

TASK-2

QUESTION-1

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

```
n=1
```

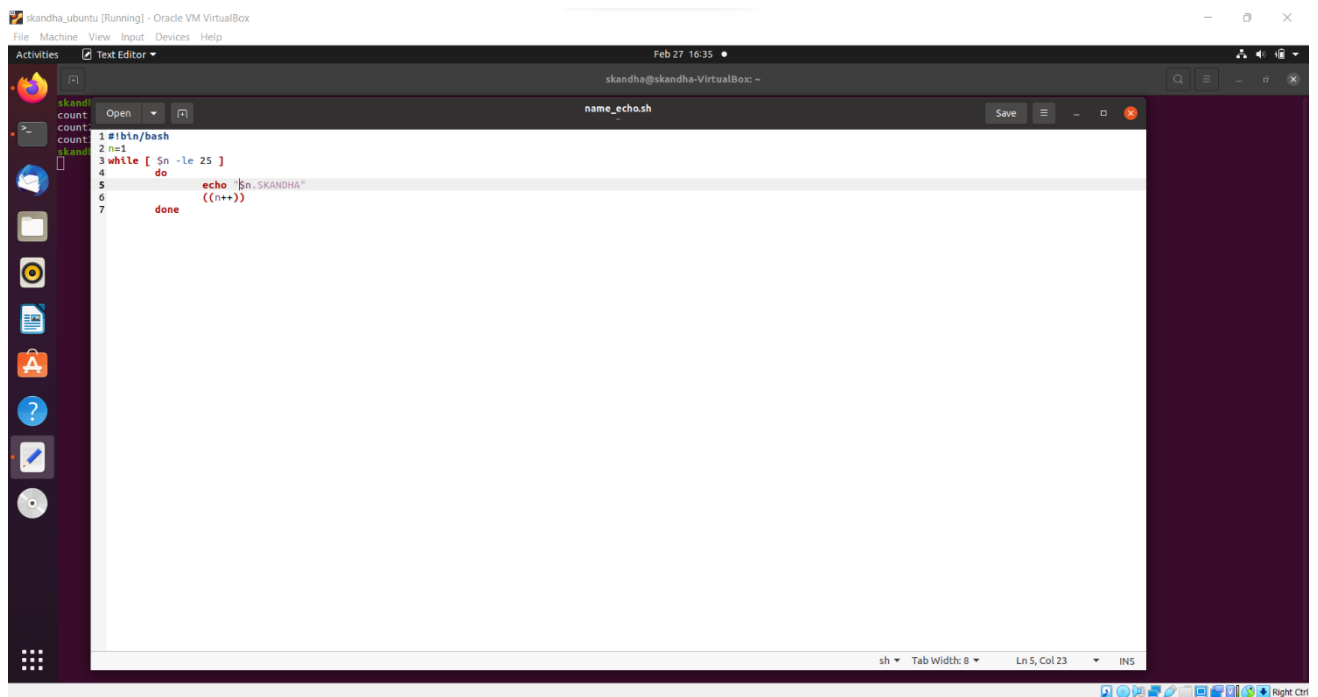
```
while [ $n -le 25 ]
```

```
do
```

```
    echo " $n.SKANDHA"
```

```
    ((n++))
```

```
done
```



The screenshot shows a terminal window titled "skandha_ubuntu [Running] - Oracle VM VirtualBox". The terminal displays the output of a bash script. The script is a while loop that prints " \$n.SKANDHA" for n from 1 to 25. The terminal output shows the first few lines of the loop: "1.SKANDHA", "2.SKANDHA", "3.SKANDHA", "4.SKANDHA", "5.SKANDHA", "6.SKANDHA", and "7.SKANDHA". The terminal window has a dark background and a light-colored text area. The status bar at the bottom indicates "sh", "Tab Width: 8", "Ln 5, Col 23", and "INS".

```
skandha_ubuntu [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Activities Text Editor Feb 27 16:35
skandha@skandha-VirtualBox: ~
name_echo.sh Save
1 #!/bin/bash
2 n=1
3 while [ $n -le 25 ]
4 do
5     echo " $n.SKANDHA"
6     ((n++))
7 done
1.SKANDHA
2.SKANDHA
3.SKANDHA
4.SKANDHA
5.SKANDHA
6.SKANDHA
7.SKANDHA
sh Tab Width: 8 Ln 5, Col 23 INS
```

```
skandha_ubuntu [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help

Feb 27 16:37

skandha@skandha-VirtualBox: ~
skandha@skandha-VirtualBox:~$ chnod +x name_echo.sh
skandha@skandha-VirtualBox:~$ bash name_echo.sh
1. SKANDHA
2. SKANDHA
3. SKANDHA
4. SKANDHA
5. SKANDHA
6. SKANDHA
7. SKANDHA
8. SKANDHA
9. SKANDHA
10. SKANDHA
11. SKANDHA
12. SKANDHA
13. SKANDHA
14. SKANDHA
15. SKANDHA
16. SKANDHA
17. SKANDHA
18. SKANDHA
19. SKANDHA
20. SKANDHA
21. SKANDHA
22. SKANDHA
23. SKANDHA
24. SKANDHA
25. SKANDHA
skandha@skandha-VirtualBox:~$
```

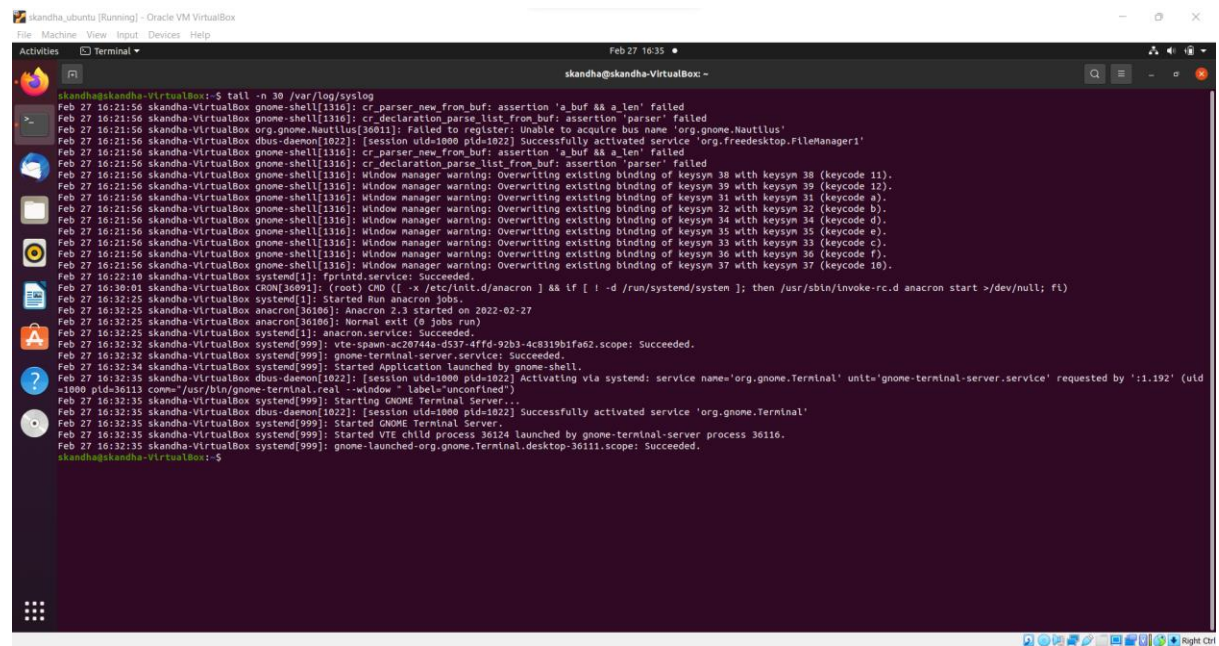
Question 2:head -n 30 /var/log/syslog

```
skandha_ubuntu [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help

Feb 27 16:34

skandha@skandha-VirtualBox: ~
skandha@skandha-VirtualBox:~$ head -n 30 /var/log/syslog
Dec 21 13:31:41 skandha-VirtualBox rsyslogd: [origin software="rsyslogd" swVersion="8.2001.0" x-pid="594" x-info="https://www.rsyslog.com"] rsyslogd was HUPed
Dec 21 13:31:41 skandha-VirtualBox avahi-daemon[573]: Server startup complete. Host name is skandha-VirtualBox.local. Local service cookie is 506668126.
Dec 21 13:31:41 skandha-VirtualBox systemd[1]: logrotate.service: Succeeded.
Dec 21 13:31:41 skandha-VirtualBox systemd[1]: Finished rotate log files.
Dec 21 13:31:42 skandha-VirtualBox udisksd[612]: failed to load module mdraid: libbd_mdraid.so.2: cannot open shared object file: No such file or directory
Dec 21 13:31:42 skandha-VirtualBox kernel: [ 22.248477] kauditd_printk_skb: 28 callbacks suppressed
Dec 21 13:31:42 skandha-VirtualBox kernel: [ 22.248481] audit: type=1400 audit(1640073702.300:40): apparmor="DENIED" operation="capable" profile="/usr/sbin/cups-browsed" pid=675 comm="cups-browsed" cap-ability=23 capname="sys_nice"
Dec 21 13:31:42 skandha-VirtualBox udisksd[612]: Failed to load the 'mdraid' libblockdev plugin
Dec 21 13:31:42 skandha-VirtualBox dbus-daemon[576]: [system] Activating via systemd: service name='org.freedesktop.PolicyKit1' unit='polkit.service' requested by ':1.7' (uid=0 pid=612 comm="/usr/lib/udf-ks/udisksd" label="unconfined")
Dec 21 13:31:42 skandha-VirtualBox snapd[601]: AppArmor status: apparmor is enabled and all features are available
Dec 21 13:31:43 skandha-VirtualBox NetworkManager[577]: <info> [1640073703.3377] NetworkManager (version 1.22.10) is starting... (for the first time)
Dec 21 13:31:43 skandha-VirtualBox NetworkManager[577]: <info> [1640073703.3378] Read config: /etc/NetworkManager/NetworkManager.conf (lib: 10-dns-resolved.conf, 20-connectivity-ubuntu.conf, no-mac-addr-change.conf) (run: 10-globally-managed-devices.conf) (etc: default-wifi-powersave-on.conf)
Dec 21 13:31:43 skandha-VirtualBox systemd[1]: Started Network Manager.
Dec 21 13:31:43 skandha-VirtualBox NetworkManager[577]: <info> [1640073703.3619] bus-manager: acquired D-Bus service "org.freedesktop.NetworkManager"
Dec 21 13:31:43 skandha-VirtualBox systemd[1]: Reached target Network.
Dec 21 13:31:43 skandha-VirtualBox systemd[1]: Starting Network Manager Wait Online...
Dec 21 13:31:43 skandha-VirtualBox systemd[1]: Starting MySQL Community Server...
Dec 21 13:31:43 skandha-VirtualBox systemd[1]: Starting OpenVPN service...
Dec 21 13:31:43 skandha-VirtualBox systemd[1]: Condition check resulted in fast remote file copy program daemon being skipped.
Dec 21 13:31:43 skandha-VirtualBox systemd[1]: Starting Permit User Sessions...
Dec 21 13:31:43 skandha-VirtualBox systemd[1]: Started Unattended Upgrades Shutdown.
Dec 21 13:31:43 skandha-VirtualBox systemd[1]: Finished OpenVPN Service.
Dec 21 13:31:43 skandha-VirtualBox polkitd[590]: started daemon version 0.105 using authority implementation 'local' version '0.105'
Dec 21 13:31:43 skandha-VirtualBox systemd[1]: Started Authorization Manager.
Dec 21 13:31:43 skandha-VirtualBox systemd[1]: Starting Modem Manager...
Dec 21 13:31:43 skandha-VirtualBox systemd[1]: Finished Permit User Sessions.
Dec 21 13:31:43 skandha-VirtualBox systemd[1]: Starting hold until boot process finishes up...
Dec 21 13:31:43 skandha-VirtualBox NetworkManager[577]: <info> [1640073703.9402] manager[0x55f29543c030]: monitoring kernel firmware directory '/lib/firmware'.
Dec 21 13:31:43 skandha-VirtualBox NetworkManager[577]: <info> [1640073703.9403] monitoring ifupdown state file '/run/network/1fstate'.
```

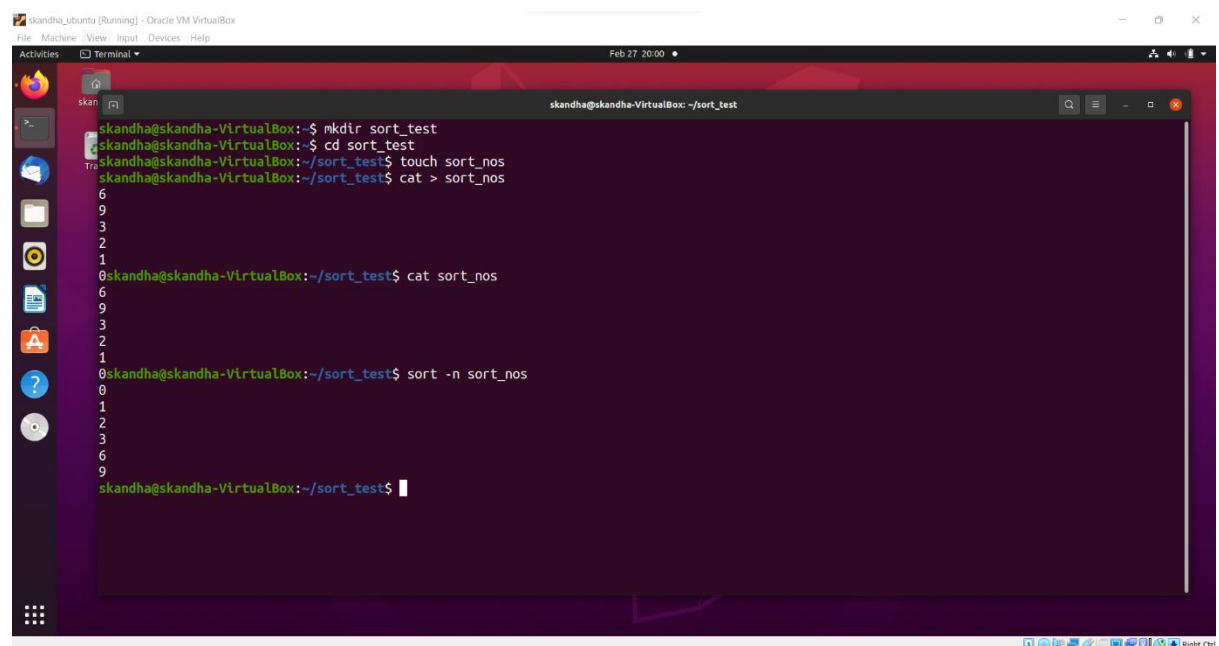
Question-3:tail -n 30 /var/log/syslog



```
skandha@skandha-VirtualBox:~$ tail -n 30 /var/log/syslog
Feb 27 16:21:56 skandha-VirtualBox gnome-shell[1316]: cr_parser_new_from_buf: assertion 'a_buf && a_len' failed
Feb 27 16:21:56 skandha-VirtualBox gnome-shell[1316]: cr_declaration_parse_list_from_buf: assertion 'parser' failed
Feb 27 16:21:56 skandha-VirtualBox org.gnome.Nautilus[36011]: Failed to register: Unable to acquire bus name 'org.gnome.Nautilus'
Feb 27 16:21:56 skandha-VirtualBox dbus-daemon[1022]: [session uid=1000 pid=1022] Successfully activated service 'org.freedesktop.FileManager1'
Feb 27 16:21:56 skandha-VirtualBox gnome-shell[1316]: cr_parser_new_from_buf: assertion 'a_buf && a_len' failed
Feb 27 16:21:56 skandha-VirtualBox gnome-shell[1316]: cr_declaration_parse_list_from_buf: assertion 'parser' failed
Feb 27 16:21:56 skandha-VirtualBox gnome-shell[1316]: Window manager warning: Overwriting existing binding of keysym 38 with keysym 38 (keycode 11).
Feb 27 16:21:56 skandha-VirtualBox gnome-shell[1316]: Window manager warning: Overwriting existing binding of keysym 39 with keysym 39 (keycode 12).
Feb 27 16:21:56 skandha-VirtualBox gnome-shell[1316]: Window manager warning: Overwriting existing binding of keysym 31 with keysym 31 (keycode a).
Feb 27 16:21:56 skandha-VirtualBox gnome-shell[1316]: Window manager warning: Overwriting existing binding of keysym 32 with keysym 32 (keycode b).
Feb 27 16:21:56 skandha-VirtualBox gnome-shell[1316]: Window manager warning: Overwriting existing binding of keysym 34 with keysym 34 (keycode d).
Feb 27 16:21:56 skandha-VirtualBox gnome-shell[1316]: Window manager warning: Overwriting existing binding of keysym 35 with keysym 35 (keycode e).
Feb 27 16:21:56 skandha-VirtualBox gnome-shell[1316]: Window manager warning: Overwriting existing binding of keysym 33 with keysym 33 (keycode c).
Feb 27 16:21:56 skandha-VirtualBox gnome-shell[1316]: Window manager warning: Overwriting existing binding of keysym 36 with keysym 36 (keycode f).
Feb 27 16:21:56 skandha-VirtualBox gnome-shell[1316]: Window manager warning: Overwriting existing binding of keysym 37 with keysym 37 (keycode 10).
Feb 27 16:22:10 skandha-VirtualBox systemd[1]: fprintd.service: Succeeded.
Feb 27 16:30:01 skandha-VirtualBox CMD[36091]: (root) CMD ([ -x /etc/init.d/anacron ] && if [ ! -d /run/systemd/system ]; then /usr/sbin/invoke-rc.d anacron start >/dev/null; fi)
Feb 27 16:32:25 skandha-VirtualBox anacron[36106]: Anacron 2.3 started on 2022-02-27
Feb 27 16:32:25 skandha-VirtualBox anacron[36106]: Normal exit (0 jobs run)
Feb 27 16:32:25 skandha-VirtualBox systemd[1]: anacron.service: Succeeded.
Feb 27 16:32:32 skandha-VirtualBox systemd[999]: vte-spawn-ac20744a-d537-4ffd-92b3-4c8319b1fa62.scope: Succeeded.
Feb 27 16:32:32 skandha-VirtualBox systemd[999]: gnome-terminal-server.service: Succeeded.
Feb 27 16:32:34 skandha-VirtualBox systemd[999]: Started Application launched by gnome-shell.
Feb 27 16:32:35 skandha-VirtualBox dbus-daemon[1022]: [session uid=1000 pid=1022] Activating via systemd: service name='org.gnome.Terminal' unit='gnome-terminal-server.service' requested by ':1.192' (uid=1000 pid=36111 comm="/usr/bin/gnome-terminal.real --window * label=unconfined")
Feb 27 16:32:35 skandha-VirtualBox systemd[999]: Starting GNOME Terminal Server...
Feb 27 16:32:35 skandha-VirtualBox systemd[999]: Started Application launched by gnome-shell.
Feb 27 16:32:35 skandha-VirtualBox dbus-daemon[1022]: [session uid=1000 pid=1022] Successfully activated service 'org.gnome.Terminal'
Feb 27 16:32:35 skandha-VirtualBox systemd[999]: Started GNOME Terminal Server.
Feb 27 16:32:35 skandha-VirtualBox systemd[999]: Started VTE child process 36124 launched by gnome-terminal-server process 36116.
Feb 27 16:32:35 skandha-VirtualBox systemd[999]: gnome-launched-org.gnome.Terminal.desktop-36111.scope: Succeeded.
skandha@skandha-VirtualBox:~$
```

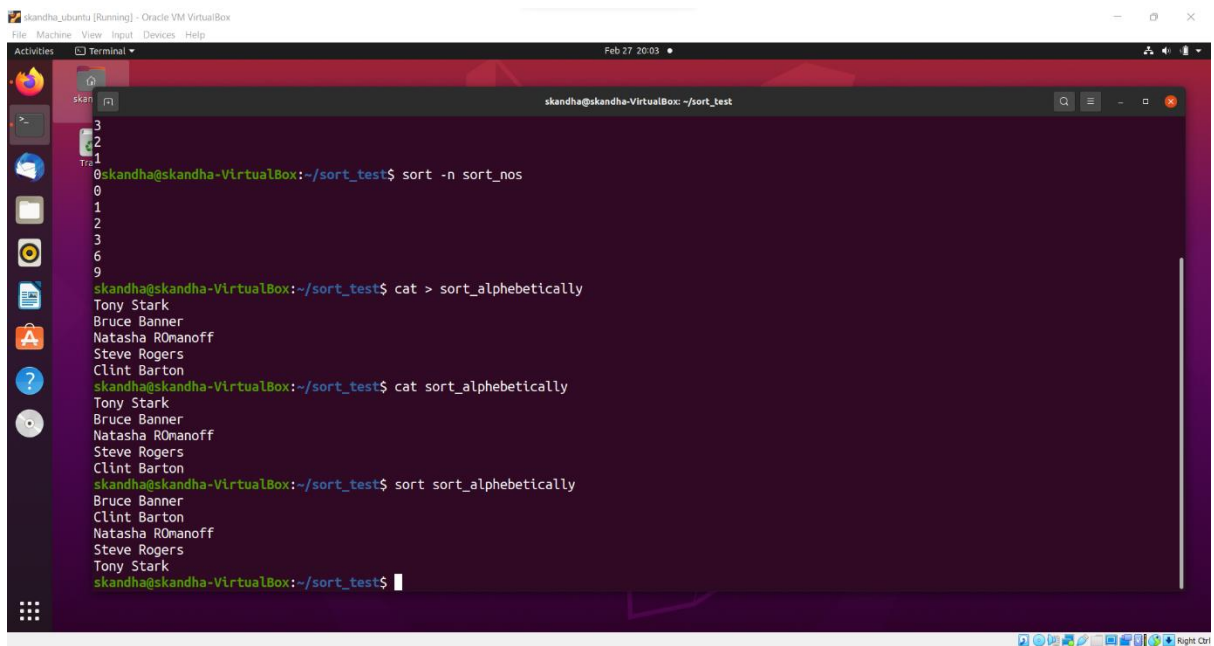
Question-4

Sorting Numbers: sort -n filename



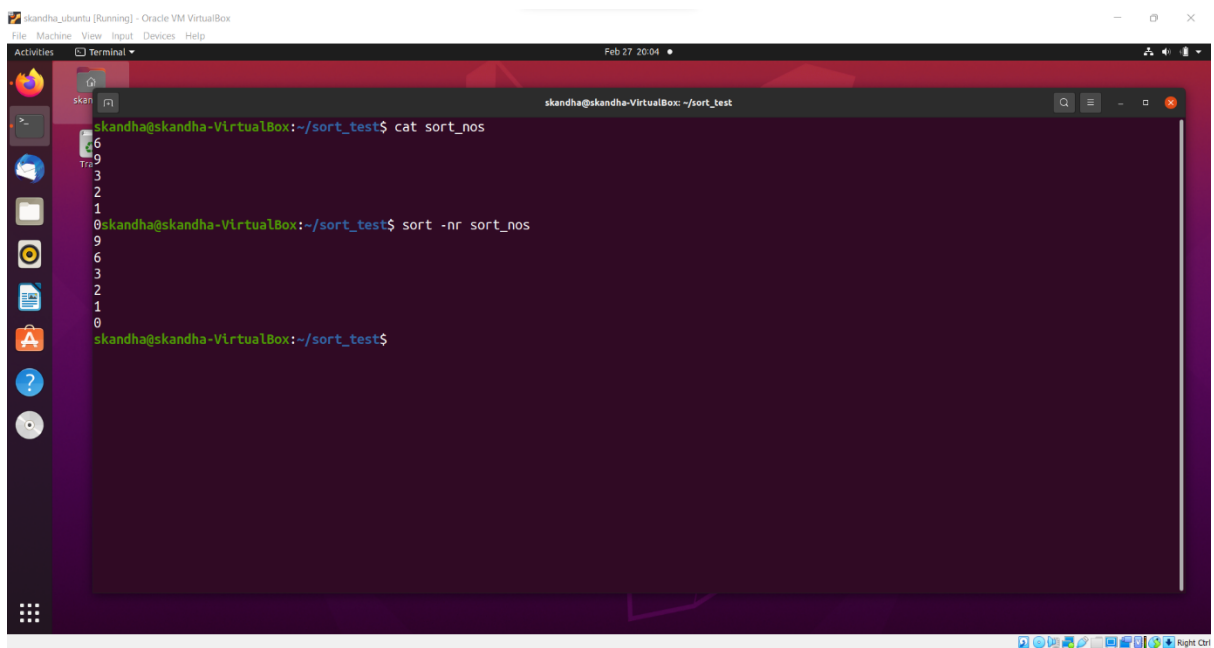
```
skandha@skandha-VirtualBox:~$ mkdir sort_test
skandha@skandha-VirtualBox:~$ cd sort_test
skandha@skandha-VirtualBox:~/sort_test$ touch sort_nos
skandha@skandha-VirtualBox:~/sort_test$ cat > sort_nos
6
9
3
2
1
0
skandha@skandha-VirtualBox:~/sort_test$ cat sort_nos
6
9
3
2
1
0
skandha@skandha-VirtualBox:~/sort_test$ sort -n sort_nos
0
1
2
3
6
9
skandha@skandha-VirtualBox:~/sort_test$
```

Sorting Alphabets sort filename



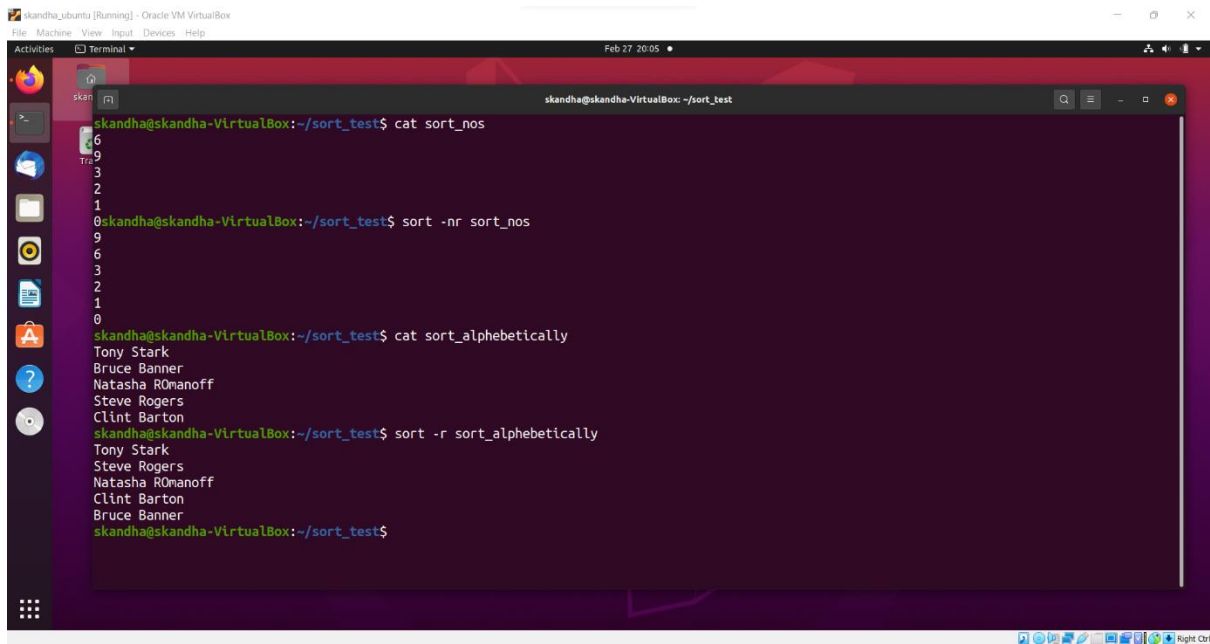
```
skandha@skandha-VirtualBox: ~/sort_test
3
2
1
0
skandha@skandha-VirtualBox:~/sort_test$ sort -n sort_nos
0
1
2
3
6
9
skandha@skandha-VirtualBox:~/sort_test$ cat > sort_alphebetically
Tony Stark
Bruce Banner
Natasha Romanoff
Steve Rogers
Clint Barton
skandha@skandha-VirtualBox:~/sort_test$ cat sort_alphebetically
Tony Stark
Bruce Banner
Natasha Romanoff
Steve Rogers
Clint Barton
skandha@skandha-VirtualBox:~/sort_test$ sort sort_alphebetically
Bruce Banner
Clint Barton
Natasha Romanoff
Steve Rogers
Tony Stark
skandha@skandha-VirtualBox:~/sort_test$
```

Sorting Numbers in reverse sort -nr filename



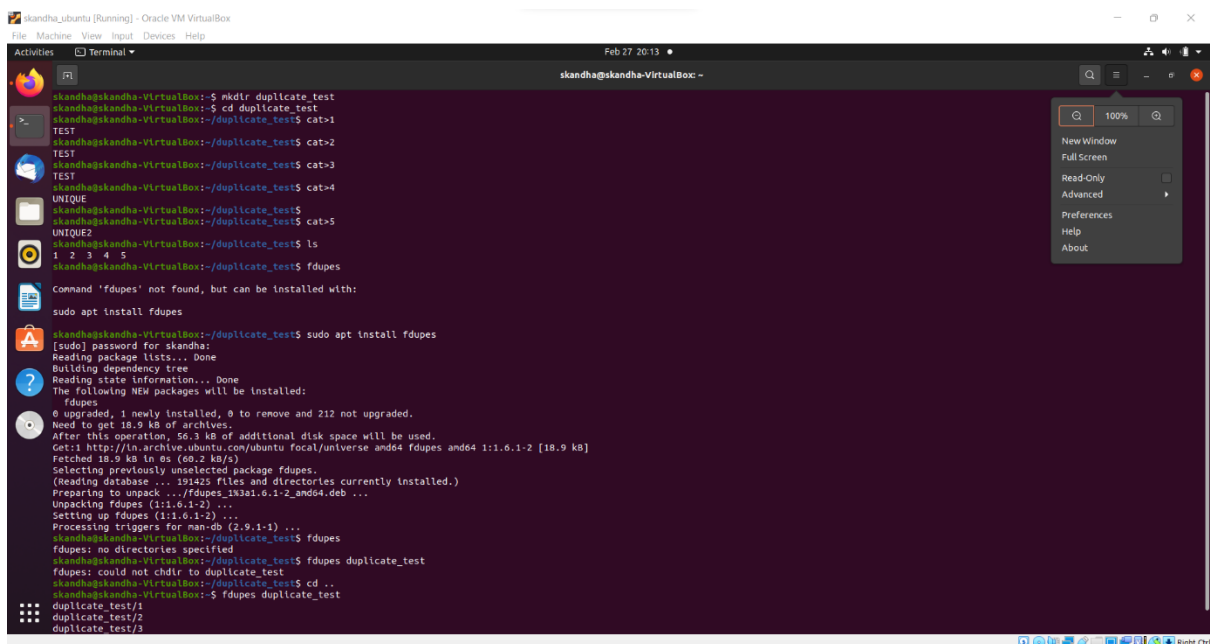
```
skandha@skandha-VirtualBox:~/sort_test$ cat sort_nos
6
9
3
2
1
0
skandha@skandha-VirtualBox:~/sort_test$ sort -nr sort_nos
9
6
3
2
1
0
skandha@skandha-VirtualBox:~/sort_test$
```

Sorting alphabets in reverse sort -r filename



```
skandha@skandha-VirtualBox: ~/sort_test
skandha@skandha-VirtualBox:~/sort_test$ cat sort_nos
6
9
3
2
1
0
skandha@skandha-VirtualBox:~/sort_test$ sort -nr sort_nos
9
6
3
2
1
0
skandha@skandha-VirtualBox:~/sort_test$ cat sort_alphebetically
Tony Stark
Bruce Banner
Natasha Romanoff
Steve Rogers
Clint Barton
skandha@skandha-VirtualBox:~/sort_test$ sort -r sort_alphebetically
Tony Stark
Steve Rogers
Natasha Romanoff
Clint Barton
Bruce Banner
skandha@skandha-VirtualBox:~/sort_test$
```

Question5 after installing fdupes we can use fdupes to find duplicates



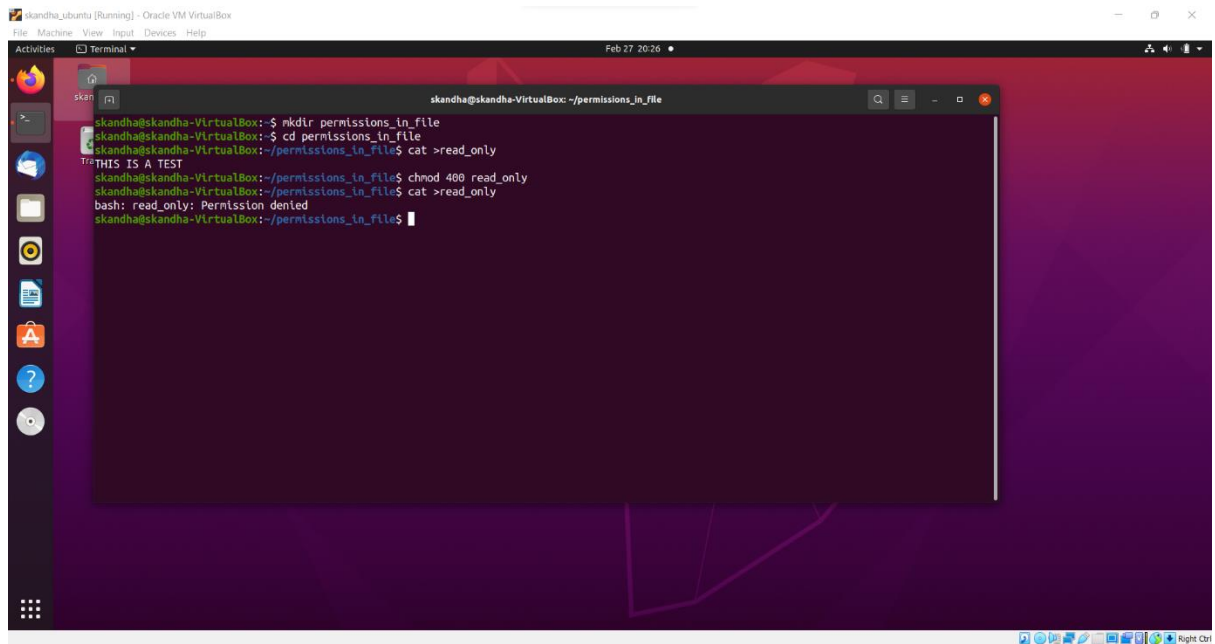
```
skandha@skandha-VirtualBox: ~$ mkdir duplicate_test
skandha@skandha-VirtualBox: ~$ cd duplicate_test
skandha@skandha-VirtualBox: ~/duplicate_test$ cat>1
TEST
skandha@skandha-VirtualBox: ~/duplicate_test$ cat>2
TEST
skandha@skandha-VirtualBox: ~/duplicate_test$ cat>3
TEST
skandha@skandha-VirtualBox: ~/duplicate_test$ cat>4
UNIQUE
skandha@skandha-VirtualBox: ~/duplicate_test$ cat>5
UNIQUE2
skandha@skandha-VirtualBox: ~/duplicate_test$ ls
1 2 3 4 5
skandha@skandha-VirtualBox: ~/duplicate_test$ fdupes
Command 'fdupes' not found, but can be installed with:
sudo apt install fdupes
skandha@skandha-VirtualBox: ~/duplicate_test$ sudo apt install fdupes
[sudo] password for skandha:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  fdupes
0 upgraded, 1 newly installed, 0 to remove and 212 not upgraded.
Need to get 18.9 kB of archives.
After this operation, 56.3 kB of additional disk space will be used.
Get:1 http://in.archive.ubuntu.com/ubuntu focal/universe amd64 fdupes amd64 1:1.6.1-2 [18.9 kB]
Fetched 18.9 kB in 0s (60.2 kB/s)
Selecting previously unselected package fdupes.
(Reading database ... 191425 files and directories currently installed.)
Preparing to unpack .../fdupes_1:1.6.1-2_amd64.deb ...
Unpacking fdupes (1:1.6.1-2) ...
Setting up fdupes (1:1.6.1-2) ...
Processing triggers for man-db (2.9.1-1) ...
skandha@skandha-VirtualBox: ~/duplicate_test$ fdupes
fdupes: no directories specified
skandha@skandha-VirtualBox: ~/duplicate_test$ fdupes duplicate_test
fdupes: could not chdir to duplicate_test
skandha@skandha-VirtualBox: ~/duplicate_test$ cd ..
skandha@skandha-VirtualBox: ~$ fdupes duplicate_test
duplicate_test/1
duplicate_test/2
duplicate_test/3
```

Question-6

The three file permissions are read write and execute

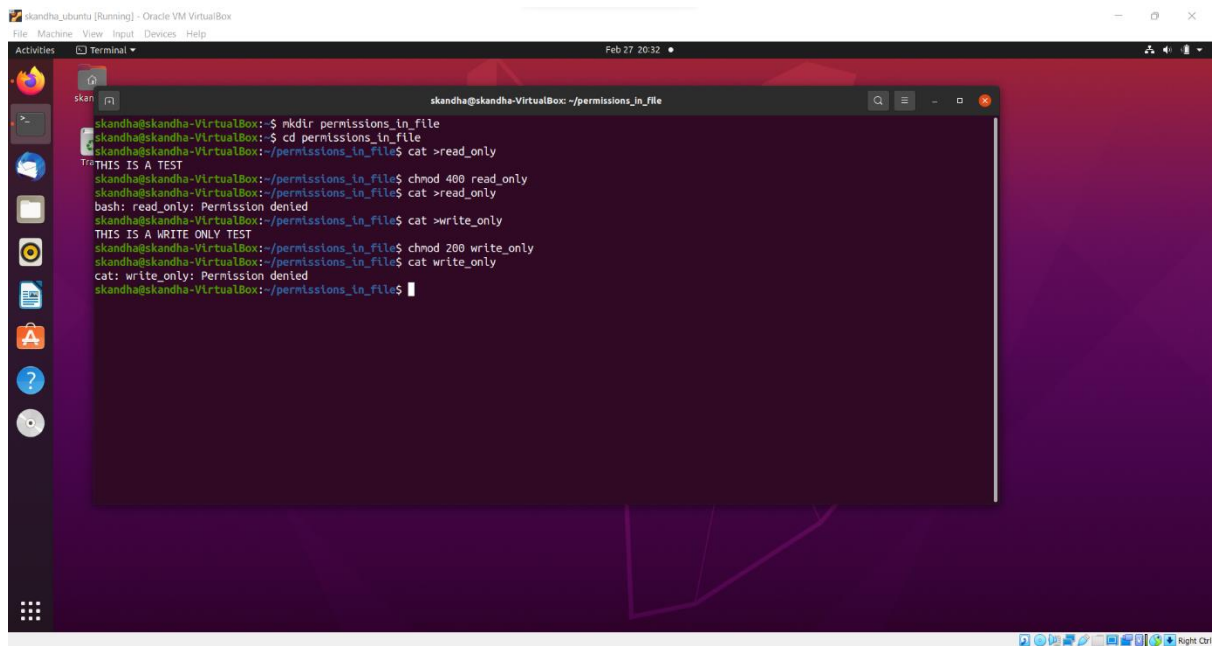
I have attached screenshots of read only write only and execute only using numeric code for user only

Read only permission



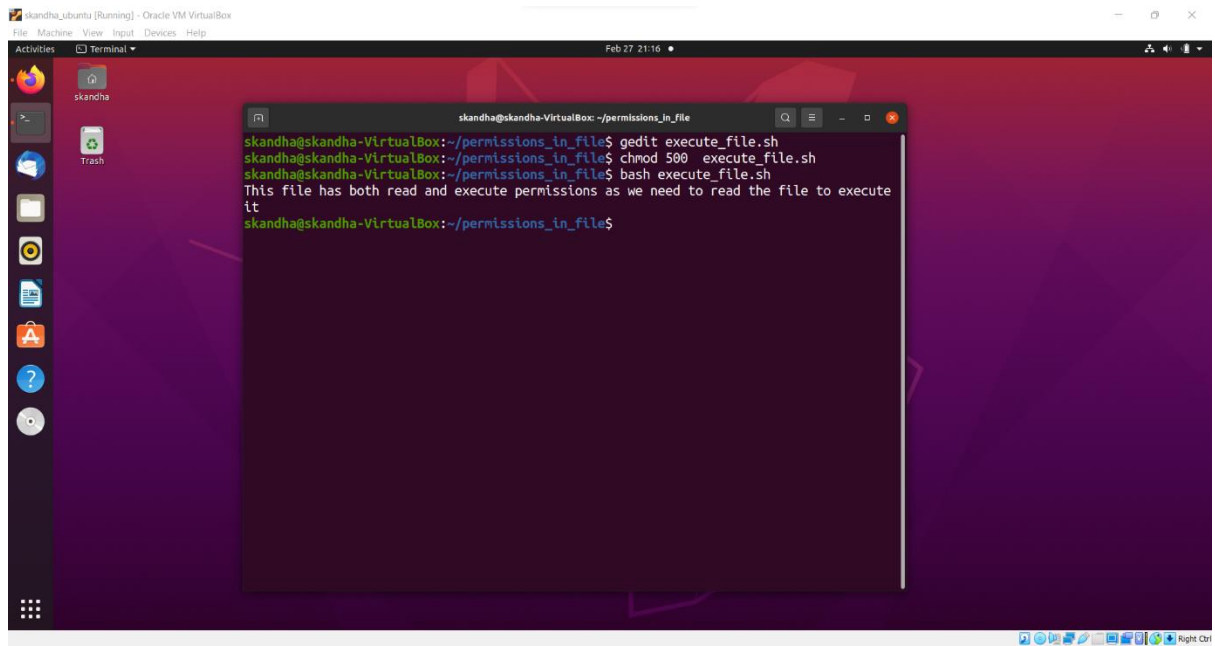
```
skandha@skandha-VirtualBox: ~/permissions_in_file
skandha@skandha-VirtualBox:~$ mkdir permissions_in_file
skandha@skandha-VirtualBox:~$ cd permissions_in_file
skandha@skandha-VirtualBox:~/permissions_in_file$ cat >read_only
THIS IS A TEST
skandha@skandha-VirtualBox:~/permissions_in_file$ chmod 400 read_only
skandha@skandha-VirtualBox:~/permissions_in_file$ cat >read_only
bash: read_only: Permission denied
skandha@skandha-VirtualBox:~/permissions_in_file$
```

Write only permission



```
skandha@skandha-VirtualBox: ~/permissions_in_file
skandha@skandha-VirtualBox:~$ mkdir permissions_in_file
skandha@skandha-VirtualBox:~$ cd permissions_in_file
skandha@skandha-VirtualBox:~/permissions_in_file$ cat >read_only
THIS IS A TEST
skandha@skandha-VirtualBox:~/permissions_in_file$ chmod 400 read_only
skandha@skandha-VirtualBox:~/permissions_in_file$ cat >read_only
bash: read_only: Permission denied
skandha@skandha-VirtualBox:~/permissions_in_file$ cat >write_only
THIS IS A WRITE ONLY TEST
skandha@skandha-VirtualBox:~/permissions_in_file$ chmod 200 write_only
skandha@skandha-VirtualBox:~/permissions_in_file$ cat write_only
cat: write_only: Permission denied
skandha@skandha-VirtualBox:~/permissions_in_file$
```

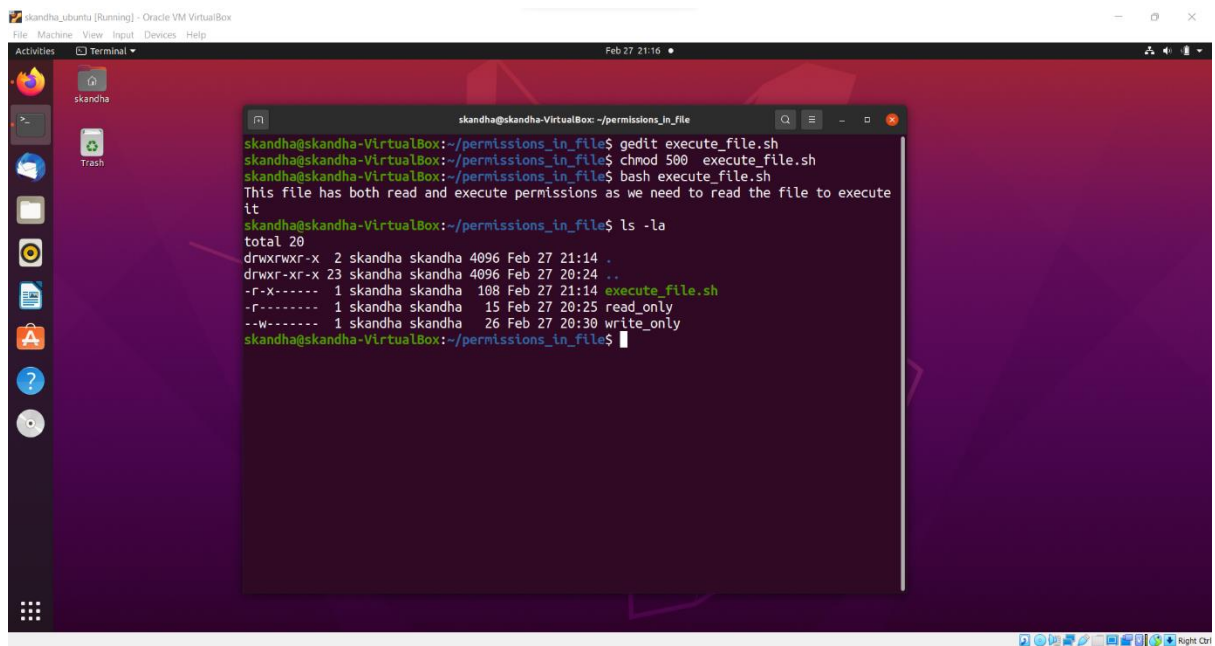
Execute and write only



A screenshot of a terminal window within an Oracle VM VirtualBox environment. The terminal shows the user 'skandha' at the prompt 'skandha@skandha-VirtualBox: ~/permissions_in_file'. The user runs 'gedit execute_file.sh', then 'chmod 500 execute_file.sh', and finally 'bash execute_file.sh'. The output of the script is displayed: 'This file has both read and execute permissions as we need to read the file to execute it'. The terminal window is titled 'skandha@skandha-VirtualBox: ~/permissions_in_file'.

```
skandha@skandha-VirtualBox:~/permissions_in_file$ gedit execute_file.sh
skandha@skandha-VirtualBox:~/permissions_in_file$ chmod 500 execute_file.sh
skandha@skandha-VirtualBox:~/permissions_in_file$ bash execute_file.sh
This file has both read and execute permissions as we need to read the file to execute it
skandha@skandha-VirtualBox:~/permissions_in_file$
```

Permission state of files



A screenshot of a terminal window within an Oracle VM VirtualBox environment. The terminal shows the user 'skandha' at the prompt 'skandha@skandha-VirtualBox: ~/permissions_in_file'. The user runs 'gedit execute_file.sh', then 'chmod 500 execute_file.sh', and finally 'bash execute_file.sh'. The output of the script is displayed: 'This file has both read and execute permissions as we need to read the file to execute it'. The user then runs 'ls -la', which shows the permission state of the files in the directory. The output is as follows:

```
skandha@skandha-VirtualBox:~/permissions_in_file$ ls -la
total 20
drwxrwxr-x 2 skandha skandha 4096 Feb 27 21:14 .
drwxr-xr-x 23 skandha skandha 4096 Feb 27 20:24 ..
-r-x----- 1 skandha skandha 108 Feb 27 21:14 execute_file.sh
-r----- 1 skandha skandha 15 Feb 27 20:25 read_only
--w----- 1 skandha skandha 26 Feb 27 20:30 write_only
skandha@skandha-VirtualBox:~/permissions_in_file$
```