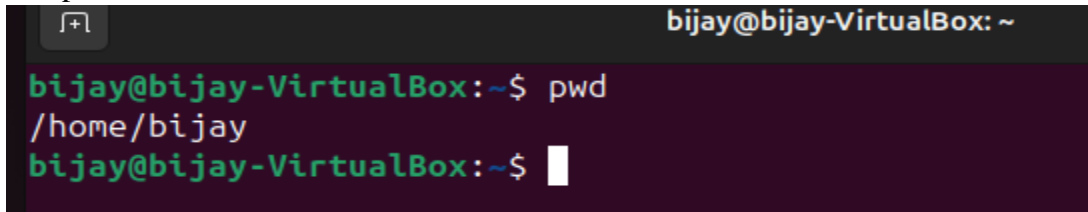


Basic Linux Commands

1) pwd

Function: Print the current working directory.

Syntax: pwd

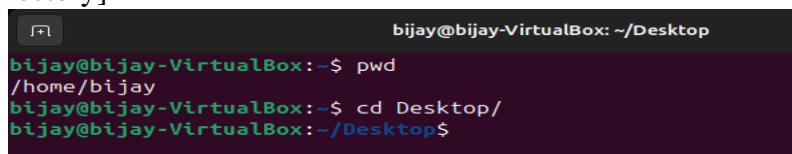
A terminal window titled 'bijay@bijay-VirtualBox: ~' showing the command 'pwd' being executed. The output is '/home/bijay'.

```
bijay@bijay-VirtualBox:~$ pwd
/home/bijay
bijay@bijay-VirtualBox:~$
```

2) cd

Function: Change the current directory.

Syntax: cd [directory]

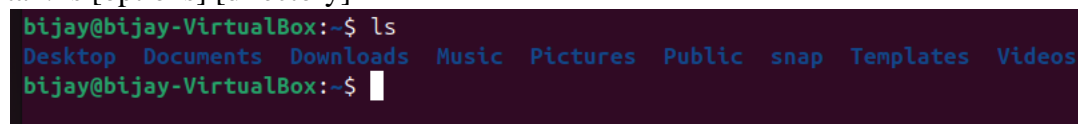
A terminal window titled 'bijay@bijay-VirtualBox: ~/Desktop' showing the command 'cd Desktop/' being executed. The output is '~/Desktop\$'.

```
bijay@bijay-VirtualBox:~$ pwd
/home/bijay
bijay@bijay-VirtualBox:~$ cd Desktop/
bijay@bijay-VirtualBox:~/Desktop$
```

3) ls

Function: List the files and directories in the current directory.

Syntax: ls [options] [directory]

A terminal window titled 'bijay@bijay-VirtualBox:~\$' showing the command 'ls' being executed. The output is a list of directories: Desktop, Documents, Downloads, Music, Pictures, Public, snap, Templates, Videos.

```
bijay@bijay-VirtualBox:~$ ls
Desktop  Documents  Downloads  Music  Pictures  Public  snap  Templates  Videos
bijay@bijay-VirtualBox:~$
```

4) ls -all

Function: List the files and directories in the current directory.

Syntax: ls -all

```

bijay@bijay-VirtualBox:~$ ls -all
total 76
drwxr-x--- 15 bijay bijay 4096 Aug  7 12:58 .
drwxr-xr-x  3 root  root  4096 Aug  7 08:41 ..
-rw-----  1 bijay bijay   712 Sep  2 09:40 .bash_history
-rw-r--r--  1 bijay bijay   220 Mar 31 14:26 .bash_logout
-rw-r--r--  1 bijay bijay  3771 Mar 31 14:26 .bashrc
drwx----- 10 bijay bijay 4096 Aug  7 12:58 .cache
drwx----- 11 bijay bijay 4096 Aug  7 09:02 .config
drwxr-xr-x  4 bijay bijay 4096 Sep  2 09:35 Desktop
drwxr-xr-x  2 bijay bijay 4096 Aug  7 08:43 Documents
drwxr-xr-x  3 bijay bijay 4096 Aug  7 12:57 Downloads
drwx-----  4 bijay bijay 4096 Aug  7 08:43 .local
drwxr-xr-x  2 bijay bijay 4096 Aug  7 08:43 Music
drwxr-xr-x  2 bijay bijay 4096 Aug  7 08:43 Pictures
-rw-r--r--  1 bijay bijay   807 Mar 31 14:26 .profile
drwxr-xr-x  2 bijay bijay 4096 Aug  7 08:43 Public
drwx-----  6 bijay bijay 4096 Sep  2 09:26 snap
drwx-----  2 bijay bijay 4096 Aug  7 08:42 .ssh
-rw-r--r--  1 bijay bijay     0 Aug  7 12:49 .sudo_as_admin_successful
drwxr-xr-x  2 bijay bijay 4096 Aug  7 08:43 Templates
drwxr-xr-x  2 bijay bijay 4096 Aug  7 08:43 Videos
bijay@bijay-VirtualBox:~$

```

5) mkdir

Function: Create a new directory.

Syntax: mkdir [options] directory

```

bijay@bijay-VirtualBox:~$ mkdir csit4th
bijay@bijay-VirtualBox:~$

```

6) touch

Function: Create an empty file or update the timestamp of an existing file. Syntax:

touch [options] file

```

bijay@bijay-VirtualBox:~$ touch newfile.txt
bijay@bijay-VirtualBox:~$

```

7) chmod

Function: Change the permissions of a file or directory. Set permissions to read, write, and execute for the user, and read and execute for the group and others

Syntax: chmod [permissions] file

```

bijay@bijay-VirtualBox:~$ chmod 755 newfile.txt
bijay@bijay-VirtualBox:~$ ls -l newfile.txt
-rwxr-xr-x 1 bijay bijay 0 Sep  2 09:52 newfile.txt
bijay@bijay-VirtualBox:~$

```

8) rm

Function: Remove a file.

Syntax: `rm [options] file`

```
bijay@bijay-VirtualBox:~$ rm newfile.txt
bijay@bijay-VirtualBox:~$ ls -l
total 40
drwxrwxr-x 2 bijay bijay 4096 Sep  2 09:50 csit4th
drwxr-xr-x 4 bijay bijay 4096 Sep  2 09:35 Desktop
drwxr-xr-x 2 bijay bijay 4096 Aug  7 08:43 Documents
drwxr-xr-x 3 bijay bijay 4096 Aug  7 12:57 Downloads
drwxr-xr-x 2 bijay bijay 4096 Aug  7 08:43 Music
drwxr-xr-x 2 bijay bijay 4096 Aug  7 08:43 Pictures
drwxr-xr-x 2 bijay bijay 4096 Aug  7 08:43 Public
drwx----- 6 bijay bijay 4096 Sep  2 09:26 snap
drwxr-xr-x 2 bijay bijay 4096 Aug  7 08:43 Templates
drwxr-xr-x 2 bijay bijay 4096 Aug  7 08:43 Videos
bijay@bijay-VirtualBox:~$
```

9). vi

Function: Open and edit the file using the Vim text editor. **Syntax:**

vi file

[illegible]

10). cat

Function: Display the content of the file.

Syntax: cat [options] file

```
bijay@bijay-VirtualBox:~$ cat newfile.txt

I am BIjay Sah Rauniyar

bijay@bijay-VirtualBox:~$
```

11). tree

Function: Display directory structure in a tree-like format.

Syntax: tree [options] [directory]

```
bijay@bijay-VirtualBox:~$ tree
.
├── csit4th
├── Desktop
│   ├── bij
│   │   └── nij.txt
│   ├── csit4.1
│   │   └── csit4.txt
│   └── hello
├── Documents
├── Downloads
│   ├── Apache_OpenOffice_4.1.15_Linux_x86-64_install-deb_en-US
│   │   └── en-US
│   │       └── DEBS
│   │           ├── desktop-integration
│   │           │   └── openoffice4.1-debian-menus_4.1.15-9813_all.deb
│   │           ├── openoffice_4.1.15-2_amd64.deb
│   │           ├── openoffice-base_4.1.15-2_amd64.deb
│   │           ├── openoffice-brand-base_4.1.15-2_amd64.deb
│   │           ├── openoffice-brand-calc_4.1.15-2_amd64.deb
│   │           ├── openoffice-brand-draw_4.1.15-2_amd64.deb
│   │           ├── openoffice-brand-en-us_4.1.15-2_amd64.deb
│   │           ├── openoffice-brand-impress_4.1.15-2_amd64.deb
│   │           └── openoffice-brand-math_4.1.15-2_amd64.deb
```

12) sudo apt-get install

Function: Install a package using the APT package manager.

Syntax: sudo apt-get install package

```
bijay@bijay-VirtualBox:~$ sudo apt-get install vim
[sudo] password for bijay:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  libsodium23 vim-common vim-runtime vim-tiny xxd
Suggested packages:
```

13) History

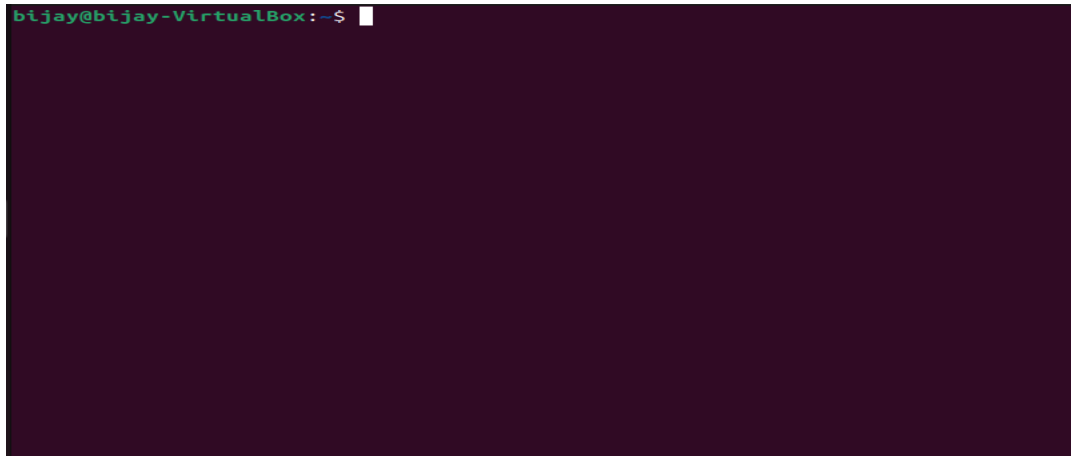
Function: Display the command history. Syntax:
history

```
bijay@bijay-VirtualBox:~$ history
 1  cd downloads
 2  ls
 3  cd Downlaods
 4  cd Downloads
 5  ls
 6  tar -xvf Apacheoffice_OpenOffice_4.1.14_Linux
 7  cd
 8  ld
 9  ls
10  cd Downloads
11  ls
12  root
13  whoami
14  cd
15  ls
16  cd
17  pwd
18  cd
19  is
20  ls
21  ls-all
22  cd Desktop/
23  ls-a;;
```

14) clear

Function: Clear the terminal screen.
Syntax: clear

```
bijay@bijay-VirtualBox:~$
```



15) ln -s

Function: Create a Symbolic Link to a File

Syntax: ln -s source destination

16) cp

Function: Copies files or directories from a source to a destination. Syntax:

cp [options] source destination

```
bijay@bijay-VirtualBox:~$ cp newfile.txt newfile2.txt
bijay@bijay-VirtualBox:~$ ls
csit4th  Documents  Music          newfile.txt  Public  Templates
Desktop  Downloads  newfile2.txt  Pictures     snap    Videos
bijay@bijay-VirtualBox:~$
```

17) mv

Function: Moves files or directories from a source to a destination; can also be used to rename files or directories.

Syntax: mv [options] source destination

```
bijay@bijay-VirtualBox:~$ mv newfile.txt Desktop/
bijay@bijay-VirtualBox:~$ cd Desktop/
bijay@bijay-VirtualBox:~/Desktop$ ls
bij csit4.1 hello newfile.txt
bijay@bijay-VirtualBox:~/Desktop$
```

18) sudo useradd

Function: Adds a new user to the system.

Syntax: sudo useradd [options] username

```
bijay@bijay-VirtualBox:~/Desktop$ sudo useradd newuserbij
[sudo] password for bijay:
bijay@bijay-VirtualBox:~/Desktop$
```

19) sudo passwd

Function: Sets or changes the password for a user.

Syntax: sudo passwd username

```
bijay@bijay-VirtualBox:~/Desktop$ sudo passwd newuserbij
New password:
BAD PASSWORD: The password fails the dictionary check - it is too simplistic/systematic
Retype new password:
passwd: password updated successfully
bijay@bijay-VirtualBox:~/Desktop$
```

20) whoami

Function: Displays the username of the current user.

Syntax: whoami

```
bijay@bijay-VirtualBox:~/Desktop$ whoami
bijay
bijay@bijay-VirtualBox:~/Desktop$
```

21) su

Function: Switches to a different user account.

Syntax: su username

```
bijay@bijay-VirtualBox:~/Desktop$ su newuserbij
Password:
$
```

22) shutdown

Function: Shuts down or restarts the computer.

Syntax: shutdown -h [time] [message]

```
bijay@bijay-VirtualBox:~$ shutdown -h now
```

23) df

Function: Display information about disk space usage.

Syntax: df [options] [file...]

```
bijay@bijay-VirtualBox:~$ df -h
Filesystem      Size  Used Avail Use% Mounted on
tmpfs            392M  1.5M  391M   1% /run
/dev/sda2        25G   9.9G   14G  43% /
tmpfs            2.0G    0    2.0G   0% /dev/shm
tmpfs            5.0M   8.0K   5.0M   1% /run/lock
tmpfs            392M  108K  392M   1% /run/user/1000
bijay@bijay-VirtualBox:~$
```

24) ps

Function: Display information about running processes.

Syntax: ps [options]

```
bijay@bijay-VirtualBox:~$ ps -aux
```

USER	PID	%CPU	%MEM	VSZ	RSS	TTY	STAT	START	TIME	COMMAND
root	1	1.3	0.3	23112	13952	?	Ss	11:20	0:01	/sbin/init sp
root	2	0.0	0.0	0	0	?	S	11:20	0:00	[kthreadd]
root	3	0.0	0.0	0	0	?	S	11:20	0:00	[pool_workque
root	4	0.0	0.0	0	0	?	I<	11:20	0:00	[kworker/R-rc
root	5	0.0	0.0	0	0	?	I<	11:20	0:00	[kworker/R-rc
root	6	0.0	0.0	0	0	?	I<	11:20	0:00	[kworker/R-sl
root	7	0.0	0.0	0	0	?	I<	11:20	0:00	[kworker/R-ne
root	8	0.0	0.0	0	0	?	I	11:20	0:00	[kworker/0:0-
root	9	0.0	0.0	0	0	?	I	11:20	0:00	[kworker/0:1-
root	10	0.0	0.0	0	0	?	I<	11:20	0:00	[kworker/0:0H
root	11	0.0	0.0	0	0	?	I	11:20	0:00	[kworker/u4:0
root	12	0.0	0.0	0	0	?	I<	11:20	0:00	[kworker/R-mm
root	13	0.0	0.0	0	0	?	I	11:20	0:00	[rcu_tasks_kt
root	14	0.0	0.0	0	0	?	I	11:20	0:00	[rcu_tasks_ru
root	15	0.0	0.0	0	0	?	I	11:20	0:00	[rcu_tasks_tr
root	16	0.0	0.0	0	0	?	S	11:20	0:00	[ksoftirqd/0]
root	17	0.1	0.0	0	0	?	I	11:20	0:00	[rcu_preempt]
root	18	0.0	0.0	0	0	?	S	11:20	0:00	[migration/0]
root	19	0.0	0.0	0	0	?	S	11:20	0:00	[idle_inject/
root	20	0.0	0.0	0	0	?	S	11:20	0:00	[cpuhp/0]
root	21	0.0	0.0	0	0	?	S	11:20	0:00	[cpuhp/1]

25) df -i

Function: Display the inode usage of file systems.

Syntax: df -i

```
bijay@bijay-VirtualBox:~$ df -i
```

Filesystem	Inodes	IUsed	IFree	IUse%	Mounted on
tmpfs	501264	998	500266	1%	/run
/dev/sda2	1638400	171032	1467368	11%	/
tmpfs	501264	1	501263	1%	/dev/shm
tmpfs	501264	5	501259	1%	/run/lock
tmpfs	100252	157	100095	1%	/run/user/1000

```
bijay@bijay-VirtualBox:~$
```

26) uname -a

Function: Display information about the system, including the kernel version.

Syntax: `uname -a`

```
bijay@bijay-VirtualBox:~$ uname -a
Linux bijay-VirtualBox 6.8.0-31-generic #31-Ubuntu SMP PREEMPT_DYNAMIC Sat Apr 2
0 00:40:06 UTC 2024 x86_64 x86_64 x86_64 GNU/Linux
bijay@bijay-VirtualBox:~$
```

27) `env`

Function: Display the environment variables for the current session.

Syntax: `env`

```
bijay@bijay-VirtualBox:~$ env
SHELL=/bin/bash
SESSION_MANAGER=local/bijay-VirtualBox:@/tmp/.ICE-unix/1779,unix/bijay-VirtualBo
x:/tmp/.ICE-unix/1779
QT_ACCESSIBILITY=1
COLORTERM=truecolor
XDG_CONFIG_DIRS=/etc/xdg/xdg-ubuntu:/etc/xdg
XDG_MENU_PREFIX=gnome-
GNOME_DESKTOP_SESSION_ID=this-is-deprecated
GNOME_SHELL_SESSION_MODE=ubuntu
SSH_AUTH_SOCK=/run/user/1000/keyring/ssh
MEMORY_PRESSURE_WRITE=c29tZSAyMDAwMDAgMjAwMDAwMAA=
XMODIFIERS=@im=ibus
DESKTOP_SESSION=ubuntu
GTK_MODULES=gail:atk-bridge
PWD=/home/bijay
LOGNAME=bijay
XDG_SESSION_DESKTOP=ubuntu
XDG_SESSION_TYPE=wayland
SYSTEMD_EXEC_PID=1810
XAUTHORITY=/run/user/1000/.mutter-Xwaylandauth.I7H2U2
```

28) `uptime`

Function: Show how long the system has been running, along with the system load.

Syntax: `uptime`

```
bijay@bijay-VirtualBox:~$ uptime
11:24:38 up 4 min, 1 user, load average: 0.03, 0.16, 0.09
bijay@bijay-VirtualBox:~$
```

29) `man`

Function: Display the manual for a command.

Syntax: `man [command]` Example: `man ls`

```
bijay@bijay-VirtualBox: ~
LS(1) User Commands LS(1)

NAME
    ls - list directory contents

SYNOPSIS
    ls [OPTION]... [FILE]...

DESCRIPTION
    List information about the FILES (the current directory by default).
    Sort entries alphabetically if none of -cftuvSUX nor --sort is speci-
    fied.

    Mandatory arguments to long options are mandatory for short options
    too.

    -a, --all
        do not ignore entries starting with .

    -A, --almost-all
        do not list implied . and ..

    --author
        Manual page ls(1) line 1 (press h for help or q to quit)
```

30) top

Function: Display real-time system processes and resource usage, such as CPU and memory usage.

Syntax: top

```
bijay@bijay-VirtualBox:~$ top

top - 11:26:57 up 6 min,  1 user,  load average: 0.08, 0.14, 0.09
Tasks: 192 total,  1 running, 191 sleeping,  0 stopped,  0 zombie
%Cpu(s):  0.0 us,  0.2 sy,  0.0 ni, 99.3 id,  0.2 wa,  0.0 hi,  0.3 si,  0.0 st
MiB Mem : 3916.1 total, 2116.3 free,  942.6 used, 1108.7 buff/cache
MiB Swap: 3916.0 total, 3916.0 free,  0.0 used. 2973.5 avail Mem

  PID USER      PR  NI   VIRT   RES   SHR S  %CPU  %MEM    TIME+  COMMAND
 1309 root        20   0  325412   9088   7552 S   0.3   0.2   0:00.16 upowerd
 1810 bijay      20   0 3966696 366244 135364 S   0.3   9.1   0:11.08 gnome-s+
 3317 bijay     20   0   23204   5760   3584 R   0.3   0.1   0:00.06 top
    1 root        20   0    23112  14080   9472 S   0.0   0.4   0:02.35 systemd
    2 root        20   0         0        0        0 S   0.0   0.0   0:00.00 kthreadd
    3 root        20   0         0        0        0 S   0.0   0.0   0:00.00 pool_wo+
    4 root         0 -20         0        0        0 I   0.0   0.0   0:00.00 kworker+
    5 root         0 -20         0        0        0 I   0.0   0.0   0:00.00 kworker+
    6 root         0 -20         0        0        0 I   0.0   0.0   0:00.00 kworker+
    7 root         0 -20         0        0        0 I   0.0   0.0   0:00.00 kworker+
    8 root        20   0         0        0        0 I   0.0   0.0   0:00.07 kworker+
    9 root        20   0         0        0        0 I   0.0   0.0   0:00.02 kworker+
   10 root         0 -20         0        0        0 I   0.0   0.0   0:00.00 kworker+
   11 root        20   0         0        0        0 I   0.0   0.0   0:00.00 kworker+
```

31) du

Function: Show disk usage of files and directories.

Syntax: du [options] [directory] Example: du -sh *

```
bijay@bijay-VirtualBox:~$ du -sh *
4.0K    csit4th
28K     Desktop
4.0K    Documents
320M    Downloads
4.0K    Music
4.0K    newfile2.txt
4.0K    Pictures
4.0K    Public
103M    snap
4.0K    Templates
4.0K    Videos
bijay@bijay-VirtualBox:~$
```