Task 1: Linux Essentials & File Permissions

1. Create a new user called 'studentuser'

sudo adduser studentuser

2. Create the following directory structure:

/home/studentuser/projectX/logs

/home/studentuser/projectX/scripts

sudo mkdir -p /home/studentuser/projectX/logs
sudo mkdir -p /home/studentuser/projectX/scripts

3. Change ownership of `projectX` to `studentuser`:

sudo chown -R studentuser:studentuser /home/studentuser/projectX

4. Create `welcome.txt` with the content:

sudo -u studentuser bash

echo "Welcome to Linux" > /home/studentuser/projectX/welcome.txt

5. Set permissions so only `studentuser` can read/write the file

chmod 600 /home/studentuser/projectX/welcome.txt

6. Create the `backup.sh` script

nano /home/studentuser/projectX/scripts/backup.sh

#!/bin/bash

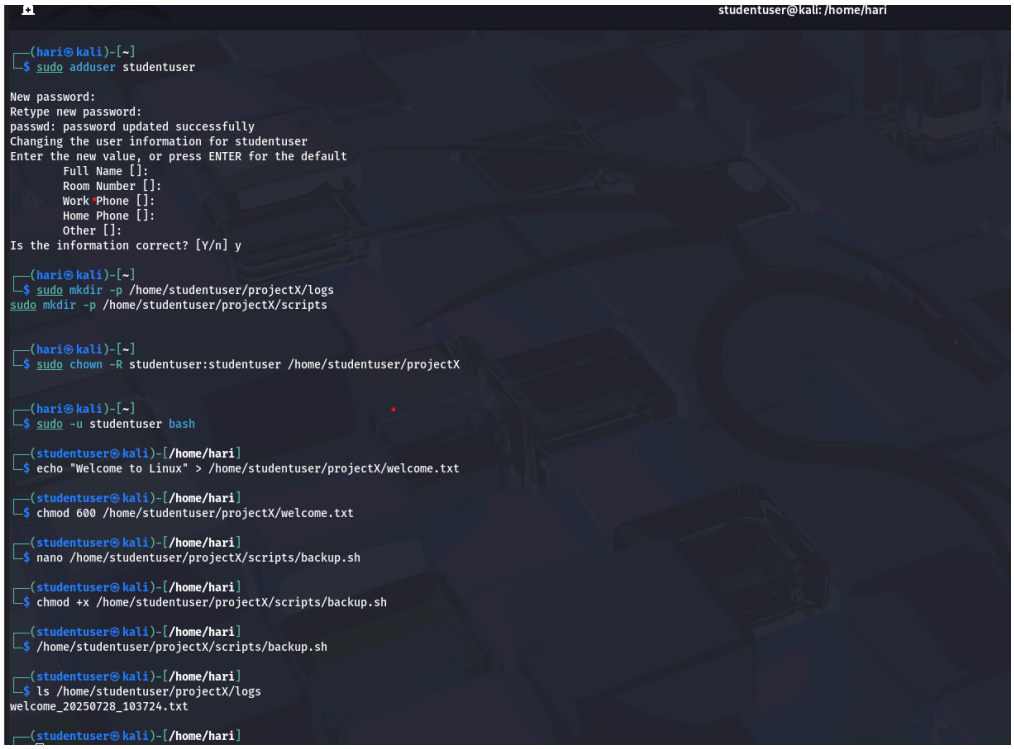
src="/home/studentuser/projectX/welcome.txt"

dest="/home/studentuser/projectX/logs/welcome_$(date +%Y%m%d_%H%M%S).txt"

cp "$src" "$dest"

7. Test the script:

ls /home/studentuser/projectX/logs



Conclusion: Task1 focused on setting up a dedicated user environment for Linux scripting. We successfully created the `studentuser` account, established the required directory structure, and implemented basic file and permission management.