All command and their output:


```
piyu@piyu-ThinkPad-T14-Gen-1:~$ pwd
/home/piyu
piyu@piyu-ThinkPad-T14-Gen-1:~$ S
```



```
piyu@piyu-ThinkPad-T14-Gen-1:~$ ls
cd      demo_file.txt  devops_file.txt  Downloads      hello.txt      Music     newfile.txt  Pictures  snap
cloud   Desktop        Documents        hardlink_file  linux_for_devops  myfile.txt  nohup.out    Public    softli
piyu@piyu-ThinkPad-T14-Gen-1:~$ pwd
/home/piyu
piyu@piyu-ThinkPad-T14-Gen-1:~$ cd linux_for_devops
piyu@piyu-ThinkPad-T14-Gen-1:~/linux_for_devops$ pwd
/home/piyu/linux_for_devops
piyu@piyu-ThinkPad-T14-Gen-1:~/linux_for_devops$
```



```
piyu@piyu-ThinkPad-T14-Gen-1:~$ ls
cd      demo_file.txt  devops_file.txt  Downloads      hello.txt      Music     newfile.txt  Pictures  snap
cloud   Desktop        Documents        hardlink_file  linux_for_devops  myfile.txt  nohup.out    Public    softli
piyu@piyu-ThinkPad-T14-Gen-1:~$ pwd
/home/piyu
piyu@piyu-ThinkPad-T14-Gen-1:~$ cd linux_for_devops
piyu@piyu-ThinkPad-T14-Gen-1:~/linux_for_devops$ pwd
/home/piyu/linux_for_devops
piyu@piyu-ThinkPad-T14-Gen-1:~/linux_for_devops$
```

```
piyu@piyu-ThinkPad-T14-Gen-1:/$ pwd
/
piyu@piyu-ThinkPad-T14-Gen-1:/$ cd /etc
piyu@piyu-ThinkPad-T14-Gen-1:/etc$ pwd
/etc
piyu@piyu-ThinkPad-T14-Gen-1:/etc$ cd ..
piyu@piyu-ThinkPad-T14-Gen-1:/$ pwd
/
piyu@piyu-ThinkPad-T14-Gen-1:/$ cd home
piyu@piyu-ThinkPad-T14-Gen-1:/home$ pwd
/home
piyu@piyu-ThinkPad-T14-Gen-1:/home$
```

```
piyu@piyu-ThinkPad-T14-Gen-1:~$ mkdir elevate_lab
piyu@piyu-ThinkPad-T14-Gen-1:~$ ls
cd       demo_file.txt  devops_file.txt  Downloads  hardlink_file  linux_for_devops  myfile.txt  nohup.out  Publi
cloud  Desktop        Documents        elevate_lab  hello.txt    Music             newfile.txt  Pictures  snap
piyu@piyu-ThinkPad-T14-Gen-1:~$ cd elevate_lab
piyu@piyu-ThinkPad-T14-Gen-1:~/elevate_lab$ ls
piyu@piyu-ThinkPad-T14-Gen-1:~/elevate_lab$ touch file1
piyu@piyu-ThinkPad-T14-Gen-1:~/elevate_lab$ ls
file1
piyu@piyu-ThinkPad-T14-Gen-1:~/elevate_lab$ touch file2
piyu@piyu-ThinkPad-T14-Gen-1:~/elevate_lab$ touch file3
piyu@piyu-ThinkPad-T14-Gen-1:~/elevate_lab$ ls
file1  file2  file3
piyu@piyu-ThinkPad-T14-Gen-1:~/elevate_lab$
```

```
piyu@piyu-ThinkPad-T14-Gen-1:~$ vi file1
piyu@piyu-ThinkPad-T14-Gen-1:~$ cat file1
Hii
My name is Payal
I am currntly pursuing degree in computer engineering from JSCOE hadapsar
i interested in devops and cloud

piyu@piyu-ThinkPad-T14-Gen-1:~$ nano file1
piyu@piyu-ThinkPad-T14-Gen-1:~$ less file1
piyu@piyu-ThinkPad-T14-Gen-1:~$
```

```
piyu@piyu-ThinkPad-T14-Gen-1:~$ ls-l
ls-l: command not found
piyu@piyu-ThinkPad-T14-Gen-1:~$ ls -l
total 88
-rw-rw-r-- 1 piyu piyu    0 Jan  5 10:33 cd
drwxrwxr-x 2 piyu piyu 4096 Jan  6 12:59 cloud
-rw-rw-r-- 1 piyu piyu   53 Jan  6 20:52 demo_file.txt
drwxr-xr-x 2 piyu piyu 4096 Jan  4 02:52 Desktop
lrwxrwxrwx 1 piyu piyu   49 Jan  6 17:42 devops_file.txt -> /home/piyu/linux_for_devops/cloud/devops_file.txt
drwxr-xr-x 2 piyu piyu 4096 Jan  4 02:52 Documents
drwxr-xr-x 2 piyu piyu 4096 Jan 15 13:58 Downloads
-rw-rw-r-- 1 piyu piyu    1 Jan 15 14:57 file
-rw-rw-r-- 1 piyu piyu  133 Jan 15 15:00 file1
-rw-rw-r-- 1 piyu piyu   13 Jan  6 18:09 hardlink_file
-rw-rw-r-- 1 piyu piyu    7 Jan 15 14:44 hello.txt
-rw-rw-r-- 1 piyu piyu   56 Jan 15 14:55 hell.txt
drwxrwxr-x 3 piyu piyu 4096 Jan  6 12:59 linux_for_devops
drwxr-xr-x 2 piyu piyu 4096 Jan  4 02:52 Music
-rw-rw-r-- 1 piyu piyu   17 Jan  6 12:39 myfile.txt
-rw-rw-r-- 1 piyu piyu    0 Jan  6 12:28 newfile.txt
-rw------- 1 piyu piyu  599 Jan  6 21:19 nohup.out
drwxr-xr-x 3 piyu piyu 4096 Jan  7 17:39 Pictures
drwxr-xr-x 2 piyu piyu 4096 Jan  4 02:52 Public
drwx------ 5 piyu piyu 4096 Jan  4 03:13 snap
lrwxrwxrwx 1 piyu piyu   49 Jan  6 17:59 softlink_file -> /home/piyu/linux_for_devops/cloud/devops_file.txt
drwxrwxr-x 2 piyu piyu 4096 Jan  3 22:03 sort
drwxrwxr-x 2 piyu piyu 4096 Jan  3 22:08 stack
drwxr-xr-x 2 piyu piyu 4096 Jan  4 02:52 Templates
-rw-rw-r-- 1 piyu piyu   38 Jan  3 21:57 text
drwxr-xr-x 2 piyu piyu 4096 Jan  4 02:52 Videos
piyu@piyu-ThinkPad-T14-Gen-1:~$
```

```
piyu@piyu-ThinkPad-T14-Gen-1:~$ chmod u+x file.txt
chmod: cannot access 'file.txt': No such file or directory
piyu@piyu-ThinkPad-T14-Gen-1:~$ chmod u+x file1
piyu@piyu-ThinkPad-T14-Gen-1:~$ ls -l
total 88
-rw-rw-r-- 1 piyu piyu    0 Jan  5 10:33 cd
drwxrwxr-x 2 piyu piyu 4096 Jan  6 12:59 cloud
-rw-rw-r-- 1 piyu piyu   53 Jan  6 20:52 demo_file.txt
drwxr-xr-x 2 piyu piyu 4096 Jan  4 02:52 Desktop
lrwxrwxrwx 1 piyu piyu   49 Jan  6 17:42 devops_file.txt -> /home/piyu/linux_for_devops/cloud/devops_file.txt
drwxr-xr-x 2 piyu piyu 4096 Jan  4 02:52 Documents
drwxr-xr-x 2 piyu piyu 4096 Jan 15 13:58 Downloads
-rw-rw-r-- 1 piyu piyu    1 Jan 15 14:57 file
-rwxrw-r-- 1 piyu piyu  133 Jan 15 15:00 file1
-rw-rw-r-- 1 piyu piyu   13 Jan  6 18:09 hardlink_file
-rw-rw-r-- 1 piyu piyu    7 Jan 15 14:44 hello.txt
-rw-rw-r-- 1 piyu piyu   56 Jan 15 14:55 hell.txt
drwxrwxr-x 3 piyu piyu 4096 Jan  6 12:59 linux_for_devops
```

```
drwxr-xr-x 2 piyu piyu 4096 Jan  4 02:52 Videos
piyu@piyu-ThinkPad-T14-Gen-1:~$ chmod u=rwx,g=r,o=r file1
piyu@piyu-ThinkPad-T14-Gen-1:~$ ls -l
total 88
-rw-rw-r-- 1 piyu piyu    0 Jan  5 10:33 cd
drwxrwxr-x 2 piyu piyu 4096 Jan  6 12:59 cloud
-rw-rw-r-- 1 piyu piyu   53 Jan  6 20:52 demo_file.txt
drwxr-xr-x 2 piyu piyu 4096 Jan  4 02:52 Desktop
lrwxrwxrwx 1 piyu piyu   49 Jan  6 17:42 devops_file.txt -> /home/piyu/linux_for_devops/cloud/devops_file.txt
drwxr-xr-x 2 piyu piyu 4096 Jan  4 02:52 Documents
drwxr-xr-x 2 piyu piyu 4096 Jan 15 13:58 Downloads
-rw-rw-r-- 1 piyu piyu    1 Jan 15 14:57 file
-rwxr--r-- 1 piyu piyu  133 Jan 15 15:00 file1
-rw-rw-r-- 1 piyu piyu   13 Jan  6 18:09 hardlink_file
-rw-rw-r-- 1 piyu piyu    7 Jan 15 14:44 hello.txt
-rw-rw-r-- 1 piyu piyu   56 Jan 15 14:55 hell.txt
drwxrwxr-x 3 piyu piyu 4096 Jan  6 12:59 linux_for_devops
drwxr-xr-x 2 piyu piyu 4096 Jan  4 02:52 Music
-rw-rw-r-- 1 piyu piyu   17 Jan  6 12:39 myfile.txt
-rw-rw-r-- 1 piyu piyu    0 Jan  6 12:28 newfile.txt
-rw------- 1 piyu piyu  599 Jan  6 21:19 nohup.out
drwxr-xr-x 3 piyu piyu 4096 Jan  7 17:39 Pictures
drwxr-xr-x 2 piyu piyu 4096 Jan  4 02:52 Public
drwx------ 5 piyu piyu 4096 Jan  4 03:13 snap
lrwxrwxrwx 1 piyu piyu   49 Jan  6 17:59 softlink_file -> /home/piyu/linux_for_devops/cloud/devops_file.txt
drwxrwxr-x 2 piyu piyu 4096 Jan  3 22:03 sort
drwxrwxr-x 2 piyu piyu 4096 Jan  3 22:08 stack
drwxr-xr-x 2 piyu piyu 4096 Jan  4 02:52 Templates
-rw-rw-r-- 1 piyu piyu   38 Jan  3 21:57 text
drwxr-xr-x 2 piyu piyu 4096 Jan  4 02:52 Videos
piyu@piyu-ThinkPad-T14-Gen-1:~$
```

```
piyu@piyu-ThinkPad-T14-Gen-1:~$ chmod o-w file1
piyu@piyu-ThinkPad-T14-Gen-1:~$ ls -l
total 88
-rw-rw-r-- 1 piyu piyu    0 Jan  5 10:33 cd
drwxrwxr-x 2 piyu piyu 4096 Jan  6 12:59 cloud
-rw-rw-r-- 1 piyu piyu   53 Jan  6 20:52 demo_file.txt
drwxr-xr-x 2 piyu piyu 4096 Jan  4 02:52 Desktop
lrwxrwxrwx 1 piyu piyu   49 Jan  6 17:42 devops_file.txt -> /home/piyu/linux_for_devops/cloud/devops_file.txt
drwxr-xr-x 2 piyu piyu 4096 Jan  4 02:52 Documents
drwxr-xr-x 2 piyu piyu 4096 Jan 15 13:58 Downloads
-rw-rw-r-- 1 piyu piyu    1 Jan 15 14:57 file
-rwxrw-r-- 1 piyu piyu  133 Jan 15 15:00 file1
-rw-rw-r-- 1 piyu piyu   13 Jan  6 18:09 hardlink_file
-rw-rw-r-- 1 piyu piyu    7 Jan 15 14:44 hello.txt
-rw-rw-r-- 1 piyu piyu   56 Jan 15 14:55 hell.txt
drwxrwxr-x 3 piyu piyu 4096 Jan  6 12:59 linux_for_devops
drwxr-xr-x 2 piyu piyu 4096 Jan  4 02:52 Music
-rw-rw-r-- 1 piyu piyu   17 Jan  6 12:39 myfile.txt
-rw-rw-r-- 1 piyu piyu    0 Jan  6 12:28 newfile.txt
-rw------- 1 piyu piyu  599 Jan  6 21:19 nohup.out
drwxr-xr-x 3 piyu piyu 4096 Jan  7 17:39 Pictures
drwxr-xr-x 2 piyu piyu 4096 Jan  4 02:52 Public
drwx------ 5 piyu piyu 4096 Jan  4 03:13 snap
lrwxrwxrwx 1 piyu piyu   49 Jan  6 17:59 softlink_file -> /home/piyu/linux_for_devops/cloud/devops_file.txt
drwxrwxr-x 2 piyu piyu 4096 Jan  3 22:03 sort
drwxrwxr-x 2 piyu piyu 4096 Jan  3 22:08 stack
drwxr-xr-x 2 piyu piyu 4096 Jan  4 02:52 Templates
-rw-rw-r-- 1 piyu piyu   38 Jan  3 21:57 text
drwxr-xr-x 2 piyu piyu 4096 Jan  4 02:52 Videos
piyu@piyu-ThinkPad-T14-Gen-1:~$ chmod u=rwx,g=r,o=r file1
piyu@piyu-ThinkPad-T14-Gen-1:~$ ls -l
```

```
piyu@piyu-ThinkPad-T14-Gen-1:~$ chmod 755 file1
piyu@piyu-ThinkPad-T14-Gen-1:~$ ls
cd                file              myfile.txt        sort
cloud             file1             newfile.txt       stack
demo_file.txt     hardlink_file     nohup.out         Templates
Desktop           hello.txt         Pictures          text
devops_file.txt   hell.txt          Public            Videos
Documents         linux_for_devops  snap
Downloads         Music             softlink_file
piyu@piyu-ThinkPad-T14-Gen-1:~$ ls-l
ls-l: command not found
piyu@piyu-ThinkPad-T14-Gen-1:~$ ls -l
total 88
-rw-rw-r-- 1 piyu piyu    0 Jan  5 10:33 cd
drwxrwxr-x 2 piyu piyu 4096 Jan  6 12:59 cloud
-rw-rw-r-- 1 piyu piyu   53 Jan  6 20:52 demo_file.txt
drwxr-xr-x 2 piyu piyu 4096 Jan  4 02:52 Desktop
lrwxrwxrwx 1 piyu piyu   49 Jan  6 17:42 devops_file.txt -> /home/piyu/linux_for_devops/cloud/devops_file.txt
drwxr-xr-x 2 piyu piyu 4096 Jan  4 02:52 Documents
drwxr-xr-x 2 piyu piyu 4096 Jan 15 13:58 Downloads
-rw-rw-r-- 1 piyu piyu    1 Jan 15 14:57 file
-rwxr-xr-x 1 piyu piyu  133 Jan 15 15:00 file1
-rw-rw-r-- 1 piyu piyu   13 Jan  6 18:09 hardlink_file
-rw-rw-r-- 1 piyu piyu    7 Jan 15 14:44 hello.txt
-rw-rw-r-- 1 piyu piyu   56 Jan 15 14:55 hell.txt
drwxrwxr-x 3 piyu piyu 4096 Jan  6 12:59 linux_for_devops
drwxr-xr-x 2 piyu piyu 4096 Jan  4 02:52 Music
-rw-rw-r-- 1 piyu piyu   17 Jan  6 12:39 myfile.txt
-rw-rw-r-- 1 piyu piyu    0 Jan  6 12:28 newfile.txt
-rw------- 1 piyu piyu  599 Jan  6 21:19 nohup.out
drwxr-xr-x 3 piyu piyu 4096 Jan  7 17:39 Pictures
drwxr-xr-x 2 piyu piyu 4096 Jan  4 02:52 Public
drwx------ 5 piyu piyu 4096 Jan  4 03:13 snap
lrwxrwxrwx 1 piyu piyu   49 Jan  6 17:59 softlink_file -> /home/piyu/linux_for_devops/cloud/devops_file.txt
drwxrwxr-x 2 piyu piyu 4096 Jan  3 22:03 sort
drwxrwxr-x 2 piyu piyu 4096 Jan  3 22:08 stack
drwxr-xr-x 2 piyu piyu 4096 Jan  4 02:52 Templates
-rw-rw-r-- 1 piyu piyu   38 Jan  3 21:57 text
drwxr-xr-x 2 piyu piyu 4096 Jan  4 02:52 Videos
```

```
piyu@piyu-ThinkPad-T14-Gen-1:~$ sudo chown root file
[sudo] password for piyu:
piyu@piyu-ThinkPad-T14-Gen-1:~$ ls -l
total 88
-rw-rw-r-- 1 piyu piyu    0 Jan  5 10:33 cd
drwxrwxr-x 2 piyu piyu 4096 Jan  6 12:59 cloud
-rw-rw-r-- 1 piyu piyu   53 Jan  6 20:52 demo_file.txt
drwxr-xr-x 2 piyu piyu 4096 Jan  4 02:52 Desktop
lrwxrwxrwx 1 piyu piyu   49 Jan  6 17:42 devops_file.txt -> /home/piyu/linux_for_devops/cloud/devops_file.txt
drwxr-xr-x 2 piyu piyu 4096 Jan  4 02:52 Documents
drwxr-xr-x 2 piyu piyu 4096 Jan 15 13:58 Downloads
-rw-rw-r-- 1 root piyu    1 Jan 15 14:57 file
-rwxr-xr-x 1 piyu piyu  133 Jan 15 15:00 file1
-rw-rw-r-- 1 piyu piyu   13 Jan  6 18:09 hardlink_file
-rw-rw-r-- 1 piyu piyu    7 Jan 15 14:44 hello.txt
-rw-rw-r-- 1 piyu piyu   56 Jan 15 14:55 hell.txt
drwxrwxr-x 3 piyu piyu 4096 Jan  6 12:59 linux_for_devops
drwxr-xr-x 2 piyu piyu 4096 Jan  4 02:52 Music
-rw-rw-r-- 1 piyu piyu   17 Jan  6 12:39 myfile.txt
-rw-rw-r-- 1 piyu piyu    0 Jan  6 12:28 newfile.txt
-rw------- 1 piyu piyu  599 Jan  6 21:19 nohup.out
drwxr-xr-x 3 piyu piyu 4096 Jan  7 17:39 Pictures
drwxr-xr-x 2 piyu piyu 4096 Jan  4 02:52 Public
drwx------ 5 piyu piyu 4096 Jan  4 03:13 snap
lrwxrwxrwx 1 piyu piyu   49 Jan  6 17:59 softlink_file -> /home/piyu/linux_for_devops/cloud/devops_file.txt
drwxrwxr-x 2 piyu piyu 4096 Jan  3 22:03 sort
drwxrwxr-x 2 piyu piyu 4096 Jan  3 22:08 stack
drwxr-xr-x 2 piyu piyu 4096 Jan  4 02:52 Templates
-rw-rw-r-- 1 piyu piyu   38 Jan  3 21:57 text
drwxr-xr-x 2 piyu piyu 4096 Jan  4 02:52 Videos
```
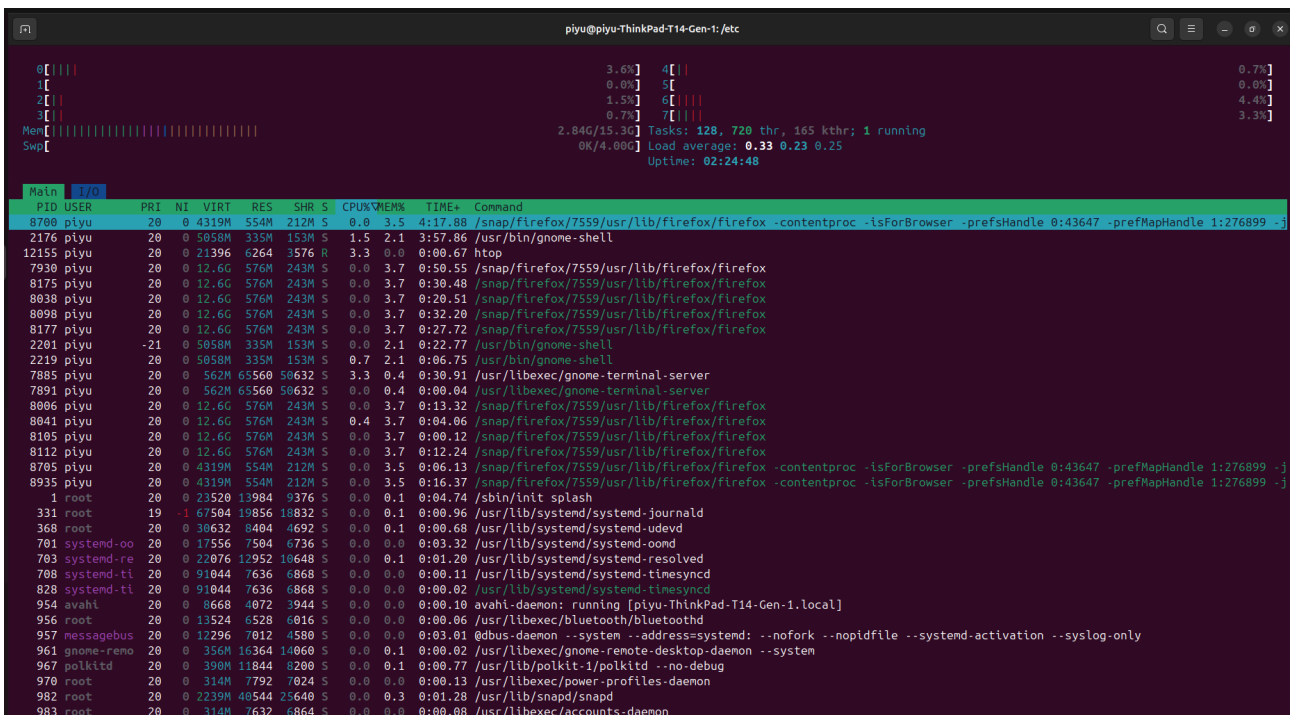
```
piyu@piyu-ThinkPad-T14-Gen-1:~$ touch /etc/test.txt
touch: cannot touch '/etc/test.txt': Permission denied
piyu@piyu-ThinkPad-T14-Gen-1:~$ sudo touch /etc/test.txt
piyu@piyu-ThinkPad-T14-Gen-1:~$ cd etc
bash: cd: etc: No such file or directory
piyu@piyu-ThinkPad-T14-Gen-1:~$ cd /etc
piyu@piyu-ThinkPad-T14-Gen-1:/etc$ ls
adduser.conf           credstore.encrypted    firebird            hosts               libnl-3             network             pulse           skel
alsa                   cron.d                 fonts               hosts.allow         libpaper.d          networkd-dispatcher python3         snmp
alternatives           cron.daily             fprintd.conf        hosts.deny          libreoffice         NetworkManager      python3.12      speech-dispatcl
anacrontab             cron.hourly            fstab               hp                  locale.alias        networks            rc0.d           ssh
apg.conf               cron.monthly           fuse.conf           ifplugd             locale.conf         newt                rc1.d           ssl
apm                    cron.weekly            fwupd               init                locale.gen          nftables.conf       rc2.d           sssd
apparmor               cron.yearly            gdb                 init.d              localtime           nsswitch.conf       rc3.d           subgid
apparmor.d             cups                   gdm3                initramfs-tools     logcheck            openvpn             rc4.d           subgid-
apport                 cupshelpers            geoclue             inputrc             login.defs          opt                 rc5.d           subuid
apt                    dbus-1                 ghostscript         insserv.conf.d      logrotate.conf      os-release          rc6.d           subuid-
avahi                  dconf                  glvnd               ipp-usb             logrotate.d         PackageKit          rcS.d           sudo.conf
bash.bashrc            debconf.conf           gnome               iproute2            lsb-release         pam.conf            resolv.conf     sudoers
bash_completion        debian_version        gnome-remote-desktop issue              machine-id          pam.d               rmt             sudoers.d
bindresvport.blacklist debuginfod            gnutls              issue.net           magic.mime          passwd              rpc             sudo_logsrvd.co
binfmt.d               default                groff               java-21-openjdk     manpath.config      passwd-             rsyslog.conf    supercat
bluetooth              deluser.conf           group               kernel              mime.types          pcmcia             rsyslog.d       sysctl.conf
brlapi.key             depmod.d               group-              kerneloops.conf     mke2fs.conf         perl               rygel.conf      sysctl.d
brltty                 dhcp                   grub.d              krb5.conf.d         ModemManager        pki                sane.d          sysstat
brltty.conf            dhcpcd.conf            gshadow             ldap                modprobe.d          plymouth           security        systemd
ca-certificates        dictionaries-common    gshadow-            ld.so.cache         modules             pm                 selinux         terminfo
ca-certificates.conf   dpkg                   gss                 ld.so.conf          modules-load.d      pnm2ppa.conf       sensors3.conf   test.txt
chatscripts            e2scrub.conf           gtk-2.0             ld.so.conf.d        mtab                polkit-1           sensors.d       thermald
cloud                  emacs                  gtk-3.0             legal               mysql               ppp                services        timezone
colord                 environment            hdparm.conf         libao.conf          nanorc              profile            sgml            tmpfiles.d
console-setup          environment.d          host.conf           libaudit.conf       netconfig           profile.d          shadow          ubuntu-advanta
cracklib               ethertypes             hostname            libblockdev         netplan             protocols          shadow-         ucf.conf
credstore                                                         libibverbs.d                                              shells          udev
piyu@piyu-ThinkPad-T14-Gen-1:/etc$ cat test.txt
```

```
                                                    piyu@piyu-ThinkPad-T14-Gen-1: /etc

  0[||||                                    3.6%]  4[|                                                      0.7%]
  1[                                        0.0%]  5[                                                      0.0%]
  2[|                                       1.5%]  6[||||                                                  4.4%]
  3[|                                       0.7%]  7[||||                                                  3.3%]
  Mem[||||||||||||||||||||||||||||||||||||         2.84G/15.3G] Tasks: 128, 720 thr, 165 kthr; 1 running
  Swp[                                              0K/4.00G] Load average: 0.33 0.23 0.25
                                                            Uptime: 02:24:48

  Main   I/O
    PID USER      PRI  NI  VIRT   RES   SHR S  CPU%▽MEM%   TIME+  Command
   8700 piyu       20   0 4319M  554M  212M S   0.0  3.5  4:17.88 /snap/firefox/7559/usr/lib/firefox/firefox -contentproc -isForBrowser -prefsHandle 0:43647 -prefMapHandle 1:276899 -j
   2176 piyu       20   0 5058M  335M  153M S   1.5  2.1  3:57.86 /usr/bin/gnome-shell
  12155 piyu       20   0 21396  6264  3576 R   3.3  0.0  0:00.67 htop
   7930 piyu       20   0 12.6G  576M  243M S   0.0  3.7  0:50.55 /snap/firefox/7559/usr/lib/firefox/firefox
   8175 piyu       20   0 12.6G  576M  243M S   0.0  3.7  0:30.48 /snap/firefox/7559/usr/lib/firefox/firefox
   8038 piyu       20   0 12.6G  576M  243M S   0.0  3.7  0:20.51 /snap/firefox/7559/usr/lib/firefox/firefox
   8098 piyu       20   0 12.6G  576M  243M S   0.0  3.7  0:32.20 /snap/firefox/7559/usr/lib/firefox/firefox
   8177 piyu       20   0 12.6G  576M  243M S   0.0  3.7  0:27.72 /snap/firefox/7559/usr/lib/firefox/firefox
   2201 piyu      -21   0 5058M  335M  153M S   0.0  2.1  0:22.77 /usr/bin/gnome-shell
   2219 piyu       20   0 5058M  335M  153M S   0.7  2.1  0:06.75 /usr/bin/gnome-shell
   7885 piyu       20   0  562M 65560 50632 S   3.3  0.4  0:30.91 /usr/libexec/gnome-terminal-server
   7891 piyu       20   0  562M 65560 50632 S   0.0  0.4  0:00.04 /usr/libexec/gnome-terminal-server
   8006 piyu       20   0 12.6G  576M  243M S   0.0  3.7  0:13.32 /snap/firefox/7559/usr/lib/firefox/firefox
   8041 piyu       20   0 12.6G  576M  243M S   0.4  3.7  0:04.06 /snap/firefox/7559/usr/lib/firefox/firefox
   8105 piyu       20   0 12.6G  576M  243M S   0.0  3.7  0:00.12 /snap/firefox/7559/usr/lib/firefox/firefox
   8112 piyu       20   0 12.6G  576M  243M S   0.0  3.7  0:12.24 /snap/firefox/7559/usr/lib/firefox/firefox
   8705 piyu       20   0 4319M  554M  212M S   0.0  3.5  0:06.13 /snap/firefox/7559/usr/lib/firefox/firefox -contentproc -isForBrowser -prefsHandle 0:43647 -prefMapHandle 1:276899 -j
   8935 piyu       20   0 4319M  554M  212M S   0.0  3.5  0:16.37 /snap/firefox/7559/usr/lib/firefox/firefox -contentproc -isForBrowser -prefsHandle 0:43647 -prefMapHandle 1:276899 -j
      1 root       20   0 23520 13984  9376 S   0.0  0.1  0:04.74 /sbin/init splash
    331 root       19  -1 67504 19856 18832 S   0.0  0.1  0:00.96 /usr/lib/systemd/systemd-journald
    368 root       20   0 30632  8404  4692 S   0.0  0.1  0:00.68 /usr/lib/systemd/systemd-udevd
    701 systemd-oo 20   0 17556  7504  6736 S   0.0  0.0  0:03.32 /usr/lib/systemd/systemd-oomd
    703 systemd-re 20   0 22076 12952 10648 S   0.0  0.1  0:01.20 /usr/lib/systemd/systemd-resolved
    708 systemd-ti 20   0 91044  7636  6868 S   0.0  0.0  0:00.11 /usr/lib/systemd/systemd-timesyncd
    828 systemd-ti 20   0 91044  7636  6868 S   0.0  0.0  0:00.02 /usr/lib/systemd/systemd-timesyncd
    954 avahi      20   0  8668  4072  3944 S   0.0  0.0  0:00.10 avahi-daemon: running [piyu-ThinkPad-T14-Gen-1.local]
    956 root       20   0 13524  6528  6016 S   0.0  0.0  0:00.06 /usr/libexec/bluetooth/bluetoothd
    957 messagebus 20   0 12296  7012  4580 S   0.0  0.0  0:03.01 @dbus-daemon --system --address=systemd: --nofork --nopidfile --systemd-activation --syslog-only
    961 gnome-remo 20   0  356M 16364 14060 S   0.0  0.1  0:00.02 /usr/lib/gnome-remote-desktop-daemon --system
    967 polkitd    20   0  390M 11844  8200 S   0.0  0.1  0:00.77 /usr/lib/polkit-1/polkitd --no-debug
    970 root       20   0  314M  7792  7024 S   0.0  0.0  0:00.13 /usr/libexec/power-profiles-daemon
    982 root       20   0 2239M 40544 25640 S   0.0  0.3  0:01.28 /usr/lib/snapd/snapd
    983 root       20   0  314M  7632  6864 S   0.0  0.0  0:00.08 /usr/libexec/accounts-daemon
```

```
piyu@piyu-ThinkPad-T14-Gen-1:/etc$ top

top - 15:49:58 up  2:22,  1 user,  load average: 0.23, 0.20, 0.24
Tasks: 287 total,   1 running, 286 sleeping,   0 stopped,   0 zombie
%Cpu(s):  0.4 us,  0.3 sy,  0.0 ni, 99.3 id,  0.0 wa,  0.0 hi,  0.0
MiB Mem : 15618.7 total, 10435.1 free,   2917.9 used,   2782.6 buf
MiB Swap:  4096.0 total,  4096.0 free,      0.0 used.  12700.8 ava

    PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM
   9314 piyu      20   0 4134808 610584 117960 S   2.4   3.8
   2176 piyu      20   0 5155564 336488 151584 S   0.8   2.1
   2352 piyu      20   0  397508  11792   6792 S   0.8   0.1
   7930 piyu      20   0   12.7g 590032 249164 S   0.8   3.7
  11064 root      20   0       0      0      0 I   0.8   0.0
      1 root      20   0   23520  13984   9376 S   0.0   0.1
      2 root      20   0       0      0      0 S   0.0   0.0
      3 root      20   0       0      0      0 S   0.0   0.0
      4 root       0 -20       0      0      0 I   0.0   0.0
      5 root       0 -20       0      0      0 I   0.0   0.0
      6 root       0 -20       0      0      0 I   0.0   0.0
      7 root       0 -20       0      0      0 I   0.0   0.0
      9 root       0 -20       0      0      0 I   0.0   0.0
     12 root       0 -20       0      0      0 I   0.0   0.0
piyu@piyu-ThinkPad-T14-Gen-1:/etc$ htop
Command 'htop' not found, but can be installed with:
sudo snap install htop  # version 3.4.1, or
sudo apt  install htop  # version 3.2.2-2
See 'snap info htop' for additional versions.
piyu@piyu-ThinkPad-T14-Gen-1:/etc$ sudo apt install htop
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Suggested packages:
  lm-sensors
The following NEW packages will be installed:
  htop
0 upgraded, 1 newly installed, 0 to remove and 416 not upgraded.
Need to get 171 kB of archives.
After this operation, 434 kB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu noble/main amd64 htop amd64 3.3.0-4build1 [171 kB]
Fetched 171 kB in 1s (118 kB/s)
Selecting previously unselected package htop.
(Reading database      161049 files and directories currently install
```

```
     12 root       0 -20       0      0      0 I   0.0   0.0
piyu@piyu-ThinkPad-T14-Gen-1:/etc$ htop
Command 'htop' not found, but can be installed with:
sudo snap install htop  # version 3.4.1, or
sudo apt  install htop  # version 3.2.2-2
See 'snap info htop' for additional versions.
piyu@piyu-ThinkPad-T14-Gen-1:/etc$ sudo apt install htop
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Suggested packages:
  lm-sensors
The following NEW packages will be installed:
  htop
0 upgraded, 1 newly installed, 0 to remove and 416 not upgraded.
Need to get 171 kB of archives.
After this operation, 434 kB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu noble/main amd64 htop amd64 3.3.0-4build1 [171 kB]
Fetched 171 kB in 1s (118 kB/s)
Selecting previously unselected package htop.
(Reading database ... 161049 files and directories currently install
ed.)
Preparing to unpack .../htop_3.3.0-4build1_amd64.deb ...
Unpacking htop (3.3.0-4build1) ...
Setting up htop (3.3.0-4build1) ...
Processing triggers for desktop-file-utils (0.27-2build1) ...
Processing triggers for hicolor-icon-theme (0.17-2) ...
Processing triggers for gnome-menus (3.36.0-1.1ubuntu3) ...
Processing triggers for man-db (2.12.0-4build2) ...
piyu@piyu-ThinkPad-T14-Gen-1:/etc$ htop
piyu@piyu-ThinkPad-T14-Gen-1:/etc$ df -h
Filesystem      Size  Used Avail Use% Mounted on
tmpfs           1.6G  2.3M  1.6G   1% /run
/dev/nvme0n1p5  323G   13G  294G   5% /
tmpfs           7.7G     0  7.7G   0% /dev/shm
tmpfs           5.0M  8.0K  5.0M   1% /run/lock
efivarfs        246K   62K  180K  26% /sys/firmware/efi/efivars
/dev/nvme0n1p1   96M   38M   59M  39% /boot/efi
tmpfs           1.6G  144K  1.6G   1% /run/user/1000
piyu@piyu-ThinkPad-T14-Gen-1:/etc$ free -m
               total        used        free      shared  buff/cache   available
Mem:           15618        2880       10284         492        2928       12738
Swap:           4095           0        4095
```