SMARTBRIDGE EXTERNSHIP

(Cyber Threat Intelligence (Cyber Security & Ethical Hacking))

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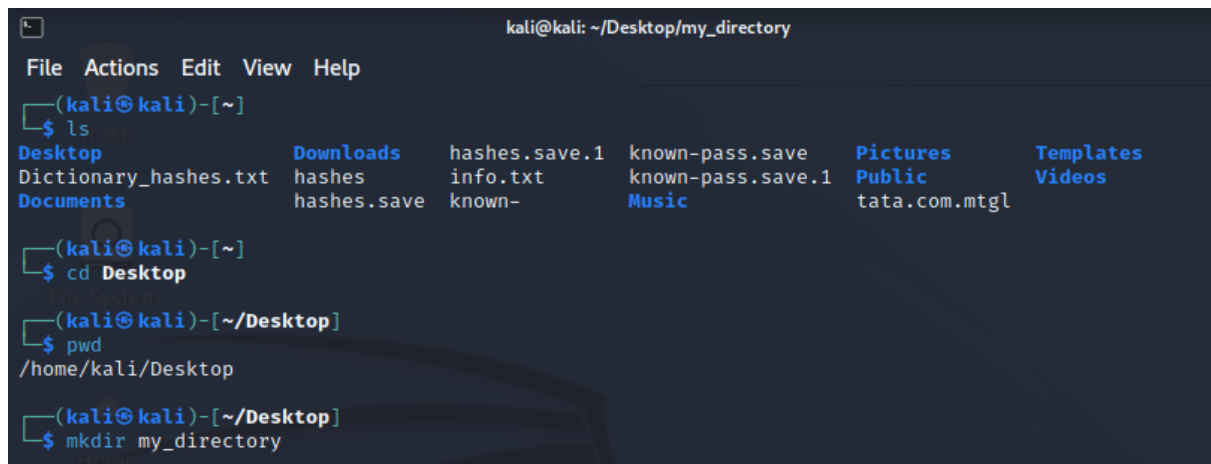
REG.NO: 20BCE2722

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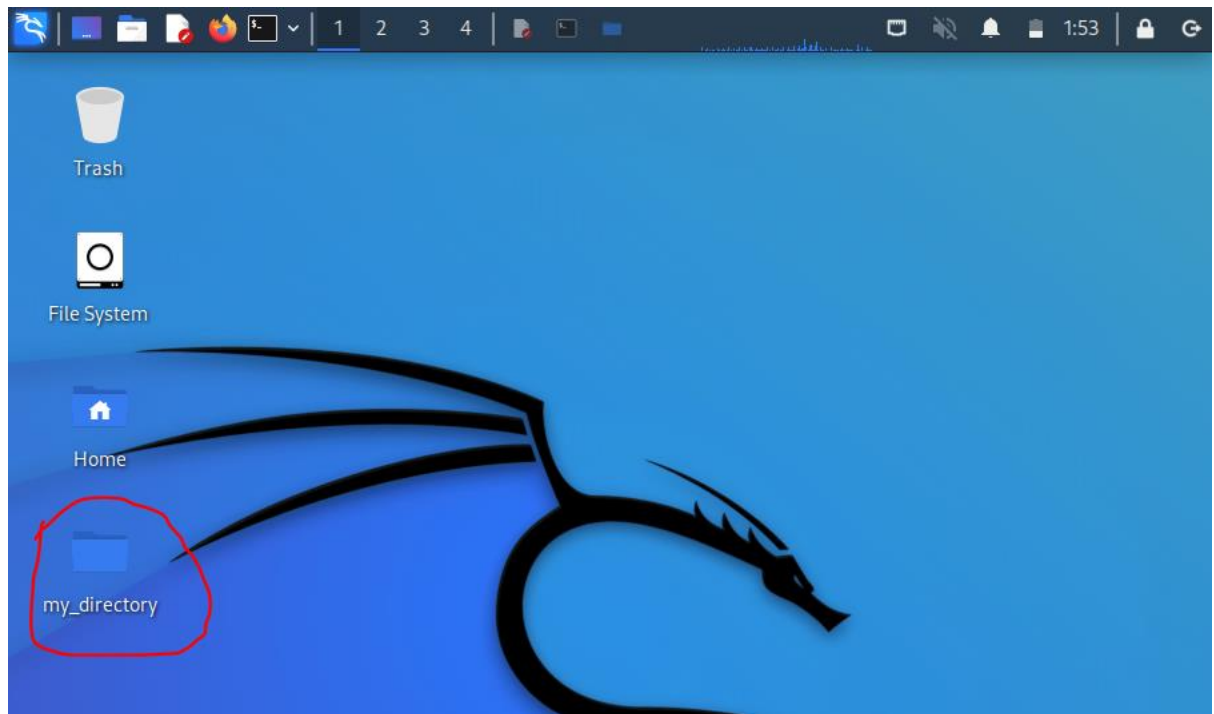
Assignment: Bash Shell Basics

Task 1: File and Directory Manipulation

1. Create a directory called "my_directory".

2. Navigate into the "my_directory".


```
┌──(kali㉿kali)-[~/Desktop]
└─$ mkdir my_directory

┌──(kali㉿kali)-[~/Desktop]
└─$ cd my_directory
```

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


```
┌──(kali㉿kali)-[~/Desktop/my_directory]
└─$ touch my_file.txt
```
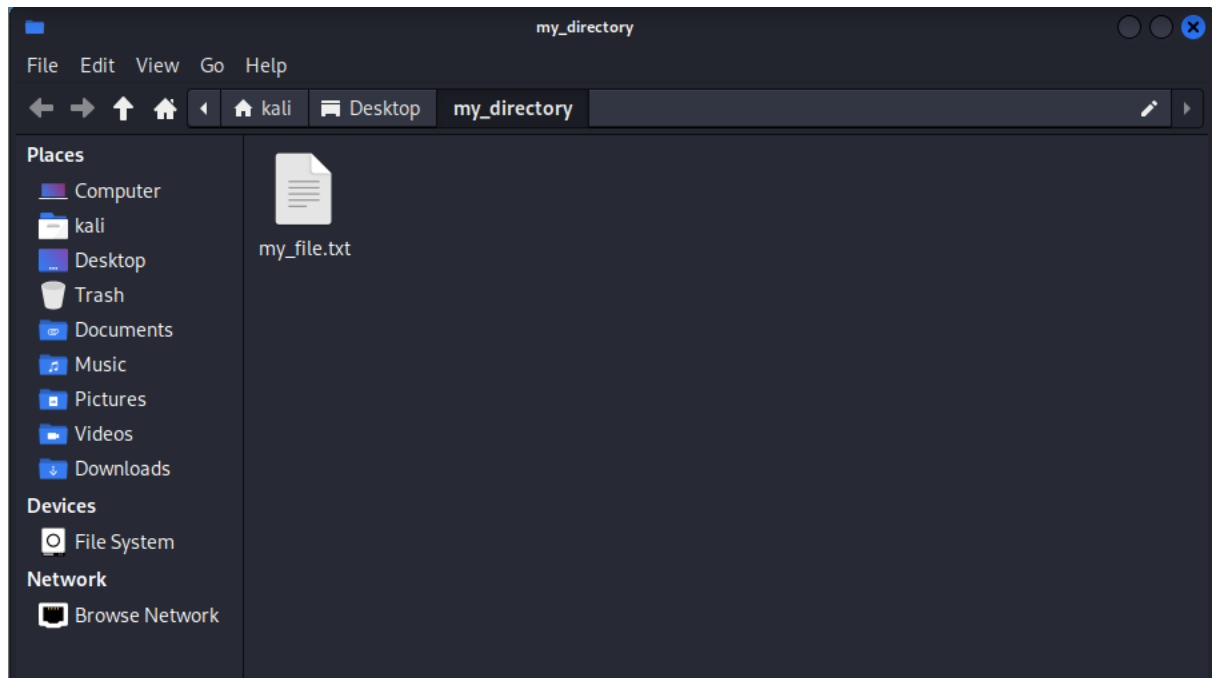
4. List all the files and directories in the current directory.

```
┌──(kali㉿kali)-[~/Desktop/my_directory]
└─$ ls
my_file.txt
```

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

```
┌──(kali㉿kali)-[~/Desktop/my_directory]
└─$  mv my_file.txt new_file.txt
```

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

```
┌──(kali㉿kali)-[~/Desktop/my_directory]
└─$ less new_file.txt
```

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

```
┌──(kali㉿kali)-[~/Desktop/my_directory]
└─$ echo "Hello, World!" >> new_file.txt

dquote>
```

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

```
┌──(kali㉿kali)-[~/Desktop/my_directory]
└─$ mkdir backup
```

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

```
┌──(kali㉿kali)-[~/Desktop/my_directory]
└─$ mv new_file.txt backup/
```

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

```
┌──(kali㉿kali)-[~/Desktop/my_directory]
└─$ ls backup/
new_file.txt
```

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

```
┌──(kali㉿kali)-[~/Desktop/my_directory]
└─$ rm -r backup
```

Task 2: Permissions and Scripting

● Create a new file called "my_script.sh".

```
┌──(kali㉿kali)-[~/Desktop/my_directory]
└─$ touch 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.

```
┌──(kali㉿kali)-[~/Desktop/my_directory]
└─$ #!/bin/bash
echo "Welcome to my script!"
echo "Today's date is $(date)."

quote>
```

● Make "my_script.sh" executable.

```
┌──(kali㉿kali)-[~/Desktop/my_directory]
└─$ chmod +x my_script.sh
```

● Run "my_script.sh" and verify that the output matches the expected result.

```
┌──(kali㊀kali)-[~/Desktop/my_directory]
└─$ ./my_script.sh
```

Task 3: Command Execution and Pipelines

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

```
┌──(kali㊀kali)-[~/Desktop/my_directory]
└─$ ps aux

USER       PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root         1  0.0  0.5 167948 12048 ?        Ss   01:26   0:02 /sbin/init splash
root         2  0.0  0.0      0     0 ?        S    01:26   0:00 [kthreadd]
root         3  0.0  0.0      0     0 ?        I<   01:26   0:00 [rcu_gp]
root         4  0.0  0.0      0     0 ?        I<   01:26   0:00 [rcu_par_gp]
root         5  0.0  0.0      0     0 ?        I<   01:26   0:00 [netns]
root         7  0.0  0.0      0     0 ?        I<   01:26   0:00 [kworker/0:0H-events_highpri]
root         9  0.0  0.0      0     0 ?        I<   01:26   0:00 [kworker/0:1H-events_highpri]
root        10  0.0  0.0      0     0 ?        I<   01:26   0:00 [mm_percpu_wq]
root        11  0.0  0.0      0     0 ?        I    01:26   0:00 [rcu_tasks_kthread]
root        12  0.0  0.0      0     0 ?        I    01:26   0:00 [rcu_tasks_rude_kthread]
root        13  0.0  0.0      0     0 ?        I    01:26   0:00 [rcu_tasks_trace_kthread]
root        14  0.0  0.0      0     0 ?        S    01:26   0:00 [ksoftirqd/0]
root        15  0.0  0.0      0     0 ?        I    01:26   0:02 [rcu_preempt]
root        16  0.0  0.0      0     0 ?        S    01:26   0:00 [migration/0]
root        17  0.0  0.0      0     0 ?        I    01:26   0:00 [kworker/0:1-events]
root        18  0.0  0.0      0     0 ?        S    01:26   0:00 [cpuhp/0]
root        19  0.0  0.0      0     0 ?        S    01:26   0:00 [cpuhp/1]
root        20  0.0  0.0      0     0 ?        S    01:26   0:00 [migration/1]
root        21  0.0  0.0      0     0 ?        S    01:26   0:00 [ksoftirqd/1]
root        23  0.0  0.0      0     0 ?        I<   01:26   0:00 [kworker/1:0H-events_highpri]
root        26  0.0  0.0      0     0 ?        S    01:26   0:00 [kdevtmpfs]
root        27  0.0  0.0      0     0 ?        I<   01:26   0:00 [inet_frag_wq]
root        28  0.0  0.0      0     0 ?        S    01:26   0:00 [kauditd]
root        29  0.0  0.0      0     0 ?        S    01:26   0:00 [khungtaskd]
root        30  0.0  0.0      0     0 ?        S    01:26   0:00 [oom_reaper]
root        31  0.0  0.0      0     0 ?        I<   01:26   0:00 [writeback]
root        32  0.0  0.0      0     0 ?        S    01:26   0:00 [kcompactd0]
root        33  0.0  0.0      0     0 ?        SN   01:26   0:00 [ksmd]
root        34  0.0  0.0      0     0 ?        SN   01:26   0:00 [khugepaged]
root        35  0.0  0.0      0     0 ?        I<   01:26   0:00 [kintegrityd]
root        36  0.0  0.0      0     0 ?        I<   01:26   0:00 [kblockd]
root        37  0.0  0.0      0     0 ?        I<   01:26   0:00 [blkcg_punt_bio]
root        38  0.0  0.0      0     0 ?        I<   01:26   0:00 [tpm_dev_wq]
root        39  0.0  0.0      0     0 ?        I<   01:26   0:00 [edac-poller]
root        40  0.0  0.0      0     0 ?        I<   01:26   0:00 [devfreq_wq]
root        41  0.0  0.0      0     0 ?        S    01:26   0:00 [kswapd0]
root        50  0.0  0.0      0     0 ?        I<   01:26   0:00 [kthrotld]
root        52  0.0  0.0      0     0 ?        I<   01:26   0:00 [acpi_thermal_pm]
root        53  0.0  0.0      0     0 ?        I<   01:26   0:00 [kworker/1:1H-events_highpri]
root        54  0.0  0.0      0     0 ?        I<   01:26   0:00 [mld]
root        55  0.0  0.0      0     0 ?        I<   01:26   0:00 [ipv6_addrconf]
root        60  0.0  0.0      0     0 ?        I<   01:26   0:00 [kstrp]
root        65  0.0  0.0      0     0 ?        I<   01:26   0:00 [zswap-shrink]
root        66  0.0  0.0      0     0 ?        I<   01:26   0:00 [kworker/u5:0]
root       132  0.0  0.0      0     0 ?        I<   01:26   0:00 [ata_sff]
root       133  0.0  0.0      0     0 ?        I<   01:26   0:00 [cryptd]
```

```
root          133  0.0  0.0      0     0 ?        I<   01:26   0:00 [cryptd]
root          136  0.0  0.0      0     0 ?        S    01:26   0:00 [scsi_eh_0]
root          137  0.0  0.0      0     0 ?        S    01:26   0:00 [scsi_eh_1]
root          138  0.0  0.0      0     0 ?        I<   01:26   0:00 [scsi_tmf_1]
root          139  0.0  0.0      0     0 ?        I<   01:26   0:00 [scsi_tmf_0]
root          147  0.0  0.0      0     0 ?        S    01:26   0:00 [scsi_eh_2]
root          148  0.0  0.0      0     0 ?        I<   01:26   0:00 [scsi_tmf_2]
root          189  0.0  0.0      0     0 ?        S    01:26   0:01 [irq/18-vmwgfx]
root          197  0.0  0.0      0     0 ?        S    01:26   0:00 [card0-crtc0]
root          199  0.0  0.0      0     0 ?        S    01:26   0:00 [card0-crtc1]
root          202  0.0  0.0      0     0 ?        S    01:26   0:00 [card0-crtc2]
root          203  0.0  0.0      0     0 ?        S    01:26   0:00 [card0-crtc3]
root          205  0.0  0.0      0     0 ?        S    01:26   0:00 [card0-crtc4]
root          207  0.0  0.0      0     0 ?        S    01:26   0:00 [card0-crtc5]
root          208  0.0  0.0      0     0 ?        S    01:26   0:00 [card0-crtc6]
root          209  0.0  0.0      0     0 ?        S    01:26   0:00 [card0-crtc7]
root          244  0.0  0.0      0     0 ?        S    01:26   0:00 [jbd2/sda1-8]
root          245  0.0  0.0      0     0 ?        I<   01:26   0:00 [ext4-rsv-conver]
root          295  0.0  1.3  58028 28100 ?        Ss   01:26   0:00 /lib/systemd/systemd-journald
root          323  0.0  0.3  25848  6676 ?        Ss   01:26   0:00 /lib/systemd/systemd-udevd
root          387  0.0  0.2   8228  4996 ?        Ss   01:26   0:00 /usr/sbin/haveged --Foreground --verbose=1
root          405  0.0  0.0      0     0 ?        I<   01:26   0:00 [rpciod]
root          406  0.0  0.0      0     0 ?        I<   01:26   0:00 [xprtiod]
root          409  0.0  0.1   6808  2916 ?        Ss   01:26   0:00 /usr/sbin/cron -f
message+      410  0.0  0.2  11140  5936 ?        Ss   01:26   0:01 /usr/bin/dbus-daemon --system --address=sy
root          413  0.0  0.5 237016 11496 ?        Ssl  01:26   0:01 /usr/libexec/polkitd --no-debug
root          415  0.0  0.2 222368  4416 ?        Ssl  01:26   0:00 /usr/sbin/rsyslogd -n -iNONE
root          417  0.0  0.4  25792  8356 ?        Ss   01:26   0:00 /lib/systemd/systemd-logind
root          499  0.0  1.1 259464 24084 ?        Ssl  01:26   0:00 /usr/sbin/NetworkManager --no-daemon
root          500  0.0  0.5 243824 11956 ?        Ssl  01:26   0:00 /usr/sbin/ModemManager
root          510  0.0  0.1 294172  3164 ?        Sl   01:26   0:00 /usr/sbin/VBoxService
root          526  0.0  0.3 310032  7888 ?        Sl   01:26   0:00 /usr/sbin/lightdm
root          541  2.3  5.8 379020 117872 tty7    Ssl+ 01:26   1:10 /usr/lib/xorg/Xorg :0 -seat seat0 -auth /v
root          542  0.0  0.0   5820   856 tty1     Ss+  01:26   0:00 /sbin/agetty -o -p -- \u --noclear - linux
rtkit         673  0.0  0.1 153944  2984 ?        SNsl 01:26   0:00 /usr/libexec/rtkit-daemon
root          723  0.0  0.4 163676  8644 ?        Sl   01:27   0:00 lightdm --session-child 14 23
kali          731  0.0  0.5  19448 10824 ?        Ss   01:27   0:00 /lib/systemd/systemd --user
kali          732  0.0  0.1 169084  3188 ?        S    01:27   0:00 (sd-pam)
kali          747  0.0  0.3  36956  6744 ?        S<sl 01:27   0:00 /usr/bin/pipewire
kali          748  0.0  0.3  20812  7324 ?        Ssl  01:27   0:00 /usr/bin/pipewire-media-session
kali          749  0.0  1.7 652224 35408 ?        S<sl 01:27   0:00 /usr/bin/pulseaudio --daemonize=no --log-t
kali          751  0.0  0.5 240904 12020 ?        SLsl 01:27   0:00 /usr/bin/gnome-keyring-daemon --foreground
kali          753  0.0  0.2  10440  5800 ?        Ss   01:27   0:01 /usr/bin/dbus-daemon --session --address=s
kali          760  0.0  1.3 269036 27772 ?        Ssl  01:27   0:01 xfce4-session
kali          815  0.0  0.0  20248   476 ?        S    01:27   0:00 /usr/bin/VBoxClient --clipboard
kali          817  0.0  0.2 152516  4252 ?        Sl   01:27   0:00 /usr/bin/VBoxClient --clipboard
kali          826  0.0  0.0  20248   472 ?        S    01:27   0:00 /usr/bin/VBoxClient --seamless
kali          828  0.0  0.1 152484  2648 ?        Sl   01:27   0:00 /usr/bin/VBoxClient --seamless
kali          835  0.0  0.0  20248   476 ?        S    01:27   0:00 /usr/bin/VBoxClient --draganddrop
kali          836  0.3  0.1 153000  2776 ?        Sl   01:27   0:10 /usr/bin/VBoxClient --draganddrop
kali          839  0.0  0.0  20248   476 ?        S    01:27   0:00 /usr/bin/VBoxClient --vmsvga
kali          840  0.0  0.1 152728  3924 ?        Sl   01:27   0:00 /usr/bin/VBoxClient --vmsvga
```

```
kali          840  0.0  0.1 152728  3924 ?        Sl   01:27   0:00 /usr/bin/VBoxClient --vmsvga
kali          847  0.0  0.0   8008   852 ?        Ss   01:27   0:00 /usr/bin/ssh-agent x-session-manager
kali          857  0.0  0.6 312220 12372 ?        Ssl  01:27   0:00 /usr/libexec/at-spi-bus-launcher
kali          863  0.0  0.2   9880  4904 ?        S    01:27   0:00 /usr/bin/dbus-daemon --config-file=/usr/sh
kali          867  0.0  0.3 231584  6188 ?        Sl   01:27   0:00 /usr/lib/x86_64-linux-gnu/xfce4/xfconf/xfc
kali          872  0.0  0.5 165520 10336 ?        Sl   01:27   0:00 /usr/libexec/at-spi2-registryd --use-gnome
kali          883  0.0  0.2  81320  5624 ?        SLs  01:27   0:00 /usr/bin/gpg-agent --supervised
kali          885  0.7  5.4 933184 110580 ?       Sl   01:27   0:22 xfwm4 --display :0.0 --sm-client-id 2818c4
kali          888  0.0  0.5 238672 12088 ?        Ssl  01:27   0:00 /usr/libexec/gvfsd
kali          893  0.0  0.4 381508  8712 ?        Sl   01:27   0:00 /usr/libexec/gvfsd-fuse /run/user/1000/gvf
kali          910  0.0  1.5 231592 30808 ?        Sl   01:27   0:00 xfsettingsd --display :0.0 --sm-client-id
root          913  0.0  0.4 308684  9244 ?        Ssl  01:27   0:00 /usr/libexec/upowerd
kali          919  0.1  2.3 476864 46736 ?        Sl   01:27   0:05 xfce4-panel --display :0.0 --sm-client-id
kali          923  0.3  2.9 490516 58920 ?        Sl   01:27   0:10 Thunar --sm-client-id 25c0101fb-ed50-45f2-
kali          928  0.0  2.4 335232 48936 ?        Sl   01:27   0:00 /usr/lib/x86_64-linux-gnu/xfce4/panel/wrap
kali          929  0.1  2.7 475860 55968 ?        Sl   01:27   0:05 xfdesktop --display :0.0 --sm-client-id 28
kali          932  1.3  1.5 205004 31868 ?        Sl   01:27   0:39 /usr/lib/x86_64-linux-gnu/xfce4/panel/wrap
kali          933  0.0  1.3 341148 27000 ?        Sl   01:27   0:00 /usr/lib/x86_64-linux-gnu/xfce4/panel/wrap
kali          934  0.6  1.5 350980 30784 ?        Sl   01:27   0:18 /usr/lib/x86_64-linux-gnu/xfce4/panel/wrap
kali          935  0.1  2.2 593948 46212 ?        Sl   01:27   0:04 /usr/lib/x86_64-linux-gnu/xfce4/panel/wrap
kali          936  0.0  2.1 326144 42876 ?        Sl   01:27   0:00 /usr/lib/x86_64-linux-gnu/xfce4/panel/wrap
kali          937  0.0  2.2 391716 46176 ?        Sl   01:27   0:01 /usr/lib/x86_64-linux-gnu/xfce4/panel/wrap
kali          940  0.0  2.1 334240 42692 ?        Sl   01:27   0:00 /usr/lib/x86_64-linux-gnu/xfce4/panel/wrap
kali          969  0.0  1.9 390520 40192 ?        Ssl  01:27   0:00 /usr/lib/x86_64-linux-gnu/xfce4/notifyd/xf
kali          991  0.0  1.3 193760 26772 ?        Sl   01:27   0:00 xfce4-power-manager --restart --sm-client-
kali          996  0.0  1.5 432776 31944 ?        Sl   01:27   0:00 light-locker
kali         1003  0.0  0.5 851440 11096 ?        Sl   01:27   0:00 xiccd
kali         1011  0.0  0.3 235164  7084 ?        Sl   01:27   0:00 /usr/libexec/geoclue-2.0/demos/agent
kali         1012  0.0  0.3 157600  6264 ?        Ssl  01:27   0:00 /usr/libexec/dconf-service
kali         1022  0.0  2.6 374816 54688 ?        Sl   01:27   0:01 /usr/bin/python3 /usr/bin/blueman-applet
colord       1028  0.0  0.8 243564 17692 ?        Ssl  01:27   0:00 /usr/libexec/colord
kali         1044  0.0  0.8 187292 17848 ?        Sl   01:27   0:00 /usr/lib/policykit-1-gnome/polkit-gnome-au
kali         1053  0.0  2.4 551360 49196 ?        Sl   01:27   0:00 nm-applet
kali         1054  0.0  0.2  14764  4064 ?        Ssl  01:27   0:00 xcape -e Super_L Control_L Escape
kali         1071  0.0  0.7 351832 16060 ?        Ssl  01:27   0:00 /usr/libexec/gvfs-udisks2-volume-monitor
root         1088  0.0  0.7 395776 15096 ?        Ssl  01:27   0:00 /usr/libexec/udisks2/udisksd
kali         1113  0.0  0.4 313532 10100 ?        Ssl  01:27   0:00 /usr/libexec/gvfs-afc-volume-monitor
kali         1118  0.0  0.4 234468  8616 ?        Ssl  01:27   0:00 /usr/libexec/gvfs-mtp-volume-monitor
kali         1126  0.0  0.4 235424  9240 ?        Ssl  01:27   0:00 /usr/libexec/gvfs-gphoto2-volume-monitor
kali         1130  0.0  0.4 234648  8568 ?        Ssl  01:27   0:00 /usr/libexec/gvfs-goa-volume-monitor
kali         1138  0.0  0.6 312784 12276 ?        Sl   01:27   0:00 /usr/libexec/gvfsd-trash --spawner :1.17 /
kali         1147  0.0  0.4 161060  8704 ?        Ssl  01:27   0:00 /usr/libexec/gvfsd-metadata
kali         1167  0.0  0.3  48024  7008 ?        Ss   01:27   0:00 /usr/libexec/bluetooth/obexd
kali         1454  0.5  5.1 434264 104860 ?       Rl   01:28   0:14 /usr/bin/qterminal
kali         1461  0.2  0.3  10760  6612 pts/0    Ss   01:28   0:08 /usr/bin/zsh
root         6558  0.0  0.0      0     0 ?        I    01:48   0:01 [kworker/0:2-events]
root         6564  0.0  0.0      0     0 ?        I    01:48   0:01 [kworker/1:2-events]
root         7100  0.0  0.0      0     0 ?        I    01:50   0:00 [kworker/u4:2-flush-8:0]
root        11440  0.0  0.0      0     0 ?        I    02:07   0:00 [kworker/u4:1+events_unbound]
kali        11547  0.4  2.9 478324 60308 ?        Sl   02:07   0:01 mousepad /home/kali/Desktop/my_directory/m
root        11921  0.0  0.0      0     0 ?        I    02:09   0:00 [kworker/1:3-ata_sff]
root        13134  0.0  0.0      0     0 ?        I    02:14   0:00 [kworker/1:0-ata_sff]
```

● Use the "grep" command to filter the processes list and display only the processes with "bash" in their name.

```
┌──(kali㊀kali)-[~/Desktop/my_directory]
└─$ ps aux | grep bash

kali        13682  0.0  0.1   6300  2172 pts/0    R+   02:16   0:00 grep --color=auto bash
```

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

```
┌──(kali㊀kali)-[~/Desktop/my_directory]
└─$ ps aux | grep bash | wc -l

1
```