# Operating Systems

# Assignment 1: Basic Linux Operations

1. pwd command

```
harshita@HarshitaP:~$ pwd
/home/harshita
```

2. cd command

```
md: command not found
harshita@HarshitaP:/mnt/c/Users$ cd harsh
harshita@HarshitaP:/mnt/c/Users/harsh$ cd Desktop
-bash: cd: Desktop: No such file or directory
```

3. ls command

```
harshita@HarshitaP:/mnt/c/Users/harsh$ ls
AppData              'My Documents'                                                              Recent
'Application Data'    NTUSER.DAT                                                                  'Saved Games'
Contacts             NTUSER.DAT{99d10cd5-2e55-11ed-8047-a08069656390}.TxR.0.regtrans-ms          Searches
Cookies              NTUSER.DAT{99d10cd5-2e55-11ed-8047-a08069656390}.TxR.1.regtrans-ms          SendTo
DSALab.java          NTUSER.DAT{99d10cd5-2e55-11ed-8047-a08069656390}.TxR.2.regtrans-ms          'Start Menu'
Documents            NTUSER.DAT{99d10cd5-2e55-11ed-8047-a08069656390}.TxR.blf                     Templates
Downloads            NTUSER.DAT{99d10cd6-2e55-11ed-8047-a08069656390}.TM.blf                       Videos
Favorites            NTUSER.DAT{99d10cd6-2e55-11ed-8047-a08069656390}.TMContainer00000000000000000001.regtrans-ms   ntuser.dat.LOG1
IdeaProjects         NTUSER.DAT{99d10cd6-2e55-11ed-8047-a08069656390}.TMContainer00000000000000000002.regtrans-ms   ntuser.dat.LOG2
Links                NetHood                                                                     ntuser.ini
'Local Settings'     OneDrive
Music                PrintHood
```

4. cat command

```
harshita@HarshitaP:~$ cat >newfile.txt
Hey, This is harshita
harshita@HarshitaP:~$ ls
newfile.txt
```

5. cp command

```
harshita@HarshitaP:/mnt/c/users/harsh$ ls Contacts
desktop.ini
harshita@HarshitaP:/mnt/c/users/harsh$ cp newfile1.txt Contacts
harshita@HarshitaP:/mnt/c/users/harsh$ ls Contacts
desktop.ini  newfile1.txt
```

6. mv command

```
harshita@HarshitaP:/mnt/c/users/harsh$ ls Contacts
desktop.ini  newfile1.txt
harshita@HarshitaP:/mnt/c/users/harsh$ mv newfile1.txt Documents
harshita@HarshitaP:/mnt/c/users/harsh$ ls Documents
'21BCE8421_Harshita P_AI9.pdf'           InfixToPostfix.class  'My Music'      'One District, One Product.docx'   Stack.class   newfile1.txt
 21BCE8421_HarshitaP_Assignment12.pdf    InfixToPostfix.java   'My Pictures'   'Podcast Ideas-VCR.docx'           lab.class     stackCH.class
```

7. mkdir command

```
harshita@HarshitaP: /mnt/c/u    ×    +    ∨
harshita@HarshitaP:/mnt/c/users/harsh/Contacts$ ls
desktop.ini  newfile1.txt
harshita@HarshitaP:/mnt/c/users/harsh/Contacts$ mkdir dir1
harshita@HarshitaP:/mnt/c/users/harsh/Contacts$ ls
desktop.ini  dir1  newfile1.txt
```

8. rmdir command

```
harshita@HarshitaP:/mnt/c/users/harsh/Contacts$ ls
desktop.ini  dir1  newfile1.txt
harshita@HarshitaP:/mnt/c/users/harsh/Contacts$ rmdir dir1
harshita@HarshitaP:/mnt/c/users/harsh/Contacts$ ls
desktop.ini  newfile1.txt
```

9. rm command

```
harshita@HarshitaP:/mnt/c/users/harsh/Contacts$ ls
desktop.ini  newf1.txt  newfile1.txt
harshita@HarshitaP:/mnt/c/users/harsh/Contacts$ rm newf1.txt
harshita@HarshitaP:/mnt/c/users/harsh/Contacts$ ls
desktop.ini   newfile1.txt
```

10. touch command

```
harshita@HarshitaP:/mnt/c/users/harsh/Contacts$ ls
desktop.ini  newfile1.txt
harshita@HarshitaP:/mnt/c/users/harsh/Contacts$ touch Web.html
harshita@HarshitaP:/mnt/c/users/harsh/Contacts$ ls
Web.html  desktop.ini  newfile1.txt
```

11. find command

```
harshita@HarshitaP:/mnt/c/users/harsh$ find . -name Web.html
./Contacts/Web.html
```

12. grep command

```
harshita@HarshitaP:/mnt/c/users/harsh$ grep -r Hello
grep: AppData/Local/Comms/UnistoreDB/store.jfm: Permission denied
grep: AppData/Local/Comms/UnistoreDB/store.vol: Permission denied
grep: AppData/Local/Comms/UnistoreDB/tmp.edb: Permission denied
grep: AppData/Local/Comms/UnistoreDB/USS.jtx: Permission denied
grep: AppData/Local/D3DSCache/7f778b92ccfdf6c2/6F75932F-7DFC-4FB0-B4B8-12DE1AC415DA_VEN_8086&DEV_46A6&SUBS
grep: AppData/Local/D3DSCache/7f778b92ccfdf6c2/6F75932F-7DFC-4FB0-B4B8-12DE1AC415DA_VEN_8086&DEV_46A6&SUBS
grep: AppData/Local/D3DSCache/7f778b92ccfdf6c2/6F75932F-7DFC-4FB0-B4B8-12DE1AC415DA_VEN_8086&DEV_46A6&SUBS
grep: AppData/Local/D3DSCache/7f778b92ccfdf6c2/F4EB2D6C-ED2B-4BDD-AD9D-F913287E6768.idx: Permission denied
grep: AppData/Local/D3DSCache/7f778b92ccfdf6c2/F4EB2D6C-ED2B-4BDD-AD9D-F913287E6768.lock: Permission denie
grep: AppData/Local/D3DSCache/7f778b92ccfdf6c2/F4EB2D6C-ED2B-4BDD-AD9D-F913287E6768.val: Permission denied
AppData/Local/Google/Chrome/User Data/Default/Cache/Cache_Data/f_01b028:Hello, Madam Mayor. Nice work.
grep: AppData/Local/Google/Chrome/User Data/Default/Code Cache/js/4fb08e00dedb23ec_0: binary file matches
```

13. sudo command

```
harshita@HarshitaP:/mnt/c/users/harsh/contacts$ sudo mkdir newdir1
[sudo] password for harshita:
harshita@HarshitaP:/mnt/c/users/harsh/contacts$ ls
Web.html  desktop.ini  newdir  newdir1  newfile1.txt
```

14. df command

```
harshita@HarshitaP:~$ df
Filesystem      1K-blocks      Used Available Use% Mounted on
/dev/sdb       263174212   1097516 248638540   1% /
none             3993016         4   3993012   1% /mnt/wsl
tools          480918524 161915680 319002844  34% /init
none             3993016         4   3993012   1% /run
none             3993016         0   3993016   0% /run/lock
none             3993016         0   3993016   0% /run/shm
none             3993016         0   3993016   0% /run/user
tmpfs            3993016         0   3993016   0% /sys/fs/cgroup
drivers        480918524 161915680 319002844  34% /usr/lib/wsl/drivers
lib            480918524 161915680 319002844  34% /usr/lib/wsl/lib
drvfs          480918524 161915680 319002844  34% /mnt/c
```

15. du command

```
harshita@HarshitaP:~$ du
24      .
harshita@HarshitaP:~$ du -h
24K     .
```

16. head command

```
harshita@HarshitaP:/mnt/c/users/harsh/contacts$ head newfile1.txt
Hey, this is harshita
```

17. tail command

```
harshita@HarshitaP:/mnt/c/users/harsh$ tail newf.txt
hello
```

18. diff command

```
harshita@HarshitaP:/mnt/c/users/harsh/contacts$ diff Web.html newfile1.txt
0a1
> Hey, this is harshita
```

19. chown command

```
harshita@HarshitaP:~$ sudo chown home harshi
[sudo] password for harshita:
```

20. jobs command

```
harshita@HarshitaP:/mnt/c/users/harsh$ sleep 5m &
[1] 177
harshita@HarshitaP:/mnt/c/users/harsh$ jobs
[1]+  Running                 sleep 5m &
```

21. kill command

```
harshita@HarshitaP:/mnt/c/users/harsh$ kill -n signum
[1]+  Done                    sleep 5m
```

22. ping command

```
harshita@HarshitaP:/mnt/c/users/harsh$ ping google.com
PING google.com (142.250.77.110) 56(84) bytes of data.
64 bytes from maa05s15-in-f14.1e100.net (142.250.77.110): icmp_seq=1 ttl=116 time=10.7 ms
64 bytes from maa05s15-in-f14.1e100.net (142.250.77.110): icmp_seq=2 ttl=116 time=12.9 ms
64 bytes from maa05s15-in-f14.1e100.net (142.250.77.110): icmp_seq=3 ttl=116 time=20.1 ms
64 bytes from maa05s15-in-f14.1e100.net (142.250.77.110): icmp_seq=4 ttl=116 time=12.2 ms
64 bytes from maa05s15-in-f14.1e100.net (142.250.77.110): icmp_seq=5 ttl=116 time=11.3 ms
64 bytes from maa05s15-in-f14.1e100.net (142.250.77.110): icmp_seq=6 ttl=116 time=10.6 ms
```

23. wget command

```
harshita@HarshitaP:~$ wget https://cdn.mos.cms.futurecdn.net/qfFFFhnM8LwZnjpTECN3oB-1200-80.jpg.webp
--2023-01-27 01:12:33--  https://cdn.mos.cms.futurecdn.net/qfFFFhnM8LwZnjpTECN3oB-1200-80.jpg.webp
Resolving cdn.mos.cms.futurecdn.net (cdn.mos.cms.futurecdn.net)... 8.241.143.122, 8.241.130.250, 8.247.49.250
Connecting to cdn.mos.cms.futurecdn.net (cdn.mos.cms.futurecdn.net)|8.241.143.122|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 21446 (21K) [image/webp]
Saving to: 'qfFFFhnM8LwZnjpTECN3oB-1200-80.jpg.webp'

qfFFFhnM8LwZnjpTECN3oB-1200-8 100%[===============================================>]  20.94K  --.-KB/s    in 0s

2023-01-27 01:12:35 (87.0 MB/s) - 'qfFFFhnM8LwZnjpTECN3oB-1200-80.jpg.webp' saved [21446/21446]

harshita@HarshitaP:~$ ls
newfile.txt   qfFFFhnM8LwZnjpTECN3oB-1200-80.jpg.webp
```

24. uname command

```
harshita@HarshitaP:~$ uname
Linux
```

25. top command

```
harshita@HarshitaP:~$ top
top - 01:13:14 up  1:23,  0 users,  load average: 0.00, 0.00, 0.00
Tasks:   5 total,   1 running,   4 sleeping,   0 stopped,   0 zombie
%Cpu(s):  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   7798.9 total,   7606.3 free,    122.6 used,     69.9 buff/cache
MiB Swap:   2048.0 total,   2048.0 free,      0.0 used.   7512.6 avail Mem

  PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM     TIME+ COMMAND
    1 root      20   0    1816   1144   1108 S   0.0   0.0   0:00.04 init
  180 root      20   0    2164    368      0 S   0.0   0.0   0:00.00 init
  181 root      20   0    2172    368      0 S   0.0   0.0   0:00.02 init
  182 harshita  20   0    6068   5124   3412 S   0.0   0.1   0:00.04 bash
  197 harshita  20   0    7780   3696   3100 R   0.0   0.0   0:00.01 top
```

26. history command

```
harshita@HarshitaP:~$ history
    1  pwd
    2  cd Pictures
    3  cd pictures
    4  cd photos
    5  cd camera roll
    6  ls/mnt/
    7  ls /mnt/
    8  pwd
    9  cd downloads
   10  cd Downloads
   11  cd/home/harshita/Downloads
```

27. man command

```
harshita@HarshitaP:~$ man top

TOP(1)                              User Commands                              TOP(1)

NAME
       top - display Linux processes

SYNOPSIS
       top -hv|-bcEeHiOSs1 -d secs -n max -u|U user -p pids -o field -w [cols]

       The traditional switches '-' and whitespace are optional.

DESCRIPTION
       The  top  program  provides  a  dynamic  real-time  view  of  a running system.  It can display system summary
       information as well as a list of processes or threads currently being managed by the Linux kernel.  The  types
       of  system  summary information shown and the types, order and size of information displayed for processes are
       all user configurable and that configuration can be made persistent across restarts.

       The program provides a limited interactive interface for process manipulation as well as a much more extensive
       interface  for  personal  configuration  --  encompassing  every  aspect of its operation.  And while top is
       referred to throughout this document, you are free to name the program anything  you  wish.   That  new  name,
       possibly  an  alias, will then be reflected on top's display and used when reading and writing a configuration
       file.

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28. echo command

```
harshita@HarshitaP:~$ echo I need to go to bed
I need to go to bed
```

29. hostname command

```
harshita@HarshitaP:~$ hostname
HarshitaP
harshita@HarshitaP:~$ hostname -i
127.0.1.1
```

30. useradd, userdel command

```
/@ubuntulinux:~/gfg$ sudo useradd -u 1234 test_user
/@ubuntulinux:~/gfg$ id test_user
1234(test_user) gid=1234(test_user) groups=1234(test_user)
```

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