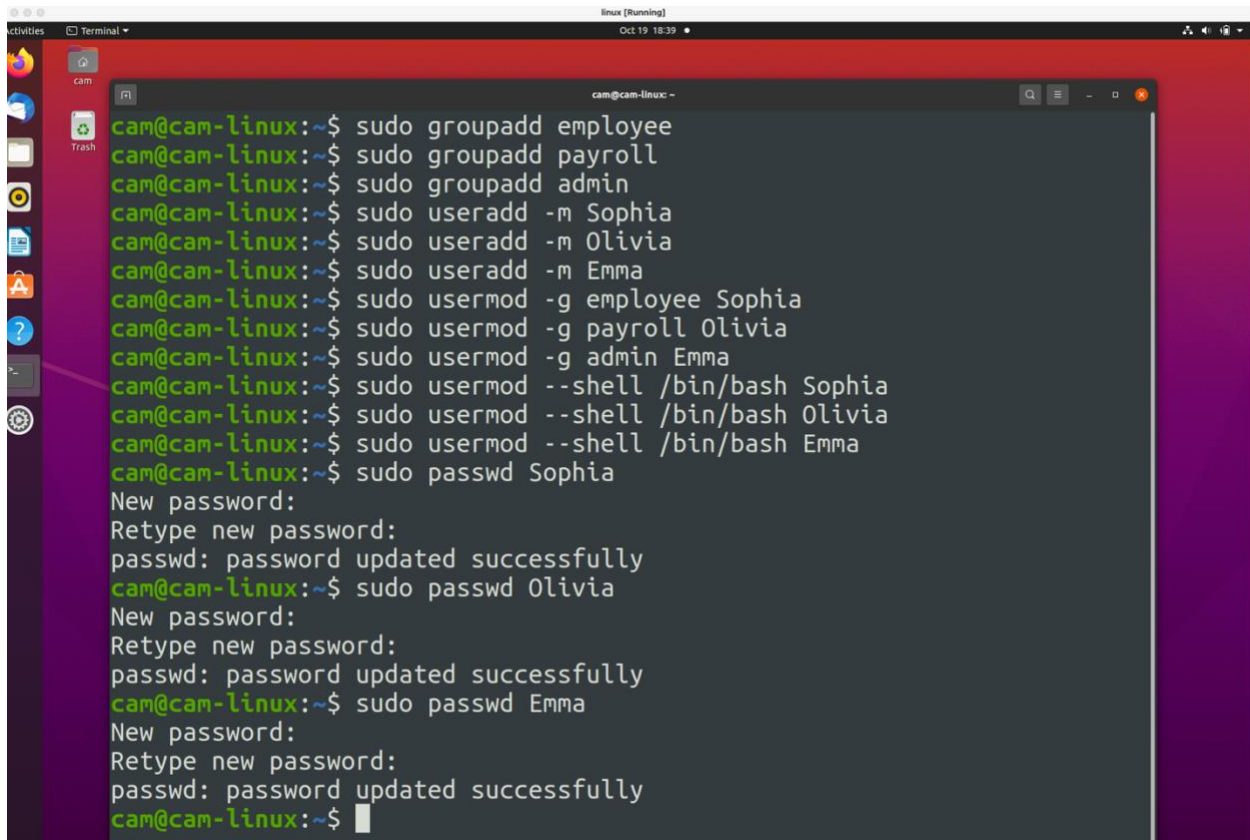


OLD DOMINION UNIVERSITY
CYSE 270 LINUX SYSTEM FOR CYBERSECURITY

Assignment #6 File Permission

Cameron Cassani
01177215

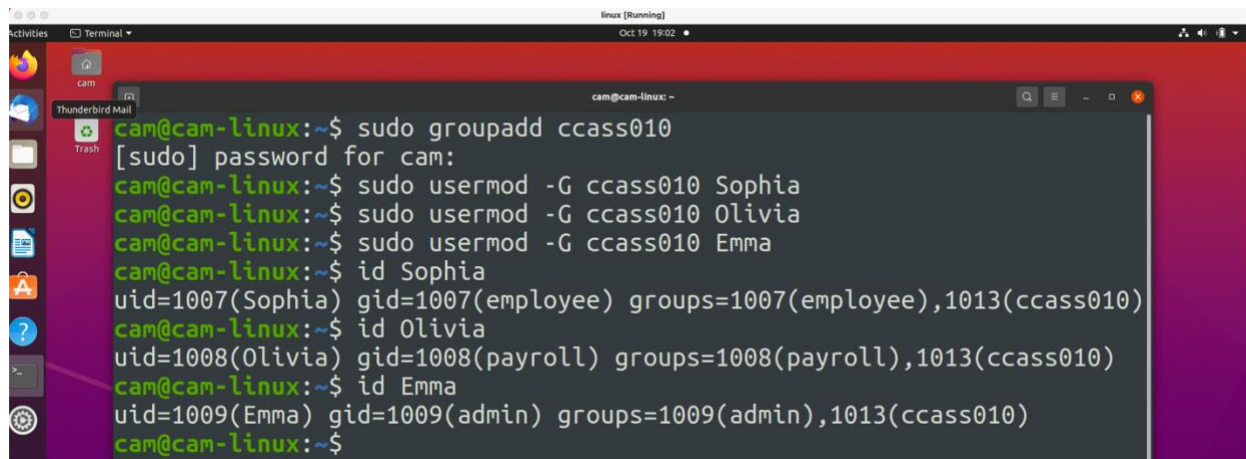
TASK A



```
cam@cam-linux:~$ sudo groupadd employee
cam@cam-linux:~$ sudo groupadd payroll
cam@cam-linux:~$ sudo groupadd admin
cam@cam-linux:~$ sudo useradd -m Sophia
cam@cam-linux:~$ sudo useradd -m Olivia
cam@cam-linux:~$ sudo useradd -m Emma
cam@cam-linux:~$ sudo usermod -g employee Sophia
cam@cam-linux:~$ sudo usermod -g payroll Olivia
cam@cam-linux:~$ sudo usermod -g admin Emma
cam@cam-linux:~$ sudo usermod --shell /bin/bash Sophia
cam@cam-linux:~$ sudo usermod --shell /bin/bash Olivia
cam@cam-linux:~$ sudo usermod --shell /bin/bash Emma
cam@cam-linux:~$ sudo passwd Sophia
New password:
Retype new password:
passwd: password updated successfully
cam@cam-linux:~$ sudo passwd Olivia
New password:
Retype new password:
passwd: password updated successfully
cam@cam-linux:~$ sudo passwd Emma
New password:
Retype new password:
passwd: password updated successfully
cam@cam-linux:~$
```

Explanation (Step 1 & 2)

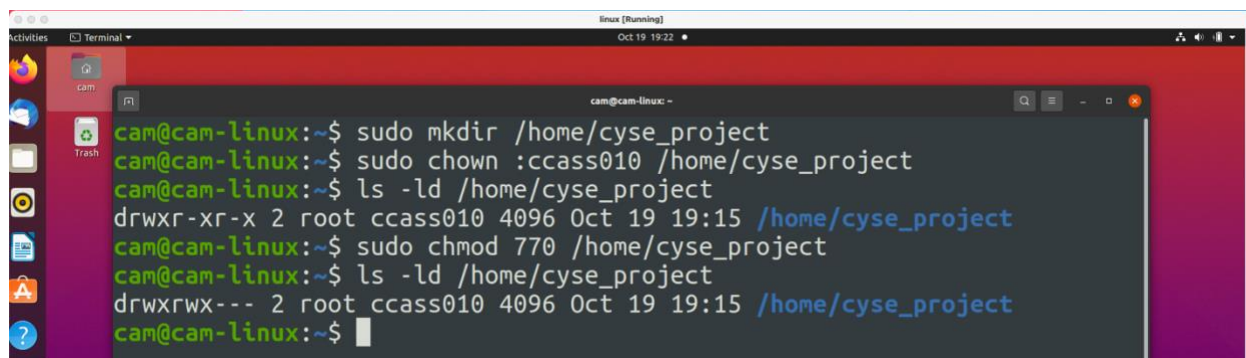
- I use “sudo groupadd xxxxx” and replace xxxxx with employee, payroll, and admin to create three groups with the respective names.
- I use “sudo useradd -m xxxxx” and replace xxxxx with Sophia, Olivia, and Emma to create three users accounts with a specified home directory.
- I use “sudo usermod --shell xxxxx” and replace xxxxx with the Sophia, Olivia and Emma to change their login shells to /bin/bash.
- I use “sudo passwd xxxxx” and replace xxxxx with the Sophia, Olivia and Emma to set a password for each user.

A terminal window titled 'linux [Running]' with a timestamp of 'Oct 19 19:02'. The prompt is 'cam@cam-linux: ~'. The user enters 'sudo groupadd ccass010', followed by '[sudo] password for cam:'. Then, they enter 'sudo usermod -G ccass010 Sophia', 'sudo usermod -G ccass010 Olivia', and 'sudo usermod -G ccass010 Emma'. Finally, they check the user profiles with 'id Sophia', 'id Olivia', and 'id Emma'.

```
cam@cam-linux:~$ sudo groupadd ccass010
[sudo] password for cam:
cam@cam-linux:~$ sudo usermod -G ccass010 Sophia
cam@cam-linux:~$ sudo usermod -G ccass010 Olivia
cam@cam-linux:~$ sudo usermod -G ccass010 Emma
cam@cam-linux:~$ id Sophia
uid=1007(Sophia) gid=1007(employee) groups=1007(employee),1013(ccass010)
cam@cam-linux:~$ id Olivia
uid=1008(Olivia) gid=1008(payload) groups=1008(payload),1013(ccass010)
cam@cam-linux:~$ id Emma
uid=1009(Emma) gid=1009(admin) groups=1009(admin),1013(ccass010)
cam@cam-linux:~$
```

Explanation (Step 3)

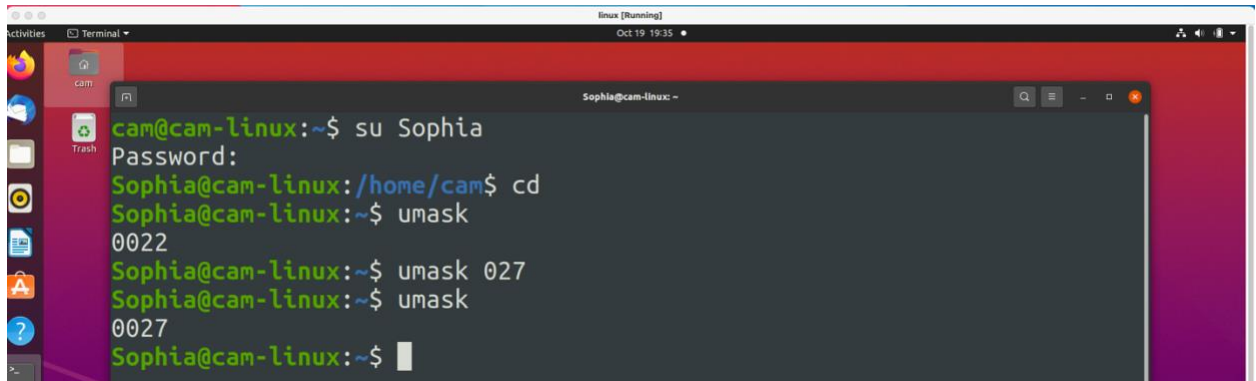
- I use “sudo groupadd ccass010” to create a group with my midas id.
- I use “sudo usermod -G ccass010 xxxxx” and replace xxxxx with Sophia, Olivia and Emma to add the ccass010 group as the secondary group for those users.
- I use “id xxxxx” and replace xxxxx with Sophia, Olivia, and Emma to check each user’s group profile.

A terminal window titled 'linux [Running]' with a timestamp of 'Oct 19 19:22'. The prompt is 'cam@cam-linux: ~'. The user enters 'sudo mkdir /home/cyse_project', 'sudo chown :ccass010 /home/cyse_project', 'ls -ld /home/cyse_project', 'sudo chmod 770 /home/cyse_project', and another 'ls -ld /home/cyse_project'.

```
cam@cam-linux:~$ sudo mkdir /home/cyse_project
cam@cam-linux:~$ sudo chown :ccass010 /home/cyse_project
cam@cam-linux:~$ ls -ld /home/cyse_project
drwxr-xr-x 2 root ccass010 4096 Oct 19 19:15 /home/cyse_project
cam@cam-linux:~$ sudo chmod 770 /home/cyse_project
cam@cam-linux:~$ ls -ld /home/cyse_project
drwxrwx--- 2 root ccass010 4096 Oct 19 19:15 /home/cyse_project
cam@cam-linux:~$
```

Explanation (Step 4 & 5)

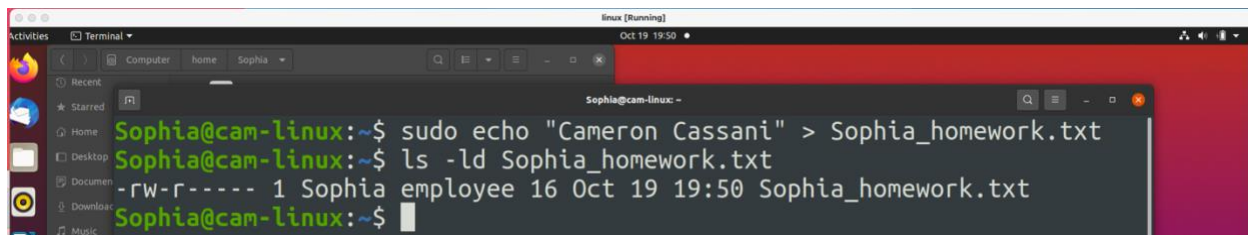
- I use “sudo mkdir /home/cyse_project” to create the directory /home/cyse_project.
- I use “sudo chown ccass010 /home/cyse_project” to assign ccass010 as the owner of the cyse_project directory.
- I use “ls -ld /home/cyse_project” to check the permission of cyse_project.
- I use “sudo chmod 770 /home/cyse_project” to change the permissions of the cyse_project directory so that only project group members have access to this directory.
- I use “ls -ld /home/cyse_project” to check the permissions of cyse_project.

A terminal window titled 'Linux [Running]' with a timestamp of 'Oct 19 19:35'. The user 'cam' is logged in. The terminal shows the following commands and output:

```
cam@cam-linux:~$ su Sophia
Password:
Sophia@cam-linux:/home/cam$ cd
Sophia@cam-linux:~$ umask
0022
Sophia@cam-linux:~$ umask 027
Sophia@cam-linux:~$ umask
0027
Sophia@cam-linux:~$
```

Explanation (Step 6)

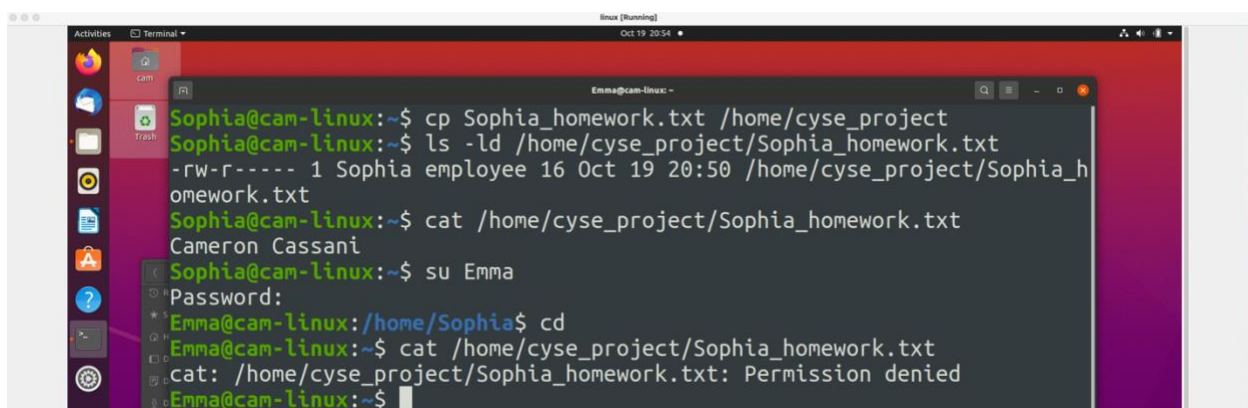
- I use “su Sophia” to switch to Sophia’s account.
- I use “umask 027” to change the permissions for Sophia to -rw-r-----.
- I use “umask” to check the permissions of Sophia

A terminal window titled 'Linux [Running]' with a timestamp of 'Oct 19 19:50'. The user 'Sophia' is logged in. The terminal shows the following commands and output:

```
Sophia@cam-linux:~$ sudo echo "Cameron Cassani" > Sophia_homework.txt
Sophia@cam-linux:~$ ls -ld Sophia_homework.txt
-rw-r----- 1 Sophia employee 16 Oct 19 19:50 Sophia_homework.txt
Sophia@cam-linux:~$
```

Explanation (Step 7)

- I use “sudo echo “Cameron Cassani” > Sophia_homework.txt” to create a new file called Sophia_homework in the home directory. This file also includes my name (“Cameron Cassani”) in the first line.
- I use “ls -ld Sophia_homework.txt” to check the permissions of the file.

A terminal window titled 'Linux [Running]' with a timestamp of 'Oct 19 20:14'. The user 'Sophia' is logged in. The terminal shows the following commands and output:

```
Sophia@cam-linux:~$ cp Sophia_homework.txt /home/cyse_project
Sophia@cam-linux:~$ ls -ld /home/cyse_project/Sophia_homework.txt
-rw-r----- 1 Sophia employee 16 Oct 19 20:50 /home/cyse_project/Sophia_homework.txt
Sophia@cam-linux:~$ cat /home/cyse_project/Sophia_homework.txt
Cameron Cassani
Sophia@cam-linux:~$ su Emma
Password:
Emma@cam-linux:/home/Sophia$ cd
Emma@cam-linux:~$ cat /home/cyse_project/Sophia_homework.txt
cat: /home/cyse_project/Sophia_homework.txt: Permission denied
Emma@cam-linux:~$
```

Explanation (Step 8 & 9)

- I use “sudo cp Sophia_homework.txt /home/cyse_project/Sophia_homework.txt” to copy Sophia_homework to the /home/cyse_project directory.

- I use “ls -ld /home/cyse_project/Sophia_homework.txt” to check the permissions of the document.
- I use “cat /home/cyse_project/Sophia_homework.txt” with Sophia’s account to make sure that user can read it.
- I use “su Emma” to switch to Emma’s account
- I use “cat /home/cyse_project/Sophia_homework.txt” with Emma’s account to make sure the user can’t read it.

TASK B

```

cam@cam-linux:~$ su -
Password:
root@cam-linux:~# chmod 2744 /home/cyse_project/Sophia_homework.txt
root@cam-linux:~# ls -ld /home/cyse_project/Sophia_homework.txt
-rwxr-Sr-- 1 Sophia employee 16 Oct 19 20:50 /home/cyse_project/Sophia_homework.txt
root@cam-linux:~#
  
```

Explanation (Step 1)

- I use “su –” to switch to the root account.
- I use “chmod 2744 /home/cyse_project/Sophia_homework.txt” to disallow group members to access the Sophia_homework file

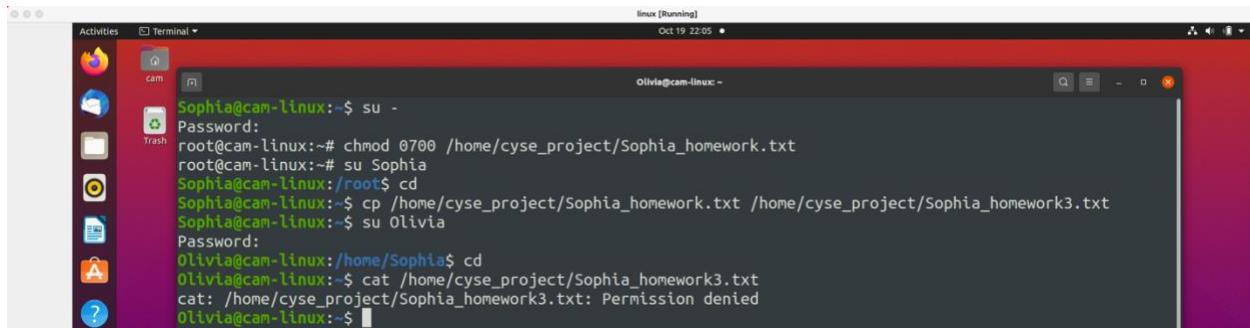
```

root@cam-linux:~# su Sophia
Sophia@cam-linux:/root$ cd
Sophia@cam-linux:~$ cp /home/cyse_project/Sophia_homework.txt /home/cyse_project/Sophia_homework2.txt
Sophia@cam-linux:~$ su Emma
Password:
Emma@cam-linux:/home/Sophia$ cat /home/cyse_project/Sophia_homework2.txt
Cameron Cassani
Emma@cam-linux:/home/Sophia$
  
```

Explanation (Step 2 & 3)

- I use “su Sophia” to switch to Sophia’s account.
- I use “cp /home/cyse_project/Sophia_homework.txt /home/cyse_project/Sophia_homework2.txt” to copy Sophia’s homework.txt to the /home/cyse/project directory as Sophia_homework2.txt
- I use “su Emma” to switch to Emma’s account.
- I use “cat /home/cyse_project/Sophia_homework2.txt” to read the Sophia_homework2.txt file.

TASK C



```
Sophia@cam-linux:~$ su -
Password:
root@cam-linux:~# chmod 0700 /home/cyse_project/Sophia_homework.txt
root@cam-linux:~# su Sophia
Sophia@cam-linux:~$ cd /home/cyse_project
Sophia@cam-linux:~/cyse_project$ cp Sophia_homework.txt Sophia_homework3.txt
Sophia@cam-linux:~/cyse_project$ su Olivia
Password:
Olivia@cam-linux:~/cyse_project$ cd /home/cyse_project
Olivia@cam-linux:~/cyse_project$ cat Sophia_homework3.txt
cat: /home/cyse_project/Sophia_homework3.txt: Permission denied
Olivia@cam-linux:~/cyse_project$
```

Explanation (Step 1 & 2 & 3)

- I use “su –” to switch to the root account.
- I use “chmod 0700 /home/cyse_project/Sophia_homework.txt” to disallow group members to access the Sophia_homework file.
- I use “su Sophia” to switch to Sophia’s account.
- I use “cp /home/cyse_project/Sophia_homework.txt /home/cyse_project/Sophia_homework3.txt” to copy Sophia’s homework.txt to the /home/cyse/project directory as Sophia_homework3.txt
- I use “su Olivia” to switch to Olivia’s account.
- I use “cat /home/cyse_project/Sophia_homework3.txt” to test to see if Olivia can read the file. (Olivia’s account can not).