Ramatu Hallie

Task A: Get accounts and groups ready (70 points)

Step 1. Create three groups- employee, payroll, and admin. (You may refer to the slides under Module



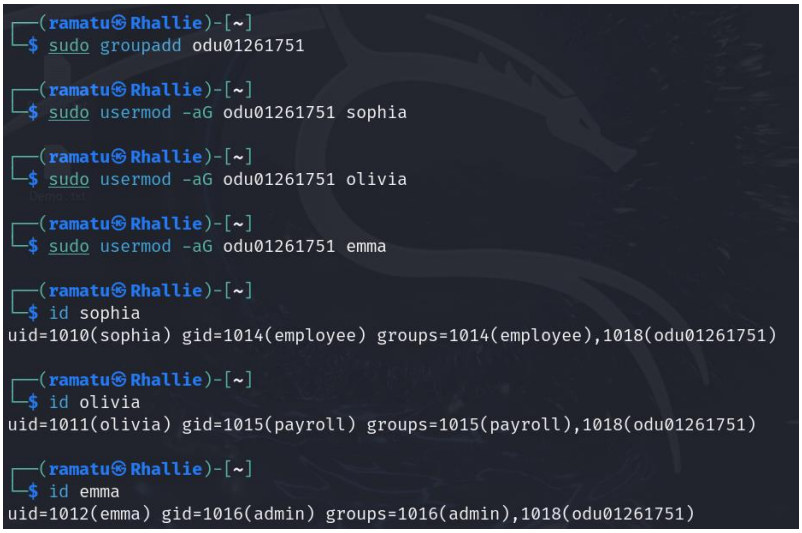
2 – Group Management)

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.



Step 3. Create a shared group called "your_midas" (replace it with your MIDAS name) and

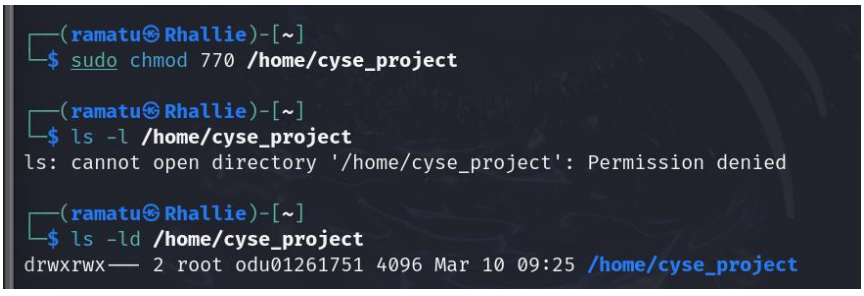
set this shared group as the above accounts' secondary group. After this step, remember to check each user's group profile.



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.



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.



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.

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

┌──(sophia㉿Rhallie)-[~]
└─$ umask
0027

┌──(sophia㉿Rhallie)-[~]
└─$ touch testfile

┌──(sophia㉿Rhallie)-[~]
└─$ ls -l testfile
-rw-r----- 1 sophia employee 0 Mar 10 09:36 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)

```
┌──(sophia㉿Rhallie)-[~]
└─$ echo "ramatu" > ~/sophia_homework

┌──(sophia㉿Rhallie)-[~]
└─$ cat ~/sophia_homework
ramatu

┌──(sophia㉿Rhallie)-[~]
└─$ ls -l ~/sophia_homework
-rw-r----- 1 sophia employee 7 Mar 10 09:40 /home/sophia/sophia_homework
```

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.

```
┌──(sophia㉿Rhallie)-[~]
└─$ cp ~/sophia_homework /home/cyse_project/

┌──(sophia㉿Rhallie)-[~]
└─$ ls -l /home/cyse_project/sophia_homework
-rw-r----- 1 sophia employee 7 Mar 10 09:45 /home/cyse_project/sophia_homewor
k
```

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

```
┌──(sophia㉿Rhallie)-[~]
└─$ su - emma
Password:
┌──(emma㉿Rhallie)-[~]
└─$ 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.

```
┌──(emma㉿Rhallie)-[~]
└─$ exit
logout

┌──(sophia㉿Rhallie)-[~]
└─$ exit
logout

┌──(emma㉿Rhallie)-[~]
└─$ logout

┌──(ramatu㉿Rhallie)-[~]
└─$
```

Task B: Set SGID permission (15 points)

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.

```
┌──(ramatu㉿Rhallie)-[~]
└─$ sudo -i
┌──(root㉿Rhallie)-[~]
└─# sudo chmod g+s /home/cyse_project

┌──(root㉿Rhallie)-[~]
└─# ls -ld /home/cyse_project
drwxrws── 2 root odu01261751 4096 Mar 10 09:45 /home/cyse_project
```

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

```
┌──(root㉿Rhallie)-[~]
└─# su - sophia
┌──(sophia㉿Rhallie)-[~]
└─$ cp ~/sophia_homework /home/cyse_project/sophia_homework2

┌──(sophia㉿Rhallie)-[~]
└─$ ls -l /home/cyse_project/sophia_homework2
-rw-r──── 1 sophia odu01261751 7 Mar 10 10:06 /home/cyse_project/sophia_home
work2
```

Step 3. Switch to Emma's account. Try to read "Sophia_ homework2" in the /home/cyse_project directory.

```
┌──(sophia㉿Rhallie)-[~]
└─$ su - emma
Password:
┌──(emma㉿Rhallie)-[~]
└─$ cat /home/cyse_project/sophia_homework2
ramatu
```

Task C: Unset SGID permissions (15 points)

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.

```
┌──(emma㉿Rhallie)-[~]
└─$ sudo -i
[sudo] password for emma:
emma is not in the sudoers file.

┌──(emma㉿Rhallie)-[~]
└─$ logout

┌──(sophia㉿Rhallie)-[~]
└─$ logout

┌──(root㉿Rhallie)-[~]
└─# sudo chmod g-s /home/cyse_project

┌──(root㉿Rhallie)-[~]
└─# sudo chmod g-r /home/cyse_project

┌──(root㉿Rhallie)-[~]
└─# ls -ld /home/cyse_project
drwx-wx── 2 root odu01261751 4096 Mar 10 10:06 /home/cyse_project
```

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

```
┌──(root㉿Rhallie)-[~]
└─# su - sophia
┌──(sophia㉿Rhallie)-[~]
└─$ cp ~/sophia_homework /home/cyse_project/sophia_homework3

┌──(sophia㉿Rhallie)-[~]
└─$ ls -l /home/cyse_project/sophia_homework3
-rw-r──── 1 sophia employee 7 Mar 10 10:15 /home/cyse_project/sophia_homewor
k3
```

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

```
──(sophia㉿Rhallie)-[~]
└─$ su - olivia
Password:
──(olivia㉿Rhallie)-[~]
└─$ cat /home/cyse_project/sophia_homework3
cat: /home/cyse_project/sophia_homework3: Permission denied
```