

Zyron James M. Sumulong
CYSE 270
Assignment 6

Task A: Get accounts and groups ready

Step 1. Create three groups- employee, payroll, and admin.

Commands: `sudo groupadd employee`
`sudo groupadd payroll`
`sudo groupadd admin`

```
(kali@kali)-[~]
└─$ sudo groupadd employee
[sudo] password for kali:

(kali@kali)-[~]
└─$ sudo groupadd payroll

(kali@kali)-[~]
└─$ sudo groupadd admin
```

Step 2. Create three user accounts with a specified home directory for Sophia, Olivia, and Emma. Set the primary group for Sophia, Olivia, and Emma to "employee", "payroll", and "admin", respectively. And change their login shell to /bin/bash. Don't forget to set their passwords.

Commands: `sudo useradd -m -d /home/sophia -g employee -s /bin/bash sophia`
`sudo useradd -m -d /home/olivia -g payroll -s /bin/bash olivia`
`sudo useradd -m -d /home/emma -g admin -s /bin/bash emma`
`sudo passwd sophia`
`sudo passwd olivia`
`sudo passwd emma`

-m creates home directory, -d specifies the home directory, -g sets the primary group, -s sets login shell

```
(kali@kali)-[~]
└─$ sudo useradd -m -d /home/sophia -g employee -s /bin/bash sophia

(kali@kali)-[~]
└─$ sudo useradd -m -d /home/olivia -g payroll -s /bin/bash olivia

(kali@kali)-[~]
└─$ sudo useradd -m -d /home/emma -g admin -s /bin/bash emma

(kali@kali)-[~]
└─$ sudo passwd sophia
New password:
Retype new password:
passwd: password updated successfully

(kali@kali)-[~]
└─$ sudo passwd olivia
New password:
Retype new password:
passwd: password updated successfully

(kali@kali)-[~]
└─$ sudo passwd emma
New password:
Retype new password:
passwd: password updated successfully
```

Step 3. Create a shared group called "your_midas" (replace it with your MIDAS name) and set this shared group as the above accounts' secondary group. After this step, remember to check each user's group Profile.

```
Commands:  sudo groupadd zsumu001
           sudo usermod -aG zsumu001 sophia
           sudo usermod -aG zsumu001 olivia
           sudo usermod -aG zsumu001 emma
           groups sophia
           groups olivia
           groups emma
```

-aG appends a secondary group without removing exiting ones

```
(kali㉿kali)-[~]
└─$ sudo groupadd zsumu001

(kali㉿kali)-[~]
└─$ sudo usermod -aG zsumu001 sophia

(kali㉿kali)-[~]
└─$ sudo usermod -aG zsumu001 olivia

(kali㉿kali)-[~]
└─$ sudo usermod -aG zsumu001 emma

(kali㉿kali)-[~]
└─$ groups sophia
sophia : employee zsumu001

(kali㉿kali)-[~]
└─$ groups olivia
olivia : payroll zsumu001

(kali㉿kali)-[~]
└─$ groups emma
emma : admin zsumu001
```

Step 4. Create a directory named /home/cyse_project, which is to be owned by the "your_midas" group which is a shared group). After this step, remember to check the permission of this shared directory.

```
Commands:  sudo mkdir /home/cyse_project
           sudo chown :zsumu001 /home/cyse_project
           ls -ld /home/cyse_project
```

-mkdir = makes directory

-chown = change owner

```
(kali㉿kali)-[~]
└─$ sudo mkdir /home/cyse_project

(kali㉿kali)-[~]
└─$ sudo chown :zsumu001 /home/cyse_project

(kali㉿kali)-[~]
└─$ ls -ld /home/cyse_project
drwxr-xr-x 2 root zsumu001 4096 Oct  8 13:19 /home/cyse_project
```

Step 5. Change the permissions of the /home/cyse_project directory to "rwxrwx---" using the octal method so that only the project group members have access to this directory. After this step, remember to check the permission of this shared directory.

Commands: `sudo chmod 770 /home/cyse_project`

`ls -ld /home/cyse_project`

-chmod 700 = change mode rwxrwx---

```
(kali㉿kali)-[~]
└─$ sudo chmod 770 /home/cyse_project

(kali㉿kali)-[~]
└─$ ls -ld /home/cyse_project
drwxrwx--- 2 root zsumu001 4096 Oct  8 13:19 /home/cyse_project
```

Step 6. Switch to Sophia's account. Change the default permissions using octal method with umask command, to "rw-r----" for Sophia when she creates a file or directory. Check the value of umask, and permission of a new file after this step.

Commands: `su - sophia`

`umask 027`

`umask`

`touch testfile`

`ls -l testfile`

-umask 027 = sets new default permission with rw-r----

-umask = displays current umask value

-touch testfile = creates new empty file called testfile

-ls -l testfile = lists file details including permissions

```
(kali㉿kali)-[~]
└─$ su - sophia
Password:
(sophia㉿kali)-[~]
└─$ umask 027

(sophia㉿kali)-[~]
└─$ umask
0027

(sophia㉿kali)-[~]
└─$ touch testfile

(sophia㉿kali)-[~]
└─$ ls -l testfile
-rw-r----- 1 sophia employee 0 Oct  8 13:27 testfile
```

Step 7. Create a new file called "Sophia_homework" in the home directory of Sophia and put your name in the file as content. After this step, remember to check the content and the permission of the new file. (ls -l Sophia_homework)

Commands: echo "Zyron Sumulong" > ~/Sophia_homework
ls -l ~/Sophia_homework
cat ~/Sophia_homework

```
(sophia@kali)-[~]
└─$ echo "Zyron Sumulong" > ~/Sophia_homework

(sophia@kali)-[~]
└─$ ls -l ~/Sophia_homework
-rw-r----- 1 sophia employee 15 Oct  8 13:32 /home/sophia/Sophia_homework

(sophia@kali)-[~]
└─$ cat ~/Sophia_homework
Zyron Sumulong
```

Step 8. Copy "Sophia_homework" to the /home/cyse_project directory. After this step, remember to check the permission of the file in the shared directory.

Commands: cp ~/Sophia_homework /home/cyse_project/
ls -l /home/cyse_project

```
(sophia@kali)-[~]
└─$ cp ~/Sophia_homework /home/cyse_project/

(sophia@kali)-[~]
└─$ ls -l /home/cyse_project/
total 4
-rw-r----- 1 sophia employee 15 Oct  8 13:34 Sophia_homework
```

Step 9. Switch to Emma's account. Try to read "Sophia_homework" in the /home/cyse_project Directory.

Commands: su - emma
cat /home/cyse_project/Sophia_homework

```
(sophia@kali)-[~]
└─$ su - emma
Password:
(emma@kali)-[~]
└─$ cat /home/cyse_project/Sophia_homework
cat: /home/cyse_project/Sophia_homework: Permission denied
```

Step 10. Exit out of Emma's account and Sophia's account.

Commands: exit
Exit

```
(emma@kali)-[~]
└─$ exit
logout

(sophia@kali)-[~]
└─$ exit
logout
```

Task B: Set SGID permission

Step 1. Switch to root or the regular user's account. To allow group members to access the files shared in the shared directory, you need to fix the sharing issue by setting the correct SGID group values to /home/cyse_project directory.

Commands: `sudo chmod g+s /home/cyse_project`
`ls -ld /home/cyse_project`

-g+s = sets SGID bit for the group

```
(kali㉿kali)-[~]
└─$ sudo chmod g+s /home/cyse_project

(kali㉿kali)-[~]
└─$ ls -ld /home/cyse_project
drwxrws— 2 root zsumu001 4096 Oct  8 13:34 /home/cyse_project
```

Step 2. Switch to Sophia's account. Copy "Sophia_homework" to the /home/cyse_project directory as "Sophia_homework2".

Commands: `su - sophia`
`cp ~/Sophia_homework /home/cyse_project/Sophia_homework2`
`ls -l /home/cyse_project`

```
(kali㉿kali)-[~]
└─$ su - sophia
Password:
(kali㉿kali)-[~]
└─$ cp ~/Sophia_homework /home/cyse_project/Sophia_homework2
```

```
(sophia㉿kali)-[~]
└─$ ls -l /home/cyse_project
total 8
-rw-r— 1 sophia employee 15 Oct  8 13:34 Sophia_homework
-rw-r— 1 sophia zsumu001 15 Oct  8 13:39 Sophia_homework2
```

Step 3. Switch to Emma's account. Try to read "Sophia_homework2" in the /home/cyse_project Directory.

Commands: `su - emma`
`cat /home/cyse_project/Sophia_homework2`

```
(sophia㉿kali)-[~]
└─$ su - emma
Password:
(emma㉿kali)-[~]
└─$ cat /home/cyse_project/Sophia_homework2
Zyron Sumulong
```

Task C: Unset SGID permissions

Step 1. Switch to root the regular user's account. To disallow group members to access the files in the shared folder, you need to fix the sharing issue by setting the correct SGID group values to /home/cyse_project directory to remove the group user read permission.

Commands: exit
exit
sudo chmod g-s /home/cyse_project
ls -ld /home/cyse_project

-g-s = removes SGID bit

```
(emma@kali)-[~]
└─$ exit
logout

(sophia@kali)-[~]
└─$ exit
logout

(kali@kali)-[~]
└─$ sudo chmod g-s /home/cyse_project
```

```
(kali@kali)-[~]
└─$ ls -ld /home/cyse_project
drwxrwx--- 2 root zsumu001 4096 Oct  8 13:39 /home/cyse_project
```

Step 2. Switch to Sophia's account. Copy "Sophia_homework" to the /home/cyse_project directory as "Sophia_homework3".

Commands: su - sophia
cp ~/Sophia_homework /home/cyse_project/Sophia_homework3
ls -l /home/cyse_project

```
(kali@kali)-[~]
└─$ su - sophia
Password:
(sophia@kali)-[~]
└─$ cp ~/Sophia_homework /home/cyse_project/Sophia_homework3
```

Step 3. Switch to Olivia's account. Try to read "Sophia_home3" in the /home/cyse_project directory.

Commands: su - olivia
cat /home/cyse_project/Sophia_homework3

```
(sophia@kali)-[~]
└─$ su - olivia
Password:
(olivia@kali)-[~]
└─$ cat /home/cyse_project/Sophia_homework3
cat: /home/cyse_project/Sophia_homework3: Permission denied
```

