

PROCEDURE :

1. Basic Linux Commands

- \$ cd : Change directory.
- \$ ls : List directory contents.
- \$ pwd : Print working directory.
- \$ cp : Copy files and directories.
- \$ mv : Move/rename files and directories.
- \$ rm -rf : Remove files and directories.
- \$ chmod : Change file permissions.
- \$ cat : Display file content.
- \$ grep : Search text patterns in files.
- \$ vim /-\$ nano : Terminal based text editor.
- \$ apt /-\$ pacman : Package management commands for installing, updating, and removing software packages.

The screenshot shows a terminal window with the following commands and output:

```
>>> ls
ded-fishing  Desktop  Downloads  linux-essentials  Pictures  Public  testing-branch  'VirtualBox VMs'
dedsec.png  Documents hack      Music           project-video.mp4  Templates  Videos          vulnerability-scanner

>>> cd -
~/project-video.mp4: can't open file: No such file or directory

>>> cd -
~/ded-fishing
dedsec.png  Desktop  Downloads  linux-essentials  new-vid.mp4  Public  testing-branch  'VirtualBox VMs'
dedsec.png  Documents hack      Music           Pictures      Templates  Videos          vulnerability-scanner

>>> ls -la
total 104
drwxr-xr-x 1 root root 4096 Feb 20 17:54 .
drwxr-xr-x 1 root root 4096 Feb 20 17:54 ..
-rw-r--r-- 1 root root  122 Feb 20 17:54 .bash_history
-rw-r--r-- 1 root root  187 Feb 20 17:54 .bash_logout
-rw-r--r-- 1 root root 2216 Feb 20 17:54 .bash_profile
-rw-r--r-- 1 root root  160 Feb 20 17:54 .bashrc
-rw-r--r-- 1 root root  220 Feb 20 17:54 .byobu
-rw-r--r-- 1 root root  122 Feb 20 17:54 .cache
-rw-r--r-- 1 root root  122 Feb 20 17:54 .cargo
-rw-r--r-- 1 root root  122 Feb 20 17:54 .config
-rw-r--r-- 1 root root  122 Feb 20 17:54 ded-fishing
-rw-r--r-- 1 root root  122 Feb 20 17:54 dedsec.png
-rw-r--r-- 1 root root  122 Feb 20 17:54 Desktop
-rw-r--r-- 1 root root  122 Feb 20 17:54 Documents
-rw-r--r-- 1 root root  122 Feb 20 17:54 Downloads
-rw-r--r-- 1 root root  122 Feb 20 17:54 hack
-rw-r--r-- 1 root root  122 Feb 20 17:54 linux-essentials
-rw-r--r-- 1 root root  122 Feb 20 17:54 Music
-rw-r--r-- 1 root root  122 Feb 20 17:54 new-vid.mp4
-rw-r--r-- 1 root root  122 Feb 20 17:54 Pictures
-rw-r--r-- 1 root root  122 Feb 20 17:54 Public
-rw-r--r-- 1 root root  122 Feb 20 17:54 testing-branch
-rw-r--r-- 1 root root  122 Feb 20 17:54 'VirtualBox VMs'
-rw-r--r-- 1 root root  122 Feb 20 17:54 vulnerability-scanner
```


2. Proc File System Commands

`/proc`: Directory containing system information.

- \$ cat /proc/cpuinfo : Display CPU information.

- \$ cat /proc/meminfo : Display memory information.

[illegible]

```

jeeva@jeeva-IN500K-X2-SLIM: $ cat /proc/meminfo
MemTotal:       7861808 kB
MemFree:        3803792 kB
MemAvailable:   5514096 kB
Buffers:        81788 kB
Cached:         2250252 kB
SwapCached:      0 kB
Active:         990956 kB
Inactive:       2274836 kB
Active(anon):    4184 kB
Inactive(anon):  1372716 kB
Active(file):    994772 kB
Inactive(file):  902120 kB
Unstable:        341640 kB
Locked:         14760 kB
SwapTotal:      2097148 kB
SwapFree:       2097148 kB
Swap:           0 kB
Swapped:        0 kB
MmStg:          56 kB
Writeback:      0 kB

```

3. Disk I/O Commands

- `$ iostat` : Display CPU and input/output statistics.

- **\$ iotop** : Monitor I/O usage in real-time.

- \$ dd : Data duplicator for low-level copying and conversion of files.
- \$ hdparm : Get/set hard disk parameters.

```

jeeva@jeeva-INBOOK-X2-SLIM:~$ iostat
Linux 6.2.0-39-generic (jeeva-INBOOK-X2-SLIM) 27/02/24 _x86_64_ (4 CPU)

avg-cpu:  %user   %nice %system %iowait  %steal   %idle
           9.16    0.18    3.00    4.08    0.00   82.40

Device            tps    kB_read/s    kB_wrtn/s    kB_dscd/s    kB_read    kB_wrtn    kB_dscd
loop0              0.12         0.05         0.00         0.00         0      0
loop1              0.03         0.04         0.00         0.00         0      0
loop10             0.10         0.03         0.00         0.00         0      0
loop11             0.34         0.32         0.00         0.00         0      0
loop12             1.49        54.50         0.00         0.00     3502      0
loop13             0.00         0.75         0.00         0.00     22961      0
loop14             0.06         0.10         0.00         0.00         0      0
loop2              0.12         0.05         0.00         0.00         0      0
loop3              1.07        14.10         0.00         0.00         0      0
loop4              0.33         2.57         0.00         0.00     3032      0
loop5              0.14         2.49         0.00         0.00     2080      0
loop6              0.14         2.43         0.00         0.00     1130      0
loop7              5.01        61.93         0.00         0.00     1200      0
loop8              0.14         2.50         0.00         0.00     24307      0
loop9              5.28        24.00         0.00         0.00     1040      0
nvme0n1           110.61       3230.70       1902.50       11300.64     1339536     740277     5442270

```

4. Buffer Cache Commands

- \$ sync : Synchronize cached writes to disk.
- \$ vmstat : Report virtual memory statistics.
- \$ free : Display amount of free and used memory in the system.

```

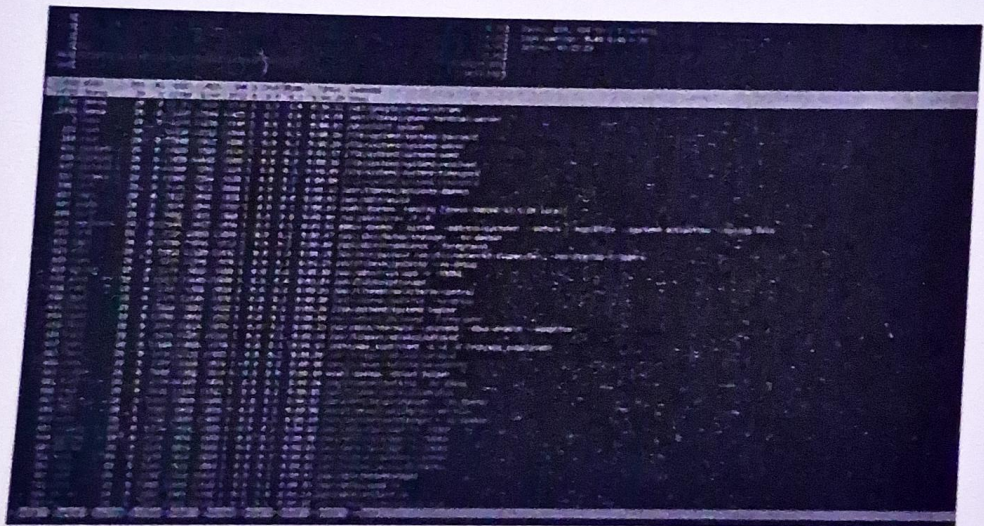
jeeva@jeeva-INBOOK-X2-SLIM:~$ vmstat
procs -----memory-----swap-----io-----system-----cpu-----
r  b   swpd   free   buff   cache   si   so    bi   bo    in   cs us sy id wa st
1  0     0 3860668 72376 2364764    0    0   316   209  469  754  6  2 89  3  0
jeeva@jeeva-INBOOK-X2-SLIM:~$ sync
jeeva@jeeva-INBOOK-X2-SLIM:~$ free
              total        used         free      shared  buff/cache   available
Mem:       7861800      1514844      3941176       436476       2405760      5635872
Swap:      2097148           0       2097148

```


5. Disk Monitoring Tool Commands

- \$ vmstat : Report virtual memory statistics.
- \$ htop : Interactive process viewer.

```
jeeva@jeeva-INBOOK-X2-SLIM:~/lo$ vmstat
procs-----memory-----swap-----io-----system-----cpu-----
r b swpd free buff cache si so bi bo in cs us sy id wa st
0 0 0 3506892 88448 2450336 0 0 111 106 413 612 5 2 91 3 0
jeeva@jeeva-INBOOK-X2-SLIM:~/lo$
```



Result:

Thus, we have successfully learnt the basic linux commands and system component.