

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.

```
01:29 en ? [icon]
EHassouna@192:~
File Edit View Search Terminal Help
bash: syntax error near unexpected token `newline'
[EHassouna@192 ~]$ useradd user1
useradd: Permission denied.
useradd: cannot lock /etc/passwd; try again later.
[EHassouna@192 ~]$ sudo useradd user1
[sudo] password for EHassouna:
[EHassouna@192 ~]$ sudo useradd user2
[EHassouna@192 ~]$ sudo useradd user3
[EHassouna@192 ~]$ sudo useradd user4
[EHassouna@192 ~]$ sudo useradd user5
^[[A[EHassouna@192 ~]$ sudo useradd user6
^[[A[EHassouna@192 ~]$ sudo useradd user7
[EHassouna@192 ~]$ sudo passwd user7 12
passwd: Only one user name may be specified.
[EHassouna@192 ~]$ sudo passwd user7
Changing password for user user7.
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
Sorry, passwords do not match.
passwd: Authentication token manipulation error
[EHassouna@192 ~]$ sudo passwd user7
Changing password for user user7.
New password:
BAD PASSWORD: The password fails the dictionary check - it is too simplistic/systematic
Retype new password:
Sorry, passwords do not match.
passwd: Authentication token manipulation error
[EHassouna@192 ~]$ sudo passwd user7
Changing password for user user7.
New password:
BAD PASSWORD: The password contains the user name in some form
Retype new password:
Sorry, passwords do not match.
passwd: Authentication token manipulation error
[EHassouna@192 ~]$
```

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

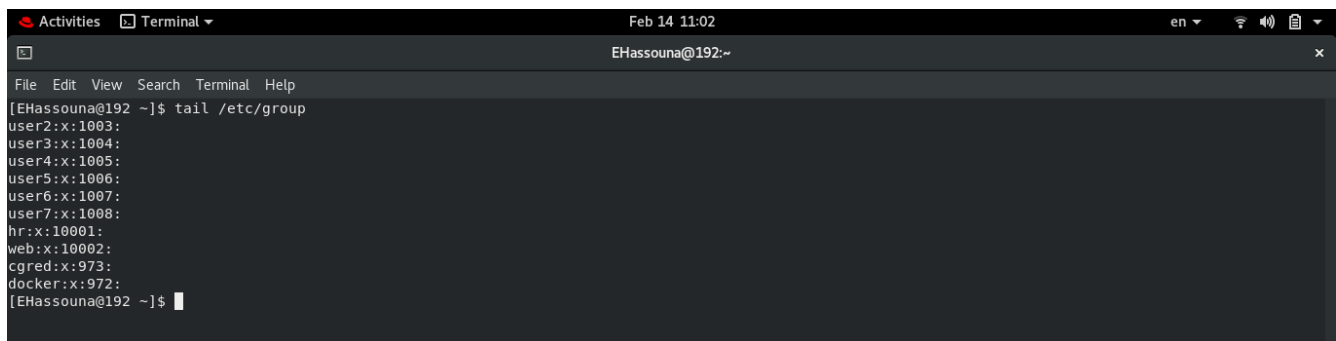
Group GID sales 10000 hr 10001 web 10002

```
01:34 en ? [icon]
EHassouna@192:~
File Edit View Search Terminal Help
^[[A[EHassouna@192 ~]$ sudo useradd user7
[EHassouna@192 ~]$ sudo passwd user7 12
passwd: Only one user name may be specified.
[EHassouna@192 ~]$ sudo passwd user7
Changing password for user user7.
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
Sorry, passwords do not match.
passwd: Authentication token manipulation error
[EHassouna@192 ~]$ sudo passwd user7
Changing password for user user7.
New password:
BAD PASSWORD: The password fails the dictionary check - it is too simplistic/systematic
Retype new password:
Sorry, passwords do not match.
passwd: Authentication token manipulation error
[EHassouna@192 ~]$ sudo passwd user7
Changing password for user user7.
New password:
BAD PASSWORD: The password contains the user name in some form
Retype new password:
Sorry, passwords do not match.
passwd: Authentication token manipulation error
[EHassouna@192 ~]$ sudo groupadd -g 10000 sales
groupadd: group 'sales' already exists
[EHassouna@192 ~]$ sudo groupadd -g 10001 hr
[EHassouna@192 ~]$ sudo groupadd -g 10002 web
[EHassouna@192 ~]$ cat -3 /etc/group
cat: invalid option -- '3'
Try 'cat --help' for more information.
[EHassouna@192 ~]$ sudo tail -3 /etc/group
user7:x:1008:
hr:x:10001:
web:x:10002:
[EHassouna@192 ~]$
```

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

```
[EHassouna@192 ~]$ sudo groupadd -g 10000 sales
groupadd: group 'sales' already exists
[EHassouna@192 ~]$ sudo groupadd -g 10001 hr
[EHassouna@192 ~]$ sudo groupadd -g 10002 web
[EHassouna@192 ~]$ cat -3 /etc/group
cat: invalid option -- '3'
Try 'cat --help' for more information.
[EHassouna@192 ~]$ sudo tail -3 /etc/group
user7:x:1008:
hr:x:10001:
web:x:10002:
[EHassouna@192 ~]$
```

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?



The screenshot shows a terminal window titled "Terminal" with the date and time "Feb 14 11:02". The user "EHassouna@192" is logged in. The terminal displays the command `tail /etc/group` and its output, which lists the last three entries of the `/etc/group` file: `user7:x:1008:`, `hr:x:10001:`, and `web:x:10002:`. The terminal window has a menu bar with "File", "Edit", "View", "Search", "Terminal", and "Help".

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

```
[EHassouna@192 ~]$ whoami
EHassouna
[EHassouna@192 ~]$ pwd
/home/EHassouna
[EHassouna@192 ~]$ mkdir -p depts/sales
[EHassouna@192 ~]$ mkdir -p depts/hr
[EHassouna@192 ~]$ mkdir -p depts/web
[EHassouna@192 ~]$ ls depts/
hr sales web
[EHassouna@192 ~]$
```

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

```
11:11 en [signal icon] [lock icon]
EHassouna@192:~
File Edit View Search Terminal Help
[EHassouna@192 ~]$ sudo chgrp hr depts/hr
[sudo] password for EHassouna:
[EHassouna@192 ~]$ sudo chgrp sales depts/sales
[EHassouna@192 ~]$ sudo chgrp web depts/web
[EHassouna@192 ~]$
```

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

```
EHassouna@192:~
File Edit View Search Terminal Help
[EHassouna@192 ~]$ sudo chgrp hr depts/hr
[sudo] password for EHassouna:
[EHassouna@192 ~]$ sudo chgrp sales depts/sales
[EHassouna@192 ~]$ sudo chgrp web depts/web
[EHassouna@192 ~]$ chmod 755 depts
[EHassouna@192 ~]$ chmod 770 depts/hr
chmod: missing operand after '770depts/hr'
Try 'chmod --help' for more information.
[EHassouna@192 ~]$ chmod 770 depts/hr
[EHassouna@192 ~]$ chmod 770 depts/sales
[EHassouna@192 ~]$ chmod 770 depts/web
[EHassouna@192 ~]$
```

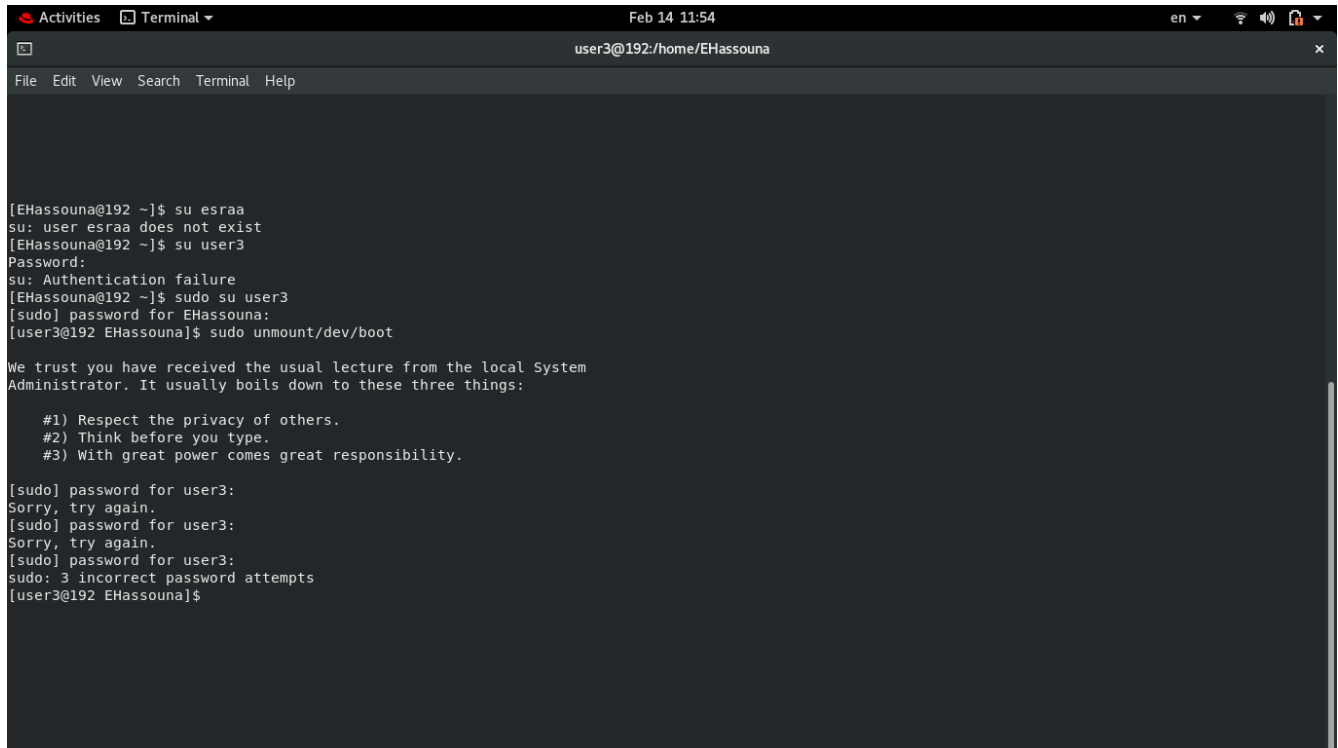
8. Set the set-gid bit on each departmental directory

```
Activities Terminal Feb 14 11:26 en [signal icon] [lock icon]
EHassouna@192:~
File Edit View Search Terminal Help
[EHassouna@192 ~]$ ll
total 12196
drwxrwxr-x. 2 EHassouna EHassouna 6 Jan 22 23:48 admin2
drwxrwxr-x. 3 EHassouna EHassouna 62 Dec 25 09:26 apache
drwxr-xr-x. 4 EHassouna EHassouna 41 Dec 21 12:51 bash
drwxrwxr-x. 3 EHassouna EHassouna 23 Dec 15 14:46 bash_comm
-rw-rw-r--. 1 EHassouna EHassouna 31 Dec 20 14:10 bashrc
-rw-rw-r--. 1 EHassouna EHassouna 1 Nov 23 13:00 C
drwxr-xr-x. 5 EHassouna EHassouna 40 Feb 14 11:06 depts
drwxr-xr-x. 2 EHassouna EHassouna 6 Nov 22 12:30 Desktop
drwxrwxr-x. 3 EHassouna EHassouna 18 Nov 24 13:09 docs
drwxr-xr-x. 8 EHassouna EHassouna 141 Dec 26 11:41 Documents
drwxr-xr-x. 5 EHassouna EHassouna 4096 Feb 9 19:45 Downloads
-rw-rw-r--. 1 EHassouna EHassouna 116967 Dec 8 13:57 errorfile
-rw-rw-r--. 1 EHassouna EHassouna 115317 Dec 8 13:30 errorfile2
-r--r--r--. 1 EHassouna EHassouna 0 Dec 6 16:31 esraa
-rw-rw-r--. 1 EHassouna EHassouna 3 Dec 8 13:47 filename1
-rw-rw-r--. 1 EHassouna EHassouna 17 Dec 8 13:47 filename2
-rw-rw-r--. 1 EHassouna EHassouna 0 Dec 7 15:05 Mail
drwxr-xr-x. 2 EHassouna EHassouna 6 Nov 22 12:30 Music
-rw-rw-r--. 1 EHassouna EHassouna 215 Dec 7 12:33 mycv
drw--wx--x. 2 EHassouna EHassouna 6 Dec 6 15:07 myteam
-rw-rw-r--. 1 EHassouna EHassouna 6103249 Dec 8 13:34 outputfile
-rw-rw-r--. 1 EHassouna EHassouna 6080512 Dec 8 13:30 outputfile2
-rw-r--r--. 1 root root 17 Dec 25 12:44 page1.html
-rw-r--r--. 1 root root 17 Dec 25 12:43 page2.html
drwxr-xr-x. 2 EHassouna EHassouna 12288 Feb 14 11:25 Pictures
drwxr-xr-x. 2 EHassouna EHassouna 6 Nov 22 12:30 Public
-rw-rw-r--. 1 EHassouna EHassouna 10 Feb 4 14:12 README.md
-rw-rw-r--. 1 EHassouna EHassouna 0 Feb 9 12:55 repsolution.repo
drwxr-xr-x. 2 EHassouna EHassouna 6 Nov 22 12:30 Templates
drwxr-xr-x. 2 root root 6 Dec 28 10:44 test
d-----.. 2 EHassouna EHassouna 6 Dec 6 16:30 testDirectory
drwxr-xr-x. 2 EHassouna EHassouna 6 Nov 22 12:30 Videos
-rw-----. 1 EHassouna EHassouna 432 Dec 21 12:55 y
-rw-r--r--. 1 EHassouna EHassouna 113 Dec 21 12:55 y.pub
[EHassouna@192 ~]$
```

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

```
/home/EHassouna
[EHassouna@192 ~]$ touch /home/EHassouna/depts/sales/user2.txt
[EHassouna@192 ~]$ touch /home/EHassouna/depts/web/user2.txt
[EHassouna@192 ~]$ touch /home/EHassouna/depts/hr/user2.txt
[EHassouna@192 ~]$ touch /home/EHassouna/depts/hr/user2.txt
```

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.

A terminal window titled 'user3@192:/home/EHassouna' showing a series of commands and their outputs. The user attempts to switch to 'esraa' and 'user3' using 'su', both failing. Then, they use 'sudo su user3', which prompts for a password. After entering the password, they run 'sudo umount/dev/boot'. This triggers a security warning from the system administrator about privilege escalation. The user then attempts to run 'sudo' as 'user3' again, but fails three times due to incorrect passwords. The terminal window includes a menu bar (File, Edit, View, Search, Terminal, Help) and a status bar (Feb 14 11:54, en, and system icons).

```
Activities Terminal Feb 14 11:54 en user3@192:/home/EHassouna
File Edit View Search Terminal Help

[EHassouna@192 ~]$ su esraa
su: user esraa does not exist
[EHassouna@192 ~]$ su user3
Password:
su: Authentication failure
[EHassouna@192 ~]$ sudo su user3
[sudo] password for EHassouna:
[user3@192 EHassouna]$ sudo umount/dev/boot

We trust you have received the usual lecture from the local System
Administrator. It usually boils down to these three things:

    #1) Respect the privacy of others.
    #2) Think before you type.
    #3) With great power comes great responsibility.

[sudo] password for user3:
Sorry, try again.
[sudo] password for user3:
Sorry, try again.
[sudo] password for user3:
sudo: 3 incorrect password attempts
[user3@192 EHassouna]$
```

11.

```
Activities Terminal ▾ Dec 4 6:37 AM
user3@192:~
File Edit View Search Terminal Help
05:48:28 Reem ~ =>su - user3
Password:
[user3@192 ~]$ sudo unmount/dev/boot

We trust you have received the usual lecture from the local System
Administrator. It usually boils down to these three things:

    #1) Respect the privacy of others.
    #2) Think before you type.
    #3) With great power comes great responsibility.

[sudo] password for user3:
user3 is not in the sudoers file. This incident will be reported.
[user3@192 ~]$ su - Reem
Password:
05:49:30 Reem ~ =>su - user3
Password:
[user3@192 ~]$ sudo visudo
[sudo] password for user3:
user3 is not in the sudoers file. This incident will be reported.
[user3@192 ~]$ visudo
visudo: /etc/sudoers: Permission denied
[user3@192 ~]$ sudo visudo
[sudo] password for user3:
Sorry, try again.
[sudo] password for user3:
user3 is not in the sudoers file. This incident will be reported.
[user3@192 ~]$
```

11.Ans:- sudo visudo user3 ALL=(ALL) !ALL, /bin/mount, /bin/umount user4
ALL=(ALL) !ALL, /bin/mount, /bin/umount user5 ALL=(ALL) !ALL, /sbin/fdisk

12.Login by user3 and try to unmount /boot. Ans:- sudo umount /dev/boot

13.Login by user4 and remount /boot. Also try to view the partition table using fdisk. Ans:-
fdisk /dev/boot

14.Create a directory with permissions rwxrwx---, grant a second group (sales) r-x
permissions mkdir dir1 chmod 770 dir1 setfacl -m g:sales:rx ~/dir1

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

16.set the the owning group as the owning group of any newly created file in that
directory.Grand your colleagues a collective directory called /opt/research, where they
can store generated research results. Only members of group profs and grads should be
able to create new files in the directory, and new file should have the following
properties: • the directory should be owned by root • new files should be group owned
by group grads • group profs should automatically have read/write access to new files •
group interns should automatically have read only access to new files • other users
should not be able to access the directory and its contents at all.

• Bonus Your boss thinks it's a great idea to have one central logging server. Satisfy his
requirements ☹ Hint: Set up rsyslogd on the "logging server" machine to accept logging
messages from other machines. On the your "workstation", set up rsyslogd to send messages to
the "logging server" Test the new setup by using the logger command on the "workstation" to
generate a log message Does the message appear in the "logging server's" /var/log/messages
file? Why does this message also appear in the "workstation's" /var/log/messages file? How
could you have the message only appear in the "logging server's" files?