

Name: **BHARGAV CHOPRA**

Register No: **20BCI0151**

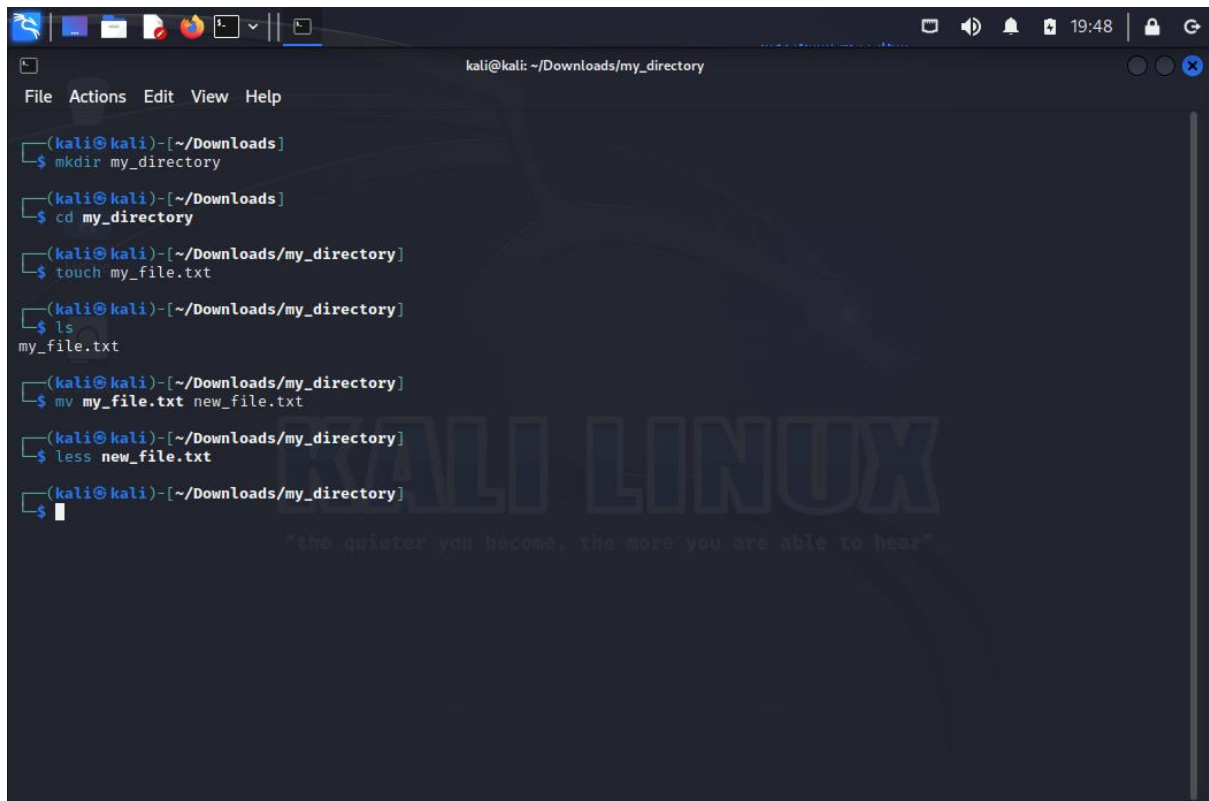
Vellore Institute of Technology, Vellore

SmartBridge Externship Program in Cyber Security and Ethical Hacking

Week 2 Assignment

Task 1: File and Directory Manipulation

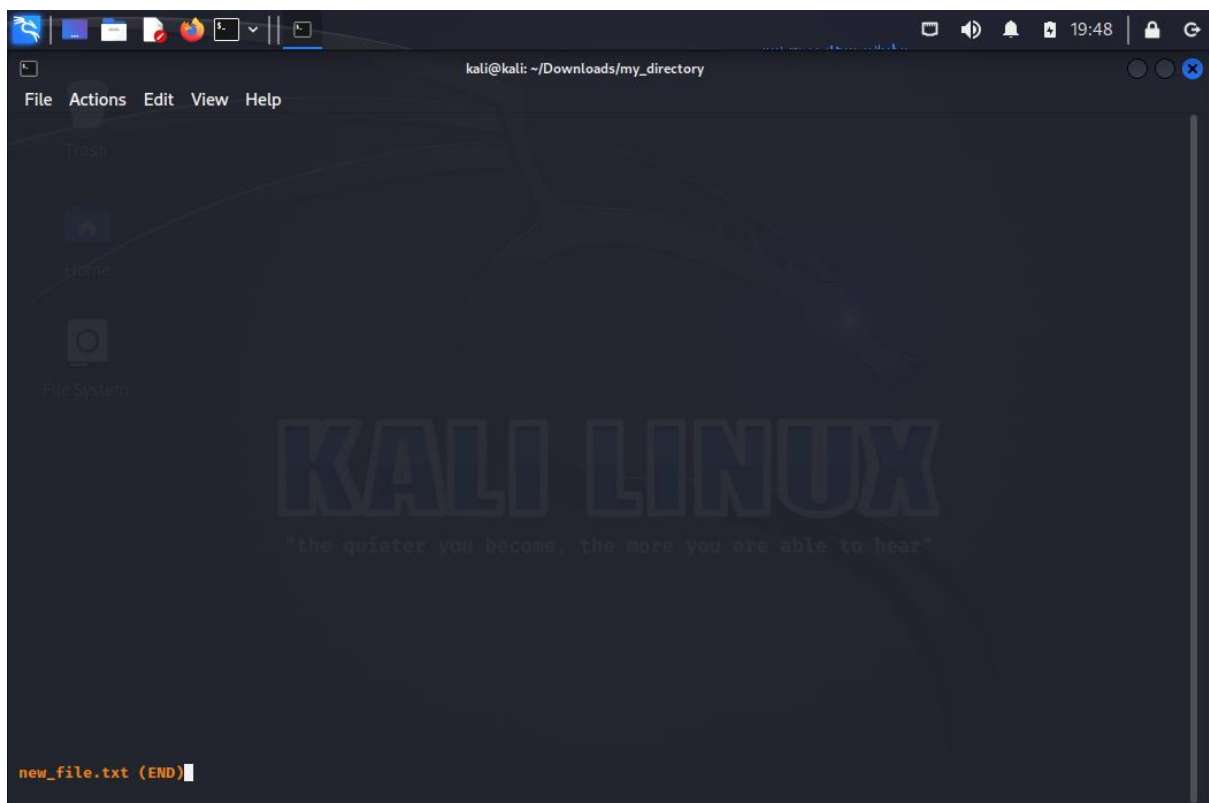
1. Create a directory called "my_directory".
2. Navigate into the "my_directory".
3. Create an empty file called "my_file.txt".
4. List all the files and directories in the current directory.
5. Rename "my_file.txt" to "new_file.txt".
6. Display the content of "new_file.txt" using a pager tool of your choice.
7. Append the text "Hello, World!" to "new_file.txt".
8. Create a new directory called "backup" within "my_directory".
9. Move "new_file.txt" to the "backup" directory.
10. Verify that "new_file.txt" is now located in the "backup" directory.
11. Delete the "backup" directory and all its contents.



A terminal window titled "kali@kali: ~/Downloads/my_directory" with a menu bar (File, Actions, Edit, View, Help). The terminal shows a sequence of commands and their outputs:

```
(kali@kali)-[~/Downloads]
$ mkdir my_directory
(kali@kali)-[~/Downloads]
$ cd my_directory
(kali@kali)-[~/Downloads/my_directory]
$ touch my_file.txt
(kali@kali)-[~/Downloads/my_directory]
$ ls
my_file.txt
(kali@kali)-[~/Downloads/my_directory]
$ mv my_file.txt new_file.txt
(kali@kali)-[~/Downloads/my_directory]
$ less new_file.txt
(kali@kali)-[~/Downloads/my_directory]
$
```

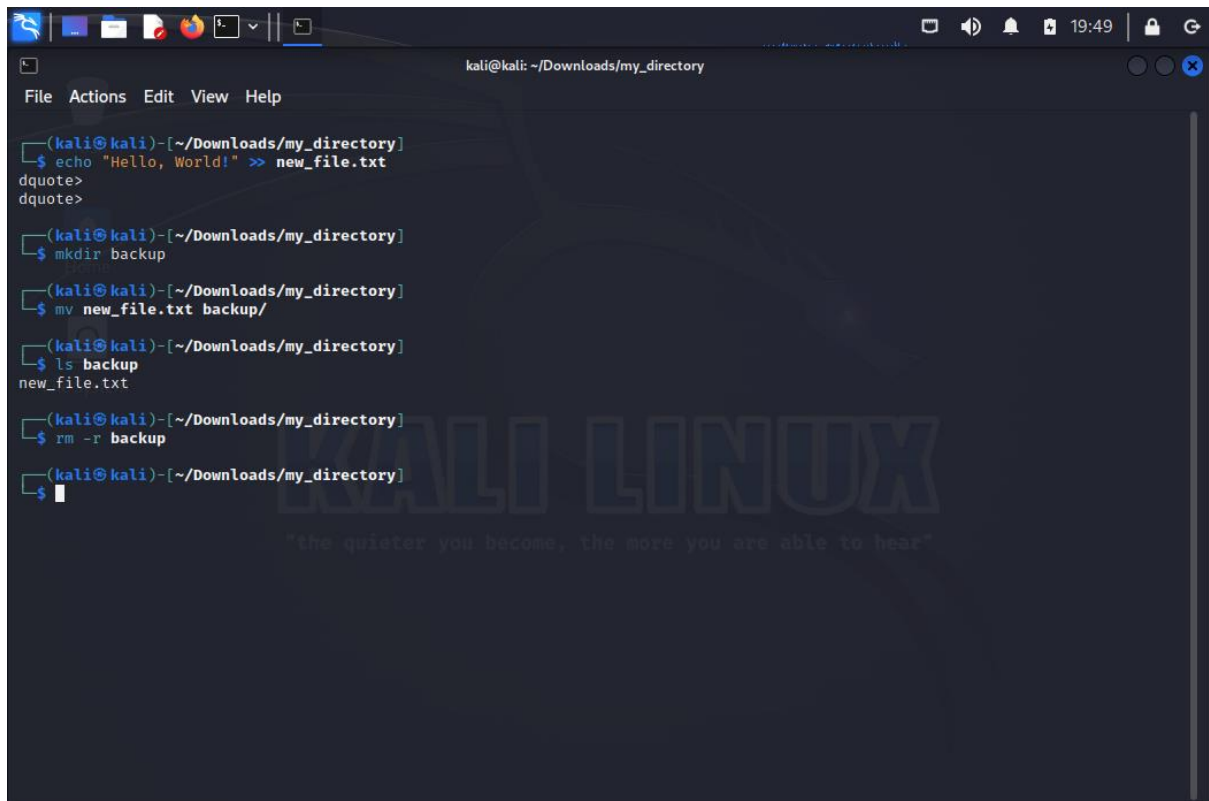
The background features a Kali Linux logo and the text "KALI LINUX" and "the quieter you become, the more you are able to hear".



The same terminal window is shown, but now displaying the output of the 'less' command. The left sidebar shows icons for Trash, Home, and File System. The main area shows the text "new_file.txt (END)" at the bottom, indicating the end of the file content.

```
new_file.txt (END)
```

The background features a Kali Linux logo and the text "KALI LINUX" and "the quieter you become, the more you are able to hear".



A terminal window titled "kali@kali: ~/Downloads/my_directory" is shown. The window has a menu bar with "File", "Actions", "Edit", "View", and "Help". The terminal displays a series of commands and their outputs:

```
(kali@kali)-[~/Downloads/my_directory]
$ echo "Hello, World!" >> new_file.txt
dquote>
dquote>

(kali@kali)-[~/Downloads/my_directory]
$ mkdir backup

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

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

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

(kali@kali)-[~/Downloads/my_directory]
$
```

The background of the terminal features a faint watermark of a dragon and the text "KALI LINUX" and "the quieter you become, the more you are able to hear".

Task 2: Permissions and Scripting

- Create a new file called "my_script.sh".
- Edit "my_script.sh" using a text editor of your choice and add the following lines:

bash

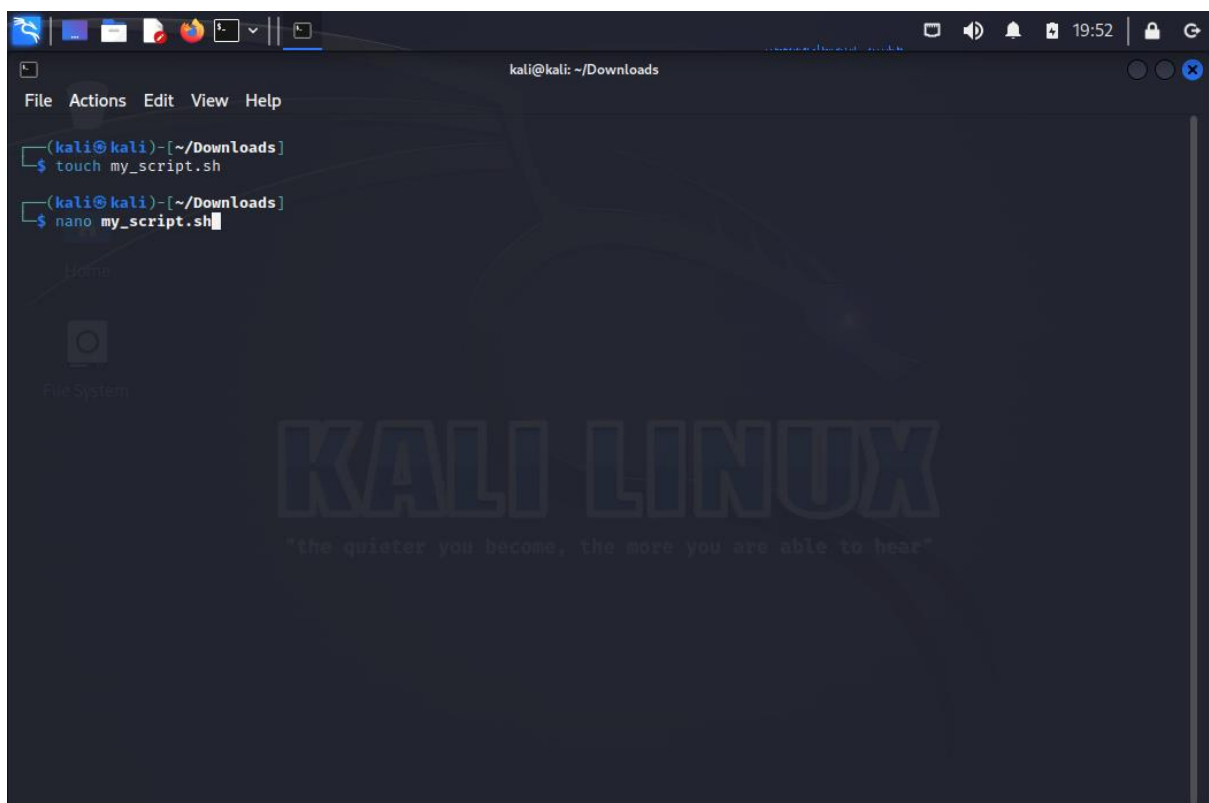
#!/bin/bash

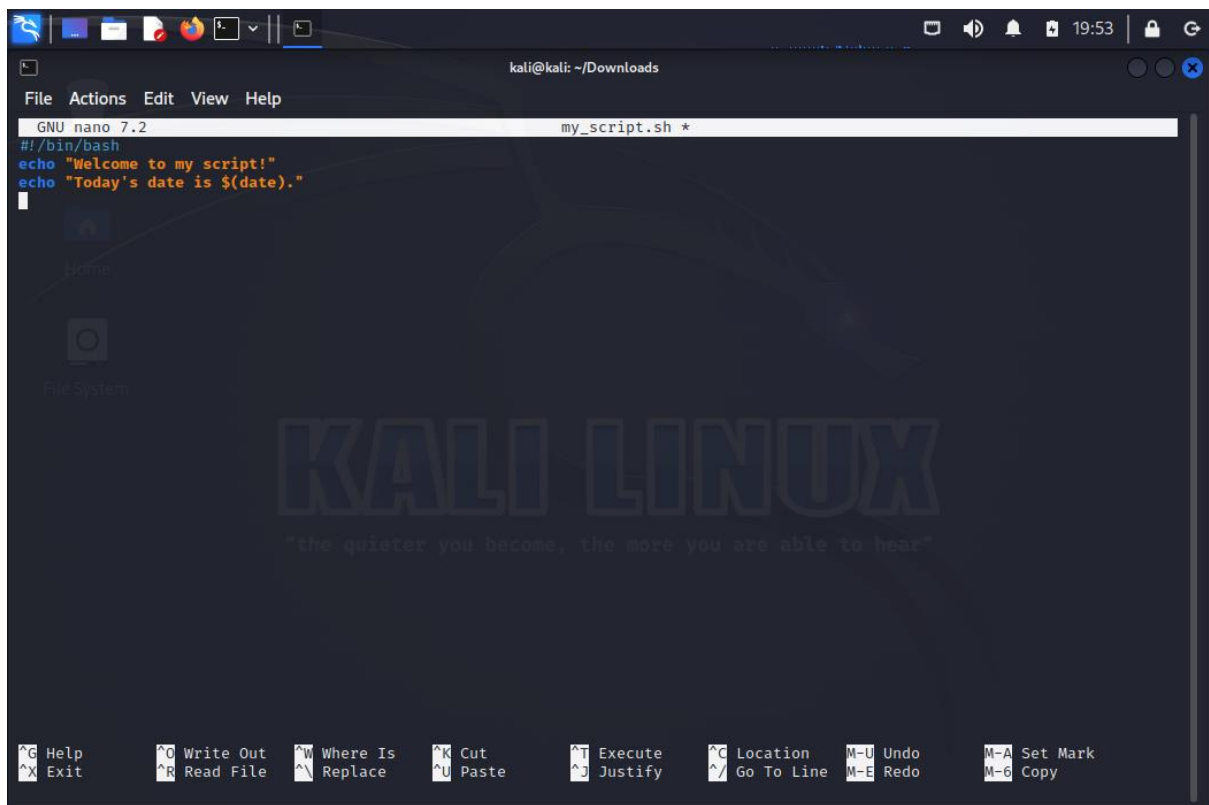
echo "Welcome to my script!"

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

Save and exit the file.

- Make "my_script.sh" executable.
- Run "my_script.sh" and verify that the output matches the expected result.

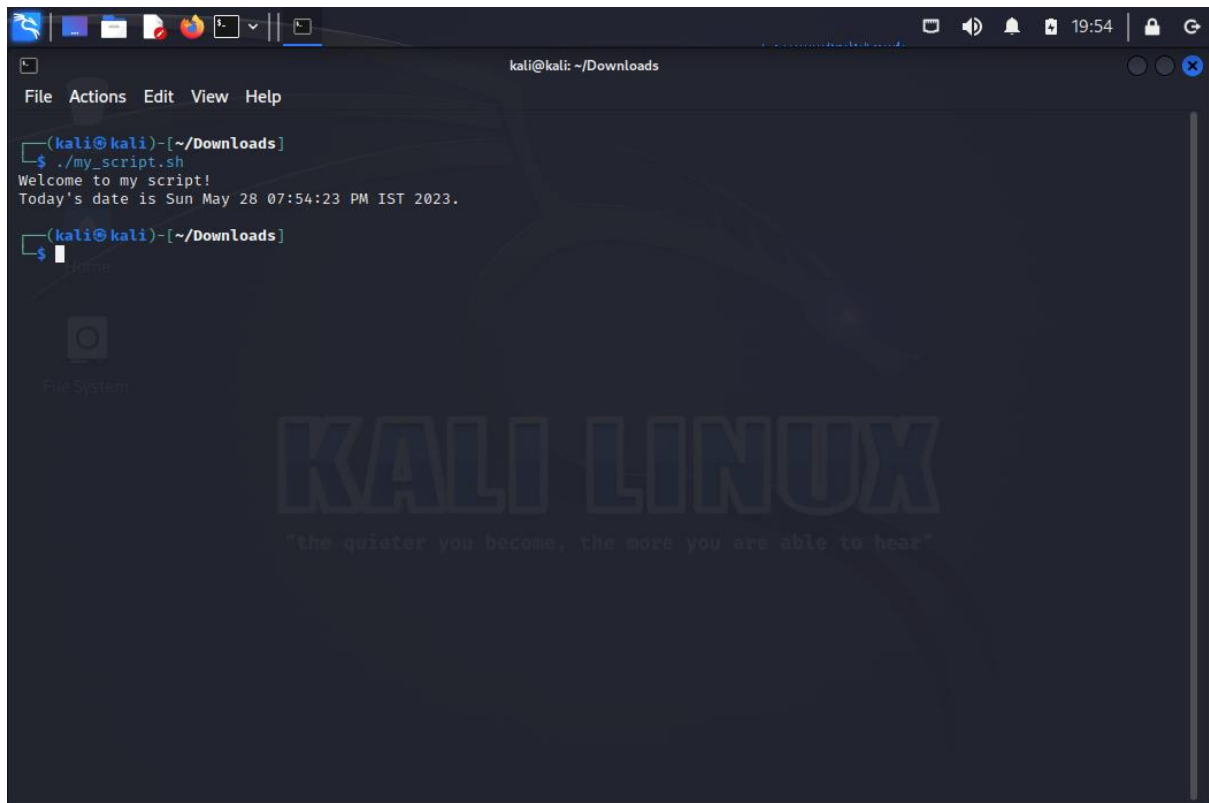




The screenshot shows a Kali Linux desktop environment with a terminal window open. The terminal window has a title bar that reads "kali@kali: ~/Downloads". Inside the terminal, the nano text editor is running, editing a file named "my_script.sh". The editor's menu bar includes "File", "Actions", "Edit", "View", and "Help". The status bar at the bottom of the editor shows "GNU nano 7.2" and "my_script.sh *". The content of the script is as follows:

```
#!/bin/bash
echo "Welcome to my script!"
echo "Today's date is $(date)."
```

The background of the terminal window features the Kali Linux logo and the text "KALI LINUX" and "the quieter you become, the more you are able to hear". The desktop environment includes a taskbar at the top with various application icons and a system tray on the right showing the time as 19:53.



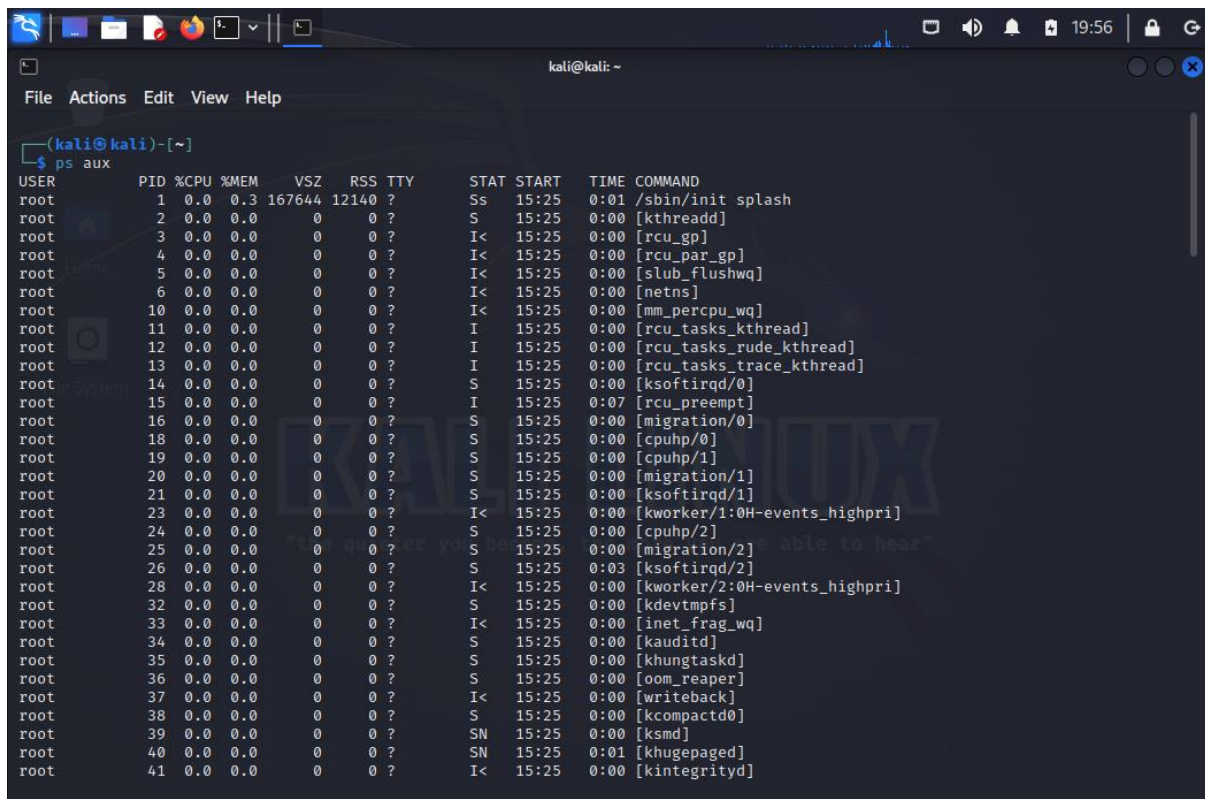
The screenshot shows the same Kali Linux desktop environment as the first image, but now the terminal window is displaying the output of the script execution. The terminal window title bar still reads "kali@kali: ~/Downloads". The prompt is "(kali@kali)-[~/Downloads]". The user has entered the command "\$./my_script.sh", and the terminal has executed it, displaying the following output:

```
Welcome to my script!
Today's date is Sun May 28 07:54:23 PM IST 2023.
```

The background of the terminal window remains the same, featuring the Kali Linux logo and the text "KALI LINUX" and "the quieter you become, the more you are able to hear". The desktop environment includes a taskbar at the top with various application icons and a system tray on the right showing the time as 19:54.

Task 3: Command Execution and Pipelines

- List all the processes running on your system using the "ps" command.
- Use the "grep" command to filter the processes list and display only the processes with "bash" in their name.
- Use the "wc" command to count the number of lines in the filtered output.



```
(kali@kali)-[~]
$ ps aux
USER          PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root            1  0.0  0.3 167644 12140 ?        Ss   15:25   0:01 /sbin/init splash
root            2  0.0  0.0      0     0 ?        S    15:25   0:00 [kthreadd]
root            3  0.0  0.0      0     0 ?        I<   15:25   0:00 [rcu_gp]
root            4  0.0  0.0      0     0 ?        I<   15:25   0:00 [rcu_par_gp]
root            5  0.0  0.0      0     0 ?        I<   15:25   0:00 [slub_flushwq]
root            6  0.0  0.0      0     0 ?        I<   15:25   0:00 [netns]
root           10  0.0  0.0      0     0 ?        I<   15:25   0:00 [mm_percpu_wq]
root           11  0.0  0.0      0     0 ?        I    15:25   0:00 [rcu_tasks_kthread]
root           12  0.0  0.0      0     0 ?        I    15:25   0:00 [rcu_tasks_rude_kthread]
root           13  0.0  0.0      0     0 ?        I    15:25   0:00 [rcu_tasks_trace_kthread]
root           14  0.0  0.0      0     0 ?        S    15:25   0:00 [ksoftirqd/0]
root           15  0.0  0.0      0     0 ?        I    15:25   0:07 [rcu_preempt]
root           16  0.0  0.0      0     0 ?        S    15:25   0:00 [migration/0]
root           18  0.0  0.0      0     0 ?        S    15:25   0:00 [cpuhp/0]
root           19  0.0  0.0      0     0 ?        S    15:25   0:00 [cpuhp/1]
root           20  0.0  0.0      0     0 ?        S    15:25   0:00 [migration/1]
root           21  0.0  0.0      0     0 ?        S    15:25   0:00 [ksoftirqd/1]
root           23  0.0  0.0      0     0 ?        I<   15:25   0:00 [kworker/1:0H-events_highpri]
root           24  0.0  0.0      0     0 ?        S    15:25   0:00 [cpuhp/2]
root           25  0.0  0.0      0     0 ?        S    15:25   0:00 [migration/2]
root           26  0.0  0.0      0     0 ?        S    15:25   0:03 [ksoftirqd/2]
root           28  0.0  0.0      0     0 ?        I<   15:25   0:00 [kworker/2:0H-events_highpri]
root           32  0.0  0.0      0     0 ?        S    15:25   0:00 [kdevtmpfs]
root           33  0.0  0.0      0     0 ?        I<   15:25   0:00 [inet_frag_wq]
root           34  0.0  0.0      0     0 ?        S    15:25   0:00 [kauditd]
root           35  0.0  0.0      0     0 ?        S    15:25   0:00 [khungtaskd]
root           36  0.0  0.0      0     0 ?        S    15:25   0:00 [oom_reaper]
root           37  0.0  0.0      0     0 ?        I<   15:25   0:00 [writeback]
root           38  0.0  0.0      0     0 ?        S    15:25   0:00 [kcompactd0]
root           39  0.0  0.0      0     0 ?        SN   15:25   0:00 [ksmd]
root           40  0.0  0.0      0     0 ?        SN   15:25   0:01 [khugepaged]
root           41  0.0  0.0      0     0 ?        I<   15:25   0:00 [kintegrityd]
```

```
kali@kali: ~  
File Actions Edit View Help  
kali 1394 0.0 0.2 233340 10508 ? Ssl 15:45 0:00 /usr/libexec/gvfs-mtp-volume-monitor  
kali 1398 0.0 0.2 312392 11936 ? Ssl 15:45 0:00 /usr/libexec/gvfs-afc-volume-monitor  
kali 1413 0.0 0.2 311616 10532 ? Sl 15:45 0:00 /usr/libexec/gvfsd-trash --spawner :1.15 /org/gtk/gvfs/exec  
kali 1414 0.0 0.1 48472 7076 ? Ss 15:45 0:00 /usr/libexec/bluetooth/obexd  
kali 1419 0.0 0.2 159940 8376 ? Ssl 15:45 0:00 /usr/libexec/gvfsd-metadata  
polkitd 69690 0.0 0.0 0 0 ? Z 18:09 0:00 [pkla-check-auth] <defunct>  
root 73042 0.0 0.0 0 0 ? I 18:16 0:01 [kworker/0:2-events]  
kali 87018 0.0 0.4 537528 16144 ? Ssl 18:42 0:00 /usr/libexec/xdg-desktop-portal  
kali 87022 0.0 0.2 534044 9228 ? Ssl 18:42 0:00 /usr/libexec/xdg-document-portal  
kali 87025 0.0 0.1 236676 7688 ? Ssl 18:42 0:00 /usr/libexec/xdg-permission-store  
root 87031 0.0 0.0 2480 972 ? Ss 18:42 0:00 fusermount3 -o rw,nosuid,nodev,fsname=portal,auto_unmount,s  
kali 87035 0.0 0.5 336048 21504 ? Ssl 18:42 0:00 /usr/libexec/xdg-desktop-portal-gtk  
root 88517 0.0 0.0 0 0 ? I 18:45 0:00 [kworker/2:2-mm_percpu_wq]  
kali 112988 0.0 0.2 233260 8272 ? Sl 19:35 0:00 /usr/lib/x86_64-linux-gnu/xfce4/xfconf/xfconfd  
root 115462 0.0 0.0 0 0 ? I 19:40 0:00 [kworker/1:4-events_freezable_power_  
root 115465 0.0 0.0 0 0 ? I 19:40 0:00 [kworker/0:1-events]  
root 115478 0.0 0.0 0 0 ? I 19:40 0:00 [kworker/2:3-events]  
root 116726 0.0 0.1 16496 5760 ? Ss 19:42 0:00 /sbin/wpa_supplicant -u -s -O DIR=/run/wpa_supplicant GROUP  
root 119588 0.0 0.0 0 0 ? I 19:46 0:00 [kworker/u6:0-events_unbound]  
root 120309 0.0 0.0 0 0 ? I 19:47 0:00 [kworker/u6:1-writeback]  
root 121820 0.0 0.0 0 0 ? I 19:50 0:00 [kworker/1:1-ata_sff]  
root 123237 0.0 0.0 0 0 ? I 19:53 0:00 [kworker/u6:2-events_unbound]  
kali 123995 0.9 2.6 441432 104856 ? Sl 19:55 0:00 /usr/bin/qterminal  
kali 123998 0.3 0.1 10148 6376 pts/0 Ss 19:55 0:00 /usr/bin/zsh  
root 124402 0.0 0.0 0 0 ? I 19:55 0:00 [kworker/1:0-ata_sff]  
kali 124518 0.0 0.1 11200 4680 pts/0 R+ 19:56 0:00 ps aux  
  
(kali@kali)-[~]  
$ ps aux | grep bash  
kali 124723 0.0 0.0 6332 2136 pts/0 S+ 19:56 0:00 grep --color=auto bash  
  
(kali@kali)-[~]  
$  
  
(kali@kali)-[~]  
$
```

This command uses the pipe symbol (|) to send the output of the **ps aux** command as input to the **grep** command. The **grep** command filters the list and displays only the processes that have "bash" in their name.


```
kali@kali: ~  
File Actions Edit View Help  
kali 87018 0.0 0.4 537528 16144 ? Ssl 18:42 0:00 /usr/libexec/xdg-desktop-portal  
kali 87022 0.0 0.2 534044 9228 ? Ssl 18:42 0:00 /usr/libexec/xdg-document-portal  
kali 87025 0.0 0.1 236676 7688 ? Ssl 18:42 0:00 /usr/libexec/xdg-permission-store  
root 87031 0.0 0.0 2480 972 ? Ss 18:42 0:00 fusermount3 -o rw,nosuid,nodev,fsname=portal,auto_unmount,s  
kali 87035 0.0 0.5 336048 21504 ? Ssl 18:42 0:00 /usr/libexec/xdg-desktop-portal-gtk  
root 88517 0.0 0.0 0 0 ? I 18:45 0:00 [kworker/2:2-mm_percpu_wq]  
kali 112988 0.0 0.2 233260 8272 ? Sl 19:35 0:00 /usr/lib/x86_64-linux-gnu/xfce4/xfconf/xfconfd  
root 115462 0.0 0.0 0 0 ? I 19:40 0:00 [kworker/1:4-events_freezable_power_]  
root 115465 0.0 0.0 0 0 ? I 19:40 0:00 [kworker/0:1-events]  
root 115478 0.0 0.0 0 0 ? I 19:40 0:00 [kworker/2:3-events]  
root 116726 0.0 0.1 16496 5760 ? Ss 19:42 0:00 /sbin/wpa_supplicant -u -s -O DIR=/run/wpa_supplicant GROUP  
root 119588 0.0 0.0 0 0 ? I 19:46 0:00 [kworker/u6:0-events_unbound]  
root 120309 0.0 0.0 0 0 ? I 19:47 0:00 [kworker/u6:1-writeback]  
root 121820 0.0 0.0 0 0 ? I 19:50 0:00 [kworker/1:1-ata_sff]  
root 123237 0.0 0.0 0 0 ? I 19:53 0:00 [kworker/u6:2-events_unbound]  
kali 123995 0.9 2.6 441432 104856 ? Sl 19:55 0:00 /usr/bin/qterminal  
kali 123998 0.3 0.1 10148 6376 pts/0 Ss 19:55 0:00 /usr/bin/zsh  
root 124402 0.0 0.0 0 0 ? I 19:55 0:00 [kworker/1:0-ata_sff]  
kali 124518 0.0 0.1 11200 4680 pts/0 R+ 19:56 0:00 ps aux  
  
(kali@kali)-[~]  
$ ps aux | grep bash  
kali 124723 0.0 0.0 6332 2136 pts/0 S+ 19:56 0:00 grep --color=auto bash  
  
(kali@kali)-[~]  
$  
  
(kali@kali)-[~]  
$ ps aux | grep bash | wc -l  
1  
  
(kali@kali)-[~]  
$  
  
(kali@kali)-[~]  
$
```

This command adds another pipe symbol (|) to send the filtered output from the previous command as input to the **wc** command. The **wc -l** option counts the number of lines in the input and displays the result.