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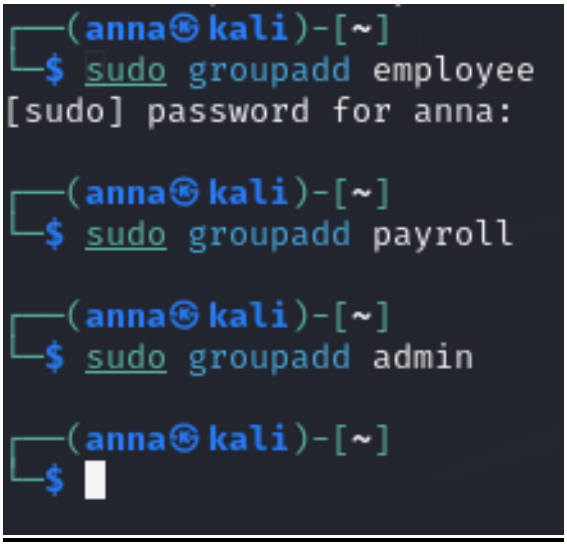
CYSE 270_28494

Professor Al Kinoon

Lab 6 – File Permission

You need to configure the system to allow three users to perform the shared folder actions. Please
submit the screenshot for all the steps in a word or pdf file
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.

Sophia: 123

Olivia: 1234

Emma: 12345

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

┌──(anna㉿kali)-[~]
└─$ sudo useradd -m -d /home/olivia
  -g employee -s /bin/bash olivia

┌──(anna㉿kali)-[~]
└─$ sudo useradd -m -d /home/emma
-g employee -s /bin/bash emma

┌──(anna㉿kali)-[~]
└─$ sudo passwd sophia
New password:
Retype new password:
passwd: password updated successful
ly

┌──(anna㉿kali)-[~]
└─$ sudo passwd olivia
New password:
Retype new password:
passwd: password updated successful
ly

┌──(anna㉿kali)-[~]
└─$ sudo passwd emma
New password:
Retype new password:
Sorry, passwords do not match.
passwd: Authentication token manipu
lation error
passwd: password unchanged

┌──(anna㉿kali)-[~]
└─$ sudo passwd emma
New password:
Retype new password:
passwd: password updated successful
ly
```

```
┌──(anna㉿kali)-[~]
└─$ cat /etc/passwd | grep -E "sophia|olivia|emma"
sophia:x:1010:1010::/home/sophia:/bin/bash
olivia:x:1011:1010::/home/olivia:/bin/bash
emma:x:1012:1010::/home/emma:/bin/bash

┌──(anna㉿kali)-[~]
└─$ cat /etc/group | grep -E "employee|payroll|admin"
lpadmin:x:123:anna
employee:x:1010:
payroll:x:1011:
admin:x:1012:
```

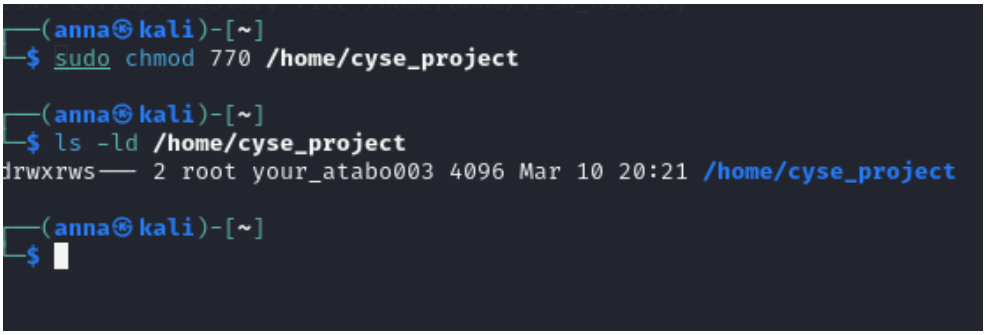
Step 3. Create a shared group called "your_midas" (replace it with your MIDAS name) and set this shared group as the above accounts' secondary group. After this step, remember to check each user's group profile.

```
┌──(anna㉿kali)-[~]
└─$ sudo groupadd your_atabo003

┌──(anna㉿kali)-[~]
└─$ sudo usermod -aG your_atabo003
sophia

┌──(anna㉿kali)-[~]
└─$ sudo usermod -aG your_atabo003
olivia

┌──(anna㉿kali)-[~]
└─$ sudo usermod -aG your_atabo003
emma

┌──(anna㉿kali)-[~]
└─$ groups sophia
sophia : employee your_atabo003

┌──(anna㉿kali)-[~]
└─$ groups olivia
olivia : employee your_atabo003

┌──(anna㉿kali)-[~]
└─$ groups emma
emma : employee your_atabo003

┌──(anna㉿kali)-[~]
└─$ cat /etc/group | grep your_atab
o003
your_atabo003:x:1013:sophia,olivia,
emma
```

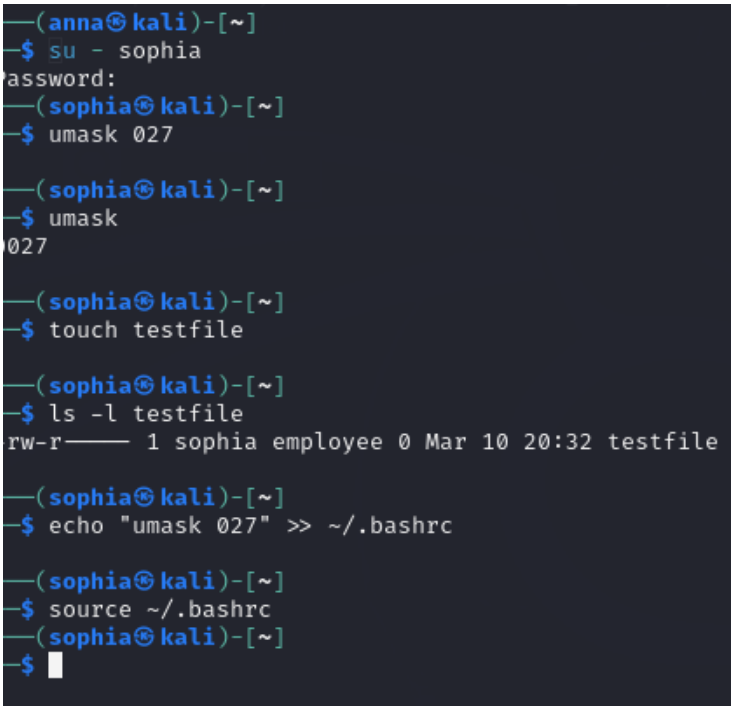
Step 4. Create a directory named /home/cyse_project, which is to be owned by the “your_midas” group which is a shared group). After this step, remember to check the permission of this shared directory.

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

┌──(anna㉿kali)-[~]
└─$ sudo chown :your_atabo003 /home/cyse_project

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

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

┌──(anna㉿kali)-[~]
└─$ ls -ld /home/cyse_project
drwxrws--- 2 root your_atabo003 4096 Mar 10 20:21 /home/cyse_project

┌──(anna㉿kali)-[~]
└─$
```

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.



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㉿kali)-[~]
└─$ echo "your_atabo003" > ~/Sophia_homework

┌──(sophia㉿kali)-[~]
└─$ cat ~/Sophia_homework
your_atabo003

┌──(sophia㉿kali)-[~]
└─$ ls -l ~/Sophia_homework
-rw-r----- 1 sophia employee 14 Mar 10 20:35 /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㉿kali)-[~]
└─$ cp ~/Sophia_homework /home/cyse_project/

┌──(sophia㉿kali)-[~]
└─$ ls -l /home/cyse_project/Sophia_homework
-rw-r----- 1 sophia your_atabo003 14 Mar 10 20:39 /home/cyse_project/Sophia_homework
```

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

```
┌──(emma㉿kali)-[~]
└─$ cat /home/cyse_project/Sophia_homework
your_atabo003

┌──(emma㉿kali)-[~]
└─$
```

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

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

┌──(anna㉿kali)-[~]
└─$
```

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.

```
┌──(anna㉿kali)-[~]
└─$ sudo chmod 2770 /home/cyse_project

┌──(anna㉿kali)-[~]
└─$ ls -ld /home/cyse_project
drwxrws── 2 root your_atabo003 4096 Mar 10 20:39 /home/cyse_project

┌──(anna㉿kali)-[~]
└─$ sudo chown -R :your_atabo003 /home/cyse_project

┌──(anna㉿kali)-[~]
└─$ su - emma
Password:
┌──(emma㉿kali)-[~]
└─$ cat /home/cyse_project/Sophia_homework
your_atabo003

┌──(emma㉿kali)-[~]
└─$
```

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

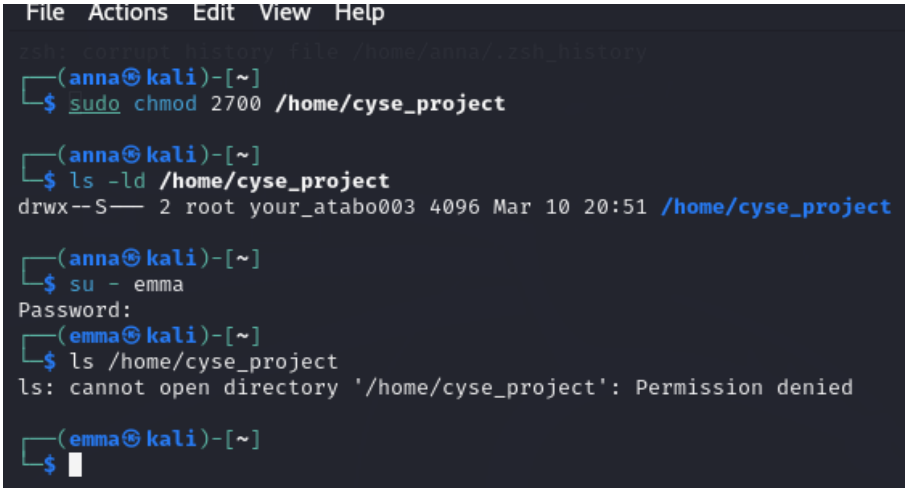
```
┌──(sophia㉿kali)-[~]
└─$ cp ~/Sophia_homework /home/cyse_project/Sophia_homework2

┌──(sophia㉿kali)-[~]
└─$ ls -l /home/cyse_project/SOphia_homework2
ls: cannot access '/home/cyse_project/SOphia_homework2': No such file or directory

┌──(sophia㉿kali)-[~]
└─$ ls -l /home/cyse_project/Sophia_homework2
-rw-r──── 1 sophia your_atabo003 14 Mar 10 20:51 /home/cyse_project/Sophia_homework2

┌──(sophia㉿kali)-[~]
└─$
```

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

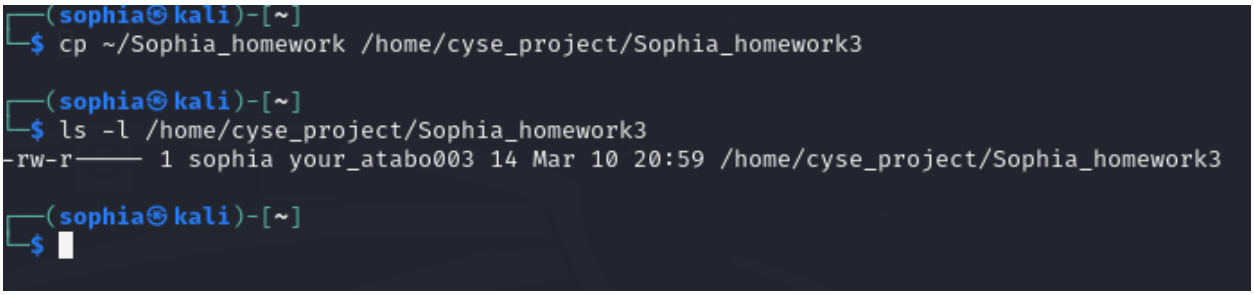
```
┌──(sophia㉿kali)-[~]
└─$ su - emma
Password:
┌──(emma㉿kali)-[~]
└─$ cat /home/cyse_project/Sophia_homework2
your_atabo003

┌──(emma㉿kali)-[~]
└─$
```

Task C: Unset SGID permissions (15 points)

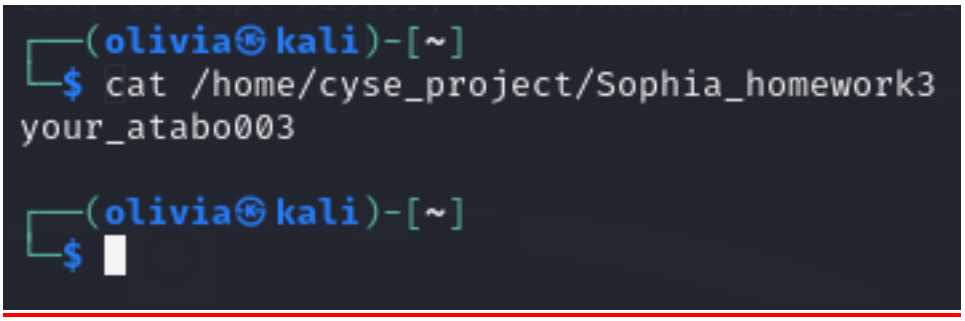
Step 1. Switch to root the regular user's account. To disallow group members to access the files in the
shared folder, you need to fix the sharing issue by setting the correct SGID group values to /home/cyse_project directory to remove the group user read permission.



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



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



Extra credit: Sticky Bit (10 points)
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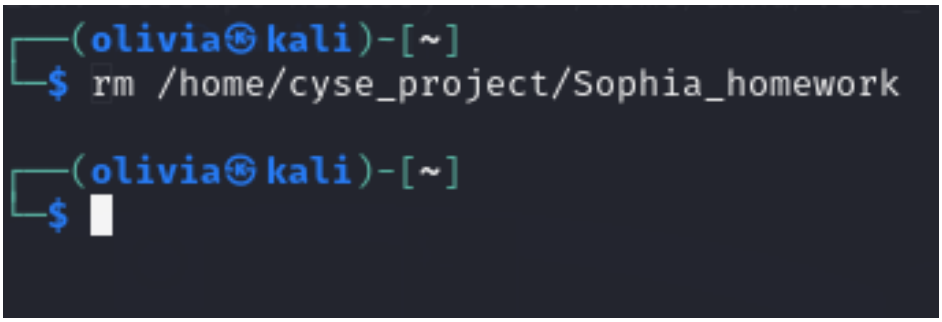
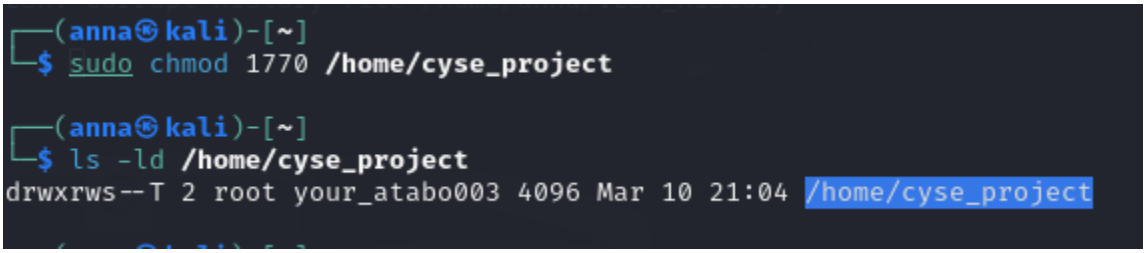
Step 1. Switch to Olivia' account. Delete "Sophia_ homework" in the /home/cyse_project directory.



Step 2. Switch to root account. Set the sticky bit permission, to make files can only be removed by the owner of the file.



Step 3. Switch to Olivia' account. Try to delete "Sophia_ homework3" in the /home/cyse_project directory. Can you delete it this time? Why?

Execution permissions have been removed from all users so that only users who own the file can only delete their own files and no one else can.