

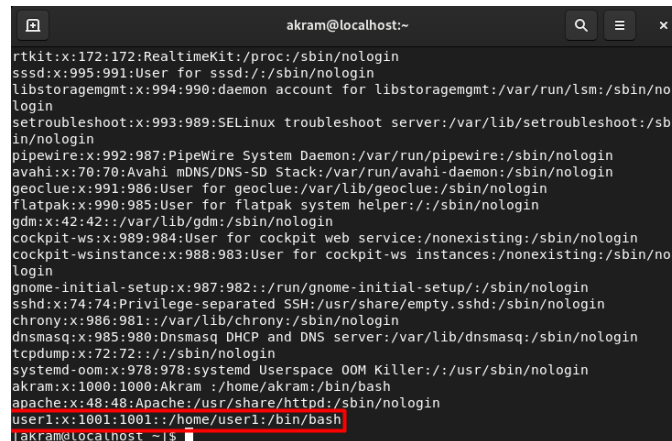
# Linux Command

**cat /etc/passwd**

- To show userlist

**sudo useradd user1 -g 1001**

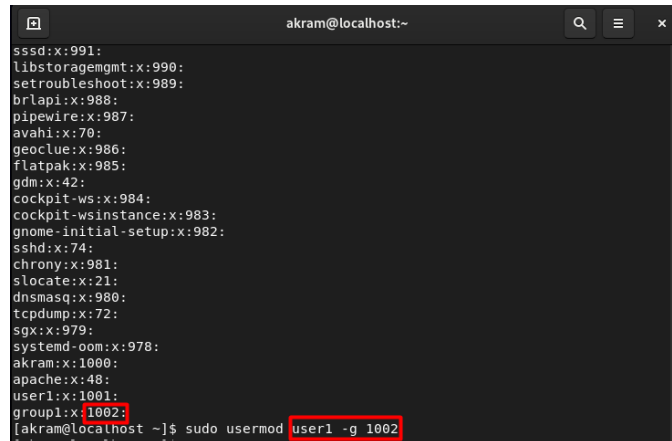
- create new user with group id 1001



```
akram@localhost:~  
rtkit:x:172:172:RealtimeKit:/proc:/sbin/nologin  
sssd:x:995:991:User for sssd:/:/sbin/nologin  
libstoragemgmt:x:994:990:daemon account for libstoragemgmt:/var/run/lsm:/sbin/nologin  
setroubleshoot:x:993:989:SELinux troubleshoot server:/var/lib/setroubleshoot:/sbin/nologin  
pipewire:x:992:987:PipeWire System Daemon:/var/run/pipewire:/sbin/nologin  
avahi:x:70:70:Avahi mDNS/DNS-SD Stack:/var/run/avahi-daemon:/sbin/nologin  
geoclue:x:991:986:User for geoclue:/var/lib/geoclue:/sbin/nologin  
flatpak:x:990:985:User for flatpak system helper:/:/sbin/nologin  
gdm:x:42:42:/var/lib/gdm:/sbin/nologin  
cockpit-ws:x:989:984:User for cockpit web service:/nonexisting:/sbin/nologin  
cockpit-wsinstance:x:988:983:User for cockpit-ws instances:/nonexisting:/sbin/nologin  
gnome-initial-setup:x:987:982:/run/gnome-initial-setup:/sbin/nologin  
sshd:x:74:74:Privilege-separated SSH:/usr/share/empty.sshd:/sbin/nologin  
chrony:x:986:981:/var/lib/chrony:/sbin/nologin  
dnsmasq:x:985:980:Dnsmasq DHCP and DNS server:/var/lib/dnsmasq:/sbin/nologin  
tcpdump:x:72:72:/:/sbin/nologin  
systemd-oom:x:978:978:systemd Userspace OOM Killer:/usr/sbin/nologin  
akram:x:1000:1000:Akram :/home/akram:/bin/bash  
apache:x:48:48:Apache:/usr/share/httpd:/sbin/nologin  
user1:x:1001:1001:/home/user1:/bin/bash  
[akram@localhost ~]$
```

**sudo groupadd -g 1002 group1**

- Add new group “group1” with group id 1002



```
akram@localhost:~  
sssd:x:991:  
libstoragemgmt:x:990:  
setroubleshoot:x:989:  
brlapi:x:988:  
pipewire:x:987:  
avahi:x:70:  
geoclue:x:986:  
flatpak:x:985:  
gdm:x:42:  
cockpit-ws:x:984:  
cockpit-wsinstance:x:983:  
gnome-initial-setup:x:982:  
sshd:x:74:  
chrony:x:981:  
slocate:x:21:  
dnsmasq:x:980:  
tcpdump:x:72:  
sgx:x:979:  
systemd-oom:x:978:  
akram:x:1000:  
apache:x:48:  
user1:x:1001:  
group1:x:1002:  
[akram@localhost ~]$ sudo usermod user1 -g 1002
```

**sudo usermod user1 -g 1002**

- Assign user1 in new group which id is 1002

```
akram@localhost:~  
rtkit:x:172:172:RealtimeKit:/proc:/sbin/nologin  
sssd:x:995:991:User for sssd:/:/sbin/nologin  
libstoragemgmt:x:994:990:daemon account for libstoragemgmt:/var/run/lsm:/sbin/nologin  
setroubleshoot:x:993:989:SELinux troubleshoot server:/var/lib/setroubleshoot:/sbin/nologin  
pipewire:x:992:987:PipeWire System Daemon:/var/run/pipewire:/sbin/nologin  
avahi:x:70:70:Avahi mDNS/DNS-SD Stack:/var/run/avahi-daemon:/sbin/nologin  
geoclue:x:991:986:User for geoclue:/var/lib/geoclue:/sbin/nologin  
flatpak:x:990:985:User for flatpak system helper:/:/sbin/nologin  
gdm:x:42:42:/var/lib/gdm:/sbin/nologin  
cockpit-ws:x:989:984:User for cockpit web service:/nonexisting:/sbin/nologin  
cockpit-wsinstance:x:988:983:User for cockpit-ws instances:/nonexisting:/sbin/nologin  
gnome-initial-setup:x:987:982:/run/gnome-initial-setup:/sbin/nologin  
sshd:x:74:74:Privilege-separated SSH:/usr/share/empty.sshd:/sbin/nologin  
chrony:x:986:981:/var/lib/chrony:/sbin/nologin  
dnsmasq:x:985:980:Dnsmasq DHCP and DNS server:/var/lib/dnsmasq:/sbin/nologin  
tcpdump:x:72:72:/:/sbin/nologin  
systemd-oom:x:978:978:systemd Userspace OOM Killer:/usr/sbin/nologin  
akram:x:1000:1000:Akram /home/akram:/bin/bash  
user1:x:1001:1002:/home/user1:/bin/bash  
[akram@localhost ~]$
```

**mkdir {os-concepts,ubuntu-is-the-best}**

- Create multiple file in one command in home Directory.

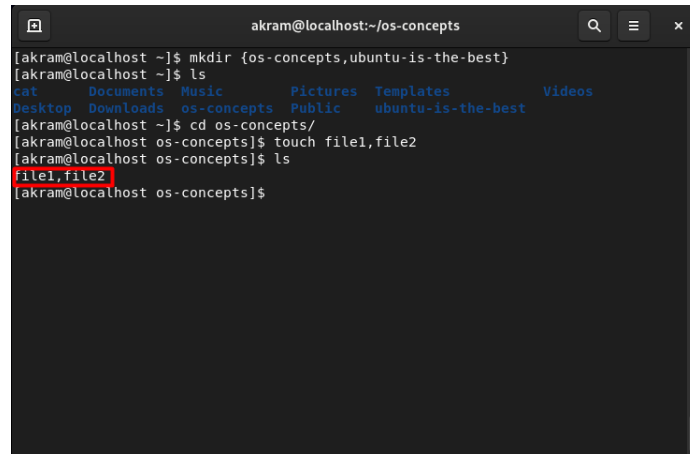
```
akram@localhost:~  
[akram@localhost ~]$ mkdir {os-concepts,ubuntu-is-the-best}  
[akram@localhost ~]$ ls  
cat      Documents  Music      Pictures  Templates  Videos  
Desktop  Downloads  os-concepts  Public    ubuntu-is-the-best  
[akram@localhost ~]$
```

## cd os-concepts

- To change Directory home to newly Created os-concepts

## touch file1,file2

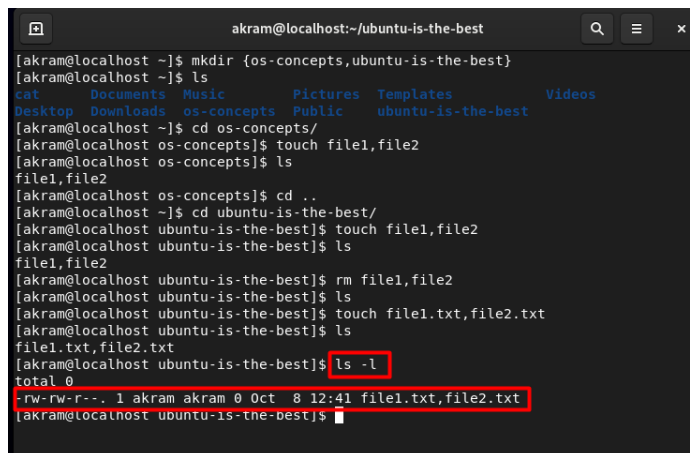
- To create 2 file



```
akram@localhost:~/os-concepts
[akram@localhost ~]$ mkdir {os-concepts,ubuntu-is-the-best}
[akram@localhost ~]$ ls
cat  Desktop  Downloads  Music  os-concepts  Pictures  Templates  Videos
[akram@localhost ~]$ cd os-concepts/
[akram@localhost os-concepts]$ touch file1,file2
[akram@localhost os-concepts]$ ls
file1,file2
[akram@localhost os-concepts]$
```

## ls -l

- To show the permission of the file where w indicates write, r indicates Read and x indicate Execute.



```
akram@localhost:~/ubuntu-is-the-best
[akram@localhost ~]$ mkdir {os-concepts,ubuntu-is-the-best}
[akram@localhost ~]$ ls
cat  Desktop  Downloads  Music  os-concepts  Pictures  Templates  Videos
[akram@localhost ~]$ cd os-concepts/
[akram@localhost os-concepts]$ touch file1,file2
[akram@localhost os-concepts]$ ls
file1,file2
[akram@localhost os-concepts]$ cd ..
[akram@localhost ~]$ cd ubuntu-is-the-best/
[akram@localhost ubuntu-is-the-best]$ touch file1,file2
[akram@localhost ubuntu-is-the-best]$ ls
file1,file2
[akram@localhost ubuntu-is-the-best]$ rm file1,file2
[akram@localhost ubuntu-is-the-best]$ ls
[akram@localhost ubuntu-is-the-best]$ touch file1.txt,file2.txt
[akram@localhost ubuntu-is-the-best]$ ls
file1.txt,file2.txt
[akram@localhost ubuntu-is-the-best]$ ls -l
total 0
-rw-rw-r--. 1 akram akram 0 Oct  8 12:41 file1.txt,file2.txt
[akram@localhost ubuntu-is-the-best]$
```

To update file permissions so that the owner can read and write, the group can only read, and others have no permissions, you can use the chmod command in Linux with the following syntax

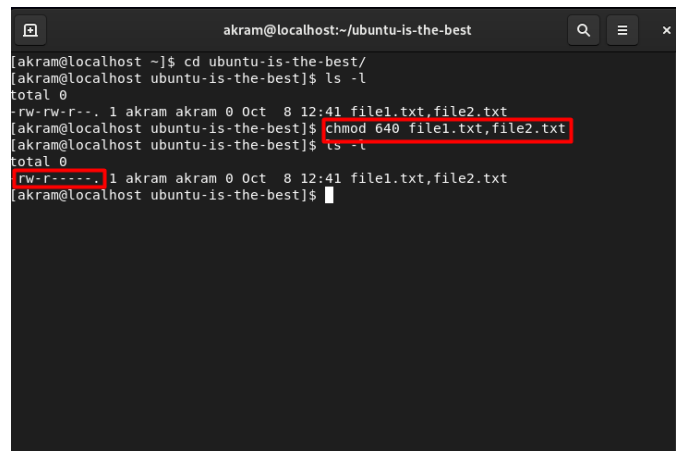
- **chmod 640 file1.txt,file2.txt**

In this command:

6 represents read (4) + write (2) permissions for the owner.

4 represents read permission for the group.

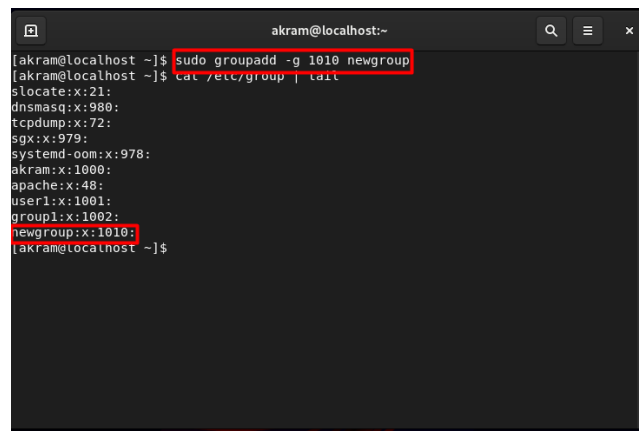
0 represents no permissions for others.

A terminal window titled 'akram@localhost:~/ubuntu-is-the-best'. The user runs 'cd ubuntu-is-the-best/' and 'ls -l', showing files 'file1.txt' and 'file2.txt' with permissions '-rw-rw-r--'. Then, the user runs 'chmod 640 file1.txt,file2.txt', which is highlighted with a red box. Finally, the user runs 'ls -l' again, showing the files with updated permissions 'rw-r-----', which is also highlighted with a red box.

```
akram@localhost:~/ubuntu-is-the-best
[akram@localhost ~]$ cd ubuntu-is-the-best/
[akram@localhost ubuntu-is-the-best]$ ls -l
total 0
-rw-rw-r--. 1 akram akram 0 Oct  8 12:41 file1.txt,file2.txt
[akram@localhost ubuntu-is-the-best]$ chmod 640 file1.txt,file2.txt
[akram@localhost ubuntu-is-the-best]$ ls -l
total 0
rw-r-----. 1 akram akram 0 Oct  8 12:41 file1.txt,file2.txt
[akram@localhost ubuntu-is-the-best]$
```

**sudo groupadd -g 1010 newgroup**

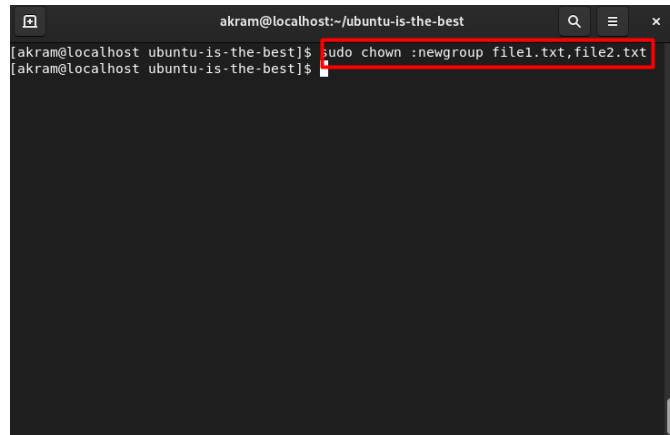
- Create new group with id 1010 which name is newgroup.

A terminal window titled 'akram@localhost:~'. The user runs 'sudo groupadd -g 1010 newgroup', which is highlighted with a red box. Then, the user runs 'cat /etc/group | tail', showing a list of system and user groups. The entry 'newgroup:x:1010:' is highlighted with a red box.

```
akram@localhost:~
[akram@localhost ~]$ sudo groupadd -g 1010 newgroup
[akram@localhost ~]$ cat /etc/group | tail
slocate:x:21:
dnsmasq:x:980:
tcpdump:x:72:
sgx:x:979:
systemd-oom:x:978:
akram:x:1000:
apache:x:48:
user1:x:1001:
group1:x:1002:
newgroup:x:1010:
[akram@localhost ~]$
```

To update ownership of a file to the newly created group you can use chown command.

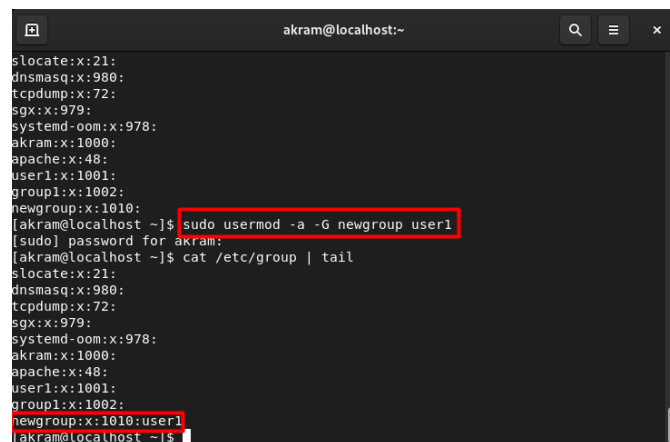
- **sudo chown :newgroup file.txt,file2.txt**



```
akram@localhost:~/ubuntu-is-the-best
[akram@localhost ubuntu-is-the-best]$ sudo chown :newgroup file1.txt,file2.txt
[akram@localhost ubuntu-is-the-best]$
```

To assign user1 to newly created group which gid is 1010

- **sudo usermod -a -G newgroup user1**



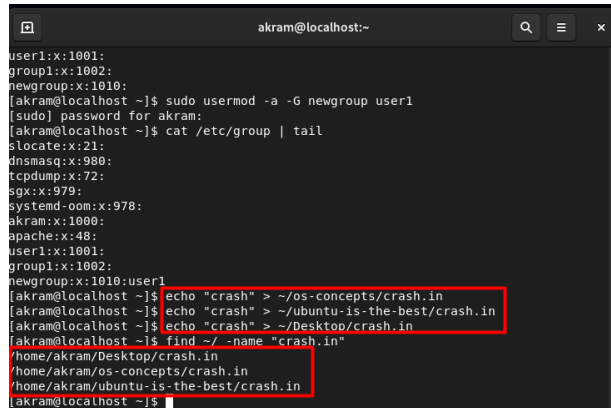
```
akram@localhost:~
slocate:x:21:
dnsmasq:x:980:
tcpdump:x:72:
sgx:x:979:
systemd-oom:x:978:
akram:x:1000:
apache:x:48:
user1:x:1001:
group1:x:1002:
newgroup:x:1010:
[akram@localhost ~]$ sudo usermod -a -G newgroup user1
[sudo] password for akram:
[akram@localhost ~]$ cat /etc/group | tail
slocate:x:21:
dnsmasq:x:980:
tcpdump:x:72:
sgx:x:979:
systemd-oom:x:978:
akram:x:1000:
apache:x:48:
user1:x:1001:
group1:x:1002:
newgroup:x:1010:user1
[akram@localhost ~]$
```

To create a file named "crash.in" containing the word "crash" in different directories and then find those files using the find command, you can follow these steps:

- **echo "crash" > ~/os-concept/crash.in**
- **echo "crash" > ~/ubuntu-is-the-best/crash.in**
- **echo "crash" > ~/Desktop/crash.in**

**find ~/ -name "crash.in"**

- Use the find command to locate all instances of the file.
- This command will search for files named "crash.in" starting from the root directory (/) and display the paths to all matching files.
- 

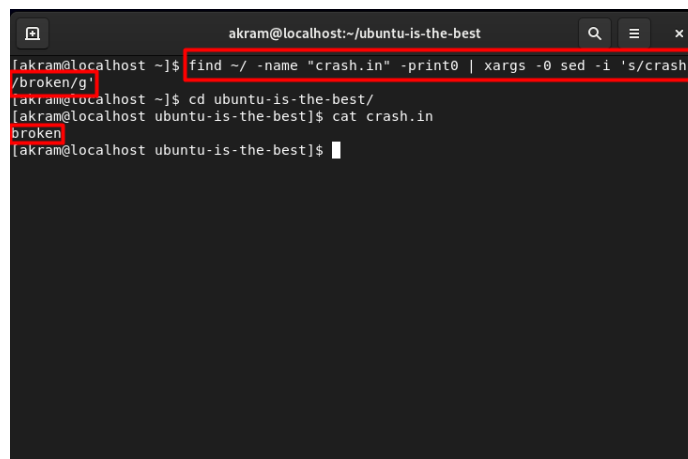


```
akram@localhost:~$ sudo usermod -a -G newgroup user1
[sudo] password for akram:
akram@localhost ~$ cat /etc/group | tail
locate:x:21:
dnsmasq:x:980:
tcpdump:x:72:
sgx:x:979:
systemd-oom:x:978:
akram:x:1000:
apache:x:48:
user1:x:1001:
group1:x:1002:
newgroup:x:1010:user1
akram@localhost ~$ echo "crash" > ~/os-concepts/crash.in
akram@localhost ~$ echo "crash" > ~/ubuntu-is-the-best/crash.in
akram@localhost ~$ echo "crash" > ~/Desktop/crash.in
akram@localhost ~$ find ~/ -name "crash.in"
/home/akram/Desktop/crash.in
/home/akram/os-concepts/crash.in
/home/akram/ubuntu-is-the-best/crash.in
akram@localhost ~$
```

**find ~/ -name "crash.in" -print0 | xargs -0 sed -i 's/crash/broken/g'**

- `find ~/ -name "crash.in" -print0`: This finds all files named "crash.in" starting from the home directory (~) and prints the file paths with null terminators (to handle filenames with spaces or special characters).
- `xargs -0 sed -i 's/crash/broken/g'`: This takes the output of the find command and uses xargs to execute sed on each file. The sed command (`sed -i 's/crash/broken/g'`) replaces all occurrences of "crash" with "broken" in each file in-place.

After running this command, all instances of "crash" in the "crash.in" files within the specified directories will be replaced with "broken".



```
akram@localhost:~/ubuntu-is-the-best$ find ~/ -name "crash.in" -print0 | xargs -0 sed -i 's/crash/broken/g'
akram@localhost ~$ cd ubuntu-is-the-best/
akram@localhost ubuntu-is-the-best$ cat crash.in
broken
akram@localhost ubuntu-is-the-best$
```