

EXERCISES

1. What does each of the following commands do? Print the output and attach it as part of your Lab3 document.

(a) `cd /`

```
ibab@IBAB-Workshop-Comp015:~$ cd Downloads/  
ibab@IBAB-Workshop-Comp015:~/Downloads$ pwd  
/home/ibab/Downloads  
ibab@IBAB-Workshop-Comp015:~/Downloads$ cd /  
ibab@IBAB-Workshop-Comp015:/$ pwd  
/  
ibab@IBAB-Workshop-Comp015:/$
```

(b) `cd ~`

```
ibab@IBAB-Workshop-Comp015:/$ cd  
ibab@IBAB-Workshop-Comp015:~$ cd Downloads/  
ibab@IBAB-Workshop-Comp015:~/Downloads$ cd ~  
ibab@IBAB-Workshop-Comp015:~$ pwd  
/home/ibab  
ibab@IBAB-Workshop-Comp015:~$
```

(c) `cd`

```
ibab@IBAB-Workshop-Comp015:~$ cd  
ibab@IBAB-Workshop-Comp015:~$ pwd  
/home/ibab  
ibab@IBAB-Workshop-Comp015:~$
```

(d) `cd ..`

```
ibab@IBAB-Workshop-Comp015:~$ cd  
ibab@IBAB-Workshop-Comp015:~$ cd ..  
ibab@IBAB-Workshop-Comp015:/home$
```

(e) `cd .`

```
ibab@IBAB-Workshop-Comp015:~$ cd Downloads/
ibab@IBAB-Workshop-Comp015:~/Downloads$ mkdir test_lab3
ibab@IBAB-Workshop-Comp015:~/Downloads$ cd /test_lab3
bash: cd: /test_lab3: No such file or directory
ibab@IBAB-Workshop-Comp015:~/Downloads$ ls
haritest1  lab3.pdf  testfile2  testfiles  test_lab3
ibab@IBAB-Workshop-Comp015:~/Downloads$ cd Downloads/test_lab3
bash: cd: Downloads/test_lab3: No such file or directory
ibab@IBAB-Workshop-Comp015:~/Downloads$ cd Downloads/test_lab3/
bash: cd: Downloads/test_lab3/: No such file or directory
ibab@IBAB-Workshop-Comp015:~/Downloads$ cd
ibab@IBAB-Workshop-Comp015:~$ cd /home/ibab/Downloads/test_lab3
ibab@IBAB-Workshop-Comp015:~/Downloads/test_lab3$ cd .
ibab@IBAB-Workshop-Comp015:~/Downloads/test_lab3$
```

(f) `cd -`

```
ibab@IBAB-Workshop-Comp015:~/Downloads/test_lab3$ cd -
/home/ibab/Downloads/test_lab3
ibab@IBAB-Workshop-Comp015:~/Downloads/test_lab3$
```

2. When using the `ls` command, what is the difference between `-R` option and `-r` option?

```
ibab@IBAB-Workshop-Comp015:~$ ls -R | more
.:
Desktop
Documents
Downloads
games
lab2_hariharan.pdf
Lab submissions
linux course
Music
Pictures
Public
PycharmProjects
snap
Templates
testdir
testfile2
testfiles
Videos

./Desktop:
Lab submissions

./Desktop/Lab submissions:
Hariharan.pdf.odt
Screenshot from 2025-07-17 15-05-07.png

./Documents:

./Downloads:
haritest1
lab3.pdf
testfile2
testfiles
test_lab3

./Downloads/haritest1:

./Downloads/test_lab3:

./games:
testdir

./games/testdir:
```

```
ibab@IBAB-Workshop-Comp015:~$ cd
ibab@IBAB-Workshop-Comp015:~$ ls -r
Videos      Templates      Pictures      lab2_hariharan.pdf  Desktop
testfiles   snap           Music        games
testfile2   PycharmProjects 'linux course' Downloads
testdir     Public         'Lab submissions' Documents
ibab@IBAB-Workshop-Comp015:~$
```

3. How do I find out what directory I am currently in?

```
ibab@IBAB-Workshop-Comp015:~$ pwd
/home/ibab
ibab@IBAB-Workshop-Comp015:~$
```

4. How do I list files sorted by modification time, but with oldest first?

```
ibab@IBAB-Workshop-Comp015:~$ ls -t
Downloads  testdir      lab2_hariharan.pdf  Documents  Videos
Pictures   games        Desktop             Music
testfile2  'linux course' snap             Public
testfiles  'Lab submissions' PycharmProjects  Templates
ibab@IBAB-Workshop-Comp015:~$ ls -tr
Videos      Documents    lab2_hariharan.pdf  testdir     Downloads
Templates   PycharmProjects 'Lab submissions'  testfiles
Public       snap         'linux course'      testfile2
Music        Desktop      games                Pictures
```

5. What is the difference between (explain in your own words) `ls -ltr` and `ls -lr`?

```
ibab@IBAB-Workshop-Comp015:~$ ls -ltr
total 300
drwxr-xr-x 2 ibab ibab 4096 Jul 16 15:47 Videos
drwxr-xr-x 2 ibab ibab 4096 Jul 16 15:47 Templates
drwxr-xr-x 2 ibab ibab 4096 Jul 16 15:47 Public
drwxr-xr-x 2 ibab ibab 4096 Jul 16 15:47 Music
drwxr-xr-x 2 ibab ibab 4096 Jul 16 15:47 Documents
drwxrwxr-x 3 ibab ibab 4096 Jul 16 17:00 PycharmProjects
drwx----- 6 ibab ibab 4096 Jul 17 15:12 snap
drwxr-xr-x 3 ibab ibab 4096 Jul 18 14:48 Desktop
-rw-rw-r-- 1 ibab ibab 246861 Jul 18 17:30 lab2_hariharan.pdf
drwxrwxr-x 2 ibab ibab 4096 Jul 18 17:50 'Lab submissions'
drwxrwxr-x 2 ibab ibab 4096 Jul 21 11:45 'linux course'
drwxrwxr-x 3 ibab ibab 4096 Jul 21 12:12 games
drwxrwxr-x 2 ibab ibab 4096 Jul 21 12:12 testdir
-rw-rw-r-- 1 ibab ibab 0 Jul 23 09:21 testfiles
-rw-rw-r-- 1 ibab ibab 0 Jul 23 09:28 testfile2
drwxr-xr-x 3 ibab ibab 4096 Jul 23 09:30 Pictures
drwxr-xr-x 4 ibab ibab 4096 Jul 24 14:58 Downloads
ibab@IBAB-Workshop-Comp015:~$ ls -lr
total 300
drwxr-xr-x 2 ibab ibab 4096 Jul 16 15:47 Videos
-rw-rw-r-- 1 ibab ibab 0 Jul 23 09:21 testfiles
-rw-rw-r-- 1 ibab ibab 0 Jul 23 09:28 testfile2
drwxrwxr-x 2 ibab ibab 4096 Jul 21 12:12 testdir
drwxr-xr-x 2 ibab ibab 4096 Jul 16 15:47 Templates
drwx----- 6 ibab ibab 4096 Jul 17 15:12 snap
drwxrwxr-x 3 ibab ibab 4096 Jul 16 17:00 PycharmProjects
drwxr-xr-x 2 ibab ibab 4096 Jul 16 15:47 Public
drwxr-xr-x 3 ibab ibab 4096 Jul 23 09:30 Pictures
drwxr-xr-x 2 ibab ibab 4096 Jul 16 15:47 Music
drwxrwxr-x 2 ibab ibab 4096 Jul 21 11:45 'linux course'
drwxrwxr-x 2 ibab ibab 4096 Jul 18 17:50 'Lab submissions'
-rw-rw-r-- 1 ibab ibab 246861 Jul 18 17:30 lab2_hariharan.pdf
drwxrwxr-x 3 ibab ibab 4096 Jul 21 12:12 games
drwxr-xr-x 4 ibab ibab 4096 Jul 24 14:58 Downloads
drwxr-xr-x 2 ibab ibab 4096 Jul 16 15:47 Documents
drwxr-xr-x 3 ibab ibab 4096 Jul 18 14:48 Desktop
ibab@IBAB-Workshop-Comp015:~$
```


6. What is the difference between `ls -aLF`, `ls -A` and `ls -CF`?

```
ibab@IBAB-Workshop-Comp015:~$ ls -aLF
total 360
drwxr-x--- 23 ibab ibab 4096 Jul 23 09:54 ./
drwxr-xr-x  6 root root 4096 Jul 15 16:57 ../
-rw-----  1 ibab ibab 2311 Jul 24 14:39 .bash_history
-rw-r--r--  1 ibab ibab  220 Jul 15 16:57 .bash_logout
-rw-r--r--  1 ibab ibab 3771 Jul 15 16:57 .bashrc
drwx----- 19 ibab ibab 4096 Jul 18 14:48 .cache/
drwx----- 19 ibab ibab 4096 Jul 17 16:57 .config/
drwxr-xr-x  3 ibab ibab 4096 Jul 18 14:48 Desktop/
drwxr-xr-x  2 ibab ibab 4096 Jul 16 15:47 Documents/
drwxr-xr-x  4 ibab ibab 4096 Jul 24 14:58 Downloads/
drwxrwxr-x  3 ibab ibab 4096 Jul 21 12:12 games/
drwx-----  2 ibab ibab 4096 Jul 17 14:44 .gnupg/
drwxrwxr-x  4 ibab ibab 4096 Jul 16 16:59 .java/
-rw-rw-r--  1 ibab ibab 246861 Jul 18 17:30 lab2_hariharan.pdf
drwxrwxr-x  2 ibab ibab 4096 Jul 18 17:50 'Lab submissions'/
-rw-----  1 ibab ibab   20 Jul 21 11:31 .lessht
drwxrwxr-x  2 ibab ibab 4096 Jul 21 11:45 'linux course'/
drwx-----  3 ibab ibab 4096 Jul 16 15:47 .local/
drwxr-xr-x  2 ibab ibab 4096 Jul 16 15:47 Music/
drwxr-xr-x  3 ibab ibab 4096 Jul 23 09:30 Pictures/
drwx-----  3 ibab ibab 4096 Jul 16 15:47 .pki/
-rw-r--r--  1 ibab ibab  807 Jul 15 16:57 .profile
drwxr-xr-x  2 ibab ibab 4096 Jul 16 15:47 Public/
drwxrwxr-x  3 ibab ibab 4096 Jul 16 17:00 PycharmProjects/
-rw-----  1 ibab ibab   42 Jul 17 13:04 .python_history
drwx-----  6 ibab ibab 4096 Jul 17 15:12 snap/
drwx-----  2 ibab ibab 4096 Jul 17 14:44 .ssh/
drwxr-xr-x  2 ibab ibab 4096 Jul 16 15:47 Templates/
drwxrwxr-x  2 ibab ibab 4096 Jul 21 12:12 testdir/
-rw-rw-r--  1 ibab ibab    0 Jul 23 09:28 testfile2
-rw-rw-r--  1 ibab ibab    0 Jul 23 09:21 testfiles
drwxr-xr-x  2 ibab ibab 4096 Jul 16 15:47 Videos/
ibab@IBAB-Workshop-Comp015:~$
```

```
ibab@IBAB-Workshop-Comp015:~$ ls -A
.bash_history  games      Music      .ssh
.bash_logout   .gnupg     Pictures   Templates
.bashrc        .java      .pki       testdir
.cache         lab2_hariharan.pdf .profile   testfile2
.config        'Lab submissions' Public     testfiles
Desktop       .lessht    PycharmProjects Videos
Documents     'linux course' .python_history
Downloads     .local     snap
```

```

ibab@IBAB-Workshop-Comp015:~$ ls -CF
Desktop/      lab2_hariharan.pdf  Pictures/      Templates/
Documents/    'Lab submissions'/  Public/        testdir/
Downloads/    'linux course'/    PycharmProjects/ testfile2
games/        Music/              snap/          testfiles
ibab@IBAB-Workshop-Comp015:~$

```

7. Describe how you would use a combination of color codes in the command prompt appearance.
8. Find the option of `ls` that lists the contents of a directory in the long format, but without the primary group information.

```

ibab@IBAB-Workshop-Comp015:~$ ls -lGa
total 360
drwxr-x--- 23 ibab  4096 Jul 23 09:54 .
drwxr-xr-x  6 root  4096 Jul 15 16:57 ..
-rw-----  1 ibab  2311 Jul 24 14:39 .bash_history
-rw-r--r--  1 ibab   220 Jul 15 16:57 .bash_logout
-rw-r--r--  1 ibab  3771 Jul 15 16:57 .bashrc
drwx----- 19 ibab  4096 Jul 18 14:48 .cache
drwx----- 19 ibab  4096 Jul 17 16:57 .config
drwxr-xr-x  3 ibab  4096 Jul 18 14:48 Desktop
drwxr-xr-x  2 ibab  4096 Jul 16 15:47 Documents
drwxr-xr-x  4 ibab  4096 Jul 24 14:58 Downloads
drwxrwxr-x  3 ibab  4096 Jul 21 12:12 games
drwx-----  2 ibab  4096 Jul 17 14:44 .gnupg
drwxrwxr-x  4 ibab  4096 Jul 16 16:59 .java
-rw-rw-r--  1 ibab 246861 Jul 18 17:30 lab2_hariharan.pdf
drwxrwxr-x  2 ibab  4096 Jul 18 17:50 'Lab submissions'
-rw-----  1 ibab    20 Jul 21 11:31 .lessht
drwxrwxr-x  2 ibab  4096 Jul 21 11:45 'linux course'
drwx-----  3 ibab  4096 Jul 16 15:47 .local
drwxr-xr-x  2 ibab  4096 Jul 16 15:47 Music
drwxr-xr-x  3 ibab  4096 Jul 23 09:30 Pictures
drwx-----  3 ibab  4096 Jul 16 15:47 .pki
-rw-r--r--  1 ibab   807 Jul 15 16:57 .profile
drwxr-xr-x  2 ibab  4096 Jul 16 15:47 Public
drwxrwxr-x  3 ibab  4096 Jul 16 17:00 PycharmProjects
-rw-----  1 ibab    42 Jul 17 13:04 .python_history
drwx-----  6 ibab  4096 Jul 17 15:12 snap
drwx-----  2 ibab  4096 Jul 17 14:44 .ssh
drwxr-xr-x  2 ibab  4096 Jul 16 15:47 Templates
drwxrwxr-x  2 ibab  4096 Jul 21 12:12 testdir
-rw-rw-r--  1 ibab     0 Jul 23 09:28 testfile2
-rw-rw-r--  1 ibab     0 Jul 23 09:21 testfiles
drwxr-xr-x  2 ibab  4096 Jul 16 15:47 Videos
ibab@IBAB-Workshop-Comp015:~$

```

9. Download the `etc.zip` folder sent to you by email, unzip it and rename it as `etc_learn`.

Change your directory to `etc_learn`. In this directory do the following using the necessary wildcards:

(i) List the files or directories starting with `b`

```
ibab@IBAB-Workshop-Comp015:~$ cd /home/ibab/Downloads
ibab@IBAB-Workshop-Comp015:~/Downloads$ ls
etc  etc.zip  haritest1  lab3.pdf  testfile2  testfiles  test_lab3
ibab@IBAB-Workshop-Comp015:~/Downloads$ ls
etc_learn.  etc.zip  haritest1  lab3.pdf  testfile2  testfiles  test_lab3
ibab@IBAB-Workshop-Comp015:~/Downloads$ cd
ibab@IBAB-Workshop-Comp015:~$ cd /home/ibab/Downloads/etc_learn.
ibab@IBAB-Workshop-Comp015:~/Downloads/etc_learn.$ ls b*
bash.bashrc  bash_completion  bindresvport.blacklist  brlapi.key  brltty.conf

bash_completion.d:

binfmt.d:

bluetooth:

brltty:

byobu:
ibab@IBAB-Workshop-Comp015:~/Downloads/etc_learn.$
```

(ii) List the files or directories starting with any of the letters from a-k

```
ibab@IBAB-Workshop-Comp015:~/Downloads/etc_learn.$ 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

alsa:

alternatives:

apm:

apparmor:

apparmor.d:

apport:

apt:

avahi:

bash_completion.d:

binfmt.d:

bluetooth:

brltty:

byobu:

ca-certificates:
```

(iii) List files or directories ending with d

```
ibab@IBAB-Workshop-Comp015:~/Downloads/etc_learn.$ 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:
logrotate.d:
```


(iv) List the files or directories having anything to do with conf. How many are there?

```
ibab@IBAB-Workshop-Comp015:~/Downloads/etc_learn.$ ls [conf.]*
ca-certificates.conf  crontab  crypttab  fprintd.conf  fstab  fuse.conf

ca-certificates:
chatscripts:
cloud:
colord:
console-setup:
cracklib:
credstore:
credstore.encrypted:
cron.d:
cron.daily:
cron.hourly:
cron.monthly:
cron.weekly:
cron.yearly:
cryptsetup-initramfs:
cups:
cupshelpers:
fonts:
fwupd:
```

(v) Output the last three lines of the file /etc/resolve.conf

10. Create the following directories:

/home/ibab/lab3/Q10/q1 and /home/ibab/lab3/Q10/q2

Use one command. Attach a screenshot of the commands and the outputs of this and add to your Lab3 document.

(i) create the q1 directory using one command

```
ibab@IBAB-Workshop-Comp015:~$ mkdir -p /home/ibab/lab3/Q10/q1 /home/ibab/lab3/Q10/q2
ibab@IBAB-Workshop-Comp015:~$ cd /home/ibab/lab3/Q10/q1
```

(ii) Change directories from q1 to q2 using one command

```
ibab@IBAB-Workshop-Comp015:~$ cd /home/ibab/lab3/Q10/q1
ibab@IBAB-Workshop-Comp015:~/lab3/Q10/q1$ cd ../q2
ibab@IBAB-Workshop-Comp015:~/lab3/Q10/q2$
```

(iii) Copy the q1 directory to q1_copy

```
ibab@IBAB-Workshop-Comp015:~/lab3/Q10/q2$ cp -r /home/ibab/lab3/Q10/q1 /home/ibab/lab3/Q10/q1_copy
```

(iv) Delete the q1_copy interactively

```
ibab@IBAB-Workshop-Comp015:~/lab3/Q10/q2$ rm -ri /home/ibab/lab3/Q10/q1_copy
rm: remove directory '/home/ibab/lab3/Q10/q1_copy'? y
ibab@IBAB-Workshop-Comp015:~/lab3/Q10/q2$
```