DATE :

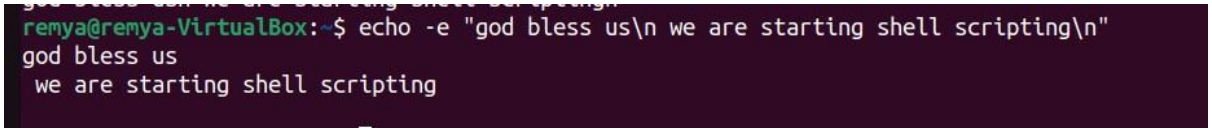
AIM: BASIC LINUX COMMANDS ACTIVITY QUESTIONS

1. Command to display the following message as such (Use ” and Newline).

"God! Bless us..
We are starting Shell Scripting"

OUTPUT

->echo -e "God! Bless us....\n We are starting shell scripting"

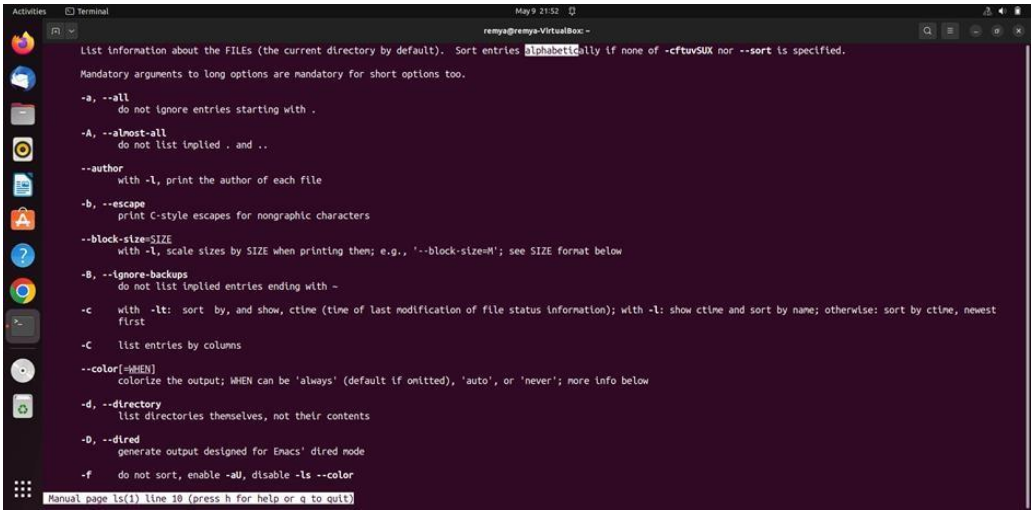


2. Get the manual page of ’ls’ command. Search for the word ”alphabetic”. Find the next occurrence and then find the previous occurrence.

OUTPUT

->man ls press '/' and type "alphabetic", press enter.

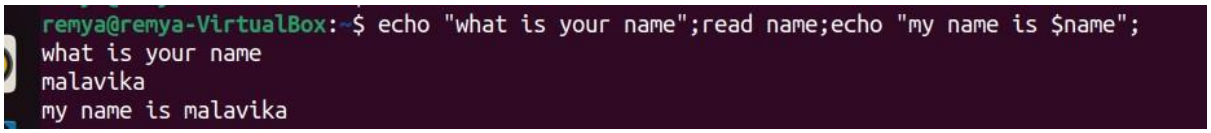
- Press n to find the next occurrence of “alphabetic”.
- Press N to find the previous occurrence of “alphabetic”.



3. Read your name from the keyboard and display it.

OUTPUT

->echo "Enter your name";read name; echo "The name entered is $name";



4. Create the directory structure dir1/dir4 and dir1/dir2/dir3 with a single command and then change directory to dir3.

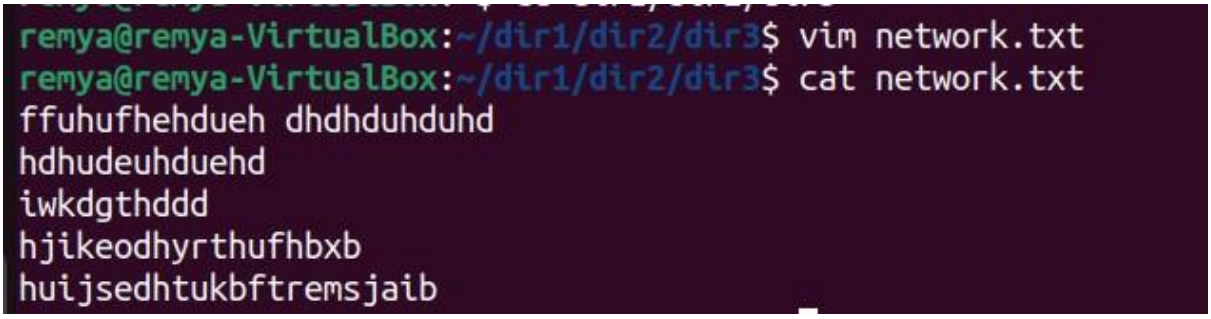
OUTPUT

->mkdir -p dir1/dir4 dir1/dir2/dir3
->cd dir1/dir2/dir3

5. Create some files using Vim.

OUTPUT

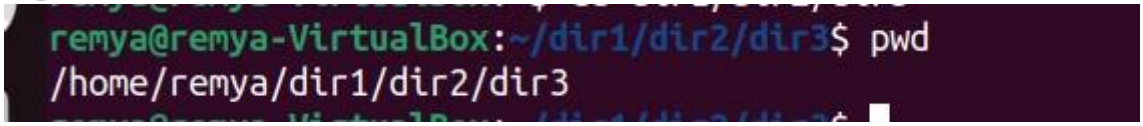
->vimtext.tx, vim text1.txt, vim text3.txt
-> this will create a new text file namedtext
->press "i" to get into insert mode, Type contents into the filepress
->'Esc' key to exit insert mode, type ":wq" to save and exit.



6. Display the current directory .

OUTPUT

->pwd



7. Listing Files and folders.

a. List the contents of dir1 (Qn. 4) and all its descendants.

b. List the contents of dir3 (Qn. 4) in

i. Alphabetical Order.

ii. Sorted on Time of modification, newest first. iii. Sorted on Size. iv. Reverse of all above.

v. Long listing of files Sorted on Size with smallest first and size.

vi. displayed in human readable form.

OUTPUT

-> a) ls –R dir1

-> b)

i) ls –h

ii) ls -lt

iii) ls -s

iv) ls –r

v) ls -lSr

vi) ls –hs

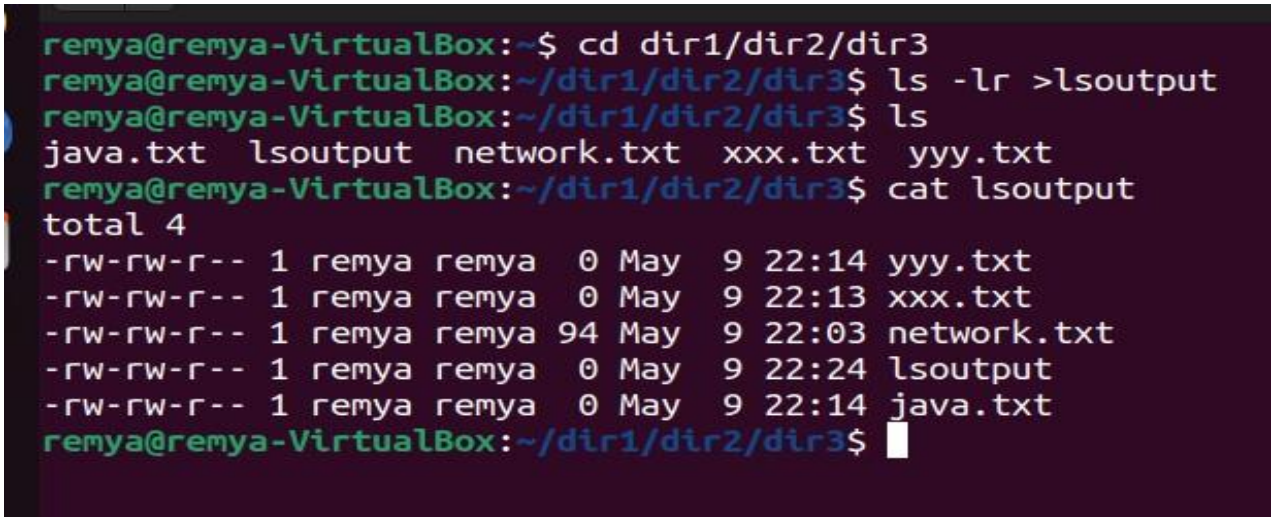
```
remya@remya-VirtualBox:~$ ls -R dir1
dir1:
dir2  dir4

dir1/dir2:
dir3

dir1/dir2/dir3:
network.txt

dir1/dir4:
```

```
remya@remya-VirtualBox:~/dir1/dir2/dir3$ ls
java.txt  network.txt  xxx.txt  yyy.txt
remya@remya-VirtualBox:~/dir1/dir2/dir3$ ls -h
java.txt  network.txt  xxx.txt  yyy.txt
remya@remya-VirtualBox:~/dir1/dir2/dir3$ ls -lt
total 4
-rw-rw-r-- 1 remya remya  0 May  9 22:14 java.txt
-rw-rw-r-- 1 remya remya  0 May  9 22:14 yyy.txt
-rw-rw-r-- 1 remya remya  0 May  9 22:13 xxx.txt
-rw-rw-r-- 1 remya remya 94 May  9 22:03 network.txt
remya@remya-VirtualBox:~/dir1/dir2/dir3$ ls -s
total 4
0 java.txt  4 network.txt  0 xxx.txt  0 yyy.txt
remya@remya-VirtualBox:~/dir1/dir2/dir3$ ls -r
yyy.txt  xxx.txt  network.txt  java.txt
remya@remya-VirtualBox:~/dir1/dir2/dir3$ ls -lSr
total 4
-rw-rw-r-- 1 remya remya  0 May  9 22:14 yyy.txt
-rw-rw-r-- 1 remya remya  0 May  9 22:13 xxx.txt
-rw-rw-r-- 1 remya remya  0 May  9 22:14 java.txt
-rw-rw-r-- 1 remya remya 94 May  9 22:03 network.txt
remya@remya-VirtualBox:~/dir1/dir2/dir3$ ls -h
java.txt  network.txt  xxx.txt  yyy.txt
```

8. Execute ls and store the output to a file lsoutput.

OUTPUT

->ls –lr > lsoutput

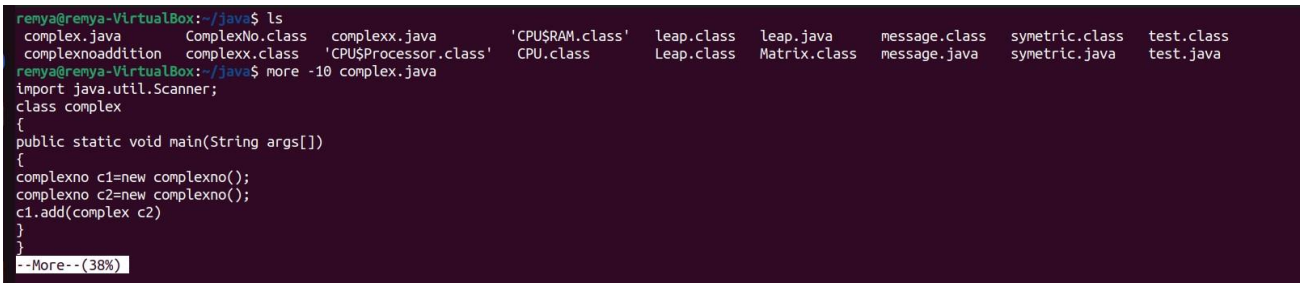


9. Display the file

a. starting with the first 10 lines.

OUTPUT

->more -10 complex.java



b. starting with the 10th line with provision for

i. Scrolling Up

-> more +10 complex.java

ii.Scrolling Up and Down

->less +10 complex.java

```
import java.util.Scanner;
class complex
{
public static void main(String args[])
{
complexno c1=new complexno();
complexno c2=new complexno();
c1.add(complex c2)
}
}
class complex {
int r,i;
Scanner read=new Scanner(System.in);
complexno()
{
System.out.println("enter the complex number");
r=read.nextint();
i=read.nextInt();
}
void add(complex c2);
{
int rr,ri;
rr=r+c2.r;
ri=i+c2.i;
System.out.println("sum="+rr+"+i"+ri);
}
}
~
~
~
~
~
~
~
~
~
~
(END)
```

10. Execute ls -l and add the output to lsoutput, at the end.

->ls –l >lsoutput

OUTPUT

```
remya@remya-VirtualBox:~/java$ ls -l
total 72
-rw-rw-r-- 1 remya remya  428 Apr  4 20:24  complex.java
-rw-rw-r-- 1 remya remya  531 Apr  4 20:21  complexnoaddition
-rw-rw-r-- 1 remya remya 1258 Apr  4 20:35  ComplexNo.class
-rw-rw-r-- 1 remya remya  361 Apr  4 20:35  complexx.class
-rw-rw-r-- 1 remya remya  569 Apr  4 20:33  complexx.java
-rw-rw-r-- 1 remya remya 1540 Apr  4 20:42 'CPU$Processor.class'
-rw-rw-r-- 1 remya remya 1437 Apr  4 20:42 'CPU$RAM.class'
-rw-rw-r-- 1 remya remya  637 Apr  4 20:42  CPU.class
-rw-rw-r-- 1 remya remya  801 Mar 30 21:06  leap.class
-rw-rw-r-- 1 remya remya  803 Mar 30 21:01  Leap.class
-rw-rw-r-- 1 remya remya  393 Mar 30 21:06  leap.java
-rw-rw-r-- 1 remya remya 1173 Mar 30 20:47  Matrix.class
-rw-rw-r-- 1 remya remya  423 Mar 26 15:46  message.class
-rw-rw-r-- 1 remya remya   99 Mar 26 15:46  message.java
-rw-rw-r-- 1 remya remya 1175 Mar 30 20:50  symetric.class
-rw-rw-r-- 1 remya remya  664 Mar 30 20:49  symetric.java
-rw-rw-r-- 1 remya remya  427 Apr  4 20:42  test.class
-rw-rw-r-- 1 remya remya 1193 Apr  4 20:41  test.java
remya@remya-VirtualBox:~/java$ ls -l >lsoutput
remya@remya-VirtualBox:~/java$ cat lsoutput
total 72
-rw-rw-r-- 1 remya remya  428 Apr  4 20:24 complex.java
-rw-rw-r-- 1 remya remya  531 Apr  4 20:21 complexnoaddition
-rw-rw-r-- 1 remya remya 1258 Apr  4 20:35 ComplexNo.class
-rw-rw-r-- 1 remya remya  361 Apr  4 20:35 complexx.class
-rw-rw-r-- 1 remya remya  569 Apr  4 20:33 complexx.java
-rw-rw-r-- 1 remya remya 1540 Apr  4 20:42 CPU$Processor.class
-rw-rw-r-- 1 remya remya 1437 Apr  4 20:42 CPU$RAM.class
-rw-rw-r-- 1 remya remya  637 Apr  4 20:42 CPU.class
-rw-rw-r-- 1 remya remya  801 Mar 30 21:06 leap.class
-rw-rw-r-- 1 remya remya  803 Mar 30 21:01 Leap.class
-rw-rw-r-- 1 remya remya  393 Mar 30 21:06 leap.java
-rw-rw-r-- 1 remya remya    0 May  9 22:40 lsoutput
-rw-rw-r-- 1 remya remya 1173 Mar 30 20:47 Matrix.class
-rw-rw-r-- 1 remya remya  423 Mar 26 15:46 message.class
-rw-rw-r-- 1 remya remya   99 Mar 26 15:46 message.java
-rw-rw-r-- 1 remya remya 1175 Mar 30 20:50 symetric.class
-rw-rw-r-- 1 remya remya  664 Mar 30 20:49 symetric.java
-rw-rw-r-- 1 remya remya  427 Apr  4 20:42 test.class
-rw-rw-r-- 1 remya remya 1193 Apr  4 20:41 test.java
remya@remya-VirtualBox:~/java$
```

11. Execute ls -l and feed the result to less command, to scroll through the directory listing.

OUTPUT

-> ls –l |less

```
remya@remya-VirtualBox:~/java$ ls -l |less
```

```
total 84
-rw-rw-r-- 1 remya remya  428 Apr  4 20:24 complex.java
-rw-rw-r-- 1 remya remya  531 Apr  4 20:21 complexnoaddition
-rw-rw-r-- 1 remya remya 1258 Apr  4 20:35 ComplexNo.class
-rw-rw-r-- 1 remya remya  361 Apr  4 20:35 complexx.class
-rw-rw-r-- 1 remya remya  569 Apr  4 20:33 complexx.java
-rw-rw-r-- 1 remya remya 1540 Apr  4 20:42 CPU$Processor.class
-rw-rw-r-- 1 remya remya 1437 Apr  4 20:42 CPU$RAM.class
-rw-rw-r-- 1 remya remya  637 Apr  4 20:42 CPU.class
-rw-rw-r-- 1 remya remya   56 May 11 21:01 file1
-rw-rw-r-- 1 remya remya   11 May 11 20:56 file2
-rw-rw-r-- 1 remya remya  801 Mar 30 21:06 leap.class
-rw-rw-r-- 1 remya remya  803 Mar 30 21:01 Leap.class
-rw-rw-r-- 1 remya remya  393 Mar 30 21:06 leap.java
-rw-rw-r-- 1 remya remya 1077 May  9 22:40 lsoutput
-rw-rw-r-- 1 remya remya 1173 Mar 30 20:47 Matrix.class
-rw-rw-r-- 1 remya remya  423 Mar 26 15:46 message.class
-rw-rw-r-- 1 remya remya   99 Mar 26 15:46 message.java
-rw-rw-r-- 1 remya remya 1175 Mar 30 20:50 symetric.class
-rw-rw-r-- 1 remya remya  664 Mar 30 20:49 symetric.java
-rw-rw-r-- 1 remya remya  427 Apr  4 20:42 test.class
-rw-rw-r-- 1 remya remya 1193 Apr  4 20:41 test.java
~
~
~
~
~
~
~
~
~
~
~
~
~
~
(END)
```

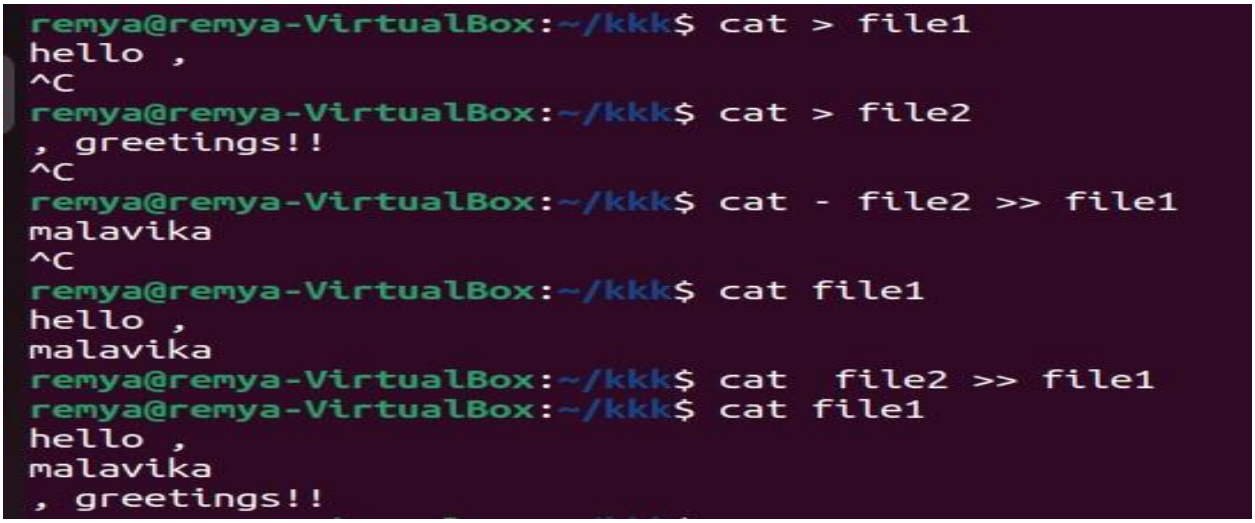
12. a. Create a file file1 containing the word ”Hello,” using cat and output redirection

b. Create another file file2 containing the word ”, Greetings!!”

c. Display the sentence
Hello,
Yourname
, Greetings!!
using cat, by concatenating file1, Standard Input and file2. Standard input may receive the contents from an echo or a read.

OUTPUT

->cat > file1
->cat > file2
-> cat – file2 >> file1
-> cat file2 >> file1
->cat file1



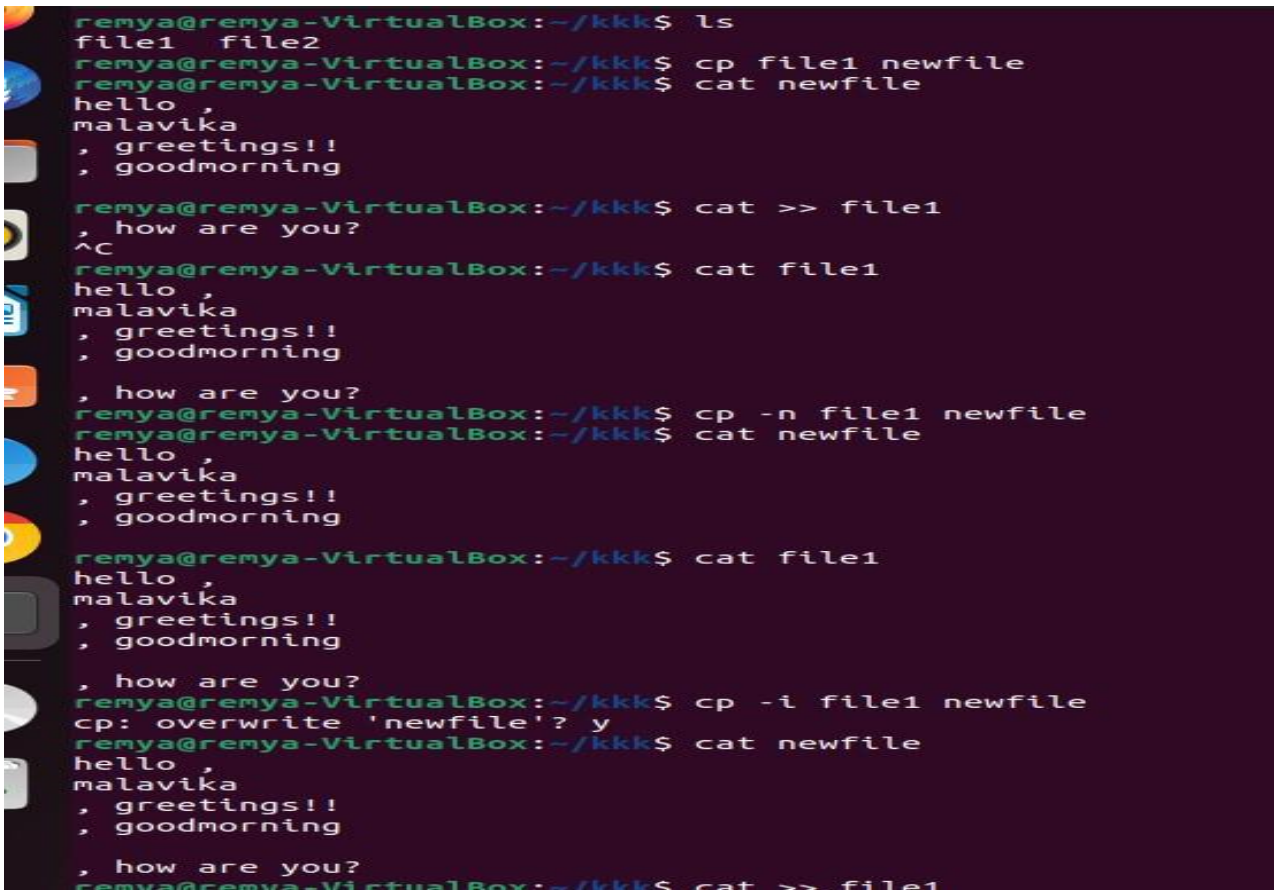
13.Copy the file file1 to newfile.

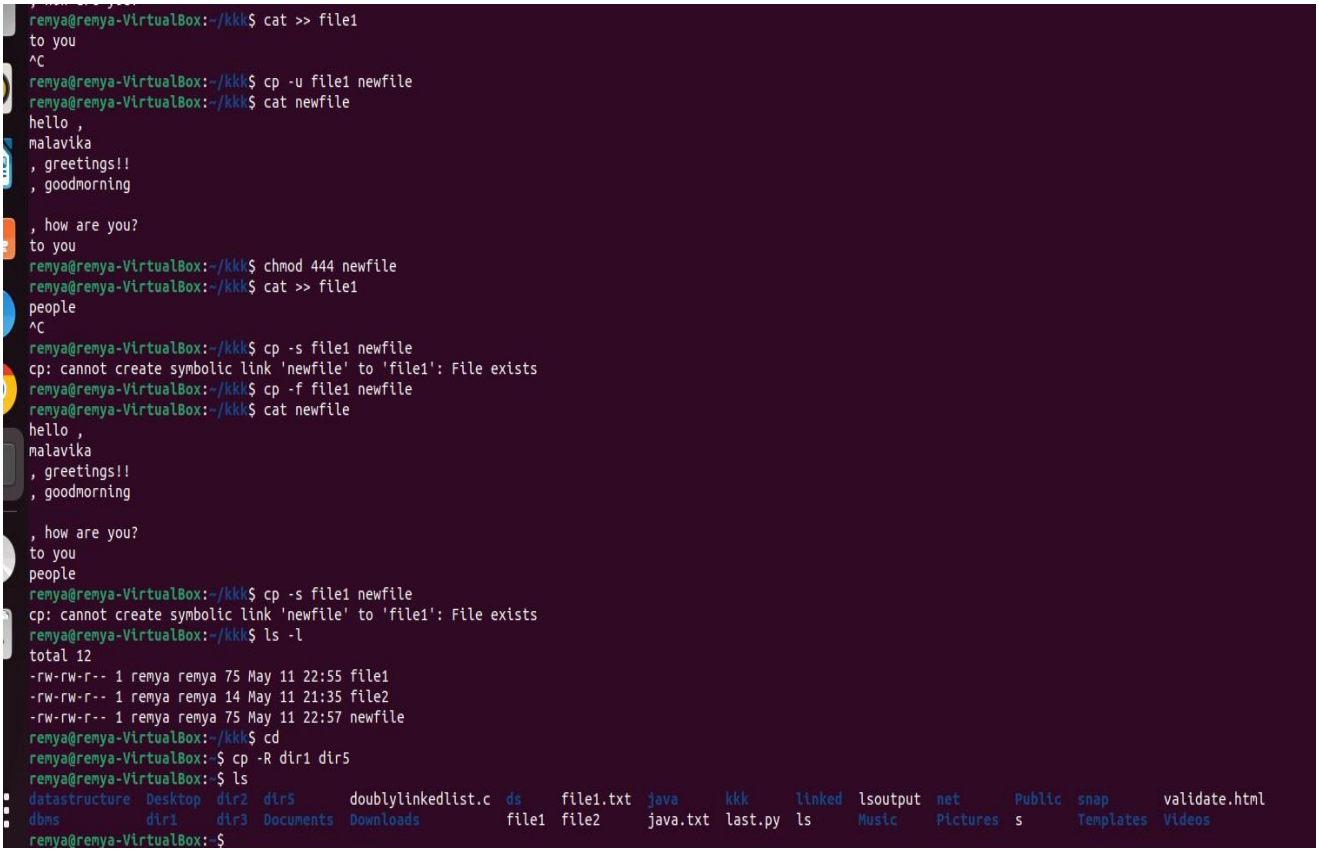
a. If newfile already exists, it should be replaced.
b. If newfile already exists, it should not be replaced.
c. If newfile already exists, it should be replaced, but only with the consent of the user.

d. If newfile already exists, it should be replaced only if its contents is older than that of file1.
e. Even if newfile is read only.
f. Create a link instead of copying.
g. Copy the entire directory tree from dir1 of Qn.4 to a new directory dir5.

OUTPUT

a)-> cp file1 newfile
b)-> cp –n file1 newfile
c)-> cp –i file1 newfile
d)-> cp –u file1 newfile
e)-> cp –f file1 newfile
f)-> ln file1 newfile
g)-> cp –R dir1 dir5





14. Create a new directory, dir6 inside dir1
    a. Move all files in dir5 into it.
    b. Rename the file newfile in Qn.13 to oldfile.
    c. Move the file file1 in Qn.12 to dir6 with the name file3
    d. Delete all files where the name starts with a vowel character, upper or lower case.
    e. Delete all files where the name is at least 3 characters long.
    f. Delete all hidden folders, and files.

OUTPUT

    h. ->mv dir1/dir5 dir1/dir6
    i. ->mv newfile oldfile
    j. -> mv file1 dir1/dir2/dir3/file3
    k. -> rm [a,e,i,o,u,A,E,I,O,U]*
    l. -> rm ???*

```
remya@remya-VirtualBox:~$ mkdir -p dir1/dir6
remya@remya-VirtualBox:~$ mv dir1/dir5 dir1/dir6
remya@remya-VirtualBox:~$ cd dir1/dir6
remya@remya-VirtualBox:~/dir1/dir6$ ls
dir5
remya@remya-VirtualBox:~/dir1/dir6$ cd ..
remya@remya-VirtualBox:~/dir1$ cd dir2/dir3
remya@remya-VirtualBox:~/dir1/dir2/dir3$ cd ..
remya@remya-VirtualBox:~/dir1/dir2$ cd dir4
bash: cd: dir4: No such file or directory
remya@remya-VirtualBox:~/dir1/dir2$ cd dir2/dir3/dir4
bash: cd: dir2/dir3/dir4: No such file or directory
remya@remya-VirtualBox:~/dir1/dir2$ cd dir2/dir4
bash: cd: dir2/dir4: No such file or directory
remya@remya-VirtualBox:~/dir1/dir2$ cd dir3
remya@remya-VirtualBox:~/dir1/dir2/dir3$ mv newfile oldfile
mv: cannot stat 'newfile': No such file or directory
remya@remya-VirtualBox:~/dir1/dir2/dir3$ touch newfile
remya@remya-VirtualBox:~/dir1/dir2/dir3$ ls
file1  file1.txt  file2  file3  java.txt  lsoutput  network.txt  newfile  oldfile  xxx.txt  yyy.txt
remya@remya-VirtualBox:~/dir1/dir2/dir3$ mv newfile oldfile
remya@remya-VirtualBox:~/dir1/dir2/dir3$ ls
file1  file1.txt  file2  file3  java.txt  lsoutput  network.txt  oldfile  xxx.txt  yyy.txt
remya@remya-VirtualBox:~/dir1/dir2/dir3$ mv file1 dir1/dir6/file3
mv: cannot move 'file1' to 'dir1/dir6/file3': No such file or directory
remya@remya-VirtualBox:~/dir1/dir2/dir3$ cd
remya@remya-VirtualBox:~$ mv file1 dir1/dir6/file3
mv: cannot stat 'file1': No such file or directory
remya@remya-VirtualBox:~$ touch file1
remya@remya-VirtualBox:~$ mv file1 dir1/dir6/file3
remya@remya-VirtualBox:~$ cd dir1/dir2/dir3
remya@remya-VirtualBox:~/dir1/dir2/dir3$ rm [a,e,i,o,u,A,E,I,O,U]*
rm: cannot remove 'oldfile': Is a directory
remya@remya-VirtualBox:~/dir1/dir2/dir3$ ls
file1  file1.txt  file2  file3  java.txt  lsoutput  network.txt  oldfile  xxx.txt  yyy.txt
remya@remya-VirtualBox:~/dir1/dir2/dir3$ rm ???*
rm: cannot remove 'file3': Is a directory
rm: cannot remove 'oldfile': Is a directory
remya@remya-VirtualBox:~/dir1/dir2/dir3$ ls
file3  oldfile
remya@remya-VirtualBox:~/dir1/dir2/dir3$ ls -a
.  ..  file3  oldfile
remya@remya-VirtualBox:~/dir1/dir2/dir3$ rm -rf .*
rm: refusing to remove '.' or '..' directory: skipping '.'
rm: refusing to remove '.' or '..' directory: skipping '..'
remya@remya-VirtualBox:~/dir1/dir2/dir3$ ls -a
.  ..  file3  oldfile
remya@remya-VirtualBox:~/dir1/dir2/dir3$
```

15. Create a file testfile1 using vim

OUTPUT

- > vim testfile1

a. Set line number

-> press esc then enter :set number

b. Type your name and address with district and pincode

-> enter i

c. Copy paste the contents 10 times.

-> placed the cursor in the end and enter “yy” then enter “10p”.

d. Replace all occurrence of your district with a neighbouring district.

-> press esc and type “ :%s/malapuram/ernakulam/gi”.

```
remya@remya-VirtualBox:~$ vim testfile2
```

```
malavika,xxxyyyzzz,malapuram,689623
malavika,xxxyyyzzz,malapuram,689623
malavika,xxxyyyzzz,malapuram,689623
malavika,xxxyyyzzz,malapuram,689623
malavika,xxxyyyzzz,malapuram,689623
malavika,xxxyyyzzz,malapuram,689623
malavika,xxxyyyzzz,malapuram,689623
malavika,xxxyyyzzz,malapuram,689623
malavika,xxxyyyzzz,malapuram,689623
malavika,xxxyyyzzz,malapuram,689623
malavika,xxxyyyzzz,malapuram,689623
~
10 more lines
```

```
malavika,xxxyyyzzz,ernakulam,689623
malavika,xxxyyyzzz,ernakulam,689623
malavika,xxxyyyzzz,ernakulam,689623
malavika,xxxyyyzzz,ernakulam,689623
malavika,xxxyyyzzz,ernakulam,689623
malavika,xxxyyyzzz,ernakulam,689623
malavika,xxxyyyzzz,ernakulam,689623
malavika,xxxyyyzzz,ernakulam,689623
malavika,xxxyyyzzz,ernakulam,689623
malavika,xxxyyyzzz,ernakulam,689623
malavika,xxxyyyzzz,ernakulam,689623
~
11 substitutions on 11 lines
```

16. Create 2 files testfile2 and testfile3 using Vim.

a. Modify the permissions of testfile2 using symbolic mode.

i. Add read permission to other

ii. Revoke write from owner

iii. Set only execute to Group

iv. Add write to owner, revoke read from others and set read only to group

v. Set read and write to all

OUTPUT

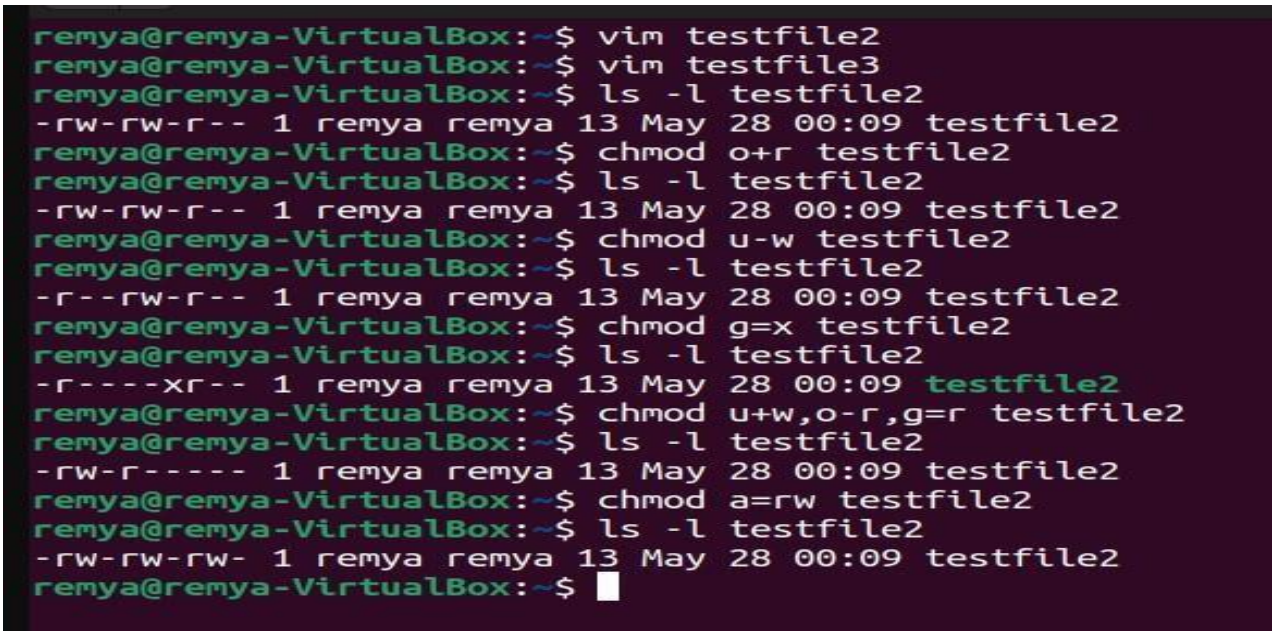
i. -> chmod o+r testfile2

ii. ->chmod u-w testfile2

iii.-> chmod g=x testfile2

iv. ->chmod u+w,o-r,g=r testfile2

v. ->chmod a=rw testfile2

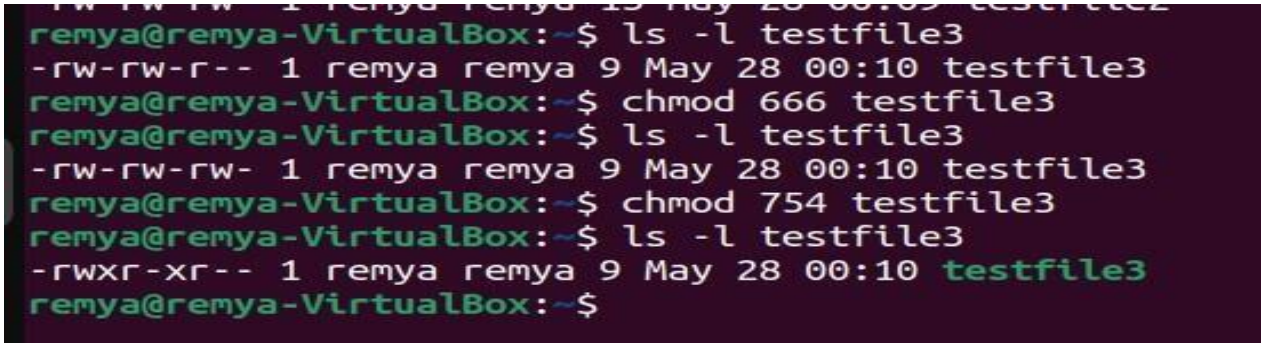


b. Modify the permissions of testfile3 using numeric mode i Set read and write to all ii set read,write and execute to owner, read and execute to group and read only to others

OUTPUT

i. ->chmod 666 testfile3

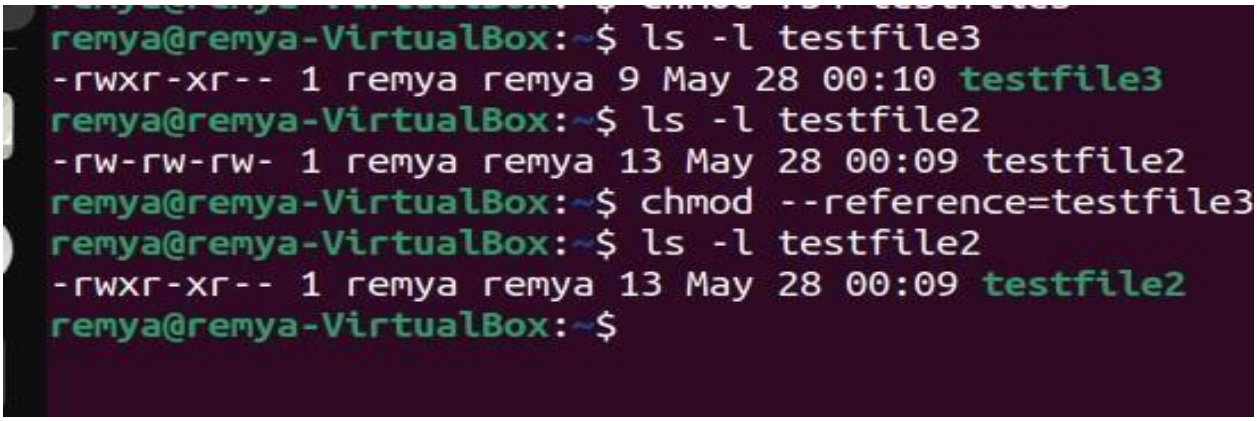
ii. ->chmod 754 testfile3



c. Set the permissions of testfile2 the same as that of testfile3.

OUTPUT

-> chmod --reference=testfile3 testfile2



17. Using cut filter

a.Display the filenames from ls -l assuming filenames start at column 44.

OUTPUT

```
remya@remya-VirtualBox:~$ cd java
remya@remya-VirtualBox:~/java$ ls -l
total 84
-rw-rw-r-- 1 remya remya  428 Apr  4 20:24  complex.java
-rw-rw-r-- 1 remya remya  531 Apr  4 20:21  complexnoaddition
-rw-rw-r-- 1 remya remya 1258 Apr  4 20:35  ComplexNo.class
-rw-rw-r-- 1 remya remya  361 Apr  4 20:35  complexx.class
-rw-rw-r-- 1 remya remya  569 Apr  4 20:33  complexx.java
-rw-rw-r-- 1 remya remya 1540 Apr  4 20:42 'CPU$Processor.class'
-rw-rw-r-- 1 remya remya 1437 Apr  4 20:42 'CPU$RAM.class'
-rw-rw-r-- 1 remya remya  637 Apr  4 20:42  CPU.class
-rw-rw-r-- 1 remya remya   56 May 11 21:01  file1
-rw-rw-r-- 1 remya remya   11 May 11 20:56  file2
-rw-rw-r-- 1 remya remya  801 Mar 30 21:06  leap.class
-rw-rw-r-- 1 remya remya  803 Mar 30 21:01  Leap.class
-rw-rw-r-- 1 remya remya  393 Mar 30 21:06  leap.java
-rw-rw-r-- 1 remya remya 1077 May  9 22:40  lsoutput
-rw-rw-r-- 1 remya remya 1173 Mar 30 20:47  Matrix.class
-rw-rw-r-- 1 remya remya  423 Mar 26 15:46  message.class
-rw-rw-r-- 1 remya remya   99 Mar 26 15:46  message.java
-rw-rw-r-- 1 remya remya 1175 Mar 30 20:50  symetric.class
-rw-rw-r-- 1 remya remya  664 Mar 30 20:49  symetric.java
-rw-rw-r-- 1 remya remya  427 Apr  4 20:42  test.class
-rw-rw-r-- 1 remya remya 1193 Apr  4 20:41  test.java
remya@remya-VirtualBox:~/java$ ls -l|cut -c 40-

:24 complex.java
:21 complexnoaddition
:35 ComplexNo.class
:35 complexx.class
:33 complexx.java
:42 CPU$Processor.class
:42 CPU$RAM.class
:42 CPU.class
:01 file1
:56 file2
:06 leap.class
:01 Leap.class
:06 leap.java
:40 lsoutput
:47 Matrix.class
:46 message.class
:46 message.java
:50 symetric.class
:49 symetric.java
:42 test.class
:41 test.java
remya@remya-VirtualBox:~/java$
```

a. -> ls -l|cut -c 40-

b. Display user Id and user name of all users from /etc/passwd.(fields 1 and 3).

-> cut -d: -f 1,3 /etc/passwd

```
remya@remya-VirtualBox:~/java$ cut -d: -f 1,3 /etc/passwd
root:0
daemon:1
bin:2
sys:3
sync:4
games:5
man:6
lp:7
mail:8
news:9
uucp:10
proxy:13
www-data:33
backup:34
list:38
irc:39
gnats:41
nobody:65534
systemd-network:100
systemd-resolve:101
messagebus:102
systemd-timesync:103
syslog:104
_apt:105
tss:106
uuidd:107
systemd-oom:108
tcpdump:109
```

18. Using tr

a. Piped with cat, display all that are entered in Uppercase

b. Squeeze all space characters in ls -l and cut the size and name of all files.

c. Piped with cat, change the output of Qn.12c to Hello, yourname, Greetings!!

OUTPUT

a. ->cat sample|tr [:lower:] [:upper:]

b. ->ls -l|tr -s ' '|cut -d' ' -f 5,9

c. -> cat file1 | tr -d "\n"

```
remya@remya-VirtualBox:~/java$ cd
remya@remya-VirtualBox:~$ cat > sample
malavika manohar
^C
remya@remya-VirtualBox:~$ cat sample|tr [:lower:] [:upper:]
MALAVIKA MANOHAR
remya@remya-VirtualBox:~$ ls -l|tr -s ' '|cut -d ' ' -f 5,9

4096 datastructure
4096 dbms
4096 Desktop
4096 dir1
4096 dir2
4096 dir3
4096 dir5
4096 Documents
4404 doublylinkedlist.c
4096 Downloads
4096 ds
12 file1.txt
4096 java
39 java.txt
4096 kkk
52 last.py
4096 linked
0 ls
1130 lsoutput
4096 Music
4096 net
4096 Pictures
4096 Public
9934 s
17 sample
4096 snap
4096 Templates
13 testfile2
9 testfile3
37 testfile5
1059 validate.html
```

```
remya@remya-VirtualBox:~/dir1$ cat file1
hello ,
malavika
 , greetings!!!
remya@remya-VirtualBox:~/dir1$ cat file1 | tr -d "\n"
hello ,malavika , greetings!!!remya@remya-VirtualBox:~/dir1$
```

19. Create 3 files containing name, age and marks of 5 students respectively and paste them into a single csv (comma separated values) file.

OUTPUT

-> paste -d "," name age marks >> csvfile

```
remya@remya-VirtualBox:~$ cd dir1
remya@remya-VirtualBox:~/dir1$ cat file1
hello ,
malavika
 , greetings!!!
remya@remya-VirtualBox:~/dir1$ cat > name
malu
ponnu
arya
chikku
revathi
^C
remya@remya-VirtualBox:~/dir1$ cat > age
12
14
16
18
22
^C
remya@remya-VirtualBox:~/dir1$ cat > marks
78
77
98
99
98
^C
remya@remya-VirtualBox:~/dir1$ touch csvfile
remya@remya-VirtualBox:~/dir1$ paste -d ","  name age marks >> csvfile
remya@remya-VirtualBox:~/dir1$ cat csvfile
malu,12,78
ponnu,14,77
arya,16,98
chikku,18,99
revathi,22,98
remya@remya-VirtualBox:~/dir1$
```

20. Using find

a. piped with wc, display the number of files in a directory that starts with the letter a

b. Delete all .py files in the parent directory.

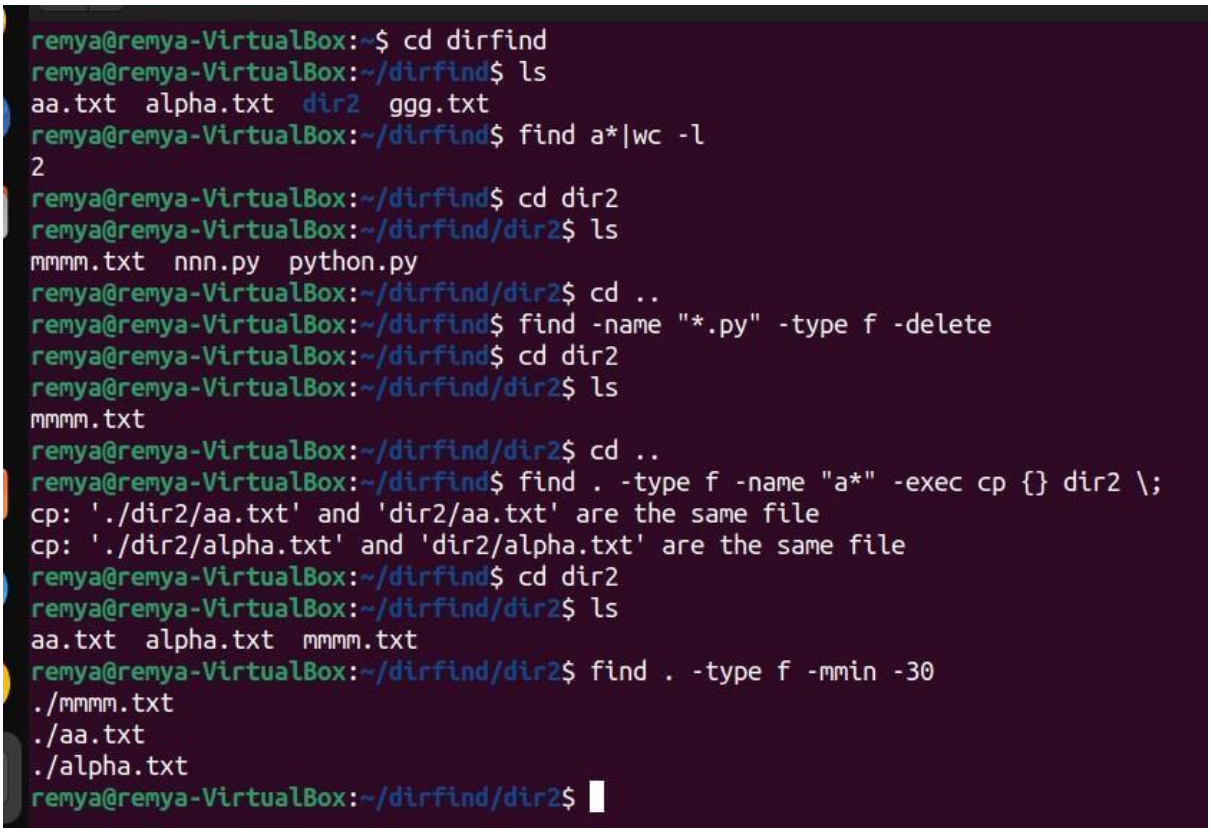
c. Copy all files that starts with “a” to dir2.

d. Display files in the current directory that were modified in the last 30 minutes.

OUTPUT

a. -> find a*|wc -l

b. -> find -name "*.py" -type f -delete
c. -> find . -type f -name "a*" -exec cp {} dir2 \;
d. -> find . -type f -mmin -30



21. Use head and tail piped with cat /etc/passwd to display the details of

a. The first 12 users in the system.

b. The last 7 users in the system.

c. All but the first 3.

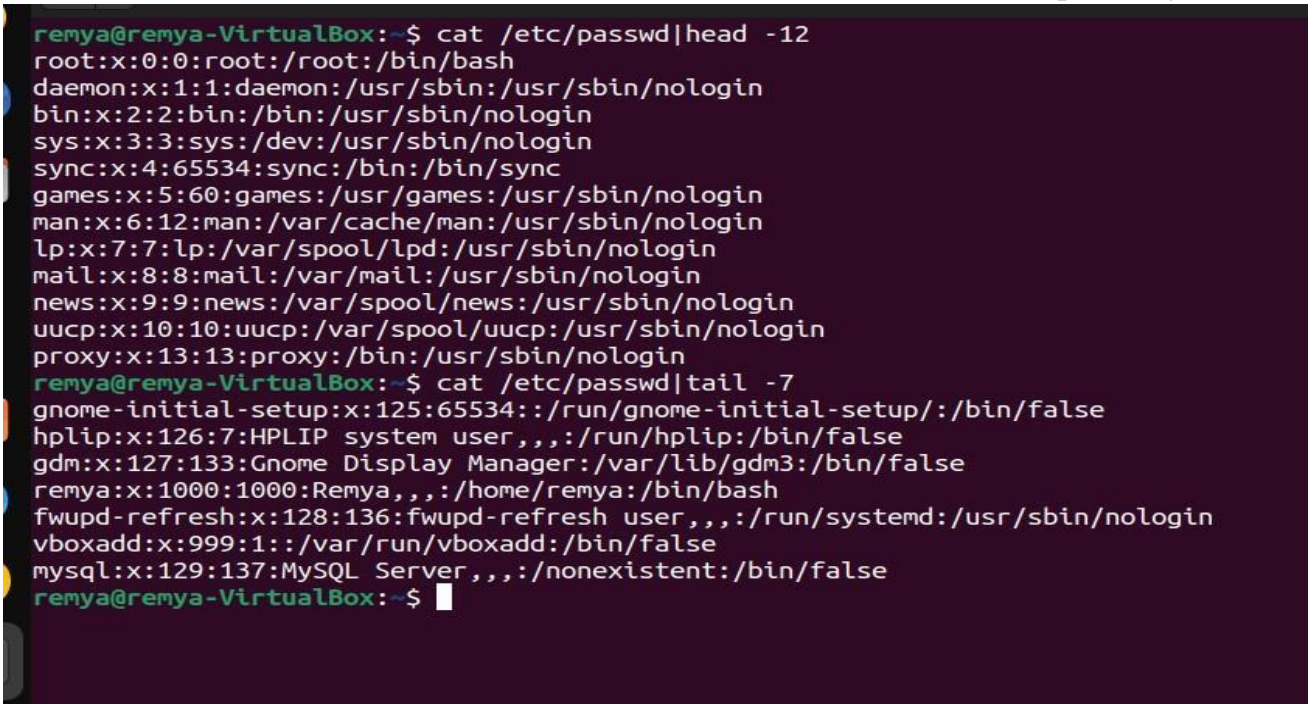
d. All but the last 5.

e. Only the 9th.

OUTPUT

a. -> cat /etc/passwd|head -12

b. -> cat /etc/passwd|tail -7



c. -> cat /etc/passwd|tail +4

d. -> cat /etc/passwd|head -n -5

```
remya@remya-VirtualBox:~$ cat /etc/passwd|head -n -5
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
```

e. -> cat /etc/passwd|head -9|tail -1

```
remya@remya-VirtualBox:~$ cat /etc/passwd|head -9|tail -1
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
remya@remya-VirtualBox:~$
```

22. Use grep to

a. Display all lines in a file that contains the string “abc”.

b. Display all lines in a file that does not contain the string “abc”.

c. List names of all .py files that contains a print.

d. List names of all .py files that does not contain a print.

e. Display the number of import statements in each .py file.

f. Display the Line numbers of print in a .py file.

g. List names of all files in the directory tree that contain a print

h. Display the context of every print in a .py file. i.e., n lines before and every print.

i. ls -l starts with d for directories. Use ls -l piped with grep & cut to display the names of all directories in the current directory.

OUTPUT

a. -> grep abc file.txt

b. -> grep -v abc file.txt

c. -> grep -l “print” *.py

d. -> grep -L “print” *.py

e. -> grep -c “import” *.py

f. -> grep -n “print” even.py

g. -> grep -lR “print”

```
remya@remya-VirtualBox:~/dir1/dir2$ cat file.txt
abc
abc is a string
these are english alphabets
remya@remya-VirtualBox:~/dir1/dir2$ grep  abc file.txt
abc
abc is a string
remya@remya-VirtualBox:~/dir1/dir2$ grep  -v abc  file.txt
these are english alphabets
remya@remya-VirtualBox:~/dir1/dir2$ grep -l "print" *.py
even.py
odd.py
palindrome.py
remya@remya-VirtualBox:~/dir1/dir2$ grep -L "print" *.py
sample.py
remya@remya-VirtualBox:~/dir1/dir2$ grep -c "import" *.py
even.py:0
odd.py:0
palindrome.py:1
sample.py:0
remya@remya-VirtualBox:~/dir1/dir2$ ls
dir3  even.py  file1.txt  file2.txt  file.txt  odd.py  palindrome.py  sample.py
remya@remya-VirtualBox:~/dir1/dir2$ cat even.py
n=int(input("enter a number"))
area=n*n
print(area)
remya@remya-VirtualBox:~/dir1/dir2$ grep -n "print" even.py
3:print(area)
remya@remya-VirtualBox:~/dir1/dir2$ grep -lR "print"
palindrome.py
odd.py
even.py
```

h. -> grep “print” palindrome.py -A 1

-> grep “print” palindrome.py -B 5 i.

-> ls –l

-> ls -l | grep “^d” | cut –d “ “ –f 10

```
remya@remya-VirtualBox:~/dir1/dir2$ ls
dir3  even.py  file1.txt  file2.txt  file.txt  odd.py  palindrome.py  sample.py
remya@remya-VirtualBox:~/dir1/dir2$ cat palindrome.py
import java.util.Scanner;
class complex
{
public static void main(String args[])
{
complexno c1=new complexno();
complexno c2=new complexno();
c1.add(complex c2)
}
}
class complex {
int r,i;
Scanner read=new Scanner(System.in);
complexno()
{
System.out.println("enter the complex number");
r=read.nextint();
i=read.nextInt();
}
void add(complex c2);
{
int rr,ri;
rr=r+c2.r;
ri=i+c2.i;
System.out.println("sum="+rr+"+i"+ri);
}
}
remya@remya-VirtualBox:~/dir1/dir2$ grep "print" palindrome.py -A 1
System.out.println("enter the complex number");
r=read.nextint();
--
System.out.println("sum="+rr+"+i"+ri);
}
remya@remya-VirtualBox:~/dir1/dir2$ grep "print" palindrome.py -B 5
class complex {
int r,i;
Scanner read=new Scanner(System.in);
complexno()
{
System.out.println("enter the complex number");
--
void add(complex c2);
{
```

```
remya@remya-VirtualBox:~/dir1/dir2$ ls -l
total 28
drwxrwxr-x 4 remya remya 4096 May 22 01:21 dir3
-rw-rw-r-- 1 remya remya   52 May 29 22:01 even.py
-rw-rw-r-- 1 remya remya    0 May  9 23:52 file1.txt
-rw-rw-r-- 1 remya remya   10 May  9 23:52 file2.txt
-rw-rw-r-- 1 remya remya   49 May 29 21:54 file.txt
-rw-rw-r-- 1 remya remya   52 May 29 22:02 odd.py
-rw-rw-r-- 1 remya remya  428 May 29 22:04 palindrome.py
-rw-rw-r-- 1 remya remya   25 May 29 22:05 sample.py
```

23. Using expr

a. Read two integers X and Y. Display the sum, difference, product, quotient and remainder of these variables.

b. Read a string, S, a position, p and a length l. Display the substring of length l starting at position p from the string S.

OUTPUT

a) -> read -p "enter two numbers:" x y
-> echo "sum is : `expr $x + $y` "
-> echo "difference is : `expr $x - $y` "
-> echo "product is : `expr $x \* $y` "
-> echo "quotient is : `expr $x / $y` "
->echo "remainder is : `expr $x % $y` "

b) -> read -p "enter a string: " s
-> read -p "enter the position: " p
-> read -p "enter the length: " l
-> echo "substring : `expr substr $s $p $l`"

```
remya@remya-VirtualBox:~$ read -p "enter two numbers:" x y
enter two numbers:12 5
remya@remya-VirtualBox:~$ echo "sum is : `expr $x + $y` "
sum is : 17
remya@remya-VirtualBox:~$ echo "difference is : `expr $x - $y` "
difference is : 7
remya@remya-VirtualBox:~$ echo "product is : `expr $x \* $y` "
product is : 60
remya@remya-VirtualBox:~$ echo "quotient is : `expr $x / $y` "
quotient is : 2
remya@remya-VirtualBox:~$ echo "remainder is : `expr $x % $y` "
remainder is : 2
remya@remya-VirtualBox:~$ read -p "enter a string: " s
enter a string: notebook
remya@remya-VirtualBox:~$ read -p "enter the position: " p
enter the position: 5
remya@remya-VirtualBox:~$ read -p "enter the length: " l
enter the length: 4
remya@remya-VirtualBox:~$ echo "substring : `expr substr $s $p $l`"
substring : book
remya@remya-VirtualBox:~$
```

24. a. Add a normal user, user1. Create (if it does not exist) the folder /user1 and set /user1 as the home directory of user1. Also set /bin/bash as the login shell (Use a single command).

b. Modify the user account of user1, to expire it after a specific date.

c. Change the owner and group of the directory tree from dir2 and all its contents to user1.

d. Delete the user account user1

i. By retaining the home folder.
ii. By deleting the home folder.

OUTPUT

a. ->sudo useradd -s /bin/bash -m -d /home/u_ser1 u_ser1

-> sudo chage –l u_ser1

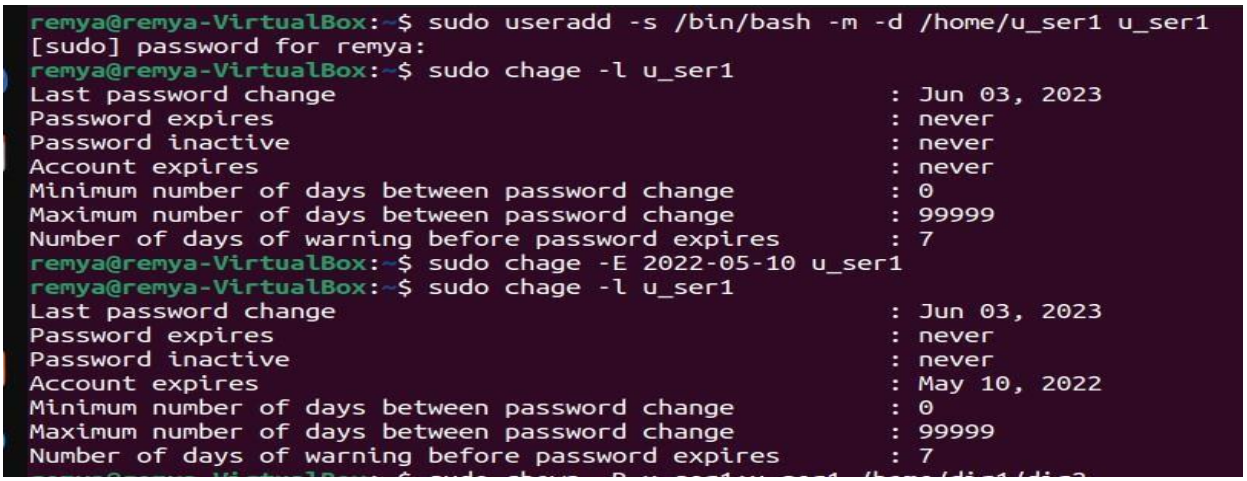
b. -> sudo chage -E 2022-05-10 u_ser1

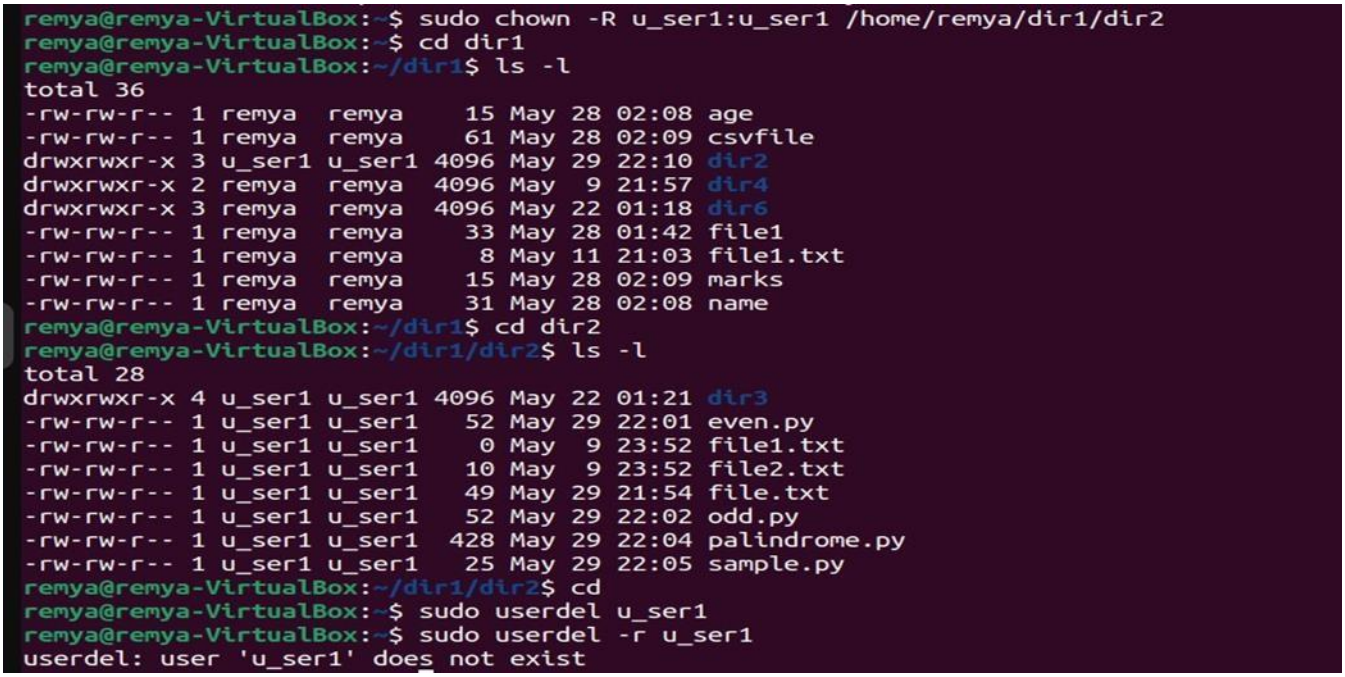
-> sudo chage -l u_ser1

c. -> sudo chown -R u_ser1:u_ser1 /home/remya/dir1/dir2

d. -> sudo userdel u_ser1

-> sudo userdel -r u_ser1





25. Miscellaneous

a. Using tar create a tar.gz file of the folder dir1 of Qn.4 with the name mydir.tar.gz.

b. Extract the contents of mydir.tar.gz to dir6 of Qn.14.

c. Use top to display processes sorted on

i. ProcessId

1. Type top

2. Press N ii.

CPU%

1.Type top

2. Press P

d. Use ps to display

i. Processes associated with the current terminal

ii. All processes in the system

e. Use df to display the storage available in each partition in human readable form.

OUTPUT

a. -> tar -czvf mydir.tar.gz dir1

```
remya@remya-VirtualBox:~$ tar -czvf mydir.tar.gz dir1
dir1/
dir1/csvfile
dir1/.Testfile2.swp
dir1/marks
dir1/age
dir1/dir4/
dir1/file1.txt
dir1/name
dir1/dir6/
dir1/dir6/dir5/
dir1/dir6/file3
dir1/dir2/
dir1/dir2/dir3/
dir1/dir2/dir3/oldfile/
dir1/dir2/dir3/oldfile/newfile
dir1/dir2/dir3/file3/
dir1/dir2/dir3/file3/file1
dir1/dir2/file.txt
dir1/dir2/file2.txt
dir1/dir2/file1.txt
dir1/dir2/palindrome.py
dir1/dir2/odd.py
dir1/dir2/even.py
dir1/dir2/sample.py
dir1/file1
```

b. -> tar -xzvf mydir.tar.gz -C dir1/dir6

```
remya@remya-VirtualBox:~$ tar -xzvf mydir.tar.gz -C dir1/dir6
dir1/
dir1/csvfile
dir1/.Testfile2.swp
dir1/marks
dir1/age
dir1/dir4/
dir1/file1.txt
dir1/name
dir1/dir6/
dir1/dir6/dir5/
dir1/dir6/file3
dir1/dir2/
dir1/dir2/dir3/
dir1/dir2/dir3/oldfile/
dir1/dir2/dir3/oldfile/newfile
dir1/dir2/dir3/file3/
dir1/dir2/dir3/file3/file1
dir1/dir2/file.txt
dir1/dir2/file2.txt
dir1/dir2/file1.txt
dir1/dir2/palindrome.py
dir1/dir2/odd.py
dir1/dir2/even.py
dir1/dir2/sample.py
dir1/file1
remya@remya-VirtualBox:~$ ls -l mydir.tar.gz
-rw-rw-r-- 1 remya remya 1344 Jun  4 02:04 mydir.tar.gz
```

c. i) -> top -o PID ii) -> top -o %CPU

```
remya@remya-VirtualBox:~$ top -o PID

top - 02:19:45 up  1:32,  1 user,  load average: 0.23, 0.18, 0.16
Tasks: 264 total,   1 running, 263 sleeping,   0 stopped,   0 zombie
%Cpu(s):  0.2 us,  0.1 sy,  0.0 ni, 99.7 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3921.6 total,    501.6 free,   1394.9 used,   2025.1 buff/cache
MiB Swap:   2170.0 total,   2162.5 free,      7.5 used.   2211.8 avail Mem

    PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM     TIME+ COMMAND
   5620 remya     20   0   21884   4280   3424 R   0.3   0.1   0:00.26 top
   5587 root      20   0       0      0      0 I   0.0   0.0   0:00.00 kworker/1:2-events
   5540 remya     20   0 3007308  63024  48112 S   0.0   1.6   0:00.45 gjs
   5523 root      20   0       0      0      0 I   0.0   0.0   0:00.20 kworker/u20:3-events_power_efficient
   5504 root      20   0       0      0      0 I   0.0   0.0   0:00.15 kworker/0:0-events
   5456 root      20   0       0      0      0 I   0.0   0.0   0:00.00 kworker/9:1
   5432 root      20   0       0      0      0 I   0.0   0.0   0:00.00 kworker/2:2-events
   5330 root      20   0       0      0      0 I   0.0   0.0   0:00.26 kworker/1:1-events
   5323 root      20   0       0      0      0 I   0.0   0.0   0:00.00 kworker/6:1
   5040 root      20   0       0      0      0 I   0.0   0.0   0:00.64 kworker/u20:0-events_power_efficient
   4846 root      20   0       0      0      0 I   0.0   0.0   0:00.00 kworker/8:2-events
   4813 root      20   0       0      0      0 I   0.0   0.0   0:00.00 kworker/5:0-events
   4802 remya     20   0  325472   9004   8036 S   0.0   0.2   0:00.08 gvfsd-dnssd
   4786 remya     20   0  397376   8792   7844 S   0.0   0.2   0:00.03 gvfsd-network
   4149 root      20   0       0      0      0 I   0.0   0.0   0:00.00 kworker/3:3-events
   4085 root      20   0       0      0      0 I   0.0   0.0   0:00.36 kworker/3:1-events
   4083 root      20   0       0      0      0 I   0.0   0.0   0:00.27 kworker/5:2-ata_sff
   4081 root      20   0       0      0      0 I   0.0   0.0   0:00.00 kworker/7:0
   3780 remya     20   0 1015524  25840  14784 S   0.0   0.6   0:00.22 snap
   3518 root      20   0       0      0      0 I   0.0   0.0   0:01.45 kworker/4:0-events
   3237 root      20   0       0      0      0 I   0.0   0.0   0:02.69 kworker/u20:1-events_unbound
   3168 root      20   0       0      0      0 I   0.0   0.0   0:00.48 kworker/7:3-events
   3166 root      20   0       0      0      0 I   0.0   0.0   0:00.28 kworker/9:2-events
   3125 remya     20   0  884328  77212  50732 S   0.0   1.9   0:01.55 nautilus
   3051 root      20   0       0      0      0 I   0.0   0.0   0:00.61 kworker/2:0-events
```

```
remya@remya-VirtualBox:~$ top -o %CPU

top - 02:21:18 up  1:34,  1 user,  load average: 0.15, 0.16, 0.15
Tasks: 264 total,   1 running, 263 sleeping,   0 stopped,   0 zombie
%Cpu(s):  0.2 us,  0.1 sy,  0.0 ni, 99.7 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3921.6 total,    500.8 free,   1395.7 used,   2025.1 buff/cache
MiB Swap:   2170.0 total,   2162.5 free,      7.5 used.   2211.0 avail Mem

    PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM     TIME+ COMMAND
   1946 remya     20   0 6408124 448940 145956 S   2.0  11.2   9:33.86 gnome-shell
   1001 mysql     20   0 2381436 379296  20976 S   1.3   9.4   1:19.56 mysqld
   5622 remya     20   0   21884   4280   3420 R   0.7   0.1   0:00.19 top
   1223 root      20   0  304380   2936   2568 S   0.3   0.1   0:01.37 VBoxService
   2491 remya     20   0  227504   2192   1832 S   0.3   0.1   0:20.77 VBoxClient
   2542 remya     20   0  568288  58112  44476 S   0.3   1.4   0:14.21 gnome-terminal-
   2604 root      20   0       0      0      0 I   0.3   0.0   0:00.52 kworker/6:3-events
   3168 root      20   0       0      0      0 I   0.3   0.0   0:00.50 kworker/7:3-mm_percpu_wq
      1 root      20   0  166836  11832   8120 S   0.0   0.3   0:02.07 systemd
      2 root      20   0       0      0      0 S   0.0   0.0   0:00.01 kthreadd
      3 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 rcu_gp
      4 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 rcu_par_gp
      5 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 slub_flushwq
      6 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 netns
      8 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 kworker/0:0H-events_highpri
     10 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 mm_percpu_wq
     11 root      20   0       0      0      0 I   0.0   0.0   0:00.00 rcu_tasks_kthread
     12 root      20   0       0      0      0 I   0.0   0.0   0:00.00 rcu_tasks_rude_kthread
     13 root      20   0       0      0      0 I   0.0   0.0   0:00.00 rcu_tasks_trace_kthread
     14 root      20   0       0      0      0 S   0.0   0.0   0:00.04 ksoftirqd/0
```

d. -> ps –T -> ps –A

```
remya@remya-VirtualBox:~$ ps -T
    PID    SPID TTY          TIME CMD
   2560    2560 pts/0    00:00:00 bash
   5626    5626 pts/0    00:00:00 ps
remya@remya-VirtualBox:~$ ps -A
    PID TTY          TIME CMD
      1 ?        00:00:02 systemd
      2 ?        00:00:00 kthreadd
      3 ?        00:00:00 rcu_gp
      4 ?        00:00:00 rcu_par_gp
      5 ?        00:00:00 slub_flushwq
      6 ?        00:00:00 netns
      8 ?        00:00:00 kworker/0:0H-events_highpri
     10 ?        00:00:00 mm_percpu_wq
     11 ?        00:00:00 rcu_tasks_kthread
     12 ?        00:00:00 rcu_tasks_rude_kthread
     13 ?        00:00:00 rcu_tasks_trace_kthread
     14 ?        00:00:00 ksoftirqd/0
     15 ?        00:00:04 rcu_preempt
     16 ?        00:00:00 migration/0
```

e. -> df -h

```
remya@remya-VirtualBox:~$ df -h
Filesystem      Size  Used Avail Use% Mounted on
tmpfs           393M  1.6M  391M   1% /run
/dev/sda3        20G   18G  672M  97% /
tmpfs           2.0G     0  2.0G   0% /dev/shm
tmpfs           5.0M  4.0K  5.0M   1% /run/lock
/dev/sda2       512M  5.3M  507M   2% /boot/efi
tmpfs           393M  120K  393M   1% /run/user/1000
/dev/sr0         51M   51M     0 100% /media/remya/VBox_GAs_7.0.4
remya@remya-VirtualBox:~$
```