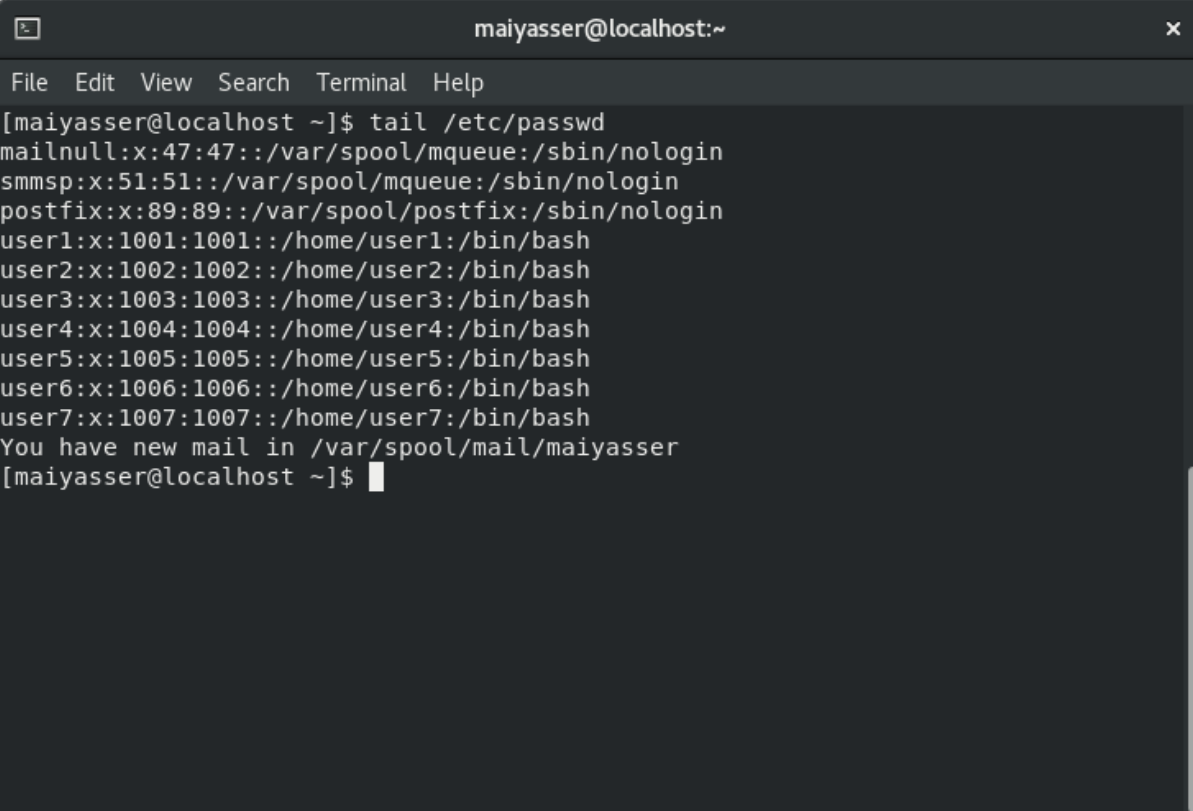


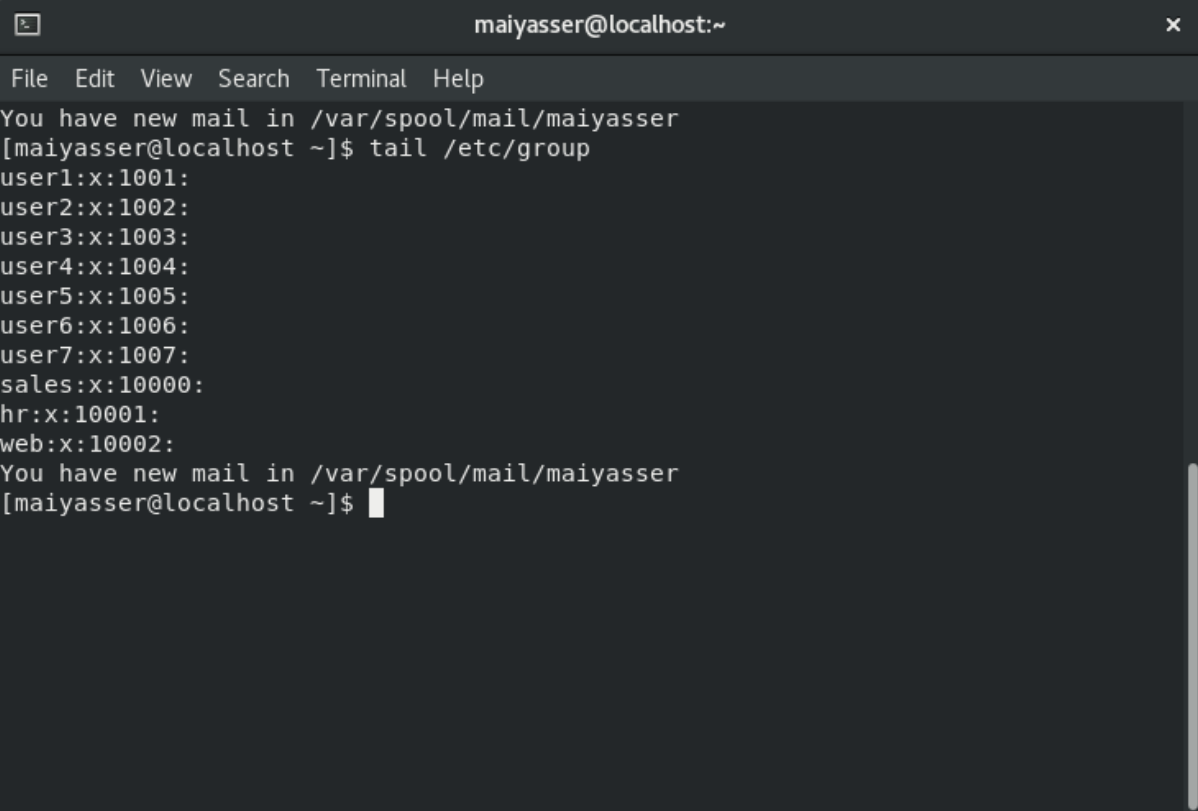
1. Using the `useradd` command, add accounts for the following users in your system: `user1`, `user2`, `user3`, `user4`, `user5`, `user6` and `user7`. Remember to give each user a password.



```
maiyasser@localhost:~  
File Edit View Search Terminal Help  
[maiyasser@localhost ~]$ tail /etc/passwd  
mailnull:x:47:47::/var/spool/mqueue:/sbin/nologin  
smmsp:x:51:51::/var/spool/mqueue:/sbin/nologin  
postfix:x:89:89::/var/spool/postfix:/sbin/nologin  
user1:x:1001:1001::/home/user1:/bin/bash  
user2:x:1002:1002::/home/user2:/bin/bash  
user3:x:1003:1003::/home/user3:/bin/bash  
user4:x:1004:1004::/home/user4:/bin/bash  
user5:x:1005:1005::/home/user5:/bin/bash  
user6:x:1006:1006::/home/user6:/bin/bash  
user7:x:1007:1007::/home/user7:/bin/bash  
You have new mail in /var/spool/mail/maiyasser  
[maiyasser@localhost ~]$
```

2. Using the groupadd command, add the following groups to your system.

Group GID
sales 10000
hr 10001
web 10002



```
maiyasser@localhost:~  
File Edit View Search Terminal Help  
You have new mail in /var/spool/mail/maiyasser  
[maiyasser@localhost ~]$ tail /etc/group  
user1:x:1001:  
user2:x:1002:  
user3:x:1003:  
user4:x:1004:  
user5:x:1005:  
user6:x:1006:  
user7:x:1007:  
sales:x:10000:  
hr:x:10001:  
web:x:10002:  
You have new mail in /var/spool/mail/maiyasser  
[maiyasser@localhost ~]$
```

Why should you set GID in this manner instead of allowing the system to set the GID by default?

The system will increment number

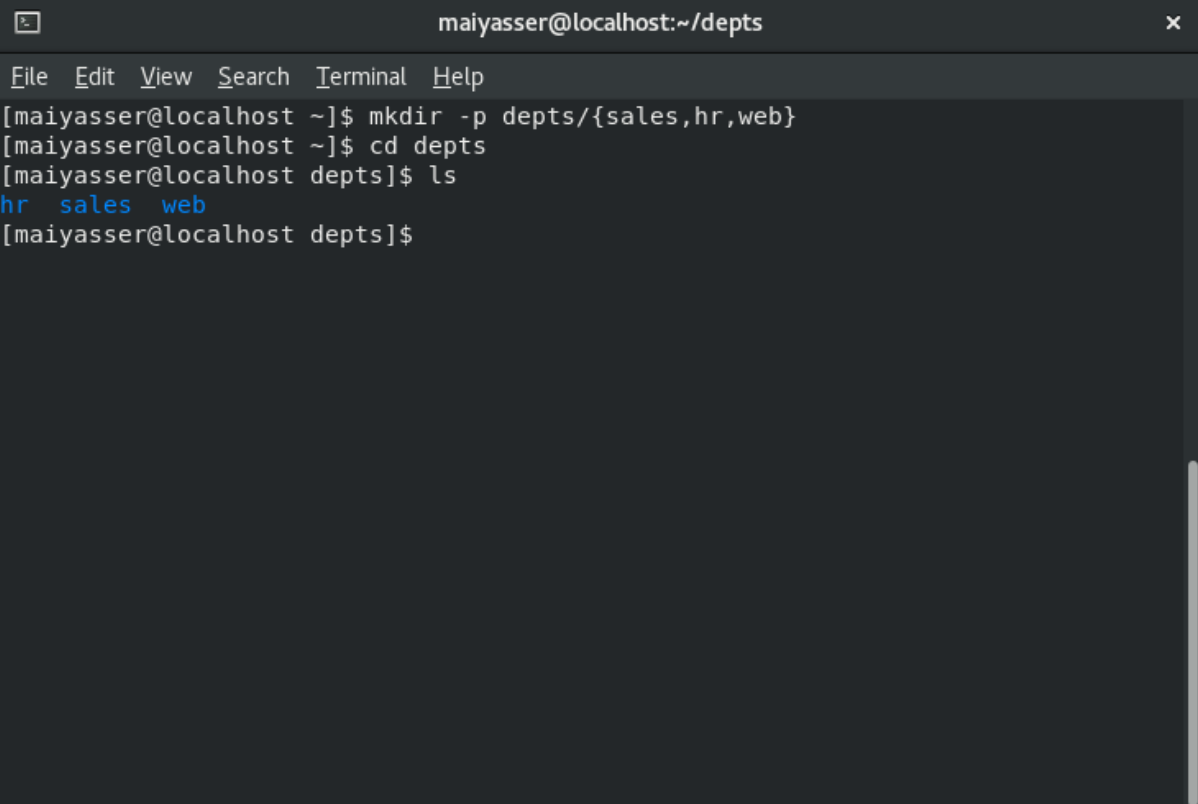
3. Using the usermod command to add user1 and user2 to the sales auxiliary group, user3 and user4 to the hr auxiliary group. User5 and user6 to web auxiliary group. And add user7 to all auxiliary Groups

```
maiyasser@localhost:~  
File Edit View Search Terminal Help  
[maiyasser@localhost ~]$ sudo usermod -aG sales user1  
[sudo] password for maiyasser:  
[maiyasser@localhost ~]$ sudo usermod -aG sales user2  
[maiyasser@localhost ~]$ sudo usermod -aG hr user3  
[maiyasser@localhost ~]$ sudo usermod -aG hr user4  
[maiyasser@localhost ~]$ sudo usermod -aG web user5  
[maiyasser@localhost ~]$ sudo usermod -aG web user6  
[maiyasser@localhost ~]$ sudo usermod -aG sales,hr,web user7  
[maiyasser@localhost ~]$ tail /etc/groups  
tail: cannot open '/etc/groups' for reading: No such file or directory  
[maiyasser@localhost ~]$ tail /etc/group  
user1:x:1001:  
user2:x:1002:  
user3:x:1003:  
user4:x:1004:  
user5:x:1005:  
user6:x:1006:  
user7:x:1007:  
sales:x:10000:user1,user2,user7  
hr:x:10001:user3,user4,user7  
web:x:10002:user5,user6,user7  
[maiyasser@localhost ~]$
```

4. Login as each user and use id command to verify that they are in the appropriate groups. How else might you verify this information?

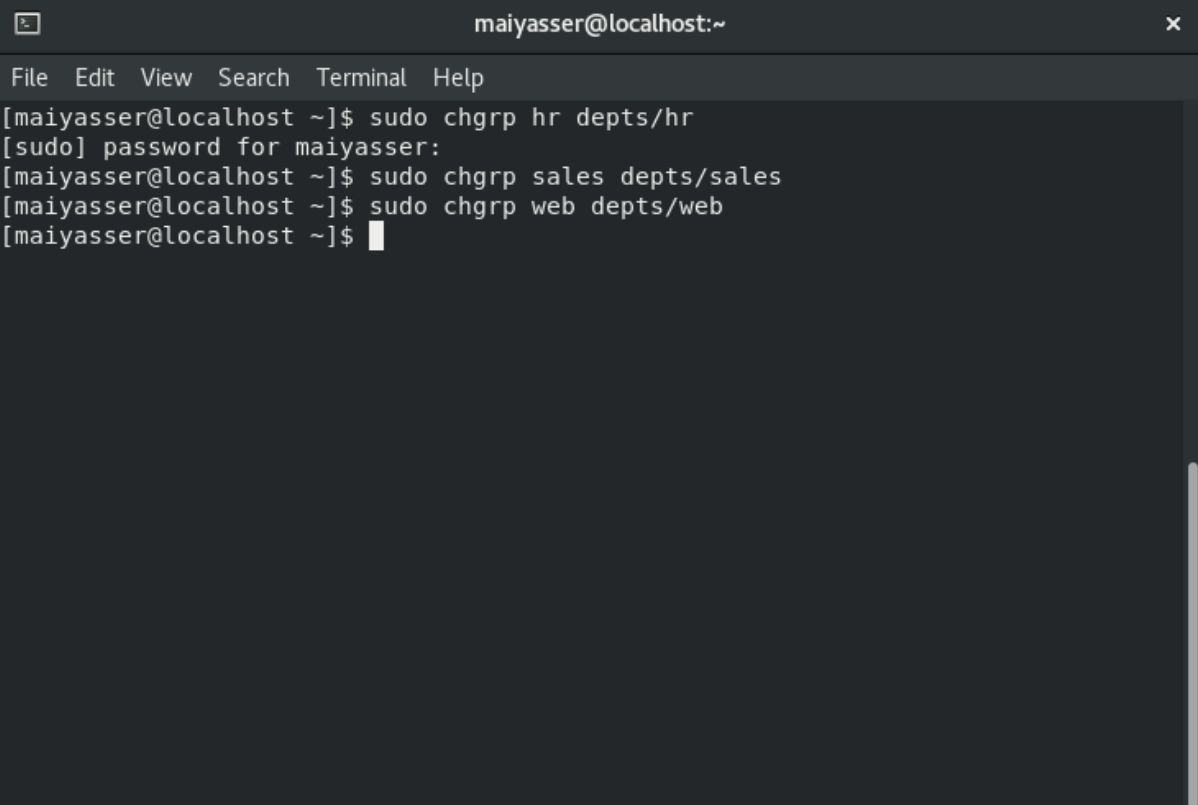
```
user7@localhost:~  
File Edit View Search Terminal Help  
Retype new password:  
passwd: all authentication tokens updated successfully.  
[maiyasser@localhost ~]$ sudo passwd user5  
Changing password for user user5.  
New password:  
BAD PASSWORD: The password is shorter than 8 characters  
Retype new password:  
passwd: all authentication tokens updated successfully.  
[maiyasser@localhost ~]$ sudo passwd user6  
Changing password for user user6.  
New password:  
BAD PASSWORD: The password is shorter than 8 characters  
Retype new password:  
passwd: all authentication tokens updated successfully.  
[maiyasser@localhost ~]$ sudo passwd user7  
Changing password for user user7.  
New password:  
BAD PASSWORD: The password is shorter than 8 characters  
Retype new password:  
passwd: all authentication tokens updated successfully.  
[maiyasser@localhost ~]$ sudo passwd user8  
passwd: Unknown user name 'user8'.  
[maiyasser@localhost ~]$ clear  
[maiyasser@localhost ~]$ su - user1  
Password:  
[user1@localhost ~]$ id  
uid=1001(user1) gid=1001(user1) groups=1001(user1),10000(sales) context=unconfined_u:unconfined_r:unconfined_t:s0-s0:c0.c1023  
[user1@localhost ~]$ su - user2  
Password:  
[user2@localhost ~]$ id  
uid=1002(user2) gid=1002(user2) groups=1002(user2),10000(sales) context=unconfined_u:unconfined_r:unconfined_t:s0-s0:c0.c1023  
[user2@localhost ~]$ su - user3  
Password:  
[user3@localhost ~]$ id  
uid=1003(user3) gid=1003(user3) groups=1003(user3),10001(hr) context=unconfined_u:unconfined_r:unconfined_t:s0-s0:c0.c1023  
[user3@localhost ~]$ su - user4  
Password:  
[user4@localhost ~]$ id  
uid=1004(user4) gid=1004(user4) groups=1004(user4),10001(hr) context=unconfined_u:unconfined_r:unconfined_t:s0-s0:c0.c1023  
[user4@localhost ~]$ su - user5  
Password:  
[user5@localhost ~]$ id  
uid=1005(user5) gid=1005(user5) groups=1005(user5),10002(web) context=unconfined_u:unconfined_r:unconfined_t:s0-s0:c0.c1023  
[user5@localhost ~]$ su - user6  
Password:  
[user6@localhost ~]$ id  
uid=1006(user6) gid=1006(user6) groups=1006(user6),10002(web) context=unconfined_u:unconfined_r:unconfined_t:s0-s0:c0.c1023  
[user6@localhost ~]$ su - user7  
Password:  
[user7@localhost ~]$ id  
uid=1007(user7) gid=1007(user7) groups=1007(user7),10000(sales),10001(hr),10002(web) context=unconfined_u:unconfined_r:unconfined_t:s0-s0:c0.c1023  
[user7@localhost ~]$
```

5. Create a directory called /depts with a sales, hr, and web directory within the /depts directory.



```
maiyasser@localhost:~/depts
File Edit View Search Terminal Help
[maiyasser@localhost ~]$ mkdir -p depts/{sales,hr,web}
[maiyasser@localhost ~]$ cd depts
[maiyasser@localhost depts]$ ls
hr sales web
[maiyasser@localhost depts]$
```

6. Using the chgrp command, set the group ownership of each directory to the group with the matching name



```
maiyasser@localhost:~
File Edit View Search Terminal Help
[maiyasser@localhost ~]$ sudo chgrp hr depts/hr
[sudo] password for maiyasser:
[maiyasser@localhost ~]$ sudo chgrp sales depts/sales
[maiyasser@localhost ~]$ sudo chgrp web depts/web
[maiyasser@localhost ~]$
```

7. Set the permissions on the /depts directory to 755, and each subdirectory to 770

```
maiyasser@localhost:~  
File Edit View Search Terminal Help  
  
[maiyasser@localhost ~]$ chmod 755 depts  
[maiyasser@localhost ~]$ chmod 770 sales hr web  
chmod: cannot access 'sales': No such file or directory  
chmod: cannot access 'hr': No such file or directory  
chmod: cannot access 'web': No such file or directory  
[maiyasser@localhost ~]$ cd depts  
[maiyasser@localhost depts]$ chmod 770 sales hr web  
[maiyasser@localhost depts]$ ls -l  
total 0  
drwxrwx---. 2 maiyasser hr      6 Dec 23 15:40 hr  
drwxrwx---. 2 maiyasser sales 6 Dec 23 15:40 sales  
drwxrwx---. 2 maiyasser web   6 Dec 23 15:40 web  
[maiyasser@localhost depts]$ cd ../  
[maiyasser@localhost ~]$ ls -l  
total 5808  
drwxrwxr-x. 2 maiyasser maiyasser    60 Dec 12 21:36 bash2  
drwxrwxr-x. 2 maiyasser maiyasser    18 Dec  5 14:49 Commands  
drwxrwxr-x. 4 maiyasser maiyasser   141 Dec 21 23:43 DBMS  
drwxr-xr-x. 5 maiyasser maiyasser    40 Dec 23 15:40 depts  
drwxr-xr-x. 2 maiyasser maiyasser     6 Nov 21 15:23 Desktop
```

8. Set the set-gid bit on each departmental directory

```
[maiyasser@localhost ~]$ chmod g+s depts/hr  
[maiyasser@localhost ~]$ chmod g+s depts/web  
[maiyasser@localhost ~]$ chmod g+s depts/sales
```

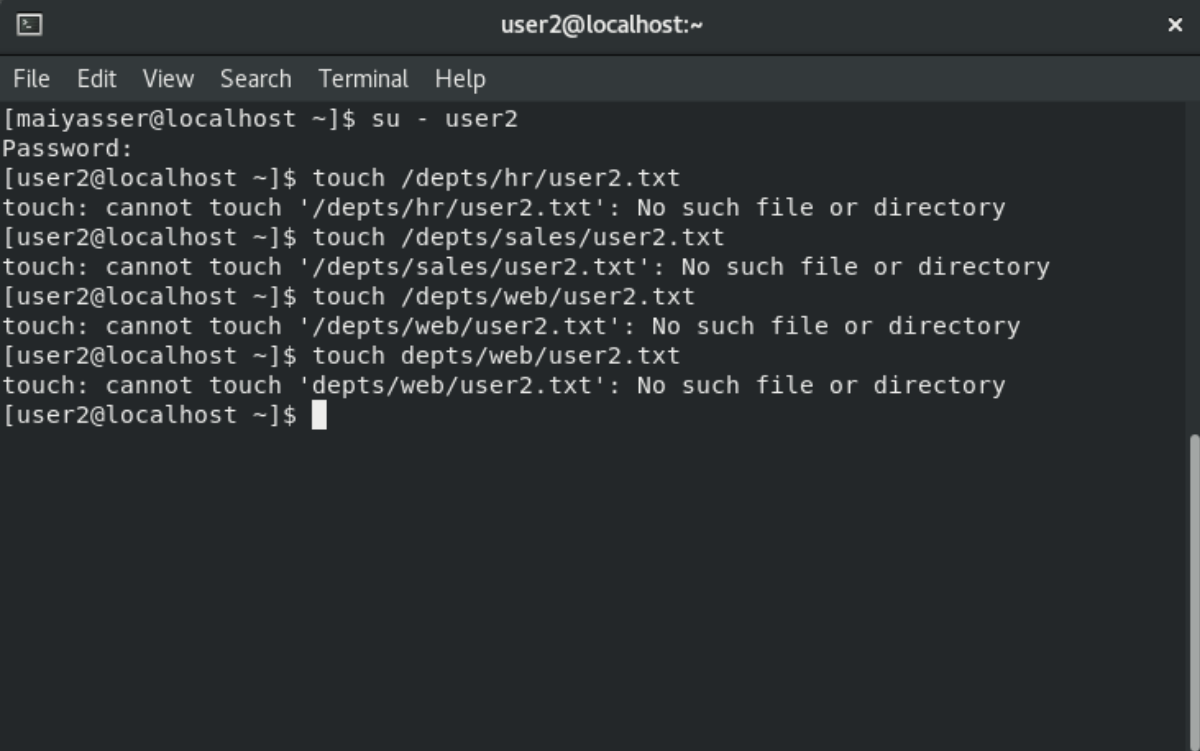
9. Use the su command to switch to the user2 account and attempt the following commands:

`touch /depts/sales/user2.txt`

`touch /depts/hr/ user2.txt`

`touch /depts/web/ user2.txt`

Which of these commands succeeded and which failed? What is the group ownership of the files that were created?

A terminal window titled 'user2@localhost:~' with a menu bar (File, Edit, View, Search, Terminal, Help). The terminal shows the following commands and output:

```
[maiyasser@localhost ~]$ su - user2
Password:
[user2@localhost ~]$ touch /depts/hr/user2.txt
touch: cannot touch '/depts/hr/user2.txt': No such file or directory
[user2@localhost ~]$ touch /depts/sales/user2.txt
touch: cannot touch '/depts/sales/user2.txt': No such file or directory
[user2@localhost ~]$ touch /depts/web/user2.txt
touch: cannot touch '/depts/web/user2.txt': No such file or directory
[user2@localhost ~]$ touch depts/web/user2.txt
touch: cannot touch 'depts/web/user2.txt': No such file or directory
[user2@localhost ~]$
```

All failed because user2 doesn't have the ownership of the directory depts.

10. Configure sudoers file to allow user3 and user4 to use /bin/mount and /bin/umount commands, while allowing user5 only to use fdisk command.

1- `sudo visudo`

2- `user3 ALL=(ALL) !ALL, /bin/mount, /bin/unmount`

3- `user4 ALL=(ALL) !ALL, /bin/mount, /bin/unmount`

4- `user5 ALL=(ALL) !ALL, /sbin/fdisk`

11. Login by user3 and try to unmount /boot.

`su - user3`

`sudo umount /dev/boot`

12. Login by user4 and remount /boot. Also try to view the partition table using fdisk.

`su - user4`

`fdisk /dev/boot`

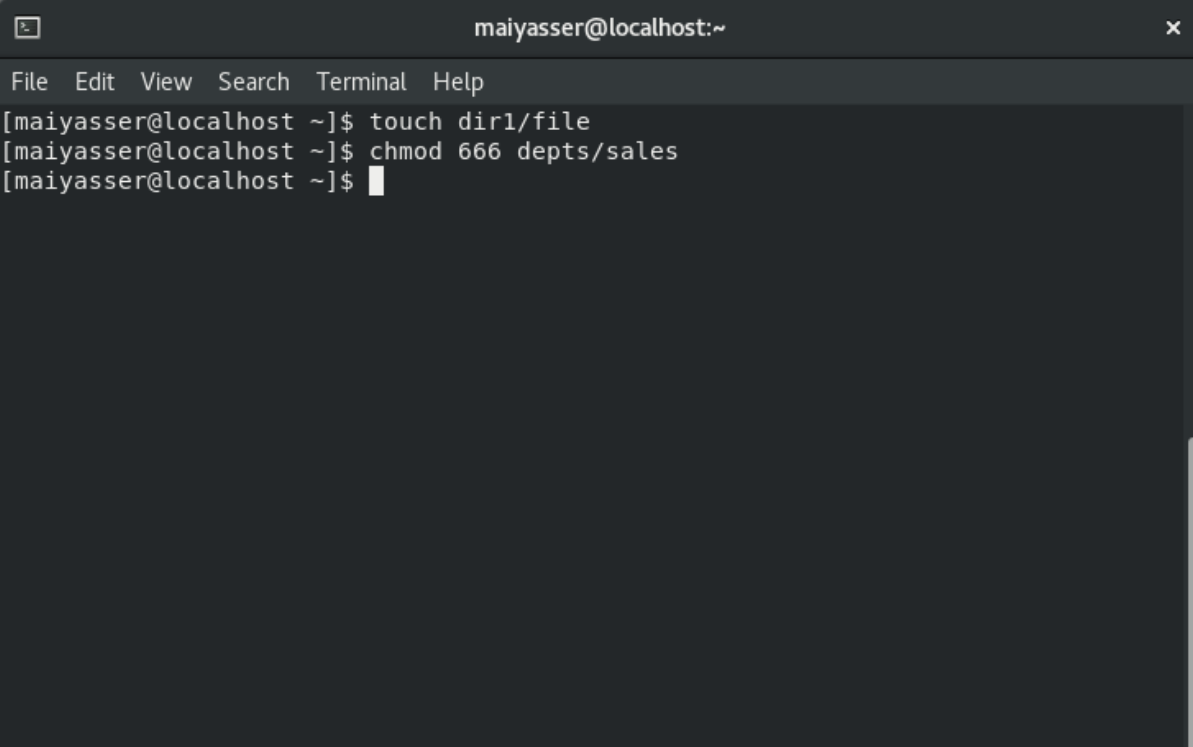
13. Create a directory with permissions `rwxrwx---`, grant a second group (sales) `r-x` permissions

```
mkdir dir1
```

```
chmod 770 dir1
```

```
chmod 555 depts/sales
```

14. create a file on that directory and grant read and write to a second group (sales)



```
maiyasser@localhost:~  
File Edit View Search Terminal Help  
[maiyasser@localhost ~]$ touch dir1/file  
[maiyasser@localhost ~]$ chmod 666 depts/sales  
[maiyasser@localhost ~]$
```