

1.

```
> ls -la
total 344
drwxr-xr-x 12 migueljrm95 migueljrm95 4096 Feb  4 18:38 .
drwxr-xr-x  4 root         root         4096 Jan 28 19:09 ..
-rw----- 1 migueljrm95 migueljrm95  1710 Dec 18 13:45 .bash_history
-rw-r--r-- 1 migueljrm95 migueljrm95   220 Dec 18 11:26 .bash_logout
-rw-r--r-- 1 migueljrm95 migueljrm95  3771 Dec 18 11:26 .bashrc
drwxr-xr-x  6 migueljrm95 migueljrm95  4096 Feb  4 18:38 .cache
drwxr-xr-x  6 migueljrm95 migueljrm95  4096 Jan 17 13:15 .config
-rw-r--r-- 1 migueljrm95 migueljrm95    63 Dec 18 18:27 .gitconfig
drwxr-xr-x  2 migueljrm95 migueljrm95  4096 Dec 18 11:26 .landscape
drwx----- 5 migueljrm95 migueljrm95  4096 Dec 21 16:42 .local
-rw-r--r-- 1 migueljrm95 migueljrm95     0 Dec 18 11:26 .motd_shown
drwxr-xr-x 12 migueljrm95 migueljrm95  4096 Jan 27 17:14 .oh-my-zsh
-rw-r--r-- 1 migueljrm95 migueljrm95 87565 Dec 18 14:44 .p10k.zsh
-rw-r--r-- 1 migueljrm95 migueljrm95   807 Dec 18 11:26 .profile
-rw-r--r-- 1 migueljrm95 migueljrm95    10 Dec 18 13:44 .shell.pre-oh-my-zsh
drwxr-xr-x  3 migueljrm95 migueljrm95  4096 Dec 18 12:58 .sts4
-rw-r--r-- 1 migueljrm95 migueljrm95     0 Dec 18 12:01 .sudo_as_admin_successful
drwxr-xr-x  3 migueljrm95 migueljrm95  4096 Dec 18 12:58 .tooling
drwxr-xr-x  5 migueljrm95 migueljrm95  4096 Dec 18 12:24 .vscode-server
-rw-r--r-- 1 migueljrm95 migueljrm95   183 Dec 18 12:24 .wget-hsts
-rw-r--r-- 1 migueljrm95 migueljrm95 49006 Dec 18 13:34 .zcompdump
-rw-r--r-- 1 migueljrm95 migueljrm95 50531 Jan 27 17:14 .zcompdump-DESKTOP-OUP6HIH-5.8
-rw----- 1 migueljrm95 migueljrm95 24975 Feb  4 18:38 .zsh_history
-rw-r--r-- 1 migueljrm95 migueljrm95  4137 Dec 18 14:30 .zshrc
-rw-r--r-- 1 migueljrm95 migueljrm95  3548 Dec 18 13:42 .zshrc.pre-oh-my-zsh
-rw-r--r-- 1 migueljrm95 migueljrm95    79 Jan 23 12:31 actors
-rw-r--r-- 1 migueljrm95 migueljrm95   276 Jan 23 12:28 awards
```

2.

```
> touch perm1.

> ls -l | grep perm1.
-rw-r--r-- 1 migueljrm95 migueljrm95     0 Feb  4 18:39 perm1.
```

3.

```
> chmod 644 perm1.
```

```
> chmod u=wr,a=r perm1.
```

4.

```
> touch script1.sh

> nano script1.sh

> ls -l | grep script1.sh
-rw-r--r-- 1 migueljrm95 migueljrm95   22 Feb  4 18:50 script1.sh
```

5.

```
> chmod u-r script1.sh
> nano script1.sh
[ Error reading script1.sh: Permission denied ]
> cat script1.sh
cat: script1.sh: Permission denied
```

6.

```
> chmod u-w script1.sh
> cat script1.sh >> "new line"
cat: script1.sh: Permission denied
```

It is not possible because we have not got permissions

7.

```
> chmod 700 script1.sh
```

8.

```
> nano script1.sh
GNU nano 4.8
#!/bin/bash
clear
who
new line
```

9.

```
> chmod u-r script1.sh
[ Error reading script1.sh: Permission denied ]
```

10.

```
> mkdir systems > chmod u-w systems
```

```
> cp script1.sh systems  
cp: cannot open 'script1.sh' for reading: Permission denied
```

```
> chmod u=wrwx script1.sh  
> cp script1.sh systems  
cp: cannot create regular file 'systems/script1.sh': Permission denied
```

11.

```
> chmod u+w systems > cp script1.sh systems
```

12.

```
> chmod u-r systems  
> ls -l systems  
ls: cannot open directory 'systems': Permission denied
```

13.

```
> chmod 744 systems
```

14.

```
> chmod a-x systems  
> bash systems/script1.sh  
bash: systems/script1.sh: Permission denied  
> cd systems  
cd: permission denied: systems
```

15.

```
> chmod u+x systems
```

16.

```
> touch systems/lucy && touch systems/charles
```

```
> chmod o+wx systems/charles
```

17.

```
> chmod 564 systems/lucy
```

```
> chmod u=rx,g=rw,o=w systems/lucy
```

18.

```
> sudo su  
[sudo] password for migueljrm95:  
root@DESKTOP-OUP6HIH:/home/migueljrm95#
```

```
root@DESKTOP-OUP6HIH:/home/migueljrm95# chown root systems/charles  
root@DESKTOP-OUP6HIH:/home/migueljrm95#
```

```
$ su - migueljrm95  
Password:
```

```
> chmod o-rx systems/charles  
chmod: changing permissions of 'systems/charles': Operation not permitted
```

It is not possible because the owner of the file is root now

19.

```
> sudo su  
root@DESKTOP-OUP6HIH:/home/migueljrm95# chmod 777 systems/charles  
root@DESKTOP-OUP6HIH:/home/migueljrm95#
```

20.

```
> chmod uo=,g=rw systems/lucy
```

```
> vim systems/lucy
```

```
~  
"systems/lucy" [Permission Denied]
```

21.

```
> sudo su  
root@DESKTOP-OUP6HIH:/home/migueljrm95# groupadd -g 2020 newgroup  
root@DESKTOP-OUP6HIH:/home/migueljrm95# chown root:newgroup systems/lucy
```

22.

```
root@DESKTOP-OUP6HIH:/home/migueljrm95# usermod -g 2020 migueljrm95  
  
root@DESKTOP-OUP6HIH:/home/migueljrm95# groups migueljrm95  
migueljrm95 : newgroup adm dialout cdrom floppy sudo audio dip video plugdev netdev  
root@DESKTOP-OUP6HIH:/home/migueljrm95# su - migueljrm95
```

```
> vim systems/lucy  
vim  
hello world
```

23.

```
> sudo su  
root@DESKTOP-OUP6HIH:/home/migueljrm95# chmod a=r systems/lucy
```

24.

```
root@DESKTOP-OUP6HIH:/home/migueljrm95# chmod -R 744 systems
```

25.

```
root@DESKTOP-OUP6HIH:/home/migueljrm95# chown -R root systems
```

```
root@DESKTOP-OUP6HIH:/home/migueljrm95/systems# ls -l  
total 12  
-rwxr--r-- 1 root newgroup 0 Feb 5 18:16 charles  
drwxr--r-- 3 root newgroup 4096 Jan 17 12:35 earth  
-rwxr--r-- 1 root newgroup 0 Jan 17 12:42 last  
-rwxr--r-- 1 root newgroup 0 Jan 17 12:42 list  
-rwxr--r-- 1 root newgroup 12 Feb 6 17:50 lucy  
-rwxr--r-- 1 root newgroup 0 Jan 17 12:42 luggage  
-rwxr--r-- 1 root newgroup 31 Feb 5 18:10 script1.sh  
-rwxr--r-- 1 root newgroup 0 Jan 17 12:12 student1.txt  
-rwxr--r-- 1 root newgroup 0 Jan 17 12:12 student2.txt  
-rwxr--r-- 1 root newgroup 0 Jan 17 12:12 student3.txt
```