

1.- Create a user with user group

```
hasan:x:1000:1003:Hasan:/home/hasan:/bin/bash
jihad:x:1001:1003::/home/jihad:/bin/sh
[hasan@parrot]~
```

- Create two directories in user's home directory named os-concepts and ubuntu-is-the-best

```
[hasan@parrot]~
└─ $mkdir os-concepts
[hasan@parrot]~
└─ $ls
Desktop    Downloads  os-concepts  Public      Videos
Documents  Music      Pictures     Templates
[hasan@parrot]~
└─ $mkdir ubuntu-is-the-best
[hasan@parrot]~
└─ $ls
Desktop    Downloads  os-concepts  Public      ubuntu-is-the-best
Documents  Music      Pictures     Templates   Videos
```

- Create two files on each directory

```
[hasan@parrot]~
└─ $cd os-concepts
[hasan@parrot]~/os-concepts
└─ $touch os.txt
[hasan@parrot]~/os-concepts
└─ $touch os1.txt
[hasan@parrot]~/os-concepts
└─ $ls
os1.txt  os.txt
[hasan@parrot]~/os-concepts
└─ $cd ..
[hasan@parrot]~
└─ $cd ubuntu-is-the-best
[hasan@parrot]~/ubuntu-is-the-best
└─ $touch ubuntu.txt
[hasan@parrot]~/ubuntu-is-the-best
└─ $touch ubuntu1.txt
[hasan@parrot]~/ubuntu-is-the-best
└─ $ls
ubuntu1.txt  ubuntu.txt
```

- List the files with detailed information (including file permission)

```
[hasan@parrot]-[~/ubuntu-is-the-best]
└─ $ls -l
total 0
-rw-r--r-- 1 hasan hasan 0 Oct  6 11:38 ubuntu1.txt
-rw-r--r-- 1 hasan hasan 0 Oct  6 11:38 ubuntu.txt

[hasan@parrot]-[~/os-concepts]
└─ $ls -l
total 0
-rw-r--r-- 1 hasan miraz 0 Oct  6 11:37 os1.txt
-rw-r--r-- 1 hasan miraz 0 Oct  6 11:36 os.txt
```

- update file permission so that owner can read,write and group can only read and others can not do anything

```
[x]-[hasan@parrot]-[~/os-concepts]
└─ $sudo chmod 640 os1.txt os.txt

[hasan@parrot]-[~/os-concepts]
└─ $ls -l
total 0
-rw-r----- 1 hasan miraz 0 Oct  6 11:37 os1.txt
-rw-r----- 1 hasan miraz 0 Oct  6 11:36 os.txt

[hasan@parrot]-[~/ubuntu-is-the-best]
└─ $sudo chmod 640 ubuntu1.txt ubuntu.txt

[hasan@parrot]-[~/ubuntu-is-the-best]
└─ $ls -l
total 0
-rw-r----- 1 hasan miraz 0 Oct  6 11:38 ubuntu1.txt
-rw-r----- 1 hasan miraz 0 Oct  6 11:38 ubuntu.txt
```

Create another group

```
[hasan@parrot]-[~/ubuntu-is-the-best]
└─ $sudo groupadd miraz
```

```
hasan:x:1003:
miraz:x:1004:
```

- Update file ownership to the newly created group

```
[hasan@parrot]-[~/ubuntu-is-the-best]
└─ $sudo chown hasan:miraz ubuntu.txt
[hasan@parrot]-[~/ubuntu-is-the-best]
└─ $sudo chown hasan:miraz ubuntu1.txt
[hasan@parrot]-[~/ubuntu-is-the-best]
└─ $ls -l
total 0
-rw-r----- 1 hasan miraz 0 Oct  6 11:38 ubuntu1.txt
-rw-r----- 1 hasan miraz 0 Oct  6 11:38 ubuntu.txt
```

```
[hasan@parrot]-[~/os-concepts]
└─ $sudo chown hasan:miraz os.txt os1.txt
[hasan@parrot]-[~/os-concepts]
└─ $ls -l
total 0
-rw-r----- 1 hasan miraz 0 Oct  6 11:37 os1.txt
-rw-r----- 1 hasan miraz 0 Oct  6 11:36 os.txt
```

- Add the user to the new group

```
[hasan@parrot]-[~/ubuntu-is-the-best]
└─ $sudo usermod hasan -g 1004
```

```
hasan:x:1000:1004:Hasan:/home/hasan:/bin/bash
tjihad:x:1001:1003::/home/tjihad:/bin/sh
```

- Create a file called crash.in (File should contain the word crash in it) in different directories and then find the file in all the locations using find command

```
[hasan@parrot]-[~/os-concepts]
└─ $touch crash.in
[hasan@parrot]-[~/os-concepts]
└─ $vim crash.in
[hasan@parrot]-[~/os-concepts]
└─ $cat crash.in
hasan
miraz
crash
jihad
jisan
```

```
[hasan@parrot]~  
└─$ find ~ -type f -name "crash.in"  
/home/hasan/Desktop/crash.in  
/home/hasan/Downloads/crash.in  
/home/hasan/os-concepts/crash.in  
/home/hasan/ubuntu-is-the-best/crash.in
```

- Then, replace the lines with crash to broken to all files (use sed, xargs)

```
[hasan@parrot]~/os-concepts  
└─$ sed -i 's/crash/broken/g' crash.in  
[hasan@parrot]~/os-concepts  
└─$ cat crash.in  
hasan  
miraz  
broken  
jihad  
jisan
```

```
[hasan@parrot]~/ubuntu-is-the-best  
└─$ cat crash.in  
hasan  
miraz  
crash  
jihad  
jisan  
[hasan@parrot]~/ubuntu-is-the-best  
└─$ sed -i 's/crash/broken/g' crash.in  
[hasan@parrot]~/ubuntu-is-the-best  
└─$ cat crash.in  
hasan  
miraz  
broken  
jihad  
jisan
```

```
[hasan@parrot]-[~/Desktop]
└─$ cat crash.in
hasan
miraz
crash
jihad
jisan
[hasan@parrot]-[~/Desktop]
└─$ sed -i 's/crash/broken/g' crash.in
[hasan@parrot]-[~/Desktop]
└─$ cat crash.in
hasan
miraz
broken
jihad
jisan
```

```
[hasan@parrot]-[~/Downloads]
└─$ cat crash.in
hasan
miraz
crash
jihad
jisan
[hasan@parrot]-[~/Downloads]
└─$ sed -i 's/crash/broken/g' crash.in
[hasan@parrot]-[~/Downloads]
└─$ cat crash.in
hasan
miraz
broken
jihad
jisan
```