Linux System Administration Assignment 14_1 Report

Assignment: 14_1

Objective

This assignment demonstrates the use of basic Linux commands, user and group management, file ownership changes, and system-level monitoring in a simulated real-world IT environment.

Task 1: Basic Linux Commands in a Real-World Scenario

1. Check Current Logged-In User and System Information

Command:

whoami

uname -a

Explanation:

- whoami shows the current logged-in user.
- uname -a displays complete system information.

2. Navigate to /projects and List Contents

Command:

cd /projects

ls -l

Explanation:

- Navigates to the /projects directory and lists existing content with details.

3. Create New Project Directory and Verify

Command:

mkdir projectB

ls -l

Explanation:

- Creates a new directory projectB and lists it to verify.

4. Create a Sample File Inside projectB

Command:

touch projectB/README.txt

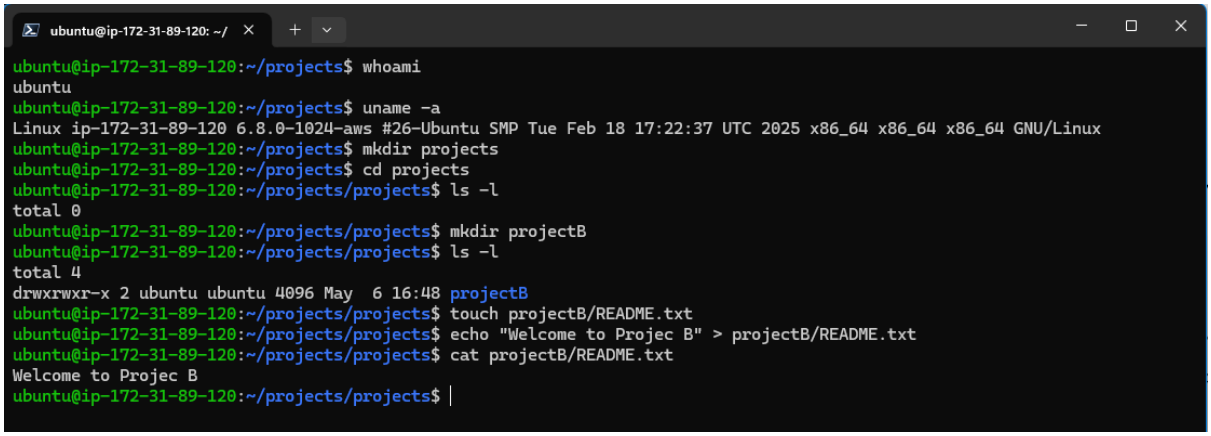
echo "Welcome to Project B" > projectB/README.txt

cat projectB/README.txt

Explanation:

- Creates and writes to a sample README file.

Screenshot:



Task 2: User and Group Permissions Management

1. Create New User and Add to Group

Command:

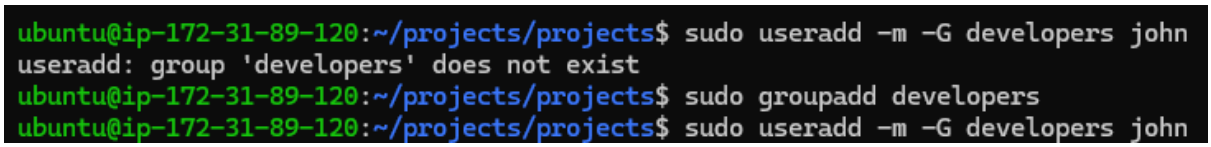
sudo useradd -m -G developers john

sudo passwd john

Explanation:

- Creates a new user john and adds him to developers group.

Screenshot:



2. Verify User and Group

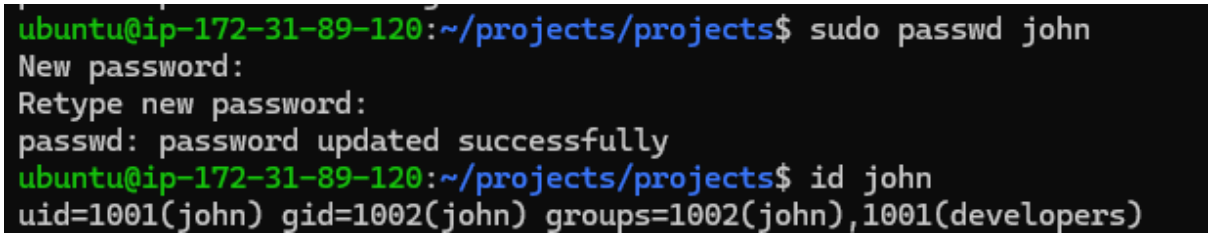
Command:

id john

Explanation:

- Displays UID, GID, and group memberships of john.

Screenshot:



3. Change Group Ownership of projectB

Command:

sudo chown :developers /projects/projectB

Explanation:

- Changes group ownership of the projectB directory to developers.

4. Set Proper Permissions

Command:

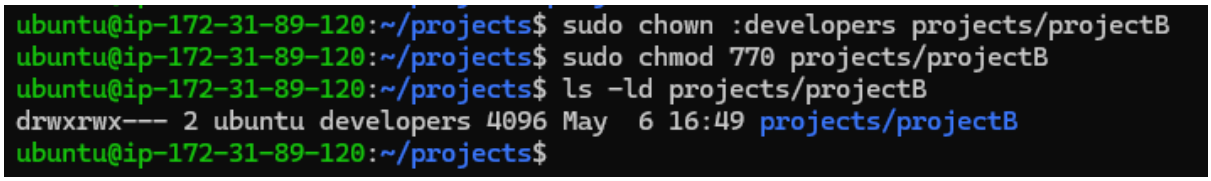
sudo chmod 770 /projects/projectB

ls -ld /projects/projectB

Explanation:

- Gives full permissions to owner and group, no access to others.

Screenshot:



Task 3: Changing File Ownership

1. Make John the Owner of projectB

Command:

sudo chown john:developers /projects/projectB

Explanation:

- Assigns john as the new owner of the directory.

2. Verify Ownership

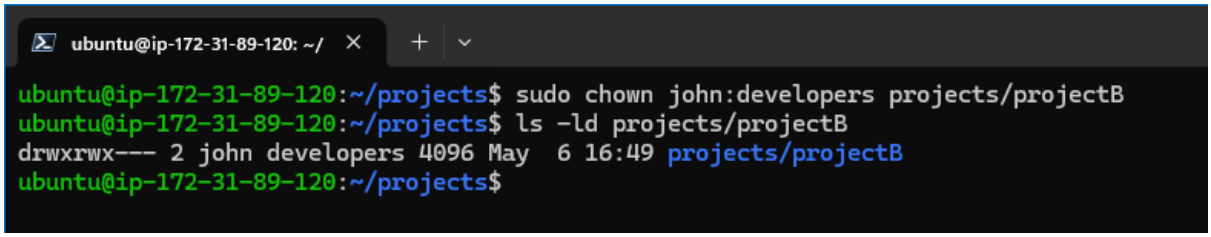
Command:

ls -ld /projects/projectB

Explanation:

- Verifies that ownership has been updated correctly.

Screenshot:



Task 4: System-Level Monitoring Commands

1. Check System Uptime

Command:

uptime

Explanation:

- Displays how long the system has been running and current load.

2. Monitor Disk Usage

Command:

df -h

Explanation:

- Shows disk usage in human-readable format.

3. Check Memory Usage

Command:

free -m

Explanation:

- Displays memory usage in MB.

4. Monitor Top Memory-Consuming Processes

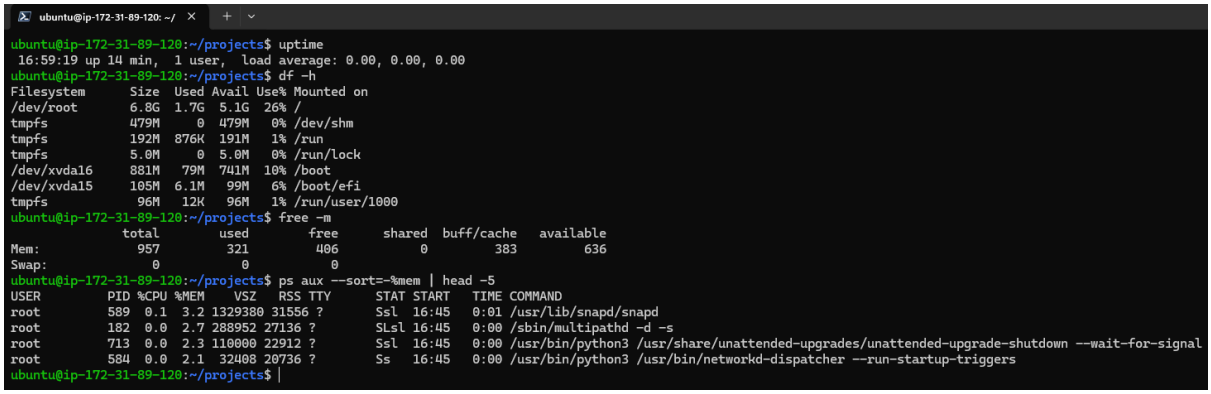
Command:

ps aux --sort=-%mem | head -5

Explanation:

- Lists top 5 memory-consuming processes sorted by usage.

Screenshot:



Conclusion

This exercise provided hands-on experience with essential Linux administrative tasks, demonstrating how to manage users, control permissions, and monitor system health in a real-world scenario