

# Linux Basic Commands

## DevOps Assignment No 3

### 1. Create an user with user group

- sudo groupadd devops1
- sudo useradd -g devops1 -m kmhasan

The screenshot shows a Linux terminal window with the following commands and output:

```
kamrul@kamrul-dev: ~  
kamrul@kamrul-dev:~$ sudo groupadd devops1  
kamrul@kamrul-dev:~$ sudo useradd -g devops1 -m kmhasan  
kamrul@kamrul-dev:~$ id kmhasan  
uid=1001(kmhasan) gid=1001(devops1) groups=1001(devops1)  
kamrul@kamrul-dev:~$
```

Below this, a list of system users is displayed, with the newly created user highlighted:

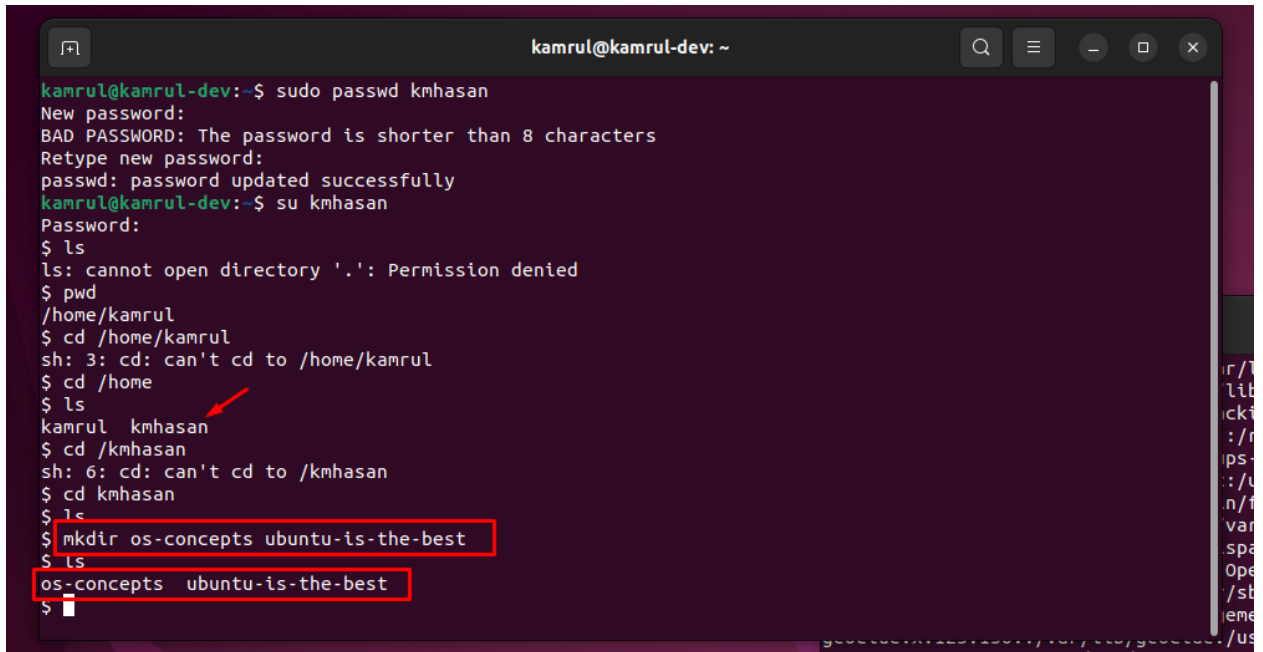
```
whoopsie:x:124:  
sssd:x:125:  
nm-openvpn:x:126:  
scanner:x:127:saned  
saned:x:128:  
colord:x:129:  
geoclue:x:130:  
pulse:x:131:  
pulse-access:x:132:  
gdm:x:133:  
lxd:x:134:kamrul  
kamrul:x:1000:  
sambashare:x:135:kamrul  
vboxsf:x:999:  
vboxdrmpc:x:998:  
fwupd-refresh:x:136:  
devops1:x:1001:  
kamrul@kamrul-dev:~$
```

On the right, a detailed view of the system users is shown, with the new user entry highlighted:

```
kamrul@kamrul-dev: ~  
cups-pk-helper:x:115:122:user for cups-pk-helper service,,,:/home/cups-pk-helper:/usr/sbin/nologin  
rtkit:x:116:123:RealtimeKit,,,:/proc:/usr/sbin/nologin  
whoopsie:x:117:124::/nonexistent:/bin/false  
sssd:x:118:125:SSSD system user,,,:/var/lib/sss:/usr/sbin/nologin  
speech-dispatcher:x:119:29:Speech Dispatcher,,,:/run/speech-dispatcher:/bin/false  
nm-openvpn:x:120:126:NetworkManager OpenVPN,,,:/var/lib/openvpn/chroot:/usr/sbin/nologin  
saned:x:121:128:/var/lib/saned:/usr/sbin/nologin  
colord:x:122:129:colord colour management daemon,,,:/var/lib/colord:/usr/sbin/nologin  
geoclue:x:123:130:/var/lib/geoclue:/usr/sbin/nologin  
pulse:x:124:131:PulseAudio daemon,,,:/run/pulse:/usr/sbin/nologin  
gnome-initial-setup:x:125:65534:/run/gnome-initial-setup:/bin/false  
hplip:x:126:7:HPLIP system user,,,:/run/hplip:/bin/false  
gdm:x:127:133:Gnome Display Manager:/var/lib/gdm3:/bin/false  
kamrul:x:1000:1000:kamrul,,,:/home/kamrul:/bin/bash  
vboxadd:x:999:1:/var/run/vboxadd:/bin/false  
fwupd-refresh:x:128:136:fwupd-refresh user,,,:/run/systemd:/usr/sbin/nologin  
kmhasan:x:1001:1001:/home/kmhasan:/bin/sh  
kamrul@kamrul-dev:~$
```

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

→ mkdir os-concepts ubuntu-is-the-best



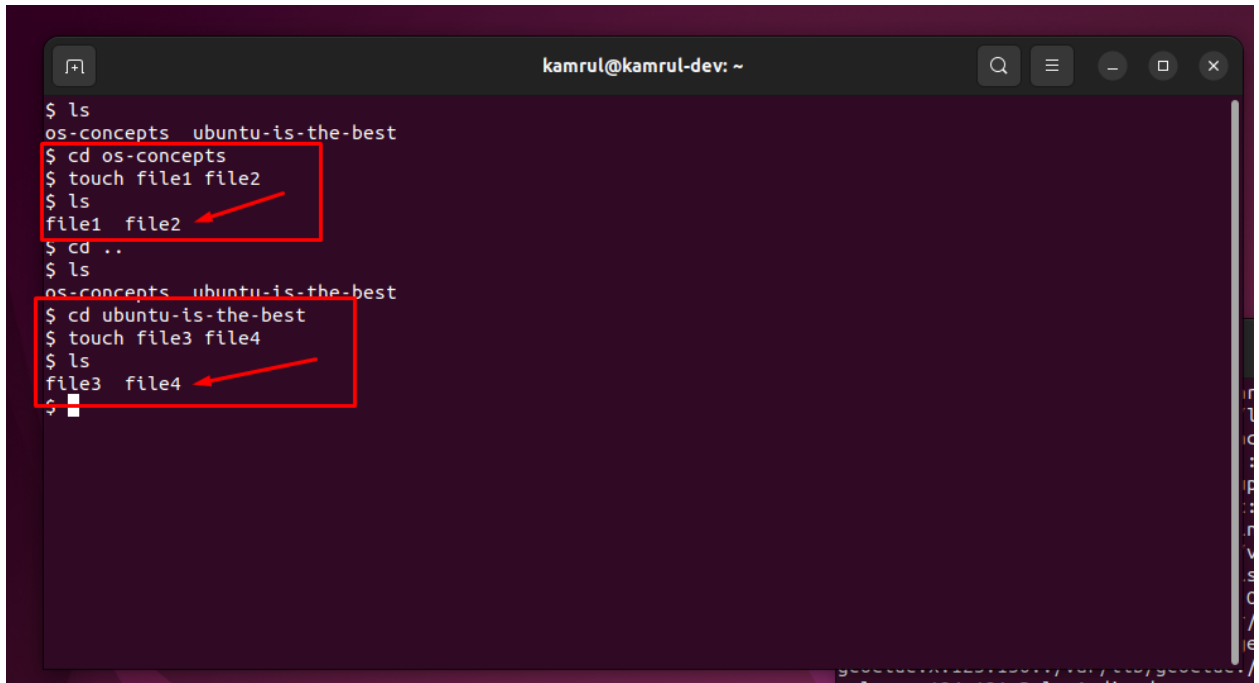
```
kamrul@kamrul-dev: ~  
kamrul@kamrul-dev:~$ sudo passwd kmhasan  
New password:  
BAD PASSWORD: The password is shorter than 8 characters  
Retype new password:  
passwd: password updated successfully  
kamrul@kamrul-dev:~$ su kmhasan  
Password:  
$ ls  
ls: cannot open directory '.': Permission denied  
$ pwd  
/home/kamrul  
$ cd /home/kamrul  
sh: 3: cd: can't cd to /home/kamrul  
$ cd /home  
$ ls  
kamrul kmhasan  
$ cd /kmhasan  
sh: 6: cd: can't cd to /kmhasan  
$ cd kmhasan  
$ ls  
$ mkdir os-concepts ubuntu-is-the-best  
$ ls  
os-concepts  ubuntu-is-the-best  
$
```

The terminal window shows the user 'kamrul' at 'kamrul-dev' running 'sudo passwd kmhasan' to set a password. After switching to 'kmhasan' with 'su kmhasan', the user attempts to navigate to their home directory but encounters permission errors. Finally, the user runs 'mkdir os-concepts ubuntu-is-the-best' to create the two required directories, which are then listed with 'ls'.

### 3. Create two files on each directory

→ touch file1 file2

→ touch file3 file4



A terminal window titled 'kamrul@kamrul-dev: ~' with a dark purple background. The terminal shows the following commands and output:

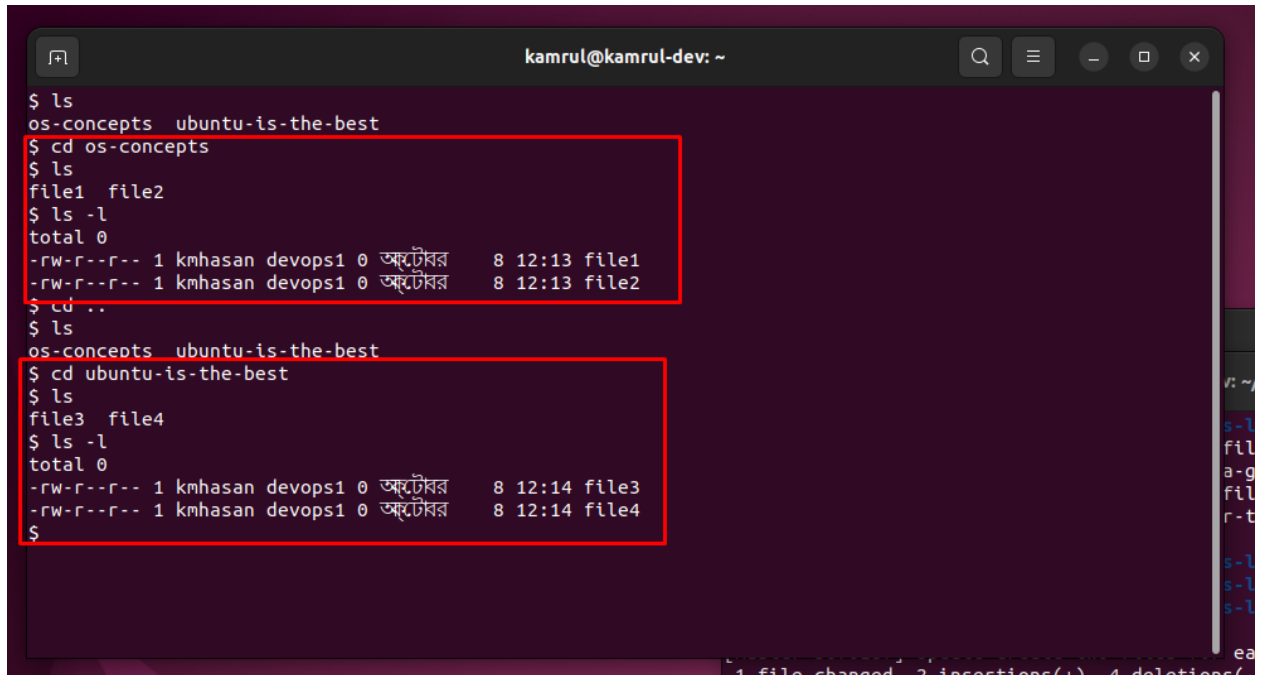
```
$ ls
os-concepts  ubuntu-is-the-best
$ cd os-concepts
$ touch file1 file2
$ ls
file1  file2
$ cd ..
$ ls
os-concepts  ubuntu-is-the-best
$ cd ubuntu-is-the-best
$ touch file3 file4
$ ls
file3  file4
$
```

Two red boxes highlight the file creation steps. The first box encloses the commands `$ cd os-concepts`, `$ touch file1 file2`, and the output `file1 file2`, with a red arrow pointing to the output. The second box encloses the commands `$ cd ubuntu-is-the-best`, `$ touch file3 file4`, and the output `file3 file4`, also with a red arrow pointing to the output.

#### 4. List the files with detailed information ( including file permission )

→ `ls -l`

→ `ls -l`



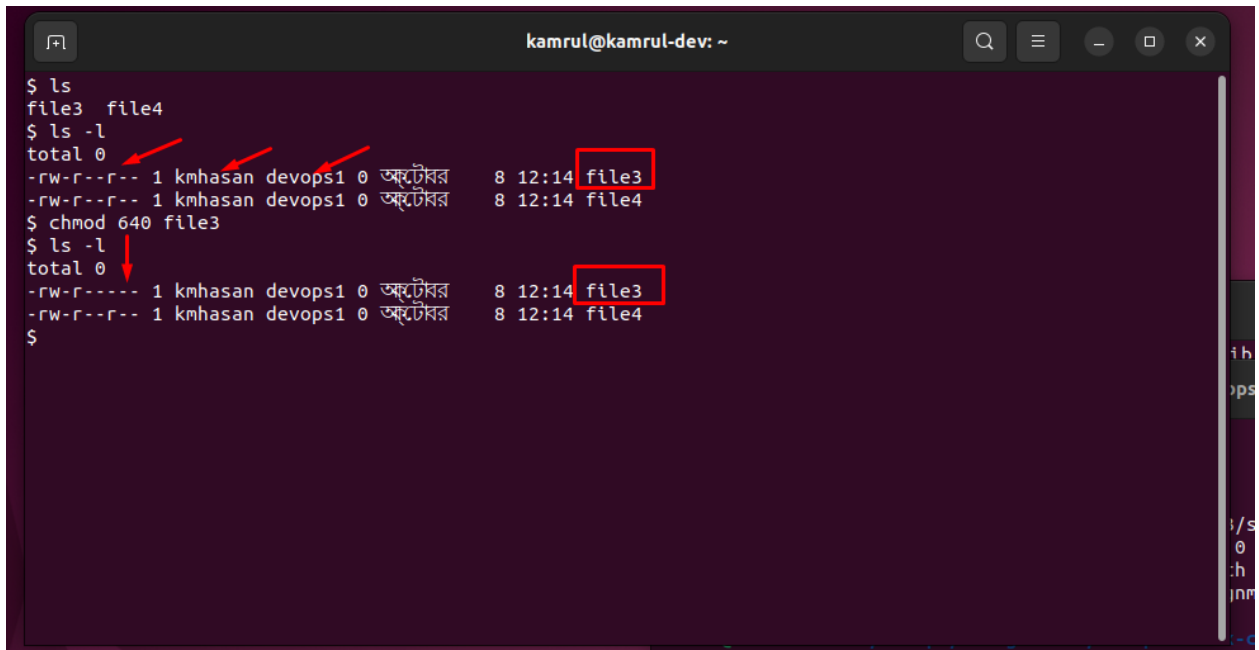
A terminal window titled 'kamrul@kamrul-dev: ~' showing a series of commands and their outputs. The commands are: `$ ls`, `os-concepts ubuntu-is-the-best`, `$ cd os-concepts`, `$ ls`, `file1 file2`, `$ ls -l`, `total 0`, `-rw-r--r-- 1 kmhasan devops1 0 অক্টোবর 8 12:13 file1`, `-rw-r--r-- 1 kmhasan devops1 0 অক্টোবর 8 12:13 file2`, `$ cd ..`, `$ ls`, `os-concepts ubuntu-is-the-best`, `$ cd ubuntu-is-the-best`, `$ ls`, `file3 file4`, `$ ls -l`, `total 0`, `-rw-r--r-- 1 kmhasan devops1 0 অক্টোবর 8 12:14 file3`, `-rw-r--r-- 1 kmhasan devops1 0 অক্টোবর 8 12:14 file4`, and `$`. The output for `ls -l` is highlighted with a red box. The terminal also shows a status bar at the bottom: '1 file changed, 2 insertions(+), 4 deletions(-)'.

```
$ ls
os-concepts  ubuntu-is-the-best
$ cd os-concepts
$ ls
file1 file2
$ ls -l
total 0
-rw-r--r-- 1 kmhasan devops1 0 অক্টোবর 8 12:13 file1
-rw-r--r-- 1 kmhasan devops1 0 অক্টোবর 8 12:13 file2
$ cd ..
$ ls
os-concepts  ubuntu-is-the-best
$ cd ubuntu-is-the-best
$ ls
file3 file4
$ ls -l
total 0
-rw-r--r-- 1 kmhasan devops1 0 অক্টোবর 8 12:14 file3
-rw-r--r-- 1 kmhasan devops1 0 অক্টোবর 8 12:14 file4
$
```

1 file changed, 2 insertions(+), 4 deletions(-)

5. Update file permission so that owner can read,write and group can only read and others can not do anything

→ `chmod 640 file3`



A terminal window titled 'kamrul@kamrul-dev: ~' showing the process of updating file permissions. The terminal output is as follows:

```
$ ls
file3 file4
$ ls -l
total 0
-rw-r--r-- 1 kmhasan devops1 0 অক্টোবর 8 12:14 file3
-rw-r--r-- 1 kmhasan devops1 0 অক্টোবর 8 12:14 file4
$ chmod 640 file3
$ ls -l
total 0
-rw-r----- 1 kmhasan devops1 0 অক্টোবর 8 12:14 file3
-rw-r--r-- 1 kmhasan devops1 0 অক্টোবর 8 12:14 file4
$
```

Annotations in the image include red arrows pointing to the permission strings and red boxes highlighting the file names 'file3' and 'file4' in the output.

## 6. Create another group like as devops :

→ sudo groupadd devops

```
kamrul@kamrul-dev: ~/ubuntu-is-th
kamrul@kamrul-dev:~/ubuntu-is-the-best$ cat /etc/group
root:x:0:
daemon:x:1:
bin:x:2:

sambashare:x:135:kamrul
vboxsf:x:999:
vboxdrmipc:x:998:
fwupd-refresh:x:136:
user1:x:1001:
devops:x:1002:
kamrul@kamrul-dev:~/ubuntu-is-the-best$
```

## 7. Update file ownership to the newly created group :

→ sudo chgrp devops file3

```
kamrul@kamrul-dev: ~/ubuntu-is-the-best
kamrul@kamrul-dev:~/ubuntu-is-the-best$ ls
file3 file4
kamrul@kamrul-dev:~/ubuntu-is-the-best$ ls -l
total 0
-rw-r----- 1 kamrul kamrul 0 আটোৱৰ 6 18:34 file3
-rw-rw-r-- 1 kamrul kamrul 0 আটোৱৰ 6 18:34 file4
kamrul@kamrul-dev:~/ubuntu-is-the-best$ sudo chgrp devops file3
[sudo] password for kamrul:
kamrul@kamrul-dev:~/ubuntu-is-the-best$ ls -l
total 0
-rw-r----- 1 kamrul devops 0 আটোৱৰ 6 18:34 file3
-rw-rw-r-- 1 kamrul kamrul 0 আটোৱৰ 6 18:34 file4
kamrul@kamrul-dev:~/ubuntu-is-the-best$
```

## 8. Add the user to the new group

→ `sudo gpasswd -a user1 devops`

```
kamrul@kamrul-dev: ~/ubuntu-is-the-best
kamrul@kamrul-dev:~/ubuntu-is-the-best$ sudo gpasswd -a user1 devops
Adding user user1 to group devops
kamrul@kamrul-dev:~/ubuntu-is-the-best$ cat /etc/group
root:x:0:
daemon:x:1:
bin:x:2:
sys:x:3:
vboxsf:x:999:
vboxdrmipc:x:998:
fwupd-refresh:x:136:
user1:x:1001:
devops:x:1002:user1
kamrul@kamrul-dev:~/ubuntu-is-the-best$
```