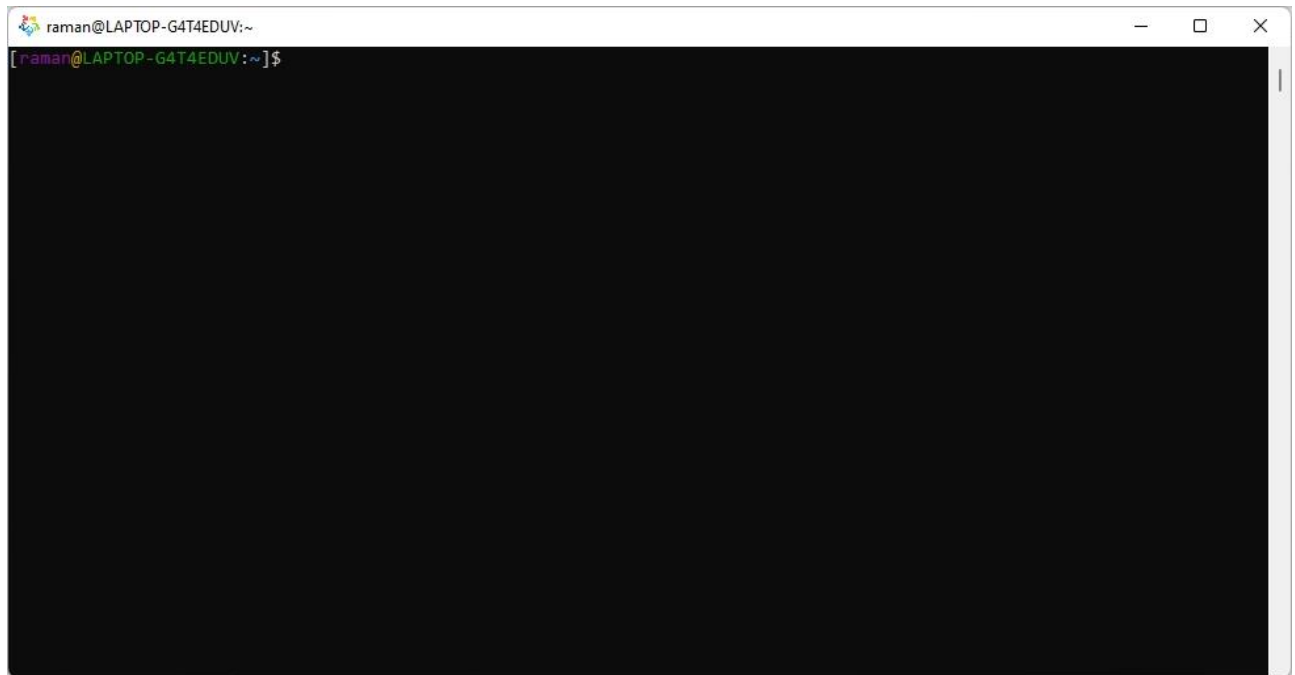


Linux Shell

Linux Shell is a program that accepts your commands and executes those commands.

In Linux Lower Case and Upper Case Letters matters for example pwd command will work but PWD command will not work similarly cd command will work but Cd or CD command will not work.

Prompt

A screenshot of a Linux terminal window. The window title bar shows 'raman@LAPTOP-G4T4EDUV:~' and standard window control buttons. The terminal itself has a black background with a green prompt '[raman@LAPTOP-G4T4EDUV:~]\$' at the top left.

In the above window raman is the username with which the user is logged in and LAPTOP-G4T4EDUV is the server name and \$ means means raman is not the root account.

If the root user is logged in

Prompt will be [root@G4T4EDUV:~]#

means root user is logged in and \$ means some user other than root account is logged in.

Root account is also called Superuser.

Root access is restricted to system administrators.

Root access may be required to install, start or stop a service but root access is not required for starting a program like a web browser.

~ (tilde) means current directory is home directory.

~raman command will give you home directory of raman account.

If you will write ~root command will give you home directory of root account.

In linux Services also have their own accounts like

~ftp will give you home directory of ftp service account as /var/ftp


Essential Linux Commands or Basic Linux Commands

Pwd command displays the current working directory

A terminal window with a black background and colorful text. The prompt is 'raman@LAPTOP-G4T4EDUV:~'. The user enters 'pwd' and the output is '/home/raman'.

```
raman@LAPTOP-G4T4EDUV:~  
[raman@LAPTOP-G4T4EDUV:~]$ pwd  
/home/raman  
[raman@LAPTOP-G4T4EDUV:~]$
```

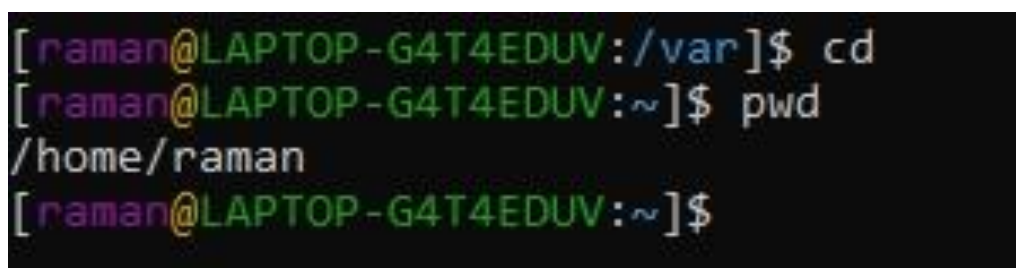
Cd dir changes the current working directory to dir

A terminal window with a black background and colorful text. The prompt is 'raman@LAPTOP-G4T4EDUV:~'. The user enters 'cd /var' and the prompt changes to 'raman@LAPTOP-G4T4EDUV:/var\$'.

```
raman@LAPTOP-G4T4EDUV:~  
[raman@LAPTOP-G4T4EDUV:~]$ cd /var  
[raman@LAPTOP-G4T4EDUV:/var]$
```

Cd /var changes current working directory to /var.

When you will write only cd command in your prompt the current or present working directory becomes your home directory.

A terminal window with a black background and colorful text. The prompt is 'raman@LAPTOP-G4T4EDUV:/var\$'. The user enters 'cd' and the prompt changes to 'raman@LAPTOP-G4T4EDUV:~'. Then the user enters 'pwd' and the output is '/home/raman'.

```
raman@LAPTOP-G4T4EDUV:/var$ cd  
raman@LAPTOP-G4T4EDUV:~$ pwd  
/home/raman  
[raman@LAPTOP-G4T4EDUV:~]$
```

In the above screen after writing cd command present working directory becomes /home/raman

Ls command lists the directories

For example go to root directory by writing command cd /

And then give command ls and you will get all the directories under root directory, below is the output.

A terminal window with a black background and colorful text. The prompt is 'raman@LAPTOP-G4T4EDUV:~'. The user enters 'cd /' and the prompt changes to 'raman@LAPTOP-G4T4EDUV:/'. Then the user enters 'ls' and the output is a list of directories: 'afs boot etc init lib64 media opt root sbin sys usr bin dev home lib lost+found mnt proc run srv tmp var'.

```
raman@LAPTOP-G4T4EDUV:~$ cd /  
raman@LAPTOP-G4T4EDUV:/]$ ls  
afs  boot  etc   init  lib64  media  opt   root  sbin  sys   usr  
bin  dev   home  lib   lost+found  mnt    proc  run   srv   tmp   var  
[raman@LAPTOP-G4T4EDUV:/]$
```

Ls -l command lists the directory contents.

```
[raman@LAPTOP-G4T4EDUV:~]$ ls -l
total 1428
dr-xr-xr-x  2 root root    4096 Mar 25  2022 afs
lrwxrwxrwx  1 root root      7 Mar 25  2022 bin -> usr/bin
dr-xr-xr-x  2 root root    4096 Mar 25  2022 boot
drwxr-xr-x  8 root root   27608 May  8 09:32 dev
drwxr-xr-x 56 root root    4096 May  8 09:32 etc
drwxr-xr-x  3 root root    4096 May  7 13:12 home
-rwxr-xr-x  2 root root 1392816 Apr 23 04:19 init
lrwxrwxrwx  1 root root      7 Mar 25  2022 lib -> usr/lib
lrwxrwxrwx  1 root root      9 Mar 25  2022 lib64 -> usr/lib64
drwx----- 2 root root   16384 Apr 10  2019 lost+found
drwxr-xr-x  2 root root    4096 Mar 25  2022 media
drwxr-xr-x  4 root root    4096 May  7 13:12 mnt
drwxr-xr-x  2 root root    4096 Mar 25  2022 opt
dr-xr-xr-x 166 root root      0 May  8 09:32 proc
dr-xr-xr-x  2 root root    4096 Jul 12  2022 root
drwxr-xr-x  6 root root    1200 May  8 09:32 run
lrwxrwxrwx  1 root root      8 Mar 25  2022/sbin -> usr/sbin
drwxr-xr-x  2 root root    4096 Mar 25  2022 srv
dr-xr-xr-x 11 root root      0 May  8 09:32 sys
drwxrwxrwt  2 root root    4096 Mar 25  2022 tmp
drwxr-xr-x 12 root root    4096 Jul 11  2022 usr
drwxr-xr-x 18 root root    4096 Jul 12  2022 var
[raman@LAPTOP-G4T4EDUV:~]$
```

Cat command concatenates or displays contents of a file.

Cat /etc/shells will display the contents of file /etc/shells which means list of all shells available on linux system below is the output

```
[raman@LAPTOP-G4T4EDUV:~]$ cat /etc/shells
/bin/sh
/bin/bash
/usr/bin/sh
/usr/bin/bash
/usr/bin/tmux
/bin/tmux
[raman@LAPTOP-G4T4EDUV:~]$
```

Clear command clears the screen

Man command gives you online documentation about a command.

Man ls will give you online documentation for ls command below is the output

```
raman@LAPTOP-G4T4EDUV:~  
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 specified.  
  
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  
with -l, print the author of each file  
  
-b, --escape  
print C-style escapes for nongraphic characters  
  
--block-size=SIZE  
with -l, scale sizes by SIZE when printing them; e.g., '--block-size=M'; see SIZE format below  
  
Manual page ls(1) line 1 (press h for help or q to quit)
```

Space will make documentation go to next page and q will quit the documentation.

Exit command is used to exit the shell.

Getting help at Command Line

Environment Variables are storage location that has name and value.

They are typically Uppercase

You can access environment variable by writing command

Echo \$varname.

There is an environment variable PATH in Linux you can access PATH Environment variable by writing command echo \$PATH.

Which command is used to locate a command

For example to find where is cat command located you can type

which cat

below is the output

```
[raman@LAPTOP-G4T4EDUV:~]$ which cat  
/usr/bin/cat  
[raman@LAPTOP-G4T4EDUV:~]$
```

Get help about a command by adding --help after command or -h after command

For example

Cat - -help

Or

Cat -h

If you can't find help by adding -h use man command.

To search within man pages you can use man -k command

Working with Directories

Cd .. takes you to parent directory

How to execute a command in this directory we will use ./cat

Mkdir command will make a new directory

Mkdir raman123 will create a new directory with name raman123

```
[raman@LAPTOP-G4T4EDUV:~]$ mkdir raman123
[raman@LAPTOP-G4T4EDUV:~]$ ls -l
total 4
drwxr-xr-x 2 raman raman 4096 May  8 12:20 raman123
```

Rmdir will remove a directory

Rmdir raman123 will delete directory with name raman123

Rm -rf will recursive remove a directory

For example,e

Rm -rf raman123 will recursively remove directory raman123

Mkdir -p raman1/raman2/raman3/raman4 will create 4 directories.