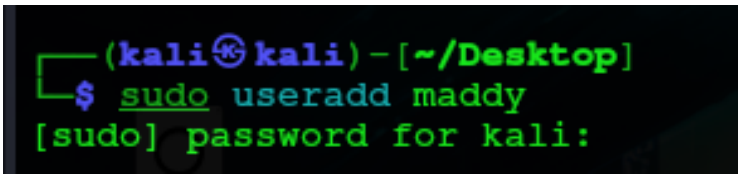
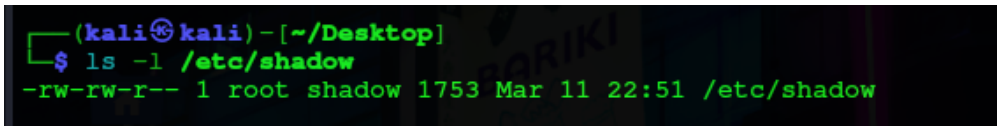
Task 1 :

User permission and system misconfigurations ⚙ :



- First, we create a user named “maddy” using the `sudo useradd <username>` command.

2. We assign the password “ **12345678**” by using the echo command to `chpassword`, write it into the password file with elevated privileges via sudo.

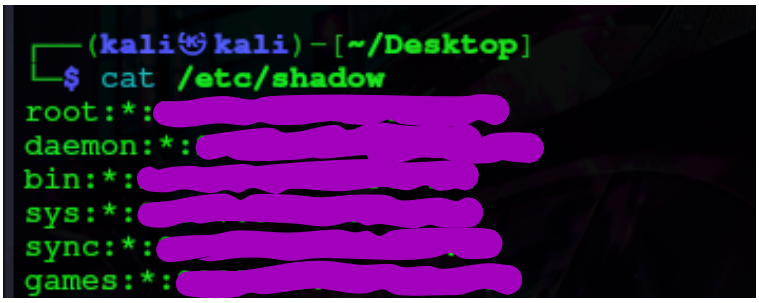


- We examine the permissions of the password file to identify and exploit any misconfigurations.

```
┌──(kali㉿kali)-[~/Desktop]
└─$ sudo chmod 777 /etc/shadow

┌──(kali㉿kali)-[~/Desktop]
└─$ ls -l /etc/shadow
-rwxrwxrwx 1 root shadow 1753 Mar 11 22:51 /etc/shadow
```

- We modify the permissions of the shadow file using the sudo chmod 777 command to grant full access. Then, we verify the updated permissions to confirm the ability to view the file.



- As observed, we can now view the contents of the /etc/shadow file, which contains hashed passwords, even with normal user privileges.

- We have successfully configured /etc/shadow to be accessible by normal users.

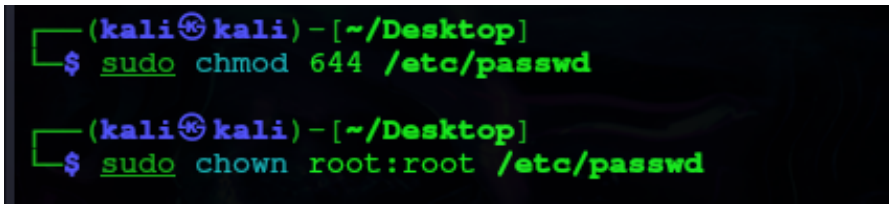
Securing permissions 🔒:

```
┌──(kali㉿kali)-[~/Desktop]
└─$ sudo chmod 640  /etc/shadow

┌──(kali㉿kali)-[~/Desktop]
└─$ sudo chown root:shadow /etc/shadow
```

1. We secure the password file by setting its permissions to 640 using the chmod command. This ensures that only the root user and members of the shadow group

can access it. The root user's password remains viewable only under superuser pr ivileges.



- We modify the permissions of the `/etc/passwd` file using `sudo chmod 644` and set its ownership to `root:root` with `sudo chown root:root` . This ensures that regular users can read the file but cannot modify it.

- Finally we use sudo visudo to check permissions.

📌 Summary of Steps

Step **Create Users**	Command	Pur pose
Set Passwords	`sudo useradd user1`	Add new users
Break Security	`` `echo "user1:pass" ``	sudo chpasswd`
Exploit Fix	`sudo chmod 777 /etc/shadow`	Make shadow file world-readable BAD
Permissions	`su user1 && cat /etc/shadow`	Access passwords as normal user
Secure	`sudo chmod 640 /etc/shadow`	Secure shadow file
/etc/passwd Fix	`sudo chmod 644 /etc/passwd`	Prevent unauthorized edits
sudo Privileges	`sudo visudo`	Restrict `sudo` access