

## Objective 1: Create a New User

Task 1: Use the useradd command to create a new user

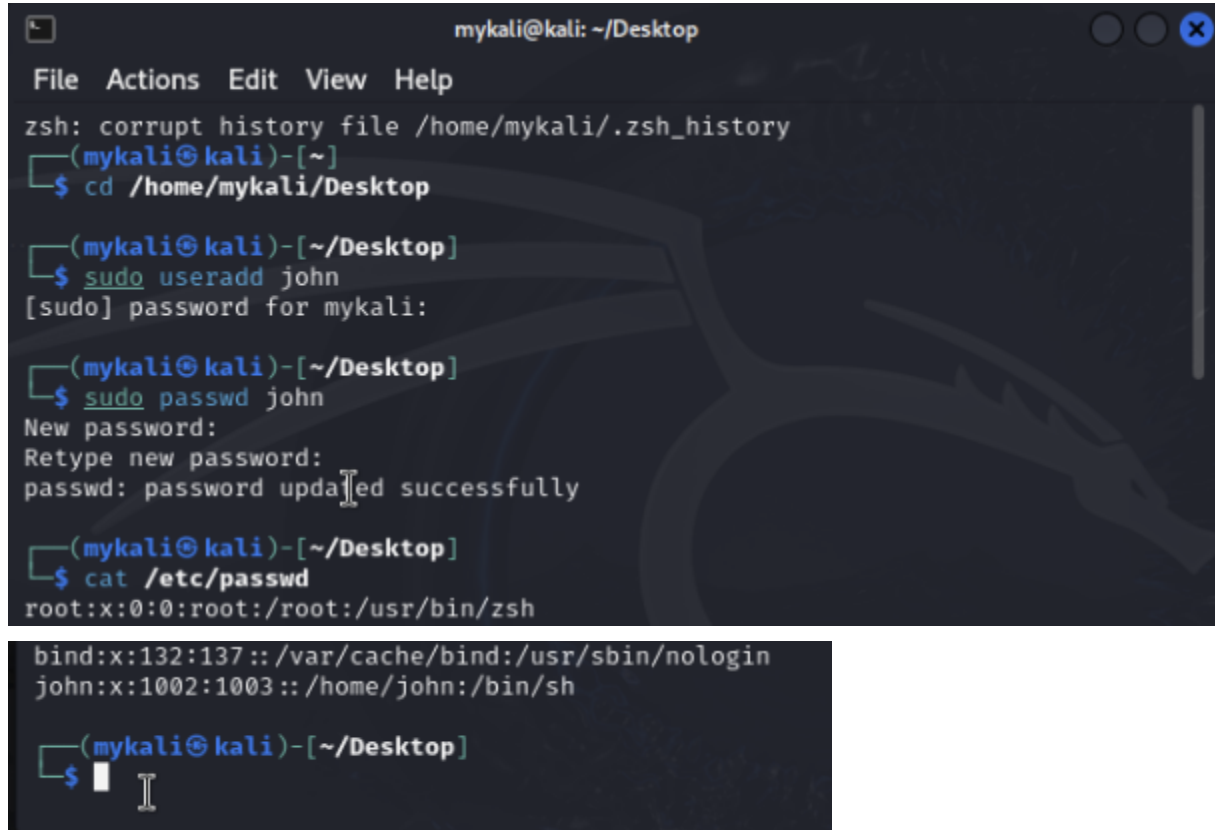
- sudo useradd john

Task 2: Set a password for the new user using passwd

- sudo passwd john

Task 3: Verify the new user by checking the /etc/passwd file

- cat /etc/passwd

A terminal window titled 'mykali@kali: ~/Desktop' with a menu bar (File, Actions, Edit, View, Help). The terminal shows the following commands and output:

```
zsh: corrupt history file /home/mykali/.zsh_history
(mykali@kali)-[~]
$ cd /home/mykali/Desktop
(mykali@kali)-[~/Desktop]
$ sudo useradd john
[sudo] password for mykali:
(mykali@kali)-[~/Desktop]
$ sudo passwd john
New password:
Retype new password:
passwd: password updated successfully
(mykali@kali)-[~/Desktop]
$ cat /etc/passwd
root:x:0:0:root:/root:/usr/bin/zsh
bind:x:132:137::/var/cache/bind:/usr/sbin/nologin
john:x:1002:1003::/home/john:/bin/sh
(mykali@kali)-[~/Desktop]
$
```

## Objective 2: Add a User to a Group

Task 1: Create a new group using groupadd

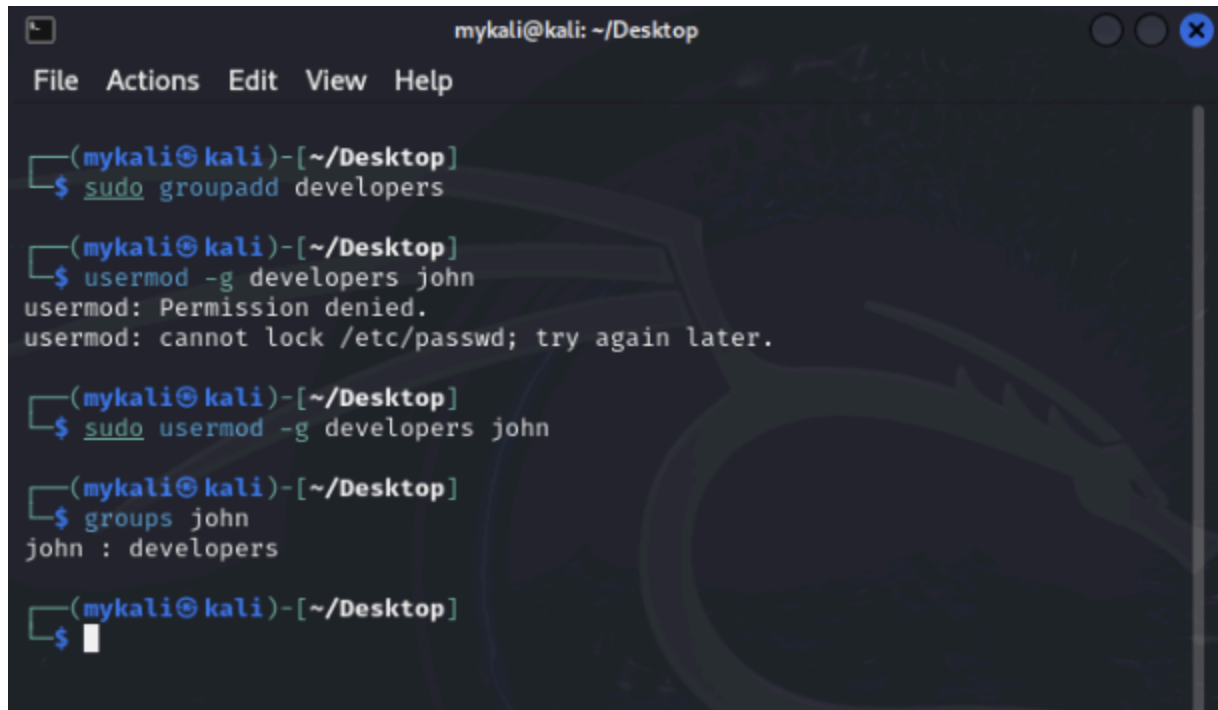
- sudo groupadd developers

Task 2: Add an existing user to the group using usermod

- sudo usermod -g developers john

Task 3: Verify that the user is added to the group by using the groups command

- groups john

A terminal window titled 'mykali@kali: ~/Desktop' with a menu bar (File, Actions, Edit, View, Help). The terminal shows a series of commands and their outputs. The background has a faint Kali Linux dragon logo.

```
(mykali@kali)-[~/Desktop]
$ sudo groupadd developers

(mykali@kali)-[~/Desktop]
$ usermod -g developers john
usermod: Permission denied.
usermod: cannot lock /etc/passwd; try again later.

(mykali@kali)-[~/Desktop]
$ sudo usermod -g john developers john

(mykali@kali)-[~/Desktop]
$ groups john
john : developers

(mykali@kali)-[~/Desktop]
$
```

## Objective 3: Modify User Information

Task 1: Modify the home directory for user john using usermod

- sudo usermod -d /home/mykali john

Task 2: Change the default shell for john to /bin/bash

- sudo usermod -s /bin/sh john {TO CREATE SHELL}

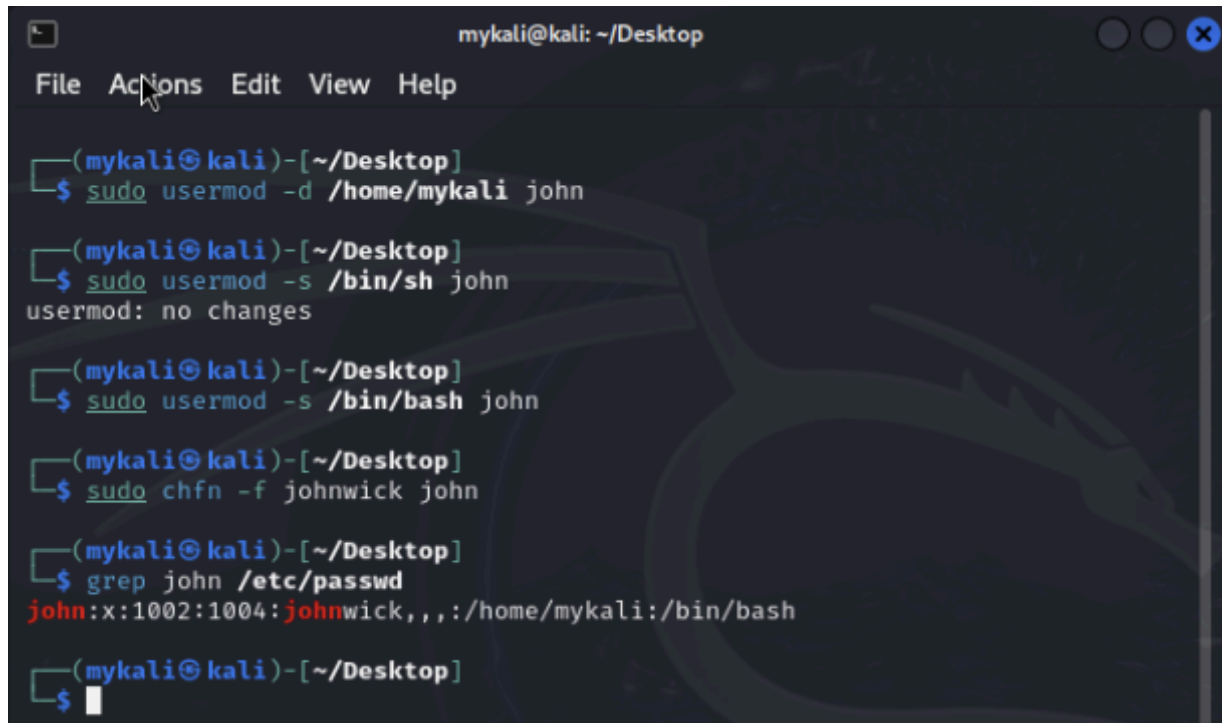
- sudo usermod -s /bin/bash john {TO CHANGE SHELL}

Task 3: Change the user's full name using the chfn command

- sudo chfn -f johnwick john

Task 4: Verify the changes using grep john /etc/passwd

- grep john /etc/passwd



```
mykali@kali: ~/Desktop
File Actions Edit View Help

(mykali@kali)-[~/Desktop]
$ sudo usermod -d /home/mykali john

(mykali@kali)-[~/Desktop]
$ sudo usermod -s /bin/sh john
usermod: no changes

(mykali@kali)-[~/Desktop]
$ sudo usermod -s /bin/bash john

(mykali@kali)-[~/Desktop]
$ sudo chfn -f johnwick john

(mykali@kali)-[~/Desktop]
$ grep john /etc/passwd
john:x:1002:1004:johnwick,,,:/home/mykali:/bin/bash

(mykali@kali)-[~/Desktop]
$
```

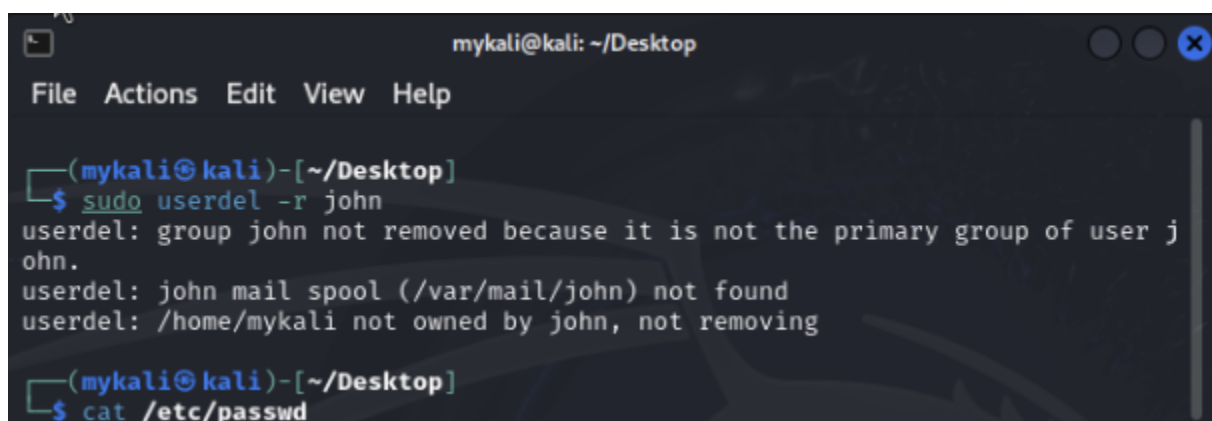
## Objective 4: Delete a User

Task 1 and Task 2: Delete the user john using the userdel command and Ensure the user's home directory and files are removed by using userdel -r

- sudo userdel -r john

Task 2: Verify the deletion by checking the /etc/passwd file

- cat /etc/passwd



```
mykali@kali: ~/Desktop
File Actions Edit View Help

(mykali@kali)-[~/Desktop]
$ sudo userdel -r john
userdel: group john not removed because it is not the primary group of user john.
userdel: john mail spool (/var/mail/john) not found
userdel: /home/mykali not owned by john, not removing

(mykali@kali)-[~/Desktop]
$ cat /etc/passwd
```

## Objective 5: Create a System User

Task 1 and Task 2: Create a system user for an application (e.g., www-data for web server users) and Ensure that the system user has no login shell and that no home directory is created by using useradd -r

- sudo useradd -r -s /usr/sbin/nologin -M www-data

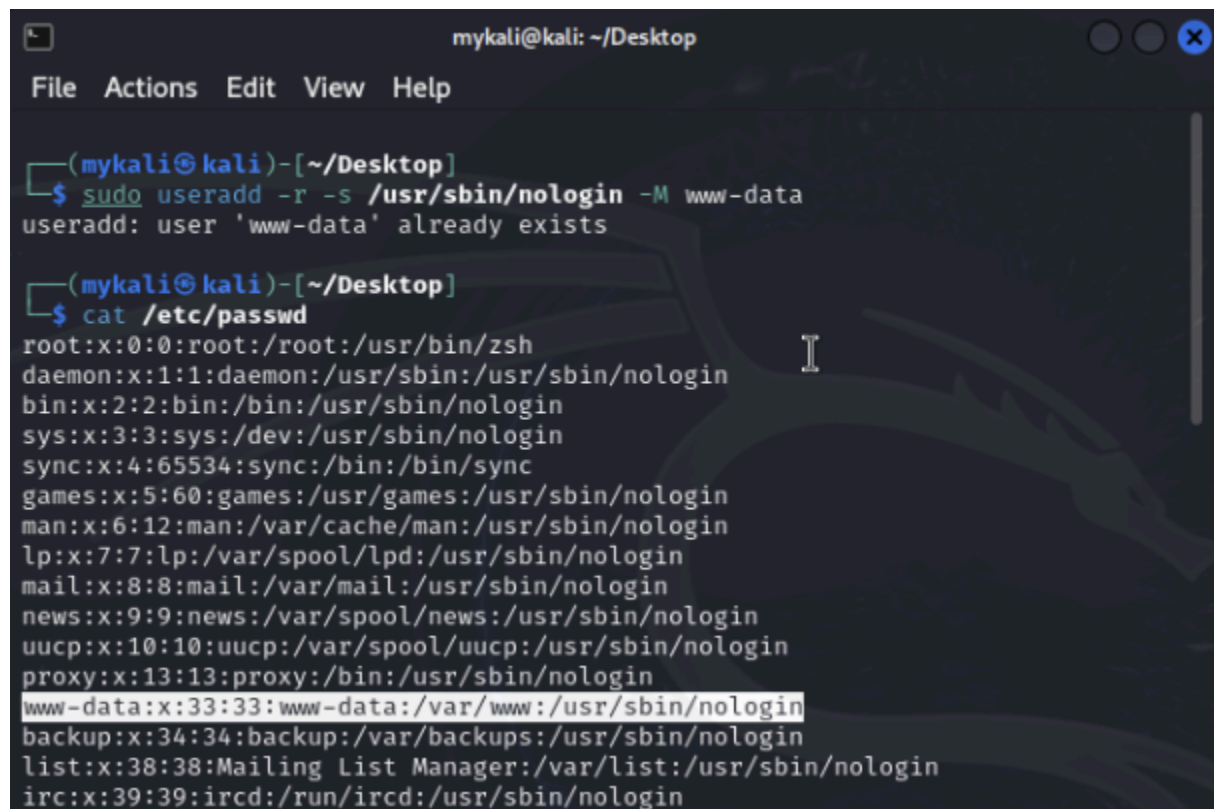
NOTE: -r: Creates a system user.

-s /usr/sbin/nologin: Assigns the nologin shell, which prevents the user from logging in.

-M: Ensures no home directory is created.

Task 3: Verify the user is created with no login shell by inspecting /etc/passwd

- cat /etc/passwd

A terminal window titled 'mykali@kali: ~/Desktop' with a menu bar (File, Actions, Edit, View, Help). The terminal shows two commands and their outputs. The first command is 'sudo useradd -r -s /usr/sbin/nologin -M www-data', which outputs 'useradd: user 'www-data' already exists'. The second command is 'cat /etc/passwd', which outputs a list of system users including root, daemon, bin, sys, sync, games, man, lp, mail, news, uucp, proxy, www-data (highlighted), backup, list, and ircd. Each entry follows the format 'username:x:uid:gid:full\_name:/home\_directory:/usr/sbin/nologin'.

## Objective 6: Managing User Permissions

Task 1: Create a new user alice

- sudo useradd -m alice

- sudo passwd alice

Task 2: Create a directory /home/alice\_data and set it as rw for the owner, r for the group, and no permissions for others

- sudo mkdir /home/alice\_data

- sudo chmod 740 /home/alice\_data

- sudo chown alice:alice /home/alice\_data

NOTE: chown alice:alice: Makes alice the owner of the directory.

Task 3: Add alice to the group that has access to this directory

- sudo groupadd alice\_group

NOTE: Change Directory Group Ownership

- sudo chown alice:alice\_group /home/alice\_data

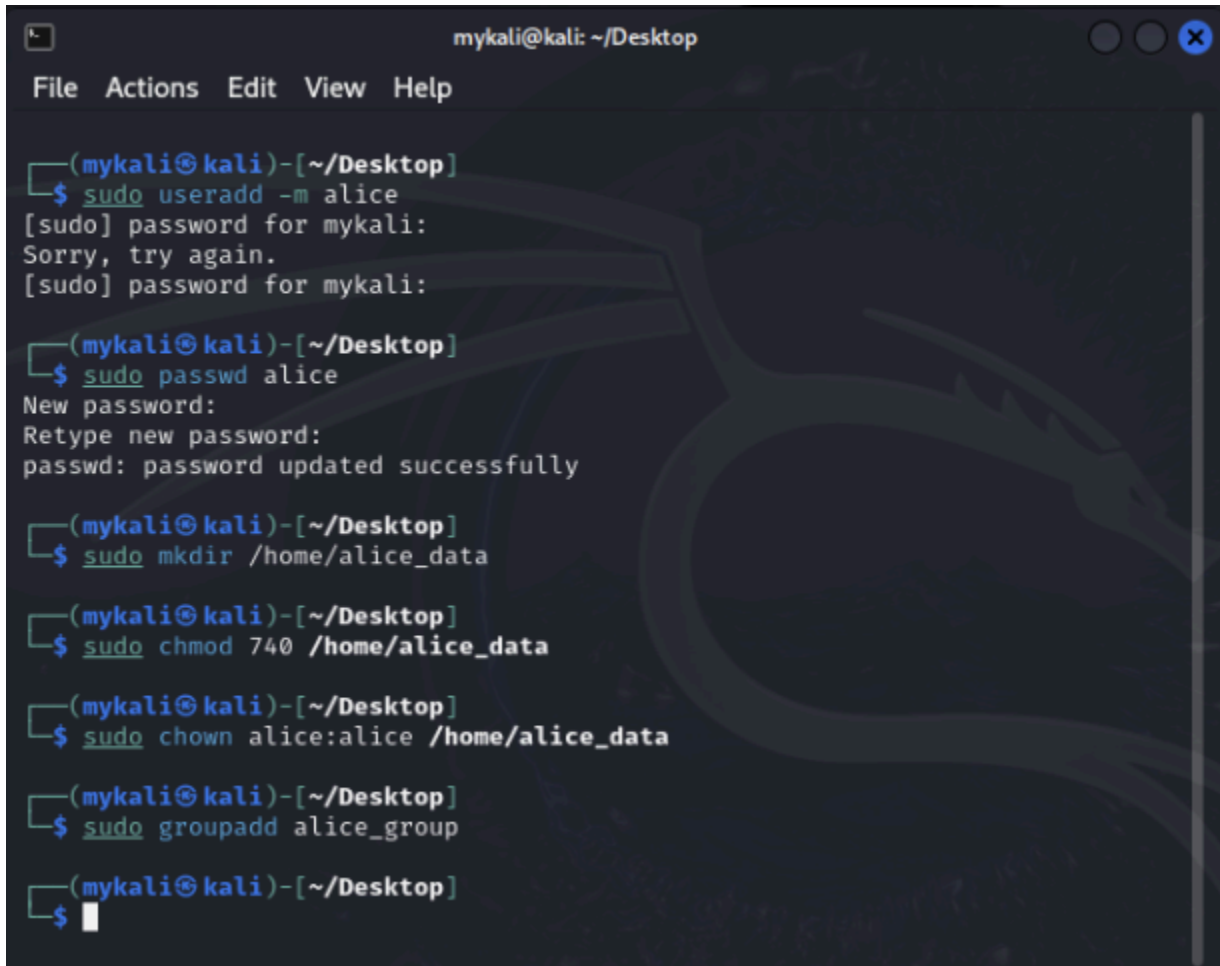
NOTE: Add alice to the group

- sudo usermod -aG alice\_group alice

Task 4: Verify the permissions using ls -l

- ls -ld /home/alice\_data

NOTE: d: Indicates it's a directory.

A terminal window titled 'mykali@kali: ~/Desktop' with a menu bar (File, Actions, Edit, View, Help). The terminal shows a series of commands and their outputs. The background has a faint dragon watermark.

```
(mykali@kali)-[~/Desktop]
$ sudo useradd -m alice
[sudo] password for mykali:
Sorry, try again.
[sudo] password for mykali:

(mykali@kali)-[~/Desktop]
$ sudo passwd alice
New password:
Retype new password:
passwd: password updated successfully

(mykali@kali)-[~/Desktop]
$ sudo mkdir /home/alice_data

(mykali@kali)-[~/Desktop]
$ sudo chmod 740 /home/alice_data

(mykali@kali)-[~/Desktop]
$ sudo chown alice:alice /home/alice_data

(mykali@kali)-[~/Desktop]
$ sudo groupadd alice_group

(mykali@kali)-[~/Desktop]
$
```

```
mykali@kali: ~/Desktop
File Actions Edit View Help

(mykali@kali)-[~/Desktop]
$ sudo chown alice:alice_group /home/alice_data

(mykali@kali)-[~/Desktop]
$ sudo usermod -aG alice_group alice

(mykali@kali)-[~/Desktop]
$ ls -ld /home/alice_data
drwxr----- 2 alice alice_group 4096 Jan 24 15:58 /home/alice_data

(mykali@kali)-[~/Desktop]
$
```

## Objective 7: Password Aging and Expiry

Task 1: Set a password expiration period of 90 days for user alice using chage

- sudo chage -M 90 alice

Task 2: Set a warning period to notify the user 7 days before the password expires

- sudo chage -W 7 alice

Task 3: Verify the changes using chage -l alice

- sudo chage -l alice

```
mykali@kali: ~/Desktop
File Actions Edit View Help

(mykali@kali)-[~/Desktop]
$ sudo chage -M 90 alice

(mykali@kali)-[~/Desktop]
$ sudo chage -W 7 alice

(mykali@kali)-[~/Desktop]
$ chage -l alice
chage: Permission denied.

(mykali@kali)-[~/Desktop]
$ sudo chage -l alice
Last password change           : Jan 24, 2025
Password expires                : Apr 24, 2025
Password inactive               : never
Account expires                 : never
Minimum number of days between password change : 0
Maximum number of days between password change : 90
Number of days of warning before password expires : 7

(mykali@kali)-[~/Desktop]
$
```

## Objective 8: Lock and Unlock User Accounts

Task 1: Lock the user account alice by using the passwd -l command

- sudo passwd -l alice

Task 2: Verify that the account is locked by trying to log in as alice

- sudo grep alice /etc/shadow

NOTE: Expected output: alice:!  
hashed-password>:<other-fields>

The ! in front of the hashed password indicates the account is locked

Also, Attempt to Log In: Try to switch to the alice account

- su - alice

Task 3: Unlock the account using the passwd -u command

- sudo passwd -u alice

Task 4: Verify the account is unlocked by trying to log in again

- sudo grep alice /etc/shadow

NOTE: The absence of ! indicates the account is unlocked

Also, Attempt to Log In Again:

- su - alice

NOTE: To reset the password: sudo passwd alice



```
mykali@kali: ~/Desktop
File Actions Edit View Help

(mykali@kali)-[~/Desktop]
$ sudo passwd -l alice
passwd: password changed.

(mykali@kali)-[~/Desktop]
$ sudo grep alice /etc/shadow
alice:!!$y$j9T$krnVJR3f0./tSAoXAhfQL0$2qNli22fUclC94k7IG4toI3HG94788xgWV0rt5sN
QVA:20112:0:90:7 :::

(mykali@kali)-[~/Desktop]
$ sudo grep alice /etc/shadow
alice:!!$y$j9T$krnVJR3f0./tSAoXAhfQL0$2qNli22fUclC94k7IG4toI3HG94788xgWV0rt5sN
QVA:20112:0:90:7 :::

(mykali@kali)-[~/Desktop]
$ su -alice
su: invalid option -- 'a'
Try 'su --help' for more information.

(mykali@kali)-[~/Desktop]
$ su - alice
Password:
su: Authentication failure

(mykali@kali)-[~/Desktop]
$ clear
```

```
mykali@kali: ~/Desktop
File Actions Edit View Help

(mykali@kali)-[~/Desktop]
$ sudo passwd -u alice
passwd: password changed.

(mykali@kali)-[~/Desktop]
$ sudo grep alice /etc/shadow
alice:$y$j9T$krnVJR3f0./tSAoXAhfQL0$2qNli22fUclC94k7IG4toI3HG94788xgWV0rt5sNQ
VA:20112:0:90:7 :::

(mykali@kali)-[~/Desktop]
$ su - alice
Password:
$ NOTE: We are now loggedin in alice
```

## Objective 9: Create and Manage Sudo Access

Task 1: Add a user bob to the sudo group, allowing bob to execute commands as root

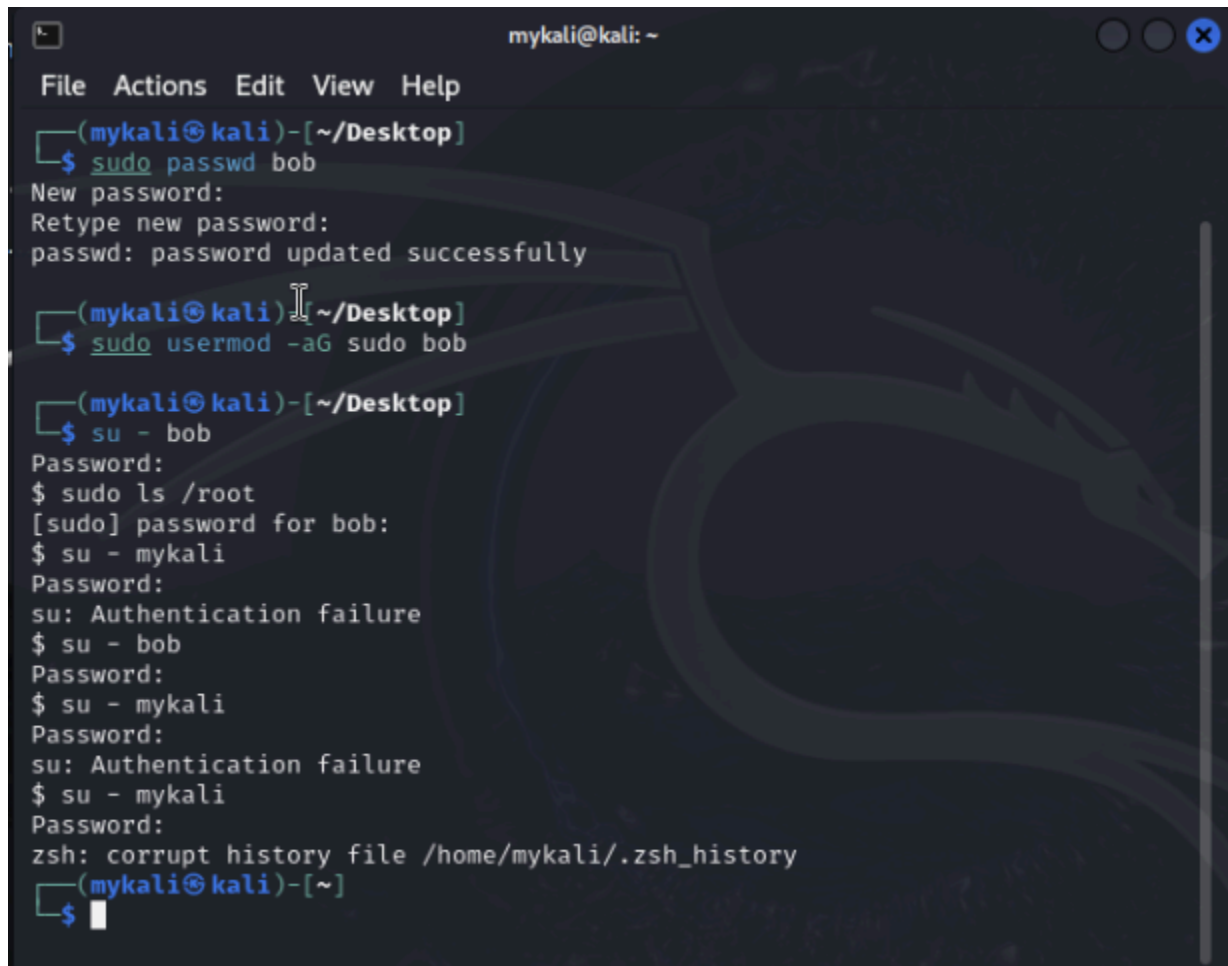


- sudo useradd -m bob
- sudo passwd bob
- sudo usermod -aG sudo bob

NOTE: -aG sudo: Adds the user to the sudo group without removing them from other groups

Task 2: Test by logging in as bob and running a command with sudo

- su - bob
- su - mykali (Trying to log into another account from the user bob we can check if sudo command is working for the bob or not)
- Task 3: Optionally, restrict bob's sudo access by editing the /etc/sudoers file using visudo (e.g., allow only apt-get commands)
- sudo visudo

A terminal window titled 'mykali@kali: ~' with a menu bar (File, Actions, Edit, View, Help). The terminal shows the following commands and output:

```
(mykali@kali)~[~/Desktop]
$ sudo passwd bob
New password:
Retype new password:
passwd: password updated successfully

(mykali@kali)~[~/Desktop]
$ sudo usermod -aG sudo bob

(mykali@kali)~[~/Desktop]
$ su - bob
Password:
$ sudo ls /root
[sudo] password for bob:
$ su - mykali
Password:
su: Authentication failure
$ su - bob
Password:
$ su - mykali
Password:
su: Authentication failure
$ su - mykali
Password:
zsh: corrupt history file /home/mykali/.zsh_history
(mykali@kali)~[~]
$
```

## Objective 10: Set Up User Environment Variables

Task 1: Modify the .bashrc file for a user (alice) to set a custom environment variable (e.g., MYVAR=HelloWorld)

- su - alice (Switch accounts to alice)

- sudo nano /home/alice/.bashrc

NOTE: If the user not in the sudoers file

- su - mykali (Change to user with sudo access)

- sudo usermod -aG sudo alice

- aG sudo: Adds the user to the sudo group without removing them from other groups

Type the text:

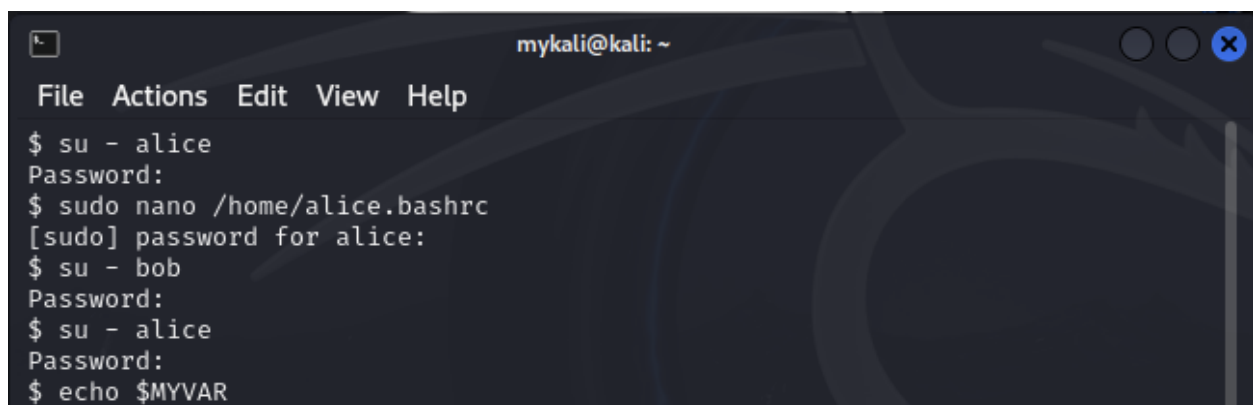
- export MYVAR="HelloWorld"

NOTE: Press Ctrl+X to exit the editor

Log out and login back using : su - alice

Task 2: Have the user log out and log back in, then check the environment variable using echo \$MYVAR

- echo \$MYVAR

A terminal window titled 'mykali@kali: ~' with a menu bar (File, Actions, Edit, View, Help). The terminal shows the following commands and output:

```
$ su - alice
Password:
$ sudo nano /home/alice.bashrc
[sudo] password for alice:
$ su - bob
Password:
$ su - alice
Password:
$ echo $MYVAR
```

## Objective 11: Create and Manage User Quotas

Task 1: Enable disk quotas on a specific file system (/home)

Task 2: Set a soft and hard limit for user alice (e.g., 1 GB for soft, 1.5 GB for hard)

Task 3: Test the quota by attempting to exceed the disk usage limit

Task 4: Verify the user's quota using the quota command

## Objective 12: Configure User Shells

Task 1: Create a user eve and set their default shell to /bin/zsh using usermod -s /bin/zsh

- sudo useradd -m -s /bin/zsh eve

- sudo passwd eve

Task 2: Verify that eve's default shell is set to Zsh by checking /etc/passwd

- grep eve /etc/passwd

Task 3: Log in as eve and confirm the shell is now Zsh

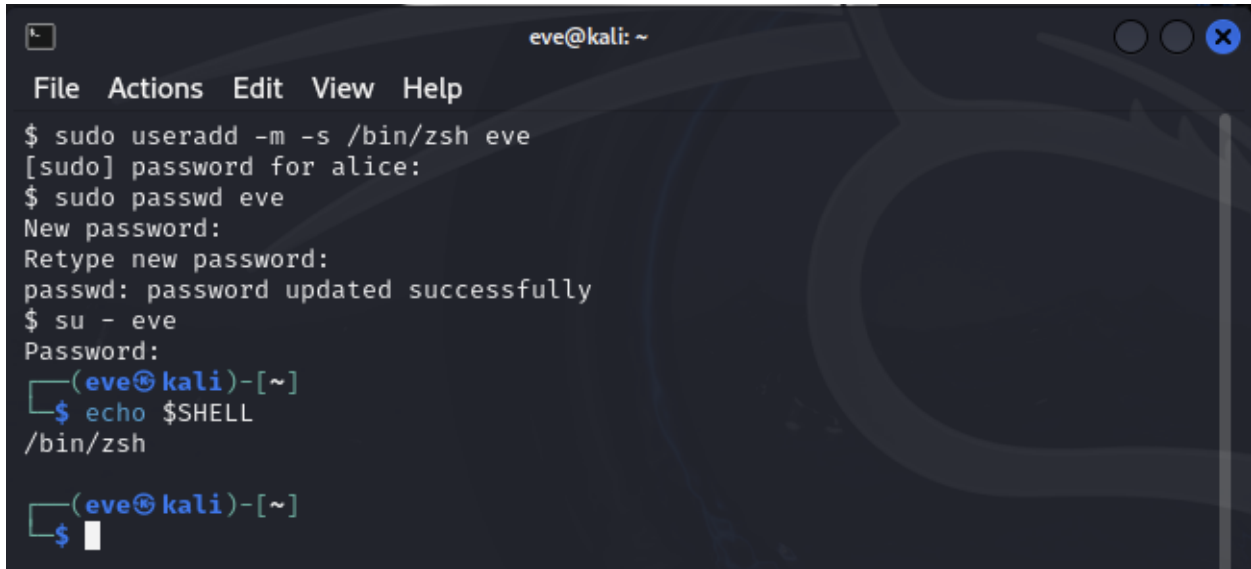
- su - eve

- echo \$SHELL

NOTE: Expected output: /bin/zsh

Also, If Zsh is not installed, install it

- sudo apt install zsh

A terminal window titled 'eve@kali: ~' with a menu bar (File, Actions, Edit, View, Help). The terminal shows the following commands and output:

```
$ sudo useradd -m -s /bin/zsh eve
[sudo] password for alice:
$ sudo passwd eve
New password:
Retype new password:
passwd: password updated successfully
$ su - eve
Password:
(eve@kali)-[~]
$ echo $SHELL
/bin/zsh
(eve@kali)-[~]
$
```

## Objective 13: Automate User Creation with a Script

Task 1: Write a Bash script that takes a username and a group as input

Task 2: Create the user, create the group if it does not exist, and add the user to the group

Task 3: Set a default password for the new user and notify the administrator by email

## Objective 14: User Account Audit

Task 1: Write a script to list all users who have not logged in for the past 90 days

Task 2: Optionally, send an email alert for these inactive accounts

Task 3: Disable inactive accounts by locking them (passwd -l)

## Objective 15: Check and Modify User File Permissions

1. Create a file /home/alice/important\_file.txt

- sudo touch /home/alice/important\_file.txt

2. Change the ownership of the file to the user alice using chown

- sudo chown alice:alice /home/alice/important\_file.txt

3. Set the file permissions so that only alice has read and write access, while others have no access

- sudo chmod 600 /home/alice/important\_file.txt

4. Verify the permissions using ls -l

- ls -l /home/alice/important\_file.txt

```
eve@kali: ~  
File Actions Edit View Help  
(eve@kali)-[~]  
$ su - alice  
Password:  
$ sudo touch /home/alice/important_file.txt  
$ sudo chown alice:alice /home/alice/important_file.txt  
$ sudo chmod 600 /home/alice/important_file.txt  
$ ls -l /home/alice/important_file.txt  
-rw----- 1 alice alice 0 Jan 25 12:49 /home/alice/important_file.txt  
$
```