

Task A

1.

```
(jayden-goldsmith@kali)-[~]  
$ sudo groupadd employee  
  
(jayden-goldsmith@kali)-[~]  
$ sudo groupadd payroll  
  
(jayden-goldsmith@kali)-[~]  
$ sudo groupadd admin
```

2.

```
(jayden-goldsmith@kali)-[~]  
$ sudo useradd -m -s /bin/bash Sophia  
  
(jayden-goldsmith@kali)-[~]  
$ sudo useradd -m -s /bin/bash Olivia  
  
(jayden-goldsmith@kali)-[~]  
$ sudo useradd -m -s /bin/bash Emma  
  
(jayden-goldsmith@kali)-[~]  
$ sudo passwd Sophia  
New password:  
Retype new password:  
passwd: password updated successfully  
  
(jayden-goldsmith@kali)-[~]  
$ sudo passwd Olivia  
New password:  
Retype new password:  
passwd: password updated successfully  
  
(jayden-goldsmith@kali)-[~]  
$ sudo passwd Emma  
New password:  
Retype new password:  
passwd: password updated successfully
```

typed directly after

```
(jayden-goldsmith@kali)-[~]  
$ sudo usermod -g employee Sophia  
  
(jayden-goldsmith@kali)-[~]  
$ sudo usermod -g payroll Olivia  
  
(jayden-goldsmith@kali)-[~]  
$ sudo usermod -g admin Emma
```

3.

```
(jayden-goldsmith@kali)-[~]
$ sudo groupadd jgold033

(jayden-goldsmith@kali)-[~]
$ sudo usermod -G jgold033 Sophia

(jayden-goldsmith@kali)-[~]
$ sudo usermod -G jgold033 Olivia

(jayden-goldsmith@kali)-[~]
$ sudo usermod -G jgold033 Emma

(jayden-goldsmith@kali)-[~]
$ id Sophia
uid=1030(Sophia) gid=1035(employee) groups=1035(employee),1039(jgold033)

(jayden-goldsmith@kali)-[~]
$ id Olivia
uid=1031(Olivia) gid=1036(payroll) groups=1036(payroll),1039(jgold033)

(jayden-goldsmith@kali)-[~]
$ id Emma
uid=1032(Emma) gid=1037(admin) groups=1037(admin),1039(jgold033)
```

4.

```
(jayden-goldsmith@kali)-[~]
$ sudo chgrp jgold033 /home/cyse_project

(jayden-goldsmith@kali)-[~]
$ ls -ld /home/cyse_project
drwxr-xr-- 2 root jgold033 4096 Oct 12 22:59 /home/cyse_project
```

5.

```
(jayden-goldsmith@kali)-[~]
$ sudo chmod 770 /home/cyse_project

(jayden-goldsmith@kali)-[~]
$ ls -ld /home/cyse_project
drwxrwx--- 2 root jgold033 4096 Oct 12 22:59 /home/cyse_project
```

6.

```
(Sophia@kali)-[~]
$ su - jayden-goldsmith
Password:
(jayden-goldsmith@kali)-[~]
$ su - Sophia
Password:
(Sophia@kali)-[~]
$ umask 026

(Sophia@kali)-[~]
$ touch step5temp.txt

(Sophia@kali)-[~]
$ ls -l step5temp.txt
-rw-r----- 1 Sophia employee 0 Oct 13 21:46 step5temp.txt
```

7.

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

(Sophia@kali)-[~]
$ echo Jayden Goldsmith > Sophia_homework

(Sophia@kali)-[~]
$ ls -l Sophia_homework
-rw-r----- 1 Sophia employee 17 Oct 13 22:36 Sophia_homework

(Sophia@kali)-[~]
$ cat Sophia_homework
Jayden Goldsmith
```

8.

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

(Sophia@kali)-[/home/cyse_project]
$ ls -l
total 4
-rw-r----- 1 Sophia employee 17 Oct 13 22:40 Sophia_homework
```

9.

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

10

```
(Emma@kali)-[/home/cyse_project]  
$ exit  
logout  
  
(Sophia@kali)-[/home/cyse_project]  
$ exit  
logout  
  
(jayden-goldsmith@kali)-[~]  
$
```

Task B

1.

```
(jayden-goldsmith@kali)-[~]  
$ sudo su -  
[sudo] password for jayden-goldsmith:  
(root@kali)-[~]  
# chmod g+s /home/cyse_project  
  
(root@kali)-[~]  
# ls -ld /home/cyse_project  
drwxrws— 2 root jgold033 4096 Oct 13 22:40 /home/cyse_project
```


Jayden Goldsmith

2.

```
(root@kali)-[~]  
# su - Sophia  
(Sophia@kali)-[~]  
$ cp Sophia_homework /home/cyse_project/Sophia_homework2
```

3.

```
(Sophia@kali)-[~]  
$ su - Emma  
Password:  
(Emma@kali)-[~]  
$ cat /home/cyse_project/Sophia_homework2  
Jayden Goldsmith
```

Task C

1.

```
(jayden-goldsmith@kali)-[~]  
$ sudo su -  
[sudo] password for jayden-goldsmith:  
(root@kali)-[~]  
# chmod g-s /home/cyse_project
```

2.

```
(root@kali)-[~]  
# su - Sophia  
(Sophia@kali)-[~]  
$ cp Sophia_homework /home/cyse_project/Sophia_homework3
```

3.

```
(Sophia@kali)-[~]  
$ su - Olivia  
Password:  
(Olivia@kali)-[~]  
$ cat /home/cyse_project/Sophia_homework3  
cat: /home/cyse_project/Sophia_homework3: Permission denied
```

Extra Credit vvv

Extra Credit

1.

```
(jayden-goldsmith@kali)-[~]
$ su - Olivia
Password:
(Olivia@kali)-[~]
$ rm /home/cyse_project/Sophia_homework
rm: remove write-protected regular file '/home/cyse_project/Sophia_homework'? y

(Olivia@kali)-[~]
$ ls -l /home/cyse_project
total 8
-rw-r----- 1 Sophia jgold033 17 Oct 13 23:25 Sophia_homework2
-rw-r----- 1 Sophia employee 17 Oct 13 23:53 Sophia_homework3
```

2.

```
(jayden-goldsmith@kali)-[~]
$ sudo su -
[sudo] password for jayden-goldsmith:
(root@kali)-[~]
# chmod +t /home/cyse_project
```

3.

```
(root@kali)-[~]
# su - Olivia
(Olivia@kali)-[~]
$ rm /home/cyse_project/Sophia_homework3
rm: remove write-protected regular file '/home/cyse_project/Sophia_homework3'? y
rm: cannot remove '/home/cyse_project/Sophia_homework3': Operation not permitted
```

It is because due to the sticky bit command that only the owner of the file can delete the file, and Olivia is not the owner of the file. Sophia created the original file “Sophia_homework” and copied it to make “Sophia_homework3”, Sophia still being the owner of the file.