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CYSE 270: Linux System for Cybersecurity

In this assignment, you should replace xxxxx with your MIDAS ID in all occurrences.

Task A – User Account management (8 * 5 = 40 points)

1. Open a terminal window in VM and execute the correct command to display user account

information (including the login shell and home directory) for the current user using grep.

2. Execute the correct command to display user password information (including the encrypted

password and password aging) for the current user using grep.

3. Create a new user named xxxxx and explicitly use options to create the home directory

/home/xxxxx for this user.

4. Set a password for the new user.

5. Set bash shell as the default login shell for the new user xxxxx, then verify the change.

6. Execute the correct command to display user password information (including the encrypted

password and password aging) for the new user xxxxx using grep.

7. Add the new user xxxxx to sudo group without overriding the existing group membership.

8. Switch to the new user's account.

Task B – Group account management (12 * 5 = 60 points)

Use Linux commands to execute the following tasks:

1. Return to your home directory and determine the shell you are using.

2. Display the current user's ID and group membership.

3. Display the group membership of the root account.

4. Run the correct command to determine the user owner and group owner of the /etc/group

file.

5. Create a new group named test and use your UIN as the GID.

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6. Display the group account information for the test group using grep.

7. Change the group name of the test group to newtest.

8. Add the current account (xxxxx) as a secondary member of the newtest group without

overriding this user's current group membership.

9. Create a new file testfile in the account's home directory, then change the group owner to

newtest.

10. Display the user owner and group owner information of the file testfile.

11. Delete the newtest group, then repeat the previous step. What do you find?

12. Delete the user xxxxx along with the home directory using a single command.

Task A, Step 1:

```
Kali GNU/Linux Rolling kali tty1

kali login: ava-mclaughlin
Password:
Linux kali 6.12.25-amd64 #1 SMP PREEMPT_DYNAMIC Kali 6.12.25-1kali1 (2025-04

The programs included with the Kali GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Kali GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
 ─(Message from Kali developers)

  This is a minimal installation of Kali Linux, you likely
  want to install supplementary tools. Learn how:
  ♦ https://www.kali.org/docs/troubleshooting/common-minimum-setup/

 ─(Run: "touch ~/.hushlogin" to hide this message)
 ┌──(ava-mclaughlin♦ kali)-[~]
 └─$ grep ava-mclaughlin /etc/passwd
ava-mclaughlin:x:1000:1000:ava mclaughlin,,,:/home/ava-mclaughlin:/bin/bash

 ┌──(ava-mclaughlin♦ kali)-[~]
 └─$ _
```

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Task A, Step 2:

```
┌──(ava-mclaughlin♦ kali)-[~]
└─$ sudo grep ava-mclaughlin /etc/shadow
[sudo] password for ava-mclaughlin:
ava-mclaughlin:$y$j9T$dQi6WxbcSfgeQnrIxidt8.$bPp6TZ9RR0HBk6ScewttDN5eIWWEPW7ynxdACLydQv3:20327:0:99999:7:::

┌──(ava-mclaughlin♦ kali)-[~]
└─$
```

Task A, Steps 3-4:

```
┌──(ava-mclaughlin♦ kali)-[~]
└─$ sudo useradd -m -d /home/xxxxx xxxxx

┌──(ava-mclaughlin♦ kali)-[~]
└─$ sudo passwd xxxxx
New password:
Retype new password:
passwd: password updated successfully
```

Task A, Step 5:

```
┌──(ava-mclaughlin♦ kali)-[~]
└─$ sudo usermod -s /bin/bash xxxxx

┌──(ava-mclaughlin♦ kali)-[~]
└─$ grep xxxxx /etc/passwd
xxxxx:x:1001:1001::/home/xxxxx:/bin/bash
```

Task A, Steps 6-7:

```
┌──(ava-mclaughlin♦ kali)-[~]
└─$ sudo grep xxxxx /etc/shadow
xxxxx:$y$j9T$mzwGCs.gzLI9pjBgve3Zn/$RULSCH06flE3i6ycH9CFt9rJ3ic3iuX83aNi79TOH36:20352:0:99999:7:::

┌──(ava-mclaughlin♦ kali)-[~]
└─$ sudo usermod -aG sudo xxxxx

┌──(ava-mclaughlin♦ kali)-[~]
└─$
```

Task A, Step 8:

```
┌──(ava-mclaughlin♦ kali)-[~]
└─$ su - xxxxx
Password:
┌─(Message from Kali developers)
│
│ This is a minimal installation of Kali Linux, you likely
│ want to install supplementary tools. Learn how:
│ ♦ https://www.kali.org/docs/troubleshooting/common-minimum-setup/
│
└─(Run: "touch ~/.hushlogin" to hide this message)
┌──(xxxxx♦ kali)-[~]
└─$
```

Task B, Step 1: <mark>Shell in use: /bin/bash</mark>

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```
┌──(xxxxx✦ kali)-[~]
└─$ cd ~

┌──(xxxxx✦ kali)-[~]
└─$ grep xxxxx /etc/passwd
xxxxx:x:1001:1001::/home/xxxxx:/bin/bash
```

Task B, Steps 2-3:

```
┌──(xxxxx✦ kali)-[~]
└─$ id
uid=1001(xxxxx) gid=1001(xxxxx) groups=1001(xxxxx),27(sudo)

┌──(xxxxx✦ kali)-[~]
└─$ id root
uid=0(root) gid=0(root) groups=0(root)

┌──(xxxxx✦ kali)-[~]
└─$
```

Task B, Steps 4-5:

```
┌──(xxxxx✦ kali)-[~]
└─$ ls -l /etc/group
-rw-r--r-- 1 root root 810 Sep 20 21:15 /etc/group

┌──(xxxxx✦ kali)-[~]
└─$ sudo groupadd -g 01295278 test

┌──(xxxxx✦ kali)-[~]
└─$
```

Task B, Steps 6-7:

```
┌──(xxxxx✦ kali)-[~]
└─$ grep test /etc/group
test:x:1295278:

┌──(xxxxx✦ kali)-[~]
└─$ sudo groupmod -n newtest test

┌──(xxxxx✦ kali)-[~]
└─$
```

Task B, Steps 8-9:

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```
┌──(xxxxx♦ kali)-[~]
└─$ sudo usermod -aG newtest xxxxx

┌──(xxxxx♦ kali)-[~]
└─$ touch ~/testfile

┌──(xxxxx♦ kali)-[~]
└─$ sudo chown :newtest ~/testfile

┌──(xxxxx♦ kali)-[~]
└─$ _
```

Task B, Step 10:

```
┌──(xxxxx♦ kali)-[~]
└─$ ls -l ~/testfile
-rw-rw-r-- 1 xxxxx newtest 0 Sep 20 21:23 /home/xxxxx/testfile

┌──(xxxxx♦ kali)-[~]
└─$
```

Task B, Step 11: <mark>Instead of a group name, Linux displays the group id.</mark>

```
┌──(xxxxx♦ kali)-[~]
└─$ sudo groupdel newtest

┌──(xxxxx♦ kali)-[~]
└─$ ls -l ~/testfile
-rw-rw-r-- 1 xxxxx 1295278 0 Sep 20 21:23 /home/xxxxx/testfile

┌──(xxxxx♦ kali)-[~]
└─$
```

Task B, Step 12: <mark>(I'm not sure why it won't delete 🥺)</mark>

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```
┌──(xxxxx♦ kali)-[~]
└─$ sudo userdel -r xxxxx
userdel: user xxxxx is currently used by process 699

┌──(xxxxx♦ kali)-[~]
└─$ su - ava-mclaughlin
Password:
┌─(Message from Kali developers)
│
│ This is a minimal installation of Kali Linux, you likely
│ want to install supplementary tools. Learn how:
│ ♦ https://www.kali.org/docs/troubleshooting/common-minimum-setup/
│
└─(Run: "touch ~/.hushlogin" to hide this message)
┌──(ava-mclaughlin♦ kali)-[~]
└─$ sudo userdel -r xxxxx
[sudo] password for ava-mclaughlin:
userdel: user xxxxx is currently used by process 699

┌──(ava-mclaughlin♦ kali)-[~]
└─$
```