

ASSIGNMENT 2 – USER MANAGEMENT ASSIGNMENT

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ANSWERS SECTION 1:

Ans 1- A user can belong to one primary group and multiple secondary groups. Groups cannot directly belong to other groups.

Explanation:

Primary group: The group associated with a user when they are created.

Secondary groups: Additional groups a user can belong to.

Ans 2- The files containing local accounts and hashed passwords are located at '/etc/passwd' and '/etc/shadow', respectively.

Explanation:

'/etc/passwd' holds user account information.

'/etc/shadow' stores the encrypted passwords and other security-related information.

Ans 3- The default values for the shadow password suite are defined in the /etc/login.defs file.

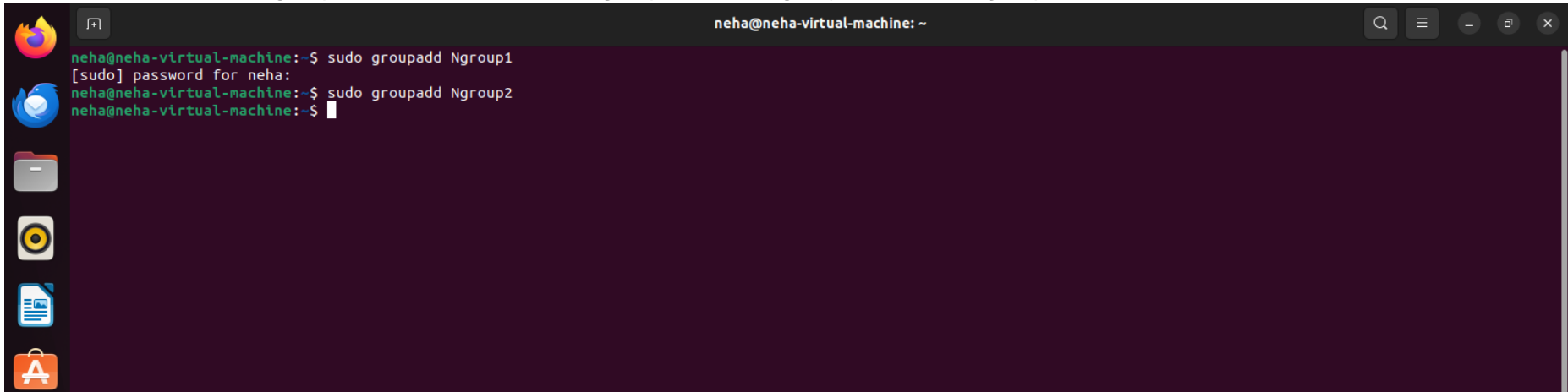
Explanation:

This file sets configuration parameters for user login and password policies.

ANSWERS SECTION 2:

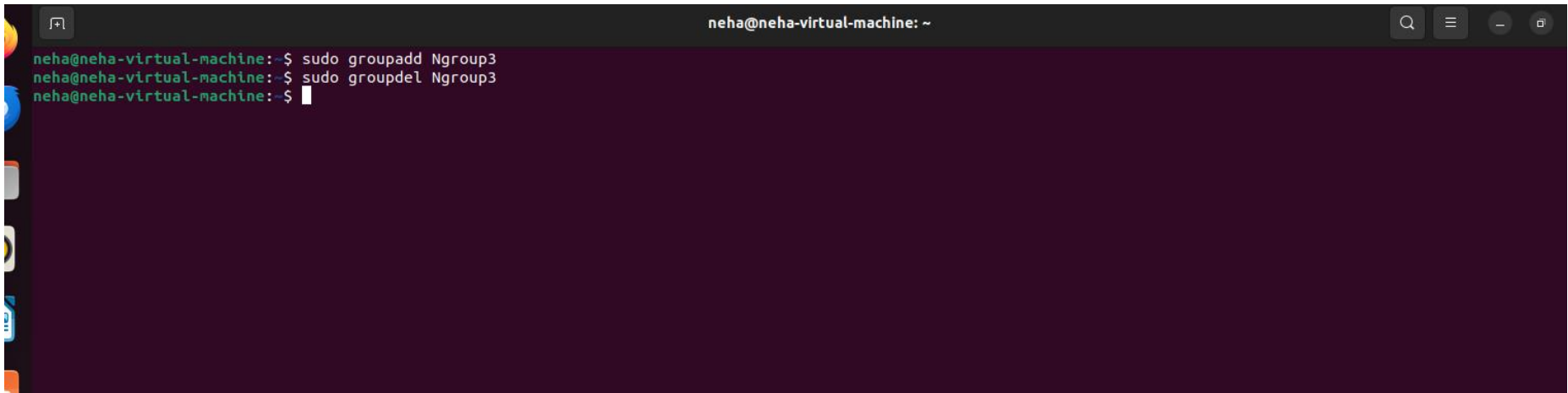
Ans 1 – Command to create and delete groups.

We use the 'groupadd' command to create groups, and use 'groupdel' to delete groups as shown in the screenshot below



```
neha@neha-virtual-machine: ~  
neha@neha-virtual-machine:~$ sudo groupadd Ngroup1  
[sudo] password for neha:  
neha@neha-virtual-machine:~$ sudo groupadd Ngroup2  
neha@neha-virtual-machine:~$
```

The screenshot shows a terminal window with a dark purple background. The window title is 'neha@neha-virtual-machine: ~'. The terminal shows the user 'neha' running the 'sudo groupadd Ngroup1' command, followed by a password prompt '[sudo] password for neha:'. Then, the user runs 'sudo groupadd Ngroup2', and the terminal returns to the prompt 'neha@neha-virtual-machine:~\$'.

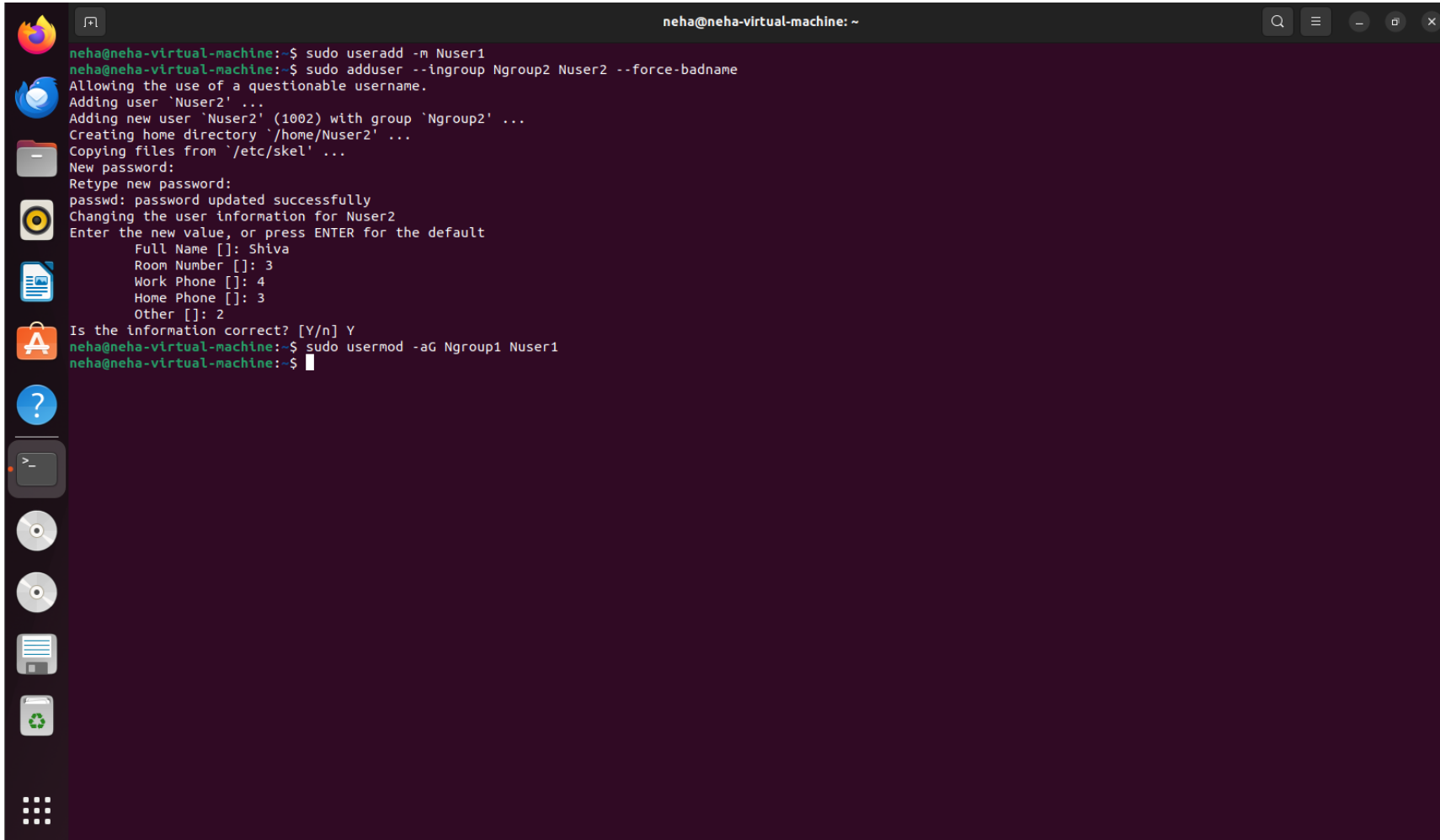


```
neha@neha-virtual-machine: ~  
neha@neha-virtual-machine:~$ sudo groupadd Ngroup3  
neha@neha-virtual-machine:~$ sudo groupdel Ngroup3  
neha@neha-virtual-machine:~$
```

The screenshot shows a terminal window with a dark purple background. The window title is 'neha@neha-virtual-machine: ~'. The terminal shows the user 'neha' running the 'sudo groupadd Ngroup3' command, followed by the 'sudo groupdel Ngroup3' command. The terminal returns to the prompt 'neha@neha-virtual-machine:~\$' after the deletion command.

Ans 3 – Commands to create and add users to the group.

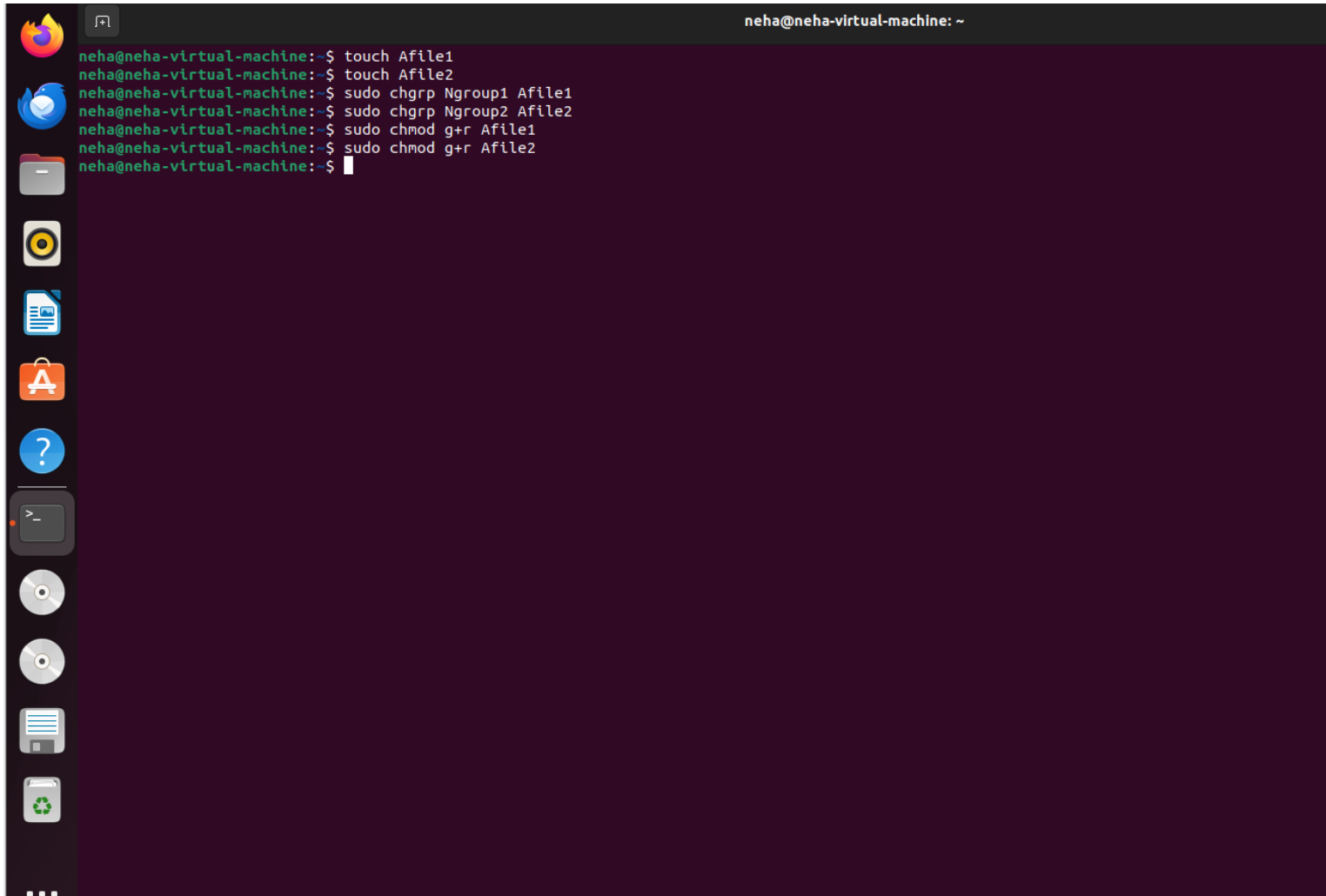
To add the users to a group, follow the 'usermod' command, which requires the user to be originally added before. If you want to create and add user simultaneously, use 'adduser -ingroup' followed by <groupname> and <username> as shown below

A terminal window titled 'neha@neha-virtual-machine: ~' with a dark purple background. The window shows a series of commands and their outputs. The first command is 'sudo useradd -m Nuser1'. The second is 'sudo adduser --ingroup Ngroup2 Nuser2 --force-badname', which prompts for a password and then asks for user information: Full Name (Shiva), Room Number (3), Work Phone (4), Home Phone (3), and Other (2). The third command is 'sudo usermod -aG Ngroup1 Nuser1'. The terminal output is as follows:

```
neha@neha-virtual-machine:~$ sudo useradd -m Nuser1
neha@neha-virtual-machine:~$ sudo adduser --ingroup Ngroup2 Nuser2 --force-badname
Adding the use of a questionable username.
Adding user `Nuser2' ...
Adding new user `Nuser2' (1002) with group `Ngroup2' ...
Creating home directory `/home/Nuser2' ...
Copying files from `/etc/skel' ...
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for Nuser2
Enter the new value, or press ENTER for the default
  Full Name []: Shiva
   Room Number []: 3
  Work Phone []: 4
  Home Phone []: 3
    Other []: 2
Is the information correct? [Y/n] Y
neha@neha-virtual-machine:~$ sudo usermod -aG Ngroup1 Nuser1
neha@neha-virtual-machine:~$
```

Ans 2 – Commands to add files to groups and change group permissions.

Use 'chgrp' command to add files to the group, user chmod to change permissions of group for a file or folder.



```
neha@neha-virtual-machine: ~  
neha@neha-virtual-machine:~$ touch Afile1  
neha@neha-virtual-machine:~$ touch Afile2  
neha@neha-virtual-machine:~$ sudo chgrp Ngroup1 Afile1  
neha@neha-virtual-machine:~$ sudo chgrp Ngroup2 Afile2  
neha@neha-virtual-machine:~$ sudo chmod g+r Afile1  
neha@neha-virtual-machine:~$ sudo chmod g+r Afile2  
neha@neha-virtual-machine:~$
```

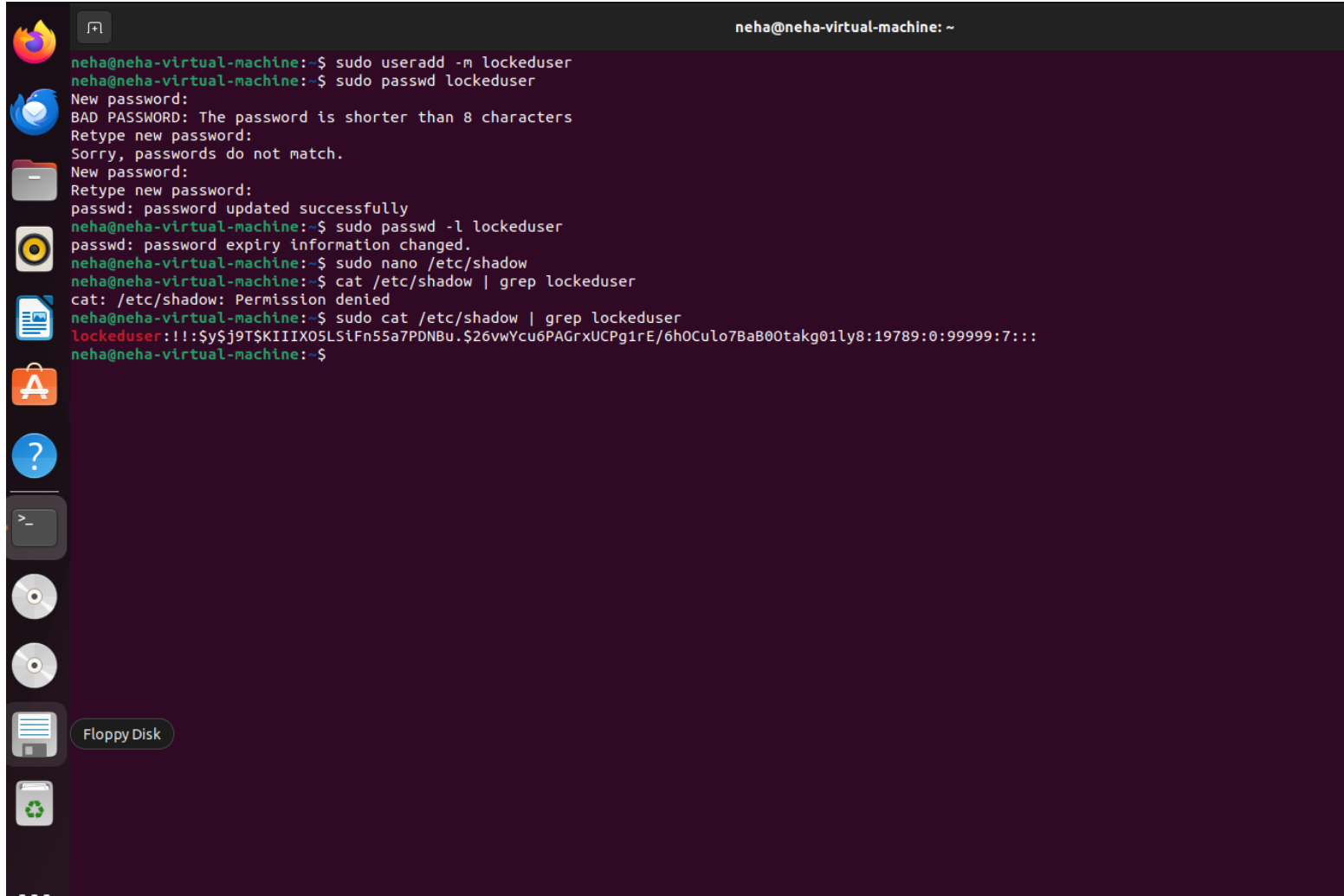
The image shows a terminal window with a dark purple background. On the left side, there is a vertical dock with several application icons: Firefox, a mail client, a file manager, a media player, a document editor, a shopping bag, a question mark, a terminal, two CD/DVD icons, a printer, and a trash can. The terminal window title bar reads 'neha@neha-virtual-machine: ~'. The command history is as follows:

- `neha@neha-virtual-machine:~$ touch Afile1`
- `neha@neha-virtual-machine:~$ touch Afile2`
- `neha@neha-virtual-machine:~$ sudo chgrp Ngroup1 Afile1`
- `neha@neha-virtual-machine:~$ sudo chgrp Ngroup2 Afile2`
- `neha@neha-virtual-machine:~$ sudo chmod g+r Afile1`
- `neha@neha-virtual-machine:~$ sudo chmod g+r Afile2`
- `neha@neha-virtual-machine:~$`

ANSWERS SECTION 3

Ans 1 – Meaning of two (!!) exclamation mark in the shadow file

The presence of !! next to the account name in the shadow file indicates that the account has been disabled or locked, as shown.



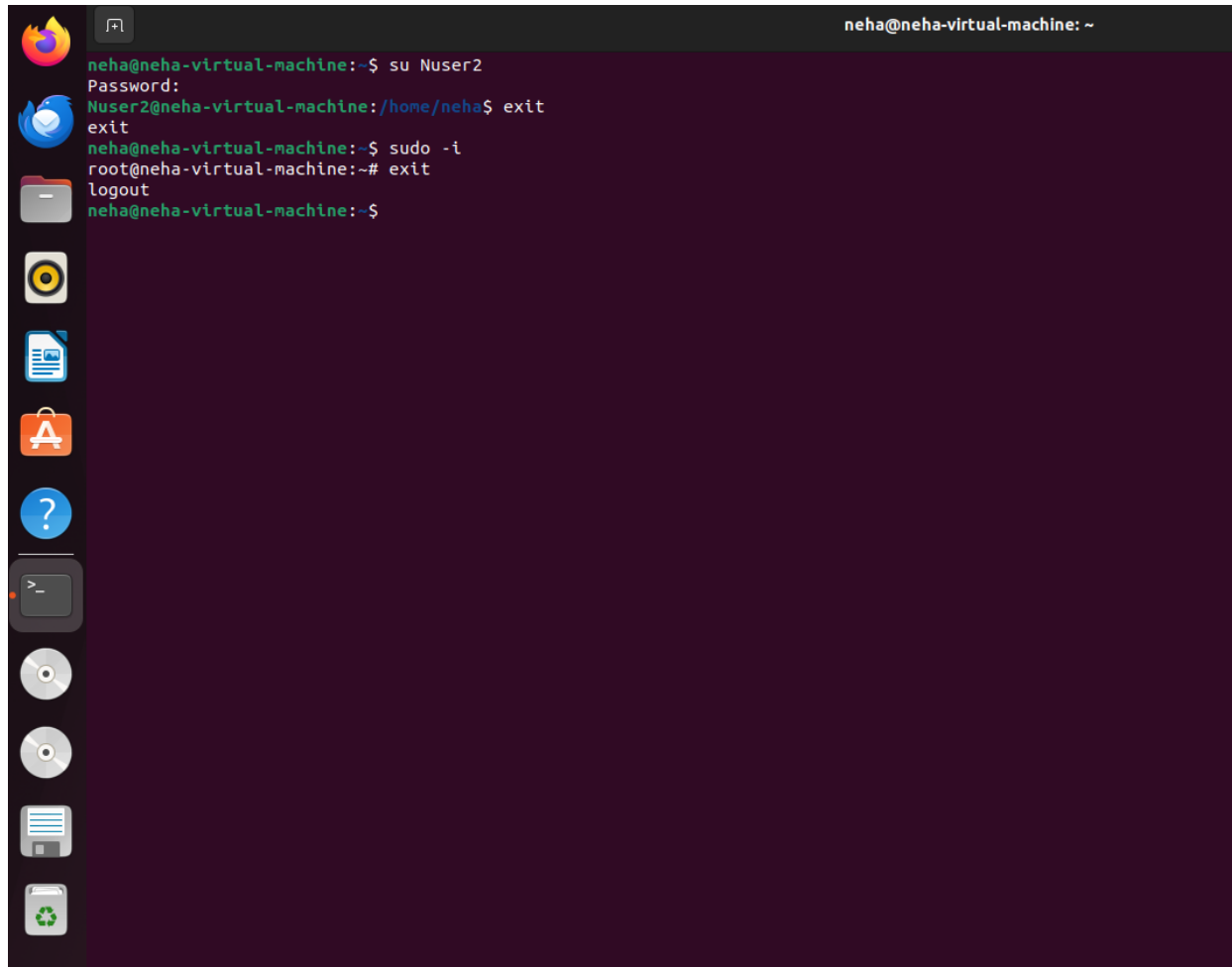
A terminal window titled "neha@neha-virtual-machine: ~" showing a series of commands and their outputs. The user "neha" is at the "neha-virtual-machine". The commands and outputs are as follows:

```
neha@neha-virtual-machine:~$ sudo useradd -m lockeduser
neha@neha-virtual-machine:~$ sudo passwd lockeduser
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
Sorry, passwords do not match.
New password:
Retype new password:
passwd: password updated successfully
neha@neha-virtual-machine:~$ sudo passwd -l lockeduser
passwd: password expiry information changed.
neha@neha-virtual-machine:~$ sudo nano /etc/shadow
neha@neha-virtual-machine:~$ cat /etc/shadow | grep lockeduser
cat: /etc/shadow: Permission denied
neha@neha-virtual-machine:~$ sudo cat /etc/shadow | grep lockeduser
lockeduser:!!: $y$j9T$KIIIX05LSiFn55a7PDNBu.$26vwYcu6PAGrxUCPg1rE/6h0CuLo7BaB00takg01ly8:19789:0:99999:7:::
neha@neha-virtual-machine:~$
```

The terminal window has a dark purple background. On the left side, there is a vertical dock with several icons: a Firefox logo, a terminal icon, a Telegram logo, a file manager icon, a camera icon, a document icon, an App Store icon, a question mark icon, a terminal icon, two CD/DVD icons, a floppy disk icon labeled "Floppy Disk", and a recycling icon. The terminal output shows the successful creation of the "lockeduser" and the resulting entry in the shadow file, which starts with "!!:" indicating a locked account.

Ans 2 – Reasons for switching users and difference between su and sudo.

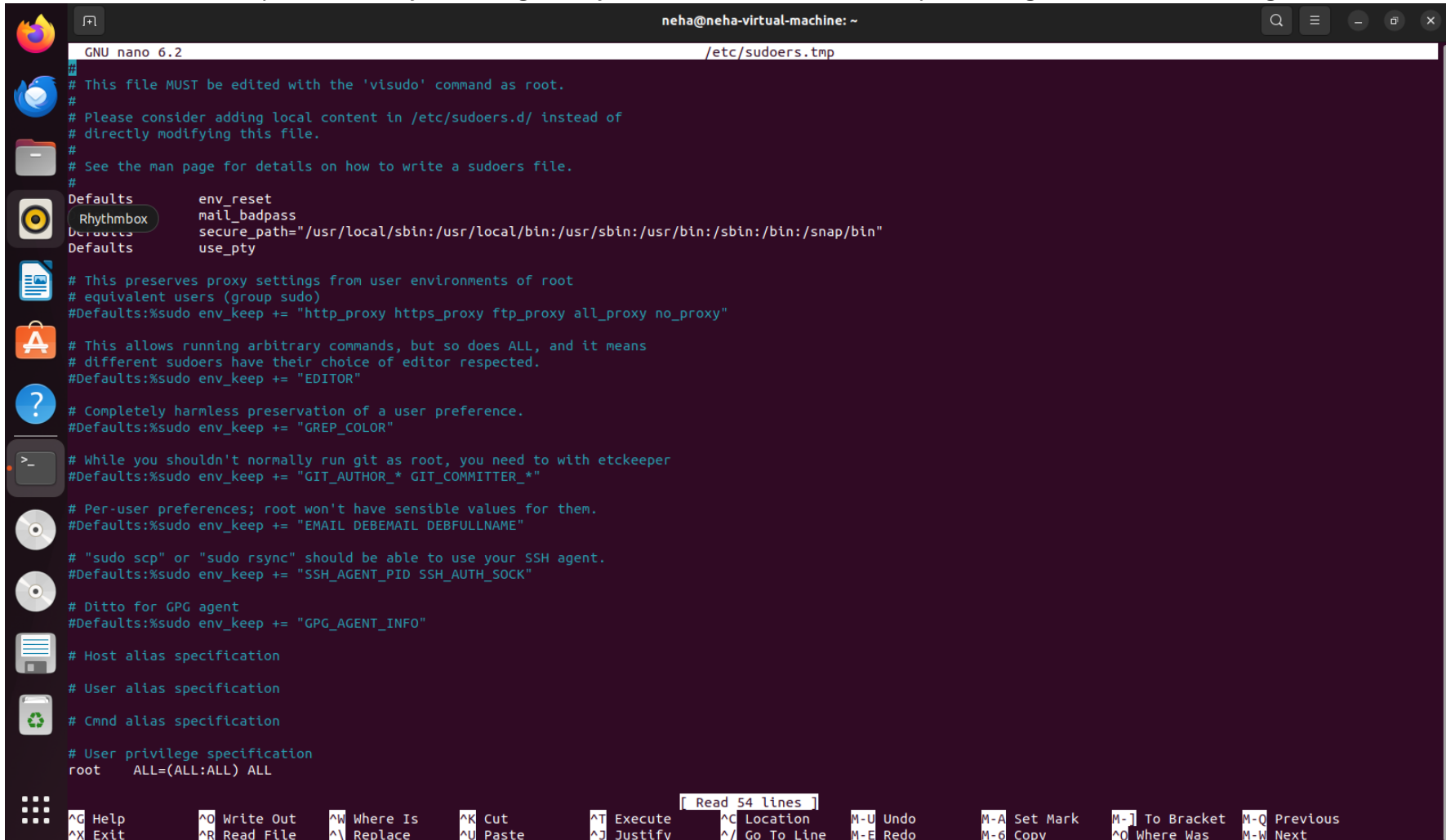
You might switch to a different user for various reasons, such as performing tasks that require different privileges. The su command is used to switch to another user, while sudo is used to execute commands with elevated privileges.

A terminal window titled 'neha@neha-virtual-machine: ~' showing a sequence of commands and outputs. The user 'neha' switches to 'Nuser2' using 'su Nuser2', enters a password, and then exits. Next, 'neha' uses 'sudo -i' to become root, enters a password, and then exits. The terminal shows the following text:

```
neha@neha-virtual-machine:~$ su Nuser2
Password:
Nuser2@neha-virtual-machine:/home/neha$ exit
exit
neha@neha-virtual-machine:~$ sudo -i
root@neha-virtual-machine:~# exit
logout
neha@neha-virtual-machine:~$
```

Ans 3 – Command to edit the superuser's configuration file

The command 'sudo visudo' is used to edit the sudoers file, which defines the configuration for the sudo command. It opens the sudoers file in a protected way, ensuring that syntax errors are avoided and preventing accidental misconfigurations.

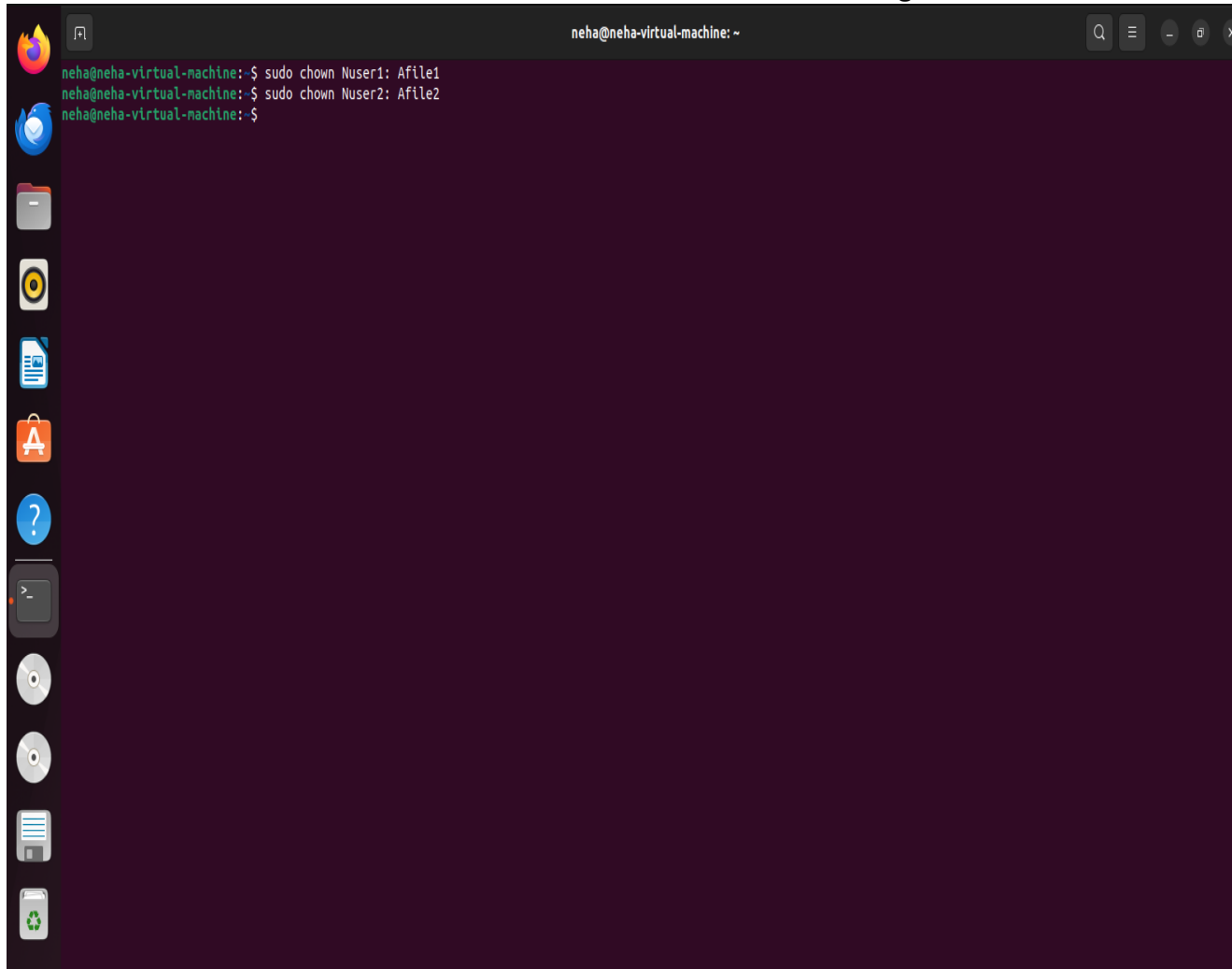


```
neha@neha-virtual-machine: ~  
GNU nano 6.2 /etc/sudoers.tmp  
# This file MUST be edited with the 'visudo' command as root.  
#  
# Please consider adding local content in /etc/sudoers.d/ instead of  
# directly modifying this file.  
#  
# See the man page for details on how to write a sudoers file.  
#  
Defaults        env_reset  
Defaults        mail_badpass  
Defaults        secure_path="/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/snap/bin"  
Defaults        use_pty  
# This preserves proxy settings from user environments of root  
# equivalent users (group sudo)  
#Defaults:sudo env_keep += "http_proxy https_proxy ftp_proxy all_proxy no_proxy"  
# This allows running arbitrary commands, but so does ALL, and it means  
# different sudoers have their choice of editor respected.  
#Defaults:sudo env_keep += "EDITOR"  
# Completely harmless preservation of a user preference.  
#Defaults:sudo env_keep += "GREP_COLOR"  
# While you shouldn't normally run git as root, you need to with etckeeper  
#Defaults:sudo env_keep += "GIT_AUTHOR_* GIT_COMMITTER_*"  
# Per-user preferences; root won't have sensible values for them.  
#Defaults:sudo env_keep += "EMAIL DEBEMAIL DEBFULLNAME"  
# "sudo scp" or "sudo rsync" should be able to use your SSH agent.  
#Defaults:sudo env_keep += "SSH_AGENT_PID SSH_AUTH_SOCK"  
# Ditto for GPG agent  
#Defaults:sudo env_keep += "GPG_AGENT_INFO"  
# Host alias specification  
# User alias specification  
# Cmnd alias specification  
# User privilege specification  
root    ALL=(ALL:ALL) ALL  
  
^G Help      ^O Write Out ^W Where Is  ^K Cut       ^T Execute  ^C Location ^M-U Undo    ^M-A Set Mark ^M-] To Bracket ^M-Q Previous  
^X Exit      ^R Read File ^\ Replace  ^U Paste     ^J Justify  ^/_ Go To Line ^M-E Redo    ^M-G Copy     ^Q Where Was ^M-W Next
```


ANSWERS SECTION 4

Ans 1 – Command to change the owner of a file or directory.

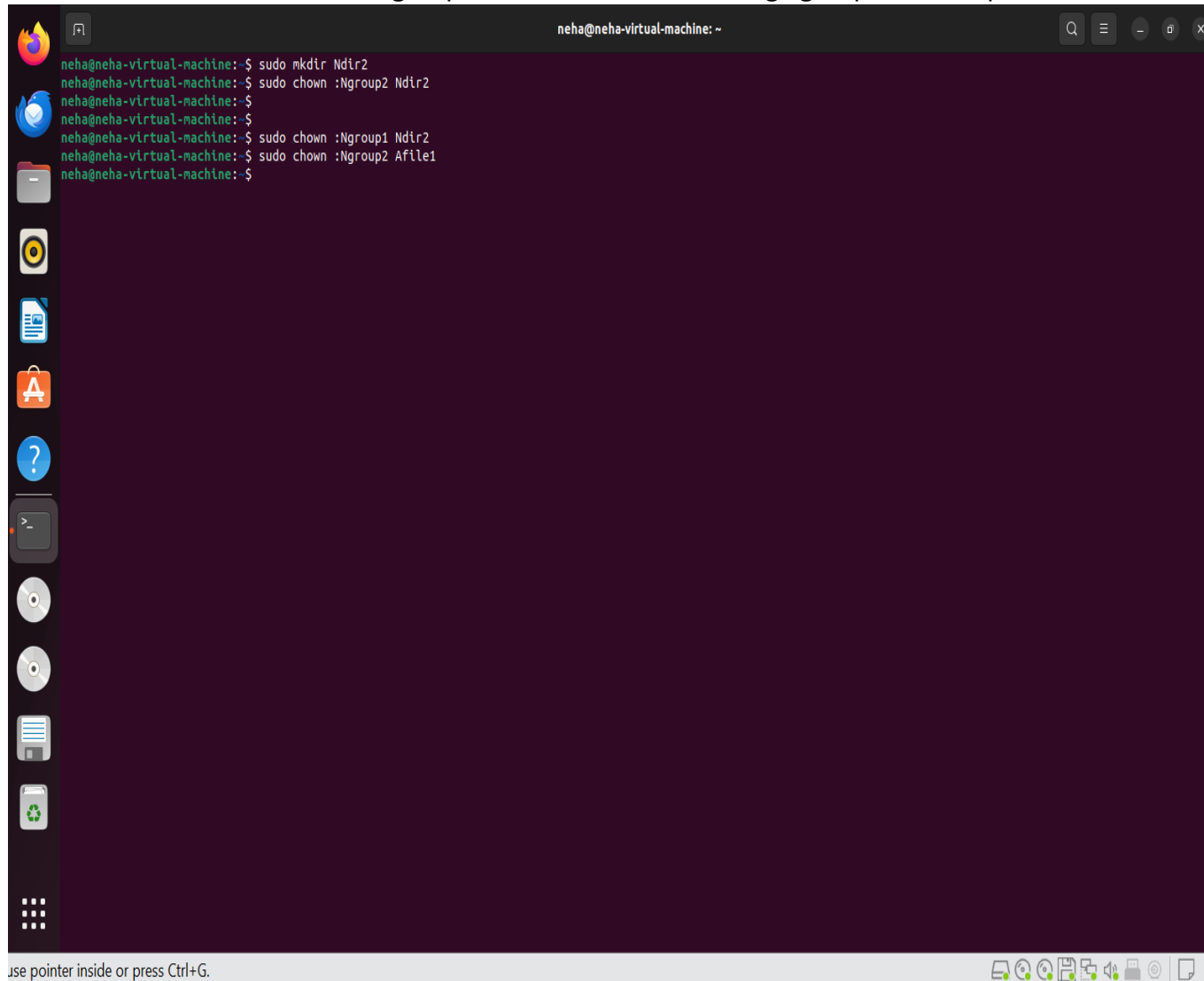
The command 'sudo chown new_owner: new_file' is used to change the owner of the file.

A screenshot of a Linux desktop environment with a dark theme. On the left is a vertical dock containing icons for Firefox, Telegram, a file manager, a media player, a document editor, the App Store, a help icon, a terminal, two CD/DVD icons, a printer, and a trash can. The terminal window is open, showing the user 'neha' at the prompt 'neha@neha-virtual-machine: ~'. The user has entered the command 'sudo chown Nuser1: Afile1', followed by 'sudo chown Nuser2: Afile2', and then a new prompt line.

```
neha@neha-virtual-machine: ~  
neha@neha-virtual-machine:~$ sudo chown Nuser1: Afile1  
neha@neha-virtual-machine:~$ sudo chown Nuser2: Afile2  
neha@neha-virtual-machine:~$
```

Ans 2 – Command to change the group ownership of a file or directory.

The command 'sudo chown :new_group new_file' is used to change group ownership of a file or directory.

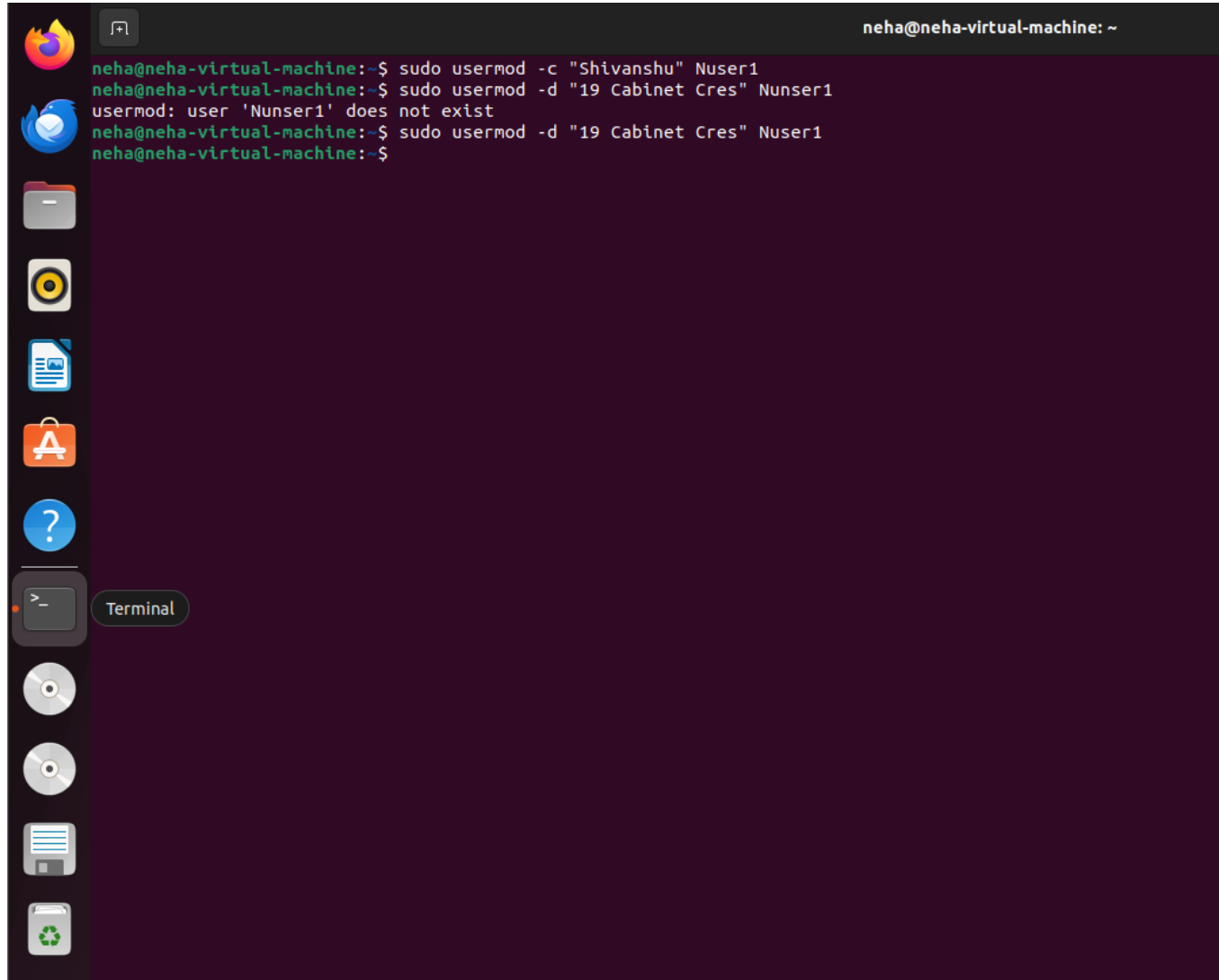


```
neha@neha-virtual-machine: ~  
neha@neha-virtual-machine:~$ sudo mkdir Ndir2  
neha@neha-virtual-machine:~$ sudo chown :Ngroup2 Ndir2  
neha@neha-virtual-machine:~$  
neha@neha-virtual-machine:~$  
neha@neha-virtual-machine:~$ sudo chown :Ngroup1 Ndir2  
neha@neha-virtual-machine:~$ sudo chown :Ngroup2 Afile1  
neha@neha-virtual-machine:~$
```

use pointer inside or press Ctrl+G.

Ans 3 – Command to change user's full name and other details.

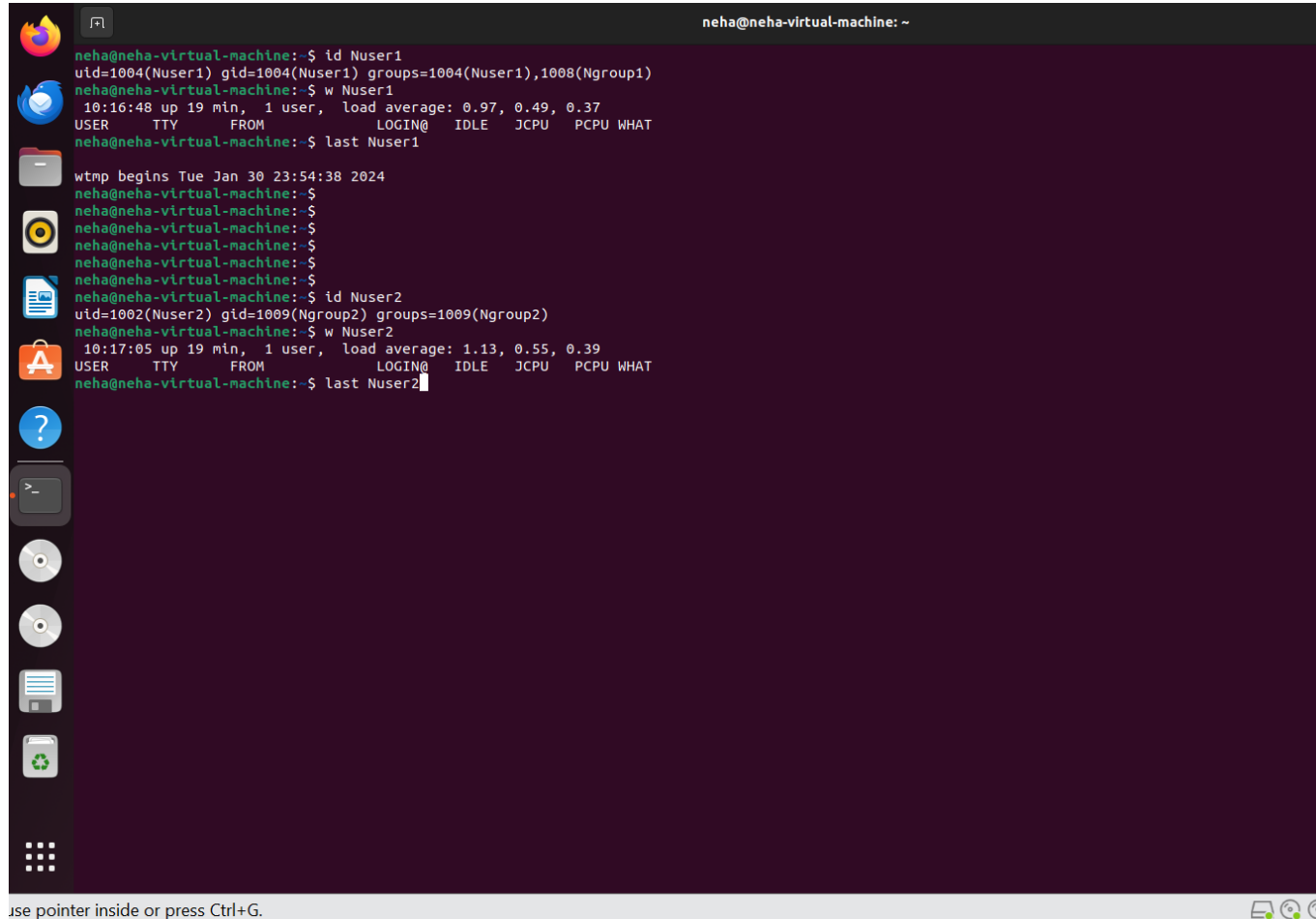
The command 'sudo usermod username' is used to change user's details.

A screenshot of a Linux terminal window with a dark purple background. The window title is 'neha@neha-virtual-machine: ~'. On the left side, there is a vertical dock with various application icons: Firefox, Telegram, a file manager, a music player, a document viewer, the App Store, a help icon, a terminal icon (which is highlighted with a 'Terminal' label), two CD/DVD icons, a printer icon, and a trash icon. The terminal shows the following commands and output:

```
neha@neha-virtual-machine:~$ sudo usermod -c "Shivanshu" Nuser1
neha@neha-virtual-machine:~$ sudo usermod -d "19 Cabinet Cres" Nuser1
usermod: user 'Nuser1' does not exist
neha@neha-virtual-machine:~$ sudo usermod -d "19 Cabinet Cres" Nuser1
neha@neha-virtual-machine:~$
```

Ans 4 – Command to display detailed user information.

The commands 'id or w or last username' are used to display detailed user information.



A terminal window titled 'neha@neha-virtual-machine: ~' with a dark purple background. The left sidebar contains icons for various applications: Firefox, Telegram, a file manager, a terminal, a CD/DVD drive, a hard drive, a document, a trash bin, and an application dock. The terminal shows the following commands and output:

```
neha@neha-virtual-machine:~$ id Nuser1
uid=1004(Nuser1) gid=1004(Nuser1) groups=1004(Nuser1),1008(Ngroup1)
neha@neha-virtual-machine:~$ w Nuser1
10:16:48 up 19 min, 1 user, load average: 0.97, 0.49, 0.37
USER      TTY      FROM          LOGIN@   IDLE   JCPU   PCPU   WHAT
neha@neha-virtual-machine:~$ last Nuser1
wtmp begins Tue Jan 30 23:54:38 2024
neha@neha-virtual-machine:~$
neha@neha-virtual-machine:~$
neha@neha-virtual-machine:~$
neha@neha-virtual-machine:~$
neha@neha-virtual-machine:~$
neha@neha-virtual-machine:~$
neha@neha-virtual-machine:~$ id Nuser2
uid=1002(Nuser2) gid=1009(Ngroup2) groups=1009(Ngroup2)
neha@neha-virtual-machine:~$ w Nuser2
10:17:05 up 19 min, 1 user, load average: 1.13, 0.55, 0.39
USER      TTY      FROM          LOGIN@   IDLE   JCPU   PCPU   WHAT
neha@neha-virtual-machine:~$ last Nuser2
```

At the bottom of the terminal window, there is a status bar that reads 'Use pointer inside or press Ctrl+G.' and three small circular icons on the right.