Ex.No:1a **Date:18/8/25**

Basic Networking Commands in Linux Operating System

Aim:

To study and execute basic networking commands in linux operating system.

1. ls

NAME: ls - list directory contents

SYNOPSIS: ls [OPTION]... [FILE]...

DESCRIPTION: List information about the FILEs (the current directory by default).

OUTPUT:

```
┌──(JackSparrow㉿Captain)-[~]
└─$ ls
Desktop  Documents  Downloads  Music  Pictures  Public  Templates  Videos
```

a) ls-a : do not ignore entries starting with .

OUTPUT:

```
┌──(JackSparrow㉿Captain)-[~]
└─$ ls -a
.              .bashrc           .dbus      .face          .java     .profile                Templates   .zshrc
..             .bashrc.original  Desktop    .face.icon     .local    Public                  Videos
.bash_history  .cache            Documents  .gnupg         Music     .ssh                    .Xauthority
.bash_logout   .config           Downloads  .ICEauthority  Pictures  .sudo_as_admin_successful  .zprofile
```

b) ls-l : use a long listing format

OUTPUT:

```
┌──(JackSparrow㉿Captain)-[~]
└─$ ls -l
total 36
drwxr-xr-x 2 JackSparrow JackSparrow 4096 Sep 28 06:51 Desktop
drwxr-xr-x 2 JackSparrow JackSparrow 4096 Sep 29 12:46 Documents
drwxr-xr-x 2 JackSparrow JackSparrow 4096 Sep 28 18:53 Downloads
drwxr-xr-x 2 JackSparrow JackSparrow 4096 Sep 28 06:51 Music
-rw------- 1 JackSparrow JackSparrow    1 Oct  2 12:31 nano.423.save
drwxr-xr-x 2 JackSparrow JackSparrow 4096 Sep 28 06:51 Pictures
drwxr-xr-x 2 JackSparrow JackSparrow 4096 Sep 28 06:51 Public
drwxr-xr-x 2 JackSparrow JackSparrow 4096 Sep 28 06:51 Templates
drwxr-xr-x 2 JackSparrow JackSparrow 4096 Sep 28 06:51 Videos
```

2. echo

NAME: echo- display a line of text

SYNOPSIS: echo [SHORT-OPTION]... [STRING]...

echo LONG-OPTION

DESCRIPTION: Echo the STRING(s) to standard output.

OUTPUT:

```
┌──(JackSparrow㉿Captain)-[~]
└─$ echo "hello"
hello
```

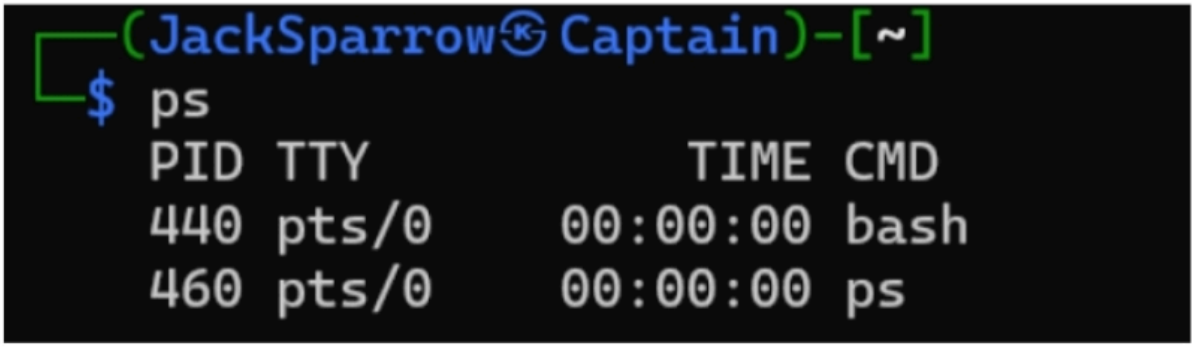
3.ps

NAME: ps- report a snapshot of the current processes.

SYNOPSIS: ps [options]

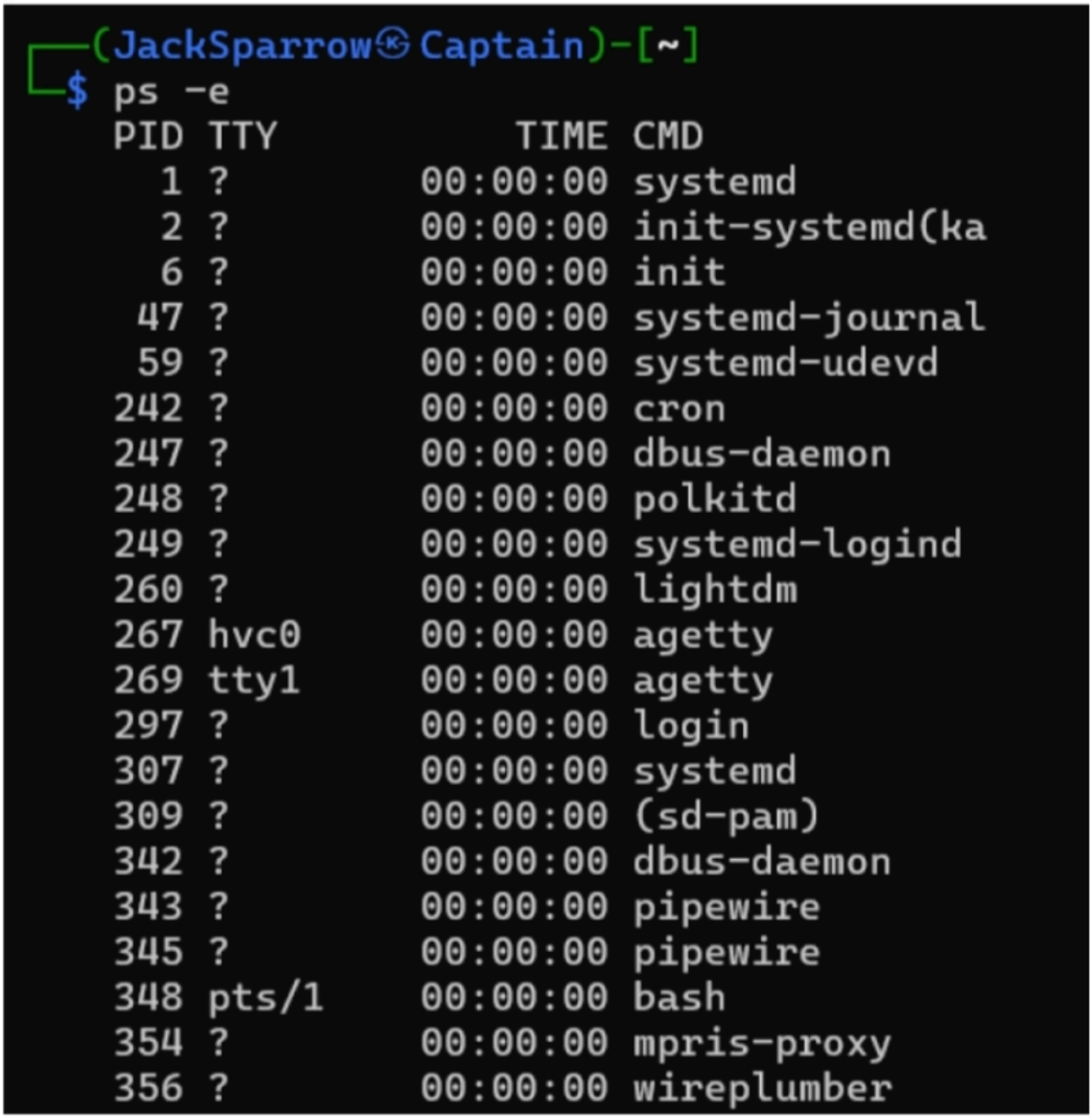
DESCRIPTION: ps displays information about a selection of the active processes.

OUTPUT:



a) ps -e: See all current running processes in the system.

OUTPUT:



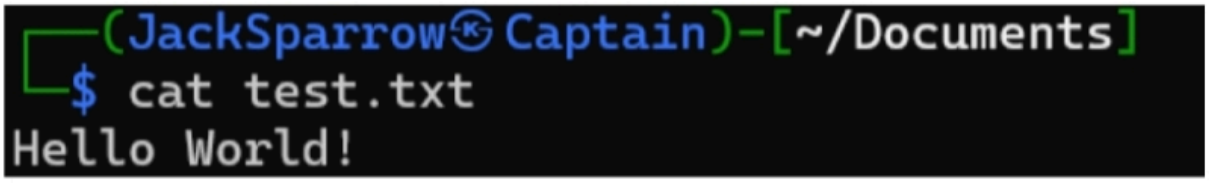
4. cat

NAME: cat- concatenate files and print on the standard output

SYNOPSIS: cat [OPTION]... [FILE]...

DESCRIPTION: Concatenate FILE(s) to standard output.

OUTPUT:



5. free

NAME: free- Display amount of free and used memory in the system

SYNOPSIS: free [options]

DESCRIPTION: free displays the total amount of free and used physical and swap memory in the system, as well as the buffers and caches used by the kernel.

OUTPUT:

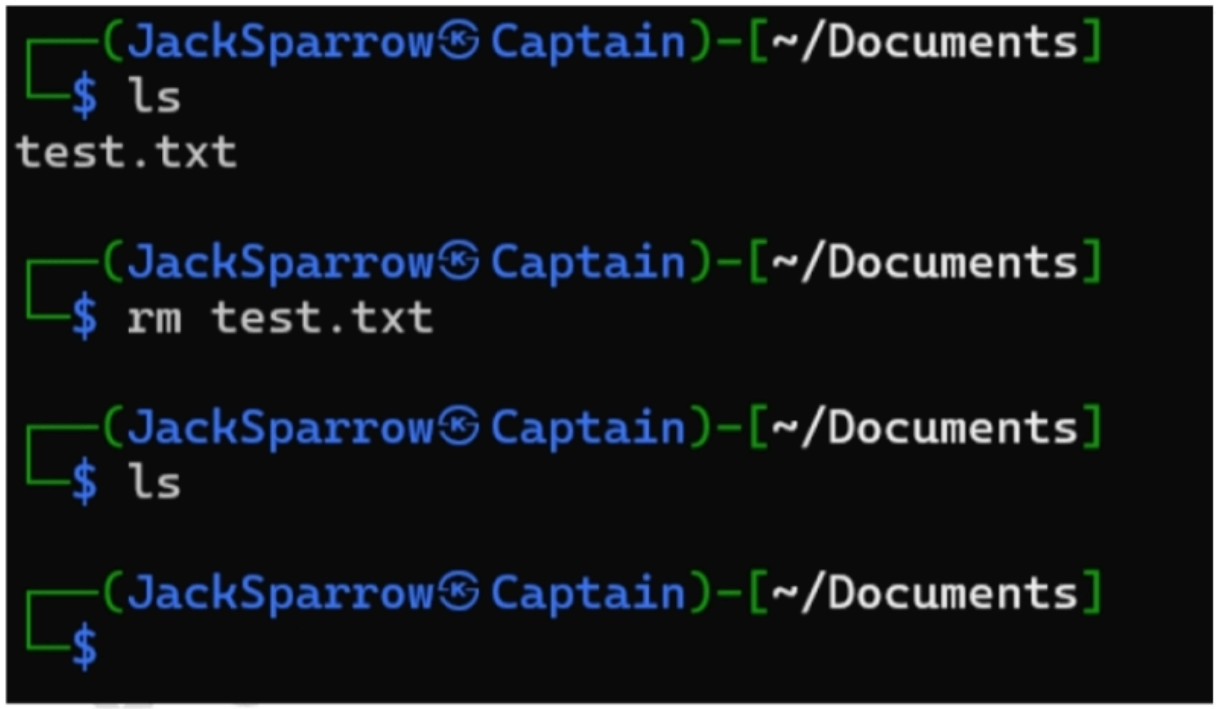
6. rm

NAME: rm- remove files or directories

SYNOPSIS: rm [OPTION]... [FILE]...

DESCRIPTION: rm removes each specified file.

OUTPUT:



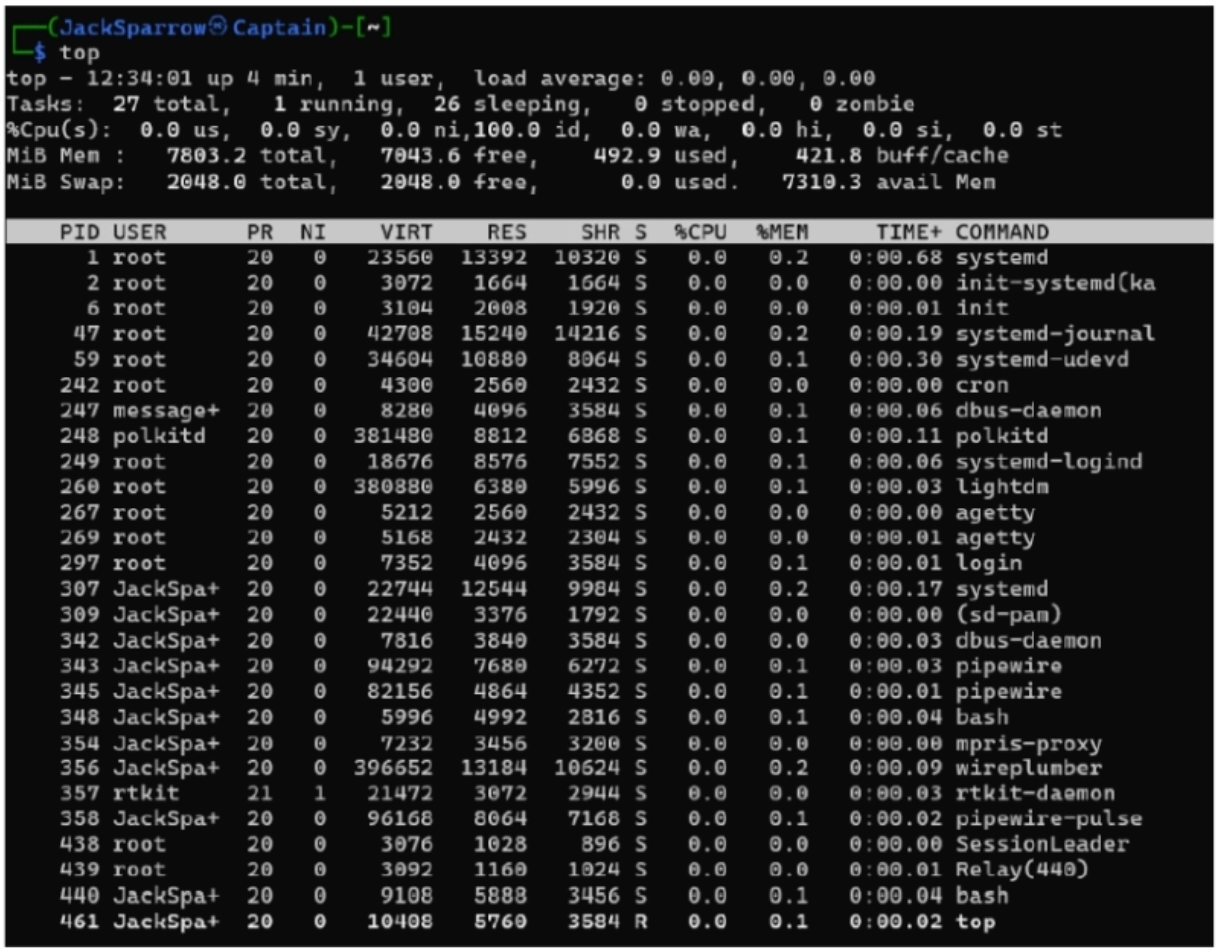
7. top

NAME: top- display Linux processes

SYNOPSIS : top [options]

DESCRIPTION: The top program provides a dynamic real-time view of a running system.

OUTPUT:



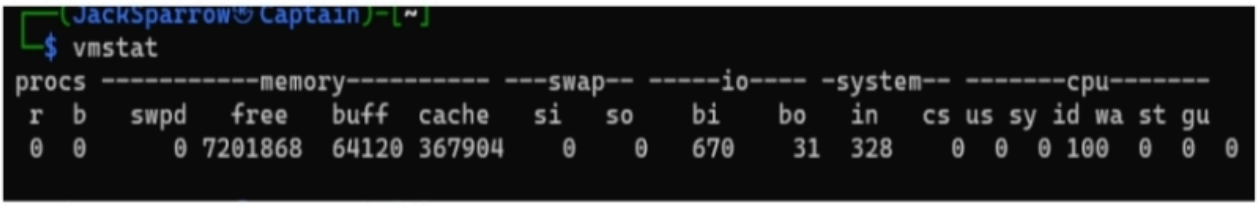
8. vmstat

NAME: vmstat- Report virtual memory statistics

SYNOPSIS: vmstat [options] [delay [count]]

DESCRIPTION: vmstat reports information about processes, memory, paging, block IO, traps, disks and cpu activity

OUTPUT:



9. ping

NAME: ping- send ICMP ECHO_REQUEST to network hosts

SYNOPSIS: ping

[- aAbBdCDfhHLnOqrRUvV346] [-c count]

[-e identifier] [-F flowlabel] [-i interval]

[-I interface] [-l preload] [-m mark]

[-M pmtudisc_option] [-N nodeinfo_option]

[-w deadline] [-W timeout] [-p pattern] [-Q tos]

[-s packetsize] [-S sndbuf] [-t ttl]

[-T timestamp option] [hop...] {destination}

DESCRIPTION: ping uses the ICMP protocol's mandatory ECHO_REQUEST datagram to elicit an ICMP ECHO_RESPONSE from a host or gateway.

OUTPUT:

```
$ ping www.google.com
PING www.google.com (142.250.182.164) 56(84) bytes of data.
64 bytes from del11s10-in-f4.1e100.net (142.250.182.164): icmp_seq=1 ttl=118 time=117 ms
64 bytes from del11s10-in-f4.1e100.net (142.250.182.164): icmp_seq=2 ttl=118 time=141 ms
64 bytes from del11s10-in-f4.1e100.net (142.250.182.164): icmp_seq=3 ttl=118 time=162 ms
64 bytes from del11s10-in-f4.1e100.net (142.250.182.164): icmp_seq=4 ttl=118 time=82.1 ms
64 bytes from del11s10-in-f4.1e100.net (142.250.182.164): icmp_seq=5 ttl=118 time=104 ms
^C
--- www.google.com ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4008ms
rtt min/avg/max/mdev = 82.117/121.295/162.443/27.972 ms
```

10. ifconfig

NAME: ifconfig- configure a network interface

SYNOPSIS: ifconfig [-v] [-a] [-s] [interface]

ifconfig [-v] interface [aftype] options | address ...

DESCRIPTION: Ifconfig is used to configure the kernel-resident network interfaces

OUTPUT:

```
(JackSparrow㉿Captain)-[~]
$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1492
        inet 172.24.234.127  netmask 255.255.240.0  broadcast 172.24.239.255
        inet6 fe80::215:5dff:fe94:5568  prefixlen 64  scopeid 0x20<link>
        ether 00:15:5d:94:55:68  txqueuelen 1000  (Ethernet)
        RX packets 43  bytes 3878 (3.7 KiB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 61  bytes 5238 (5.1 KiB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
        inet 127.0.0.1  netmask 255.0.0.0
        inet6 ::1  prefixlen 128  scopeid 0x10<host>
        loop  txqueuelen 1000  (Local Loopback)
        RX packets 16  bytes 1526 (1.4 KiB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 16  bytes 1526 (1.4 KiB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```

Result:

Thus the above linux commands were executed.

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