

What is Linux ?

Linux is an operating system, and this is an open source, and it is based on Linux kernel operating system. It's just like Microsoft Windows, macOS, or iOS. But Linux is a virus free operating system.

Here are some basic commands of Linux :-

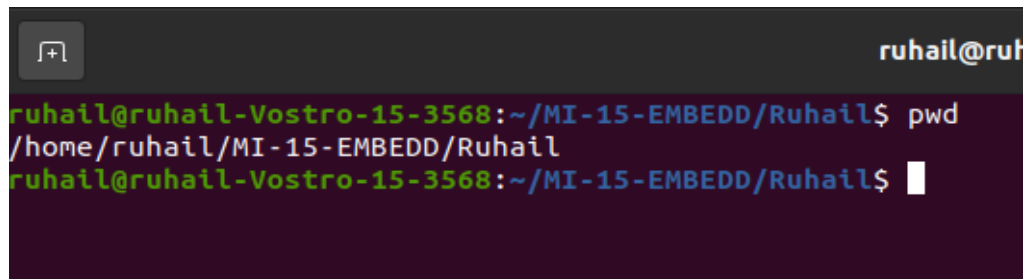
Linux Commands :-

<input type="checkbox"/> S. No	<input type="checkbox"/> Linux Basic Commands for Beginners
<input type="checkbox"/> 1	<input type="checkbox"/> PWD (Present Working Directory)
<input type="checkbox"/> 2	<input type="checkbox"/> cd (Change Directory)
<input type="checkbox"/> 3	<input type="checkbox"/> ls (List)
<input type="checkbox"/> 4	<input type="checkbox"/> cp (Copy)
<input type="checkbox"/> 5	<input type="checkbox"/> mv (Move)
<input type="checkbox"/> 6	<input type="checkbox"/> cat (concatenate)
<input type="checkbox"/> 7	<input type="checkbox"/> locate
<input type="checkbox"/> 8	<input type="checkbox"/> clear
<input type="checkbox"/> 9	<input type="checkbox"/> reset
<input type="checkbox"/> 10	<input type="checkbox"/> who
<input type="checkbox"/> 11	<input type="checkbox"/> cal (Callender)
<input type="checkbox"/> 12	<input type="checkbox"/> find
<input type="checkbox"/> 13	<input type="checkbox"/> touch
<input type="checkbox"/> 14	<input type="checkbox"/> mkdir (Make Directory)
<input type="checkbox"/> 15	<input type="checkbox"/> rmdir (Remove Directory)
<input type="checkbox"/> 16	<input type="checkbox"/> grep (Global regular expression print)

<input type="checkbox"/> 17	<input type="checkbox"/> du (Disk Uses)
<input type="checkbox"/> 18	<input type="checkbox"/> head
<input type="checkbox"/> 19	<input type="checkbox"/> tail
<input type="checkbox"/> 20	<input type="checkbox"/> kill
<input type="checkbox"/> 21	<input type="checkbox"/> last
<input type="checkbox"/> 22	<input type="checkbox"/> top
<input type="checkbox"/> 23	<input type="checkbox"/> free
<input type="checkbox"/> 24	<input type="checkbox"/> netstat (network statistics)
<input type="checkbox"/> 25	<input type="checkbox"/> uptime
<input type="checkbox"/> 26	<input type="checkbox"/> lsblk
<input type="checkbox"/> 27	<input type="checkbox"/> df
<input type="checkbox"/> 28	<input type="checkbox"/> wget
<input type="checkbox"/> 29	<input type="checkbox"/> less
<input type="checkbox"/> 30	<input type="checkbox"/> more

1. PWD Command :-

- a. PWD stands for present working Directory, this command is to show which directory we are working and which is our current directory.



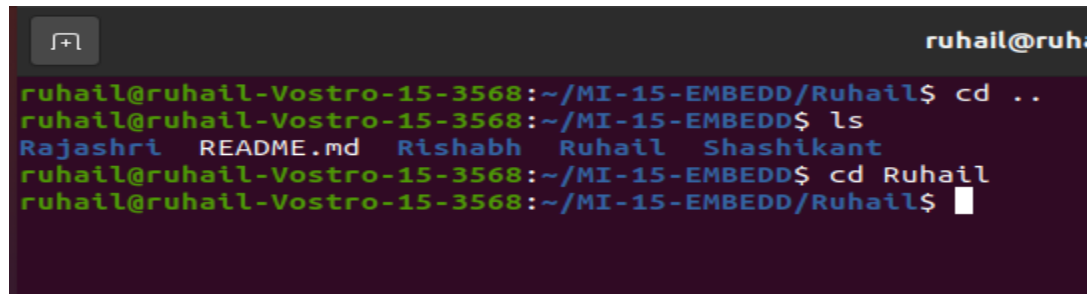
```

ruhail@ruhail-Vostro-15-3568:~/MI-15-EMBEDD/Ruhail$ pwd
/home/ruhail/MI-15-EMBEDD/Ruhail
ruhail@ruhail-Vostro-15-3568:~/MI-15-EMBEDD/Ruhail$

```

2. Cd Command :-

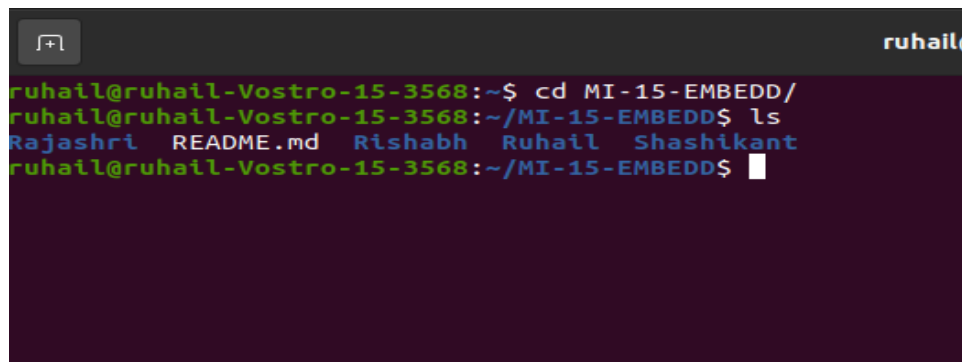
- a. Cd stands for change directory, with the help of this command we can switch one directory to another directory, and we can back present directory.



```
ruhail@ruhail-Vostro-15-3568:~/MI-15-EMBEDD/Ruhail$ cd ..
ruhail@ruhail-Vostro-15-3568:~/MI-15-EMBEDD$ ls
Rajashri  README.md  Rishabh  Ruhail  Shashikant
ruhail@ruhail-Vostro-15-3568:~/MI-15-EMBEDD$ cd Ruhail
ruhail@ruhail-Vostro-15-3568:~/MI-15-EMBEDD/Ruhail$
```

3. Ls command :-

- a. Ls stands for list, with the help of this command we can list all files and directories.



```
ruhail@ruhail-Vostro-15-3568:~$ cd MI-15-EMBEDD/
ruhail@ruhail-Vostro-15-3568:~/MI-15-EMBEDD$ ls
Rajashri  README.md  Rishabh  Ruhail  Shashikant
ruhail@ruhail-Vostro-15-3568:~/MI-15-EMBEDD$
```

4. Cat command :-

- a. Cat stands for concatenate, this command is used to create a new file, and we can see all the content which is present in the file.

```
ruhail@ruhail-Vostro-15-3568: ~/MI-15-EMBEDD/newfolder
ruhail@ruhail-Vostro-15-3568:~/MI-15-EMBEDD/newfolder$ cat > newfile.txt
this is my imp file where i will write some imp notes
ruhail@ruhail-Vostro-15-3568:~/MI-15-EMBEDD/newfolder$ cat newfile.txt
this is my imp file where i will write some imp notes
ruhail@ruhail-Vostro-15-3568:~/MI-15-EMBEDD/newfolder$
```

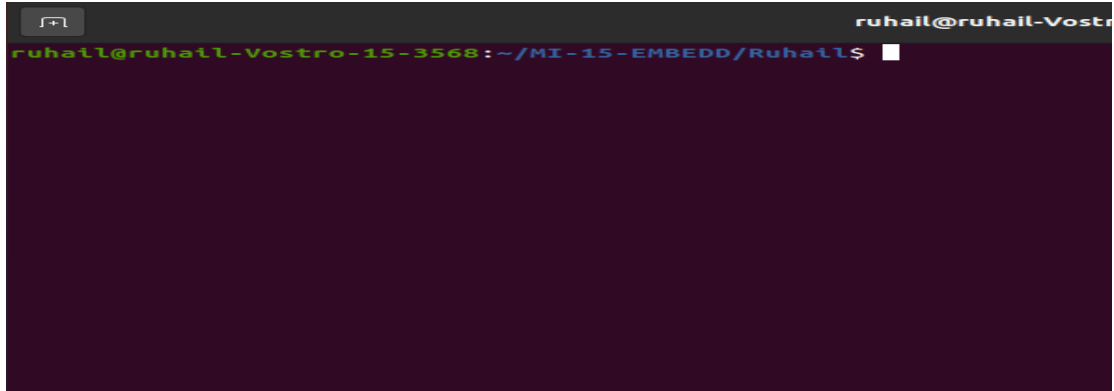
5. Clear command :-

- Clear all the command which written in terminal.

Before using clear command.

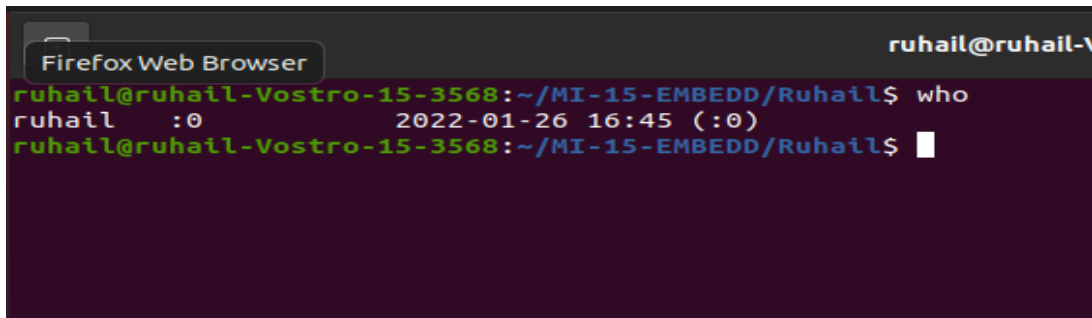
```
ruhail@ruhail-Vostro-15-3568:~/MI-15-EMBEDD/Ruhail$ pwd
/home/ruhail/MI-15-EMBEDD/Ruhail
ruhail@ruhail-Vostro-15-3568:~/MI-15-EMBEDD/Ruhail$ ls
myinfo.md
ruhail@ruhail-Vostro-15-3568:~/MI-15-EMBEDD/Ruhail$ cd ..
ruhail@ruhail-Vostro-15-3568:~/MI-15-EMBEDD$ cd ..
ruhail@ruhail-Vostro-15-3568:~$ cd MI-15-EMBEDD/
ruhail@ruhail-Vostro-15-3568:~/MI-15-EMBEDD$ ls
Rajashri  README.md  Rishabh  Ruhail  Shashikant
ruhail@ruhail-Vostro-15-3568:~/MI-15-EMBEDD$ cd Ruhail
ruhail@ruhail-Vostro-15-3568:~/MI-15-EMBEDD/Ruhail$ ls
myinfo.md
ruhail@ruhail-Vostro-15-3568:~/MI-15-EMBEDD/Ruhail$ clear
```

After using clear command.

A terminal window with a dark purple background. The title bar shows a window icon and the text "ruhail@ruhail-Vostro-15-3568". The terminal text shows the prompt "ruhail@ruhail-Vostro-15-3568:~/MI-15-EMBEDD/Ruhail\$" followed by a cursor.

6. Who command :-

- a. With the help of this command, display the user currently logged in to your Linux operating system.

A terminal window with a dark purple background. The title bar shows a window icon and the text "ruhail@ruhail-Vostro-15-3568". A "Firefox Web Browser" tab is visible. The terminal text shows the command "who" being executed, resulting in the output: "ruhail :0 2022-01-26 16:45 (:0)". The prompt "ruhail@ruhail-Vostro-15-3568:~/MI-15-EMBEDD/Ruhail\$" is shown again with a cursor.

7. Cal command :-

- a. We can view a calendar with help of this command, and we can also view current month, date, year, using this command.

```

ruhall@ruhall-Vostro-15-3568: ~/MI-15-EMBEDD$ cal
      January 2022
Su Mo Tu We Th Fr Sa
 1
 2 3 4 5 6 7 8
 9 10 11 12 13 14 15
16 17 18 19 20 21 22
23 24 25 26 27 28 29
30 31
ruhall@ruhall-Vostro-15-3568:~/MI-15-EMBEDD$ cal -y
      2022
January February March
Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa
 1 1 2 3 4 5 1 2 3 4 5
 2 3 4 5 6 7 8 9 10 11 12 6 7 8 9 10 11 12
 9 10 11 12 13 14 15 13 14 15 16 17 18 19 13 14 15 16 17 18 19
16 17 18 19 20 21 22 20 21 22 23 24 25 26 20 21 22 23 24 25 26
23 24 25 26 27 28 29 27 28 29 30 31
30 31
      April May June
Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa
 1 2 1 2 3 4 5 6 7 1 2 3 4
 3 4 5 6 7 8 9 9 10 11 12 13 14 5 6 7 8 9 10 11
10 11 12 13 14 15 16 15 16 17 18 19 20 21 12 13 14 15 16 17 18
17 18 19 20 21 22 23 22 23 24 25 26 27 28 19 20 21 22 23 24 25
24 25 26 27 28 29 30 29 30 31 26 27 28 29 30
      July August September
Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa
 1 2 1 2 3 4 5 6 1 2 3
 3 4 5 6 7 8 9 7 8 9 10 11 12 13 4 5 6 7 8 9 10
10 11 12 13 14 15 16 14 15 16 17 18 19 20 11 12 13 14 15 16 17
17 18 19 20 21 22 23 21 22 23 24 25 26 27 18 19 20 21 22 23 24
24 25 26 27 28 29 30 28 29 30 31 25 26 27 28 29 30
31

```

```

      October November December
Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa
 1 1 2 3 4 5 1 2 3
 2 3 4 5 6 7 8 6 7 8 9 10 11 12 4 5 6 7 8 9 10
 9 10 11 12 13 14 15 13 14 15 16 17 18 19 11 12 13 14 15 16 17
16 17 18 19 20 21 22 20 21 22 23 24 25 26 18 19 20 21 22 23 24
23 24 25 26 27 28 29 27 28 29 30 25 26 27 28 29 30 31
30 31
ruhall@ruhall-Vostro-15-3568:~/MI-15-EMBEDD$ cal -m
cal: option requires an argument -- 'm'
Usage: cal [general options] [-jy] [[month] year]
       cal [general options] [-j] [-m month] [year]
       ncal -C [general options] [-jy] [[month] year]
       ncal -C [general options] [-j] [-m month] [year]
       ncal [general options] [-bhjpwysM] [-H yyyy-mm-dd] [-s country_code] [[month] year]
       ncal [general options] [-bhJeoSM] [year]
General options: [-31] [-A months] [-B months] [-d yyyy-mm]
ruhall@ruhall-Vostro-15-3568:~/MI-15-EMBEDD$

```

7.1

a. Date command :-

- This command is used to show current date and time.

```

ruhall@ruhall-Vostro-15-3568:~/MI-15-EMBEDD$ date
Wednesday 26 January 2022 01:06:14 PM IST
ruhall@ruhall-Vostro-15-3568:~/MI-15-EMBEDD$

```

8. Touch command :-

- Create an empty file using this command.

```
ruhail@ruhail-Vostro-15-3568: ~/MI-15-EMBEDD/newfolder
ruhail@ruhail-Vostro-15-3568:~/MI-15-EMBEDD/newfolder$ touch impfile.txt
ruhail@ruhail-Vostro-15-3568:~/MI-15-EMBEDD/newfolder$ ls
impfile.txt  newfile.md
ruhail@ruhail-Vostro-15-3568:~/MI-15-EMBEDD/newfolder$
```

9. Mkdir Command :-

- a. We can create a new directory using this command.

```
ruhail@ruhail-Vostro-15-3568: ~/MI-15-EMBEDD
ruhail@ruhail-Vostro-15-3568:~/MI-15-EMBEDD$ mkdir newfolder
ruhail@ruhail-Vostro-15-3568:~/MI-15-EMBEDD$ ls
newfolder  Rajashri  README.md  Ritshabh  Ruhail  Shashikant
ruhail@ruhail-Vostro-15-3568:~/MI-15-EMBEDD$
```

10. Rmdir command :-

- a. Delete any empty directory using this command.

```
ruhail@ruhail-Vostro-15-3568: ~/MI-15-EMBEDD
ruhail@ruhail-Vostro-15-3568:~/MI-15-EMBEDD$ mkdir newfolder
ruhail@ruhail-Vostro-15-3568:~/MI-15-EMBEDD$ ls
newfolder  Rajashri  README.md  Rishabh  Ruhail  Shashikant
ruhail@ruhail-Vostro-15-3568:~/MI-15-EMBEDD$
```

10.1 rm -r directory name :-

- a. If we want to delete non-empty folder, then we will have to use this command.

```
ruhail@ruhail-Vostro-15-3568: ~/MI-15-EMBEDD
ruhail@ruhail-Vostro-15-3568:~/MI-15-EMBEDD$ rm -r test
ruhail@ruhail-Vostro-15-3568:~/MI-15-EMBEDD$ ls
Rajashri  README.md  Rishabh  Ruhail  Shashikant
ruhail@ruhail-Vostro-15-3568:~/MI-15-EMBEDD$
```

11. Du command :-

- a. Du stands for disk usage, with the help of this command we can show the size of all directory and a particular directory.


```
ruhail@ruhail-Vostro-15-3568:~/MI-15-EMBEDD$ du
8      ./Shashikant
8      ./Ruhail
8      ./Rishabh
12     ./git/logs/refs/remotes/origin
16     ./git/logs/refs/remotes
16     ./git/logs/refs/heads
36     ./git/logs/refs
44     ./git/logs
4      ./git/branches
12     ./git/refs/remotes/origin
16     ./git/refs/remotes
4      ./git/refs/tags
16     ./git/refs/heads
40     ./git/refs
8      ./git/info
56     ./git/hooks
8      ./git/objects/40
8      ./git/objects/0b
8      ./git/objects/c9
12     ./git/objects/9e
8      ./git/objects/0a
8      ./git/objects/a6
8      ./git/objects/db
12     ./git/objects/c1
8      ./git/objects/51
24     ./git/objects/1a
8      ./git/objects/3f
8      ./git/objects/79
8      ./git/objects/43
8      ./git/objects/95
8      ./git/objects/af
8      ./git/objects/49
8      ./git/objects/03
8      ./git/objects/56
8      ./git/objects/18
8      ./git/objects/06
```

```
ruhail@ruhail-Vostro-15-3568:~/MI-15-EMBEDD$ du -b Ruhail
4114    Ruhail
ruhail@ruhail-Vostro-15-3568:~/MI-15-EMBEDD$
```

12. MV command :-

- The use of this command is to change the name of directory and file, and we can move the file and directory to one location to another.

Here we can see in the below image, our folder name is imp after using MV command our folder name has been change into important, basically MV command is also used to Rename our folder and file.

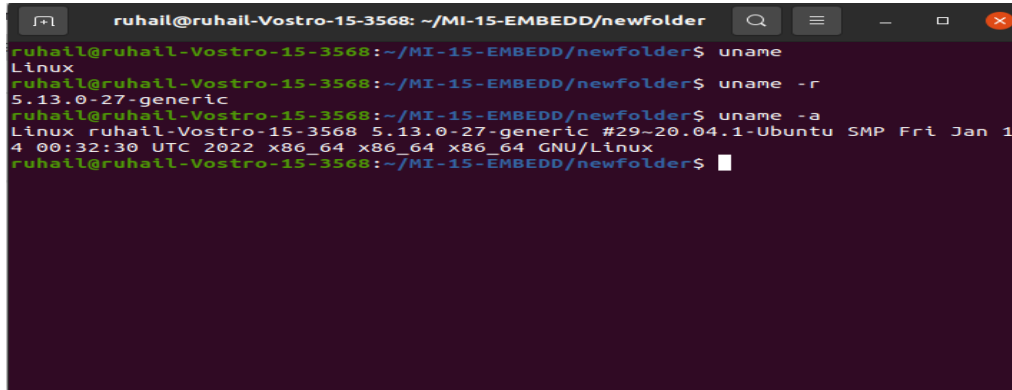
```
ruhail@ruhail-Vostro-15-3568: ~/newfolder
ruhail@ruhail-Vostro-15-3568:~/newfolder$ ls
imp test
ruhail@ruhail-Vostro-15-3568:~/newfolder$ mv imp important
ruhail@ruhail-Vostro-15-3568:~/newfolder$ ls
important test
ruhail@ruhail-Vostro-15-3568:~/newfolder$
```

13. Date command :-

- a. Date command is used for to view current date and time.

14. Uname command :-

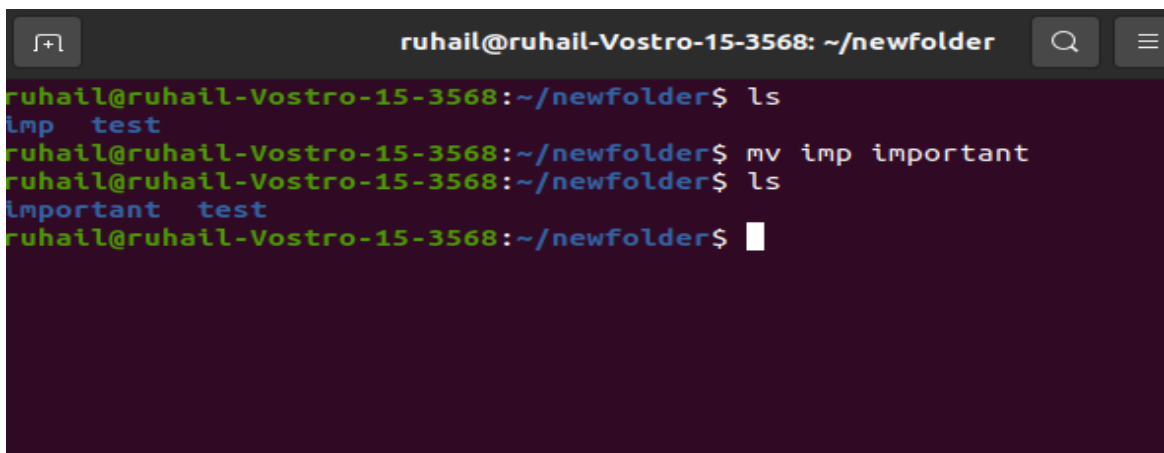
15. This command is used to find the information about the system. Like, which operating system you are using and the name of machine, kernel etc.

A terminal window titled 'ruhail@ruhail-Vostro-15-3568: ~/MI-15-EMBEDD/newfolder'. The user enters 'uname' and the output is 'Linux'. Then the user enters 'uname -r' and the output is '5.13.0-27-generic'. Finally, the user enters 'uname -a' and the output is 'Linux ruhail-Vostro-15-3568 5.13.0-27-generic #29~20.04.1-Ubuntu SMP Fri Jan 14 00:32:30 UTC 2022 x86_64 x86_64 x86_64 GNU/Linux'.

```
ruhail@ruhail-Vostro-15-3568: ~/MI-15-EMBEDD/newfolder$ uname
Linux
ruhail@ruhail-Vostro-15-3568: ~/MI-15-EMBEDD/newfolder$ uname -r
5.13.0-27-generic
ruhail@ruhail-Vostro-15-3568: ~/MI-15-EMBEDD/newfolder$ uname -a
Linux ruhail-Vostro-15-3568 5.13.0-27-generic #29~20.04.1-Ubuntu SMP Fri Jan 14 00:32:30 UTC 2022 x86_64 x86_64 x86_64 GNU/Linux
ruhail@ruhail-Vostro-15-3568: ~/MI-15-EMBEDD/newfolder$
```

16. Sudo command :-

- a. Sudo stands for “SuperUser Do”, this command is help to install packages, and we can perform other task using sudo command.

A terminal window titled 'ruhail@ruhail-Vostro-15-3568: ~/newfolder'. The user enters 'ls' and the output is 'imp test'. Then the user enters 'mv imp important' and the output is 'important test'. Finally, the user enters 'ls' and the output is 'important test'.

```
ruhail@ruhail-Vostro-15-3568: ~/newfolder$ ls
imp test
ruhail@ruhail-Vostro-15-3568: ~/newfolder$ mv imp important
ruhail@ruhail-Vostro-15-3568: ~/newfolder$ ls
important test
ruhail@ruhail-Vostro-15-3568: ~/newfolder$
```

17. Find command :-

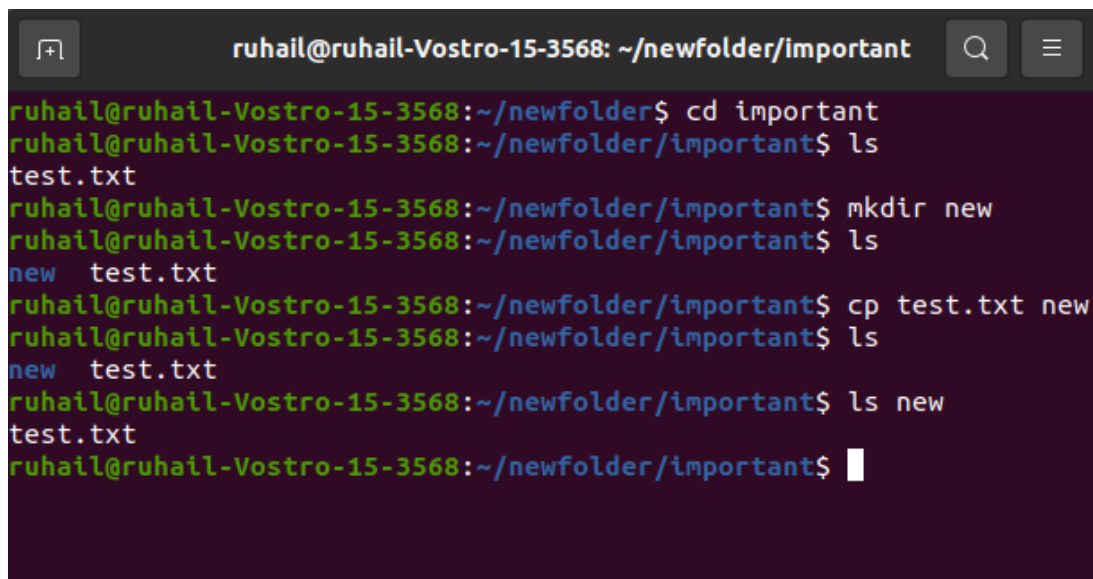
- a. This command is used to find all directories and files.
 - i. Ex :- find -name test.txt



```
ruhail@ruhail-Vostro-15-3568: ~  
ruhail@ruhail-Vostro-15-3568:~/newfolder/test$ cd ..  
ruhail@ruhail-Vostro-15-3568:~/newfolder$ cd ..  
ruhail@ruhail-Vostro-15-3568:~$ find -name demo  
./newfolder/test/demo  
ruhail@ruhail-Vostro-15-3568:~$
```

18. CP command :-

- a. CP stands for copy, if we want to copy any file current directory to another dictionary, so we can use this command.



```
ruhail@ruhail-Vostro-15-3568: ~/newfolder/important  
ruhail@ruhail-Vostro-15-3568:~/newfolder$ cd important  
ruhail@ruhail-Vostro-15-3568:~/newfolder/important$ ls  
test.txt  
ruhail@ruhail-Vostro-15-3568:~/newfolder/important$ mkdir new  
ruhail@ruhail-Vostro-15-3568:~/newfolder/important$ ls  
new test.txt  
ruhail@ruhail-Vostro-15-3568:~/newfolder/important$ cp test.txt new  
ruhail@ruhail-Vostro-15-3568:~/newfolder/important$ ls  
new test.txt  
ruhail@ruhail-Vostro-15-3568:~/newfolder/important$ ls new  
test.txt  
ruhail@ruhail-Vostro-15-3568:~/newfolder/important$
```

19. Banner command :-

- a. Banner command is used to write any name in star format.

[illegible]

20. Sudo apt clean command :-

- a. This command is help to remove junk file and temp file.

```

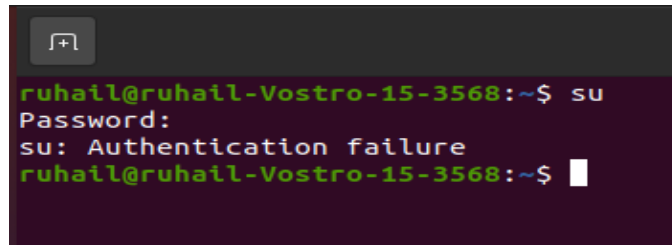
ruhall@ruhall-Vostro-15-3568:~$ sudo apt clean
[sudo] password for ruhall:
ruhall@ruhall-Vostro-15-3568:~$ sudo apt update
Hit:1 http://in.archive.ubuntu.com/ubuntu focal InRelease
Get:2 http://in.archive.ubuntu.com/ubuntu focal-updates InRelease [114 kB]
Get:3 http://security.ubuntu.com/ubuntu focal-security InRelease [114 kB]
Get:4 https://dl.google.com/linux/chrome/deb stable InRelease [1,811 B]
Get:5 https://dl.google.com/linux/chrome/deb stable/main amd64 Packages [1,093 B]
Get:6 http://in.archive.ubuntu.com/ubuntu focal-backports InRelease [108 kB]
Get:7 http://security.ubuntu.com/ubuntu focal-security/main amd64 Packages [1,178 kB]
Get:8 http://in.archive.ubuntu.com/ubuntu focal-updates/main i386 Packages [592 kB]
Get:9 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 Packages [1,510 kB]
Get:10 http://security.ubuntu.com/ubuntu focal-security/main i386 Packages [363 kB]
Get:11 http://security.ubuntu.com/ubuntu focal-security/main amd64 DEP-11 Metadata [40.7 kB]
Get:12 http://security.ubuntu.com/ubuntu focal-security/main amd64 c-n-f Metadata [9,132 B]
Get:13 http://security.ubuntu.com/ubuntu focal-security/universe i386 Packages [532 kB]
Get:14 http://security.ubuntu.com/ubuntu focal-security/universe amd64 Packages [677 kB]
Get:15 http://security.ubuntu.com/ubuntu focal-security/universe amd64 DEP-11 Metadata [66.5 kB]
Get:16 http://security.ubuntu.com/ubuntu focal-security/universe amd64 c-n-f Metadata [13.0 kB]
Get:17 http://security.ubuntu.com/ubuntu focal-security/multiverse amd64 DEP-11 Metadata [2,464 B]
Get:18 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 DEP-11 Metadata [282 kB]
Get:19 http://in.archive.ubuntu.com/ubuntu focal-updates/main DEP-11 48x48 Icons [60.8 kB]
Get:20 http://in.archive.ubuntu.com/ubuntu focal-updates/main DEP-11 64x64 Icons [98.3 kB]
Get:21 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 c-n-f Metadata [14.7 kB]
Get:22 http://in.archive.ubuntu.com/ubuntu focal-updates/universe i386 Packages [664 kB]
Get:23 http://in.archive.ubuntu.com/ubuntu focal-updates/universe amd64 Packages [894 kB]
Get:24 http://in.archive.ubuntu.com/ubuntu focal-updates/universe amd64 DEP-11 Metadata [364 kB]
Get:25 http://in.archive.ubuntu.com/ubuntu focal-updates/universe amd64 c-n-f Metadata [20.1 kB]
Get:26 http://in.archive.ubuntu.com/ubuntu focal-updates/multiverse amd64 DEP-11 Metadata [944 B]
Get:27 http://in.archive.ubuntu.com/ubuntu focal-backports/main amd64 DEP-11 Metadata [7,992 B]
Get:28 http://in.archive.ubuntu.com/ubuntu focal-backports/universe amd64 DEP-11 Metadata [12.2 kB]
Fetched 7,741 kB in 18s (442 kB/s)
Reading package lists... Done

```

21. Su command :-

- Suppose you are present in student user, and you want to switch to root user, then you can use this command,
- in simple word, this command is used to switch one user to another user.

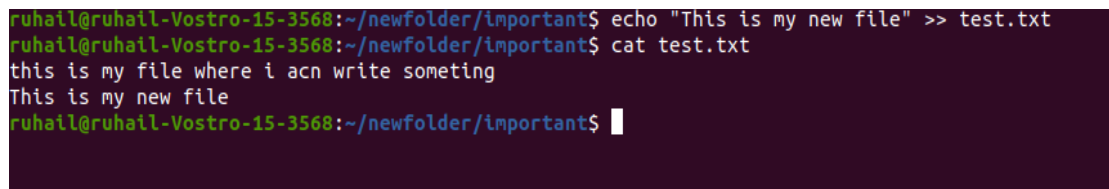
Example – [student@localhost ~]# su – root then enter

A terminal window with a dark purple background. The prompt is 'ruhail@ruhail-Vostro-15-3568:~\$'. The user enters 'su'. The prompt changes to 'Password:'. The user enters a password. The prompt changes to 'su: Authentication failure'. The user enters a new password. The prompt returns to 'ruhail@ruhail-Vostro-15-3568:~\$'.

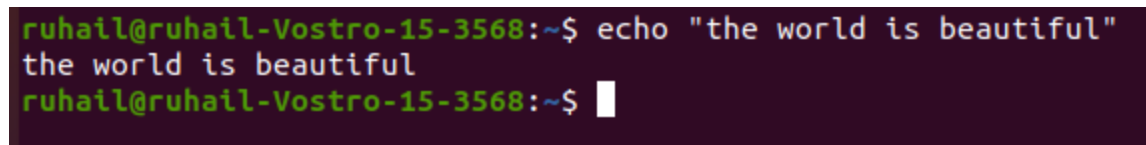
```
ruhail@ruhail-Vostro-15-3568:~$ su
Password:
su: Authentication failure
ruhail@ruhail-Vostro-15-3568:~$
```

22. Echo command :-

- With the help of this command, we can write anything in the file using this command, and we can be displaying data via passed argument string/text.

A terminal window with a dark purple background. The prompt is 'ruhail@ruhail-Vostro-15-3568:~/newfolder/important\$'. The user enters 'echo "This is my new file" >> test.txt'. The prompt changes to 'ruhail@ruhail-Vostro-15-3568:~/newfolder/important\$'. The user enters 'cat test.txt'. The output is 'this is my file where i acn write someting' and 'This is my new file'. The prompt returns to 'ruhail@ruhail-Vostro-15-3568:~/newfolder/important\$'.

```
ruhail@ruhail-Vostro-15-3568:~/newfolder/important$ echo "This is my new file" >> test.txt
ruhail@ruhail-Vostro-15-3568:~/newfolder/important$ cat test.txt
this is my file where i acn write someting
This is my new file
ruhail@ruhail-Vostro-15-3568:~/newfolder/important$
```

A terminal window with a dark purple background. The prompt is 'ruhail@ruhail-Vostro-15-3568:~\$'. The user enters 'echo "the world is beautiful"'. The output is 'the world is beautiful'. The prompt returns to 'ruhail@ruhail-Vostro-15-3568:~\$'.

```
ruhail@ruhail-Vostro-15-3568:~$ echo "the world is beautiful"
the world is beautiful
ruhail@ruhail-Vostro-15-3568:~$
```