Basic Linux Commands and Operations

1. Navigation

```
prathamesh@prathamesh:~$ pwd
/home/prathamesh
prathamesh@prathamesh:~$ ls
all        Documents   help.h   main_prathamesh.c   Music       snap
Desktop    Downloads   help.o   main_prathamesh.o   Pictures    Templates
Devops     help.c      main.c   Makefile                        Public      Videos
prathamesh@prathamesh:~$ cd Devops/Hello
prathamesh@prathamesh:~/Devops/Hello$ cd ~
prathamesh@prathamesh:~$ cd -
/home/prathamesh/Devops/Hello
prathamesh@prathamesh:~/Devops/Hello$ █
```

2. File Operations

```
prathamesh@prathamesh:~$ touch operation.txt
prathamesh@prathamesh:~$ ls
all        Documents   help.h   main_prathamesh.c   Music           Public      Videos
Desktop    Downloads   help.o   main_prathamesh.o   operation.txt   snap
Devops     help.c      main.c   Makefile            Pictures        Templates
prathamesh@prathamesh:~$ mkdir Linux
prathamesh@prathamesh:~$ rm operation.txt
prathamesh@prathamesh:~$ ls
all        Documents   help.h   main.c              Makefile   Public      Videos
Desktop    Downloads   help.o   main_prathamesh.c   Music      snap
Devops     help.c      Linux    main_prathamesh.o   Pictures   Templates
prathamesh@prathamesh:~$ rm -r Linux
prathamesh@prathamesh:~$ ls
all        Documents   help.h   main_prathamesh.c   Music      snap
Desktop    Downloads   help.o   main_prathamesh.o   Pictures   Templates
Devops     help.c      main.c   Makefile            Public     Videos
prathamesh@prathamesh:~$ cp help.c /home/prathamesh/Devops
prathamesh@prathamesh:~$ cd Devops/
prathamesh@prathamesh:~/Devops$ ls
first.sh  Hello  help.c  ps.sh  task2.sh  task3.sh  task3.sh.save  task4.sh  task5.sh  task.sh
prathamesh@prathamesh:~/Devops$ mv task.sh /home/prathamesh
prathamesh@prathamesh:~/Devops$ cd ..
prathamesh@prathamesh:~$ ls
all        Documents   help.h   main_prathamesh.c   Music      snap        Videos
Desktop    Downloads   help.o   main_prathamesh.o   Pictures   task.sh
Devops     help.c      main.c   Makefile            Public     Templates
prathamesh@prathamesh:~$ █
```

3. Viewing and Editing Files

```
prathamesh@prathamesh:~$ cat help.c
#include <stdio.h>

#include "help.h"
void help()
{
printf("you are in the help");
return;
}
```

less→

```
#include <stdio.h>

#include "help.h"
void help()
{
printf("you are in the help");
return;
}

~
~
~
~
~
~
~
~
~
(END)
```

```
prathamesh@prathamesh:~$ head -3 help.c
#include <stdio.h>

#include "help.h"
prathamesh@prathamesh:~$ tail -4  help.c
printf("you are in the help");
return;
}
```

4. File Permissions

```
prathamesh@prathamesh:~/Devops$ ./Ps.sh
bash: ./Ps.sh: Permission denied
prathamesh@prathamesh:~/Devops$ chmod 777 ./Ps.sh
prathamesh@prathamesh:~/Devops$ ./Ps.sh
Hello PS
```

```
prathamesh@prathamesh:~/Devops$ ls -l Ps.sh
-rwxrwxrwx 1 prathamesh prathamesh 16 Feb 17 20:04 Ps.sh
prathamesh@prathamesh:~/Devops$ sudo chown rohan Ps.sh
prathamesh@prathamesh:~/Devops$ ls -l Ps.sh
-rwxrwxrwx 1 rohan prathamesh 16 Feb 17 20:04 Ps.sh
prathamesh@prathamesh:~/Devops$
```

5. Process Management

```
prathamesh@prathamesh:~/Devops$ ps
    PID TTY          TIME CMD
   2562 pts/0    00:00:00 bash
  14637 pts/0    00:00:00 ps
```

```
top - 20:17:03 up 15 min,  1 user,  load average: 0.36, 0.47, 0.48
Tasks: 213 total,   2 running, 211 sleeping,   0 stopped,   0 zombie
%Cpu(s):  1.7 us,  1.8 sy,  0.0 ni, 96.4 id,  0.0 wa,  0.0 hi,  0.2 si,  0.0 st
MiB Mem :   5083.6 total,   3031.7 free,    769.6 used,   1282.3 buff/cache
MiB Swap:   2654.0 total,   2654.0 free,      0.0 used.   4045.9 avail Mem

    PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM     TIME+ COMMAND
   1645 pratham+  20   0 5083444 364100 136060 S  11.0   7.0   0:32.43 gnome-shell
   1809 pratham+  20   0  397200  11980   7128 S   1.2   0.2   0:01.82 ibus-daemon
   2543 pratham+  20   0  567488  57364  45000 S   1.2   1.1   0:03.77 gnome-terminal-
     14 root      20   0       0      0      0 I   0.6   0.0   0:01.72 rcu_sched
     71 root      20   0       0      0      0 I   0.6   0.0   0:00.85 kworker/1:1-events
    258 root      19  -1   48272  18868  17288 S   0.6   0.4   0:01.80 systemd-journal
   1480 pratham+  20   0   17916  10676   8100 S   0.6   0.2   0:02.85 systemd
   2361 root      20   0       0      0      0 I   0.6   0.0   0:02.76 kworker/3:3-events
   5998 root      20   0       0      0      0 I   0.6   0.0   0:00.67 kworker/u8:0-events_unbound
      1 root      20   0  167896  13384   8376 S   0.0   0.3   0:02.45 systemd
      2 root      20   0       0      0      0 S   0.0   0.0   0:00.03 kthreadd
      3 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 rcu_gp
      4 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 rcu_par_gp
      5 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 netns
```

6. System Information

```
prathamesh@prathamesh:~/Devops$ uname
Linux
prathamesh@prathamesh:~/Devops$ df
Filesystem     1K-blocks      Used Available Use% Mounted on
tmpfs             520560      1476    519084   1% /run
/dev/sda3       81467832 12978848  64304716  17% /
tmpfs            2602784         0   2602784   0% /dev/shm
tmpfs               5120         4      5116   1% /run/lock
/dev/sda2         524252      5364    518888   2% /boot/efi
tmpfs             520556       108    520448   1% /run/user/1000
/dev/sr0           52272     52272         0 100% /media/prathamesh/VBox_GAs_7.0.141
prathamesh@prathamesh:~/Devops$ free
               total        used        free      shared  buff/cache   available
Mem:         5205572      775160     3121852       30320     1308560     4161144
Swap:        2717692           0     2717692
prathamesh@prathamesh:~/Devops$ du
4       ./Hello
48      .
prathamesh@prathamesh:~/Devops$
```

7. Miscellaneous

```
prathamesh@prathamesh:~/Devops$ grep 'Hello' Ps.sh
echo "Hello PS"
prathamesh@prathamesh:~/Devops$ find /home/prathamesh -name help.c
/home/prathamesh/help.c
/home/prathamesh/Devops/help.c
prathamesh@prathamesh:~/Devops$ history
    1  sudo apt update
    2  sudo apt install -y build -essential linux-headers-$(prathamesh -r)
    3  sudo apt install -y build-essential linux-headers-$(prathamesh -r)
    4  ls
    5  ./autorun.inf
    6  ./autorun.sh
    7  ls
    8  cd desktop
    9  desktop
   10  cd Desktop
```