

Task A

Step 1

```
(student@kali.example.com)-[~]  
$ sudo groupadd employee  
  
(student@kali.example.com)-[~]  
$ sudo groupadd payroll  
  
(student@kali.example.com)-[~]  
$ sudo groupadd admin  
  
(student@kali.example.com)-[~]  
$
```

Step 2

```
(student@kali.example.com)-[~]
$ sudo useradd -m -d /home/sophia -s /bin/bash -g employee sophia
useradd: user 'sophia' already exists

(student@kali.example.com)-[~]
$ sudo useradd -m -d /home/olivia -s /bin/bash -g payroll olivia

(student@kali.example.com)-[~]
$ sudo useradd -m -d /home/emma -s /bin/bash -g admin emma

(student@kali.example.com)-[~]
$ sudo passwd sophia
New password:
Retype new password:
passwd: password updated successfully

(student@kali.example.com)-[~]
$ sudo passwd olivia
New password:
Retype new password:
passwd: password updated successfully

(student@kali.example.com)-[~]
$ sudo passwd emma
New password:
Retype new password:
passwd: password updated successfully
```

Step 3

```
(student@kali.example.com)-[~]
$ sudo groupadd dsmit070
groupadd: group 'dsmit070' already exists

(student@kali.example.com)-[~]
$ sudo usermod -aG dsmit070 sophia

(student@kali.example.com)-[~]
$ sudo usermod -aG dsmit070 olivia

(student@kali.example.com)-[~]
$ sudo usermod -aG dsmit070 emma
```

```
(student@kali.example.com)-[~]  
$ groups sophia  
sophia : employee dsmit070  
  
(student@kali.example.com)-[~]  
$ groups olivia  
olivia : payroll dsmit070  
  
(student@kali.example.com)-[~]  
$ groups emma  
emma : admin dsmit070
```

Step 4

```
(student@kali.example.com)-[~]  
$ sudo mkdir /home/cyse_project  
  
(student@kali.example.com)-[~]  
$ sudo chown :dsmit070 /home/cyse_project  
  
(student@kali.example.com)-[~]  
$ ls -ld /home/cyse_project  
drwxr-xr-x 2 root dsmit070 4096 Dec  5 09:28 /home/cyse_project
```

Step 5

```
(student@kali.example.com)-[~]  
$ sudo chmod 770 /home/cyse_project  
  
(student@kali.example.com)-[~]  
$ ls -ld /home/cyse_project  
drwxrwx--- 2 root dsmit070 4096 Dec  5 09:28 /home/cyse_project
```

Step 6

```
(student@kali.example.com)-[~]
$ su - sophia
Password:
(sophia@kali)-[~]
$ umask 077

(sophia@kali)-[~]
$ umask
0077

(sophia@kali)-[~]
$ touch test_file

(sophia@kali)-[~]
$ ls -l test_file
-rw----- 1 sophia employee 0 Dec  5 09:58 test_file
```

Step 7

```
(sophia@kali)-[~]
$ echo "Dj Smith" > ~/Sophia_homework

(sophia@kali)-[~]
$ ls -l ~/Sophia_homework
-rw----- 1 sophia employee 9 Dec  5 10:00 /home/sophia/Sophia_homework

(sophia@kali)-[~]
$ cat ~/Sophia_homework
Dj Smith
```

Step 8

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

(sophia@kali)-[~]
$ ls -l /home/cyse_project/Sophia_homework
-rw----- 1 sophia employee 9 Dec  5 10:05 /home/cyse_project/Sophia_homework
```

Step 9

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

Step 10

```
(emma@kali)-[~]  
$ exit  
logout  
  
(sophia@kali)-[~]  
$ exit  
logout  
  
(student@kali.example.com)-[~]  
$
```

Task B

Step 1

```
(student@kali.example.com)-[~]  
$ sudo su  
(root@kali.example.com)-[/home/student]  
# chmod g+s /home/cyse_project  
  
(root@kali.example.com)-[/home/student]  
# exit  
exit  
  
(student@kali.example.com)-[~]  
$ ls -ld /home/cyse_project  
drwxrws--- 2 root dsmit070 4096 Dec  5 10:05 /home/cyse_project
```

Step 2

```
(student@kali.example.com)-[~]  
$ su - sophia  
Password:
```

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

```
(sophia@kali)-[~]  
$ ls -l /home/cyse_project/Sophia_homework2  
-rw----- 1 sophia dsmit070 9 Dec  5 10:24 /home/cyse_project/Sophia_homework2
```

Step 3

```
(sophia@kali)-[~]  
$ su - emma  
Password:  
(emma@kali)-[~]  
$ cat /home/cyse_project/Sophia_homework2  
cat: /home/cyse_project/Sophia_homework2: Permission denied
```

Task C

Step 1

```

(emma@kali)-[~]
└─$ exit
logout

(sophia@kali)-[~]
└─$ exit
logout

(student@kali.example.com)-[~]
└─$ sudo su
(root@kali.example.com)-[/home/student]
# chmod g-s /home/cyse_project

(root@kali.example.com)-[/home/student]
# exit
exit

(student@kali.example.com)-[~]
└─$ ls -ld /home/cyse_project
drwxrwx--- 2 root dsmit070 4096 Dec  5 10:24 /home/cyse_project

```

Step 2

```

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

(sophia@kali)-[~]
└─$ ls -l /home/cyse_project/Sophia_homework3
-rw----- 1 sophia employee 9 Dec  5 10:35 /home/cyse_project/Sophia_homework3

```

Step 3

```
(sophia@kali)-[~]  
$ su - olivia  
Password:  
(olivia@kali)-[~]  
$ cat /home/cyse_project/Sophia_homework3  
cat: /home/cyse_project/Sophia_homework3: Permission denied  
  
(olivia@kali)-[~]  
$ exit  
logout  
  
(sophia@kali)-[~]  
$ exit  
logout  
  
(student@kali.example.com)-[~]  
$
```