EXPERIMENT NO. 10

AIM: Case Study of Linux Commands

RESOURCES REQUIRED:

H/W Requirements: P-IV and above, Ram 128 MB, Printer, Internet Connection**.**

S/W Requirements: Linux Operating System.

THEORY:

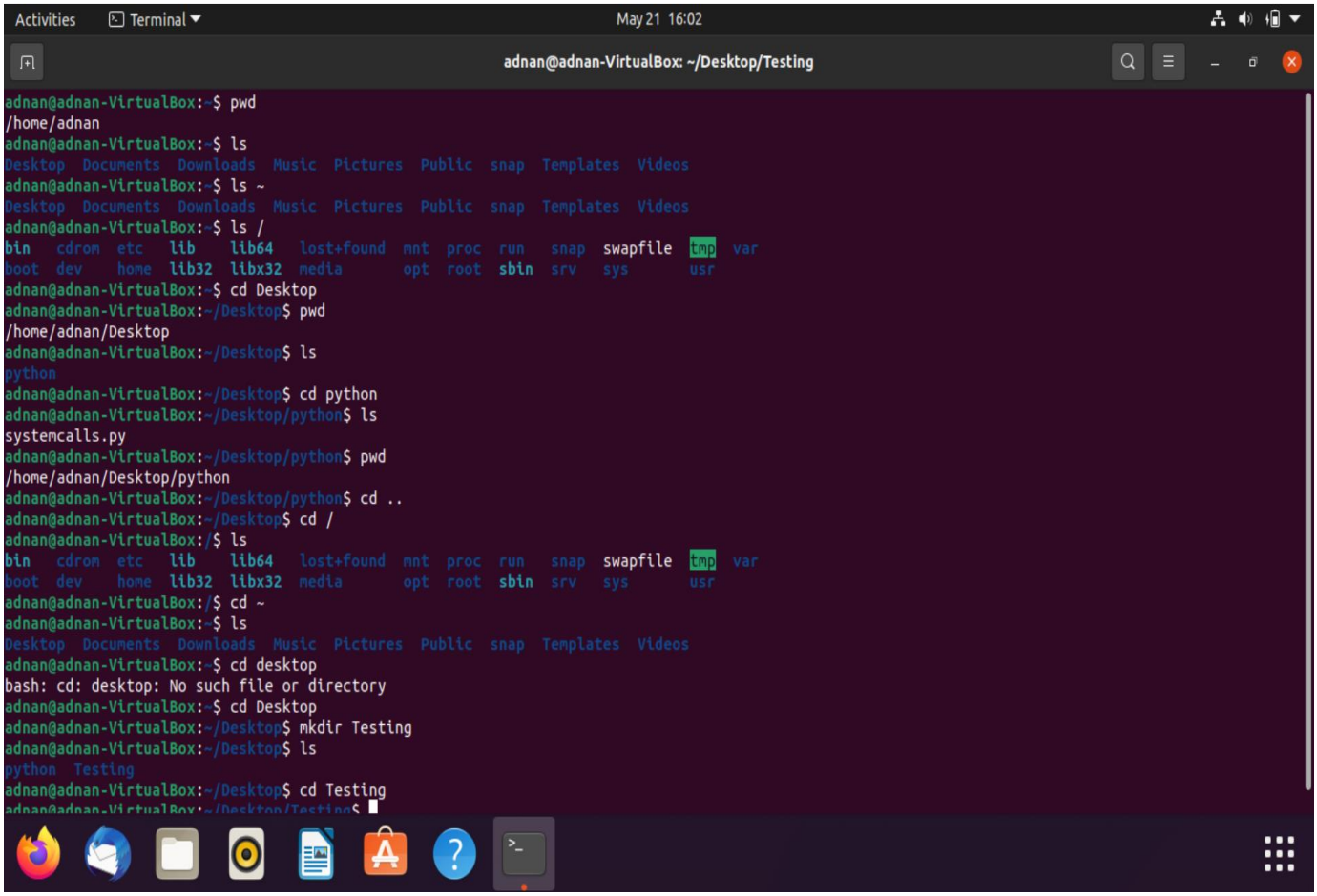
Commands	Typical Use
ls (list)	listing all the folders and files in current or specified directory.
pwd (print working directory)	Printing current working directory.
cd (change directory)	Changing current directory.
mkdir (make directory)	To create new directory (folder).
nano	To open existing file or creating and opening new file.
cat (Concatenate)	Commonly use to print content of file there are lots of different uses too.
rm (remove)	Deleting files.
rmdir (remove directory)	Deleting directory (folder).
echo	To insert or append into text into files.
sudo	To get superuser access.
apt	Use for upgrading, installing, listing, searching, etc apps
cp (copy)	Copying files from current directory to specify directory.
grep	To check the string content in specified files.
free	To get the information of all the memory.
lshw (list hardware)	To get information of system hardware.
history	History of all the commands used.

ping (packet internet groper)	This command is used to check the network connectivity between host and server/host.
hostname	Return hostname
ps (process state)	To get the Process state
mv (move)	To move files from one directory to another or renaming the files.
clear	To clear the terminal.

Conclusion: Hence, we have successfully study and used essential Linux commands.

Output :

Basic use of pwd, ls, cd and mkdir:



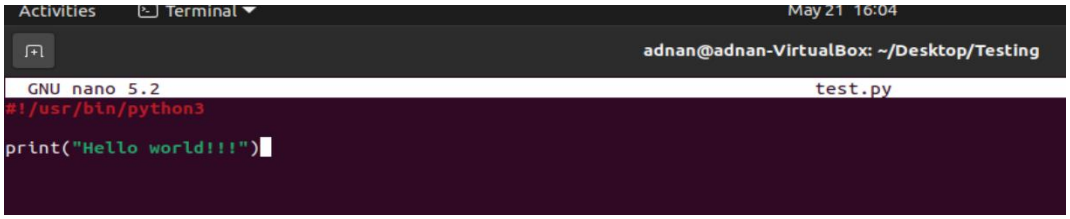
nano command:

Before using **nano**, Testing(directory) is empty :

```
adnan@adnan-VirtualBox:~/Desktop/Testing$ ls
adnan@adnan-VirtualBox:~/Desktop/Testing$ nano test.py
```

Afte using **nano** to create test.py file:

Created newfile



ls command:

Using **ls** to check if the file is created

```
adnan@adnan-VirtualBox:~/Desktop/Testing$ ls
test.py
```

rm command:

Using **rm** to remove test.py and checking if it removed successfully using **ls**:

```
adnan@adnan-VirtualBox:~/Desktop/Testing$ rm test.py
adnan@adnan-VirtualBox:~/Desktop/Testing$ ls
adnan@adnan-VirtualBox:~/Desktop/Testing$
```

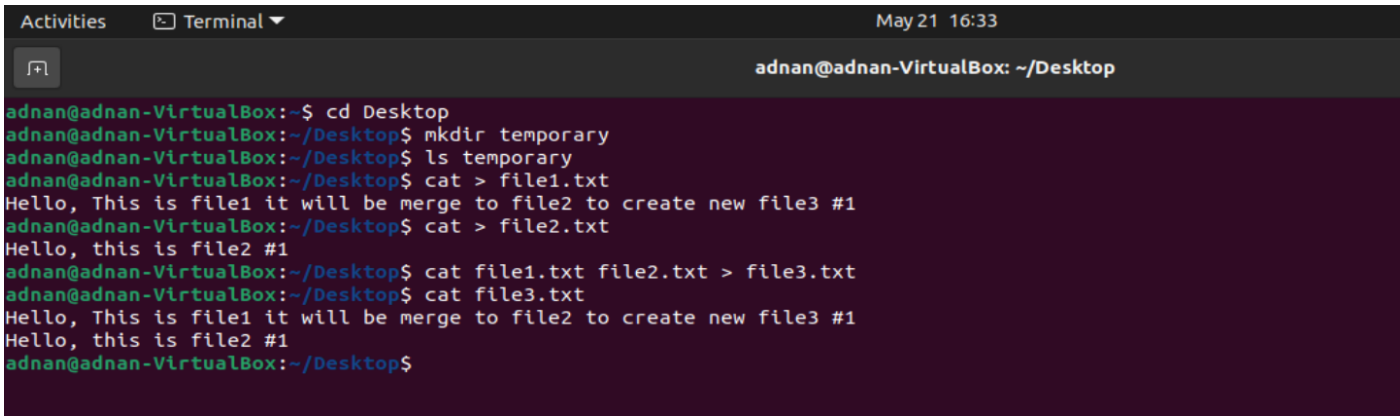
echo and cat command:

Creating file mdhash256texting.txt using **nano** and appending string into the using **echo** and checking the content of file after appending using **cat:**

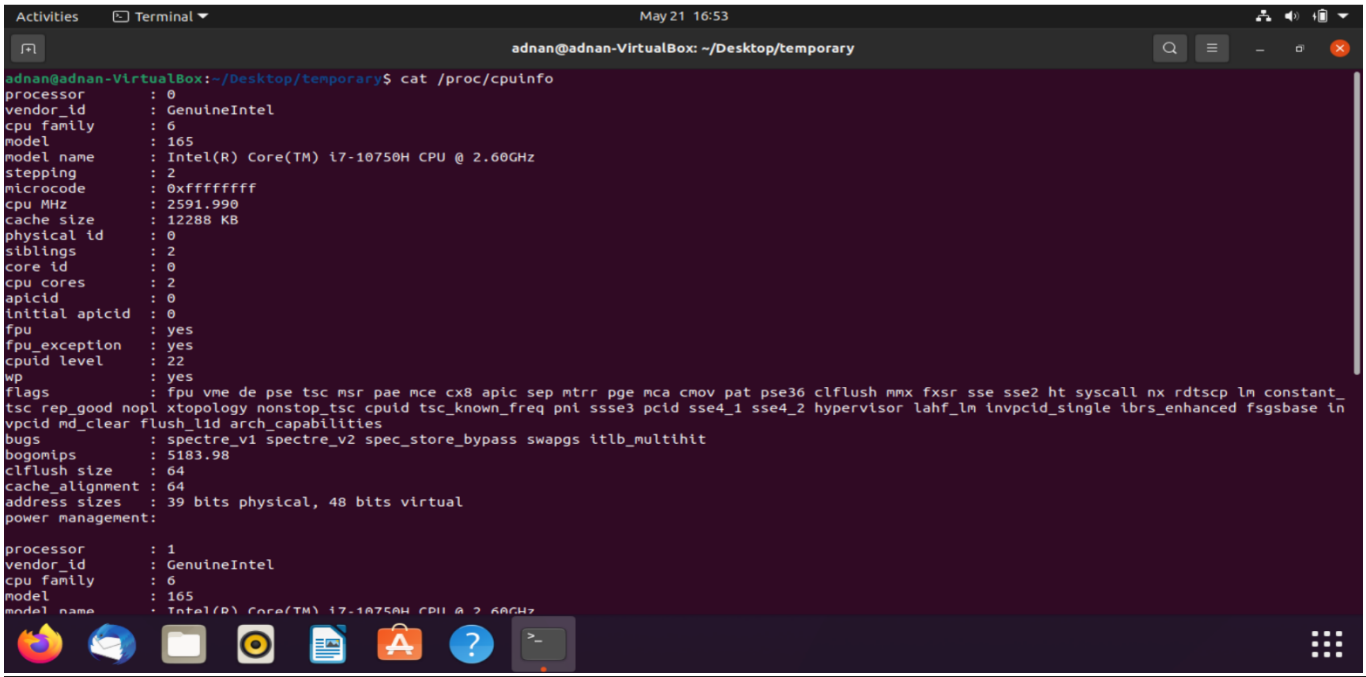
```
adnan@adnan-VirtualBox:~/Desktop/Testing$ nano mdhash256testing.txt
adnan@adnan-VirtualBox:~/Desktop/Testing$ echo "I, Giorno Giovanna, have a dream" >> mdhash256testing.txt
adnan@adnan-VirtualBox:~/Desktop/Testing$ cat mdhash256testing.txt

I, Giorno Giovanna, have a dream
adnan@adnan-VirtualBox:~/Desktop/Testing$
```

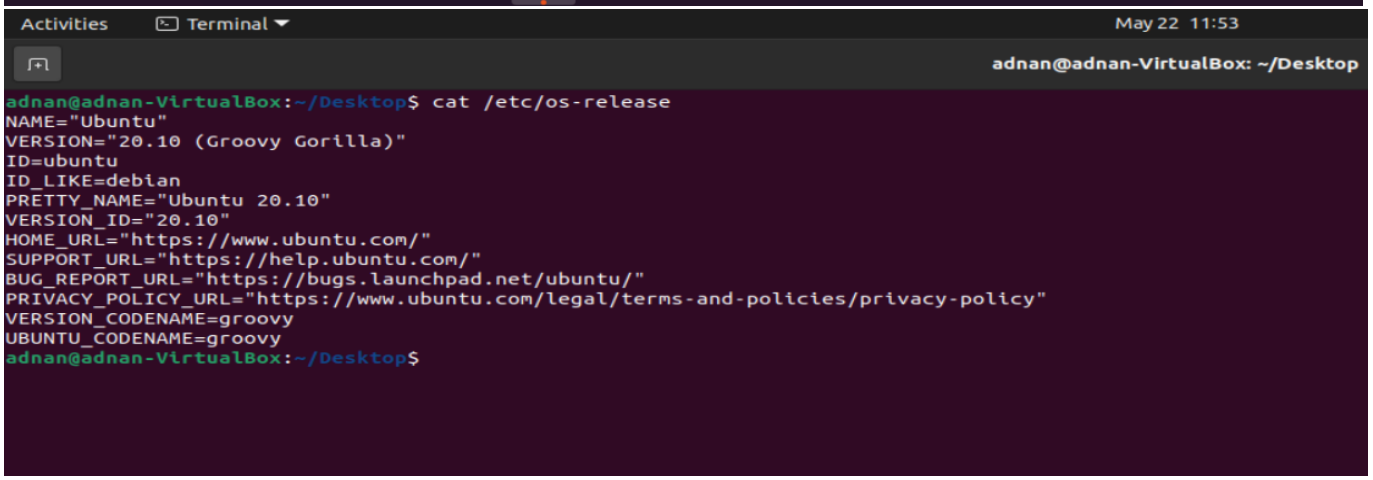
More functionality of cat:

Creating file1.txt and file2.txt and writing text through terminal into them using **cat** command and merging them in file3.txt using same:



Getting CPU and OS information using **cat:**





More functionality of ls:

ls –l will give directories and files name with their details (The file type, The file permissions, Number of hard links to the file, File owner, File group, File size, Date and Time, File name) and ls –al use to list hidden files and folders.

ls –p to check content inside directory, **ls –r** to list files and folders in reverse alphabetical order, **ls –s** to get the size of each file and folder with total size. We can combine above command as **ls –psr** or **ls –p –s –r** (sequence can be change) :

```
adnan@adnan-VirtualBox:~$ ls -l
total 36
drwxr-xr-x 4 adnan adnan 4096 May 21 16:02 Desktop
drwxr-xr-x 2 adnan adnan 4096 May 19 19:08 Documents
drwxr-xr-x 2 adnan adnan 4096 May 19 19:08 Downloads
drwxr-xr-x 2 adnan adnan 4096 May 19 19:08 Music
drwxr-xr-x 2 adnan adnan 4096 May 19 19:08 Pictures
drwxr-xr-x 2 adnan adnan 4096 May 19 19:08 Public
drwxr-xr-x 4 adnan adnan 4096 May 20 15:31 snap
drwxr-xr-x 2 adnan adnan 4096 May 19 19:08 Templates
drwxr-xr-x 2 adnan adnan 4096 May 19 19:08 Videos
adnan@adnan-VirtualBox:~$ ls -r -p
Videos/  Templates/  snap/  Public/  Pictures/  Music/  Downloads/  Documents/  Desktop/
adnan@adnan-VirtualBox:~$ ls -r -p -s
total 36
4 Videos/  4 Templates/  4 snap/  4 Public/  4 Pictures/  4 Music/  4 Downloads/  4 Documents/  4 Desktop/
adnan@adnan-VirtualBox:~$
```

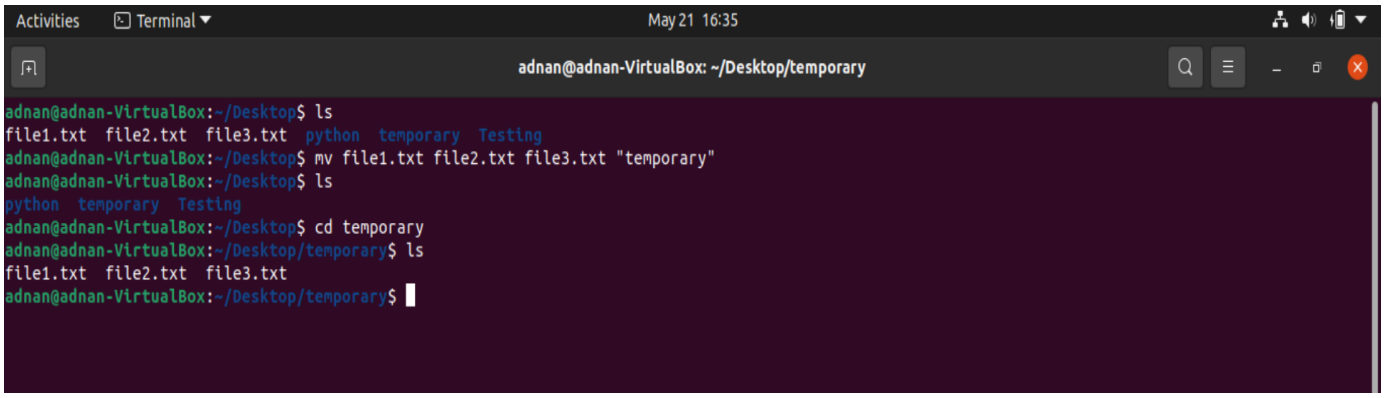
cp command:

Copying file sample.txt from current directory to Desktop using **cp** and checking content using **cat** after copying:

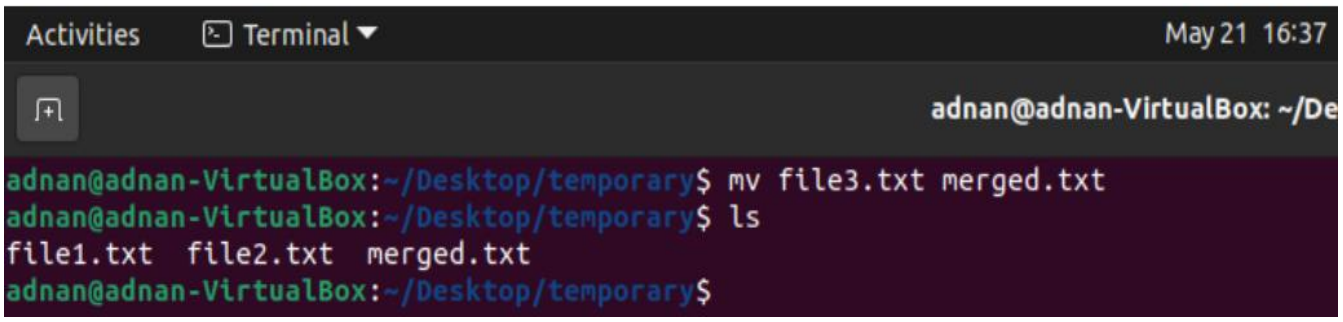
```
Activities  Terminal ▾                May 22 11:12
adnan@adnan-VirtualBox: ~/Desktop
adnan@adnan-VirtualBox:~/Desktop/temporary$ cp sample.txt ~/Desktop
adnan@adnan-VirtualBox:~/Desktop/temporary$ cd ..
adnan@adnan-VirtualBox:~/Desktop$ ls
python  sample.txt  temporary  Testing
adnan@adnan-VirtualBox:~/Desktop$ cat sample.txt

What is Lorem Ipsum?

Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a g
alley of type and scrambled it to make a type specimen book. It has survived not only five centuries, but also the leap into electronic typesetting, remaining essentially unchanged. It
was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently with desktop publishing software like Aldus PageMaker including versi
ons of Lorem Ipsum.
Why do we use it?
```

mv command:

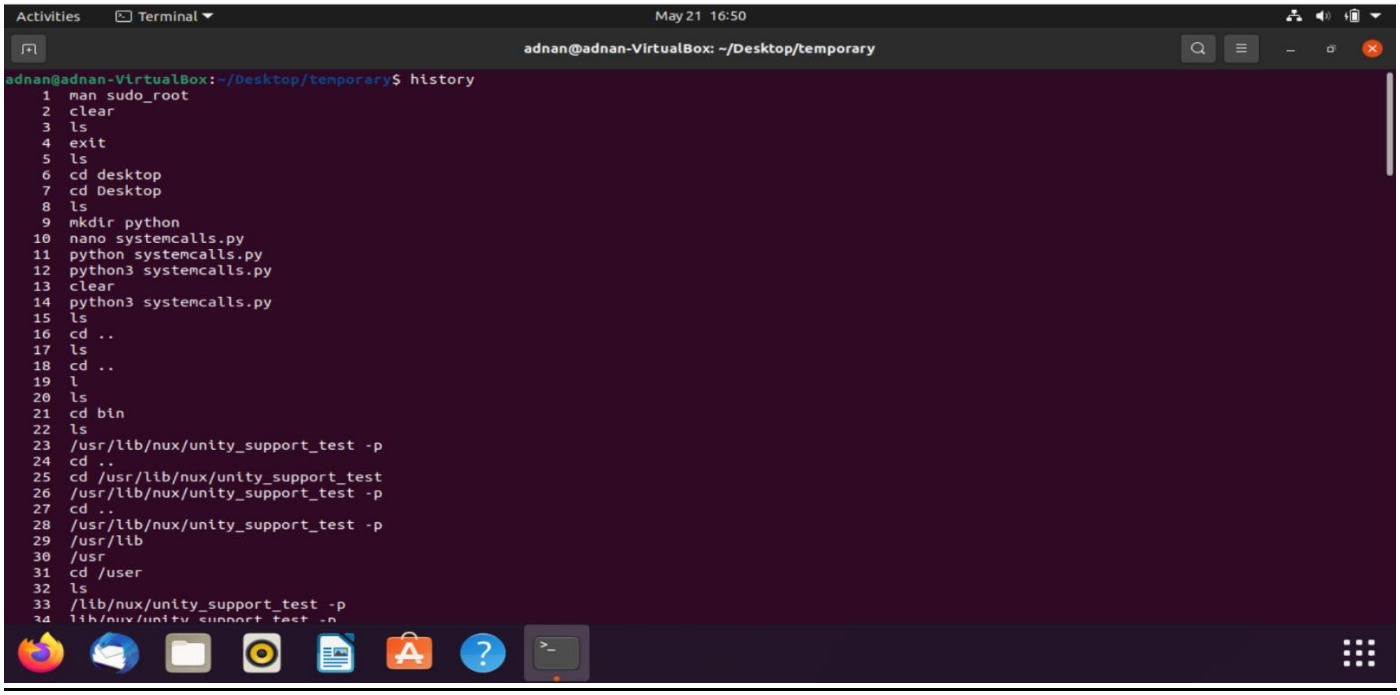
Moving file1.txt, file2.txt and file3.txt from Desktop to temporary folder using **mv**:



Renaming file3.txt to merged.txt using **mv**:



history command:



grep command:

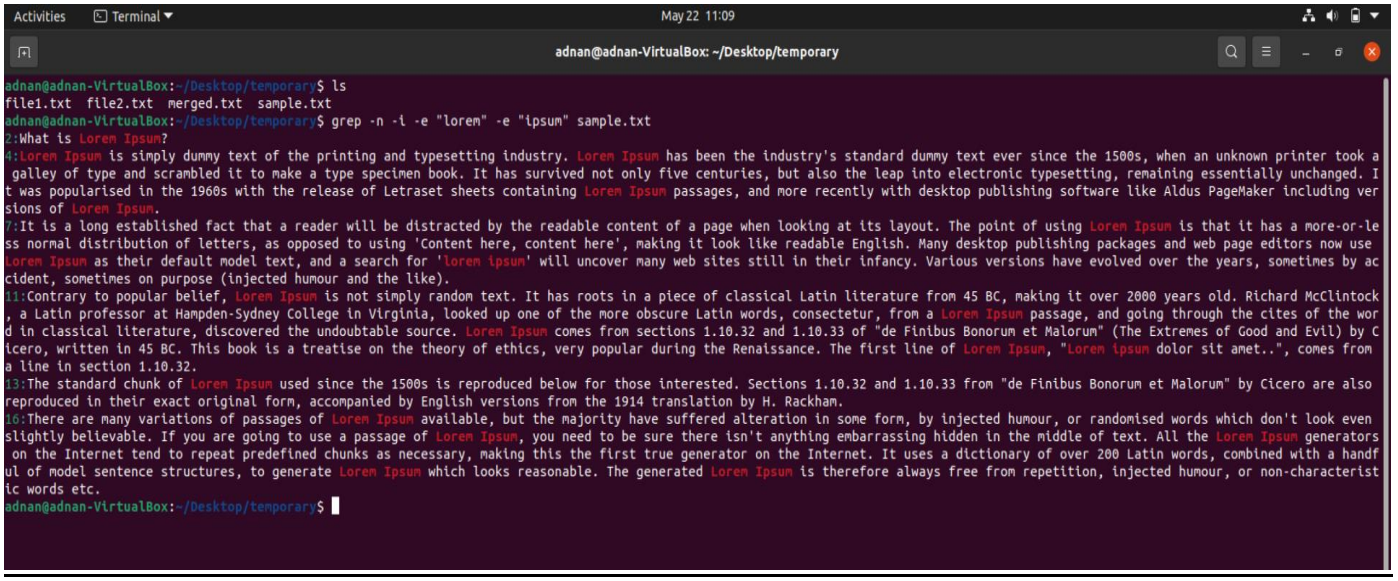
grep –n “string” sample.txt return appearance of words with line no

grep –I used for removing case sensitivity

grep –e use for defining string expression multiple expression can be use using **–e** option

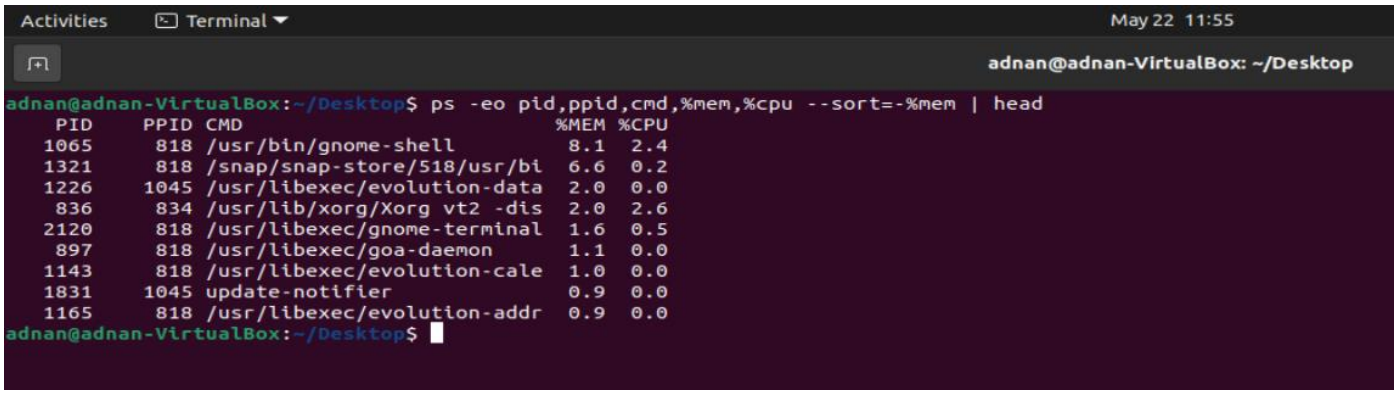
Output of combine of above options with **grep** command is given below:

String match is highlighted in red color



ps command:

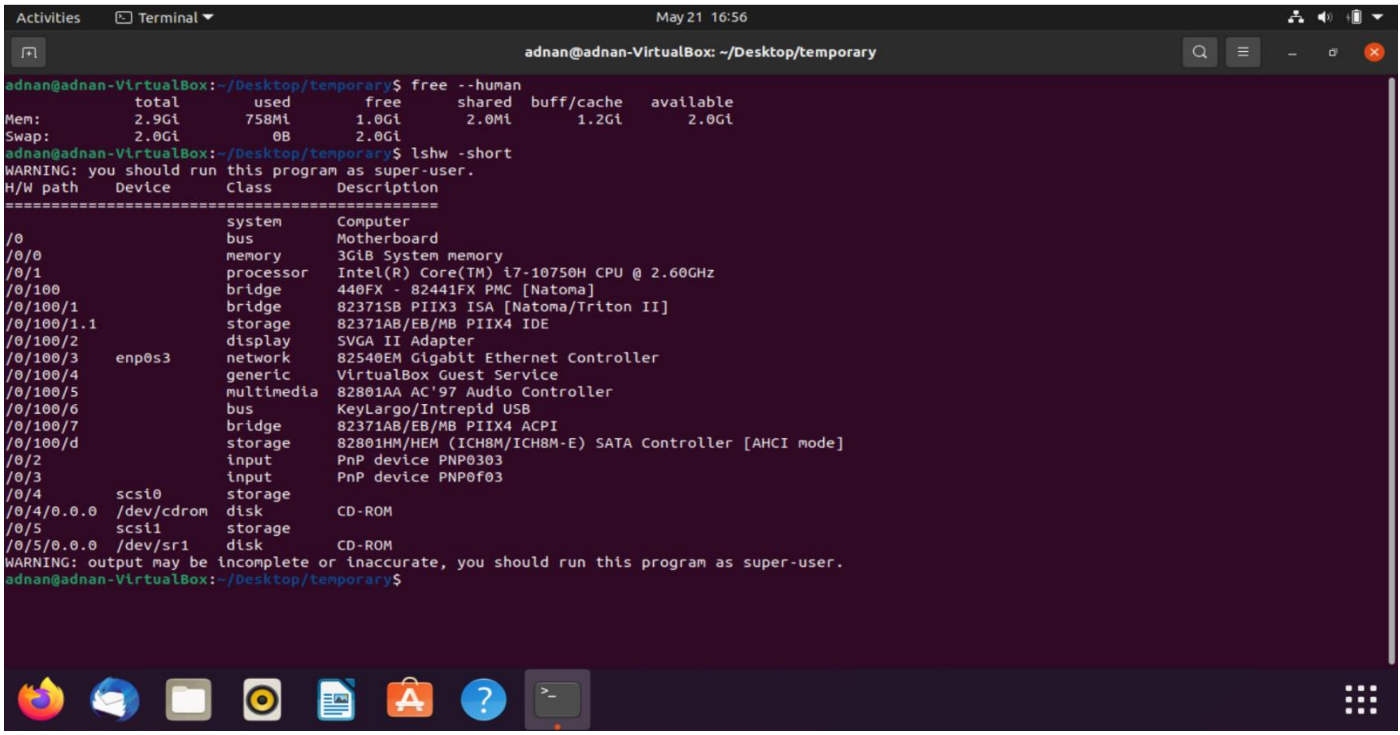
getting process id, parent id their path, memory usage and CPU usage and sorting them in descending order using **ps** with options **–e –o** :



free and lshw command:

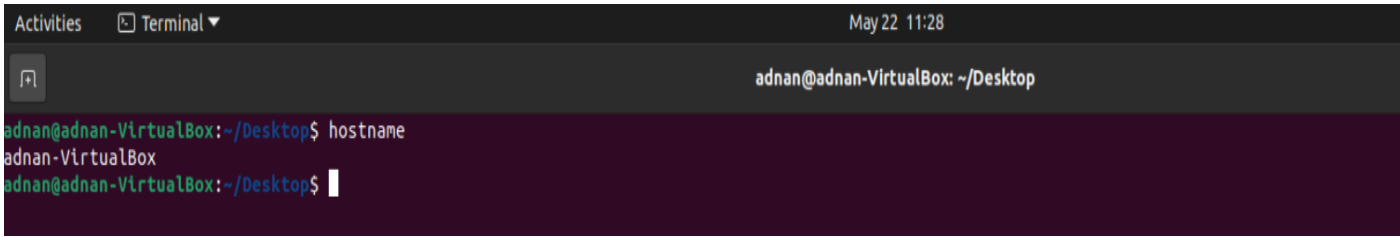
free use return information about memory state **--human** option will format output in human readable format.

lshw list hardware information **–short** option is used to get information in brief.



hostname command:

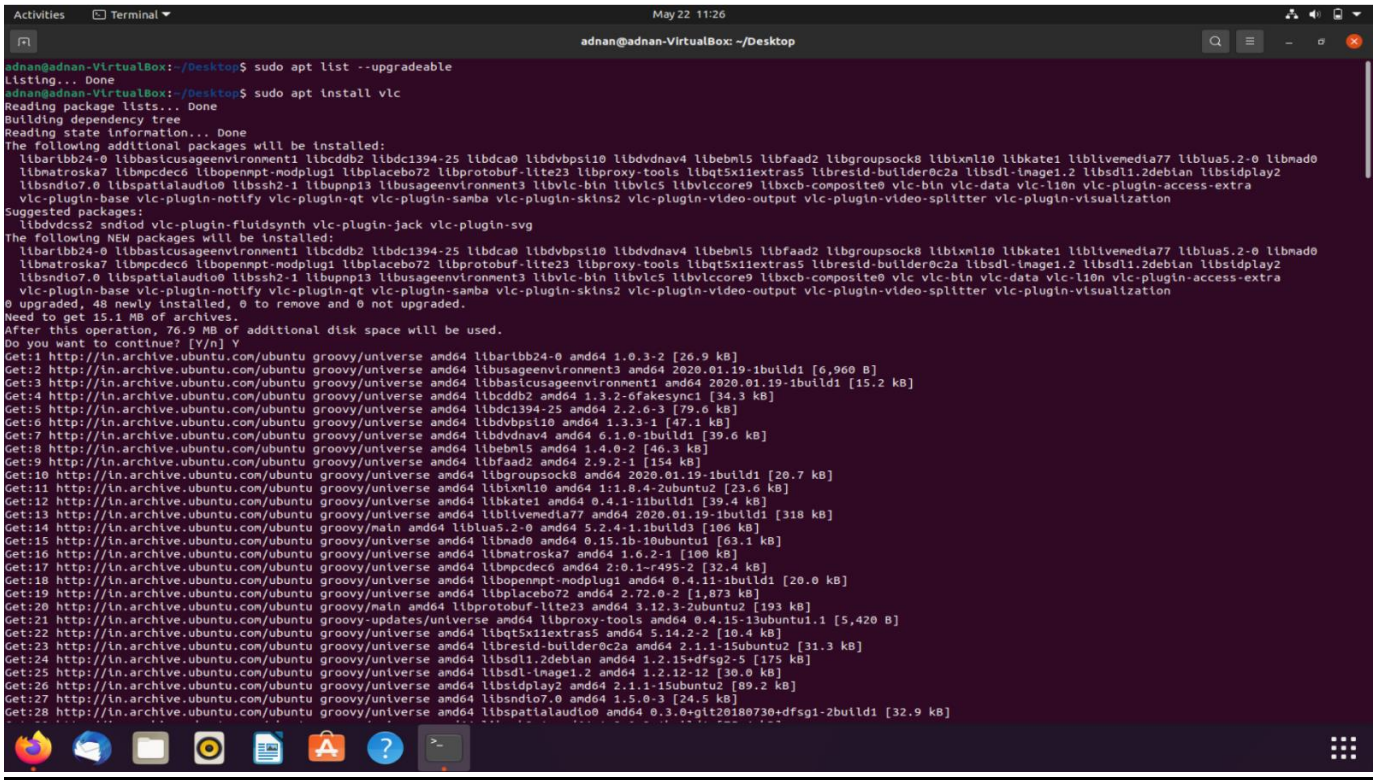
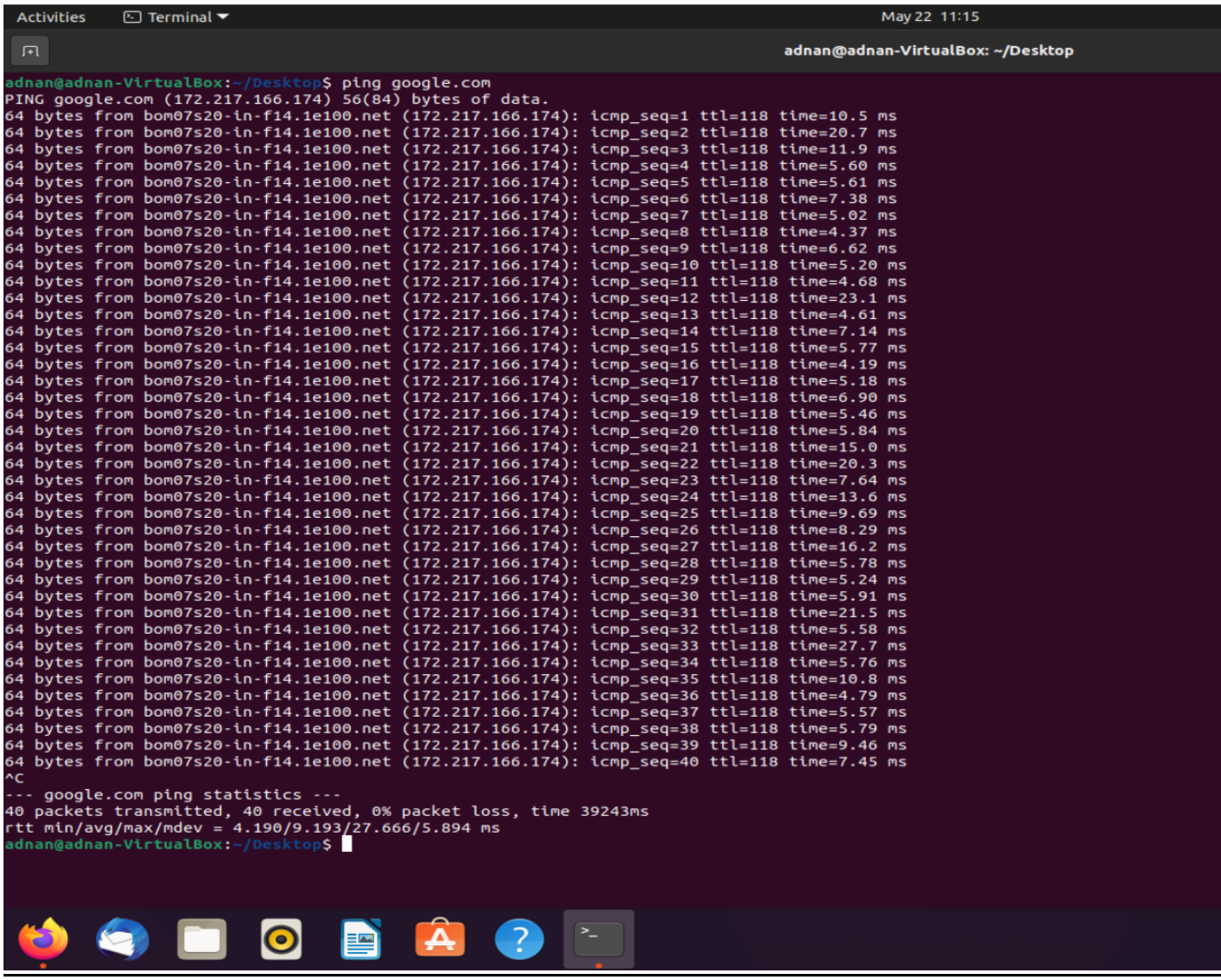
return hostname of system:



sudo and apt command:

sudo use for super user, apt list return applications present in a system

--upgradeable option use to check if any application needed an update, apt install will install specified application to system from host. (snap can be use instead of apt to install application). :



ping command: