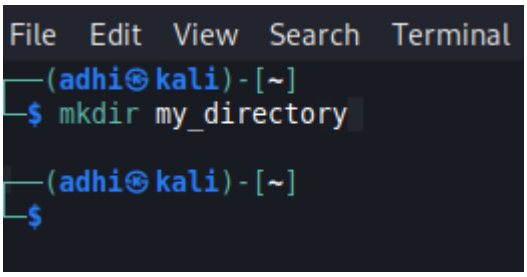
BASH SHELL BASICS

NAME: ADHITHYA S D
REGNO: 20BCI0130
EMAIL: adhithya.sd2020@vitstudent.ac.in

Task 1: File and Directory Manipulation

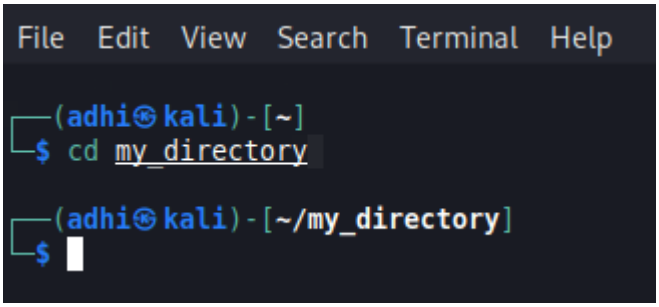
1.Create a directory called "my_directory".

We use the command “mkdir my_directory”



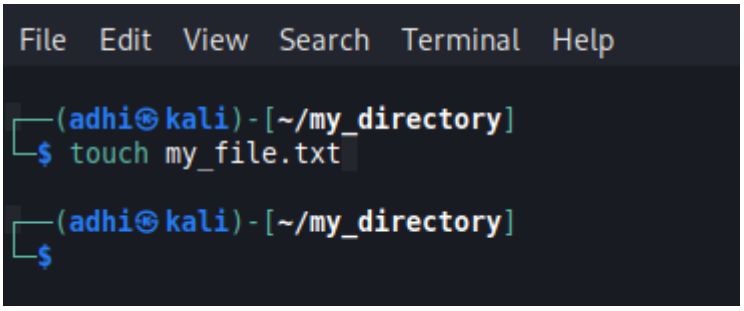
2.Navigate into the "my_directory".

We use the command “cd my_directory”



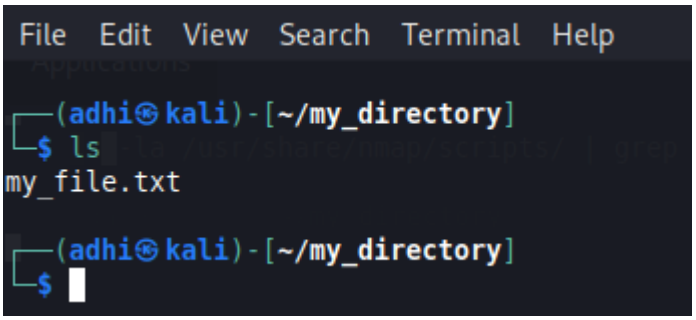
3.Create an empty file called "my_file.txt".

We use the command “touch my_file.txt”.



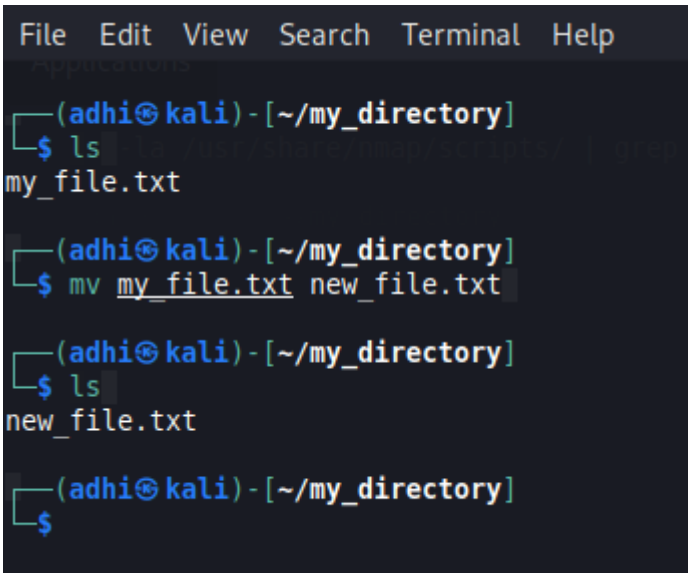
4.List all the files and directories in the current directory.

We use “ls” command to list files and directories.



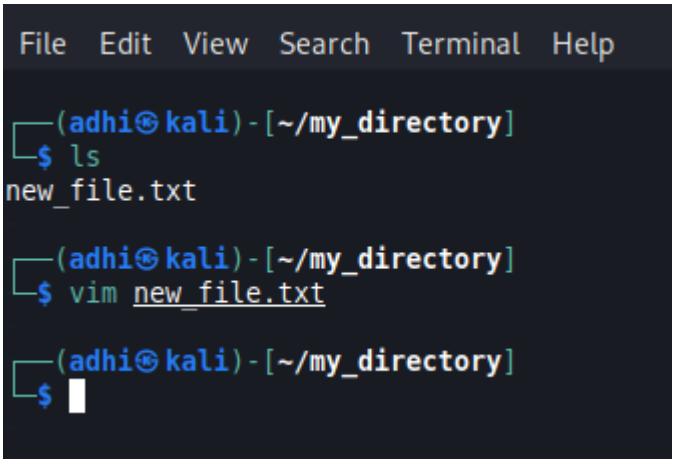
5.Rename "my_file.txt" to "new_file.txt".

We use the “mv” command to rename the file.

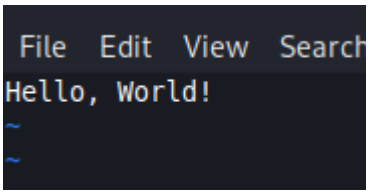


6.Display the content of "new_file.txt" using a pager tool of your choice.

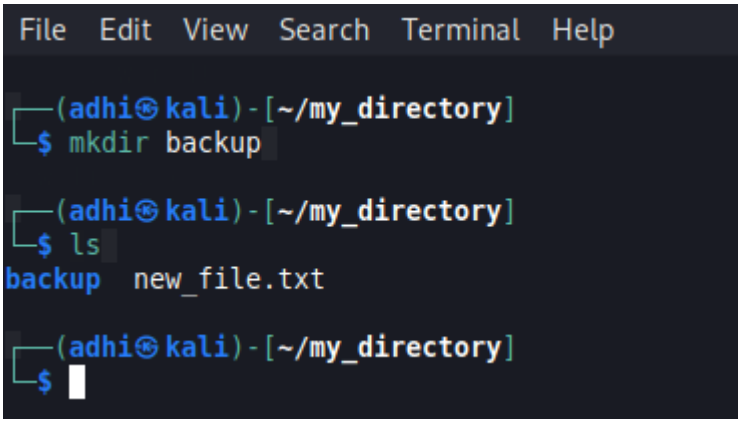
We can use “vim” and there are many other tools as well.



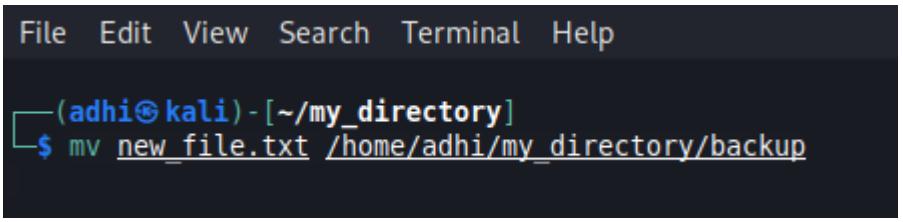
7.Append the text "Hello, World!" to "new_file.txt".



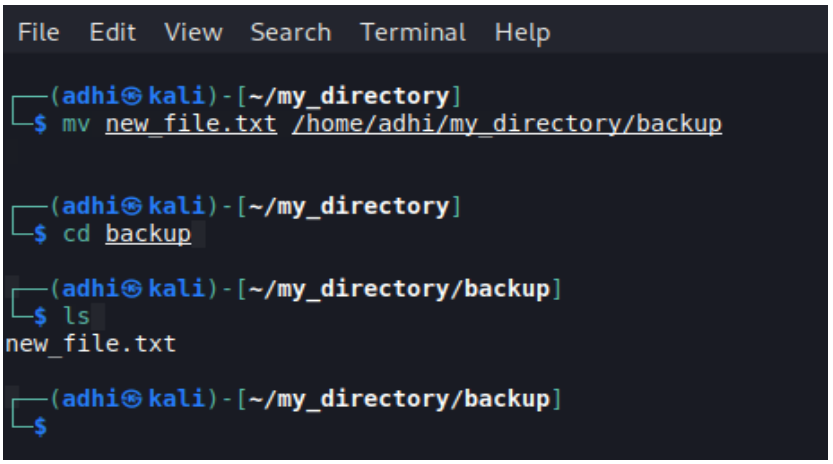
8.Create a new directory called "backup" within "my_directory".



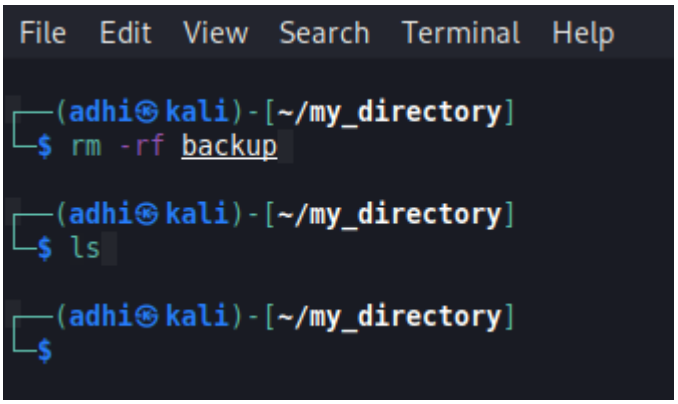
9.Move "new_file.txt" to the "backup" directory.



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

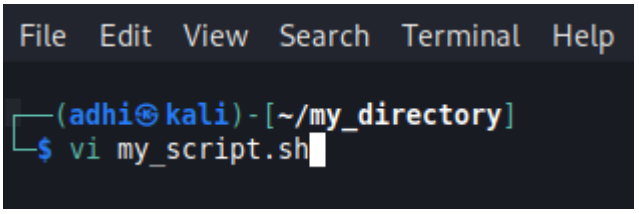


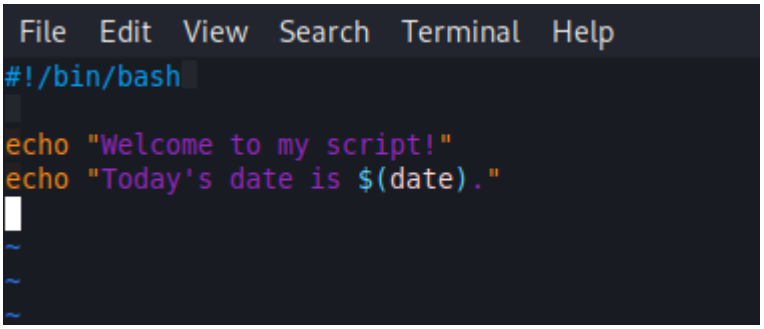
11.Delete the "backup" directory and all its contents.



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





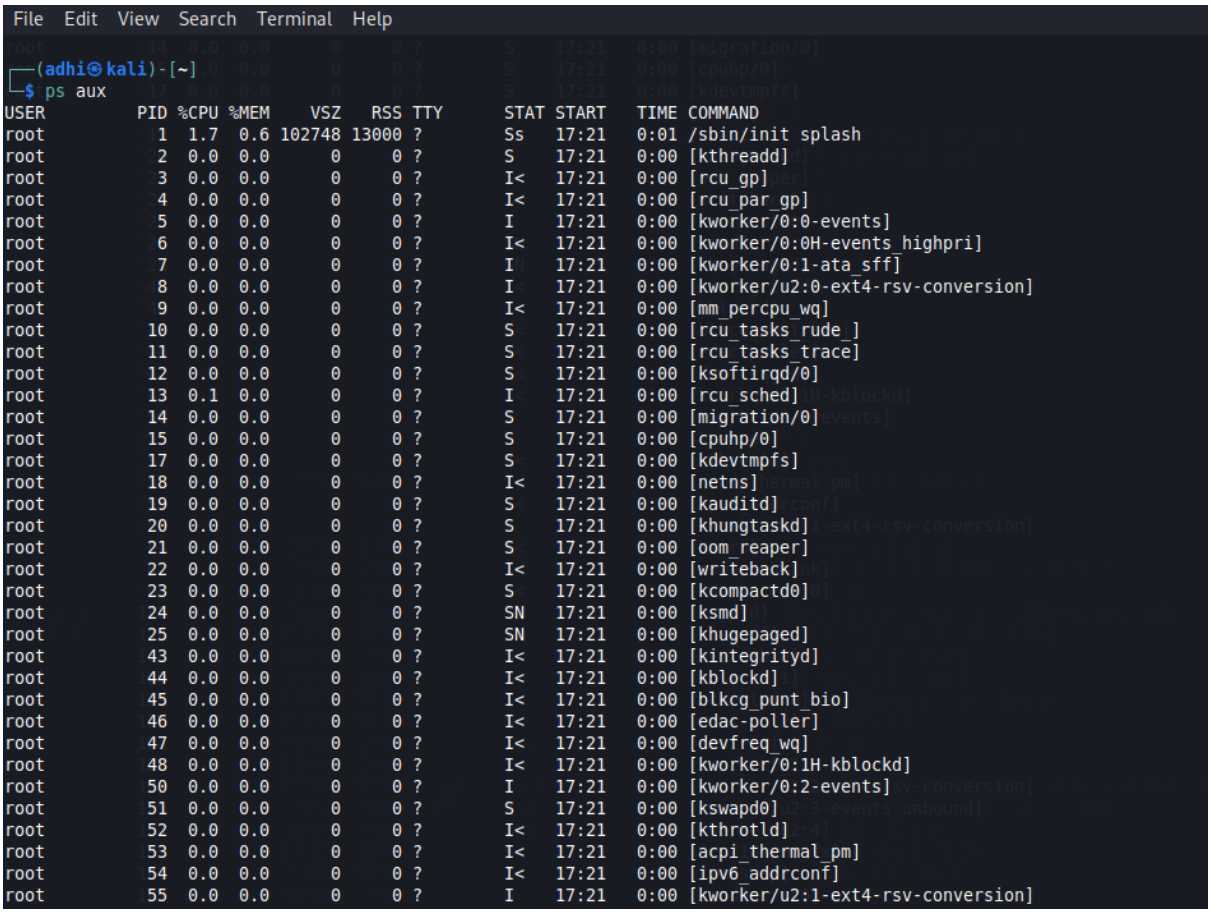
```
File  Edit  View  Search  Terminal  Help

┌──(adhi㉿kali)-[~/my_directory]
└─$ ls
my_script.sh

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

┌──(adhi㉿kali)-[~/my_directory]
└─$ ls
my_script.sh

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

OUTPUT:

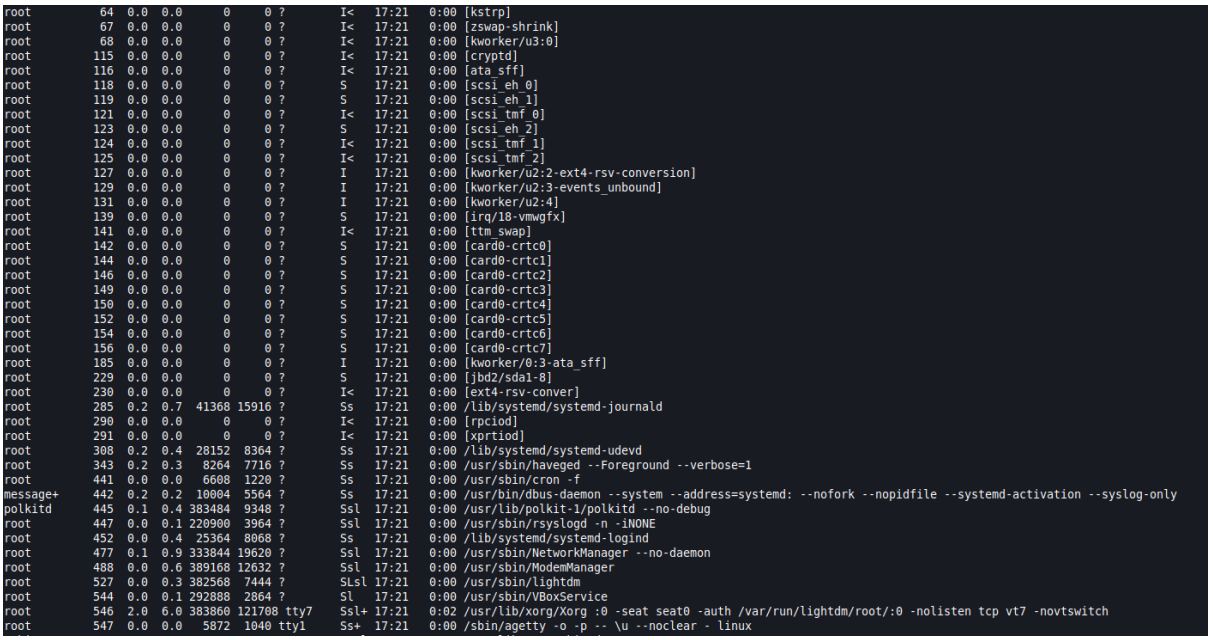
```
File  Edit  View  Search  Terminal  Help

┌──(adhi㉿kali)-[~/my_directory]
└─$ bash my_script.sh
Welcome to my script!
Today's date is Sunday 28 May 2023 02:16:38 PM IST.

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

Task 3: Command Execution and Pipelines

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



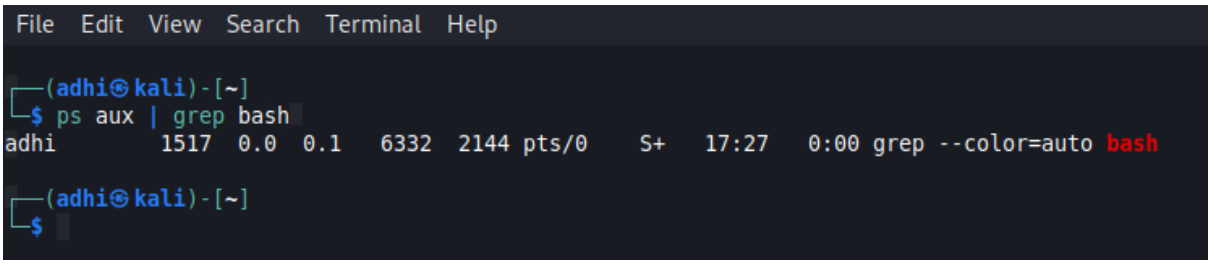
```
File  Edit  View  Search  Terminal  Help

┌──(adhi㉿kali)-[~]
└─$ ps aux
USER         PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root           1  1.7  0.6 102748 13000 ?        Ss   17:21   0:01 /sbin/init splash
root           2  0.0  0.0      0     0 ?        S    17:21   0:00 [kthreadd]
root           3  0.0  0.0      0     0 ?        I<   17:21   0:00 [rcu_gp]
root           4  0.0  0.0      0     0 ?        I<   17:21   0:00 [rcu_par_gp]
root           5  0.0  0.0      0     0 ?        I    17:21   0:00 [kworker/0:0-events]
root           6  0.0  0.0      0     0 ?        I<   17:21   0:00 [kworker/0:0H-events_highpri]
root           7  0.0  0.0      0     0 ?        I    17:21   0:00 [kworker/0:1-ata_sff]
root           8  0.0  0.0      0     0 ?        I    17:21   0:00 [kworker/u2:0-ext4-rsv-conversion]
root           9  0.0  0.0      0     0 ?        I<   17:21   0:00 [mm_percpu_wq]
root          10  0.0  0.0      0     0 ?        S    17:21   0:00 [rcu_tasks_rude_]
root          11  0.0  0.0      0     0 ?        S    17:21   0:00 [rcu_tasks_trace]
root          12  0.0  0.0      0     0 ?        S    17:21   0:00 [ksoftirqd/0]
root          13  0.1  0.0      0     0 ?        I    17:21   0:00 [rcu_sched]
root          14  0.0  0.0      0     0 ?        S    17:21   0:00 [migration/0]
root          15  0.0  0.0      0     0 ?        S    17:21   0:00 [cpuhp/0]
root          17  0.0  0.0      0     0 ?        S    17:21   0:00 [kdevtmpfs]
root          18  0.0  0.0      0     0 ?        I<   17:21   0:00 [netns]
root          19  0.0  0.0      0     0 ?        S    17:21   0:00 [kauditd]
root          20  0.0  0.0      0     0 ?        S    17:21   0:00 [khungtaskd]
root          21  0.0  0.0      0     0 ?        S    17:21   0:00 [oom_reaper]
root          22  0.0  0.0      0     0 ?        I<   17:21   0:00 [writeback]
root          23  0.0  0.0      0     0 ?        S    17:21   0:00 [kcompactd0]
root          24  0.0  0.0      0     0 ?        SN   17:21   0:00 [ksmd]
root          25  0.0  0.0      0     0 ?        SN   17:21   0:00 [khugepaged]
root          43  0.0  0.0      0     0 ?        I<   17:21   0:00 [kintegrityd]
root          44  0.0  0.0      0     0 ?        I<   17:21   0:00 [kblockd]
root          45  0.0  0.0      0     0 ?        I<   17:21   0:00 [blkcg_punt_bio]
root          46  0.0  0.0      0     0 ?        I<   17:21   0:00 [edac-poller]
root          47  0.0  0.0      0     0 ?        I<   17:21   0:00 [devfreq_wq]
root          48  0.0  0.0      0     0 ?        I<   17:21   0:00 [kworker/0:1H-kblockd]
root          50  0.0  0.0      0     0 ?        I    17:21   0:00 [kworker/0:2-events]
root          51  0.0  0.0      0     0 ?        S    17:21   0:00 [kswapd0]
root          52  0.0  0.0      0     0 ?        I<   17:21   0:00 [kthrotld]
root          53  0.0  0.0      0     0 ?        I<   17:21   0:00 [acpi_thermal_pm]
root          54  0.0  0.0      0     0 ?        I<   17:21   0:00 [ipv6_addrconf]
root          55  0.0  0.0      0     0 ?        I    17:21   0:00 [kworker/u2:1-ext4-rsv-conversion]
```



```
root          64  0.0  0.0      0     0 ?        I<   17:21   0:00 [kstrp]
root          67  0.0  0.0      0     0 ?        I<   17:21   0:00 [zswap-shrink]
root          68  0.0  0.0      0     0 ?        I<   17:21   0:00 [kworker/u3:0]
root         115  0.0  0.0      0     0 ?        I<   17:21   0:00 [cryptd]
root         116  0.0  0.0      0     0 ?        I<   17:21   0:00 [ata_sff]
root         118  0.0  0.0      0     0 ?        S    17:21   0:00 [scsi_eh_0]
root         119  0.0  0.0      0     0 ?        S    17:21   0:00 [scsi_eh_1]
root         121  0.0  0.0      0     0 ?        I<   17:21   0:00 [scsi_tmf_0]
root         123  0.0  0.0      0     0 ?        S    17:21   0:00 [scsi_eh_2]
root         124  0.0  0.0      0     0 ?        I<   17:21   0:00 [scsi_tmf_1]
root         125  0.0  0.0      0     0 ?        I<   17:21   0:00 [scsi_tmf_2]
root         127  0.0  0.0      0     0 ?        I    17:21   0:00 [kworker/u2:2-ext4-rsv-conversion]
root         129  0.0  0.0      0     0 ?        I    17:21   0:00 [kworker/u2:3-events_unbound]
root         131  0.0  0.0      0     0 ?        I    17:21   0:00 [kworker/u2:4]
root         139  0.0  0.0      0     0 ?        S    17:21   0:00 [irq/18-vmwgfx]
root         141  0.0  0.0      0     0 ?        I<   17:21   0:00 [ttm_swap]
root         142  0.0  0.0      0     0 ?        S    17:21   0:00 [card0-crtc0]
root         144  0.0  0.0      0     0 ?        S    17:21   0:00 [card0-crtc1]
root         146  0.0  0.0      0     0 ?        S    17:21   0:00 [card0-crtc2]
root         149  0.0  0.0      0     0 ?        S    17:21   0:00 [card0-crtc3]
root         150  0.0  0.0      0     0 ?        S    17:21   0:00 [card0-crtc4]
root         152  0.0  0.0      0     0 ?        S    17:21   0:00 [card0-crtc5]
root         154  0.0  0.0      0     0 ?        S    17:21   0:00 [card0-crtc6]
root         156  0.0  0.0      0     0 ?        S    17:21   0:00 [card0-crtc7]
root         185  0.0  0.0      0     0 ?        I    17:21   0:00 [kworker/0:3-ata_sff]
root         229  0.0  0.0      0     0 ?        S    17:21   0:00 [jbd2/sda1-8]
root         230  0.0  0.0      0     0 ?        I<   17:21   0:00 [ext4-rsv-conver]
root         285  0.2  0.7  41368 15916 ?        Ss   17:21   0:00 /lib/systemd/systemd-journald
root         290  0.0  0.0      0     0 ?        I<   17:21   0:00 [rpciod]
root         291  0.0  0.0      0     0 ?        I<   17:21   0:00 [xprtiod]
root         308  0.2  0.4  28152  8364 ?        Ss   17:21   0:00 /lib/systemd/systemd-udevd
root         343  0.2  0.3   8264  7716 ?        Ss   17:21   0:00 /usr/sbin/haveged --Foreground --verbose=1
root         441  0.0  0.0   6608  1220 ?        Ss   17:21   0:00 /usr/sbin/cron -f
message+     442  0.2  0.2  10004  5564 ?        Ss   17:21   0:00 /usr/bin/dbus-daemon --system --address=systemd: --nofork --nopidfile --systemd-activation --syslog-only
polkitd      445  0.1  0.4 383484  9348 ?        Ssl  17:21   0:00 /usr/lib/polkit-1/polkitd --no-debug
root         447  0.0  0.1 220900  3964 ?        Ssl  17:21   0:00 /usr/sbin/rsyslogd -n -iNONE
root         452  0.0  0.4  25364  8068 ?        Ss   17:21   0:00 /lib/systemd/systemd-logind
root         477  0.1  0.9 333844 19620 ?        Ssl  17:21   0:00 /usr/sbin/NetworkManager --no-daemon
root         488  0.0  0.6 389168 12632 ?        Ssl  17:21   0:00 /usr/sbin/ModemManager
root         527  0.0  0.3 382568  7444 ?        SLsl 17:21   0:00 /usr/sbin/lightdm
root         544  0.0  0.1 292888  2864 ?        Sl   17:21   0:00 /usr/sbin/VBoxService
root         546  2.0  6.0 383860 121708 tty7    Ssl+ 17:21   0:02 /usr/lib/xorg/Xorg :0 -seat seat0 -auth /var/run/lightdm/root/:0 -nolisten tcp vt7 -novtswitch
root         547  0.0  0.0   5872  1040 tty1     Ss+  17:21   0:00 /sbin/agetty -o -p -- \u --noclear - linux
```

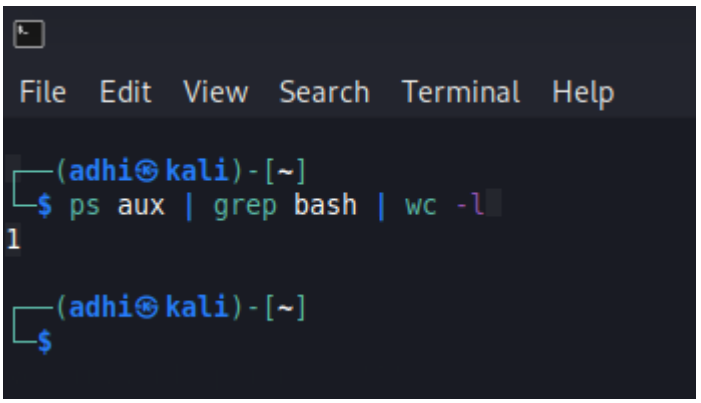
Here we can see all the processes.

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



We get only one output.

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



Here we get the output as 1.