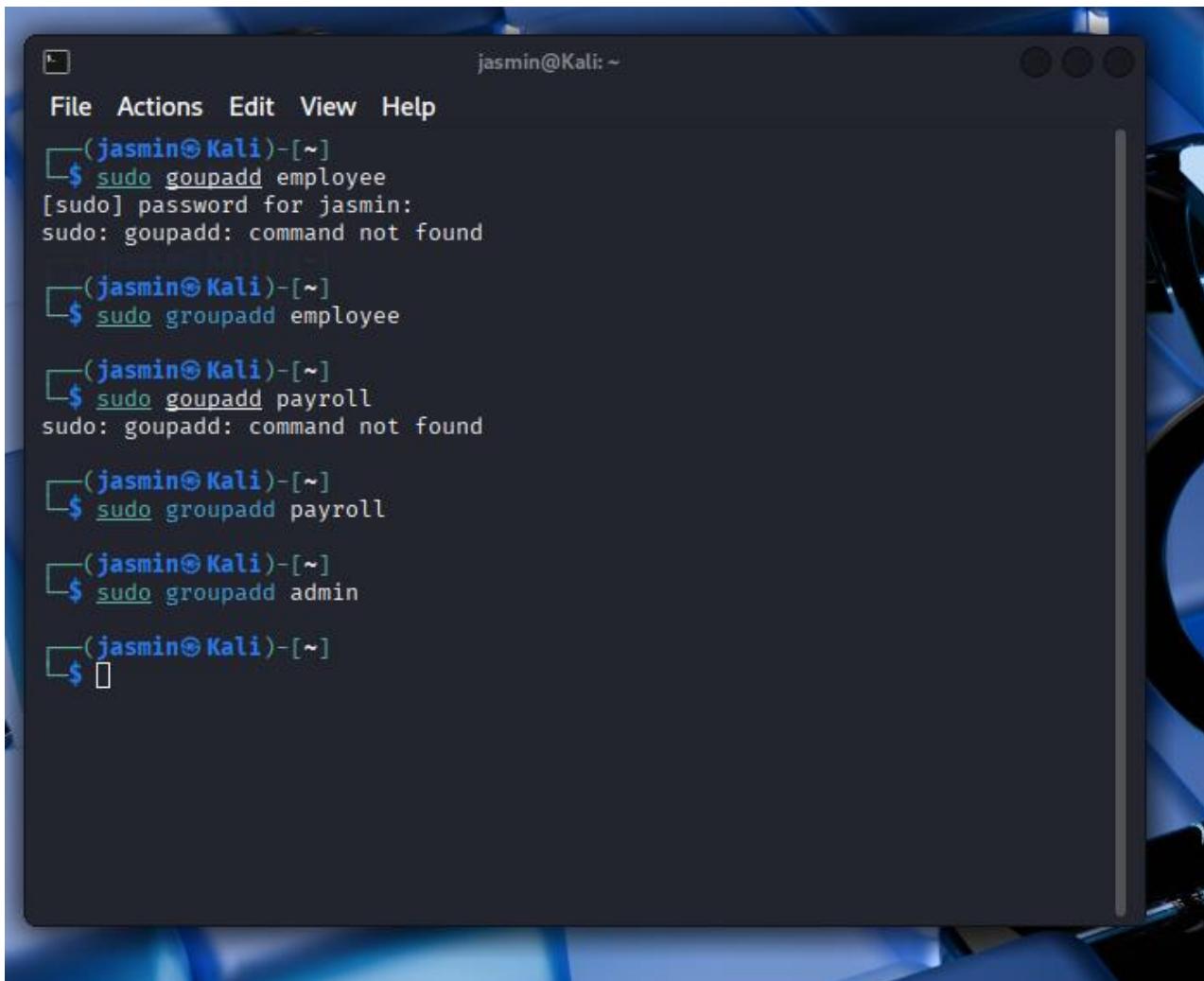


Lab 6- File Permission

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

Step 1. To create the 3 groups: employee, payroll, and admin I used the **sudo groupadd command**. This command is used to create new groups.



```
jasmin@Kali: ~
File Actions Edit View Help
(jasmin@Kali)-[~]
$ sudo groupadd employee
[sudo] password for jasmin:
sudo: groupadd: command not found

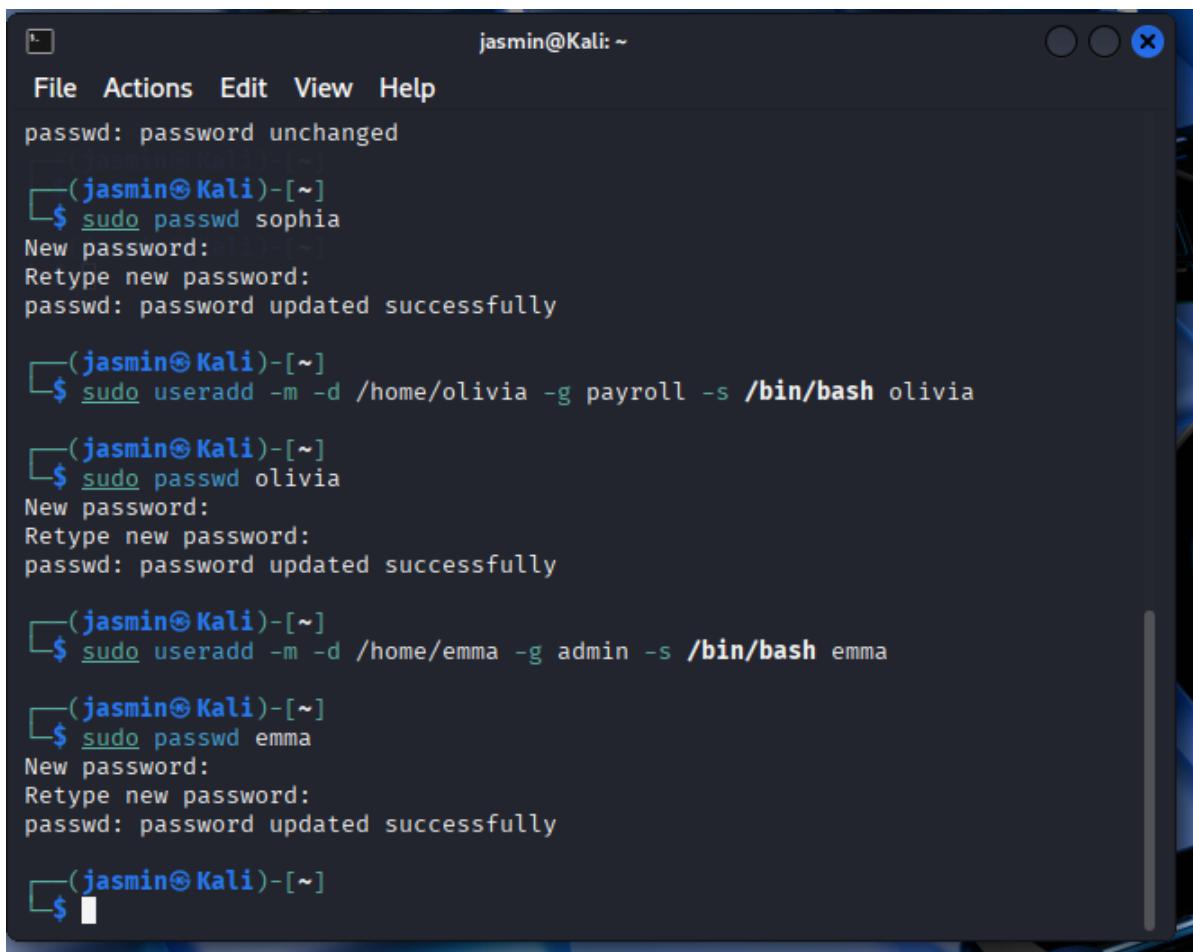
(jasmin@Kali)-[~]
$ sudo groupadd payroll
sudo: groupadd: command not found

(jasmin@Kali)-[~]
$ sudo groupadd payroll

(jasmin@Kali)-[~]
$ sudo groupadd admin

(jasmin@Kali)-[~]
$
```

Step 2. To create accounts Sophia, Olivia, and emma under the home directory with a group set, I used the following command **`sudo useradd -m -d /home/___ -g groupname -s /bin/bash`**. To create a password for each account, I used the command **`sudo passwd`**.



The screenshot shows a terminal window with a dark background and light-colored text. The window title is "jasmin@Kali: ~". The terminal output is as follows:

```
passwd: password unchanged
[jasmin@Kali:~]
$ sudo passwd sophia
New password:
Retype new password:
passwd: password updated successfully

[jasmin@Kali:~]
$ sudo useradd -m -d /home/olivia -g payroll -s /bin/bash olivia

[jasmin@Kali:~]
$ sudo passwd olivia
New password:
Retype new password:
passwd: password updated successfully

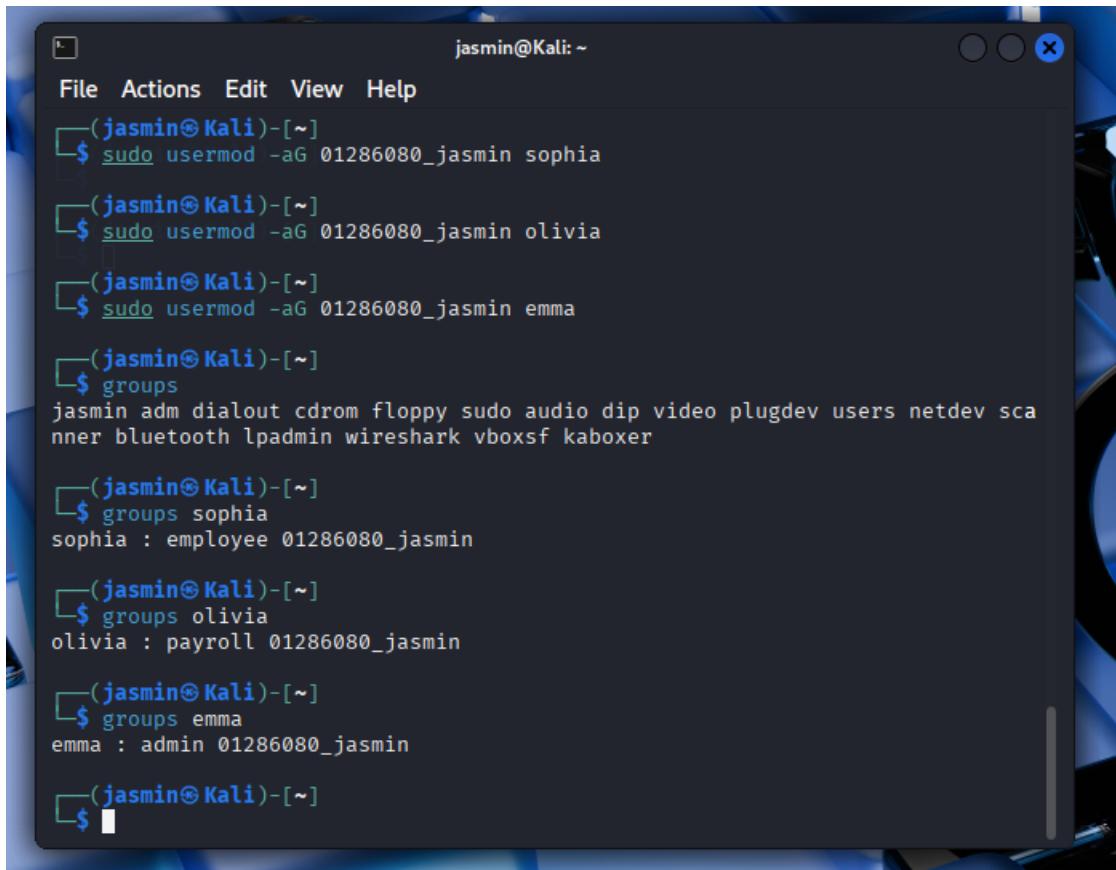
[jasmin@Kali:~]
$ sudo useradd -m -d /home/emma -g admin -s /bin/bash emma

[jasmin@Kali:~]
$ sudo passwd emma
New password:
Retype new password:
passwd: password updated successfully

[jasmin@Kali:~]
$
```

Step 3. To create a shared group I typed in the **command sudo group add 01286080_jasmin**. To add the users to the shared group, I used the command **sudo usermod -aG 01286080_jasmin**. To check and make sure the user was under the group I used the command **groups name**.

```
(jasmin㉿Kali)-[~]
$ sudo groupadd 01286080_jasmin
```



The screenshot shows a terminal window titled 'jasmin@Kali: ~'. The window contains the following command history:

```
File Actions Edit View Help
(jasmin㉿Kali)-[~]
$ sudo usermod -aG 01286080_jasmin sophia
(jasmin㉿Kali)-[~]
$ sudo usermod -aG 01286080_jasmin olivia
(jasmin㉿Kali)-[~]
$ sudo usermod -aG 01286080_jasmin emma
(jasmin㉿Kali)-[~]
$ groups
jasmin adm dialout cdrom floppy sudo audio dip video plugdev users netdev scanner bluetooth lpadmin wireshark vboxsf kaboxer
(jasmin㉿Kali)-[~]
$ groups sophia
sophia : employee 01286080_jasmin
(jasmin㉿Kali)-[~]
$ groups olivia
olivia : payroll 01286080_jasmin
(jasmin㉿Kali)-[~]
$ groups emma
emma : admin 01286080_jasmin
(jasmin㉿Kali)-[~]
$
```

Step 4. To create a directory, I used the command `sudo mkdir __`. To have the group 01286080_jasmin take ownership, I used the command `sudo chown :01286080 jasmin /home/cyse_project`. To check the permissions, I typed the command `ls -ld /home/cyse_project`,

```
(jasmin㉿Kali)-[~]
└$ sudo mkdir /home/cyse_project
[sudo] password for jasmin:

(jasmin㉿Kali)-[~]
└$ sudo chown 01286080_jasmin /home/cyse_project
chown: invalid user: '01286080_jasmin'

(jasmin㉿Kali)-[~]
└$ sudo chown :01286080_jasmin /home/cyse_project
```

```
(jasmin㉿Kali)-[~]
└$ ls -ld /home/cyse_project
drwxrwx--- 2 root 01286080_jasmin 4096 Oct 12 15:45 /home/cyse_project
```

Step 5. To 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 I used the command **sudo chmod 770 /home/cyse_project**. The 2 7's mean read write execute and 0 means no permissions.

```
(jasmin㉿Kali)-[~]
$ sudo chmod 770 /home/cyse_project
```

Step 6. To change the default permissions to “rw-r----” using the octal method, I typed **umask 027**. To check the permissions I typed **umask**.

```
└─(sophia㉿Kali)-[~]
└─$ umask 027

└─(sophia㉿Kali)-[~]
└─$ umask
0027
```

7. To create a new file called Sophia_homework under the home directory of Sophia, first I switched to sophia's account using the command **su -sophia**. Afterwards I type **echo "Jasmin" > ~ Sophia_homework** to create the file and add my name as content. To check the file permissions I type **ls -l ~/Sophia_homework**.

```
└─(sophia㉿Kali)-[~]
└─$ su - sophia
Password:
└─(sophia㉿Kali)-[~]
└─$ echo "Jasmin" > ~/Sophia_homework

└─(sophia㉿Kali)-[~]
└─$ ls -l ~/Sophia_homework
-rw-r--r-- 1 sophia employee 7 Oct 12 16:22 /home/sophia/Sophia_homework

└─(sophia㉿Kali)-[~]
└─$ █
```

Step 8. To copy "Sophia_homework" to the /home/cyse_project directory. I used the command **cp Sophia_homework /home/cyse_project/**. To check permissions I used the command **ls -l /home/cyse_project/Sophia_homework**.

```
(sophia㉿Kali)-[~]
$ cp Sophia_homework /home/cyse_project

(sophia㉿Kali)-[~]
$ ls -l /home/cyse_project /Sophia_homework
ls: cannot access '/Sophia_homework': No such file or directory
/home/cyse_project:
total 4
-rw-r-- 1 sophia employee 7 Oct 12 16:41 Sophia_homework

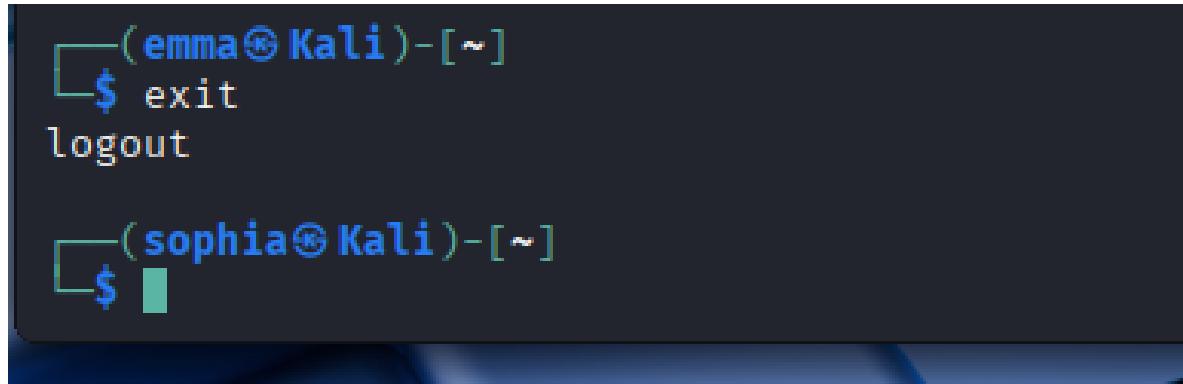
(sophia㉿Kali)-[~]
$ ls -l /home/cyse_project/Sophia_homework
-rw-r-- 1 sophia employee 7 Oct 12 16:41 /home/cyse_project/Sophia_homework

(sophia㉿Kali)-[~]
```

Step 9. To switch to Emma's account and read "Sophia_homework" in the /home/cyse_project Directory I used the command **"su - emma"** to switch to emmas account and to read I typed in the command **cat /home/cyse_project/Sophia_homework**.

```
(emma㉿Kali)-[~]
$ cat /home/cyse_project/Sophia_homework
cat: /home/cyse_project/Sophia_homework: Permission denied
```

Step 10. To Exit out of Emma's account and Sophia's account I typed in the command
“exit”



```
(emma㉿Kali)-[~]
$ exit
logout

(sophia㉿Kali)-[~]
$
```

Task B: Set SGID permission

Step 1. To switch to the root account, I typed in the command `sudo -i`. To set SGID permission, I typed in the command `chmod g+s /home/cyse_project`.

```
—(jasmin@Kali)-[~]
$ sudo -i
—(root@Kali)-[~]
# chmod g+s /home/cyse_project
```

Step 2. To switch to Sophia's account I typed in the command **sudo su – Sophia**. To copy Sophia_homework to the /home/cyse-project I typed in the command **cp Sophia_homework /home/cyse_project/Sophia_homework2**

```
(root@Kali)-[~]
# su - sophia
(sophia@Kali)-[~]
$ cp /home/sophia/Sophia_homework /home/cyse-project/Sophia_homework2
cp: cannot stat '/home/sophia/Sophia_homework': No such file or directory

(sophia@Kali)-[~]
$ cp /home/sophia/Sophia_homework /home/cysep_project/Sophia_homework2
cp: cannot stat '/home/sophia/Sophia_homework': No such file or directory

(sophia@Kali)-[~]
$ cp /home/sophia/Sophia_homework /home/cyse_project/Sophia_homework2
cp: cannot stat '/home/sophia/Sophia_homework': No such file or directory

(sophia@Kali)-[~]
$ cp /home/sophia/Sophia_homework /home/cyse_project/Sophia_homework2
cp: cannot stat '/home/sophia/Sophia_homework': No such file or directory

(sophia@Kali)-[~]
$ cp Sophia_homework /home/cyse_project/Sophia_homework2

(sophia@Kali)-[~]
$
```

Step 3. To switch to Emma's account I typed in the command **su - emma**. To read it in the /home/cyse_project directory I typed in the command **cat /home/cyse_project/Sophia_homework2**.

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

Task C: Unset SGID permissions (15 points)

Step 1. To return to root from the previous account, I typed **exit**. To disallow access to the shared folder for group members I typed the command **chmod g-r /home/cyse_project**

```
(sophia㉿Kali)-[~]
$ exit
logout

(root㉿Kali)-[~]
# sudo -1
sudo: invalid option -- '1'
usage: sudo -h | -K | -k | -V
usage: sudo -v [-ABkNnS] [-g group] [-h host] [-p prompt] [-u user]
usage: sudo -l [-ABkNnS] [-g group] [-h host] [-p prompt] [-U user]
      [-u user] [command [arg ... ]]
usage: sudo [-ABbEHkNnPS] [-r role] [-t type] [-C num] [-D directory]
           [-g group] [-h host] [-p prompt] [-R directory] [-T timeout]
           [-u user] [VAR=value] [-i | -s] [command [arg ... ]]
usage: sudo -e [-ABkNnS] [-r role] [-t type] [-C num] [-D directory]
           [-g group] [-h host] [-p prompt] [-R directory] [-T timeout]
           [-u user] file ...

(root㉿Kali)-[~]
# chmod g-r /home/cyse_project
```

Step 2. To switch to Sophia's account I typed in the command **su – Sophia**. To copy Sophia_homework into /home/cyse_project/Sophia as homework3 I typed in the command **cp Sophia_homework /home/cyse_project/Sophia_homework3**

```
└─(root㉿Kali)-[~]
  └─# su - sophia
  └─(sophia㉿Kali)-[~]
    └─$ cp Sophia_homework /home/cyse_project/Sophia_homework3

  └─(sophia㉿Kali)-[~]
    └─$ cp Sophia_homework/home/cyse_project/Sophia_homework3
    cp: missing destination file operand after 'Sophia_homework/home/cyse_project
    /Sophia_homework3'
    Try 'cp --help' for more information.

  └─(sophia㉿Kali)-[~]
    └─$ cp Sophia_homework /home/cyse_project/Sophia_homework3

  └─(sophia㉿Kali)-[~]
    └─$
```

Step 3. To switch to Olivia I typed in command **su – Olivia**. To attempt to read the file, I typed in the command **cat /home/cyse_project/Sophia_homework3**.

```
| (sophia@Kali)-[~]
| $ su - olivia
| Password: *
| (olivia@Kali)-[~]
| $ cat /home/cyse_project/Sophia_homework3
Jasmin
```