```
shubham@DESKTOP-670QJ40:~$ echo $((2+6))
8
shubham@DESKTOP-670QJ40:~$ sudo apt cal
[sudo] password for shubham:
Sorry, try again.
[sudo] password for shubham:
sudo: 1 incorrect password attempt
shubham@DESKTOP-670QJ40:~$ userpasswd
Command 'userpasswd' not found, but can be installed with:
sudo apt install usermode
shubham@DESKTOP-670QJ40:~$ passwd
Changing password for shubham.
Current password:
passwd: Authentication token manipulation error
passwd: password unchanged
shubham@DESKTOP-670QJ40:~$ passwd
Changing password for shubham.
Current password:
passwd: Authentication token manipulation error
passwd: password unchanged
shubham@DESKTOP-670QJ40:~$ awk '{print $1,$2}' demo.txt
awk: fatal: cannot open file `demo.txt' for reading: No such file or directory
shubham@DESKTOP-670QJ40:~$ cd shub
shubham@DESKTOP-670QJ40:~/shub$ awk '{print $1,$2}' demo.txt
hii infobell
ls
touch
pwd
mkdir
rm
cp
ls -a
find
grep
```

```
shubham@DESKTOP-670QJ40:~/shub$ awk '{print $1,$nf}' demo.txt
hii hii infobell
ls ls
touch touch
pwd pwd
mkdir mkdir
rm rm
cp cp
ls ls -a
find find
grep grep
shubham shubham
raj raj
ajay ajay
vickey vickey
shubham@DESKTOP-670QJ40:~/shub$ awk 'end {print nr}' demo.txt
shubham@DESKTOP-670QJ40:~/shub$ awk '/hii /{print}' demo.txt
hii infobell
shubham@DESKTOP-670QJ40:~/shub$ awk 'nr==1,nr==2 {print nr,$0}' demo.txt
shubham@DESKTOP-670QJ40:~/shub$ awk 'NR==1,NR==2 {print nr,$0}' demo.txt
 hii infobell
 ls
shubham@DESKTOP-670QJ40:~/shub$ awk 'NR==1,NR==6 {print nr,$0}' demo.txt
 hii infobell
 ls
 touch
 pwd
 mkdir
 rm
shubham@DESKTOP-670QJ40:~/shub$ awk 'END {print NR}' demo.txt
14
```

```
shubham@DESKTOP-670QJ40:~/shub$ awk 'NR==1,NR==6 {print NR,$0}' demo.txt
1 hii infobell
2 ls
3 touch
4 pwd
5 mkdir
6 rm
shubham@DESKTOP-670QJ40:~/shub$ sed 'hii;hello' demo.txt
sed: -e expression #1, char 2: extra characters after command
shubham@DESKTOP-670QJ40:~/shub$ sed 'hii/hello' demo.txt
sed: -e expression #1, char 2: extra characters after command
shubham@DESKTOP-670QJ40:~/shub$ sed 's/hii/hello/' demo.txt
hello infobell
ls
touch
pwd
mkdir
rm
cp
ls -a
find
grep
shubham
raj
ajay
vickey
```

```
shubham@DESKTOP-670QJ40:~/shub$ sed 's/h/hi/g' demo.txt
hiii infobell
ls
touchi
pwd
mkdir
rm
cp
ls -a
find
grep
shiubhiam
raj
ajay
vickey
shubham@DESKTOP-670QJ40:~/shub$ sed '3a\New line of content' demo.txt
hii infobell
ls
touch
New line of content
pwd
mkdir
rm
cp
ls -a
find
grep
shubham
raj
ajay
vickey
```

```
shubham@DESKTOP-670QJ40:~$ sudo apt install net-tools
[sudo] password for shubham:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
net-tools is already the newest version (1.60+git20181103.0eebece-1ubuntu5).
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
shubham@DESKTOP-670QJ40:~$ route -m
route: invalid option -- 'm'
Usage: route [-nNvee] [-FC] [<AF>]           List kernel routing tables
       route [-v] [-FC] {add|del|flush} ...  Modify routing table for AF.

       route {-h|--help} [<AF>]              Detailed usage syntax for specified AF.
       route {-V|--version}                  Display version/author and exit.

         -v, --verbose            be verbose
         -n, --numeric            don't resolve names
         -e, --extend             display other/more information
         -F, --fib                display Forwarding Information Base (default)
         -C, --cache              display routing cache instead of FIB

     <AF>=Use -4, -6, '-A <af>' or '--<af>'; default: inet
     List of possible address families (which support routing):
       inet (DARPA Internet) inet6 (IPv6) ax25 (AMPR AX.25)
       netrom (AMPR NET/ROM) ipx (Novell IPX) ddp (Appletalk DDP)
       x25 (CCITT X.25)
```

```
shubham@DESKTOP-670QJ40:~$ route -n
Kernel IP routing table
Destination     Gateway         Genmask         Flags Metric Ref    Use Iface
0.0.0.0         172.24.224.1    0.0.0.0         UG    0      0        0 eth0
172.24.224.0    0.0.0.0         255.255.240.0   U     0      0        0 eth0
shubham@DESKTOP-670QJ40:~$ fmt
varun
yogesh
anup
yashwant
varun yogesh anup yashwant
shubham@DESKTOP-670QJ40:~$ df -kh
Filesystem      Size  Used Avail Use% Mounted on
none            1.9G  4.0K  1.9G   1% /mnt/wsl
none            238G   95G  144G  40% /usr/lib/wsl/drivers
none            1.9G     0  1.9G   0% /usr/lib/wsl/lib
/dev/sdc       1007G  1.2G  955G   1% /
none            1.9G   76K  1.9G   1% /mnt/wslg
rootfs          1.9G  1.9M  1.9G   1% /init
none            1.9G  4.0K  1.9G   1% /run
none            1.9G     0  1.9G   0% /run/lock
none            1.9G     0  1.9G   0% /run/shm
none            1.9G     0  1.9G   0% /run/user
tmpfs           1.9G     0  1.9G   0% /sys/fs/cgroup
none            1.9G   76K  1.9G   1% /mnt/wslg/versions.txt
none            1.9G   76K  1.9G   1% /mnt/wslg/doc
drvfs           238G   95G  144G  40% /mnt/c
drvfs           932G  337G  596G  37% /mnt/d
```

```
shubham@DESKTOP-670QJ40:~$ telnet DESKTOP-670QJ40
Trying 127.0.1.1...
telnet: Unable to connect to remote host: Connection refused
shubham@DESKTOP-670QJ40:~$ cd shub
shubham@DESKTOP-670QJ40:~/shub$ netstat -plunt
(No info could be read for "-p": geteuid()=1000 but you should be root.)
Active Internet connections (only servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State       PID/Program name
udp        0      0 127.0.0.1:323           0.0.0.0:*                           -
udp6       0      0 ::1:323                 :::*                                -
shubham@DESKTOP-670QJ40:~/shub$ lsof -i
shubham@DESKTOP-670QJ40:~/shub$ nslookup google.com
Server:         172.24.224.1
Address:        172.24.224.1#53

Non-authoritative answer:
Name:   google.com
Address: 142.250.67.238
Name:   google.com
Address: 2404:6800:4009:81e::200e

shubham@DESKTOP-670QJ40:~/shub$ nslookup 142.250.67.238
238.67.250.142.in-addr.arpa     name = bom07s24-in-f14.1e100.net.

Authoritative answers can be found from:
```

```
shubham@DESKTOP-670QJ40:~/shub$ sudo apt install cal
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
E: Unable to locate package cal
shubham@DESKTOP-670QJ40:~/shub$ cal
Command 'cal' not found, but can be installed with:
sudo apt install ncal
shubham@DESKTOP-670QJ40:~/shub$ netstat -i
Kernel Interface table
Iface      MTU    RX-OK RX-ERR RX-DRP RX-OVR    TX-OK TX-ERR TX-DRP TX-OVR Flg
eth0      1472      691      0      0 0          128      0      0      0 BMRU
lo       65536        4      0      0 0            4      0      0      0 LRU
shubham@DESKTOP-670QJ40:~/shub$ netstat -s
Ip:
    Forwarding: 2
    1715 total packets received
    0 forwarded
    0 incoming packets discarded
    308 incoming packets delivered
    120 requests sent out
Icmp:
    0 ICMP messages received
    0 input ICMP message failed
    ICMP input histogram:
    0 ICMP messages sent
    0 ICMP messages failed
drvfs            932G  337G  596G  37% /mnt/d
```

```
shubham@DESKTOP-670QJ40:~/shub$ lscpu
Architecture:           x86_64
  CPU op-mode(s):       32-bit, 64-bit
  Address sizes:        39 bits physical, 48 bits virtual
  Byte Order:           Little Endian
CPU(s):                 8
  On-line CPU(s) list:  0-7
Vendor ID:              GenuineIntel
  Model name:           Intel(R) Core(TM) i5-9300H CPU @ 2.40GHz
    CPU family:         6
    Model:              158
    Thread(s) per core: 2
    Core(s) per socket: 4
    Socket(s):          1
    Stepping:           10
    BogoMIPS:           4800.00
    Flags:              fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36 clf
                        sse2 ss ht syscall nx pdpe1gb rdtscp lm constant_tsc arch_perfmon rep_good
                        id pni pclmulqdq ssse3 fma cx16 pdcm pcid sse4_1 sse4_2 movbe popcnt aes xs
                        d hypervisor lahf_lm abm 3dnowprefetch invpcid_single pti ssbd ibrs ibpb st
                        avx2 smep bmi2 erms invpcid rdseed adx smap clflushopt xsaveopt xsavec xget
                        1d arch_capabilities
Virtualization features:
  Hypervisor vendor:    Microsoft
  Virtualization type:  full
Caches (sum of all):
  L1d:                  128 KiB (4 instances)
drvfs           932G  337G  596G  37% /mnt/d
```

```
shubham@DESKTOP-670QJ40:~/shub$ 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 3373808   8636 235584    0    0     3     1   28    0  0  0 100  0  0
shubham@DESKTOP-670QJ40:~/shub$ vmstat -S
vmstat: option requires an argument -- 'S'

Usage:
 vmstat [options] [delay [count]]

Options:
 -a, --active         active/inactive memory
 -f, --forks          number of forks since boot
 -m, --slabs          slabinfo
 -n, --one-header     do not redisplay header
 -s, --stats          event counter statistics
 -d, --disk           disk statistics
 -D, --disk-sum       summarize disk statistics
 -p, --partition <dev> partition specific statistics
 -S, --unit <char>    define display unit
 -w, --wide           wide output
 -t, --timestamp      show timestamp

 -h, --help     display this help and exit
 -V, --version  output version information and exit

drvfs           932G  337G  596G  37% /mnt/d
```

```
shubham@DESKTOP-670QJ40:~/shub$ vmstat -S m
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   3454      8    241    0    0     3     1    1   28  0  0 100  0  0
shubham@DESKTOP-670QJ40:~/shub$ comm demo.txt demo4.txt
                hii infobell
                ls
                touch
                pwd
                mkdir
                rm
                cp
                ls -a
                find
                grep
                shubham
                raj
                ajay
                vickey
shubham@DESKTOP-670QJ40:~/shub$ uname -o
GNU/Linux
shubham@DESKTOP-670QJ40:~/shub$ uname -m
x86_64
shubham@DESKTOP-670QJ40:~/shub$ uname -r
5.15.90.1-microsoft-standard-WSL2
```

```
shubham@DESKTOP-670QJ40:~/shub$ free -h
              total        used        free      shared  buff/cache   available
Mem:          3.7Gi       306Mi       3.2Gi       2.0Mi       238Mi       3.2Gi
Swap:         1.0Gi          0B       1.0Gi
shubham@DESKTOP-670QJ40:~/shub$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1472
        inet 172.24.231.29  netmask 255.255.240.0  broadcast 172.24.239.255
        inet6 fe80::215:5dff:fe2a:d01e  prefixlen 64  scopeid 0x20<link>
        ether 00:15:5d:2a:d0:1e  txqueuelen 1000  (Ethernet)
        RX packets 715  bytes 318288 (318.2 KB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 128  bytes 8634 (8.6 KB)
        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 4  bytes 200 (200.0 B)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 4  bytes 200 (200.0 B)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```

```
shubham@DESKTOP-670QJ40:~/shub$ ip r
default via 172.24.224.1 dev eth0 proto kernel
172.24.224.0/20 dev eth0 proto kernel scope link src 172.24.231.29
shubham@DESKTOP-670QJ40:~/shub$ cat demo.txt | sort
ajay
cp
find
grep
hii infobell
ls
ls -a
mkdir
pwd
raj
rm
shubham
touch
vickey
shubham@DESKTOP-670QJ40:~/shub$ cmp demo.txt
dem^C
shubham@DESKTOP-670QJ40:~/shub$ cmp demo.txt demo4.txt
shubham@DESKTOP-670QJ40:~/shub$ diff demo.txt demo4.txt
shubham@DESKTOP-670QJ40:~/shub$ diff demo.txt demo3.txt
diff: demo3.txt: No such file or directory
shubham@DESKTOP-670QJ40:~/shub$ passwd
```

```
shubham@DESKTOP-670QJ40:~/shub$ passwd
Changing password for shubham.
Current password:
New password:
Retype new password:
passwd: password updated successfully
```