BUBT | BANGLADESH UNIVERSITY OF BUSINESS AND TECHNOLOGY

Computer Science and Engineering

Lab Report

Introduction to Linux Operating System

OPERATING SYSTEMS (CSE-210)

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Intake 53 (01)

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Contents

Scenario

You are the system administrator of a Linux server used by a small development team. Recently, some team members reported some issues and you need to troubleshoot and perform user management tasks.

1 Troubleshooting

1.0.1 Identify the currently logged-in users on the system

Use the **who** command to identify the currently logged-in users on the system.

who

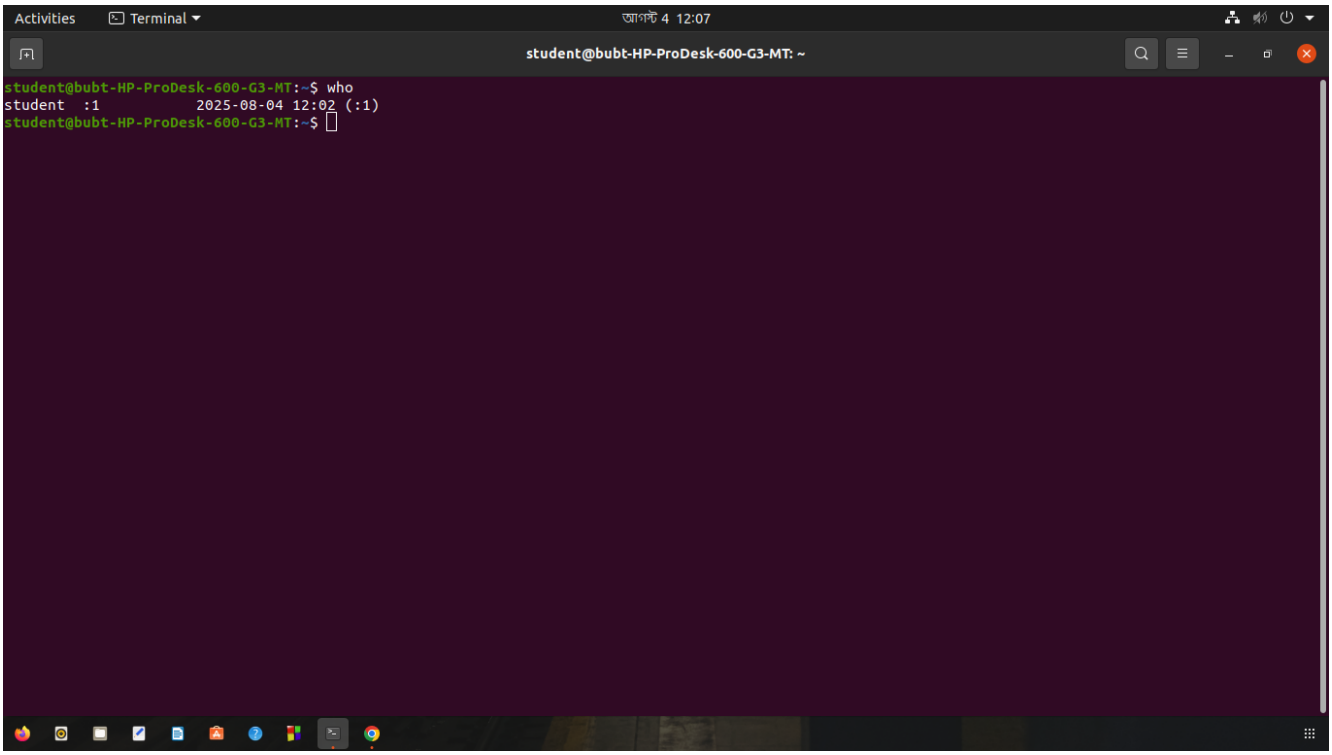

Figure 1: Use of the who command

2 User Management

2.0.1 Create a new user named developer1

Create a new user named **developer1** using the **useradd** command.

sudo useradd -m developer2

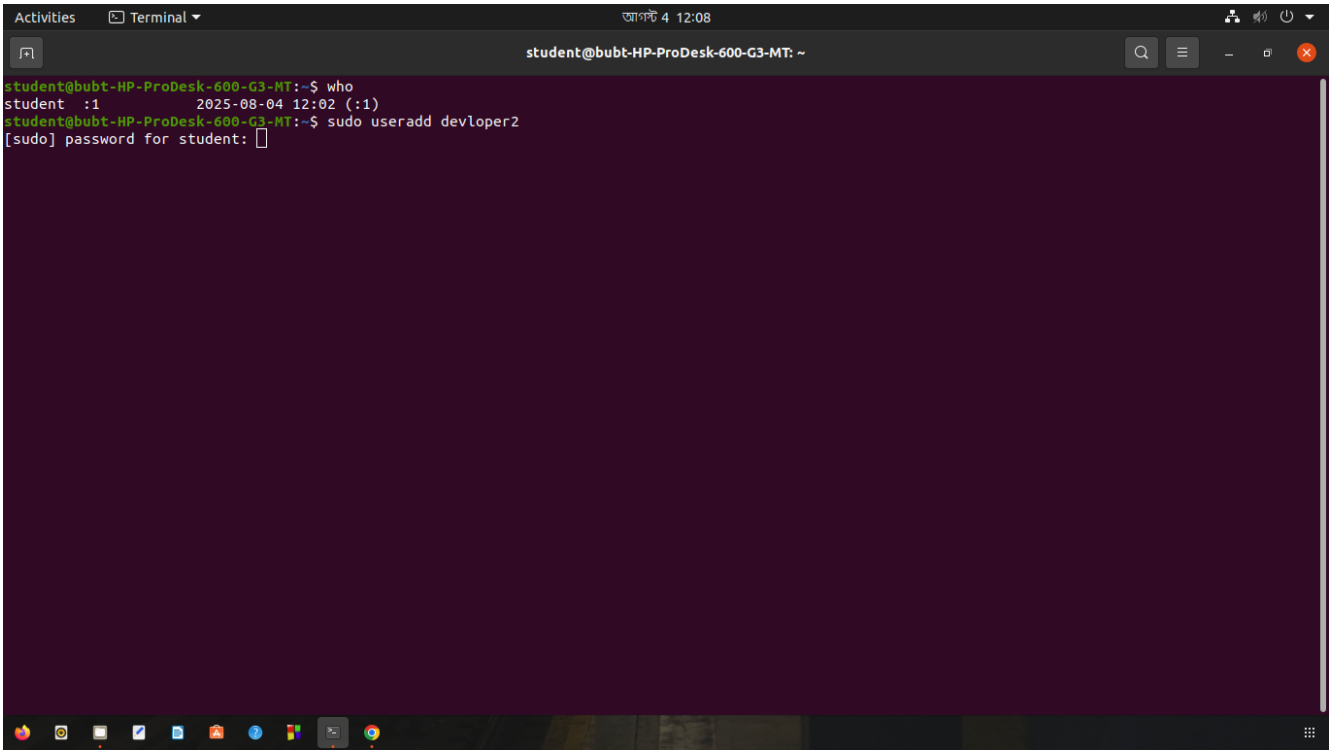

Figure 2: Create a new user

2.0.2 Set a password for the newly created user

Set a password for the newly created user using the **passwd** command.

sudo passwd
Example password: 1234

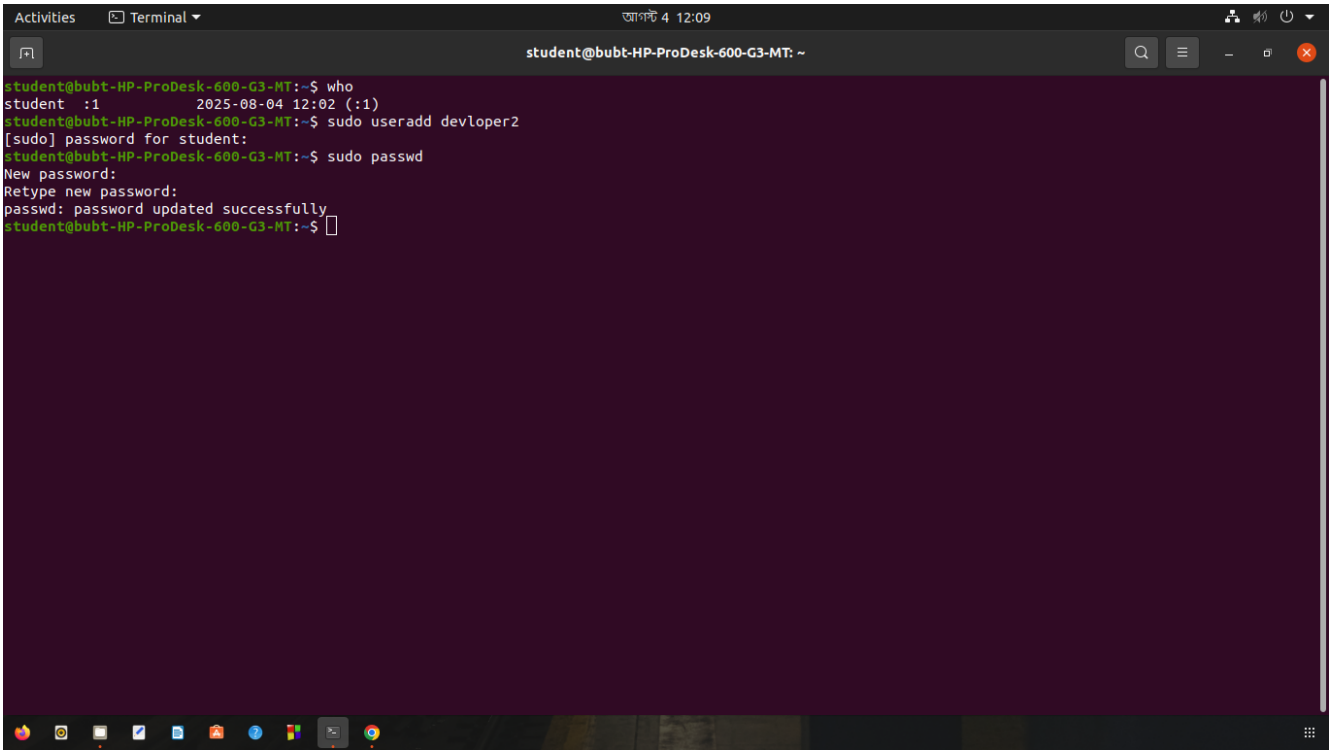

Figure 3: Set new password

2.0.3 Create a new group named development

Create a new group named development using the **groupadd** command.

sudo groupadd development2

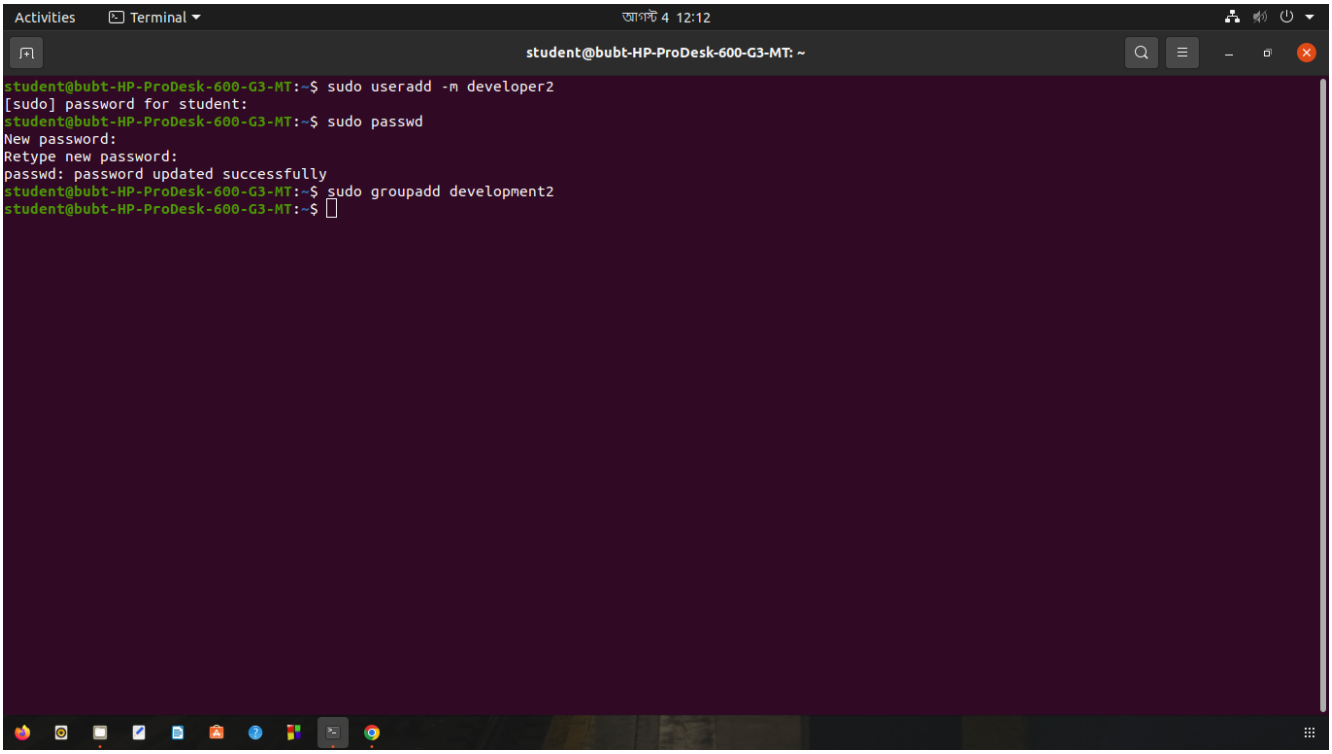

Figure 4: Creating a new group

2.0.4 Add the user developer2 to the development group

Add the user developer1 to the development group using the **usermod** command.

sudo usermod -aG development developer2

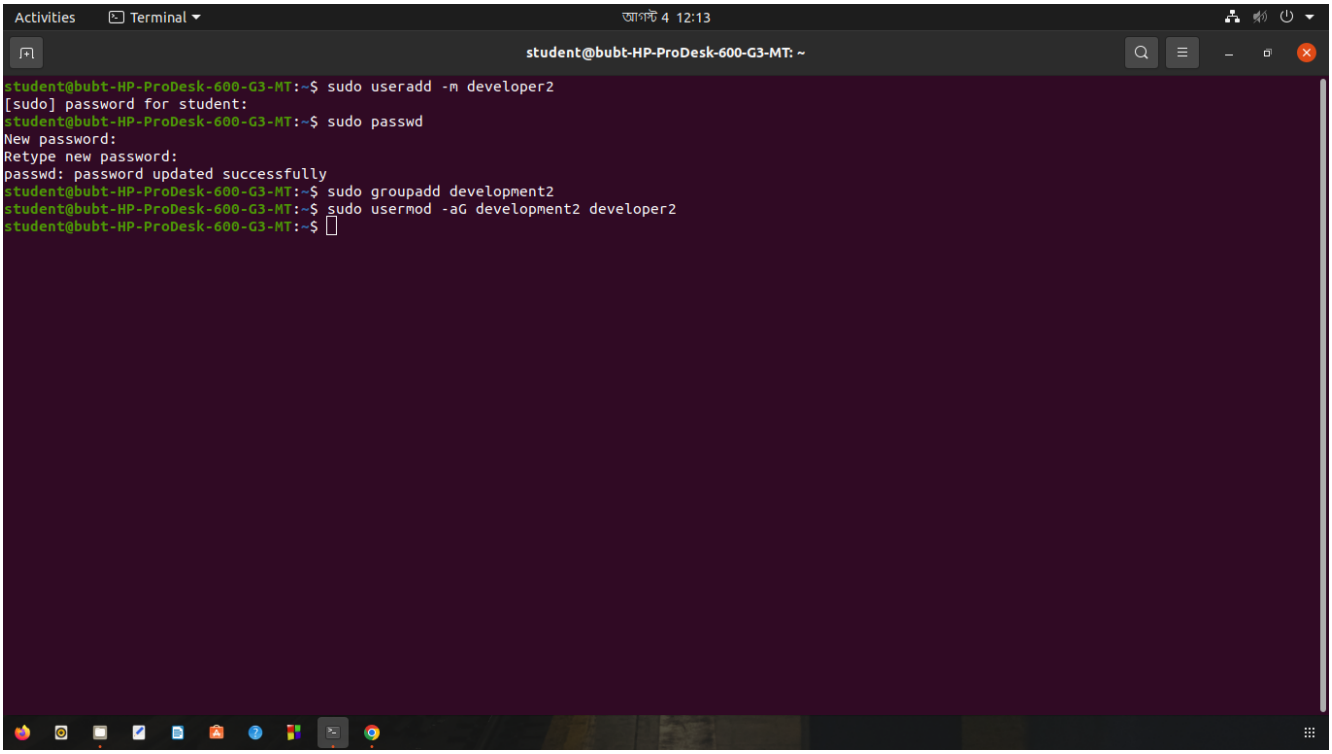

Figure 5: Add the user developer2 to the development group

2.0.5 Check and display the group memberships of the user developer1

Check and display the group memberships of the user developer1 using the **groups** command.

groups devloper2

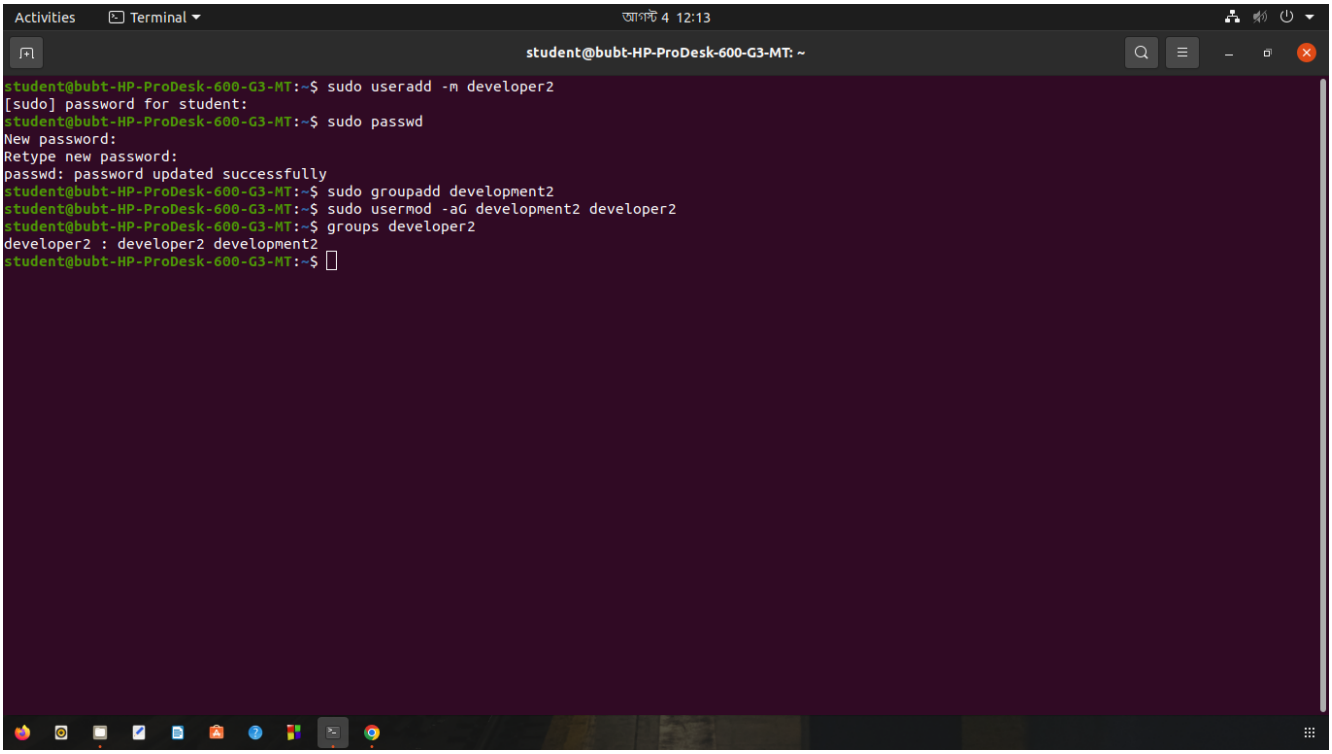

Figure 6: display the group memberships

2.0.6 Deletion of created user

Delete the created user from the system

sudo groupdel development2
sudo userdel -r developer2

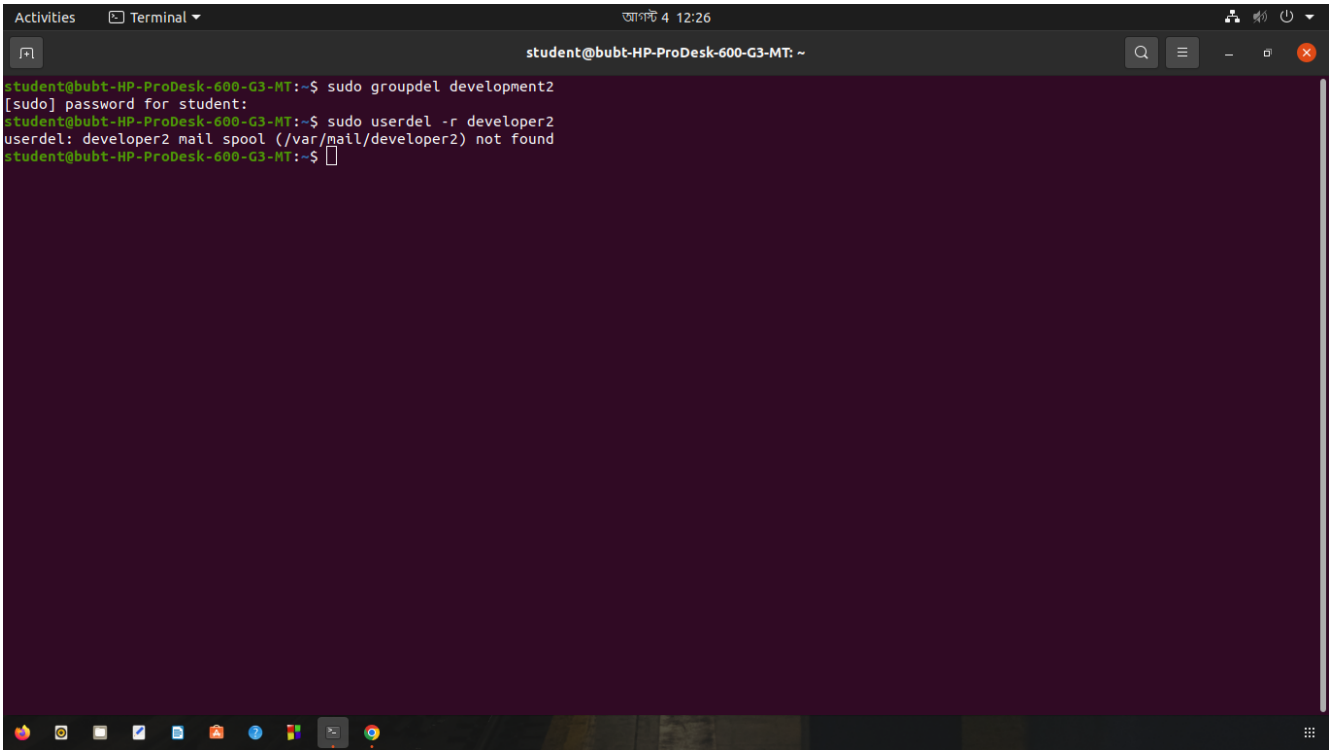

Figure 7: Deletion of created user

3 File Permission Adjustment

3.0.1 Create a directory

Create a directory named `project_files` in the home directory of `developer1` using the `mkdir` command.

sudo su - developer2

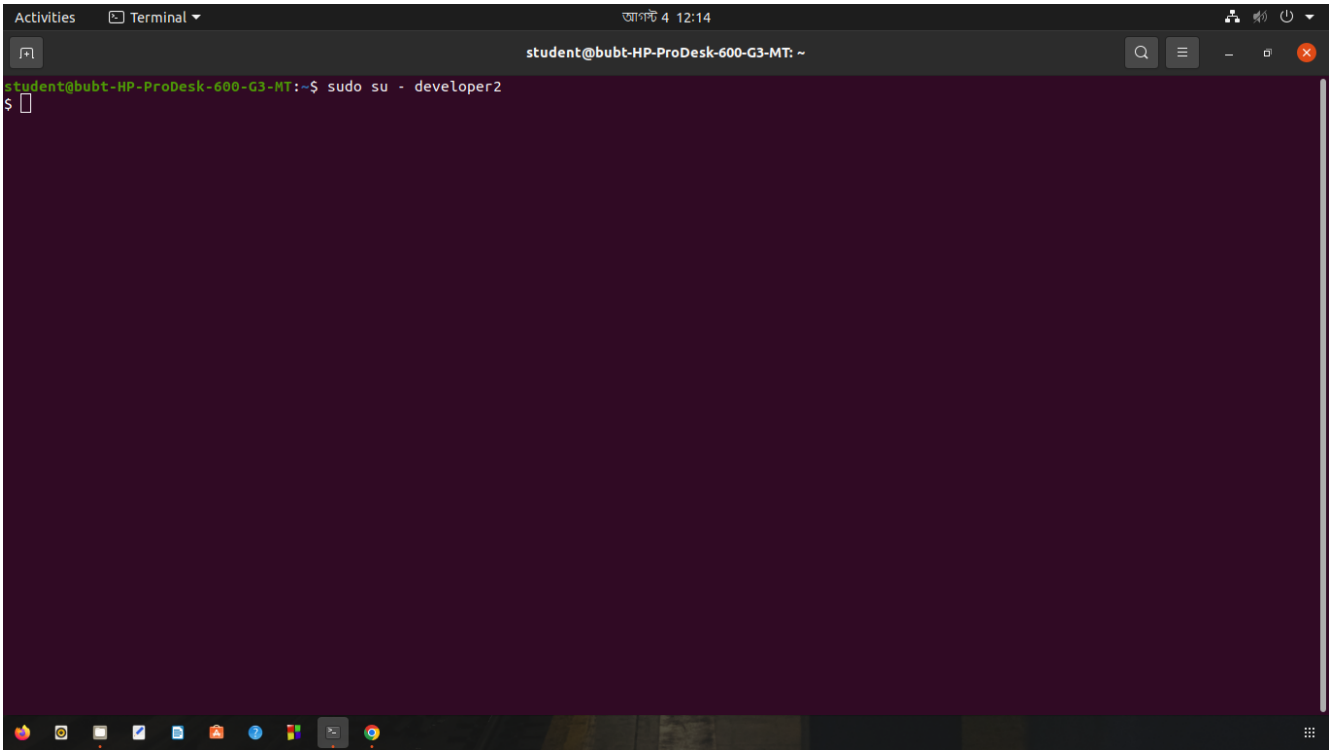

Figure 8: Logging into the developer2 account

who
whoami

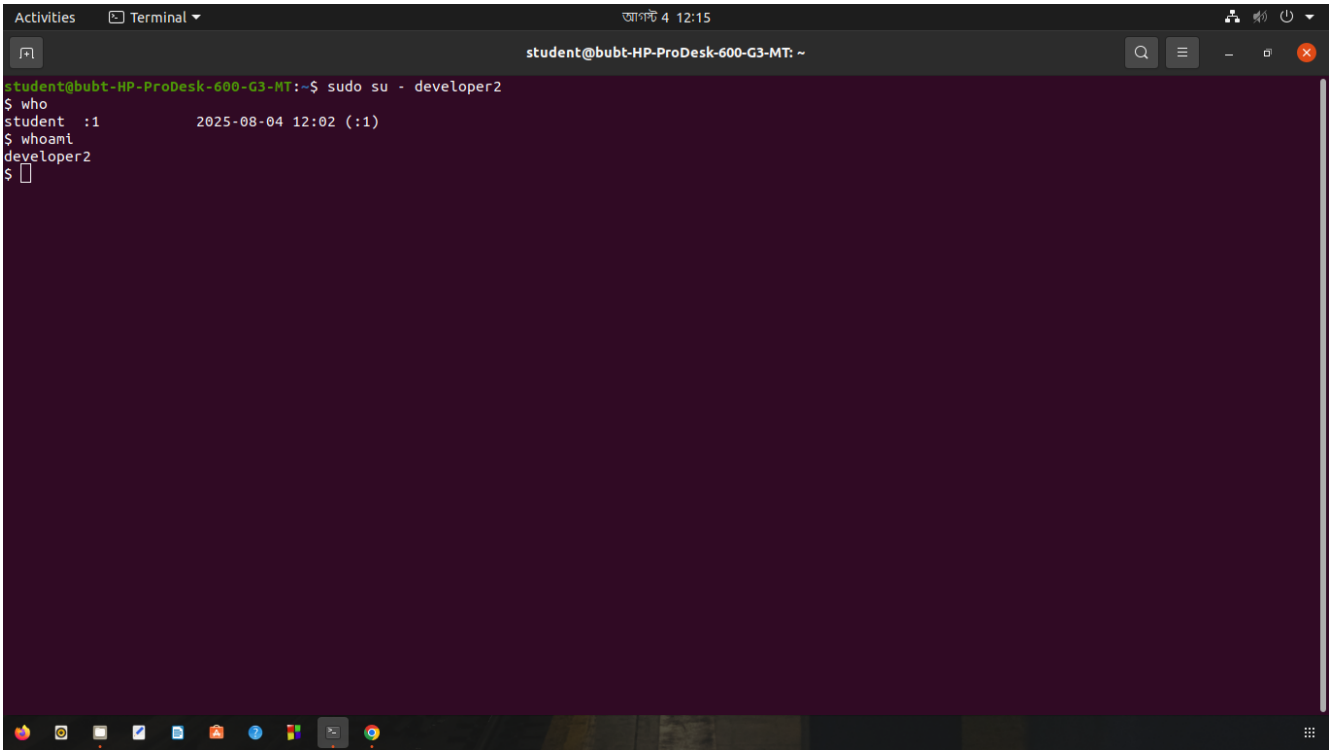

Figure 9: Verifying that we are in the correct working directory

pwd

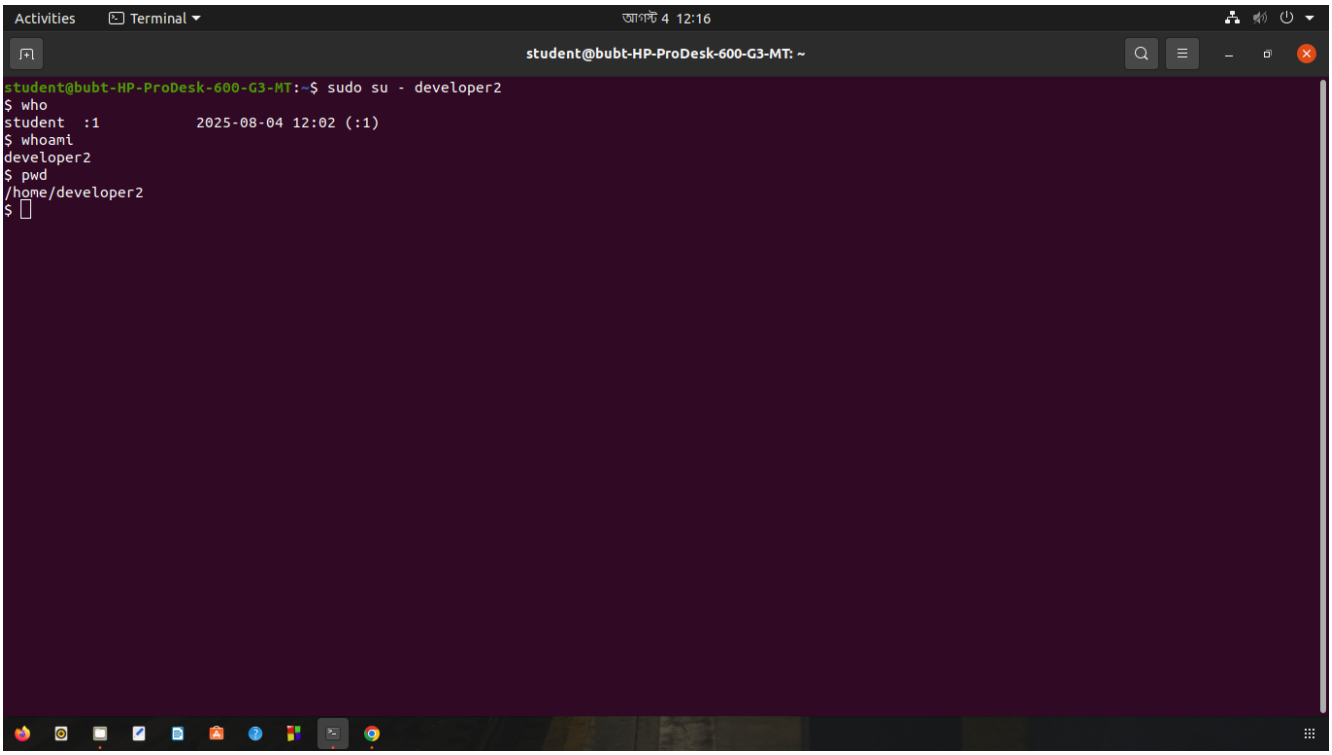

Figure 10: Verifying if we are logged in as developer2

`mkdir project_files`

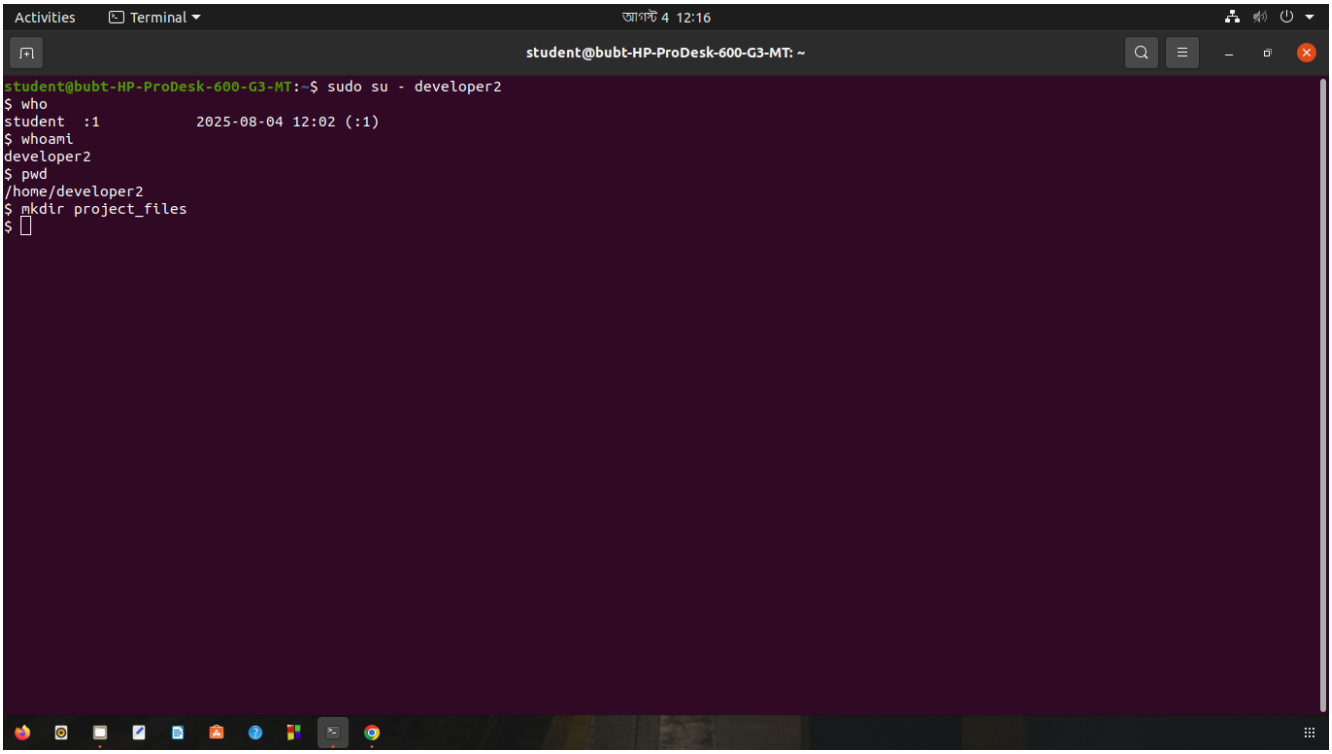

Figure 11: Creating the projectfiles directory

3.0.2 Change the Ownership

Change the ownership of the projectfiles directory to developer2 and the group to development2 using the chown and chgrp commands. `chown developer2 project_files`
`chgrp development2 project_files`

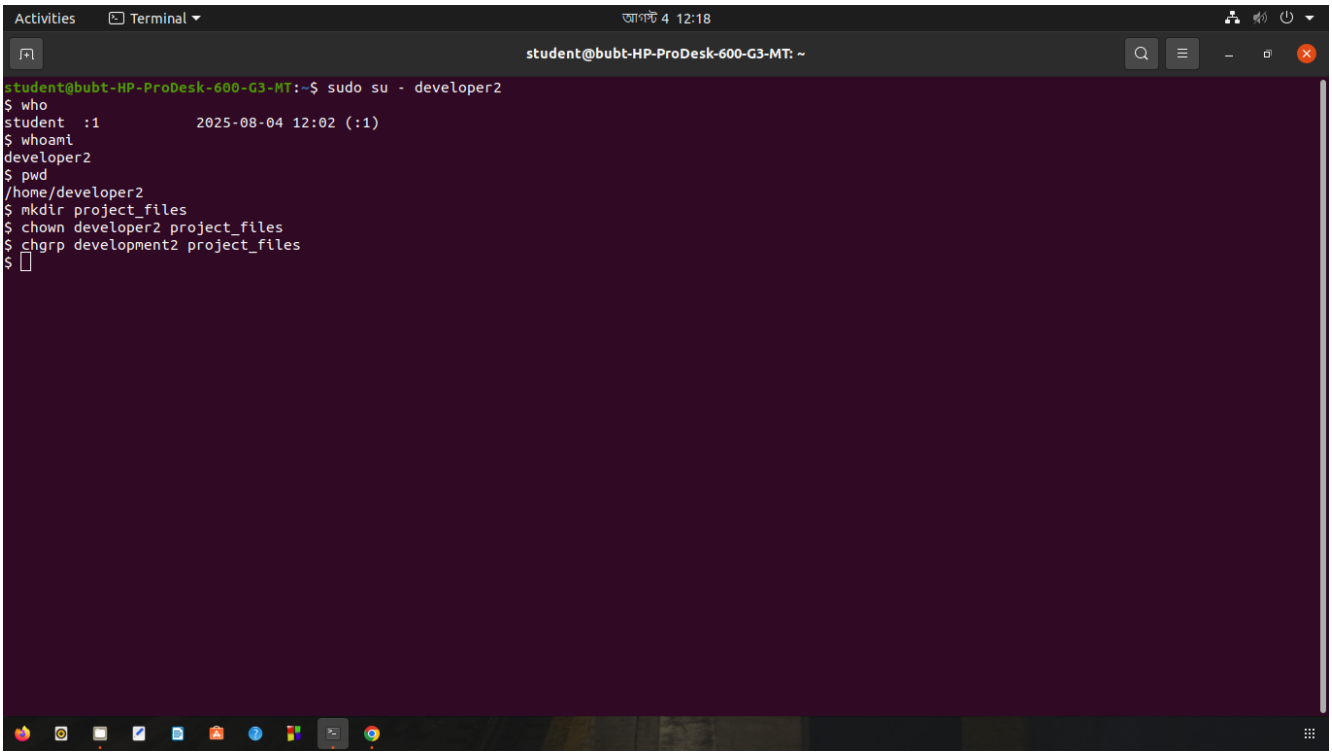

Figure 12: Change the Ownership

3.0.3 Ensure Write Permissions Only to the Owner

Ensure that only the owner (`developer2`) has write permissions in the `project_files` directory.

`chmod u+w,go-w project\_files`

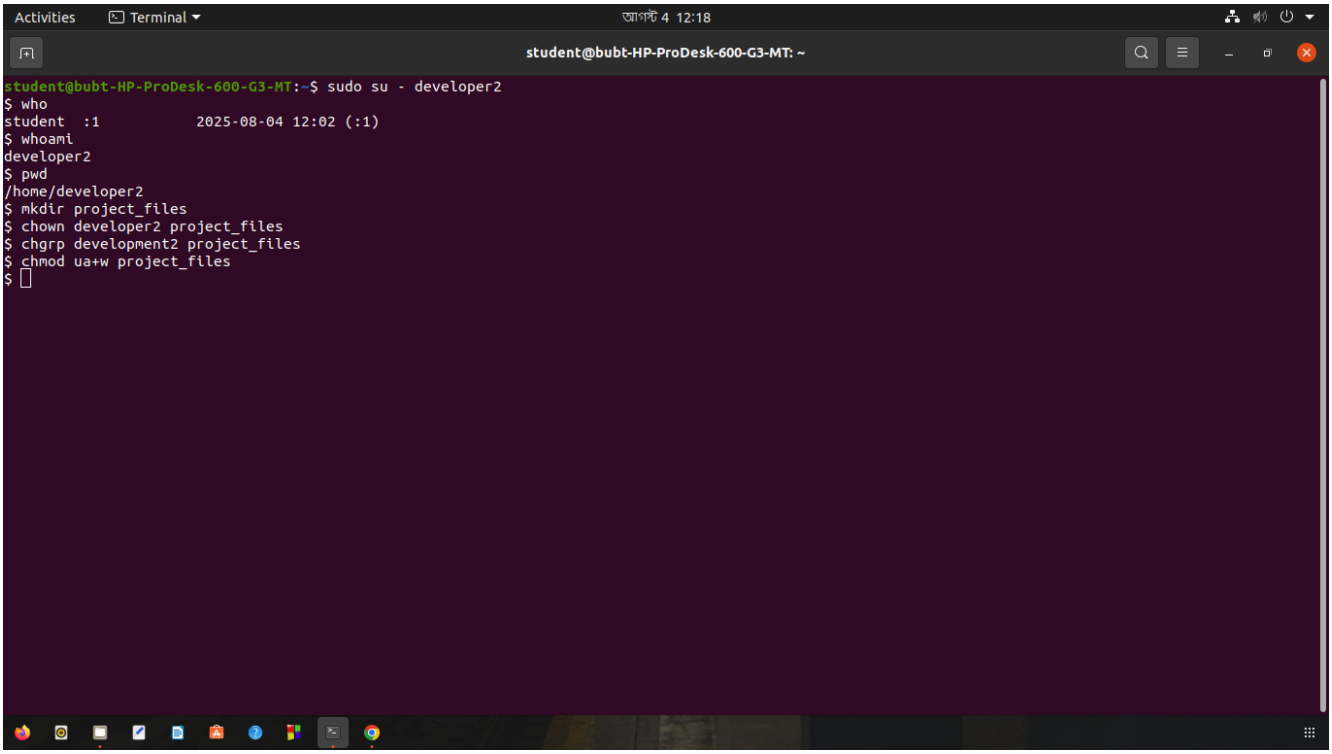

Figure 13: Ensure write permissions for the owner only

4 Conclusion

4.0.1 Summarize your troubleshooting findings and resolve

During the setup process, commands such as `useradd`, `groupadd`, and `usermod` required administrative access. To execute these commands, we used `sudo` along with the user's password to gain the necessary privileges.

```
sudo userdel developer2
sudo groupdel development2
```

4.0.2 Confirm that the new user `developer2` has been created

Confirm that the new user `developer2` has been successfully created, added to the `development2` group, and that file permissions are set correctly.

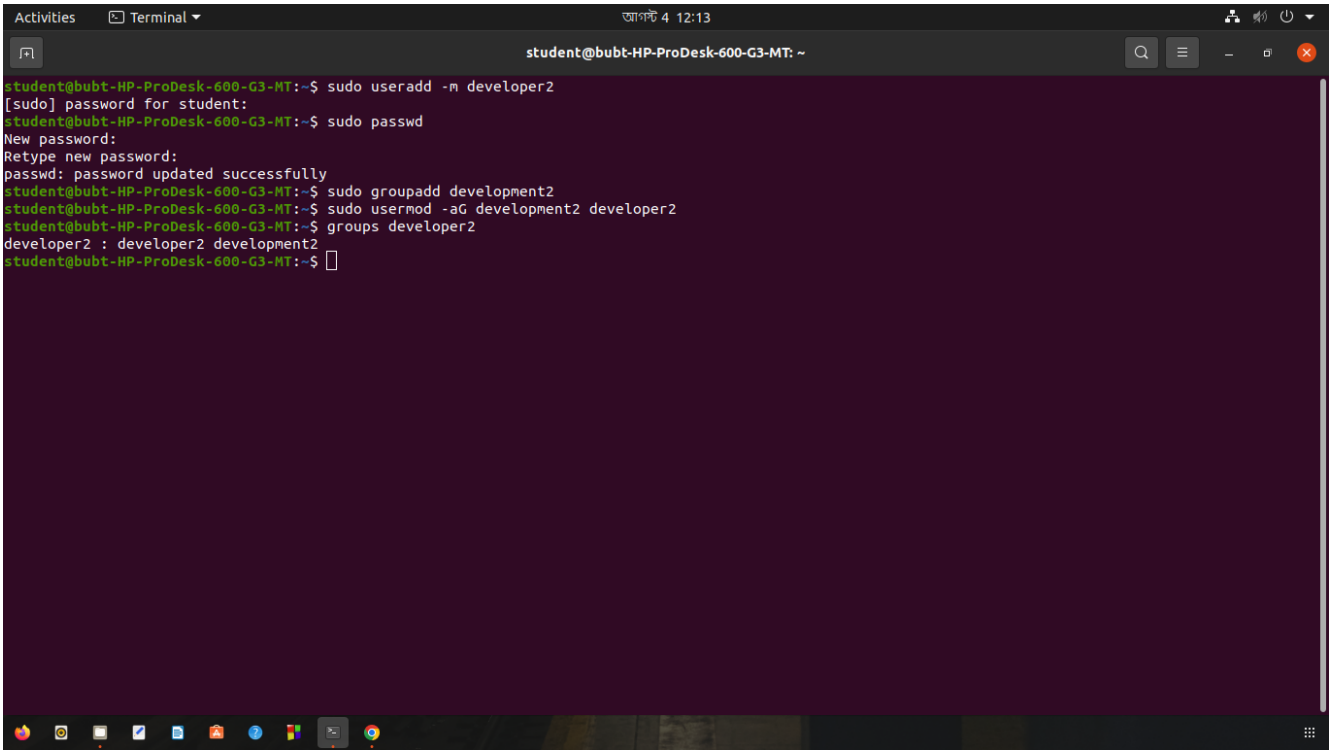

Figure 14: Verification of the new user `developer2` and group membership

5 Additional Task

5.0.1 Concatenate file1.txt and file2.txt to make a file3.txt

Concatenate file1.txt and file2.txt to make a file3.txt with all the contents of file1.txt and file2.txt

touch file1.txt touch file2.txt
touch file2.txt

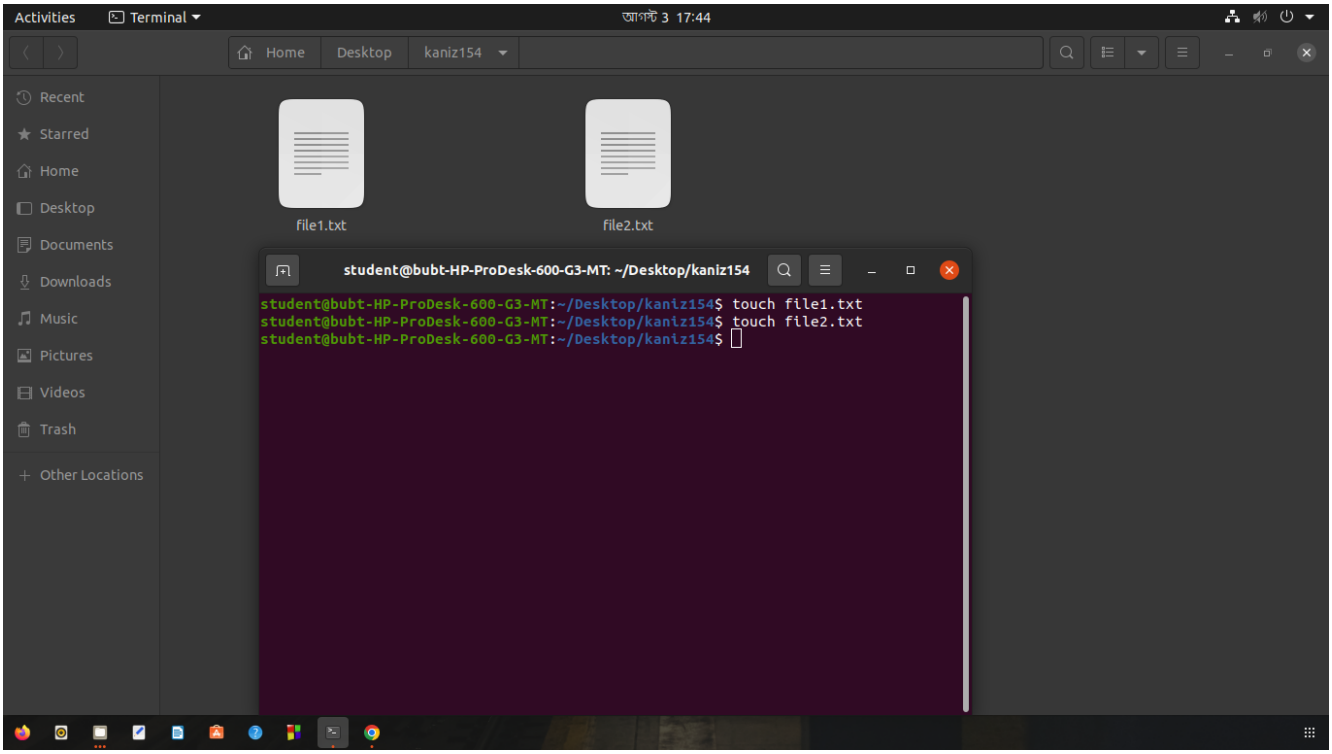

Figure 15: Create file1.txt and file2.txt

nano file1.tx
cat file1.txt

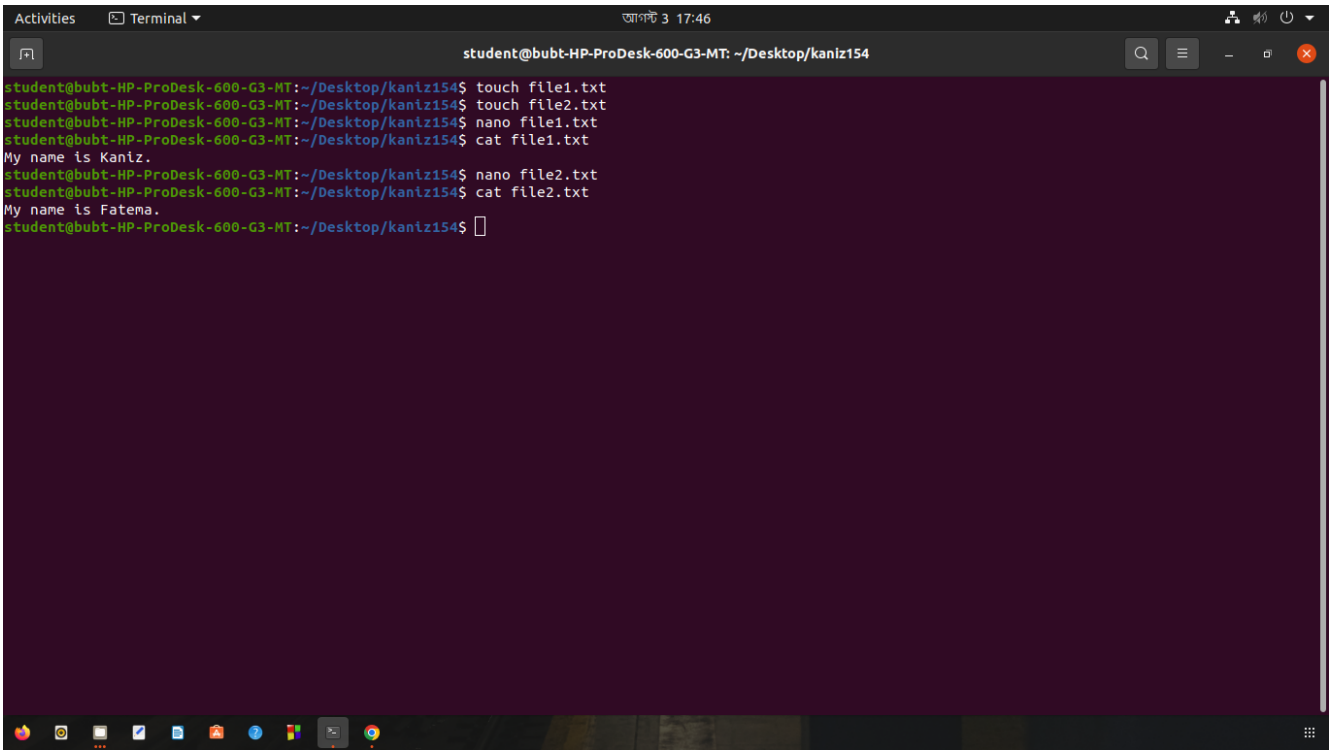

Figure 16: Write and show text file1.txt and file2.txt

cat file1.txt file2.txt > file3.txt
cat file3.txt

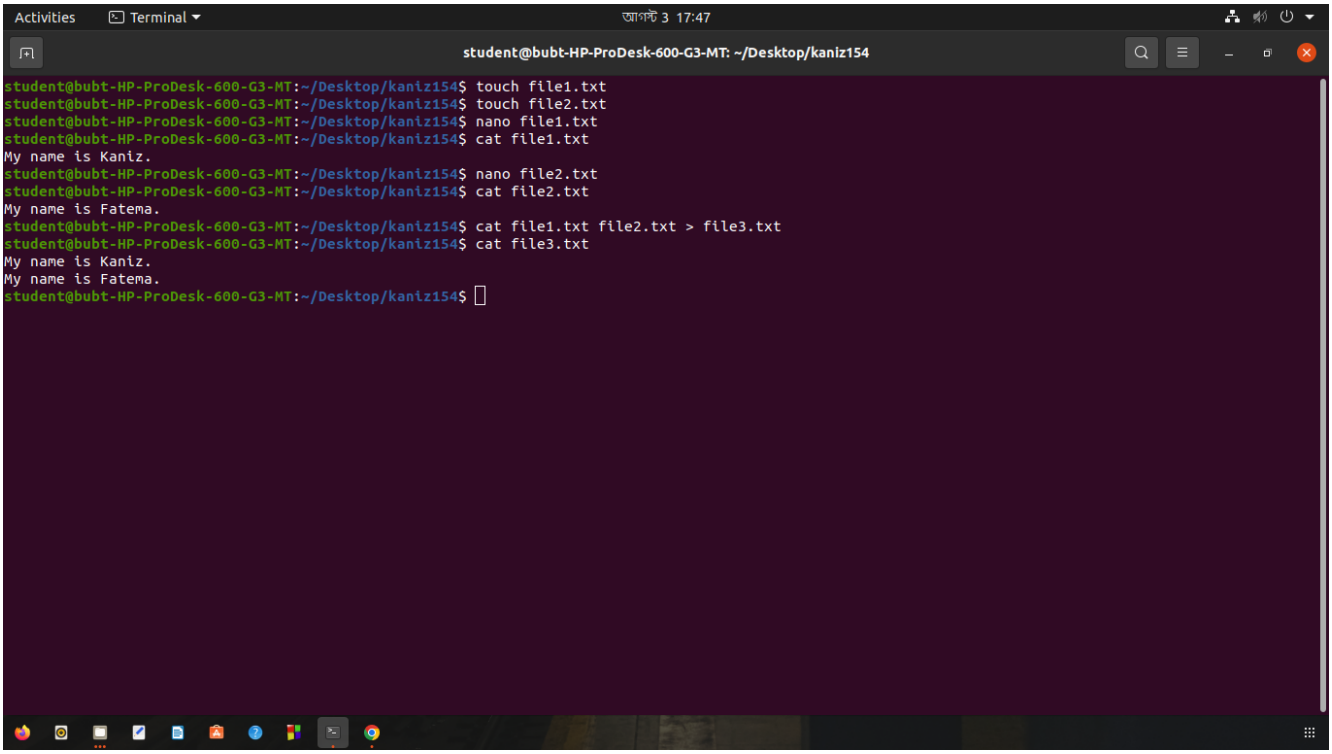

Figure 17: Concatenate file1.txt and file2.txt

5.0.2 Show all your running process list

To view all running processes on the system, use the command ***ps aux***

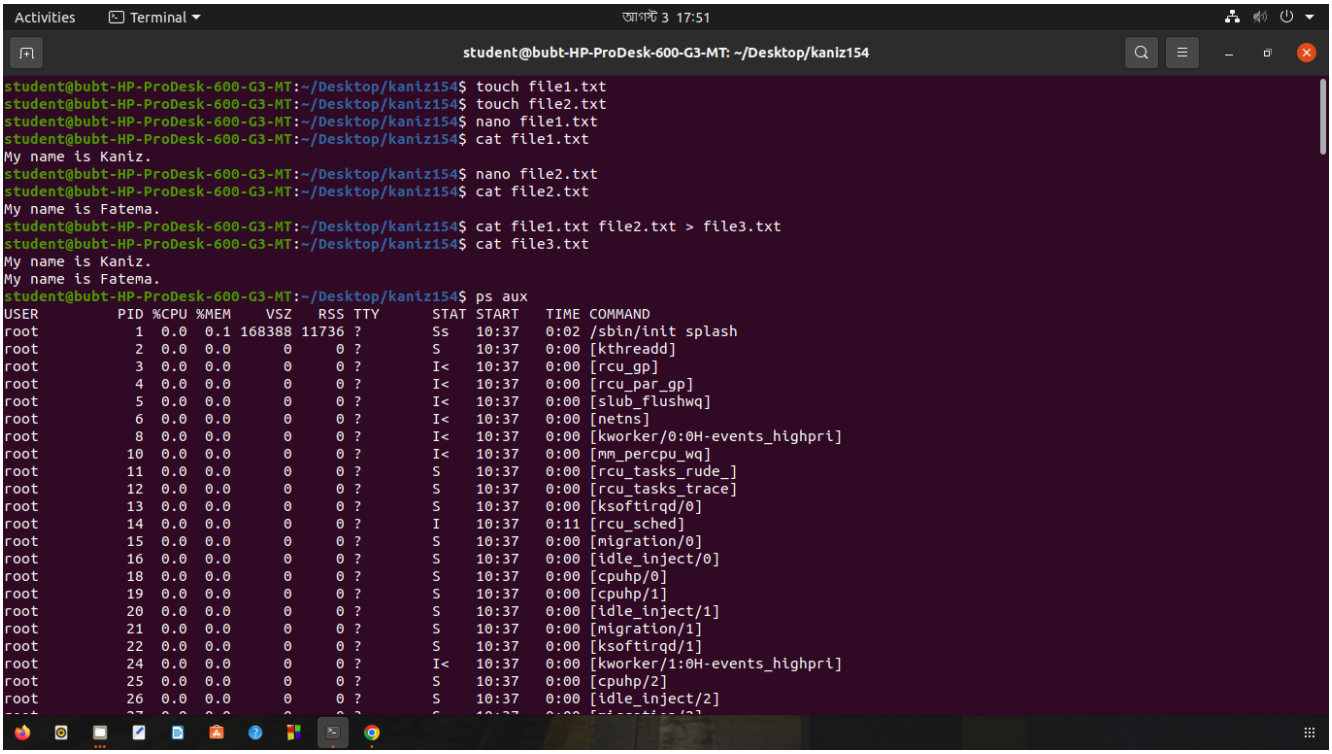

Figure 18: Show all running process list

5.0.3 ping google.com

To check network connectivity, use the command
ping google.com

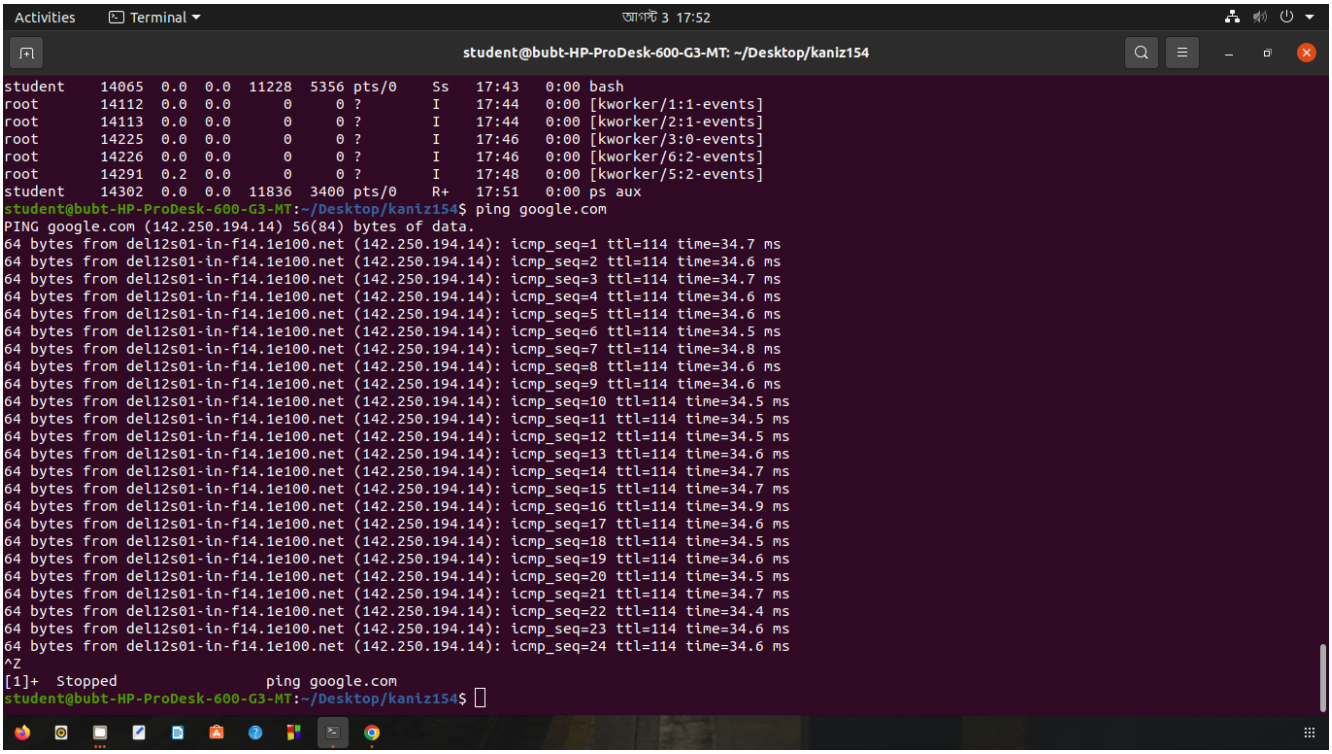

Figure 19: Show all running process list

5.0.4 File Zip and Unzip

To create a compressed archive (tarball) using gzip compression, use the following command

`tar -czvf archive.tar.gz *`

- `-c`: create a new archive
- `-z`: filter the archive through gzip
- `-v`: verbose mode, shows progress in the terminal
- `-f`: specifies the filename of the archive

To extract the contents of the compressed archive, use:

`tar -xzvf archive.tar.gz`

- `-x`: extract files from the archive
- Other flags (`-zvf`) are the same as above

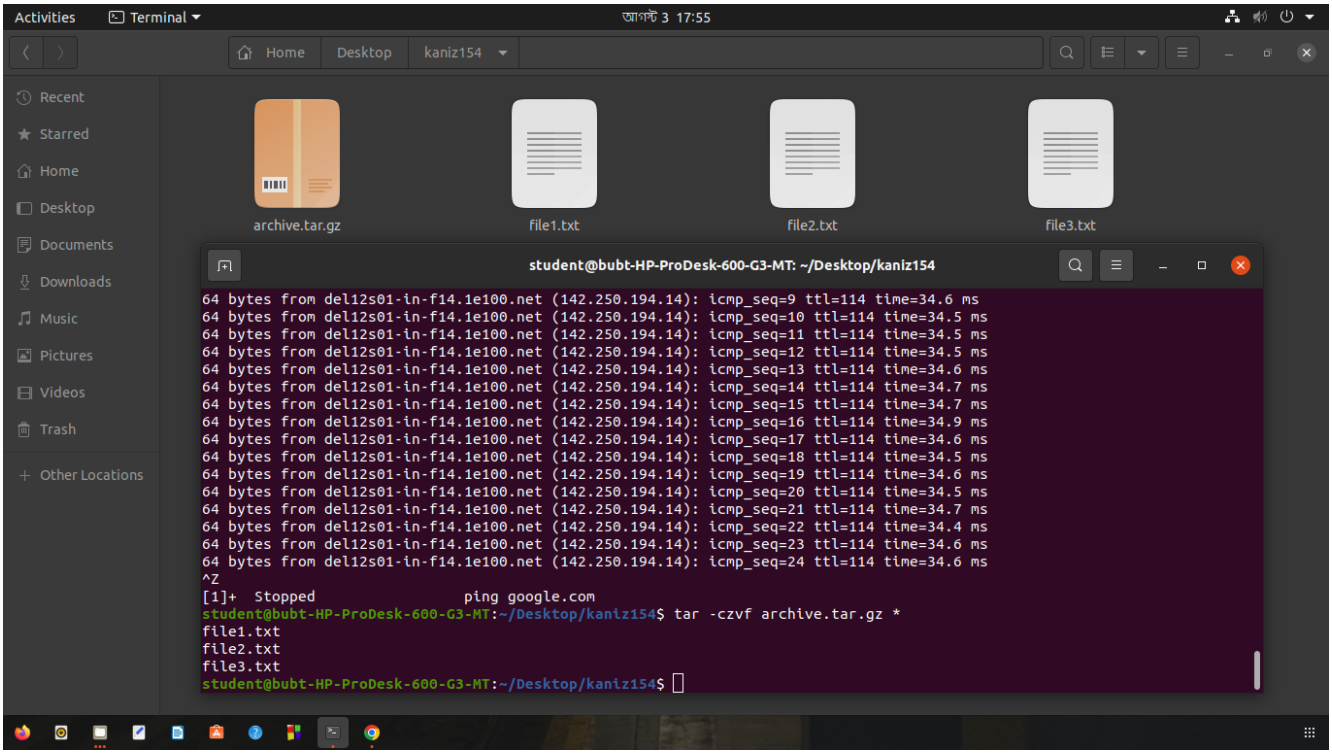

Figure 20: File Zip and Unzip

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