Jan 18 14:47 sc1.cpp
drwxr-xr-x 2 manav manav 4096 Jan 20 12:04 shellexample
drwxr-xr-x 4 manav newgrp 4096 Jan 11 14:43 try
drwxr-xr-x 2 manav manav 4096 Jan 10 23:09 Videos
root@manav-VirtualBox:/home/manav#
```

Ps :-



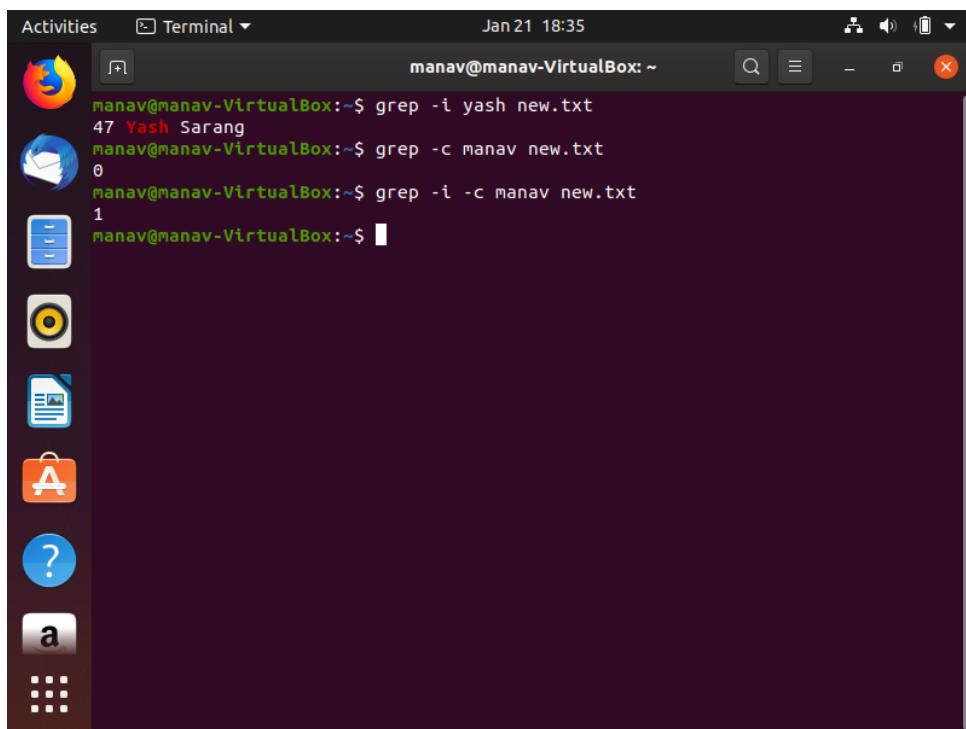
Sort :-



A screenshot of a Linux desktop environment, likely Ubuntu, showing a terminal window. The terminal window has a dark purple header bar with icons for activities, terminal, date and time (Jan 21 18:28), and system status. The main area of the terminal shows the following command-line session:

```
manav@manav-VirtualBox:~$ cat new.txt
37 Manav Pahilwani
72 Rishi Sanklecha
47 Yash Sarang
15 Om Gaydhane
manav@manav-VirtualBox:~$ sort new.txt
15 Om Gaydhane
37 Manav Pahilwani
47 Yash Sarang
72 Rishi Sanklecha
manav@manav-VirtualBox:~$ sort -r new.txt
72 Rishi Sanklecha
47 Yash Sarang
37 Manav Pahilwani
15 Om Gaydhane
manav@manav-VirtualBox:~$ sort -n new.txt
15 Om Gaydhane
37 Manav Pahilwani
47 Yash Sarang
72 Rishi Sanklecha
manav@manav-VirtualBox:~$ sort -c new.txt
sort: new.txt:3: disorder: 47 Yash Sarang
manav@manav-VirtualBox:~$
```

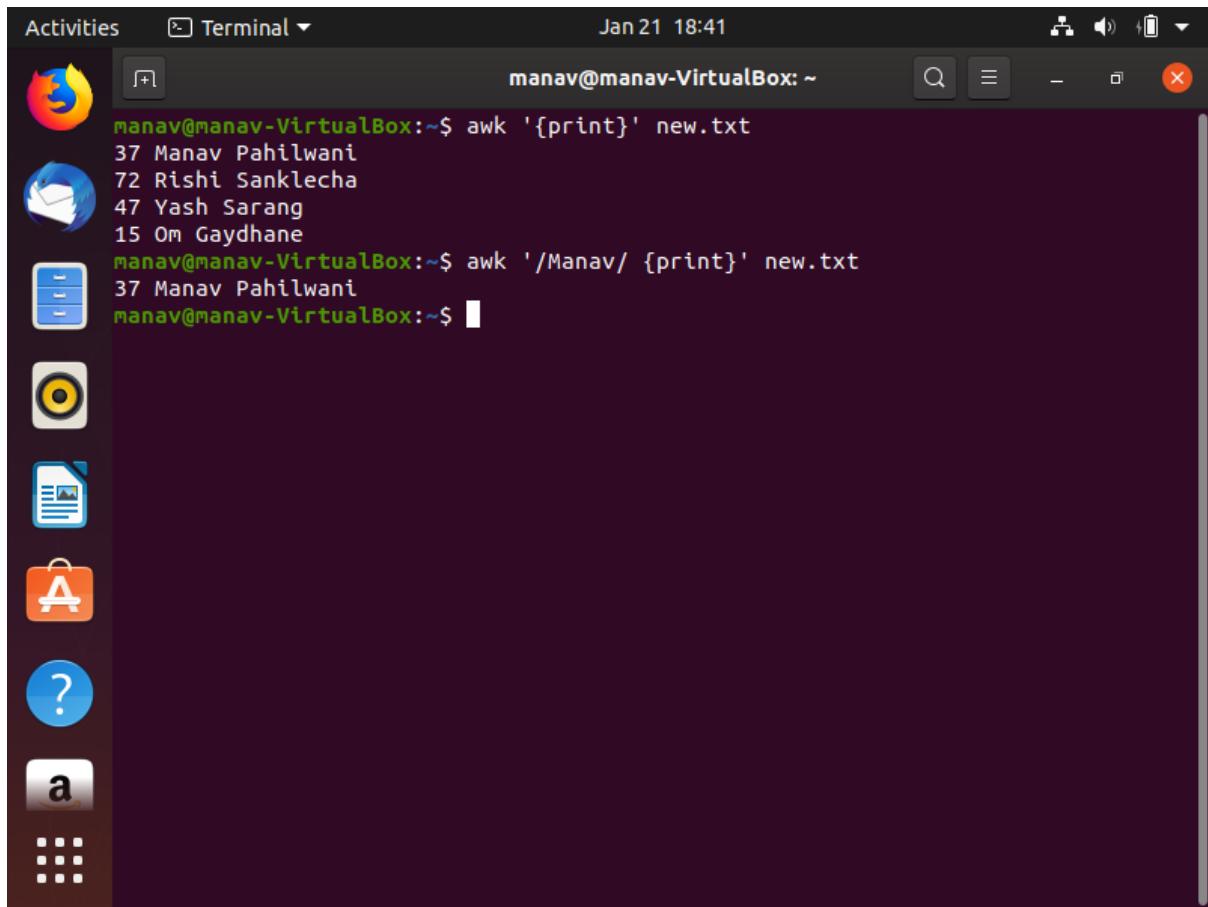
Grep :-



A screenshot of a Linux desktop environment, likely Ubuntu, showing a terminal window. The terminal window has a dark purple header bar with icons for activities, terminal, date and time (Jan 21 18:35), and system status. The main area of the terminal shows the following command-line session:

```
manav@manav-VirtualBox:~$ grep -i yash new.txt
47 Yash Sarang
manav@manav-VirtualBox:~$ grep -c manav new.txt
0
manav@manav-VirtualBox:~$ grep -i -c manav new.txt
1
manav@manav-VirtualBox:~$
```

Awk :-



A screenshot of a Linux desktop environment, likely Ubuntu, showing a terminal window. The terminal window is titled "Terminal" and has the command "manav@manav-VirtualBox: ~". The date and time at the top right are "Jan 21 18:41". The terminal content shows two awk commands being run on a file named "new.txt". The first command prints all lines, resulting in:

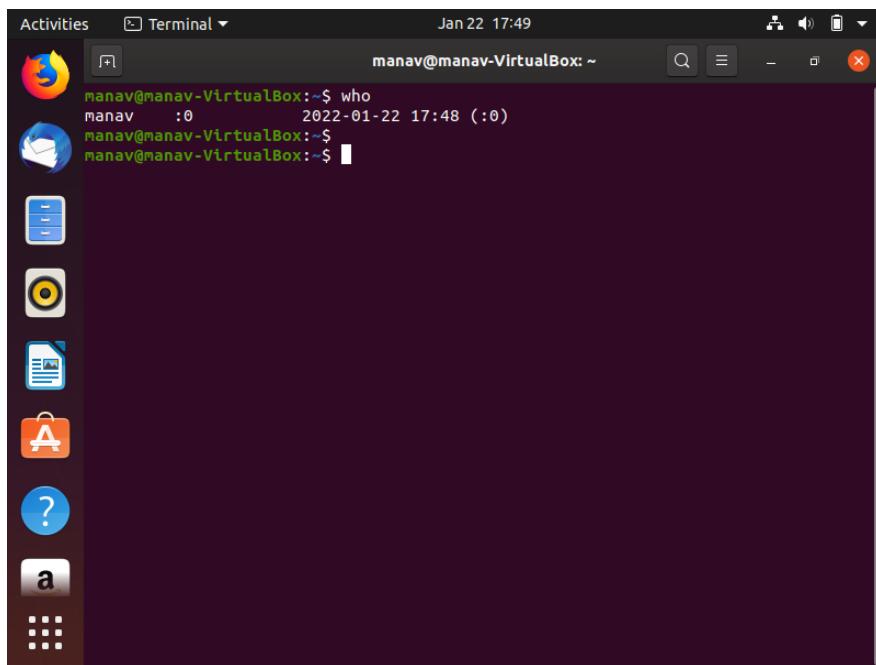
```
37 Manav Pahilwani  
72 Rishi Sanklecha  
47 Yash Sarang  
15 Om Gaydhane
```

The second command prints lines containing the string "/Manav/", resulting in:

```
37 Manav Pahilwani
```

After each command, the prompt "manav@manav-VirtualBox:~\$" appears.

Who :-

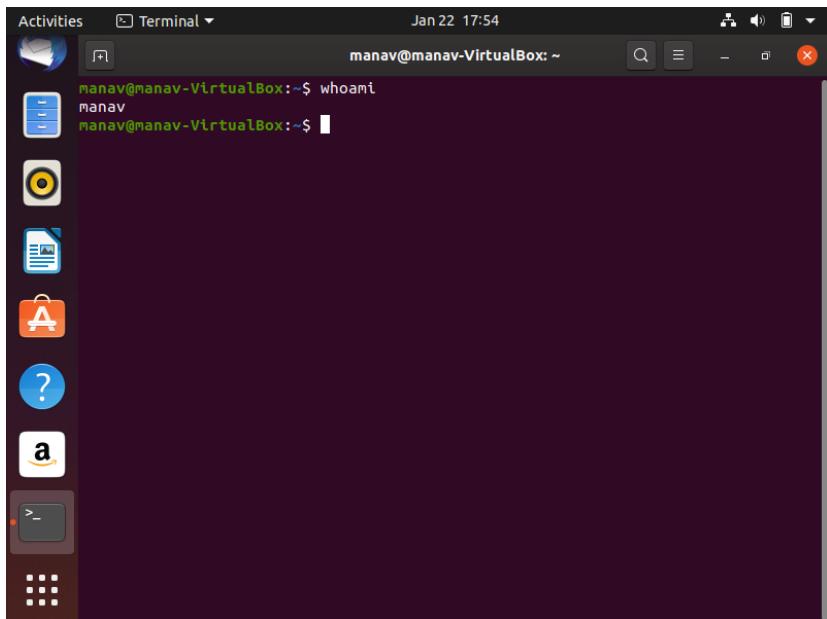


A screenshot of a Linux desktop environment, likely Ubuntu, showing a terminal window. The terminal window is titled "Terminal" and has the command "manav@manav-VirtualBox: ~". The date and time at the top right are "Jan 22 17:49". The terminal content shows the "who" command being run, which lists the current user and their session information:

```
manav :0 2022-01-22 17:48 (:0)
```

After the command, the prompt "manav@manav-VirtualBox:~\$" appears.

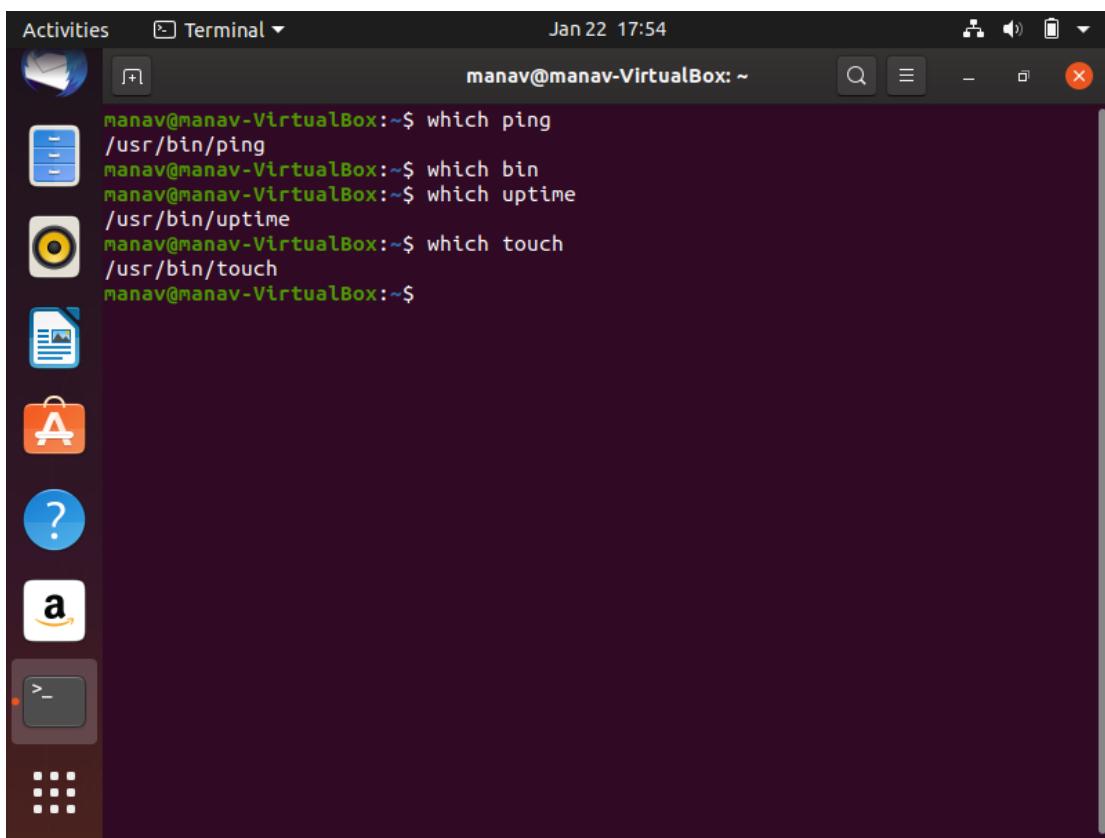
Whoami :-



A screenshot of an Ubuntu desktop environment. On the left is a dock with various icons: Dash, Home, Applications, Help, and others. A terminal window is open in the center, showing the command 'whoami' being run by the user 'manav'. The terminal output shows 'manav'.

```
Activities Terminal Jan 22 17:54
manav@manav-VirtualBox:~$ whoami
manav
manav@manav-VirtualBox:~$
```

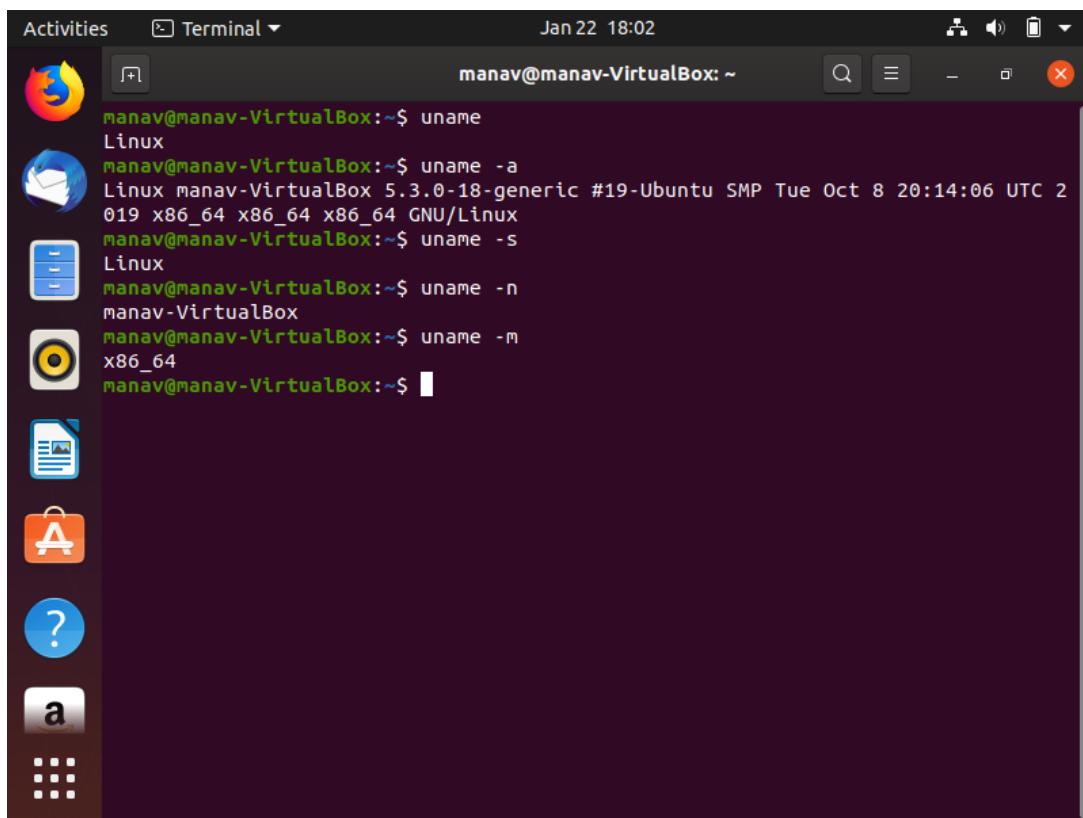
Which :-



A screenshot of an Ubuntu desktop environment. On the left is a dock with various icons. A terminal window is open in the center, showing the command 'which' run by the user 'manav' multiple times. The output shows the paths for 'ping', 'bin', 'uptime', and 'touch'.

```
Activities Terminal Jan 22 17:54
manav@manav-VirtualBox:~$ which ping
/usr/bin/ping
manav@manav-VirtualBox:~$ which bin
manav@manav-VirtualBox:~$ which uptime
/usr/bin/uptime
manav@manav-VirtualBox:~$ which touch
/usr/bin/touch
manav@manav-VirtualBox:~$
```

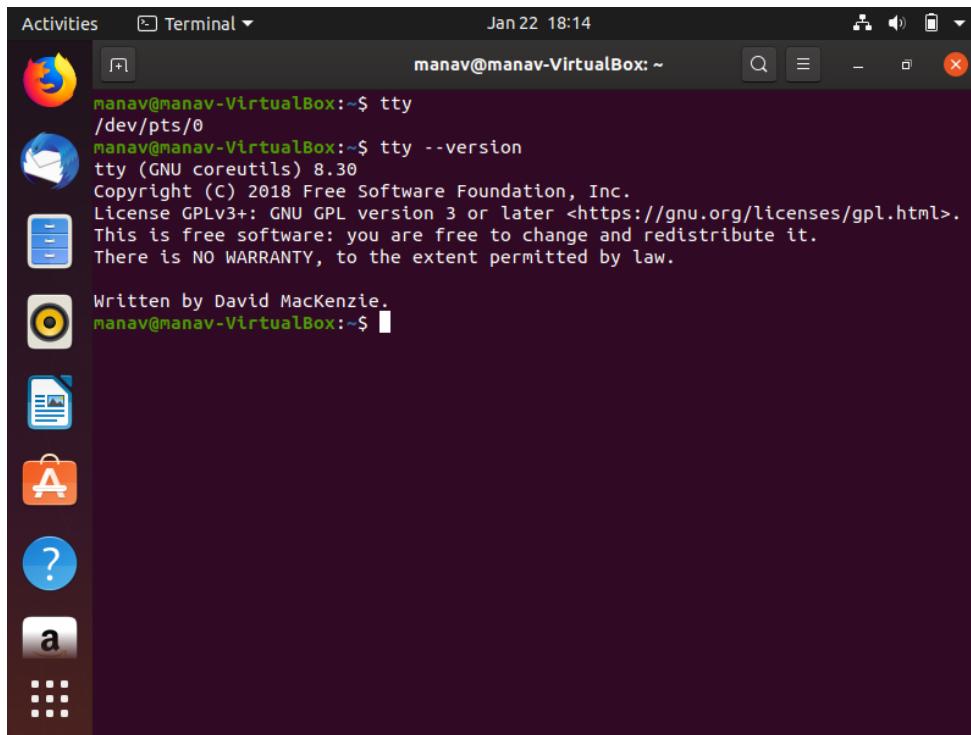
Uname :-



A screenshot of a Ubuntu desktop environment. On the left is a vertical dock with icons for the Dash, Home, Applications, Help, and Dash. The main window is a terminal window titled "Terminal". The terminal shows the following command-line session:

```
manav@manav-VirtualBox:~$ uname
Linux
manav@manav-VirtualBox:~$ uname -a
Linux manav-VirtualBox 5.3.0-18-generic #19-Ubuntu SMP Tue Oct 8 20:14:06 UTC 2
019 x86_64 x86_64 x86_64 GNU/Linux
manav@manav-VirtualBox:~$ uname -s
Linux
manav@manav-VirtualBox:~$ uname -n
manav-VirtualBox
manav@manav-VirtualBox:~$ uname -m
x86_64
manav@manav-VirtualBox:~$
```

Tty :-

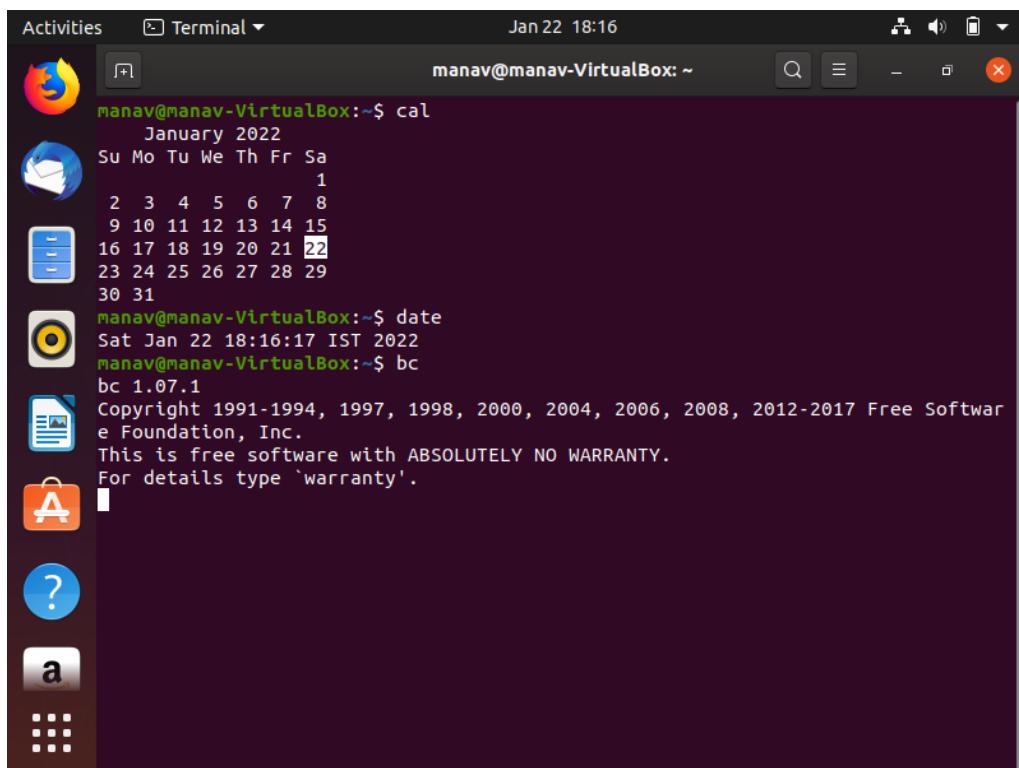


A screenshot of a Ubuntu desktop environment. On the left is a vertical dock with icons for the Dash, Home, Applications, Help, and Dash. The main window is a terminal window titled "Terminal". The terminal shows the following command-line session:

```
manav@manav-VirtualBox:~$ tty
/dev/pts/0
manav@manav-VirtualBox:~$ tty --version
tty (GNU coreutils) 8.30
Copyright (C) 2018 Free Software Foundation, Inc.
License GPLv3+: GNU GPL version 3 or later <https://gnu.org/licenses/gpl.html>.
This is free software: you are free to change and redistribute it.
There is NO WARRANTY, to the extent permitted by law.

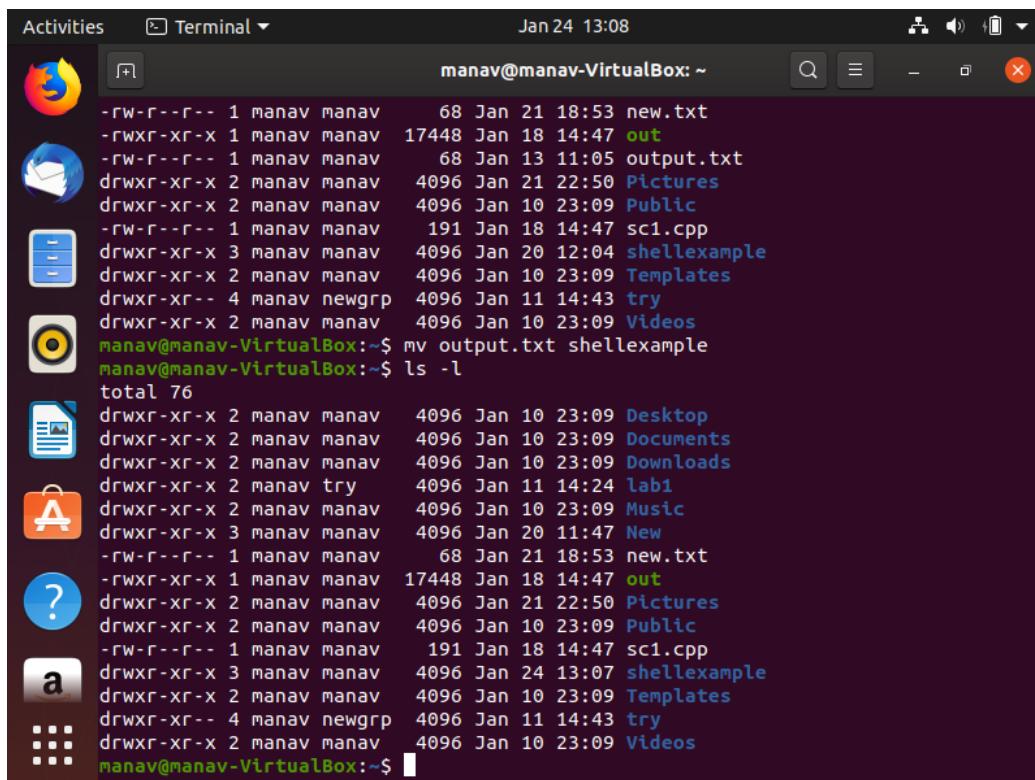
Written by David MacKenzie.
manav@manav-VirtualBox:~$
```

Date , Cal , Bc :-



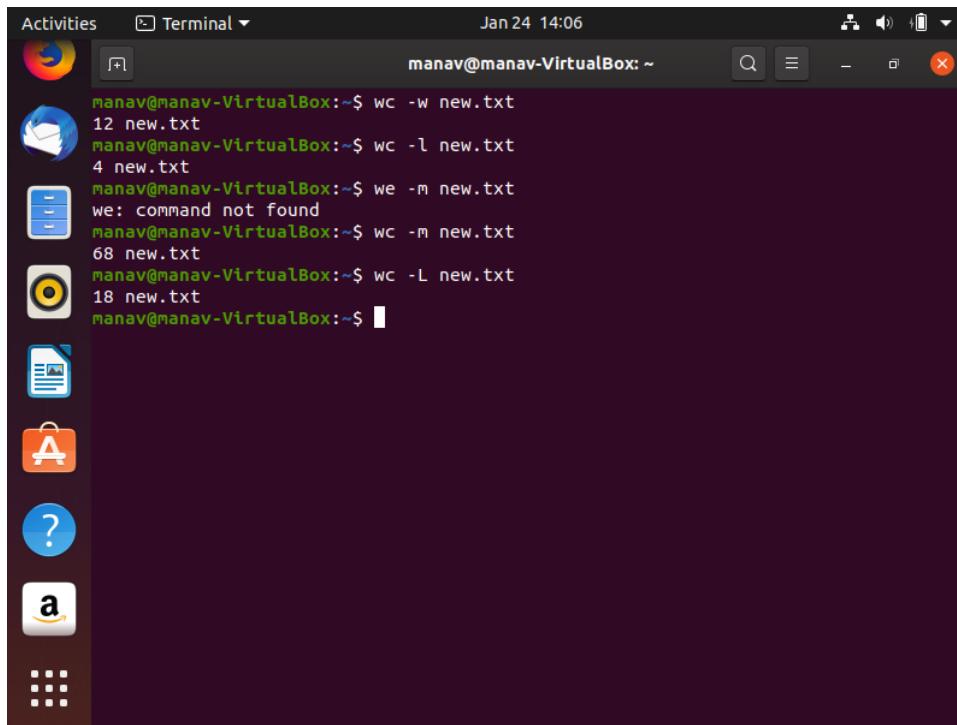
```
Activities Terminal Jan 22 18:16
manav@manav-VirtualBox:~$ cal
January 2022
Su Mo Tu We Th Fr Sa
      1
 2 3 4 5 6 7 8
 9 10 11 12 13 14 15
16 17 18 19 20 21 22
23 24 25 26 27 28 29
30 31
manav@manav-VirtualBox:~$ date
Sat Jan 22 18:16:17 IST 2022
manav@manav-VirtualBox:~$ bc
bc 1.07.1
Copyright 1991-1994, 1997, 1998, 2000, 2004, 2006, 2008, 2012-2017 Free Software Foundation, Inc.
This is free software with ABSOLUTELY NO WARRANTY.
For details type `warranty'.
```

Mv :-



```
Activities Terminal Jan 24 13:08
manav@manav-VirtualBox:~$ mv output.txt shellexample
manav@manav-VirtualBox:~$ ls -l
total 76
drwxr-xr-x 2 manav manav 4096 Jan 10 23:09 Desktop
drwxr-xr-x 2 manav manav 4096 Jan 10 23:09 Documents
drwxr-xr-x 2 manav manav 4096 Jan 10 23:09 Downloads
drwxr-xr-x 2 manav try 4096 Jan 11 14:24 lab1
drwxr-xr-x 2 manav manav 4096 Jan 10 23:09 Music
drwxr-xr-x 3 manav manav 4096 Jan 20 11:47 New
-rw-r--r-- 1 manav manav 68 Jan 21 18:53 new.txt
-rwrxr-xr-x 1 manav manav 17448 Jan 18 14:47 out
drwxr-xr-x 2 manav manav 4096 Jan 21 22:50 Pictures
drwxr-xr-x 2 manav manav 4096 Jan 10 23:09 Public
-rw-r--r-- 1 manav manav 191 Jan 18 14:47 sc1.cpp
drwxr-xr-x 3 manav manav 4096 Jan 20 12:04 shellexample
drwxr-xr-x 2 manav manav 4096 Jan 10 23:09 Templates
drwxr-xr-x 4 manav newgrp 4096 Jan 11 14:43 try
drwxr-xr-x 2 manav manav 4096 Jan 10 23:09 Videos
manav@manav-VirtualBox:~$ mv output.txt shellexample
manav@manav-VirtualBox:~$ ls -l
total 76
drwxr-xr-x 2 manav manav 4096 Jan 10 23:09 Desktop
drwxr-xr-x 2 manav manav 4096 Jan 10 23:09 Documents
drwxr-xr-x 2 manav manav 4096 Jan 10 23:09 Downloads
drwxr-xr-x 2 manav try 4096 Jan 11 14:24 lab1
drwxr-xr-x 2 manav manav 4096 Jan 10 23:09 Music
drwxr-xr-x 3 manav manav 4096 Jan 20 11:47 New
-rw-r--r-- 1 manav manav 68 Jan 21 18:53 new.txt
-rwrxr-xr-x 1 manav manav 17448 Jan 18 14:47 out
drwxr-xr-x 2 manav manav 4096 Jan 21 22:50 Pictures
drwxr-xr-x 2 manav manav 4096 Jan 10 23:09 Public
-rw-r--r-- 1 manav manav 191 Jan 18 14:47 sc1.cpp
drwxr-xr-x 3 manav manav 4096 Jan 24 13:07 shellexample
drwxr-xr-x 2 manav manav 4096 Jan 10 23:09 Templates
drwxr-xr-x 4 manav newgrp 4096 Jan 11 14:43 try
drwxr-xr-x 2 manav manav 4096 Jan 10 23:09 Videos
manav@manav-VirtualBox:~$
```

Wc :-

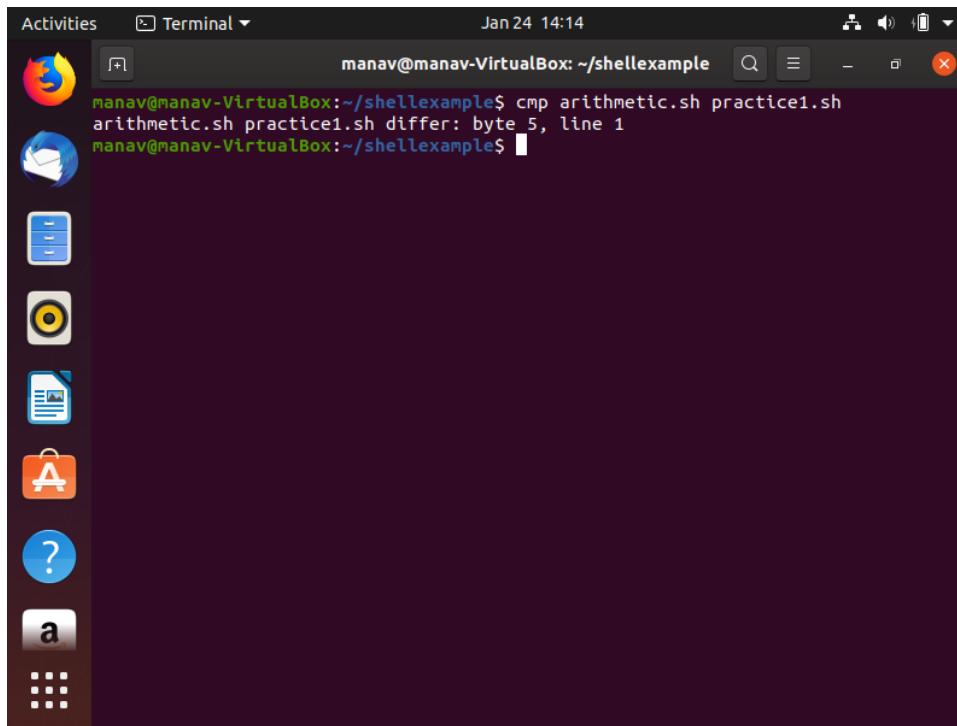


A screenshot of a Linux desktop environment, likely Ubuntu, showing a terminal window. The terminal window title is "Terminal" and the date and time are "Jan 24 14:06". The terminal content shows the user running the "wc" command on a file named "new.txt". The output of the commands is:

```
manav@manav-VirtualBox:~$ wc -w new.txt
12 new.txt
manav@manav-VirtualBox:~$ wc -l new.txt
4 new.txt
manav@manav-VirtualBox:~$ we -m new.txt
we: command not found
manav@manav-VirtualBox:~$ wc -m new.txt
68 new.txt
manav@manav-VirtualBox:~$ wc -L new.txt
18 new.txt
manav@manav-VirtualBox:~$
```

The desktop interface includes a dock with various icons for applications like the Dash, Home, and Dash to Dock.

Cmp :-

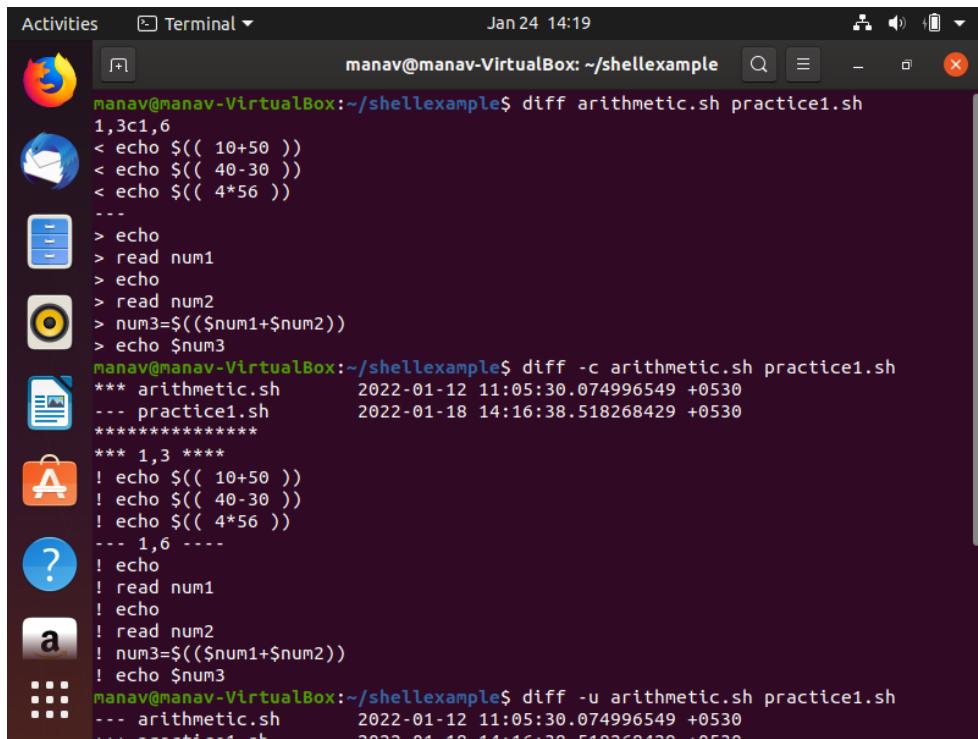


A screenshot of a Linux desktop environment, likely Ubuntu, showing a terminal window. The terminal window title is "Terminal" and the date and time are "Jan 24 14:14". The terminal content shows the user running the "cmp" command to compare two files, "arithmetic.sh" and "practice1.sh". The output of the command is:

```
manav@manav-VirtualBox:~/shellexample$ cmp arithmetic.sh practice1.sh
arithmetic.sh practice1.sh differ: byte 5, line 1
manav@manav-VirtualBox:~/shellexample$
```

The desktop interface includes a dock with various icons for applications like the Dash, Home, and Dash to Dock.

Diff :-



```
Activities Terminal Jan 24 14:19
manav@manav-VirtualBox:~/shellexample$ diff arithmetic.sh practice1.sh
1,3c1,6
< echo $(( 10+50 ))
< echo $(( 40-30 ))
< echo $(( 4*56 ))
---
> echo
> read num1
> echo
> read num2
> num3=$((num1+num2))
> echo $num3
manav@manav-VirtualBox:~/shellexample$ diff -c arithmetic.sh practice1.sh
*** arithmetic.sh      2022-01-12 11:05:30.074996549 +0530
--- practice1.sh        2022-01-18 14:16:38.518268429 +0530
*****
*** 1,3 ****
! echo $(( 10+50 ))
! echo $(( 40-30 ))
! echo $(( 4*56 ))
--- 1,6 ---
! echo
! read num1
! echo
! read num2
! num3=$((num1+num2))
! echo $num3
manav@manav-VirtualBox:~/shellexample$ diff -u arithmetic.sh practice1.sh
--- arithmetic.sh      2022-01-12 11:05:30.074996549 +0530
+++ practice1.sh        2022-01-18 14:16:38.518268429 +0530
```

Conclusion :- Thus we can use the following commands and get more options about them by using 'man' or '--help' commands and learn in depth about them.