

Chandler Anderson

Professor Vatsa

CYSE 270

2/26/2024

Assignment 6

Task A

```
Payroll:x:1015:  
Admin:x:1016:  
Employee:x:1017:  
Sophia:x:1010:  
Olivia:x:1011:  
Emma:x:1012:  
  
(Chandler@kali)-[~]  
$
```

Step 1) Above are the three required groups of Payroll, Admin, and Employee

```
File Actions Edit View Help

(Chandler@kali)-[~]
$ sudo useradd -m Sophia

(Chandler@kali)-[~]
$ sudo useradd -m Olivia

(Chandler@kali)-[~]
$ sudo useradd -m Emma

(Chandler@kali)-[~]
$ sudo passwd Sophia
New password:
Retype new password:
passwd: password updated successfully

(Chandler@kali)-[~]
$ sudo passwd Olivia
New password:
Retype new password:
passwd: password updated successfully

(Chandler@kali)-[~]
$ sudo passwd Julia
passwd: user 'Julia' does not exist

(Chandler@kali)-[~]
$ sudo passwd Emma
New password:
Retype new password:
passwd: password updated successfully

(Chandler@kali)-[~]
$ sudo usermod -s /bin/bash Sophia

(Chandler@kali)-[~]
$ sudo usermod -s /bin/bash Olivia

(Chandler@kali)-[~]
$ sudo usermod -s /bin/bash Emma

(Chandler@kali)-[~]
$ sudo usermod -g Employee Sophia

(Chandler@kali)-[~]
$ sudo usermod -g Payroll Olivia

(Chandler@kali)-[~]
$ sudo usermod -g Admin Emma
```

2) Above are the commands I issued to create the three required user accounts with home directories, set their passwords, add a bin/bash shell for each user, and add each to their respective primary group.

```

(Chandler@kali)-[~]
$ sudo groupadd cande041

(Chandler@kali)-[~]
$ sudo usermod -aG cande041 S0phia
usermod: user 'S0phia' does not exist

(Chandler@kali)-[~]
$ sudo usermod -aG cande041 Sophia

(Chandler@kali)-[~]
$ sudo usermod -aG cande041 Olivia

(Chandler@kali)-[~]
$ sudo usermod -aG cande041 Emma

(Chandler@kali)-[~]
$ id Sophia
uid=1010(Sophia) gid=1017(Employee) groups=1017(Employee),1018(cande041)

(Chandler@kali)-[~]
$ id Olivia
uid=1011(Olivia) gid=1015(Payroll) groups=1015(Payroll),1018(cande041)

(Chandler@kali)-[~]
$ id Emma
uid=1012(Emma) gid=1016(Admin) groups=1016(Admin),1018(cande041)

(Chandler@kali)-[~]
$

```

3) Above are the commands I issued to create the required shared group, as well as add each user as a secondary group member.

```

(Chandler@kali)-[~]
$ cd /home

(Chandler@kali)-[/home]
$ ls
Chandler Emma group kali Olivia Sophia testuser

(Chandler@kali)-[/home]
$ sudo mkdir cyse_project

(Chandler@kali)-[/home]
$ cd

(Chandler@kali)-[~]
$ sudo chgrp cande041 /home/cyse_project

(Chandler@kali)-[~]
$ ls -ld /home/cyse_project
drwxr-xr-x 2 root cande041 4096 Feb 26 13:37 /home/cyse_project

(Chandler@kali)-[~]
$ sudo chmod 770 /home/cyse_project

(Chandler@kali)-[~]
$ ls -ld /home/cyse_project
drwxrwx--- 2 root cande041 4096 Feb 26 13:37 /home/cyse_project

(Chandler@kali)-[~]
$

```

4, 5) Above are the commands I used to create the required directory (mkdir), change group ownership to the directory (chgrp), change the group permissions to match rwxrwx--- (chmod 770), and verify the permission changes (ls -ld)

```
(Sophia@kali)-[~]
$ umask 137

(Sophia@kali)-[~]
$ umask
0137

(Sophia@kali)-[~]
$ touch Sophia_homework.txt

(Sophia@kali)-[~]
$ echo "Chandler Anderson" > Sophia_homework.txt

(Sophia@kali)-[~]
$ ls -l Sophia_homework.txt
-rw-r----- 1 Sophia Employee 18 Feb 26 13:50 Sophia_homework.txt

(Sophia@kali)-[~]
$ cp Sophia_homework.txt /home/cyse_project

(Sophia@kali)-[~]
$ cd /home/cyse_project

(Sophia@kali)-[/home/cyse_project]
$ ls -ld
drwxrwx--- 2 root cande041 4096 Feb 26 13:51 .

(Sophia@kali)-[/home/cyse_project]
$ ls -l Sophia_homework.txt
-rw-r----- 1 Sophia Employee 18 Feb 26 13:51 Sophia_homework.txt

(Sophia@kali)-[/home/cyse_project]
$ su Emma
Password:
(Emma@kali)-[/home/cyse_project]
$ cat Sophia_homework.txt
cat: Sophia_homework.txt: Permission denied

(Emma@kali)-[/home/cyse_project]
$
```

6-10) In the above screenshot, I switched to Sophia's account using the su command, and I changed the umask to 137, as that would cover the proper permissions for both files and directories as instructed. Using 027 would have only set the proper permissions for files, so I included the execute value as well to cover directories. I then created the required file and checked to make sure the permissions were set properly. Lastly, I copied the file into the group, switched to Emma's account, and attempted to read the contents of the file using, which I was denied access to. I then exited out of both accounts.

```

(Chandler@kali)-[~]
$ sudo chmod g+s /home/cyse_project
[sudo] password for Chandler:

(Chandler@kali)-[~]
$ ls -ld /home/cyse_project
drwxrws— 2 root candee041 4096 Feb 26 13:51 /home/cyse_project
File System
(Chandler@kali)-[~]
$ su Sophia
Password:
(Sophia@kali)-[/home/Chandler]
$ cd

(Sophia@kali)-[~]
$ pwd
/home/Sophia

(Sophia@kali)-[~]
$ cp Sophia_homework.txt /home/cyse_project/Sophia_homework2.txt

(Sophia@kali)-[~]
$ cd /home/cyse_project

(Sophia@kali)-[/home/cyse_project]
$ ls
Sophia_homework2.txt  Sophia_homework.txt

(Sophia@kali)-[/home/cyse_project]
$ su Emma
Password:
(Emma@kali)-[/home/cyse_project]
$ cat Sophia_homework2.txt
Chandler Anderson

(Emma@kali)-[/home/cyse_project]
$ ls -l
total 8
-rw-r— 1 Sophia candee041 18 Feb 26 13:55 Sophia_homework2.txt
-rw-r— 1 Sophia Employee 18 Feb 26 13:51 Sophia_homework.txt

(Emma@kali)-[/home/cyse_project]
$

```

Task B) Above are the commands I used to complete task B. I used `chmod g+s` to change the SGID to allow group members access to files shared within the directory. I then switched to Sophia's account, where I copied the original homework file contents into a new file and shared it to the `cyse_project` directory. I then switched to Emma's account, attempted to read the contents of the second file using `cat`, and was allowed access.

```

(Chandler@kali)-[~]
$ sudo chmod g-s /home/cyse_project
[sudo] password for Chandler:

(Chandler@kali)-[~]
$ ls -ld /home/cyse_project
drwxrwx--- 2 root cande041 4096 Feb 26 13:55 /home/cyse_project

(Chandler@kali)-[~]
$ su Sophia
Password:
(Sophia@kali)-[/home/Chandler]
$ cd

(Sophia@kali)-[~]
$ cp Sophia_homework.txt /home/cyse_project/Sophia_homework3.txt

(Sophia@kali)-[~]
$ su Olivia
Password:
(Olivia@kali)-[/home/Sophia]
$ cd

(Olivia@kali)-[~]
$ cd /home/cyse_project

(Olivia@kali)-[/home/cyse_project]
$ ls
Sophia_homework2.txt  Sophia_homework3.txt  Sophia_homework.txt

(Olivia@kali)-[/home/cyse_project]
$ ls -l
total 12
-rw-r----- 1 Sophia cande041 18 Feb 26 13:55 Sophia_homework2.txt
-rw-r----- 1 Sophia Employee 18 Feb 26 14:06 Sophia_homework3.txt
-rw-r----- 1 Sophia Employee 18 Feb 26 13:51 Sophia_homework.txt

(Olivia@kali)-[/home/cyse_project]
$ cat Sophia_homework3.txt
cat: Sophia_homework3.txt: Permission denied

(Olivia@kali)-[/home/cyse_project]
$

```

Task C) For task C, I switched back to my account with sudo access and changed the permissions back using the “sudo chmod g-s” command. I then switched to Sophia’s account, copied the required file to the shared directory, switched to Olivia’s account, and was denied the ability to read the contents of the recently copied file.

```

(Olivia@kali)-[/home/cyse_project]
$ rm Sophia_homework.txt
rm: remove write-protected regular file 'Sophia_homework.txt'? yes

(Olivia@kali)-[/home/cyse_project]
$ ls -l
total 8
-rw-r----- 1 Sophia cande041 18 Feb 26 13:55 Sophia_homework2.txt
-rw-r----- 1 Sophia Employee 18 Feb 26 14:06 Sophia_homework3.txt

(Olivia@kali)-[/home/cyse_project]
$ exit
exit

(Sophia@kali)-[~]
$ exit
exit

(Chandler@kali)-[~]
$ sudo chmod +t /home/cyse_project

(Chandler@kali)-[~]
$ su Olivia
Password:
su: Authentication failure

(Chandler@kali)-[~]
$ su Olivia
Password:
(Olivia@kali)-[/home/Chandler]
$ cd

(Olivia@kali)-[~]
$ ls -ld /home/cyse_project
drwxrwx--T 2 root cande041 4096 Feb 26 14:12 /home/cyse_project

(Olivia@kali)-[~]
$ cd /home/cyse_project

(Olivia@kali)-[/home/cyse_project]
$ ls
Sophia_homework2.txt  Sophia_homework3.txt

(Olivia@kali)-[/home/cyse_project]
$ rm Sophia_homework3.txt
rm: remove write-protected regular file 'Sophia_homework3.txt'? yes
rm: cannot remove 'Sophia_homework3.txt': Operation not permitted

(Olivia@kali)-[/home/cyse_project]
$

```

Extra Credit) I first deleted Sophia's copied homework file from Olivia's account with no issues. I then switched to my account and issued the `sudo chmod +t` stickybit command, which blocks access for other users to remove files from the shared directory unless they are the creator of the file. When I logged back into Olivia's account and attempted to delete a file, I was blocked access, confirming the correct permissions.