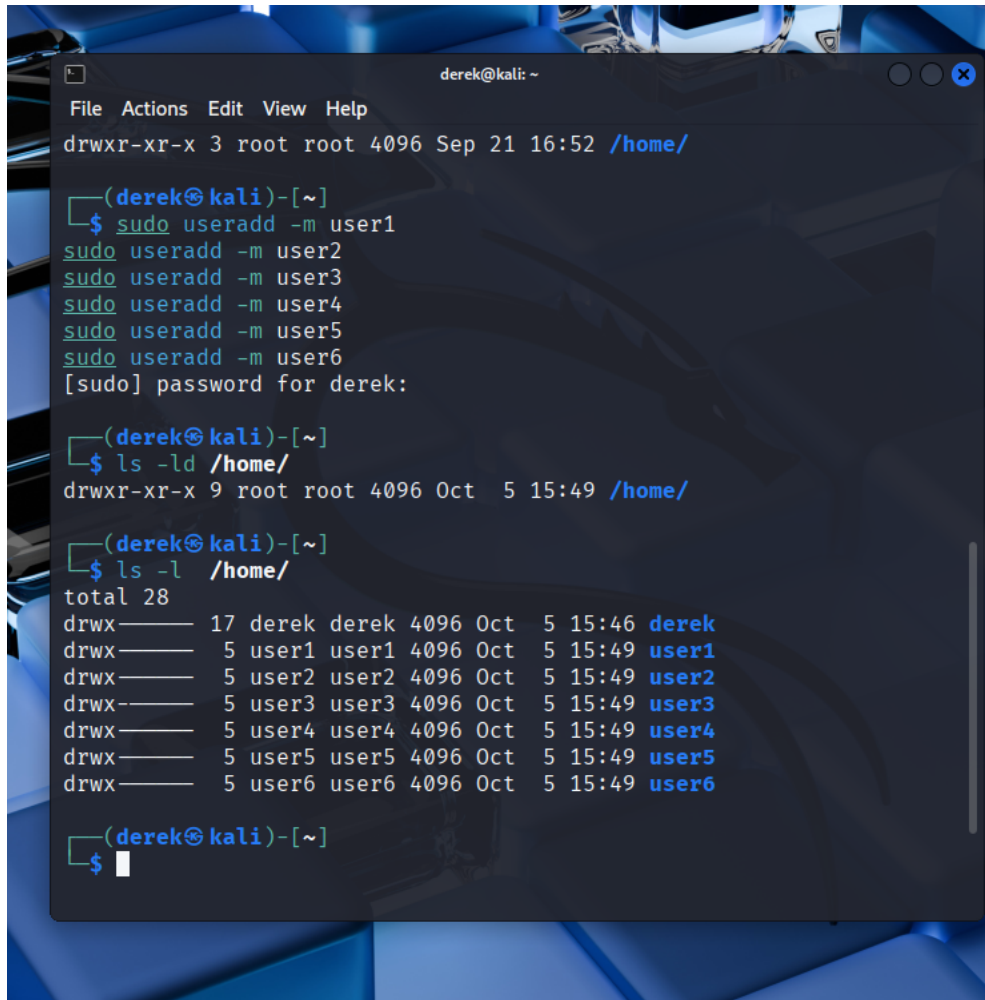
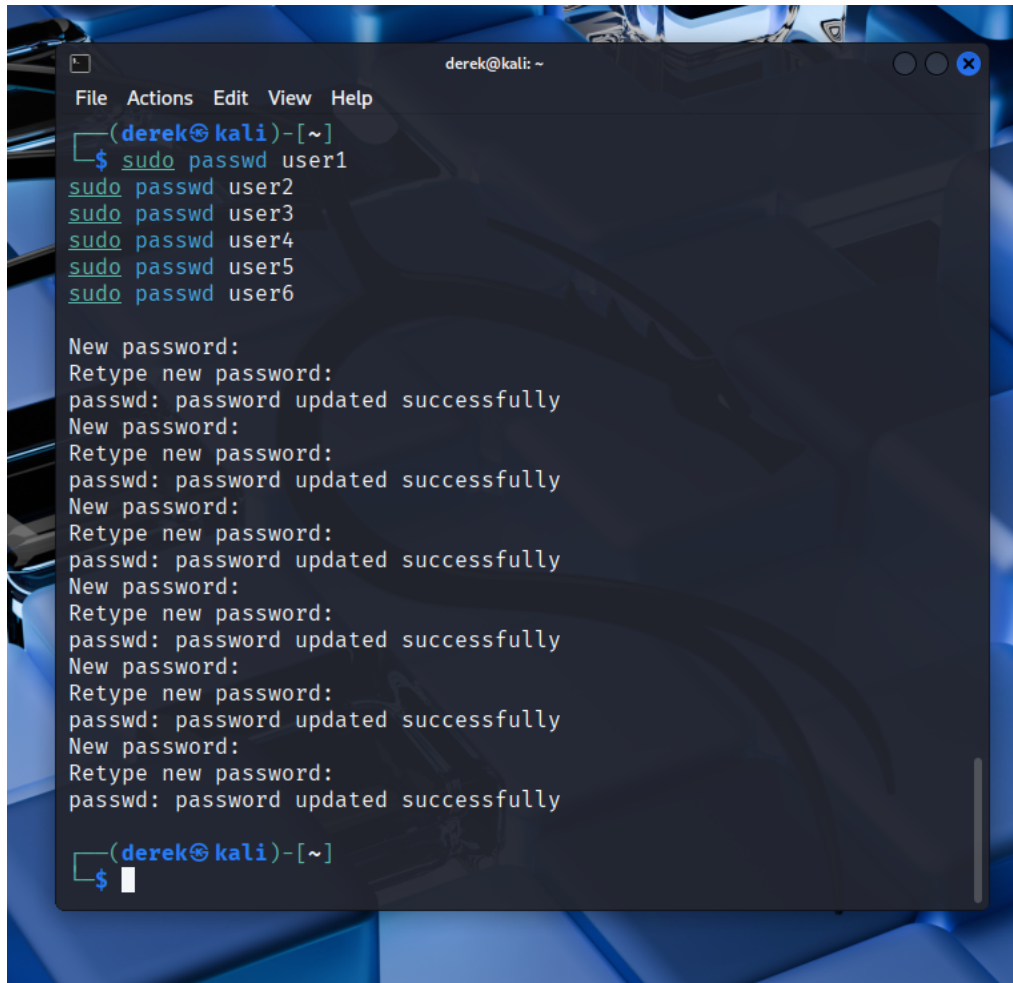


Task A**Step 1A)** Created 6 users per the lab's instructions.A terminal window titled 'derek@kali: ~' with a menu bar (File, Actions, Edit, View, Help). The terminal shows the following commands and output:
1. Initial directory listing: `drwxr-xr-x 3 root root 4096 Sep 21 16:52 /home/`
2. User creation commands: `sudo useradd -m user1`, `sudo useradd -m user2`, `sudo useradd -m user3`, `sudo useradd -m user4`, `sudo useradd -m user5`, `sudo useradd -m user6`. A password prompt `[sudo] password for derek:` is shown.
3. Directory listing with long options: `ls -ld /home/` results in `drwxr-xr-x 9 root root 4096 Oct 5 15:49 /home/`.
4. Detailed directory listing: `ls -l /home/` results in a table of files:

Permissions	Size	User	Group	Size	Month	Day	Time	Owner
drwx	17	derek	derek	4096	Oct	5	15:46	derek
drwx	5	user1	user1	4096	Oct	5	15:49	user1
drwx	5	user2	user2	4096	Oct	5	15:49	user2
drwx	5	user3	user3	4096	Oct	5	15:49	user3
drwx	5	user4	user4	4096	Oct	5	15:49	user4
drwx	5	user5	user5	4096	Oct	5	15:49	user5
drwx	5	user6	user6	4096	Oct	5	15:49	user6

5. The prompt `(derek@kali)-[~]` and `$` are shown at the bottom.

Step 1- 6) Created passwords for all 6 users per the lab's instructions.

A screenshot of a terminal window titled 'derek@kali: ~'. The window has a menu bar with 'File', 'Actions', 'Edit', 'View', and 'Help'. The terminal shows the user 'derek@kali' at the prompt '(derek@kali)-[~]'. They execute the command '\$ sudo passwd user1'. This is followed by six more commands: 'sudo passwd user2', 'sudo passwd user3', 'sudo passwd user4', 'sudo passwd user5', and 'sudo passwd user6'. For each command, the terminal shows the prompts 'New password:' and 'Retype new password:', followed by the message 'passwd: password updated successfully'. At the bottom, the prompt returns to '(derek@kali)-[~]' with a '\$' symbol and a cursor.

Step 2) Exported the users' hashes into a file named dhill036.hash and used the John the Ripper tool to crack the passwords. I first executed a **"sudo apt update"** then a **"sudo install -y john wordlist"** to update the repo. After that I exported the file and listed its contents to verify it was exported successfully.

```
(derek@kali)-[~]
$ sudo apt update
sudo apt install -y john wordlists

Get:1 http://kali.mirror.rafael.ca/kali kali-rolling InRelease [34.0 kB]
Get:2 http://kali.mirror.rafael.ca/kali kali-rolling/main amd64 Packages [21.1 MB]
Get:3 http://kali.mirror.rafael.ca/kali kali-rolling/main amd64 Contents (deb) [50.8 MB]
Get:4 http://kali.mirror.rafael.ca/kali kali-rolling/contrib amd64 Packages [118 kB]
Get:5 http://kali.mirror.rafael.ca/kali kali-rolling/contrib amd64 Contents (deb) [326 kB]
Get:6 http://kali.mirror.rafael.ca/kali kali-rolling/non-free amd64 Packages [193 kB]
```

```
derek@kali: ~
File Actions Edit View Help
$ sudo apt update
sudo apt install -y john the ripper
Hit:1 http://http.kali.org/kali kali-rolling InRelease
1231 packages can be upgraded. Run 'apt list --upgradable' to see them.
Error: Unable to locate package the

(derek@kali)-[~]
$ sudo unshadow /etc/passwd /etc/shadow > dhill036.hash

Created directory: /root/.john

(derek@kali)-[~]
$ grep -E '^((user[1-6])):' dhill036.hash
user1:$y$j9T$tzAtoMKnuzg3xrW1W68lY.$URJ4sBNE1oG1umCn50bzTUyqbss608
LtZjF3gl4JI7:1001:1001::/home/user1:/bin/sh
user2:$y$j9T$05BglHSY69ygdEk3N730H.$/8YNVSrR1WIL84BredUYwzD.qilTGV2
XkSEFG0PzzK7:1002:1002::/home/user2:/bin/sh
user3:$y$j9T$$.lvivVcA0N6mc6lXxLH6.$xvX7UBXc8DRcm3wi.X/L2j2FtlX3KBc
ssOG.CC08I13:1003:1003::/home/user3:/bin/sh
user4:$y$j9T$Fh1vtlxyDvXbQ7TtNhI5y.$0cu0B2Wd99bb1HR7shym1Ax3RuVjnGQ
k.aRDAH5u0t8:1004:1004::/home/user4:/bin/sh
user5:$y$j9T$MB3khE59/RL7NxqzxWuRf0$Wl2pGzAR4LsukJlk7FT4GVIRmVNa7M0
PTtiarFz4150:1005:1005::/home/user5:/bin/sh
user6:$y$j9T$zzVzSqxUK6J/s65nVyAo4/$hXsWqC.Gt1jsHx3YauZNR6Po9p2FE9N
b0wdYX67UvP1:1006:1006::/home/user6:/bin/sh

(derek@kali)-[~]
$
```

Step 3) I executed the tool for ten minutes and listed the passwords cracked. My results came back as 0.

```
(derek@kali)-[~]
$ sudo timeout 600 john --wordlist=/usr/share/wordlists/rockyou.txt --rules dhill036.hash 2>&1 | tee john_run.log

Using default input encoding: UTF-8
Loaded 1 password hash (HMAC-SHA256 [password is key, SHA256 256/256 AVX2 8x])
Will run 2 OpenMP threads
Press Ctrl-C to abort, or send SIGUSR1 to john process for status
0g 0:00:02:41 DONE (2025-10-05 16:18) 0g/s 1449Kp/s 1449Kc/s 1449KC/s Akuadalahing..Aaaaaaaaaaiaing
Session completed.
```

```
(derek@kali)-[~]
$ sudo john --show dhill036.hash

[sudo] password for derek:
Sorry, try again.
[sudo] password for derek:
0 password hashes cracked, 1 left

(derek@kali)-[~]
$
```

Extra Credit

I created a file with the hashes given in the lab and named it **hashes.md5**.

I then executed the following command against the file and below are the results.

```
(derek@kali)-[~]
$ john --show --format=raw-md5 hashes.md5 | tee john_shown.txt

?:password
?:root

2 password hashes cracked, 0 left
```