

1) **cd /** - changes the current directory to the root directory of the file on your system.

```
ibab@IBAB-RA-Comp203:~$ cd Downloads
ibab@IBAB-RA-Comp203:~/Downloads$ cd /
ibab@IBAB-RA-Comp203:/$
```

cd ~ : changes the current directory to the home directory of user.

```
ibab@IBAB-RA-Comp203:~$ cd ./Downloads
ibab@IBAB-RA-Comp203:~/Downloads$ pwd
/home/ibab/Downloads
ibab@IBAB-RA-Comp203:~/Downloads$ cd ~
ibab@IBAB-RA-Comp203:~$ pwd
/home/ibab
ibab@IBAB-RA-Comp203:~$
```

cd works in the same way as **cd ~**. It changes the current directory to the parent or home directory.

cd . Has no such affect on the directory and it remains the same as the current directory

cd - changes to the previous directory before the last **cd** command

```
ibab@IBAB-RA-Comp203:~$ cd ./Documents
ibab@IBAB-RA-Comp203:~/Documents$ pwd
/home/ibab/Documents
ibab@IBAB-RA-Comp203:~/Documents$ cd
ibab@IBAB-RA-Comp203:~$ pwd
/home/ibab
ibab@IBAB-RA-Comp203:~$ cd Music
ibab@IBAB-RA-Comp203:~/Music$ pwd
/home/ibab/Music
ibab@IBAB-RA-Comp203:~/Music$ cd ..
ibab@IBAB-RA-Comp203:~$ pwd
/home/ibab
ibab@IBAB-RA-Comp203:~$ ls
Desktop    Downloads  Music      'old students'  Public  Templates  Videos
Documents  jmew       nwnname    Pictures         snap    testfile2
ibab@IBAB-RA-Comp203:~$ cd snap
ibab@IBAB-RA-Comp203:~/snap$ pwd
/home/ibab/snap
ibab@IBAB-RA-Comp203:~/snap$ cd .
ibab@IBAB-RA-Comp203:~/snap$ pwd
/home/ibab/snap
ibab@IBAB-RA-Comp203:~/snap$ cd -
/home/ibab/snap
ibab@IBAB-RA-Comp203:~/snap$ cd
ibab@IBAB-RA-Comp203:~$
```

cd .. changes the current directory to one directory up.

2) **ls -R** is a recursive list of all the files and directories on the system. It shows a hierarchial list of all the files in the current directory.

ls -r on the other hand reverses the files in a reverse alphabetical order and shows the files of the current directory.

```
app.R

'./old students/R/x86_64-pc-linux-gnu-library/4.3/cli/shiny/output':
app.R

'./old students/R/x86_64-pc-linux-gnu-library/4.3/cli/shiny/simple':
app.R

'./old students/R/x86_64-pc-linux-gnu-library/4.3/clipr':
DESCRIPTION doc help html INDEX Meta NAMESPACE NEWS.md R rstudio

'./old students/R/x86_64-pc-linux-gnu-library/4.3/clipr/doc':
developing-with-clipr.html developing-with-clipr.Rmd
developing-with-clipr.R index.html

'./old students/R/x86_64-pc-linux-gnu-library/4.3/clipr/help':
aliases.rds AnIndex clipr.rdb clipr.rdx paths.rds

'./old students/R/x86_64-pc-linux-gnu-library/4.3/clipr/html':
00Index.html R.css

'./old students/R/x86_64-pc-linux-gnu-library/4.3/clipr/Meta':
features.rds links.rds package.rds vignette.rds
hsearch.rds nsInfo.rds Rd.rds
```

```
ibab@IBAB-RA-Comp203:~$ ls -r
Videos testfile2 Templates snap Public Pictures 'old students' nwnname Music jmew Downloads Documents Desktop
ibab@IBAB-RA-Comp203:~$
```

3) The command **pwd** or present working directory allows the user to see the full path display of your current working directory.

```
ibab@IBAB-RA-Comp203:~$ ls
Desktop Documents Downloads jmew Music nwnname 'old students' Pictures Public snap Templates testfile2 Videos
ibab@IBAB-RA-Comp203:~$ pwd
/home/ibab
ibab@IBAB-RA-Comp203:~$ cd Public
ibab@IBAB-RA-Comp203:~/Public$ pwd
/home/ibab/Public
ibab@IBAB-RA-Comp203:~/Public$
```

4) The **ls -l** command lists down all the files in a detailed list. This command can be modified to **ls -ltr** and **ls -lt** where all the files are listed in a reverse order with the oldest being first.

```
ibab@IBAB-RA-Comp203:~$ ls -l
total 40
drwxr-xr-x  2 ibab ibab 4096 Jul 18  2025 Desktop
drwxr-xr-x  2 ibab ibab 4096 Jul 18  2025 Documents
drwxr-xr-x  3 ibab ibab 4096 Jul 23  2025 Downloads
-rw-rw-r--  1 ibab ibab   0 Jul 23  2025 jmew
drwxr-xr-x  2 ibab ibab 4096 Aug  2  18:16 Music
-rw-rw-r--  1 ibab ibab   0 Jul 23  2025 nwnname
drwxrwxr-x 21 ibab ibab 4096 Jul 17  2025 'old students'
drwxr-xr-x  3 ibab ibab 4096 Jul 23  2025 Pictures
drwxr-xr-x  2 ibab ibab 4096 Aug  2  18:16 Public
drwx----- 9 ibab ibab 4096 Jul 17  2025 snap
drwxr-xr-x  2 ibab ibab 4096 Aug  2  18:16 Templates
-rw-rw-r--  1 ibab ibab   0 Jul 23  2025 testfile2
drwxr-xr-x  2 ibab ibab 4096 Aug  2  18:16 Videos
ibab@IBAB-RA-Comp203:~$ ls -lt
total 40
drwxr-xr-x  3 ibab ibab 4096 Jul 23  2025 Downloads
-rw-rw-r--  1 ibab ibab   0 Jul 23  2025 jmew
drwxr-xr-x  3 ibab ibab 4096 Jul 23  2025 Pictures
-rw-rw-r--  1 ibab ibab   0 Jul 23  2025 testfile2
-rw-rw-r--  1 ibab ibab   0 Jul 23  2025 nwnname
drwxr-xr-x  2 ibab ibab 4096 Jul 18  2025 Documents
drwxr-xr-x  2 ibab ibab 4096 Jul 18  2025 Desktop
drwx----- 9 ibab ibab 4096 Jul 17  2025 snap
drwxrwxr-x 21 ibab ibab 4096 Jul 17  2025 'old students'
drwxr-xr-x  2 ibab ibab 4096 Aug  2  18:16 Music
drwxr-xr-x  2 ibab ibab 4096 Aug  2  18:16 Public
drwxr-xr-x  2 ibab ibab 4096 Aug  2  18:16 Templates
drwxr-xr-x  2 ibab ibab 4096 Aug  2  18:16 Videos
```

5) **ls -l** and **ls -ltr** both list down all the files in the current directory and sub directory in a detailed manner.

BUT

ls -l shows the detailed file information listed in a alphabetical order.

WHEREAS

ls -ltr shows files in long format sorted by modification time in reverse order, with newest files first.

```
ibab@IBAB-RA-Comp203:~$ ls -l
total 40
drwxr-xr-x  2 ibab ibab 4096 Jul 18  2025 Desktop
drwxr-xr-x  2 ibab ibab 4096 Jul 18  2025 Documents
drwxr-xr-x  3 ibab ibab 4096 Jul 23  2025 Downloads
-rw-rw-r--  1 ibab ibab   0 Jul 23  2025 jmew
drwxr-xr-x  2 ibab ibab 4096 Aug  2  18:16 Music
-rw-rw-r--  1 ibab ibab   0 Jul 23  2025 nwnname
drwxrwxr-x 21 ibab ibab 4096 Jul 17  2025 'old students'
drwxr-xr-x  3 ibab ibab 4096 Jul 23  2025 Pictures
drwxr-xr-x  2 ibab ibab 4096 Aug  2  18:16 Public
drwx----- 9 ibab ibab 4096 Jul 17  2025 snap
drwxr-xr-x  2 ibab ibab 4096 Aug  2  18:16 Templates
-rw-rw-r--  1 ibab ibab   0 Jul 23  2025 testfile2
drwxr-xr-x  2 ibab ibab 4096 Aug  2  18:16 Videos
ibab@IBAB-RA-Comp203:~$ ls -ltr
total 40
drwxr-xr-x  2 ibab ibab 4096 Aug  2  18:16 Videos
drwxr-xr-x  2 ibab ibab 4096 Aug  2  18:16 Templates
drwxr-xr-x  2 ibab ibab 4096 Aug  2  18:16 Public
drwxr-xr-x  2 ibab ibab 4096 Aug  2  18:16 Music
drwxrwxr-x 21 ibab ibab 4096 Jul 17  2025 'old students'
drwx----- 9 ibab ibab 4096 Jul 17  2025 snap
drwxr-xr-x  2 ibab ibab 4096 Jul 18  2025 Desktop
drwxr-xr-x  2 ibab ibab 4096 Jul 18  2025 Documents
-rw-rw-r--  1 ibab ibab   0 Jul 23  2025 nwnname
-rw-rw-r--  1 ibab ibab   0 Jul 23  2025 testfile2
drwxr-xr-x  3 ibab ibab 4096 Jul 23  2025 Pictures
-rw-rw-r--  1 ibab ibab   0 Jul 23  2025 jmew
drwxr-xr-x  3 ibab ibab 4096 Jul 23  2025 Downloads
```


- 6) **ls -aLF**: Shows all the files including the hidden files starting with .) in a long detailed format.
ls -A: Shows all files excluding the hidden ones.
ls -CF: Shows files with type indicators in a column format with symbols “/” for directories.

```
ibab@IBAB-RA-Comp203:~$ ls -aLF
total 272
drwxr-x--- 20 ibab ibab 4096 Aug 29 19:19 ./
drwxr-xr-x  6 root root 4096 Aug  5 14:38 ../
-rw-----  1 ibab ibab 43932 Aug 29 19:19 .bash_history
-rw-----  1 ibab ibab    0 Jan  3 2025 .bash_history-03027.tmp
-rw-----  1 ibab ibab    0 Mar 11 2025 .bash_history-04829.tmp
-rw-----  1 ibab ibab    0 Jul 18 2025 .bash_history-05963.tmp
-rw-----  1 ibab ibab    0 Oct 29 2024 .bash_history-11893.tmp
-rw-----  1 ibab ibab 44708 Apr 16 2025 .bash_history-19728.tmp
-rw-----  1 ibab ibab    0 Jul 21 2025 .bash_history-20703.tmp
-rw-r--r--  1 ibab ibab  220 Apr 19 19:56 .bash_logout
-rw-r--r--  1 ibab ibab 3823 Aug  5 15:57 .bashrc
drwx----- 21 ibab ibab 4096 Jan 27 2025 .cache/
drwx----- 21 ibab ibab 4096 Apr 16 2025 .config/
drwxr-xr-x  2 ibab ibab 4096 Jul 18 2025 Desktop/
drwxr-xr-x  2 ibab ibab 4096 Jul 18 2025 Documents/
drwxr-xr-x  3 ibab ibab 4096 Jul 23 2025 Downloads/
drwx----- 2 ibab ibab 4096 Aug 29 19:03 .gnupg/
drwxrwxr-x  4 ibab ibab 4096 Sep 12 2024 .java/
-rw-rw-r--  1 ibab ibab    0 Jul 23 2025 jmew
-rw-----  1 ibab ibab   20 Jul 21 2025 .lessht
drwx----- 4 ibab ibab 4096 Aug  2 18:16 .local/
drwxr-xr-x  2 ibab ibab 4096 Aug  2 18:16 Music/
-rw-rw-r--  1 ibab ibab 1492 Aug  2 18:17 .nvidia-settings-rc
-rw-rw-r--  1 ibab ibab    0 Jul 23 2025 nwnname
drwxrwxr-x 21 ibab ibab 4096 Jul 17 2025 'old students'/
drwxr-xr-x  3 ibab ibab 4096 Jul 23 2025 Pictures/
drwx----- 3 ibab ibab 4096 Jan 10 2025 .pki/
-rw-r--r--  1 ibab ibab  807 Apr 19 19:56 .profile
drwxr-xr-x  2 ibab ibab 4096 Aug  2 18:16 Public/
-rw-----  1 ibab ibab 1314 Jul 22 2025 .python_history
drwxrwxr-x  2 ibab ibab 4096 Jan 10 2025 .r/
-rw-rw-r--  1 ibab ibab 51316 Mar  7 2025 .RData
-rw-rw-r--  1 ibab ibab 24738 Mar  7 2025 .Rhistry
drwx----- 9 ibab ibab 4096 Jul 17 2025 snap/
drwx----- 2 ibab ibab 4096 Sep 23 2024 .ssh/
-rw-r--r--  1 ibab ibab    0 Aug  5 14:38 .sudo_as_admin_successful
drwxr-xr-x  2 ibab ibab 4096 Aug  2 18:16 Templates/
-rw-rw-r--  1 ibab ibab    0 Jul 23 2025 testfile2
drwxr-xr-x  2 ibab ibab 4096 Aug  2 18:16 Videos/
ibab@IBAB-RA-Comp203:~$
```

```
ibab@IBAB-RA-Comp203:~$ ls -A
.bash_history      .bash_history-11893.tmp  .bashrc  Documents  jmew      .nvidia-settings-rc  .pki      .r      .ssh      Videos
.bash_history-03027.tmp  .bash_history-19728.tmp  .cache   Downloads  .lessht   nwnname             .profile   .RData   .sudo_as_admin_successful
.bash_history-04829.tmp  .bash_history-20703.tmp  .config  .gnupg     .local    'old students'      Public     .Rhistry  Templates
.bash_history-05963.tmp  .bash_logout            Desktop  .java      Music     Pictures             .python_history  snap     testfile2
ibab@IBAB-RA-Comp203:~$
```

```
ibab@IBAB-RA-Comp203:~$ ls -CF
Desktop/  Documents/  Downloads/  jmew  Music/  nwnname  'old students'/
Pictures/  Public/  snap/  Templates/  testfile2  Videos/
```

7) We use the command **export PS1** to customize the terminal prompt with different colours according to our liking. We use the colours green for the directory path and blue for the username and hostname.

```
ibab@IBAB-RA-Comp203:~$ export PS1="\e[33;34m[\u@\h:\[\033[32m\]\w]\$ \e[0m"
[ibab@IBAB-RA-Comp203:~]$ ls
Desktop  jmew  'old students'  snap  Videos
Documents Music  Pictures        Templates
Downloads nwnname Public          testfile2
[ibab@IBAB-RA-Comp203:~]$
```

```
[ibab@IBAB-RA-Comp203:~]$ ls -lo
total 40
drwxr-xr-x  2 ibab 4096 Jul 18  2025 Desktop
drwxr-xr-x  2 ibab 4096 Aug 29 19:48 Documents
drwxr-xr-x  3 ibab 4096 Jul 23  2025 Downloads
-rw-rw-r--  1 ibab   0 Jul 23  2025 jmew
drwxr-xr-x  2 ibab 4096 Aug  2 18:16 Music
-rw-rw-r--  1 ibab   0 Jul 23  2025 nwnname
drwxrwxr-x 21 ibab 4096 Jul 17  2025 'old students'
drwxr-xr-x  3 ibab 4096 Jul 23  2025 Pictures
drwxr-xr-x  2 ibab 4096 Aug  2 18:16 Public
drwx----- 9 ibab 4096 Jul 17  2025 snap
drwxr-xr-x  2 ibab 4096 Aug  2 18:16 Templates
-rw-rw-r--  1 ibab   0 Jul 23  2025 testfile2
drwxr-xr-x  2 ibab 4096 Aug  2 18:16 Videos
[ibab@IBAB-RA-Comp203:~]$
```

8) **ls -l** is the command that is used to enter the list of files in current directory in long format along with the group information.

Here we use a modification command **ls -lo** to print the list of files without the group information

10) Here we created two two directories and do the following functions:

Enter the directory using one command.

Shift to another directory using one command.

Copy q1 to q1_copy

Delete the q1_copy.

```
ibab@IBAB-RA-Comp203:~$ mkdir -p /home/ibab/lab3/Q10/q1 /home/ibab/lab3/Q10/q2
ibab@IBAB-RA-Comp203:~$ ls -la /home/ibab/lab3/Q10
total 16
drwxrwxr-x 4 ibab ibab 4096 Aug 29 21:39 .
drwxrwxr-x 3 ibab ibab 4096 Aug 29 21:39 ..
drwxrwxr-x 2 ibab ibab 4096 Aug 29 21:39 q1
drwxrwxr-x 2 ibab ibab 4096 Aug 29 21:39 q2
ibab@IBAB-RA-Comp203:~$ pwd
/home/ibab
ibab@IBAB-RA-Comp203:~$ cd /home/ibab/lab3/Q10/q1
ibab@IBAB-RA-Comp203:~/lab3/Q10/q1$ pwd
/home/ibab/lab3/Q10/q1
ibab@IBAB-RA-Comp203:~/lab3/Q10/q1$ cd ../q2
ibab@IBAB-RA-Comp203:~/lab3/Q10/q2$ pwd
/home/ibab/lab3/Q10/q2
ibab@IBAB-RA-Comp203:~/lab3/Q10/q2$ cp -r ../q1 ../q1_copy
ibab@IBAB-RA-Comp203:~/lab3/Q10/q2$ ls -la
total 8
drwxrwxr-x 2 ibab ibab 4096 Aug 29 21:39 .
drwxrwxr-x 5 ibab ibab 4096 Aug 29 21:42 ..
ibab@IBAB-RA-Comp203:~/lab3/Q10/q2$ rm -ri ../q1_copy
rm: remove directory '../q1_copy'? y
ibab@IBAB-RA-Comp203:~/lab3/Q10/q2$
```

9) We begin by downloading the zip file and unzip it on the terminal.

We then perform the following functions:

- (a) list the files or directories starting with b
- (b) list the files or directories starting with any of the letters from a-k
- (c) list files or directories ending with d
- (d) list the files or directories containing the pattern with conf. How many are there?
- (e) Output the last three lines of the file /etc/resolve.conf
- (f) list files that begin with g or l

```
ibab@IBAB-RA-Comp203:~$ cd Downloads
ibab@IBAB-RA-Comp203:~/Downloads$ unzip etc.zip
Archive:  etc.zip
  creating: etc/
  inflating: etc/adduser.conf
  creating: etc/alsa/
  creating: etc/alternatives/
  inflating: etc/anacrontab
  inflating: etc/apg.conf
  creating: etc/apm/
  creating: etc/apparmor/
  creating: etc/apparmor.d/
  creating: etc/appport/
  creating: etc/apt/
  creating: etc/avahi/
  inflating: etc/bash.bashrc
  inflating: etc/bash_completion
  creating: etc/bash_completion.d/
  inflating: etc/bindresvport.blacklist
  creating: etc/binfmt.d/
  creating: etc/bluetooth/
  extracting: etc/brlapi.key
  creating: etc/brltty/
  inflating: etc/brltty.conf
  creating: etc/byobu/
  creating: etc/ca-certificates/
  inflating: etc/ca-certificates.conf
  creating: etc/chatscripts/
```

```

ibab@IBAB-RA-Comp203:~/Downloads/etc_learn1$ ls b*
bash.bashrc  bash_completion  bindresvport.blacklist  brlapi.key  brltty.conf

bash_completion.d:

binfmt.d:

bluetooth:

brltty:

byobu:
ibab@IBAB-RA-Comp203:~/Downloads/etc_learn1$ ls [a-k]*
adduser.conf      crypttab          fuse.conf         hosts
anacrontab        debconf.conf      gai.conf          hosts.allow
apg.conf          debian_version    gprofng.rc       hosts.deny
bash.bashrc       deluser.conf      group            inputrc
bash_completion   dhcpcd.conf       group-           issue
bindresvport.blacklist  e2scrub.conf      gshadow          issue.net
brlapi.key        environment       gshadow-        kerneloops.conf
brltty.conf       ethertypes        hdparm.conf
ca-certificates.conf  fprintd.conf     host.conf
crontab           fstab             hostname

```

```

krb5.conf.d:
ibab@IBAB-RA-Comp203:~/Downloads/etc_learn1$ ls *d
machine-id

apparmor.d:

bash_completion.d:

binfmt.d:

cloud:

colord:

credstore.encrypted:

cron.d:

debuginfod:

depmod.d:

environment.d:

fwupd:

glvnd:

grub.d:

ifplugd:

init.d:

insserv.conf.d:

krb5.conf.d:

ld.so.conf.d:

libibverbs.d:

libpaper.d:

```



```

ibab@IBAB-RA-Comp203:~/Downloads/etc_learn1$ ls *conf*
adduser.conf      dhcpcd.conf      host.conf         logrotate.conf
apg.conf          e2scrub.conf     kerneloops.conf  manpath.config
brltty.conf       fprintd.conf     ld.so.conf        mke2fs.conf
ca-certificates.conf fuse.conf         libao.conf        multipath.conf
debconf.conf      gai.conf          libaudit.conf
deluser.conf      hdparm.conf      locale.conf

dconf:

insserv.conf.d:

krb5.conf.d:

ld.so.conf.d:
ibab@IBAB-RA-Comp203:~/Downloads/etc_learn1$ ls *conf* | wc -l
30
ibab@IBAB-RA-Comp203:~/Downloads/etc_learn1$ tail -3 /etc/resolv.conf
nameserver 127.0.0.53
options edns0 trust-ad
search ibab.ac.in
ibab@IBAB-RA-Comp203:~/Downloads/etc_learn1$ ls g* l*
gai.conf      group-      ld.so.cache  libao.conf  locale.conf  logrotate.conf
gprofng.rc    gshadow    ld.so.conf   libaudit.conf locale.gen    lsb-release
group          gshadow-   legal        locale.alias login.defs

```