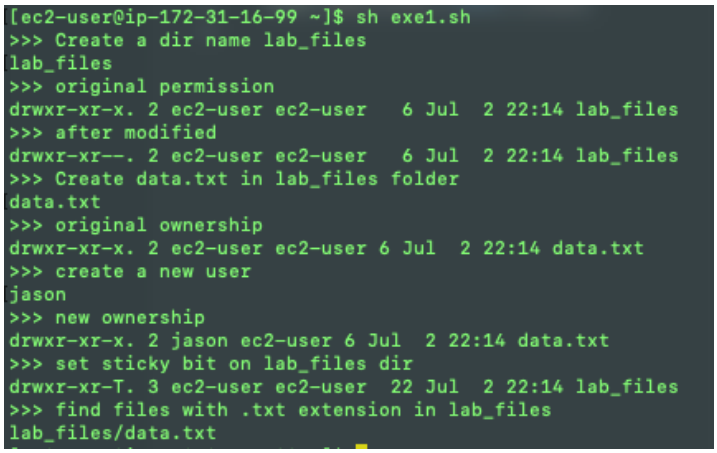
Project3: Linux Project(Demo Video)

Lab Exercise 1: File Manipulation and Permissions

1. Create a directory named "lab_files" and set its permissions to read, write, and execute for the owner, read and execute for the group, and read-only for others.
2. Inside "lab_files", create a file named "data.txt" containing some text.
3. Change the ownership of "data.txt" to another user.
4. Set the sticky bit on "lab_files" directory.
5. Find all files with ".txt" extension in "lab_files" directory and its subdirectories.

[1] https://www.redhat.com/sysadmin/linux-file-permissions-explained
[2] https://www.redhat.com/sysadmin/create-delete-files-directories-linux
[3] https://www.geeksforgeeks.org/how-to-create-a-text-file-using-the-command-line-in-linux/

```
#!/bin/bash
echo ">>> Create a dir name lab_files"
read dirName
mkdir $dirName

echo ">>> original permission"
ls -l | grep $dirName

echo ">>> after modified"
chmod 754 $dirName
ls -l | grep $dirName

echo ">>> Create data.txt in lab_files folder"
read fileName
mkdir lab_files/$fileName

echo ">>> original ownership"
ls -l lab_files | grep $fileName

echo ">>> create a new user"
read userName
sudo useradd -d /usr/$userName -c "new user for lab" -g ec2-user -p secret -s /usr/bir
sudo chown -R $userName lab_files/data.txt

echo ">>> new ownership"
ls -l lab_files | grep $fileName

echo ">>> set sticky bit on lab_files dir"
chmod +t lab_files
ls -l | grep lab_files

echo ">>> find files with .txt extension in lab_files"
find lab_files -name "*.txt"
```



Lab Exercise 2: User and Group Management

1. Create a new group named "developers".
2. Add the user "intern" to the "developers" group.
3. List all groups the "intern" user belongs to.
4. Display detailed information about the "developers" group.

[1] https://www.redhat.com/sysadmin/linux-user-group-management

```
#!/bin/bash
echo ">>> create a new group named developers"
read groupName
sudo groupadd $groupName

echo ">>> create a user name intern and add to the developers group"
read userName
sudo useradd -d /usr/$userName -c "intern user for lab" -g ec2-user -p secret -s /usr/
sudo gpasswd -M $userName $groupName

echo ">>> all groups the intern user belongs to:"
#groups $userName -> users : groups
id -Gn $userName

echo ">>> detailed info about the developers group"
getent group $groupName
```

Lab Exercise 3: Process Management

1. Displaying Running Processes
2. Displaying Dynamic View of Processes
3.Terminate a process
4.Adjust process priority
5.Adjust running process priority

[1] https://www.digitalocean.com/community/tutorials/process-management-in-linux

```
#!/bin/bash
echo ">>> display running processes"
ps -A

echo ">>> Dynamic view of processes"
top -b -n 1

echo ">>> Adjust process priority"
nice -n 19 vim &
ps -l

echo ">>> adjust running process priority"
PID=$(pgrep vim)
sudo renice -n 5 -p $PID
ps -l

echo ">>> terminate the vim process just launched"
pkill -9 vim
ps -l
```

Lab Exercise 4: Networking

1.Display network interface configuration.
2.Test network connectivity to a remote host(e.g. google.com)
3.Query DNS servers for information about a domain name(e.g. google.com)
[1] https://www.redhat.com/sysadmin/7-great-network-commands

```
#!/bin/bash
echo ">>> Display network interface configuration"
ip addr show

echo ">>> Test connectivity to google.com"
ping -c 5 google.com

echo ">>> Query DNS servers for info about google.com domain name"
#host google.com
dig google.com
```

Lab Exercise 5: Install AWS CLI

Install AWS CLI on your environment[1].
https://docs.aws.amazon.com/cli/latest/userguide/getting-started-install.html#getting-started-install-instructions

```
#!/bin/bash
echo ">>> Download the installation file using curl"
curl "https://awscli.amazonaws.com/awscli-exe-linux-x86_64.zip" -o "awscliv2.zip"

echo ">>> Unzip the installer"
unzip awscliv2.zip

echo ">>> Run the install program"
sudo ./aws/install

echo ">>> Verify "
aws help
```