

# 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 the terminal output, there is a list of system users and groups. The user **kmhasan** is highlighted in red, showing its details:

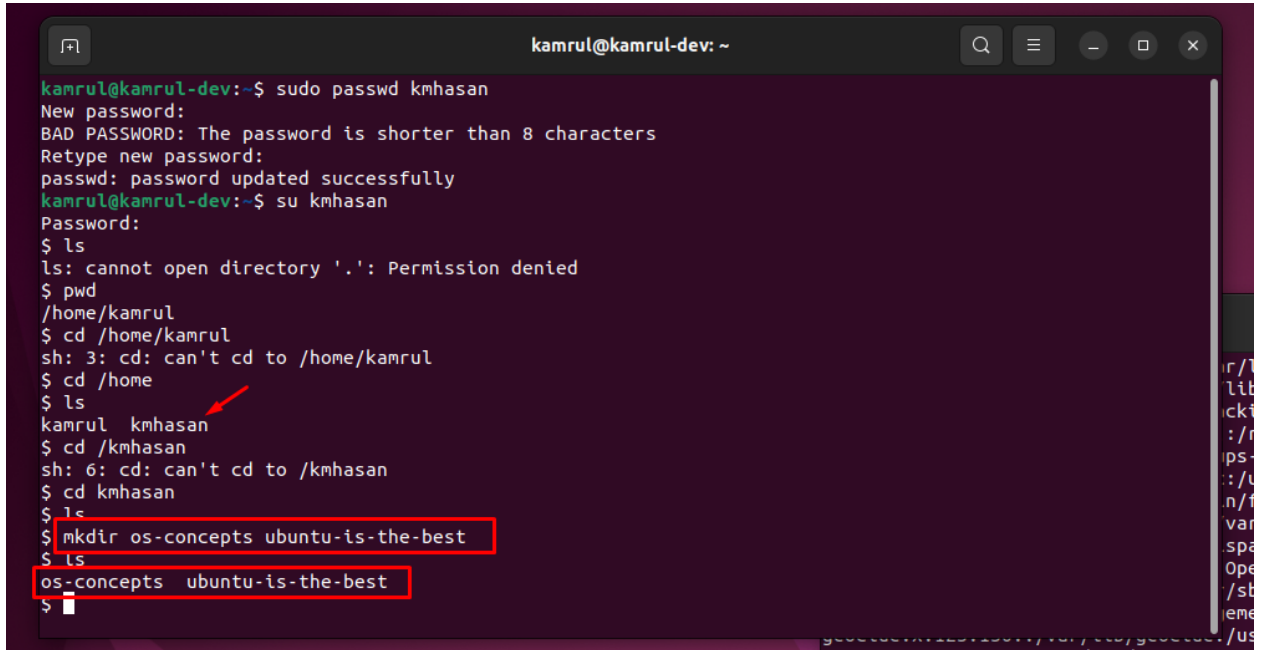
```
whoopsie:x:124:  
sssd:x:125:  
nm-openvpn:x:126:  
scanner:x:127:saned  
saned:x:128:  
colord:x:129:  
geoclue:x:130:  
pulse:x:131:  
pulse-access:x:132:  
gdm:x:133:  
lxd:x:134:kamrul  
kamrul:x:1000:  
sambashare:x:135:kamrul  
vboxsf:x:999:  
vboxdrmpc:x:998:  
fwupd-refresh:x:136:  
devops1:x:1001: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

The user **kmhasan** is shown with the following details:

```
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



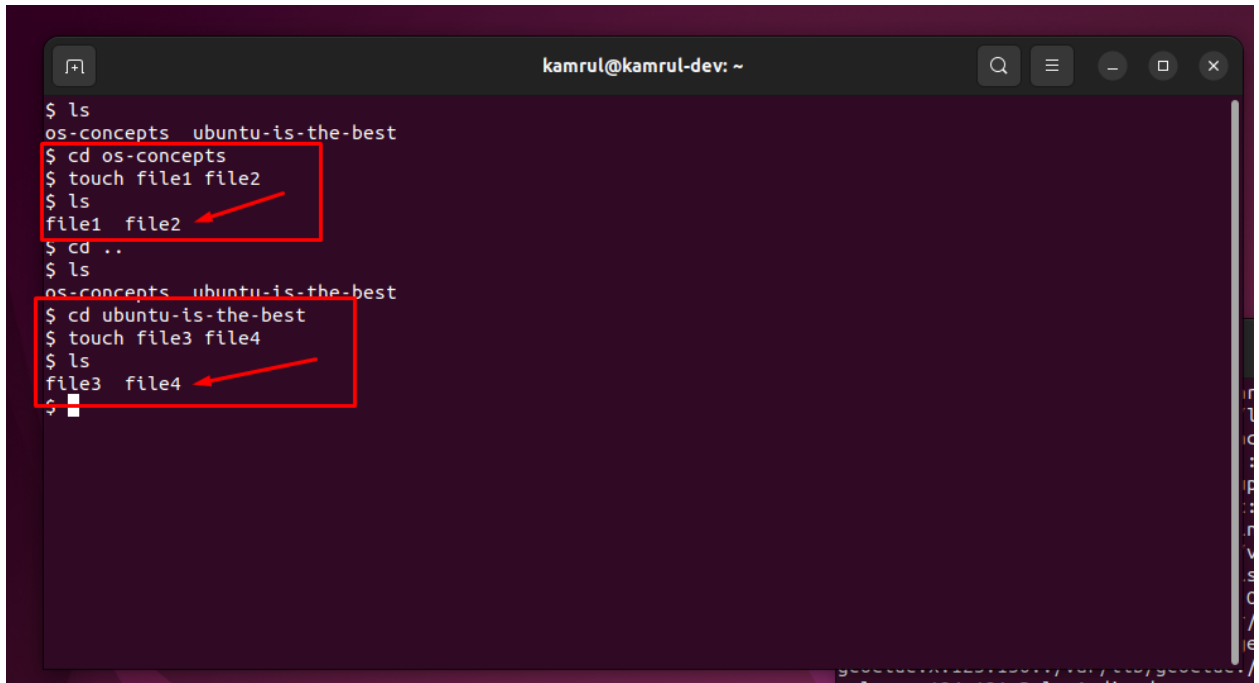
```
kamrul@kamrul-dev: ~  
kamrul@kamrul-dev:~$ sudo passwd kmhasan  
New password:  
BAD PASSWORD: The password is shorter than 8 characters  
Retype new password:  
passwd: password updated successfully  
kamrul@kamrul-dev:~$ su kmhasan  
Password:  
$ ls  
ls: cannot open directory '.': Permission 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 a successful password update, they switch to the user 'kmhasan' using 'su kmhasan'. The user 'kmhasan' is currently in the '/home' directory. They attempt to navigate to '/home/kamrul' and '/kmhasan', but receive 'Permission denied' and 'can't cd to' errors respectively. Finally, they run 'mkdir os-concepts ubuntu-is-the-best' to create the two required directories in their home directory, which is confirmed by the subsequent 'ls' command output.

### 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:

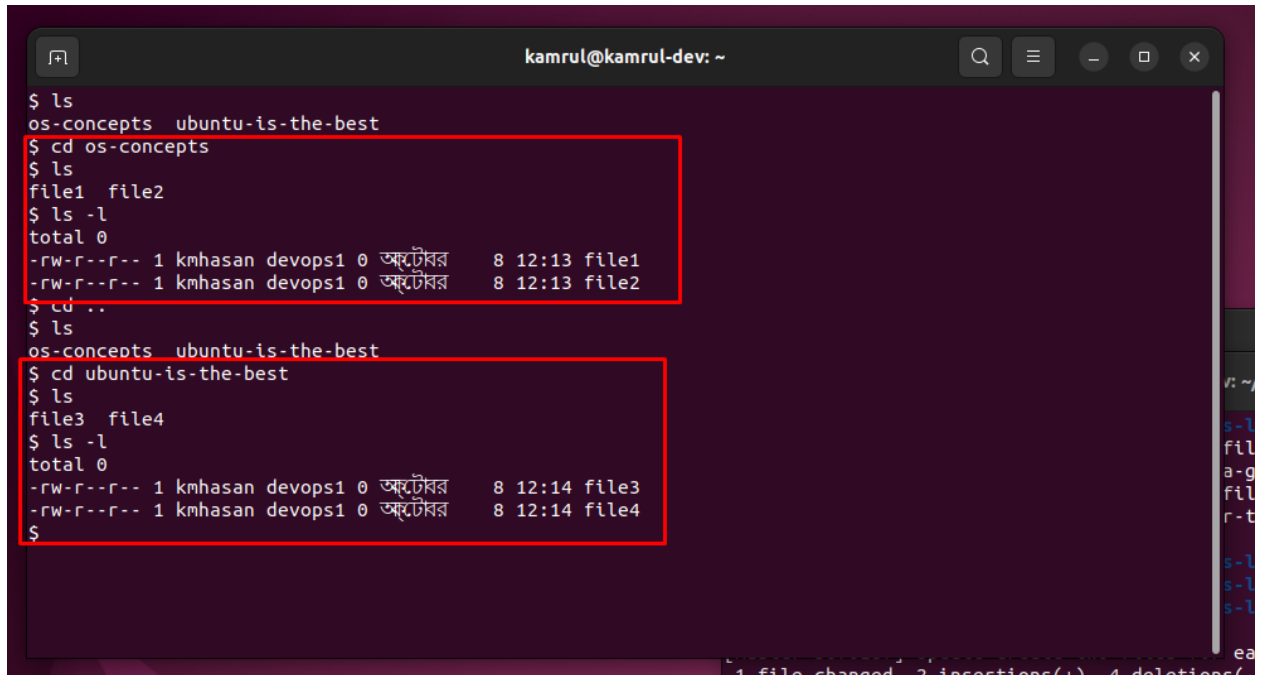
```
$ ls
os-concepts  ubuntu-is-the-best
$ cd os-concepts
$ touch file1 file2
$ ls
file1  file2
$ cd ..
$ ls
os-concepts  ubuntu-is-the-best
$ cd ubuntu-is-the-best
$ touch file3 file4
$ ls
file3  file4
$
```

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`

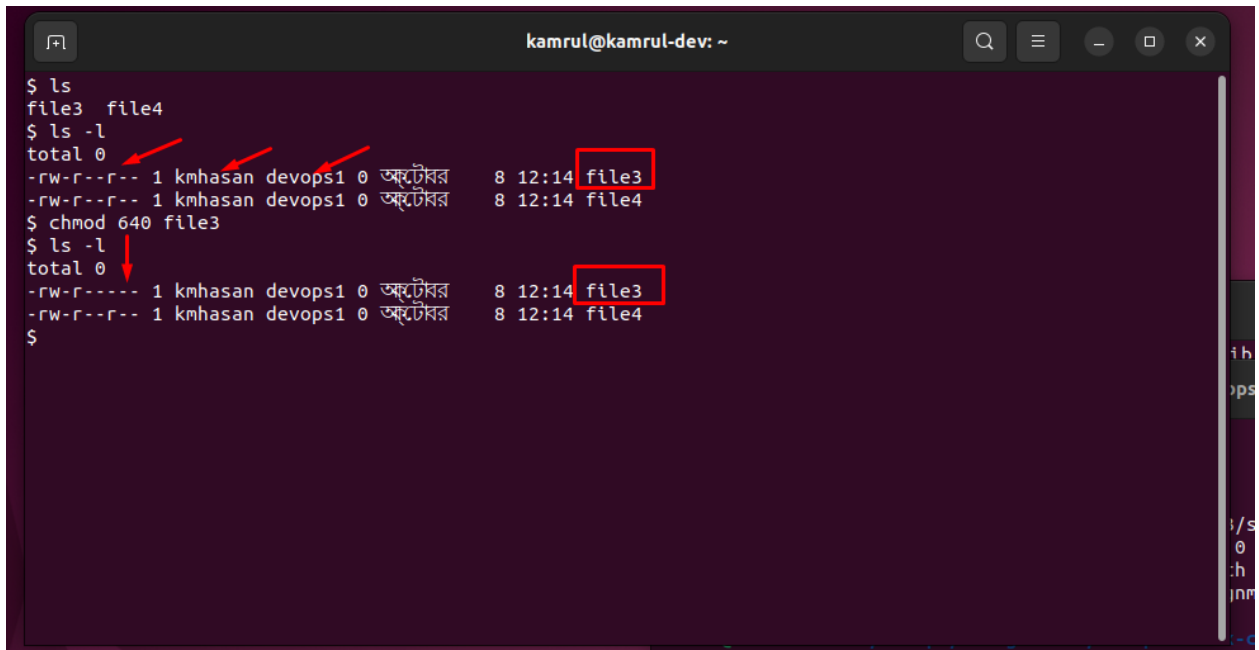


A terminal window titled 'kamrul@kamrul-dev: ~' showing a series of commands and their outputs. The window has a dark background with light-colored text. Two sections of the output are highlighted with red rectangular boxes. The first box highlights the output of 'ls -l' in the 'os-concepts' directory, showing two files: 'file1' and 'file2'. The second box highlights the output of 'ls -l' in the 'ubuntu-is-the-best' directory, showing two files: 'file3' and 'file4'. The output for each file includes its permissions, size, owner, group, and modification time.

```
$ 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
$
```

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

→ `chmod 640 file3`



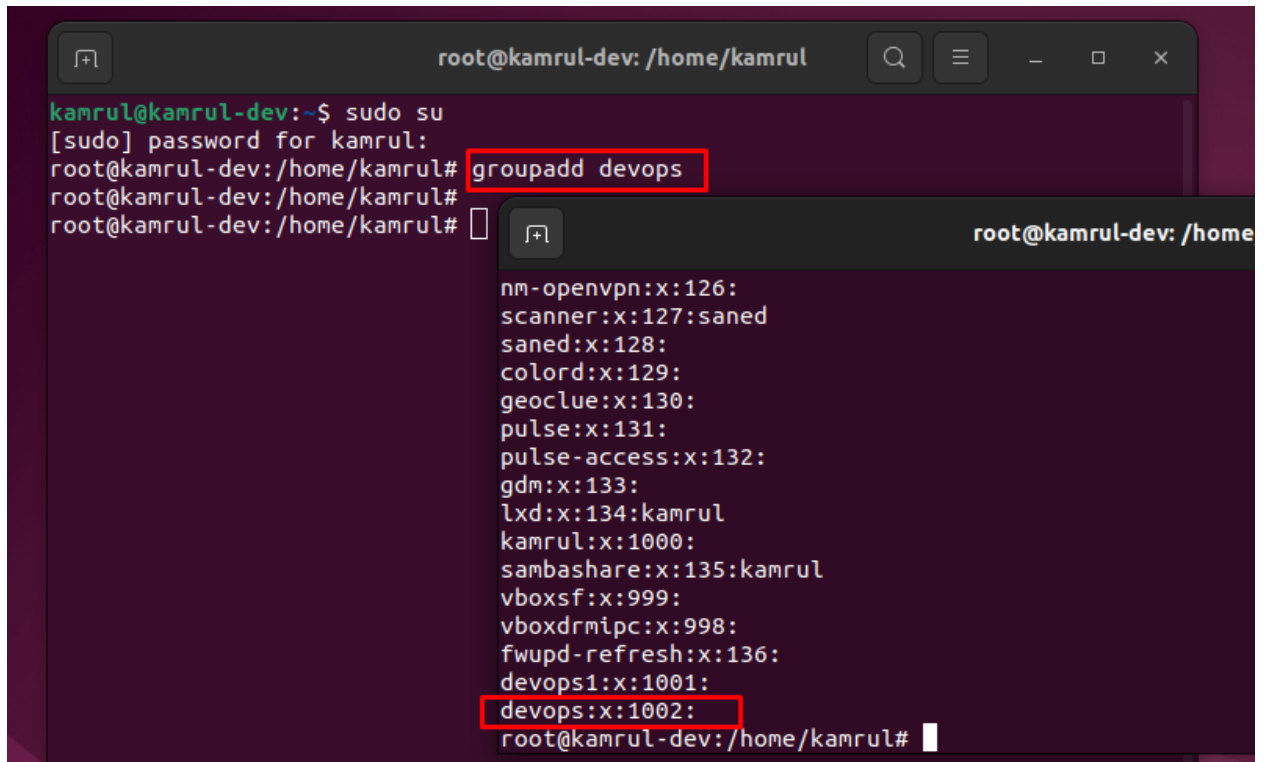
A terminal window titled 'kamrul@kamrul-dev: ~' showing the process of updating file permissions. The terminal output is as follows:

```
$ 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
$
```

Red arrows in the original image point to the permission strings: '-rw-r--r--' for file3 in the first listing and '-rw-r-----' for file3 in the second listing. Red boxes highlight 'file3' in both listings.

## 6. Create another group like as devops (root user) :

→ groupadd devops



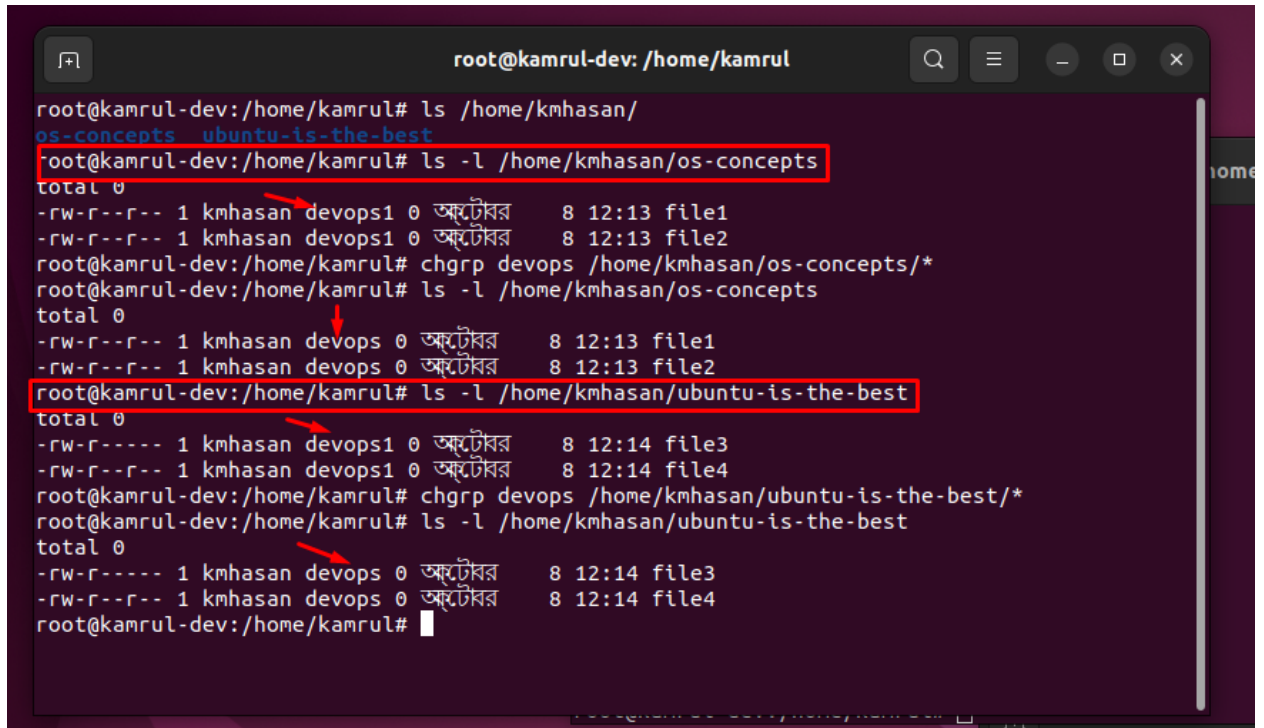
```
root@kamrul-dev: /home/kamrul
kamrul@kamrul-dev:~$ sudo su
[sudo] password for kamrul:
root@kamrul-dev: /home/kamrul# groupadd devops
root@kamrul-dev: /home/kamrul#
root@kamrul-dev: /home/kamrul#
```

The terminal window displays the command `groupadd devops` being executed. Below this, a list of system users is shown, including `nm-openvpn`, `scanner`, `saned`, `colord`, `geoclue`, `pulse`, `pulse-access`, `gdm`, `lxd`, `kamrul`, `smbashare`, `vboxsf`, `vboxdrmpc`, `fwupd-refresh`, `devops1`, and `devops`. The `devops` entry is highlighted with a red box, showing its UID as 1002.

Username	UID	Group
nm-openvpn	126	
scanner	127	saned
saned	128	
colord	129	
geoclue	130	
pulse	131	
pulse-access	132	
gdm	133	
lxd	134	kamrul
kamrul	1000	
smbashare	135	kamrul
vboxsf	999	
vboxdrmpc	998	
fwupd-refresh	136	
devops1	1001	
devops	1002	

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

→ sudo chgrp devops file3

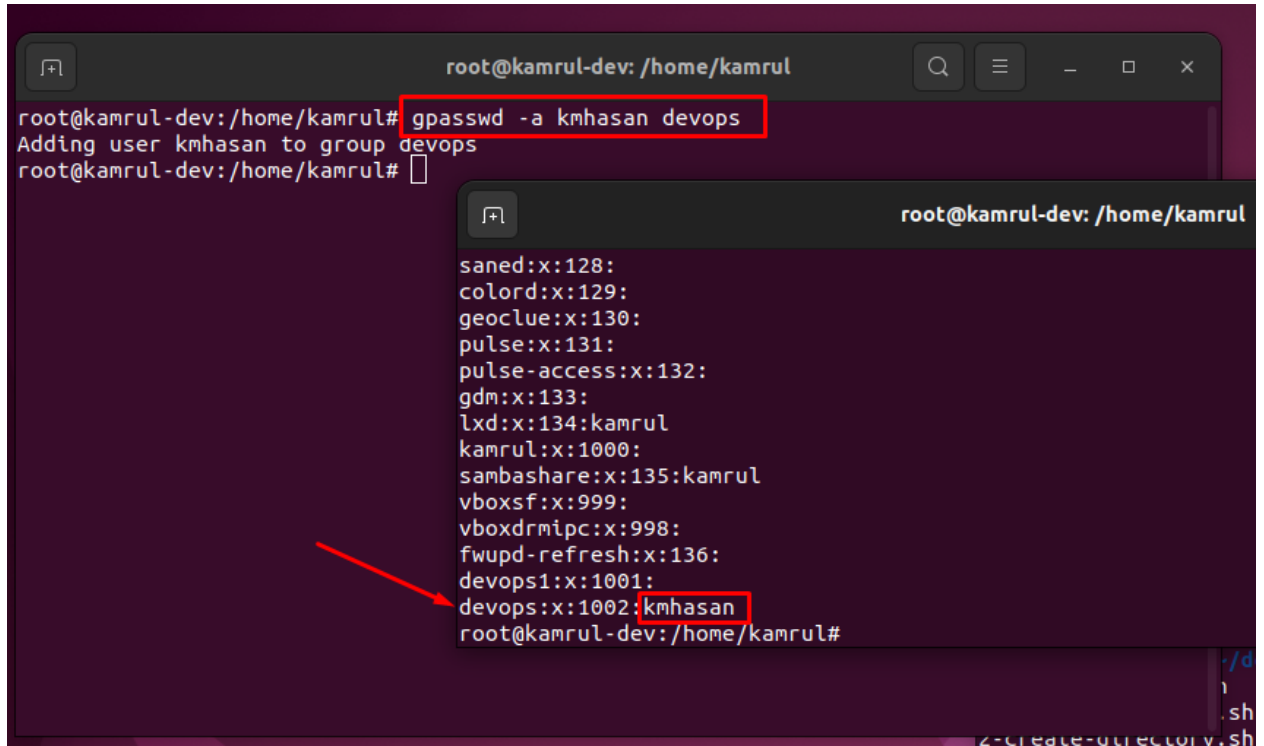


A terminal window titled 'root@kamrul-dev: /home/kamrul' showing a series of commands and their outputs. The commands are used to check and change file ownership for a new group named 'devops'. Red boxes highlight the initial state of files and the final state after the ownership change. Red arrows point to the group name 'devops' in the 'ls -l' outputs to show the update.

```
root@kamrul-dev:/home/kamrul# ls /home/kmhasan/
os-concepts  ubuntu-is-the-best
root@kamrul-dev:/home/kamrul# ls -l /home/kmhasan/os-concepts
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
root@kamrul-dev:/home/kamrul# chgrp devops /home/kmhasan/os-concepts/*
root@kamrul-dev:/home/kamrul# ls -l /home/kmhasan/os-concepts
total 0
-rw-r--r-- 1 kmhasan devops 0 অক্টোবর  8 12:13 file1
-rw-r--r-- 1 kmhasan devops 0 অক্টোবর  8 12:13 file2
root@kamrul-dev:/home/kamrul# ls -l /home/kmhasan/ubuntu-is-the-best
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
root@kamrul-dev:/home/kamrul# chgrp devops /home/kmhasan/ubuntu-is-the-best/*
root@kamrul-dev:/home/kamrul# ls -l /home/kmhasan/ubuntu-is-the-best
total 0
-rw-r----- 1 kmhasan devops 0 অক্টোবর  8 12:14 file3
-rw-r--r-- 1 kmhasan devops 0 অক্টোবর  8 12:14 file4
root@kamrul-dev:/home/kamrul#
```

## 8. Add the user to the new group

→ `gpasswd -a kmhasan devops`



The image shows a terminal window with a dark purple background. The title bar reads 'root@kamrul-dev: /home/kamrul'. The terminal content shows the command `gpasswd -a kmhasan devops` being executed, followed by the output 'Adding user kmhasan to group devops'. Below this, a list of system users and groups is displayed, including `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:`, `vboxdrmipc:x:998:`, `fwupd-refresh:x:136:`, `devops1:x:1001:`, and `devops:x:1002:kmhasan`. A red arrow points to the `devops` entry, and the name `kmhasan` is highlighted with a red box. The prompt `root@kamrul-dev: /home/kamrul#` is visible at the bottom of the terminal window.

```
root@kamrul-dev: /home/kamrul# gpasswd -a kmhasan devops
Adding user kmhasan to group devops
root@kamrul-dev: /home/kamrul#
```

```
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:
vboxdrmipc:x:998:
fwupd-refresh:x:136:
devops1:x:1001:
devops:x:1002:kmhasan
root@kamrul-dev: /home/kamrul#
```



