

Task 1: Linux Essentials & File Permissions – PoC

This Proof of Concept (PoC) demonstrates creating a Linux user, setting up directories, configuring file permissions, and writing a backup script.

1 Create a new user called `studentuser`

```
sudo adduser studentuser
```

2 Create directory structure for `projectX`

```
sudo -u studentuser mkdir -p /home/studentuser/projectX/{logs,scripts}
```

3 Create a `welcome.txt` file in `projectX`

```
echo "Welcome to Linux" | sudo tee /home/studentuser/projectX/welcome.txt  
> /dev/null  
sudo chown studentuser:studentuser /home/studentuser/projectX/welcome.t  
xt  
sudo chmod 600 /home/studentuser/projectX/welcome.txt
```

4 Create `backup.sh` script in `scripts` directory

```
sudo -u studentuser bash -c 'cat <<EOF > /home/studentuser/projectX/script  
s/backup.sh  
#!/bin/bash  
src="/home/studentuser/projectX/welcome.txt"  
dst="/home/studentuser/projectX/logs/welcome_$(date +%Y%m%d_%H%
```

```
M%S).txt"
cp "$src" "$dst"
echo "✅ Backup created: $dst"
EOF'
```

```
sudo chmod +x /home/studentuser/projectX/scripts/backup.sh
```

5 Run the **backup.sh** script

```
sudo -u studentuser /home/studentuser/projectX/scripts/backup.sh
```

```
—(kali@kali)-[~]
—$ sudo adduser studentuser

[sudo] password for kali:
warn: The home directory `/home/studentuser' already exists. Not touching this directory.
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for studentuser
Enter the new value, or press ENTER for the default
  Full Name []:
  Room Number []:
  Work Phone []:
  Home Phone []:
  Other []:
Is the information correct? [Y/n] y

—(kali@kali)-[~]
—$ sudo mkdir -p /home/studentuser/projectX/logs
—$ sudo mkdir -p /home/studentuser/projectX/scripts

—(kali@kali)-[~]
—$ sudo chown -R studentuser:studentuser /home/studentuser/projectX

—(kali@kali)-[~]
—$ sudo -u studentuser bash -c 'echo "Welcome to Linux" > /home/studentuser/projectX/welcome.txt'

—(kali@kali)-[~]
—$ sudo chmod 600 /home/studentuser/projectX/welcome.txt

—(kali@kali)-[~]
—$ sudo -u studentuser nano /home/studentuser/projectX/scripts/backup.sh
```

```
(kali㉿kali)-[~/Desktop]  
$ sudo ls /home/studentuser/projectX/logs/  
welcome_20250723_224059.txt  
(kali㉿kali)-[~/Desktop]
```