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Network Administration Lab

User Management

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1 Abstract

This experiment aims to perform the basics task of user management during system administration, In terms of creating(add) users, deleting the user, disabling user, or modifying user information, including managing account-related files.

2 Introduction

User management is one of the importanting tasks that root should have in the system, it determines the tasks that each employee has and the powers granted to him, and then everything related to it from creating the user to deleting a user on the system.. User management includes everything from creating a user to deleting a user on your system. User management can be done in three ways on a Linux system. **Graphical tools** are easy and suitable for new users, as it makes sure you'll not run into any trouble. **Command lines tools** include commands like user add, Userdel, (PASSWD), etc. These are mostly used by server administrators. The third and very rares tool is to edit the local configuration files directly using an **editor**. The local user database in Linux is **/etc/Passwd** directory. It has seven columns separated by a colon. Starting from the left columns, denotes username, x which an encryption password, user id, primary group id, a description, name of the home directory, and a login shell. In the new version of Linux, the passwords for the user will be x in **/etc/Passwd** file, and the other file which needs permission to open it is **/etc/shadow** this files includes the encrypted password and the hash of it. The root user is a superuser it has all the powers for creating a user, deleting a user, and even log in with the other user account. The root user always has Userid 0, *notes*, if someone changes the Userid from the **/etc/Passwd** file for some user or fake user and puts it to be 0, this will give it all root permission, and it will access the system as a root.

3 Procedure

3.1 Users List

1. To check the list of the current user accounts created in the Linux machine, we have used a command **(cat / etc / passwd)**, as figure 1 show .

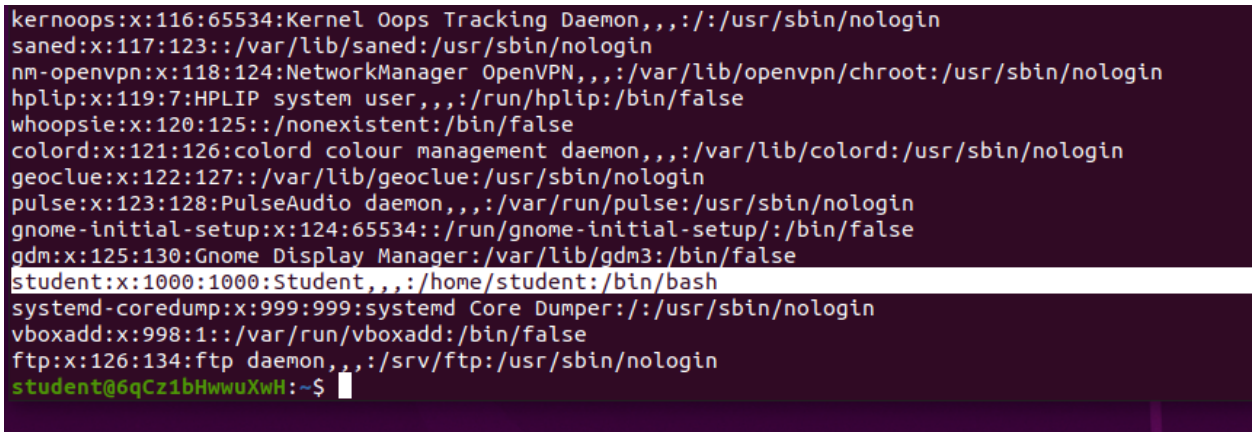

Figure 1: list of user.

2. From the list, **Question**: explain the user information. The first field contains the login name, then an encrypted password, but the encrypted password will always be replaced by "X", the third field contains the UID of the user, then the GID of the group to which it belongs, then the GECOS information, and it is at the request of the user put the information which he desires, then Home directory and finally shell login
3. **Question**: Write a bash shell script that gets all the information about the currently logging user in /etc/passwd file and writes them to a file whose name is the ID of that user, figure 2 show the cod and the result of it .

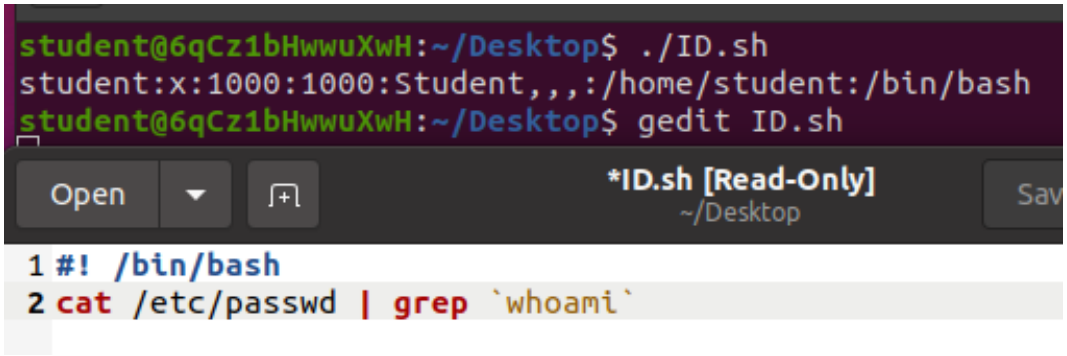

Figure 2: Bash code.

4. **Question: What is the purpose the command id ?**
id command in Linux is used to find out user and group names and numeric ID's (UID or group ID) of the current user or any other user in the server , as figure 3 show .

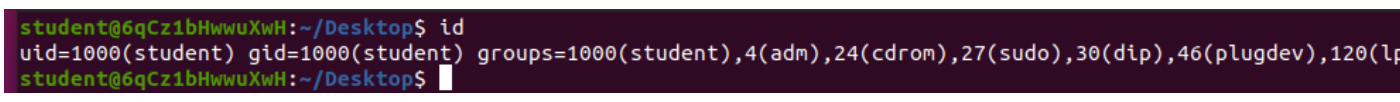

Figure 3: list of user.

3.2 Adding User Accounts

1. **Question:** Explain the objective for each of the following commands: 1. useradd 2. passwd 3. su .

   (a) useradd : This is used to create Linux account tools, using the basic action to add a user. It can be customized, such as: **sudo useradd user1** This is new user saved under the (/etc/passwd) and (/etc/shadow).
   (b) passwd : Create a manual password for the user The approved password is encrypted and stored under (/ etc / shadow). You can use the bundle to edit the password for a specific user.
   (c) su : used to switch the user account.
2. Create a user (with useradd command) whose login name is **skywalk** and the login password is skywalk as figure 4 show .

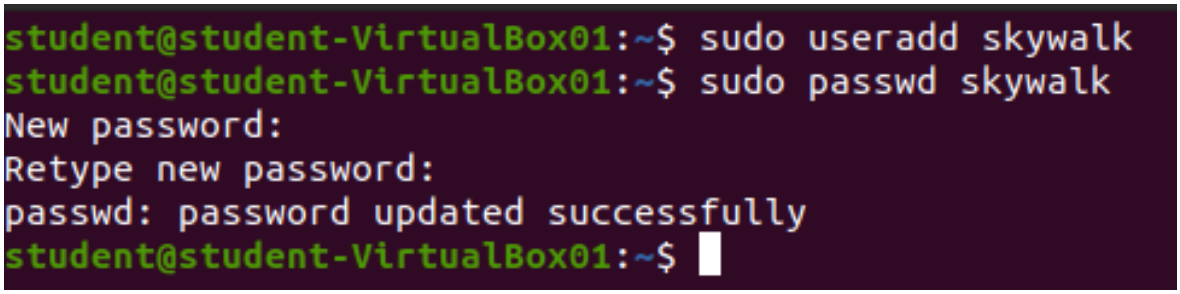

Figure 4: Create a user

3. Switch the login to the new user , as figure 5 show .

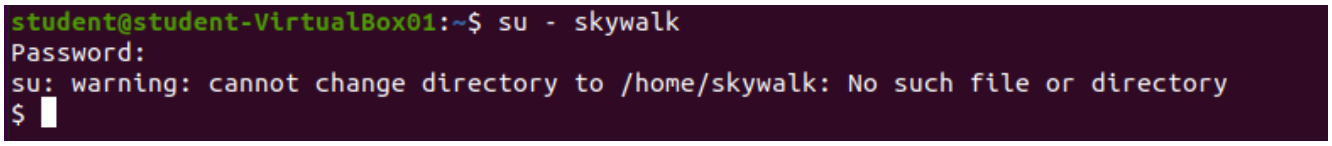

Figure 5: switch to the user.

4. After switched to the new user, verify the current group , using command **groups** as figure 6 show .

Figure 6: Groups of the user.

5. Then switch back to your original account using command **exit** as figure 7 show .

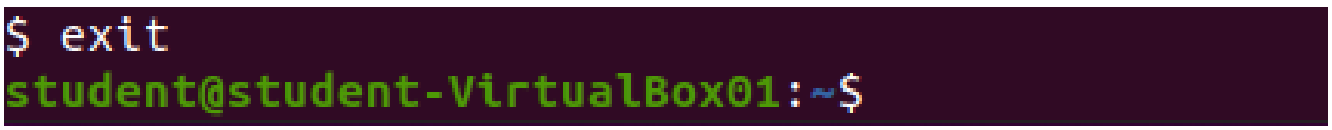

Figure 7: Exit from account .

6. The encrypted password for the user skywalk , as figure 8 show , and the encryption algorithm has been used is **SHA-512**, because 6 represent the type of method cryptographic hash algorithm.

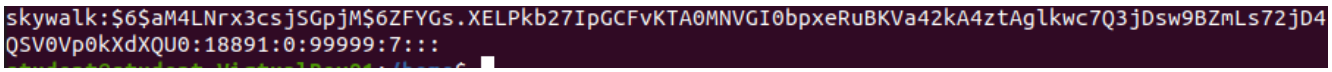

Figure 8: Encrypted password.

7. Then remove the account skywalk as figure 9.

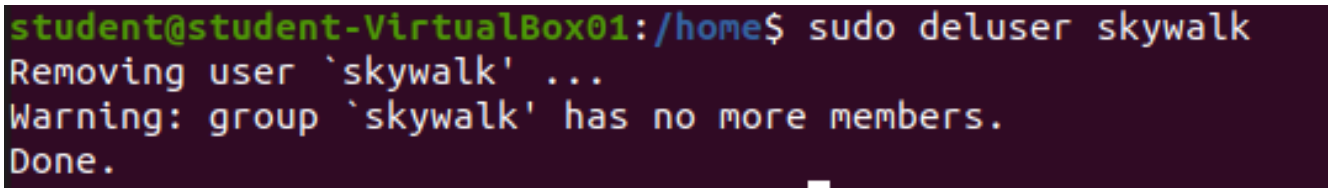

Figure 9: Remove the account.

8. **Question:** Is it possible to create two accounts with the same login name? it is not possible to create a user with a name that was previously used, meaning that the user name is unique to each user. figure10 show that .

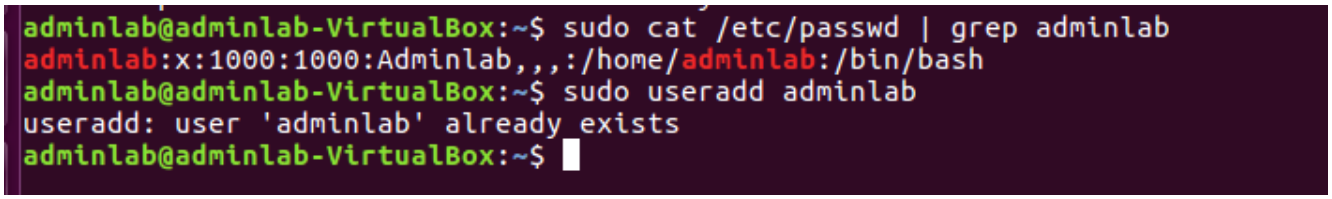

Figure 10: Duplicate username.

9. **Question:** Is the login name case sensitive? login name is sensitive in terms of letters and the result is that yes , figure 11 show that .

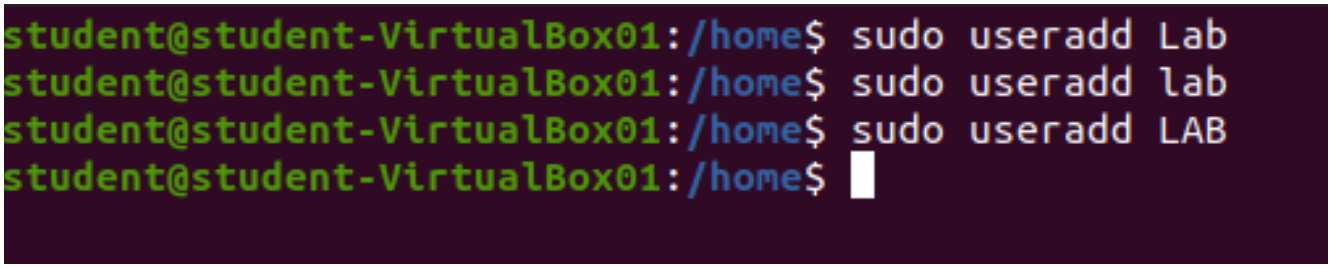

Figure 11: Login name issue.

10. **Question:** Is it possible to create a user whose ID is 0? yes, it is possible to create a user with id zero by changing the id value in file **/etc/passwd** to become zero as figures show 12, but this changing causes a drawback because this user now have root permission and can make something incorrect.

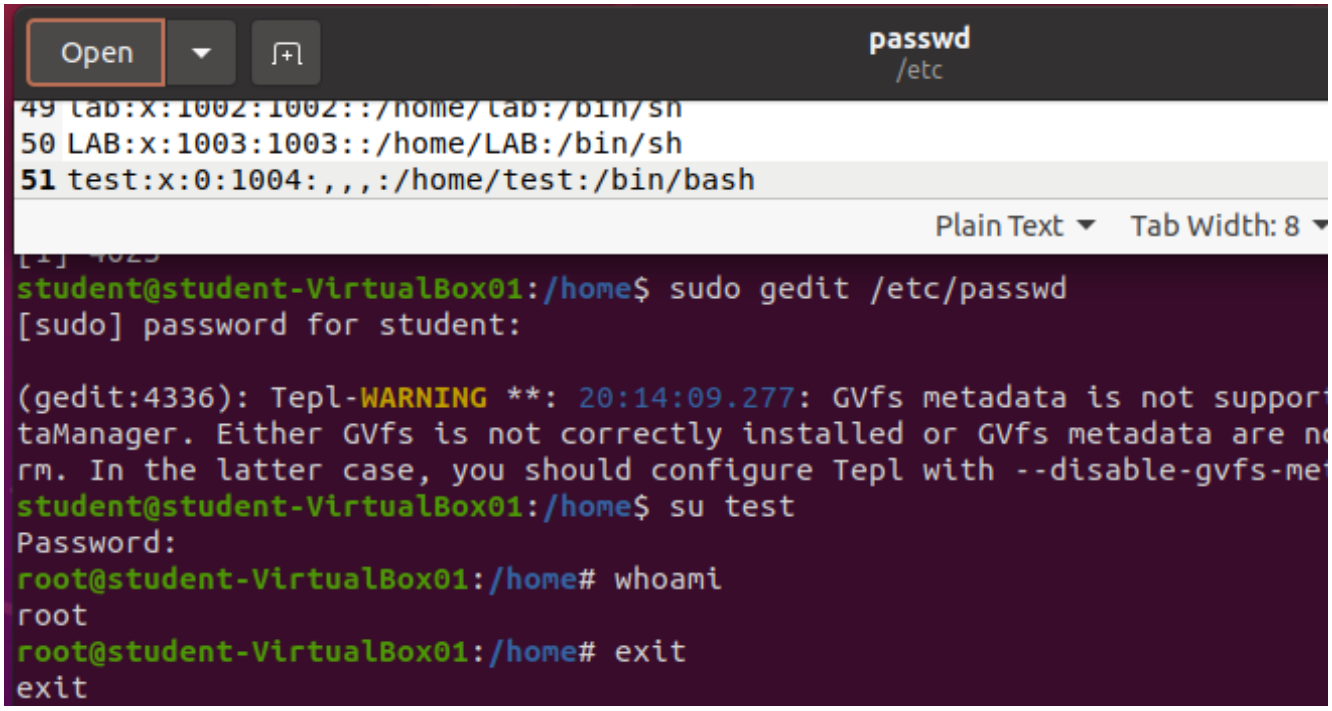

Figure 12: User with id zero.

11. **Question :** is it possible to delete a user whose ID is 0? from terminal cant delete the user and have a warning message as the figure show 13 but in file **/etc/passwd** can delete the user by deleting the line of this user

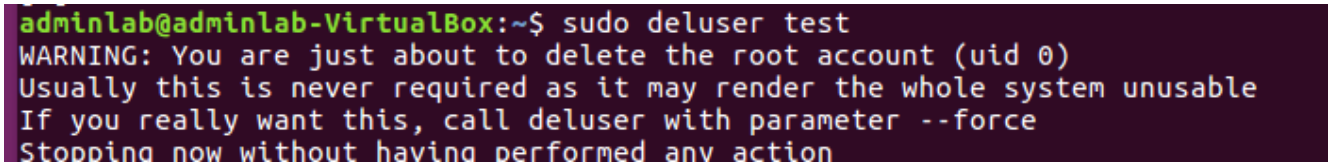

Figure 13: Delete user with id 0.

3.3 Modifying Existing User Accounts

1. **Question:** Create a user whose name is test-user,and home directory for this user.
   - In order for a user to be created in the correct way, it must be taken into account that some characteristics must be created, including (a) the user name, (b) the group name, (c) the home directory, (d) the GECO information, (e) the type of shell It has been used to create User Command (sudo adduser my-user) because it automatically creates the previous features,figure 14 show that.

```
student@6qCz1bHwwuXwH:~/Desktop$ sudo adduser test-user
Adding user `test-user' ...
Adding new group `test-user' (1002) ...
Adding new user `test-user' (1002) with group `test-user' ...
Creating home directory `/home/test-user' ...
Copying files from `/etc/skel' ...
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for test-user
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
```

Figure 14: Crete a new user .

2. Then made sure that can login with the GUI to that user,as figure 15 show .

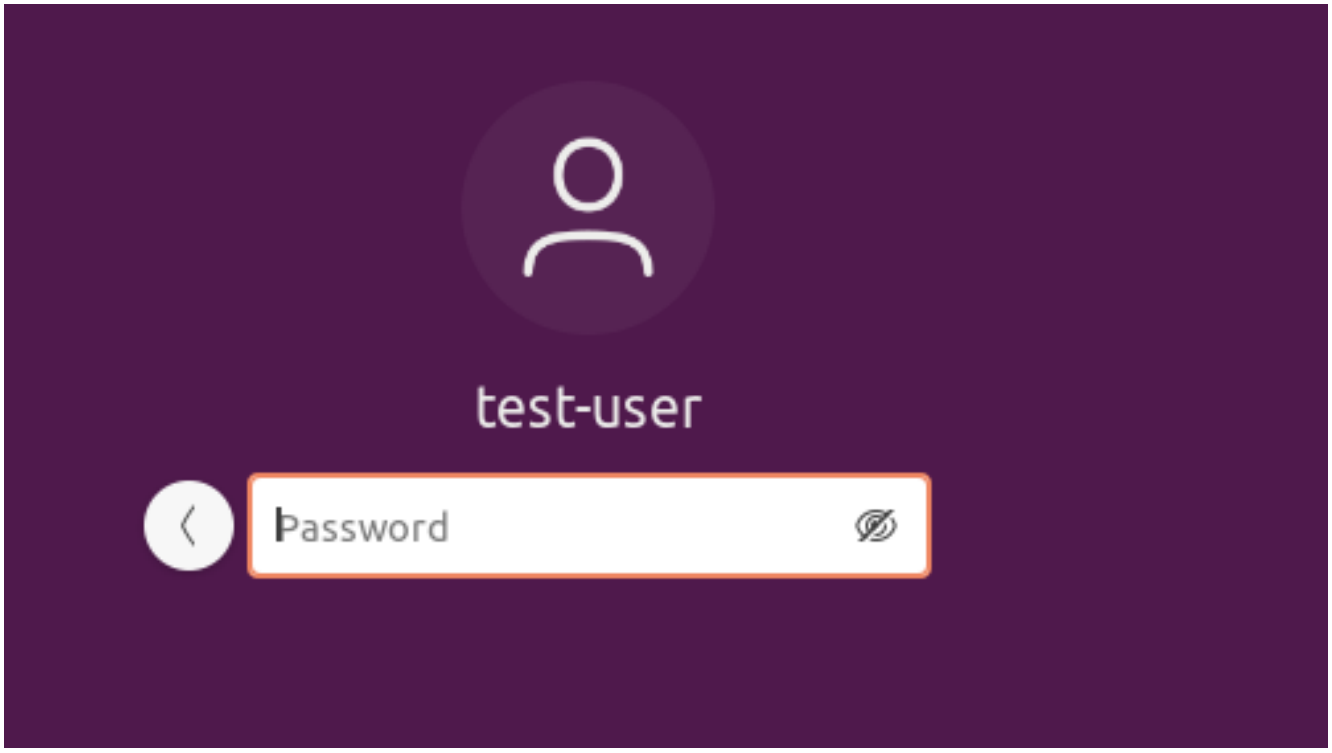

Figure 15: Login to the user.

3. After that, modify the login name of the user test-user to be test-user-modified then modify the home directory of the new user to match with its new login name,using command **usermod** via (usermod –l [new user namen] -d [new home directory of name] -m [old user name]) as figure 16 show .

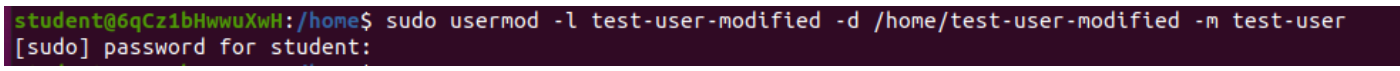

Figure 16: Modify login name and home directory.

4. Also, modify the group name of the user to be user-group-modified using command **groupmod** via (groupmod -n [new groupname] [old groupname]) , as figure 17 show .

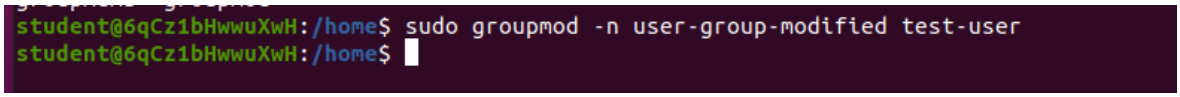

Figure 17: Modify the group.

5. Then Switch to the user **test-user-modified** and use the commands **pwd** and **id** to confirm that modifications have been successfully, as figure 18 show.

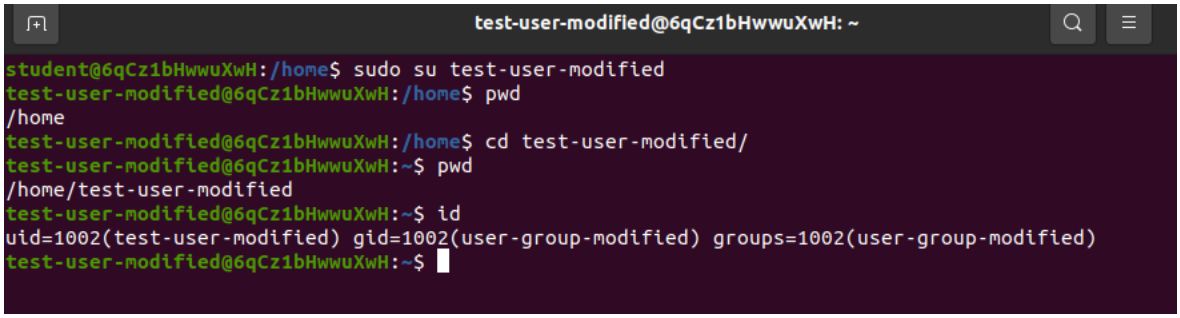

Figure 18: Attribute for user.

6. After that switch back to user account, as figure 19 show.

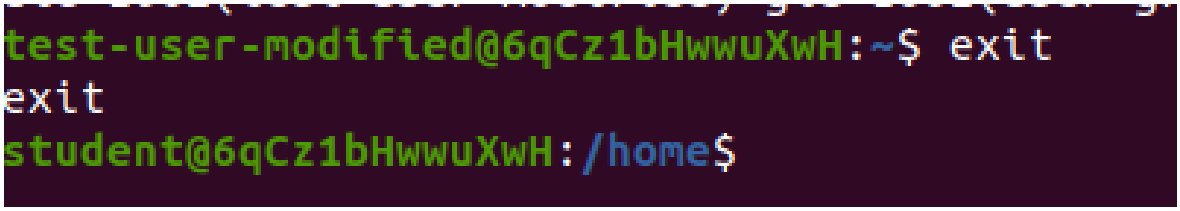

Figure 19: Switch user.

7. Change the shell of the user test-user-modified to be one that prevent logins (no logins), when put a user account in (sbin / nologin), the account logins will be stopped, meaning that the login will be disabled and therefore the account cannot accessed. as figure 20 show .

```
student@6qCz1bHwwuXwH:/home$ sudo usermod -s /sbin/nologin test-user-modified
student@6qCz1bHwwuXwH:/home$ sudo su test-user-modified
This account is currently not available.
student@6qCz1bHwwuXwH:/home$
```

Figure 20: Prevent logins.

8. Remove the account test-user-modified , as figure 21 show .

```
student@6qCz1bHwwuXwH:/home$ sudo userdel test-user-modified
```

Figure 21: Remove the account.

3.4 Removing User Accounts

1. **Question:** Describe what steps need to successfully remove an account?
   First, kill all user-owned processes.
   Second, using Userdel tools, as figure 22 show.

```
student@6qCz1bHwwuXwH:/home$ sudo killall -u mohammed
student@6qCz1bHwwuXwH:/home$ sudo deluser mohammed
Removing user `mohammed' ...
Warning: group `mohammed' has no more members.
Done.
student@6qCz1bHwwuXwH:/home$
```

Figure 22: Remove account.

2. Create an account named user-to-delete, as figure 23 show.

```
student@6qCz1bHwwuXwH:/home$ sudo adduser user-to-delet
Adding user `user-to-delet' ...
Adding new group `user-to-delet' (1003) ...
Adding new user `user-to-delet' (1002) with group `user-to-delet' ...
Creating home directory `/home/user-to-delet' ...
Copying files from `/etc/skel' ...
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for user-to-delet
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
```

Figure 23: Create account.

3. Then disable the account temporarily using two different methods: The first way is by adding a ***** to the original encrypted password that is saved in /etc/passwd as shown in figure 24, the other way is through the following command(**Sudo usermod -L username(user-to-delete)**), which **L** refer to lock so as figure 25 show that there is **!** which is to disable the account, and you can see at the top that **!** not adding before the locked command. Figure 26 shows how to unlock the account using **-U**.

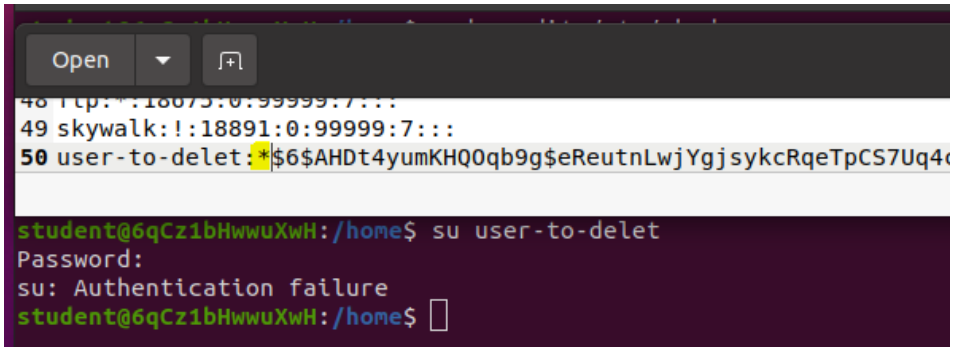

Figure 24: Disable account using *.

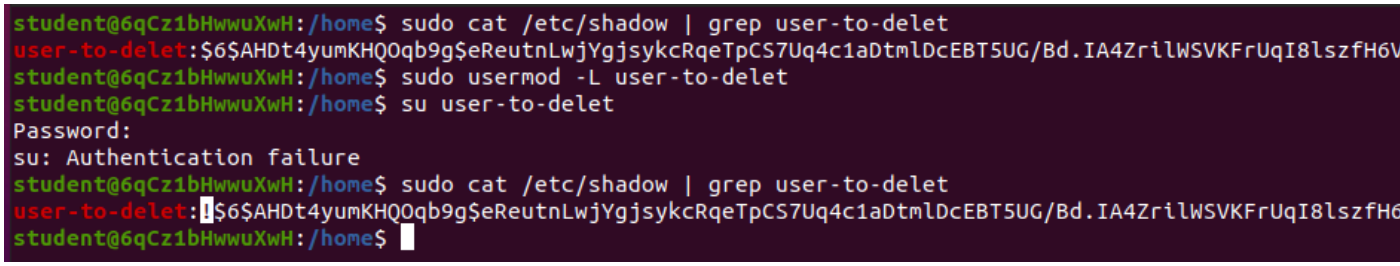

Figure 25: Disable account using Lock command.

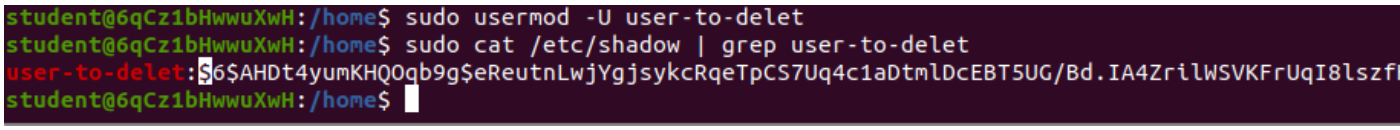

Figure 26: enable account using unlock command.

4. After that, we removed that account and made sure that the account has been deleted, figures 27 shows how it has been done.

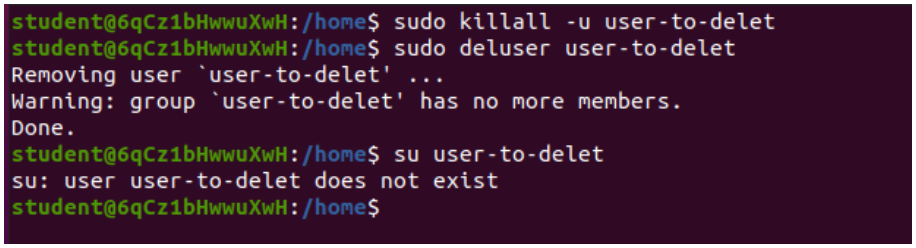

Figure 27: Deleting account

3.5 Managing Users with Scripts

1. A bash shell script that asks the user to enter user-name, password,and GECOS information. Then, it creates a user with the specified input. as figure 29 show.

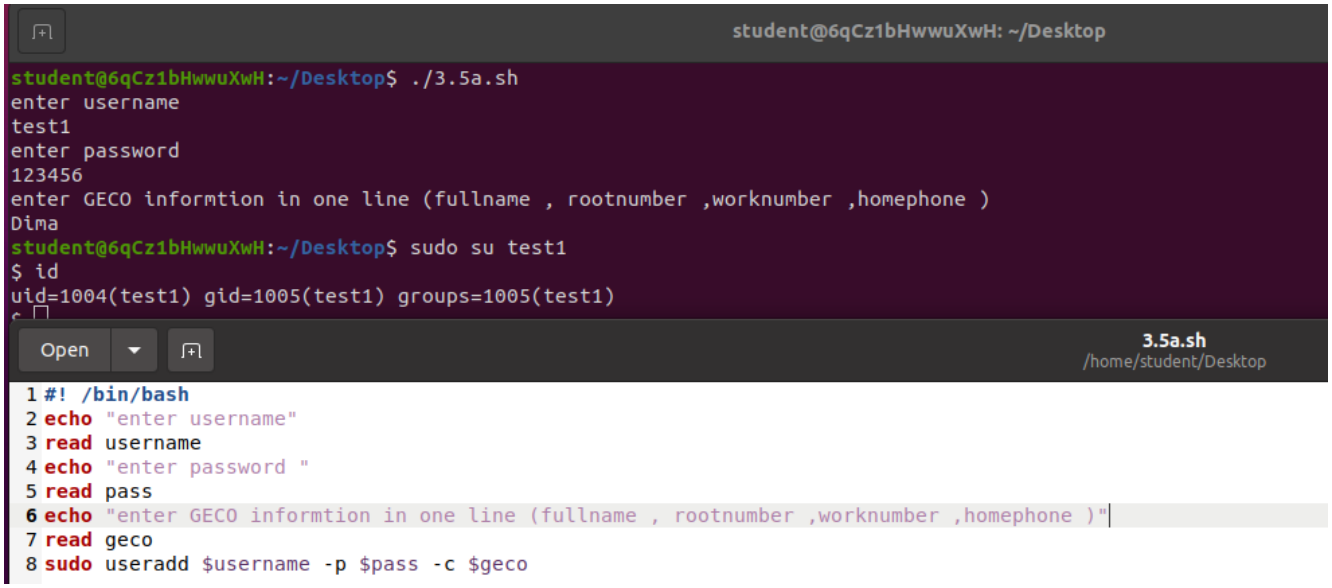

Figure 28: Bash code.

2. A bash shell script that receives a file name from the command line. This file contains a number of user names and their corresponding passwords in clear text. Each line contains a user-name and the password. script should successfully create all the users stated in the file, figure 29 show the code and the result.

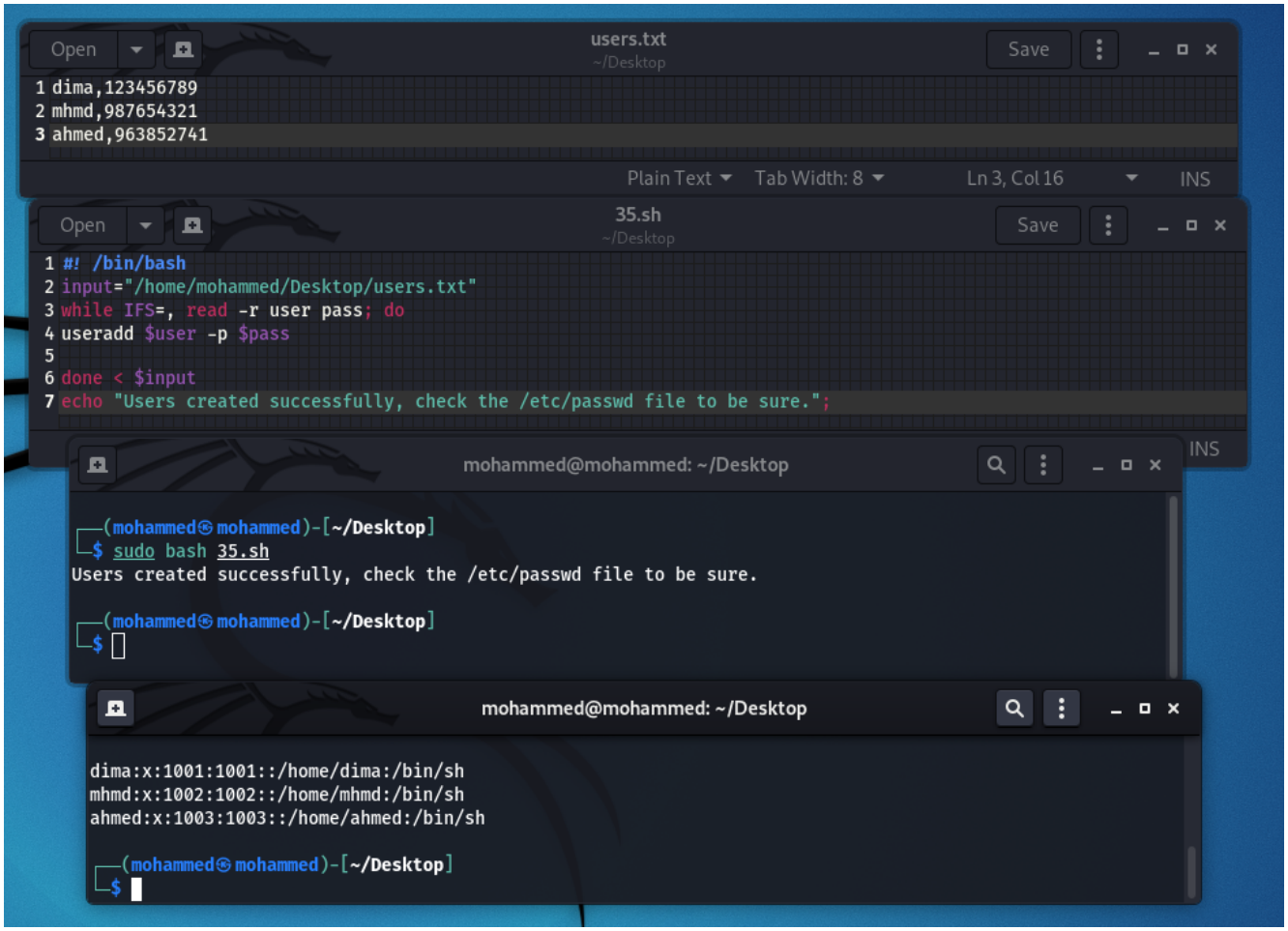

Figure 29: Bash code.

4 Conclusion

Since Linux is a multi-user operating system (in that it allows multiple users on different computers or terminals to access a single system), we will need to know how to perform effective user management: how to add, edit, suspend, or delete user accounts, along with granting them the necessary permissions to do their assigned tasks.

5 reference

https://www.pluralsight.com/guides/user-and-group-management-linux

https://www.guru99.com/linux-admin.html

https://www.javatpoint.com/linux-user-management

https://ryandaniels.ca/blog/ansible-user-management/: :text=Conclusion