

## Linux basic commands to know your system

```
hitendra@hitendra-VM: ~  
hitendra@hitendra-VM:~$ uname -a  
Linux hitendra-VM 5.19.0-38-generic #39~22.04.1-Ubuntu SMP PREEMPT_DYNAMIC Fri Mar 17 21:16:15 UTC 2 x86_64 x86_64 x86_64 GNU/Linux  
hitendra@hitendra-VM:~$ whoami  
hitendra  
hitendra@hitendra-VM:~$ lsb_release -a  
No LSB modules are available.  
Distributor ID: Ubuntu  
Description: Ubuntu 22.04.1 LTS  
Release: 22.04  
Codename: jammy  
hitendra@hitendra-VM:~$ hostname  
hitendra-VM  
hitendra@hitendra-VM:~$ id  
uid=1000(hitendra) gid=1000(hitendra) groups=1000(hitendra),4(adm),24(cdrom),27(sudo),30(dip),46(plugdev),122(lpadmin),134(lxd),135(sambashare)  
hitendra@hitendra-VM:~$ pwd  
/home/hitendra  
hitendra@hitendra-VM:~$ df -h  
Filesystem      Size  Used Avail Use% Mounted on  
tmpfs           389M  2.2M  387M   1% /run  
/dev/sda3       31G   13G   18G  42% /  
tmpfs           1.9G   7.0M   1.9G   1% /dev/shm  
tmpfs           5.0M   4.0K   5.0M   1% /run/lock  
/dev/sda2       512M   6.1M  506M   2% /boot/efi  
tmpfs           389M  2.5M  387M   1% /run/user/1000  
/dev/sr0        127M   127M   0 100% /media/hitendra/CDROM  
hitendra@hitendra-VM:~$ top
```

```
top - 16:20:56 up 37 min, 1 user, load average: 0.38, 0.98, 1.33  
Tasks: 313 total, 1 running, 312 sleeping, 0 stopped, 0 zombie  
%Cpu(s): 20.8 us, 5.4 sy, 0.0 ni, 73.7 id, 0.0 wa, 0.0 hi, 0.2 si, 0.0 st  
MiB Mem : 3888.8 total, 114.7 free, 2281.0 used, 1493.1 buff/cache  
MiB Swap: 3430.0 total, 3401.6 free, 28.4 used, 1292.1 avail Mem  


| PID  | USER     | PR  | NI  | VIRT    | RES    | SHR    | S | %CPU | %MEM | TIME+    | COMMAND                     |
|------|----------|-----|-----|---------|--------|--------|---|------|------|----------|-----------------------------|
| 1967 | hitendra | 20  | 0   | 4670912 | 472584 | 148756 | S | 44.4 | 11.9 | 12:05.60 | gnome-shell                 |
| 4279 | hitendra | 20  | 0   | 572632  | 54164  | 41756  | S | 2.3  | 1.4  | 0:08.73  | gnome-terminal-             |
| 2137 | hitendra | 20  | 0   | 532272  | 26912  | 18740  | S | 1.3  | 0.7  | 0:01.04  | xdg-desktop-por             |
| 2333 | hitendra | 20  | 0   | 297656  | 37316  | 28128  | S | 1.3  | 0.9  | 0:04.40  | vmtoolsd                    |
| 2464 | hitendra | 20  | 0   | 197944  | 66428  | 52376  | S | 1.0  | 1.7  | 0:15.94  | Xwayland                    |
| 9036 | hitendra | 20  | 0   | 21876   | 4268   | 3412   | R | 1.0  | 0.1  | 0:00.95  | top                         |
| 8810 | root     | 20  | 0   | 0       | 0      | 0      | I | 0.7  | 0.0  | 0:00.70  | kworker/0:3-pm              |
| 8841 | hitendra | 20  | 0   | 2515024 | 150792 | 90464  | S | 0.7  | 3.8  | 0:22.32  | Isolated Web Co             |
| 15   | root     | 20  | 0   | 0       | 0      | 0      | I | 0.3  | 0.0  | 0:03.69  | rcu_preempt                 |
| 624  | systemd+ | 20  | 0   | 14824   | 6152   | 5360   | S | 0.3  | 0.2  | 0:04.85  | systemd-oomd                |
| 838  | root     | 20  | 0   | 178552  | 8224   | 6920   | S | 0.3  | 0.2  | 0:04.40  | vmtoolsd                    |
| 1735 | hitendra | 20  | 0   | 10472   | 6248   | 3852   | S | 0.3  | 0.2  | 0:02.06  | dbus-daemon                 |
| 2465 | hitendra | 20  | 0   | 353964  | 26496  | 18492  | S | 0.3  | 0.7  | 0:00.50  | xdg-desktop-por             |
| 7620 | hitendra | 20  | 0   | 11.1g   | 376208 | 178416 | S | 0.3  | 9.4  | 0:55.36  | firefox                     |
| 1    | root     | 20  | 0   | 166604  | 11704  | 8160   | S | 0.0  | 0.3  | 0:04.41  | systemd                     |
| 2    | root     | 20  | 0   | 0       | 0      | 0      | S | 0.0  | 0.0  | 0:00.02  | 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  | slub_flushwq                |
| 6    | root     | 0   | -20 | 0       | 0      | 0      | I | 0.0  | 0.0  | 0:00.00  | netns                       |
| 8    | root     | 0   | -20 | 0       | 0      | 0      | I | 0.0  | 0.0  | 0:00.00  | kworker/0:0H-events_highpri |
| 10   | root     | 0   | -20 | 0       | 0      | 0      | I | 0.0  | 0.0  | 0:00.00  | mm_percpu_wq                |
| 11   | root     | 20  | 0   | 0       | 0      | 0      | I | 0.0  | 0.0  | 0:00.00  | rcu_tasks_kthread           |
| 12   | root     | 20  | 0   | 0       | 0      | 0      | I | 0.0  | 0.0  | 0:00.00  | rcu_tasks_rude_kthread      |
| 13   | root     | 20  | 0   | 0       | 0      | 0      | I | 0.0  | 0.0  | 0:00.00  | rcu_tasks_trace_kthread     |
| 14   | root     | 20  | 0   | 0       | 0      | 0      | S | 0.0  | 0.0  | 0:00.78  | ksoftirqd/0                 |
| 16   | root     | rt  | 0   | 0       | 0      | 0      | S | 0.0  | 0.0  | 0:00.02  | migration/0                 |
| 17   | root     | -51 | 0   | 0       | 0      | 0      | S | 0.0  | 0.0  | 0:00.00  | idle_inject/0               |
| 19   | root     | 20  | 0   | 0       | 0      | 0      | S | 0.0  | 0.0  | 0:00.00  | cpuhp/0                     |


```

to check memory available

```
hitendra@hitendra-VM:~$ free  
              total        used        free      shared  buff/cache   available  
Mem:           3982128      2353380      109472       76516      1519276      1305516  
Swap:          3512316       29332      3482984
```

basic list commands (ls,ls -l, ls -a)

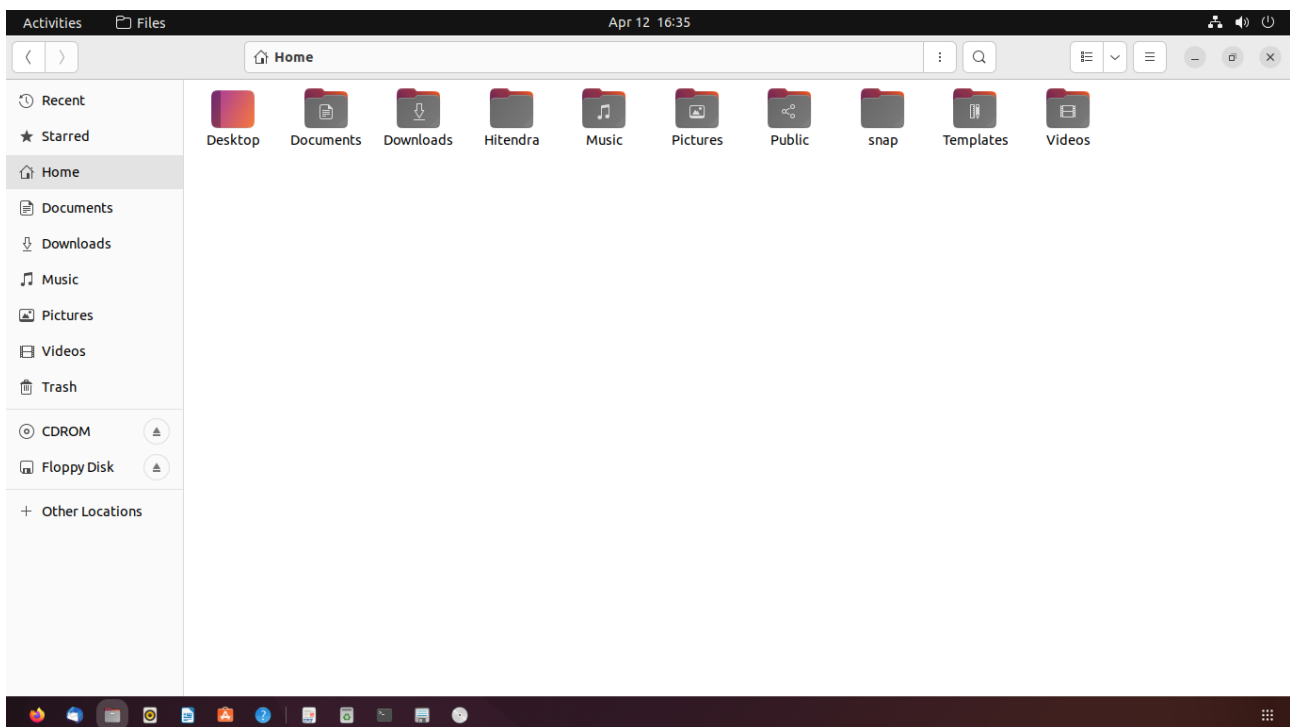
```
Activities Terminal Apr 12 16:24
hitendra@hitendra-VM: ~

hitendra@hitendra-VM:~$ ls
Desktop Documents Downloads Music Pictures Public snap Templates Videos
hitendra@hitendra-VM:~$ ls -l
total 36
drwxr-xr-x 2 hitendra hitendra 4096 Apr 12 16:03 Desktop
drwxr-xr-x 2 hitendra hitendra 4096 Apr 12 16:08 Documents
drwxr-xr-x 2 hitendra hitendra 4096 Apr 12 15:44 Downloads
drwxr-xr-x 2 hitendra hitendra 4096 Apr 12 15:44 Music
drwxr-xr-x 3 hitendra hitendra 4096 Apr 12 16:20 Pictures
drwxr-xr-x 2 hitendra hitendra 4096 Apr 12 15:44 Public
drwx----- 4 hitendra hitendra 4096 Apr 12 15:48 snap
drwxr-xr-x 2 hitendra hitendra 4096 Apr 12 15:44 Templates
drwxr-xr-x 2 hitendra hitendra 4096 Apr 12 15:44 Videos
hitendra@hitendra-VM:~$ ls -a
. .bash_logout .cache Desktop Downloads .local Music .profile snap Templates Videos
. .bashrc .config Documents .gnupg .mozilla Pictures Public .ssh .thunderbird
hitendra@hitendra-VM:~$
```

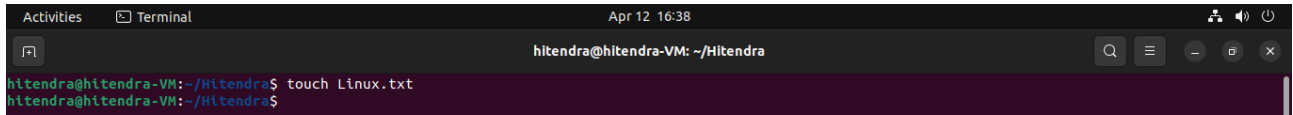
Basic directory related commands (pwd, cd Directory\_Name, cd .. ,mkdir Directory\_Name)

```
Activities Terminal Apr 12 16:35
hitendra@hitendra-VM: ~

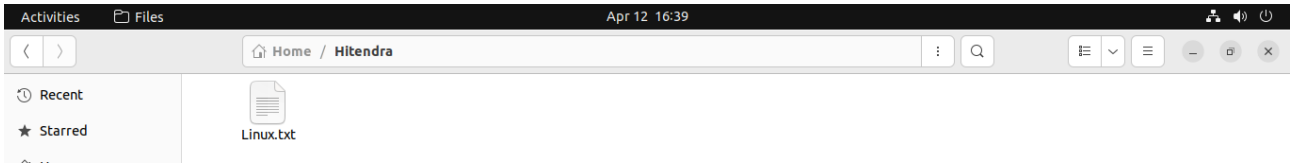
hitendra@hitendra-VM:~$ pwd
/home/hitendra
hitendra@hitendra-VM:~$ ls
Desktop Documents Downloads Music Pictures Public snap Templates Videos
hitendra@hitendra-VM:~$ cd Documents
hitendra@hitendra-VM:~/Documents$ ls
'linux commands.odt' 'Linux Training Session1-MP-Manoj.pdf'
hitendra@hitendra-VM:~/Documents$ cd ..
hitendra@hitendra-VM:~$ ls
Desktop Documents Downloads Music Pictures Public snap Templates Videos
hitendra@hitendra-VM:~$ mkdir Hitendra
hitendra@hitendra-VM:~$ ls
Desktop Documents Downloads Hitendra Music Pictures Public snap Templates Videos
hitendra@hitendra-VM:~$
```



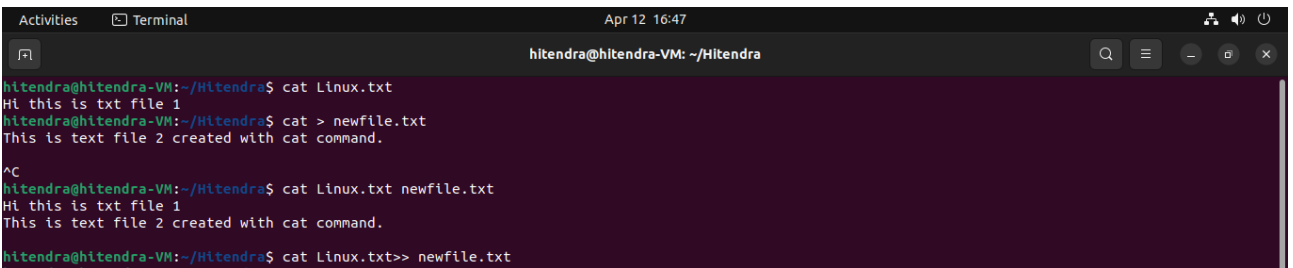
## create file



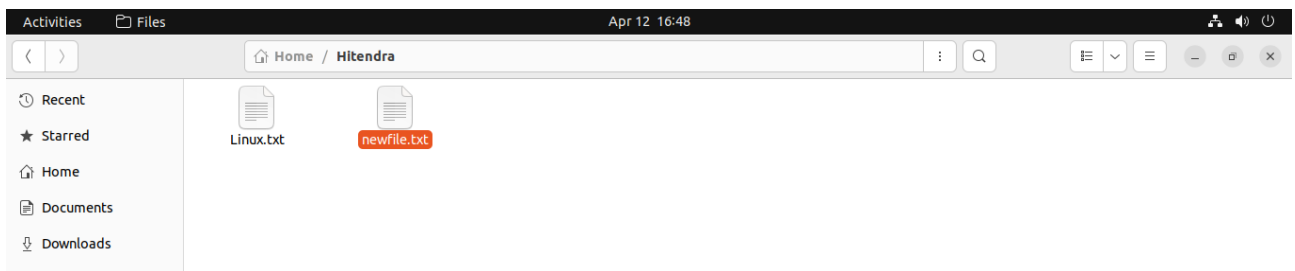
```
hitendra@hitendra-VM: ~/Hitendra
hitendra@hitendra-VM:~/Hitendra$ touch Linux.txt
hitendra@hitendra-VM:~/Hitendra$
```



## Cat commands

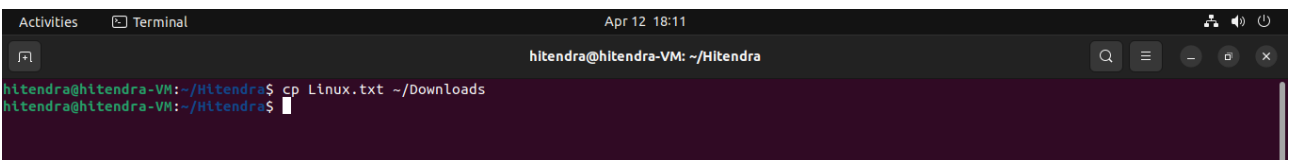


```
hitendra@hitendra-VM: ~/Hitendra
hitendra@hitendra-VM:~/Hitendra$ cat Linux.txt
Hi this is txt file 1
hitendra@hitendra-VM:~/Hitendra$ cat > newfile.txt
This is text file 2 created with cat command.
^C
hitendra@hitendra-VM:~/Hitendra$ cat Linux.txt newfile.txt
Hi this is txt file 1
This is text file 2 created with cat command.
hitendra@hitendra-VM:~/Hitendra$ cat Linux.txt>> newfile.txt
```

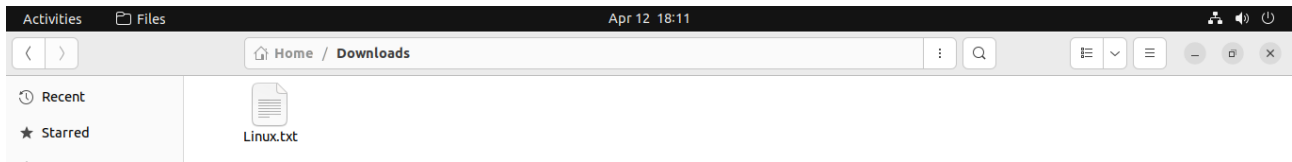


## copy files

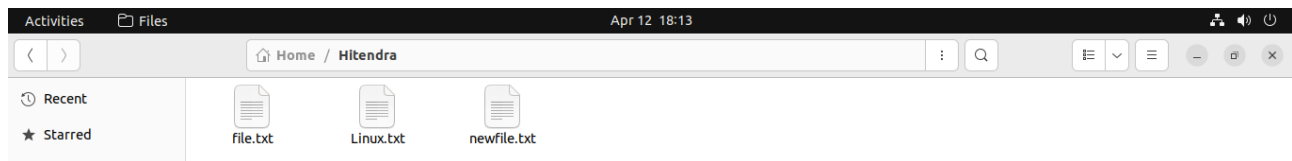
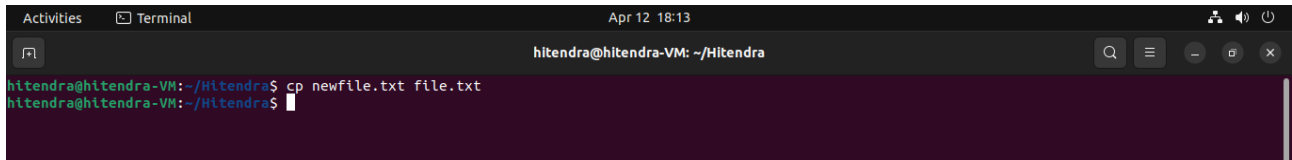
### 1. copy file and save in new destination



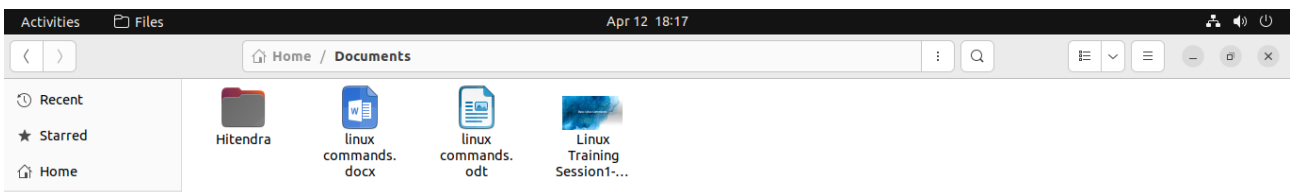
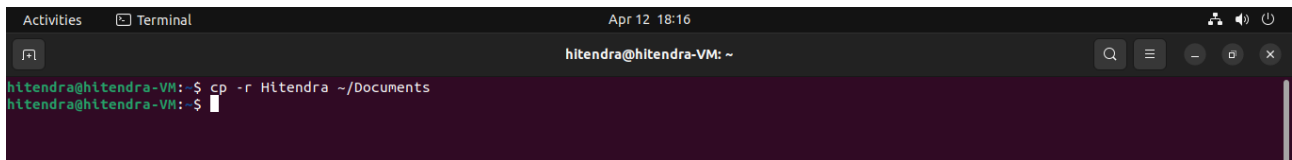
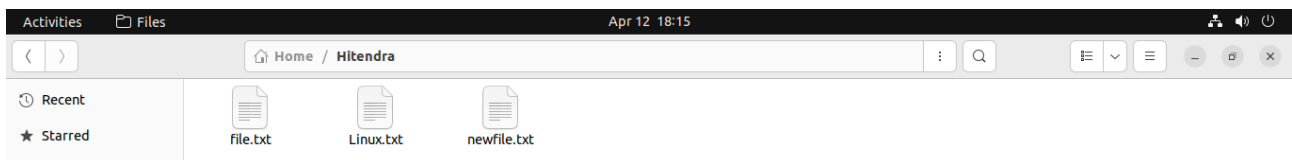
```
hitendra@hitendra-VM: ~/Hitendra
hitendra@hitendra-VM:~/Hitendra$ cp Linux.txt ~/Downloads
hitendra@hitendra-VM:~/Hitendra$
```



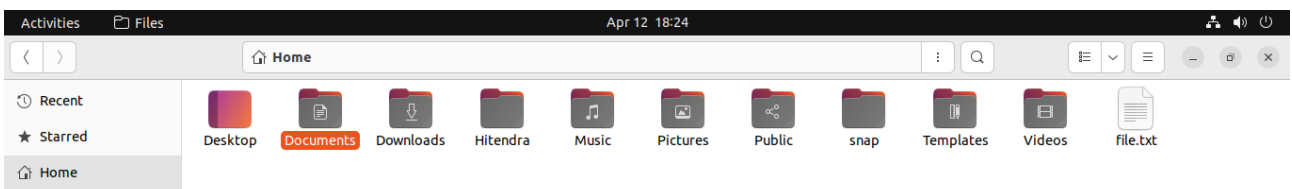
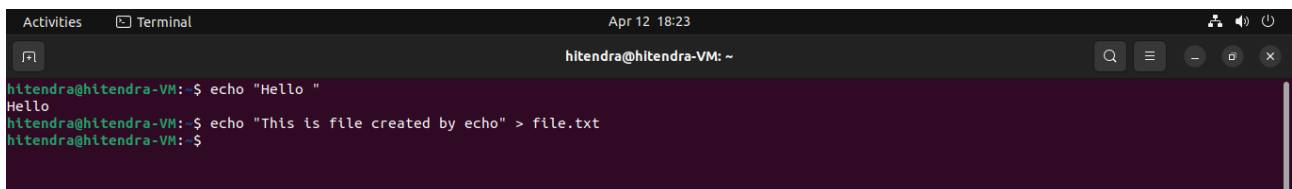
2. copy file and save in same destination with different name



3. copy directory to new location



Echo



## Grep

```
Activities Terminal Apr 12 18:29
hitendra@hitendra-VM: ~/Hitendra

hitendra@hitendra-VM:~/Hitendra$ cat newfile.txt
This is text file 2 created with cat command.

Hi this is txt file 1
hitendra@hitendra-VM:~/Hitendra$ cat Linux.txt
Hi this is txt file 1
hitendra@hitendra-VM:~/Hitendra$ grep "file 1" newfile.txt Linux.txt
newfile.txt:Hi this is txt file 1
Linux.txt:Hi this is txt file 1
hitendra@hitendra-VM:~/Hitendra$
```

## Chmod

```
Activities Terminal Apr 12 18:41
hitendra@hitendra-VM: ~/Hitendra

hitendra@hitendra-VM:~/Hitendra$ chmod 444 Linux.txt
hitendra@hitendra-VM:~/Hitendra$ cat Linux.txt
Hi this is txt file 1
hitendra@hitendra-VM:~/Hitendra$ cat newfile.txt >> Linux.txt
bash: Linux.txt: Permission denied
hitendra@hitendra-VM:~/Hitendra$
```

## Head and tail commands

```
Activities Terminal Apr 12 18:45
hitendra@hitendra-VM: ~/Hitendra

hitendra@hitendra-VM:~/Hitendra$ head newfile.txt
one
two
three
four
five
six
seven
eight
nine
ten
hitendra@hitendra-VM:~/Hitendra$ head newfile.txt
one
two
three
four
five
six
seven
eight
nine
ten
hitendra@hitendra-VM:~/Hitendra$ head -n4 newfile.txt
one
two
three
four
hitendra@hitendra-VM:~/Hitendra$ tail -n5 newfile.txt
eleven
twelve
thirteen
fourteen
fifteen
hitendra@hitendra-VM:~/Hitendra$
```

## find

```
Activities Terminal Apr 12 18:47
hitendra@hitendra-VM: ~

hitendra@hitendra-VM:~$ find ~/Hitendra -name Linux.txt
/home/hitendra/Hitendra/Linux.txt
hitendra@hitendra-VM:~$
```

## awk commands

```
Activities Terminal Apr 12 19:28
hitendra@hitendra-VM: ~/Hitendra

hitendra@hitendra-VM:~/Hitendra$ cat employee.txt
Hitendra,Mhatre,26,trainee
Rayan,Khan,28,Senior_Engineer
Rashmi,Patil,32,Manager
hitendra@hitendra-VM:~/Hitendra$ awk '{print}' employee.txt
Hitendra,Mhatre,26,trainee
Rayan,Khan,28,Senior_Engineer
Rashmi,Patil,32,Manager
hitendra@hitendra-VM:~/Hitendra$ awk '/Manager/{print}' employee.txt
Rashmi,Patil,32,Manager
hitendra@hitendra-VM:~/Hitendra$ awk -F',' '{print $1,$2}' employee.txt
Hitendra Mhatre
Rayan Khan
Rashmi Patil
hitendra@hitendra-VM:~/Hitendra$ awk -F',' '{if ($3>30) print $1,$2}' employee.txt
Rashmi Patil
hitendra@hitendra-VM:~/Hitendra$
```

## sed

```
Activities Terminal Apr 12 19:36
hitendra@hitendra-VM: ~/Hitendra

hitendra@hitendra-VM:~/Hitendra$ cat employee.txt
Hitendra,Mhatre,26,trainee
Rayan,Khan,28,Senior_Engineer
Rashmi,Patil,32,Manager
hitendra@hitendra-VM:~/Hitendra$ sed -i 's/,/ /g' employee.txt
hitendra@hitendra-VM:~/Hitendra$ cat employee.txt
Hitendra Mhatre 26 trainee
Rayan Khan 28 Senior_Engineer
Rashmi Patil 32 Manager
hitendra@hitendra-VM:~/Hitendra$ sed 'id' employee.txt
Rayan Khan 28 Senior_Engineer
Rashmi Patil 32 Manager
hitendra@hitendra-VM:~/Hitendra$ cat employee.txt
Hitendra Mhatre 26 trainee
Rayan Khan 28 Senior_Engineer
Rashmi Patil 32 Manager
hitendra@hitendra-VM:~/Hitendra$ sed -n '/Manager/p' employee.txt
Rashmi Patil 32 Manager
hitendra@hitendra-VM:~/Hitendra$ sed 'G;G' employee.txt
Hitendra Mhatre 26 trainee

Rayan Khan 28 Senior_Engineer

Rashmi Patil 32 Manager

hitendra@hitendra-VM:~/Hitendra$
```

## basic commands

```
Activities Terminal Apr 12 19:42
hitendra@hitendra-VM: ~/Hitendra

hitendra@hitendra-VM:~/Hitendra$ uname
Linux
hitendra@hitendra-VM:~/Hitendra$ lsb_release -a
No LSB modules are available.
Distributor ID: Ubuntu
Description: Ubuntu 22.04.1 LTS
Release: 22.04
Codename: jammy
hitendra@hitendra-VM:~/Hitendra$ hostnamectl
  Static hostname: hitendra-VM
            Icon name: computer-vm
            Chassis: vm
            Machine ID: bc2e05d9a15a47fd8c87c634c51a0c0a
            Boot ID: c7e353fceb347a6a17fd412ddd9f46a
    Virtualization: vmware
  Operating System: Ubuntu 22.04.1 LTS
            Kernel: Linux 5.19.0-38-generic
    Architecture: x86_64
    Hardware Vendor: VMware, Inc.
    Hardware Model: VMware Virtual Platform
hitendra@hitendra-VM:~/Hitendra$
```

```
hitendra@hitendra-VM: ~/Hitendra$ dmidecode
# dmidecode 3.3
/sys/firmware/dmi/tables/smbios_entry_point: Permission denied
Scanning /dev/mem for entry point.
/dev/mem: Permission denied
hitendra@hitendra-VM: ~/Hitendra$
```

## tar commands

```
Activities Terminal Apr 12 20:02
hitendra@hitendra-VM: ~
hitendra@hitendra-VM: ~/Hitendra$ cd ..
hitendra@hitendra-VM: ~$ tar -cvf Hitendra.tar Hitendra
Hitendra/
Hitendra/Linux.txt
Hitendra/file.txt
Hitendra/employee.txt
Hitendra/newfile.txt
hitendra@hitendra-VM: ~$ tar -xvf Hitendra.tar
Hitendra/
Hitendra/Linux.txt
Hitendra/file.txt
Hitendra/employee.txt
Hitendra/newfile.txt
hitendra@hitendra-VM: ~$ tar -jcvf Hitendra.tar.bz2 Hitendra.tar
Hitendra.tar
hitendra@hitendra-VM: ~$
```

```
Activities Files Apr 12 20:03
Home
Recent
Starred
Desktop Documents Downloads Hitendra Music Pictures Public snap Templates Videos Hitendra.tar Hitendra.tar.bz2
```