

EXTERNSHIP PROGRAM – CYBER SECURITY AND ETHICAL HACKING

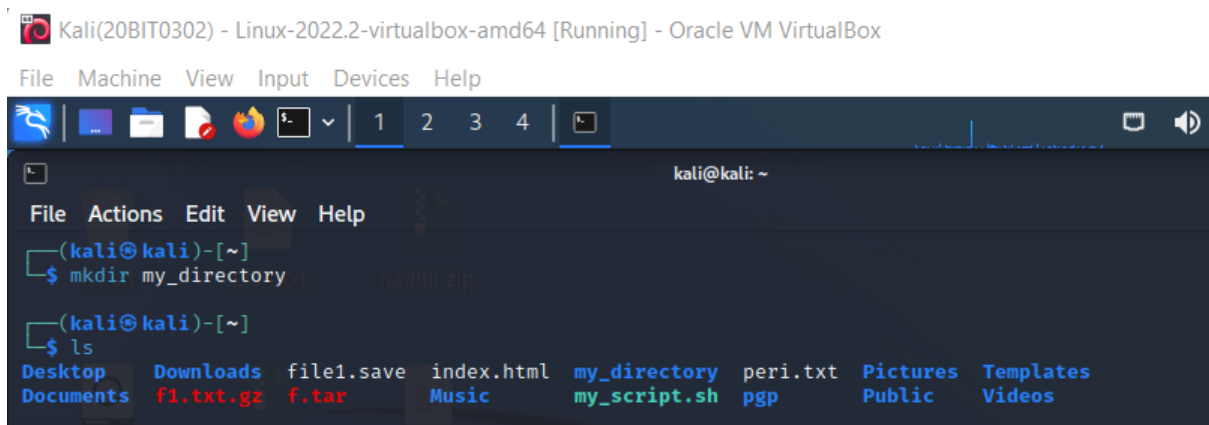
ASSIGNMENT : BASH SHELL BASICS

TASK1 . File and directory manipulation

1. Create a directory called "my_directory".

```
mkdir my_directory
```

```
ls
```

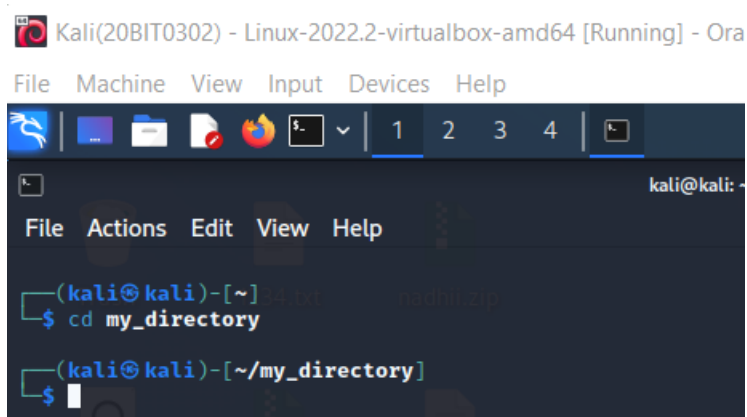


The screenshot shows a terminal window titled "Kali(20BIT0302) - Linux-2022.2-virtualbox-amd64 [Running] - Oracle VM VirtualBox". The terminal displays the following commands and output:

```
kali@kali: ~  
$ mkdir my_directory  
$ ls  
Desktop  Downloads  file1.save  index.html  my_directory  peri.txt  Pictures  Templates  
Documents  f1.txt.gz  f.tar       Music       my_script.sh  pgp       Public    Videos
```

2 . Navigate into the "my_directory".

```
cd my_directory
```



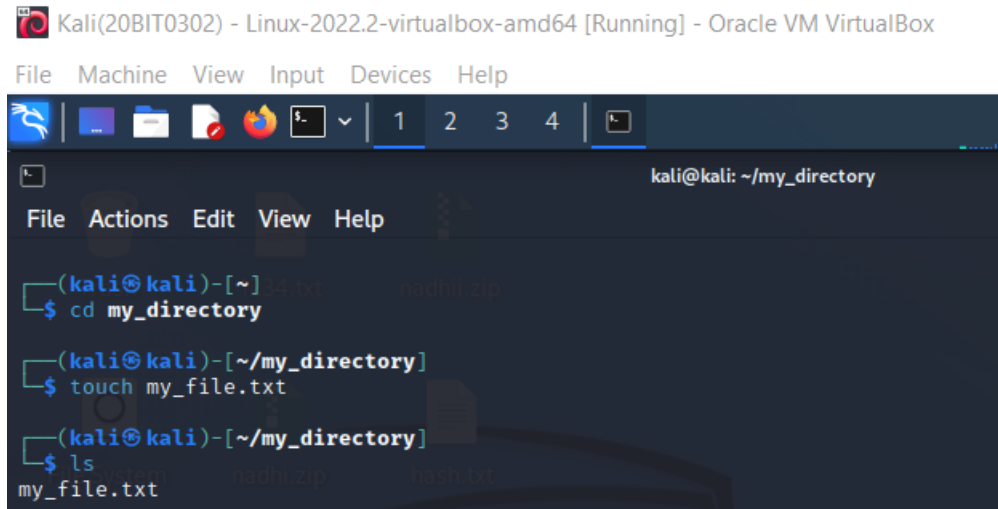
The screenshot shows a terminal window titled "Kali(20BIT0302) - Linux-2022.2-virtualbox-amd64 [Running] - Ora". The terminal displays the following commands and output:

```
kali@kali: ~  
$ cd my_directory  
$  
kali@kali: ~/my_directory
```

3 . Create an empty file called "my_file.txt".

`touch my_file.txt`

`ls`



Kali(20BIT0302) - Linux-2022.2-virtualbox-amd64 [Running] - Oracle VM VirtualBox

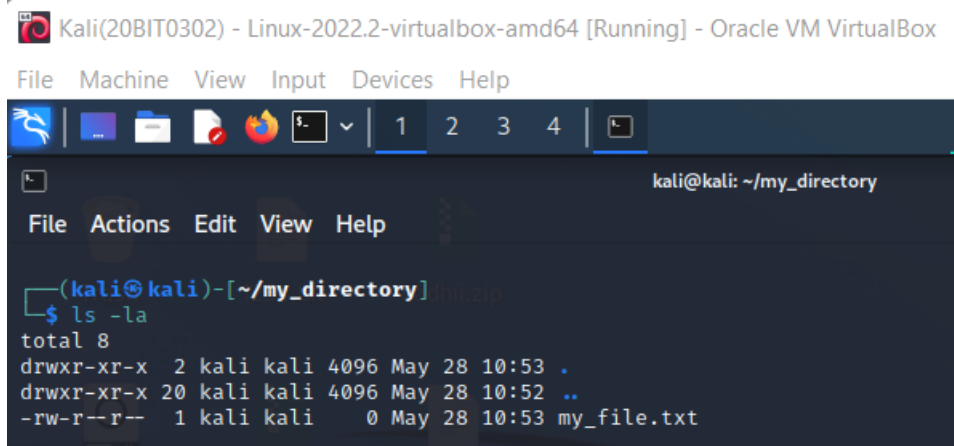
File Machine View Input Devices Help

kali@kali: ~/my_directory

```
(kali@kali)-[~]  
$ cd my_directory  
(kali@kali)-[~/my_directory]  
$ touch my_file.txt  
(kali@kali)-[~/my_directory]  
$ ls  
my_file.txt
```

4 . List all the files and directories in the current directory.

`ls -la`



Kali(20BIT0302) - Linux-2022.2-virtualbox-amd64 [Running] - Oracle VM VirtualBox

File Machine View Input Devices Help

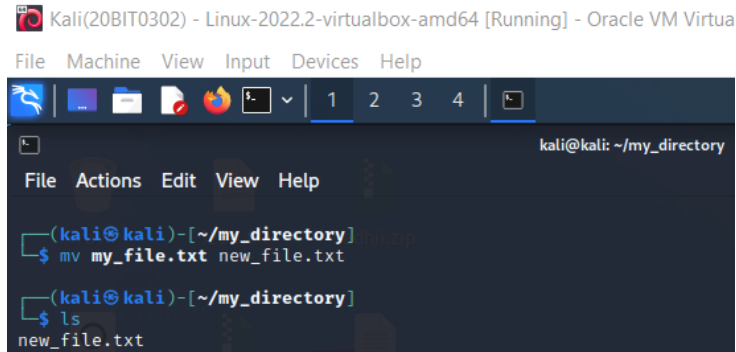
kali@kali: ~/my_directory

```
(kali@kali)-[~/my_directory]  
$ ls -la  
total 8  
drwxr-xr-x  2 kali kali 4096 May 28 10:53 .  
drwxr-xr-x 20 kali kali 4096 May 28 10:52 ..  
-rw-r--r--  1 kali kali   0 May 28 10:53 my_file.txt
```

5 . Rename "my_file.txt" to "new_file.txt".

```
mv my_file.txt new_file.txt
```

```
ls
```



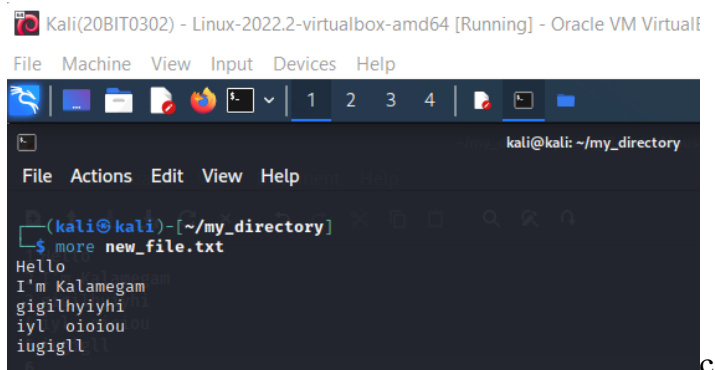
Kali(20BIT0302) - Linux-2022.2-virtualbox-amd64 [Running] - Oracle VM VirtualBox

```
kali@kali: ~/my_directory
File Actions Edit View Help
(kali@kali)~[~/my_directory]
$ mv my_file.txt new_file.txt
(kali@kali)~[~/my_directory]
$ ls
new_file.txt
```

6 . Display the content of "new_file.txt" using a pager tool of your choice.

```
more new_file.txt
```

(to display content of new_file.txt , I have added random words to it)

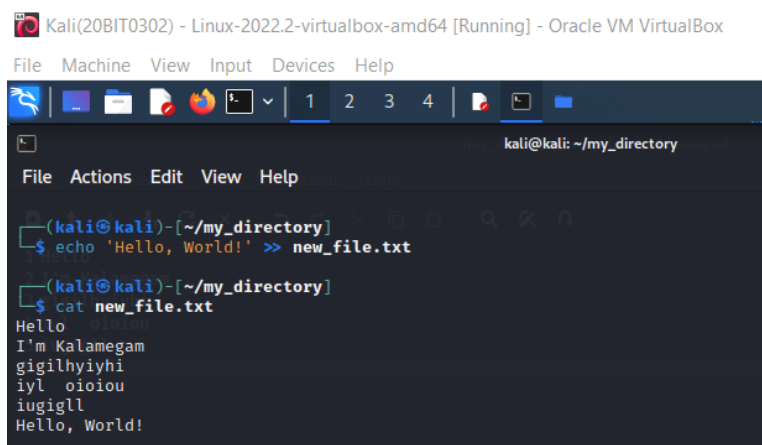


Kali(20BIT0302) - Linux-2022.2-virtualbox-amd64 [Running] - Oracle VM VirtualBox

```
kali@kali: ~/my_directory
File Machine View Input Devices Help
(kali@kali)~[~/my_directory]
$ more new_file.txt
Hello
I'm Kalamegam
gigilhyiyhi
iyl oioiou
iugigll
```

7 . Append the text "Hello, World!" to "new_file.txt".

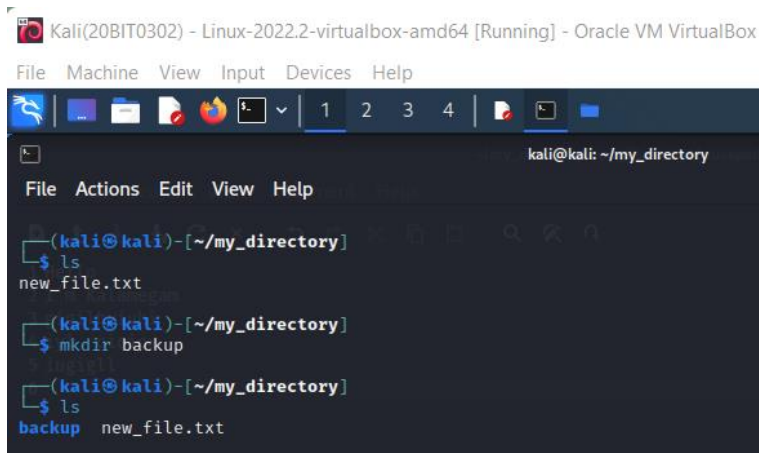
```
echo 'Hello, World!' >> new_file.txt
```



Kali(20BIT0302) - Linux-2022.2-virtualbox-amd64 [Running] - Oracle VM VirtualBox

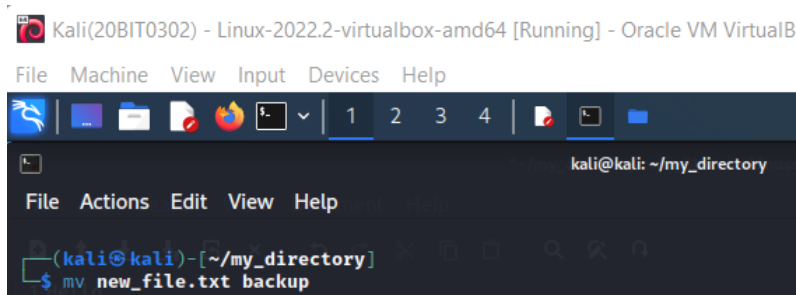
```
kali@kali: ~/my_directory
File Machine View Input Devices Help
(kali@kali)~[~/my_directory]
$ echo 'Hello, World!' >> new_file.txt
(kali@kali)~[~/my_directory]
$ cat new_file.txt
Hello
I'm Kalamegam
gigilhyiyhi
iyl oioiou
iugigll
Hello, World!
```

8 . Create a new directory called "backup" within "my_directory". ls
mkdir backup ls



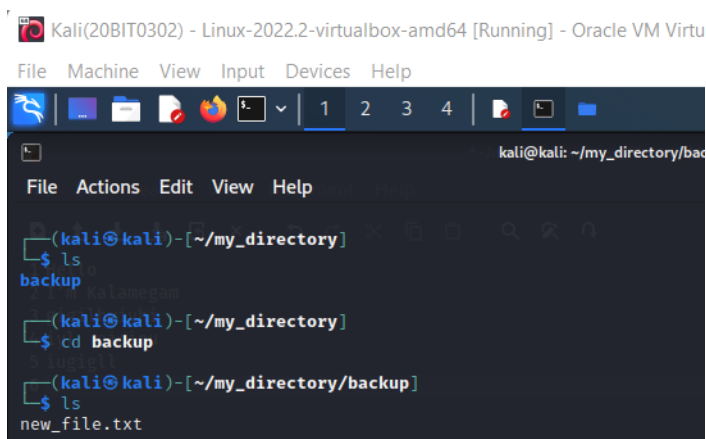
The screenshot shows a terminal window titled "Kali(20BIT0302) - Linux-2022.2-virtualbox-amd64 [Running] - Oracle VM VirtualBox". The terminal prompt is "kali@kali: ~/my_directory". The user enters "ls", showing "new_file.txt". Then they enter "mkdir backup". Finally, they enter "ls" again, showing "backup" and "new_file.txt".

9 . Move "new_file.txt" to the "backup" directory.
mv new_file.txt backup



The screenshot shows a terminal window titled "Kali(20BIT0302) - Linux-2022.2-virtualbox-amd64 [Running] - Oracle VM VirtualB". The terminal prompt is "kali@kali: ~/my_directory". The user enters "mv new_file.txt backup".

10 . Verify that "new_file.txt" is now located in the "backup" directory.
ls
cd backup
ls



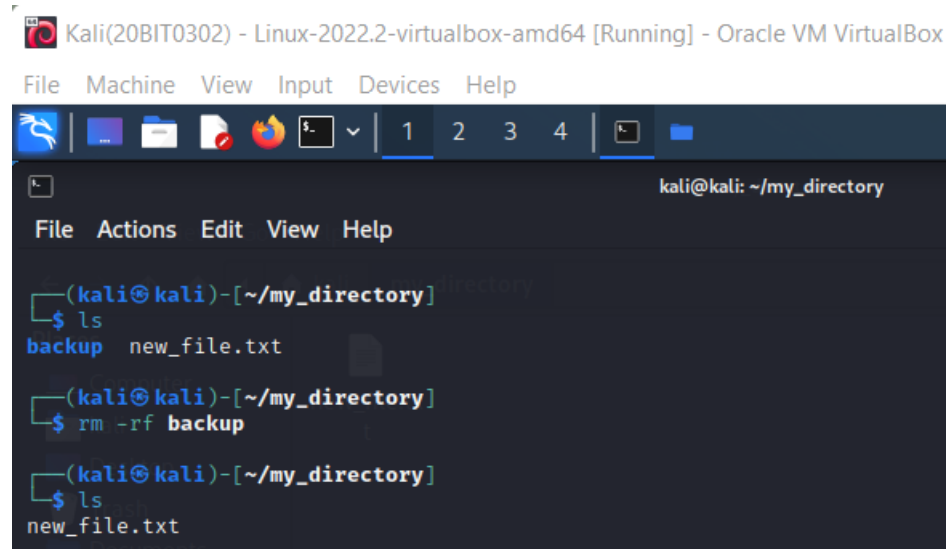
The screenshot shows a terminal window titled "Kali(20BIT0302) - Linux-2022.2-virtualbox-amd64 [Running] - Oracle VM Virtu". The terminal prompt is "kali@kali: ~/my_directory/backup". The user enters "ls", showing "new_file.txt". Then they enter "cd backup". Finally, they enter "ls" again, showing "new_file.txt".

11 . Delete the "backup" directory and all its contents.

ls

rm -rf backup

ls



The screenshot shows a terminal window titled "Kali(20BIT0302) - Linux-2022.2-virtualbox-amd64 [Running] - Oracle VM VirtualBox". The terminal is in the directory ~/my_directory. The user runs 'ls', showing 'backup' and 'new_file.txt'. Then they run 'rm -rf backup'. Finally, they run 'ls' again, showing only 'new_file.txt'.

```
Kali(20BIT0302) - Linux-2022.2-virtualbox-amd64 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help

kali@kali: ~/my_directory

(kali@kali)-[~/my_directory]
$ ls
backup  new_file.txt

(kali@kali)-[~/my_directory]
$ rm -rf backup

(kali@kali)-[~/my_directory]
$ ls
new_file.txt
```

r : recursive (remove directories and their contents recursively)

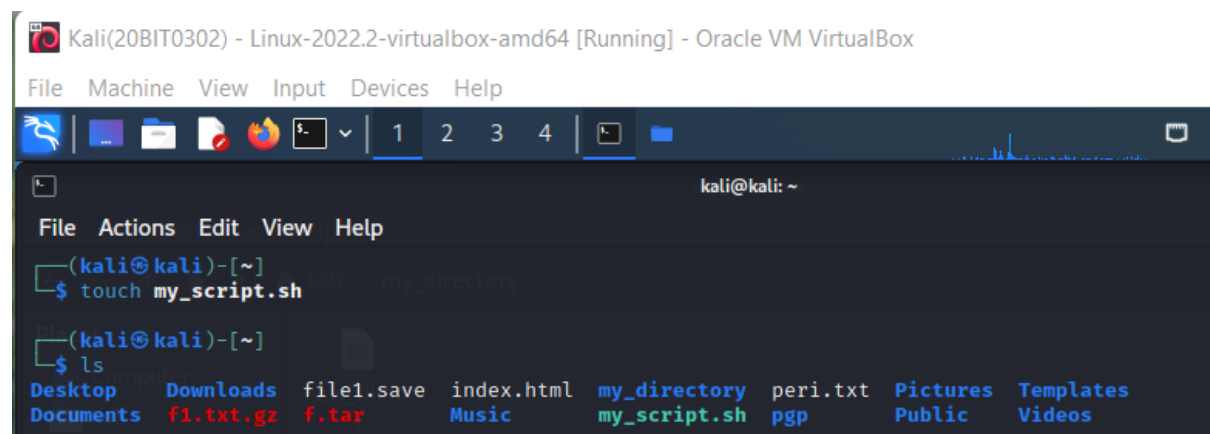
f: force (ignore non-existent file , never prompt)

TASK 2 : PERMISSIONS AND SCRIPTING

1.Create a new file called “my_script.sh”

touch my_script.sh

ls



The screenshot shows a terminal window titled "Kali(20BIT0302) - Linux-2022.2-virtualbox-amd64 [Running] - Oracle VM VirtualBox". The terminal is in the home directory (~). The user runs 'touch my_script.sh'. Then they run 'ls', showing a list of files including 'my_script.sh'.

```
Kali(20BIT0302) - Linux-2022.2-virtualbox-amd64 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help

kali@kali: ~

(kali@kali)-[~]
$ touch my_script.sh

(kali@kali)-[~]
$ ls
Desktop  Downloads  file1.save  index.html  my_directory  peri.txt  Pictures  Templates
Documents  f1.txt.gz  f.tar      Music       my_script.sh  pgp      Public    Videos
```

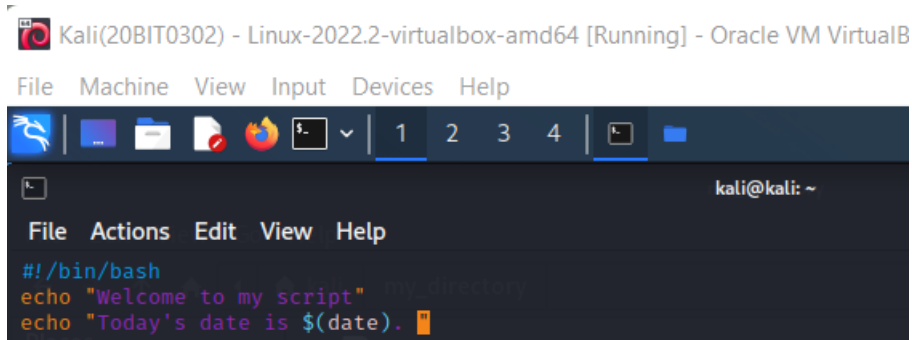
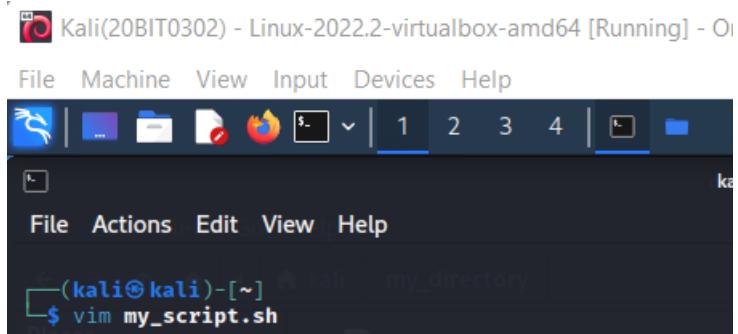
2. Edit my_script.sh using any text editor , add the given lines, make it executable , and run.

```
vim my_script.sh
```

```
#!/bin/bash
```

```
echo "Welcome to my script!"
```

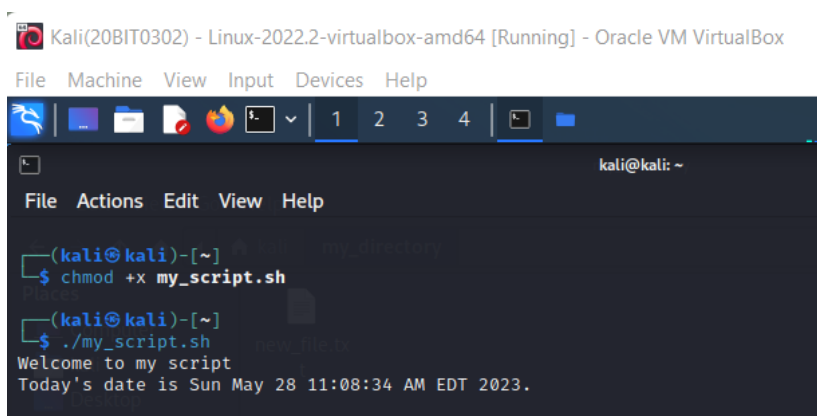
```
echo "Today's date is $(date)."
```





```
chmod +x my_script.sh
```

```
./my_script.sh
```

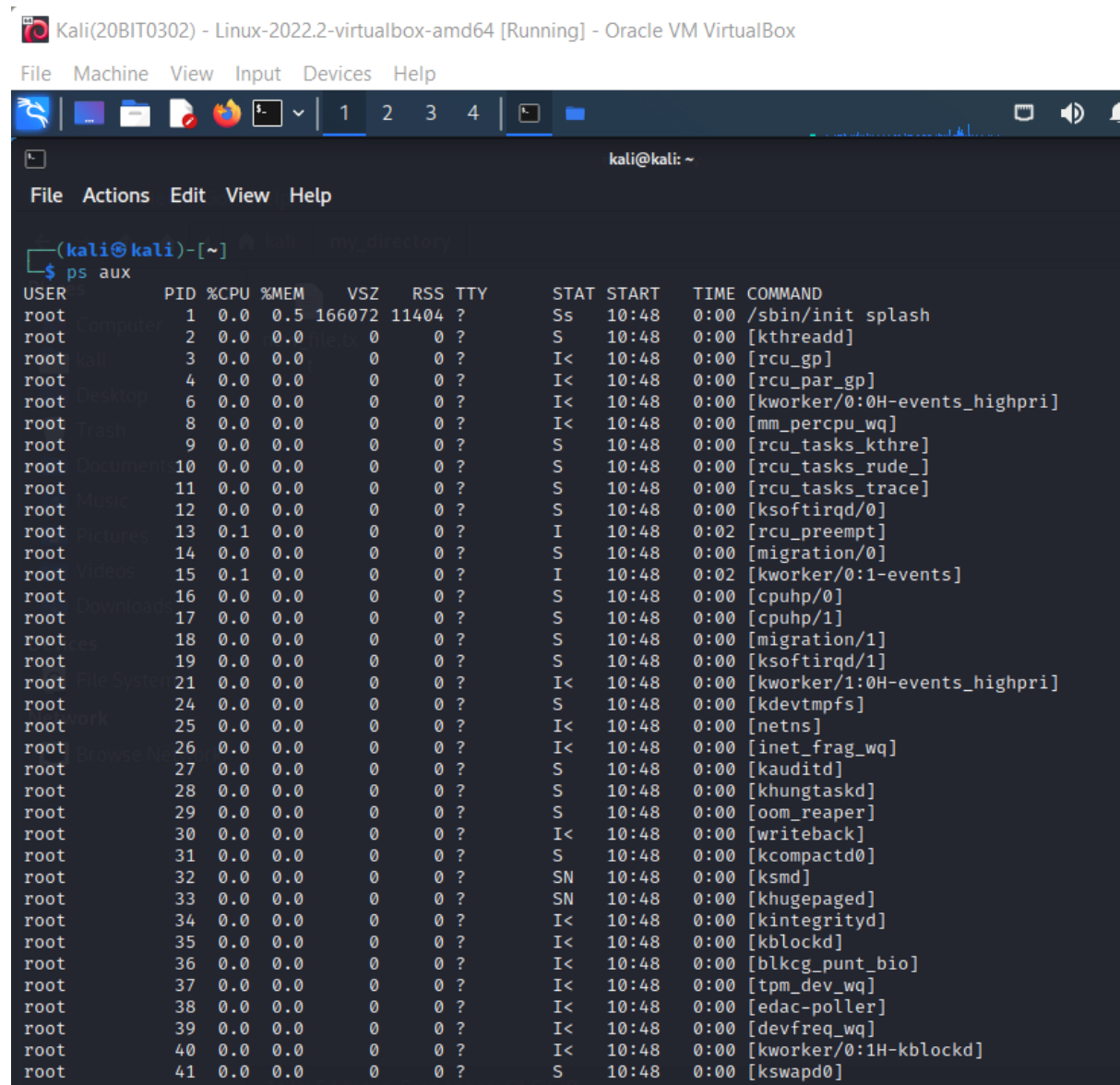


TASK 3 : COMMAND EXECUTION AND PIPELINES

1. List all the processes running on your system using the "ps" command.

ps aux

The ps aux command is used to display a detailed list of all running processes on a Linux or Unix system.



```

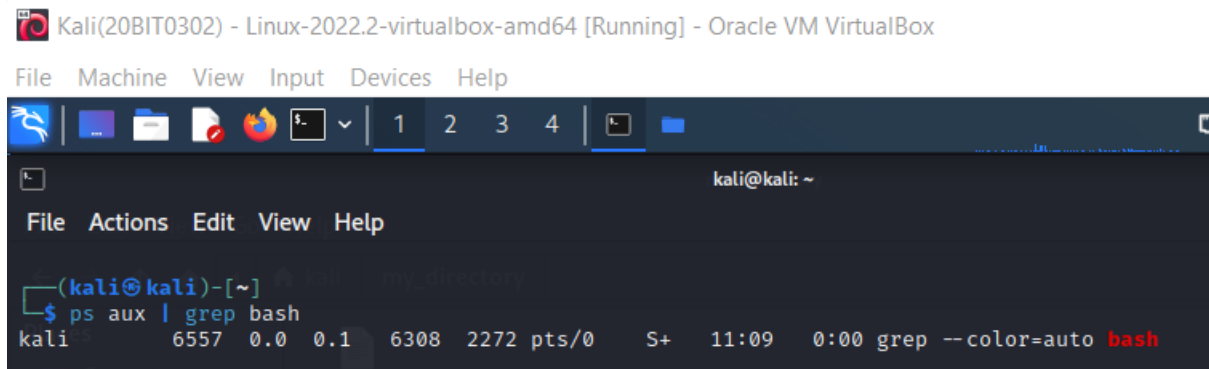
Kali(20BIT0302) - Linux-2022.2-virtualbox-amd64 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
kali@kali: ~
File Actions Edit View Help
(kali@kali)-[~]
$ ps aux
USER          PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root           1  0.0  0.5 166072 11404 ?        Ss   10:48   0:00 /sbin/init splash
root           2  0.0  0.0      0     0 ?        S    10:48   0:00 [kthreadd]
root           3  0.0  0.0      0     0 ?        I<   10:48   0:00 [rcu_gp]
root           4  0.0  0.0      0     0 ?        I<   10:48   0:00 [rcu_par_gp]
root           6  0.0  0.0      0     0 ?        I<   10:48   0:00 [kworker/0:0H-events_highpri]
root           8  0.0  0.0      0     0 ?        I<   10:48   0:00 [mm_percpu_wq]
root           9  0.0  0.0      0     0 ?        S    10:48   0:00 [rcu_tasks_kthre]
root          10  0.0  0.0      0     0 ?        S    10:48   0:00 [rcu_tasks_rude_]
root          11  0.0  0.0      0     0 ?        S    10:48   0:00 [rcu_tasks_trace]
root          12  0.0  0.0      0     0 ?        S    10:48   0:00 [ksoftirqd/0]
root          13  0.1  0.0      0     0 ?        I    10:48   0:02 [rcu_preempt]
root          14  0.0  0.0      0     0 ?        S    10:48   0:00 [migration/0]
root          15  0.1  0.0      0     0 ?        I    10:48   0:02 [kworker/0:1-events]
root          16  0.0  0.0      0     0 ?        S    10:48   0:00 [cpuhp/0]
root          17  0.0  0.0      0     0 ?        S    10:48   0:00 [cpuhp/1]
root          18  0.0  0.0      0     0 ?        S    10:48   0:00 [migration/1]
root          19  0.0  0.0      0     0 ?        S    10:48   0:00 [ksoftirqd/1]
root          21  0.0  0.0      0     0 ?        I<   10:48   0:00 [kworker/1:0H-events_highpri]
root          24  0.0  0.0      0     0 ?        S    10:48   0:00 [kdevtmpfs]
root          25  0.0  0.0      0     0 ?        I<   10:48   0:00 [netns]
root          26  0.0  0.0      0     0 ?        I<   10:48   0:00 [inet_frag_wq]
root          27  0.0  0.0      0     0 ?        S    10:48   0:00 [kauditd]
root          28  0.0  0.0      0     0 ?        S    10:48   0:00 [khungtaskd]
root          29  0.0  0.0      0     0 ?        S    10:48   0:00 [oom_reaper]
root          30  0.0  0.0      0     0 ?        I<   10:48   0:00 [writeback]
root          31  0.0  0.0      0     0 ?        S    10:48   0:00 [kcompactd0]
root          32  0.0  0.0      0     0 ?        SN   10:48   0:00 [ksmd]
root          33  0.0  0.0      0     0 ?        SN   10:48   0:00 [khugepaged]
root          34  0.0  0.0      0     0 ?        I<   10:48   0:00 [kintegrityd]
root          35  0.0  0.0      0     0 ?        I<   10:48   0:00 [kblockd]
root          36  0.0  0.0      0     0 ?        I<   10:48   0:00 [blkcg_punt_bio]
root          37  0.0  0.0      0     0 ?        I<   10:48   0:00 [tpm_dev_wq]
root          38  0.0  0.0      0     0 ?        I<   10:48   0:00 [edac-poller]
root          39  0.0  0.0      0     0 ?        I<   10:48   0:00 [devfreq_wq]
root          40  0.0  0.0      0     0 ?        I<   10:48   0:00 [kworker/0:1H-kblockd]
root          41  0.0  0.0      0     0 ?        S    10:48   0:00 [kswapd0]
  
```


2. Use the "grep" command to filter the processes list and display only the processes with

"bash" in their name.

`ps aux | grep bash`

(grep is used for matching a pattern or string)



Kali(20BIT0302) - Linux-2022.2-virtualbox-amd64 [Running] - Oracle VM VirtualBox

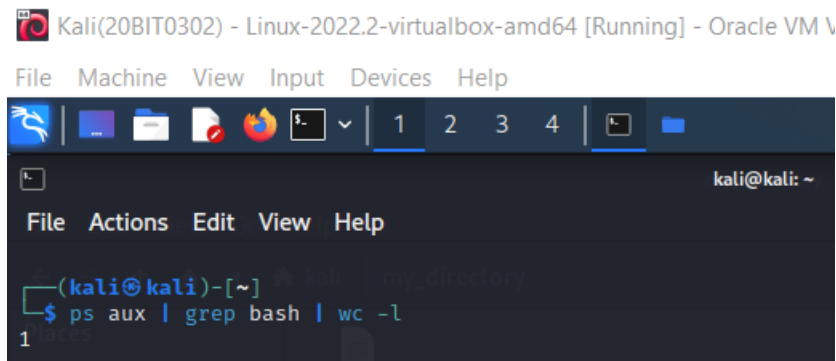
File Machine View Input Devices Help

kali@kali: ~

```
(kali@kali)-[~]
$ ps aux | grep bash
kali        6557  0.0  0.1  6308  2272 pts/0    S+   11:09   0:00 grep --color=auto bash
```

3. Use the "wc" command to count the number of lines in the filtered output.

`ps aux | grep bash | wc -l`



Kali(20BIT0302) - Linux-2022.2-virtualbox-amd64 [Running] - Oracle VM V

File Machine View Input Devices Help

kali@kali: ~

```
(kali@kali)-[~]
$ ps aux | grep bash | wc -l
1
```