

OPERATING SYSTEM

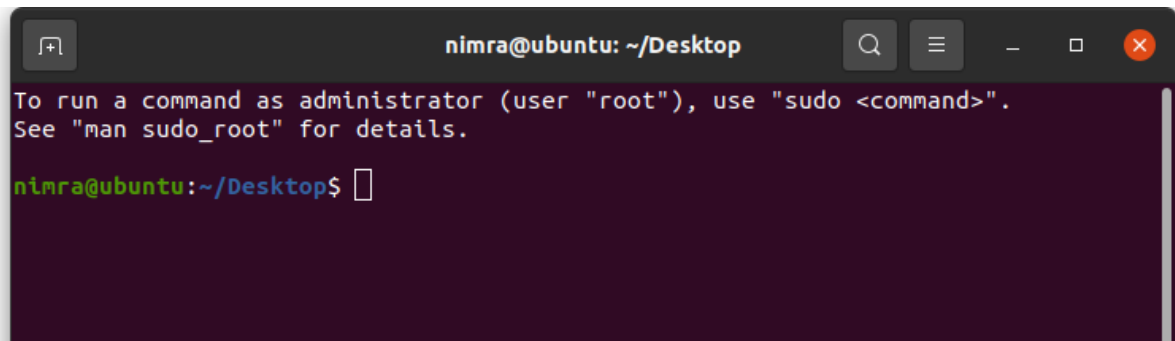
LAB MANUAL: 2

Question#1:

- a. Log in. Open a terminal window, to start a shell.

Answer:

First log in. The terminal window is opened by right clicking and then select Terminal Window.

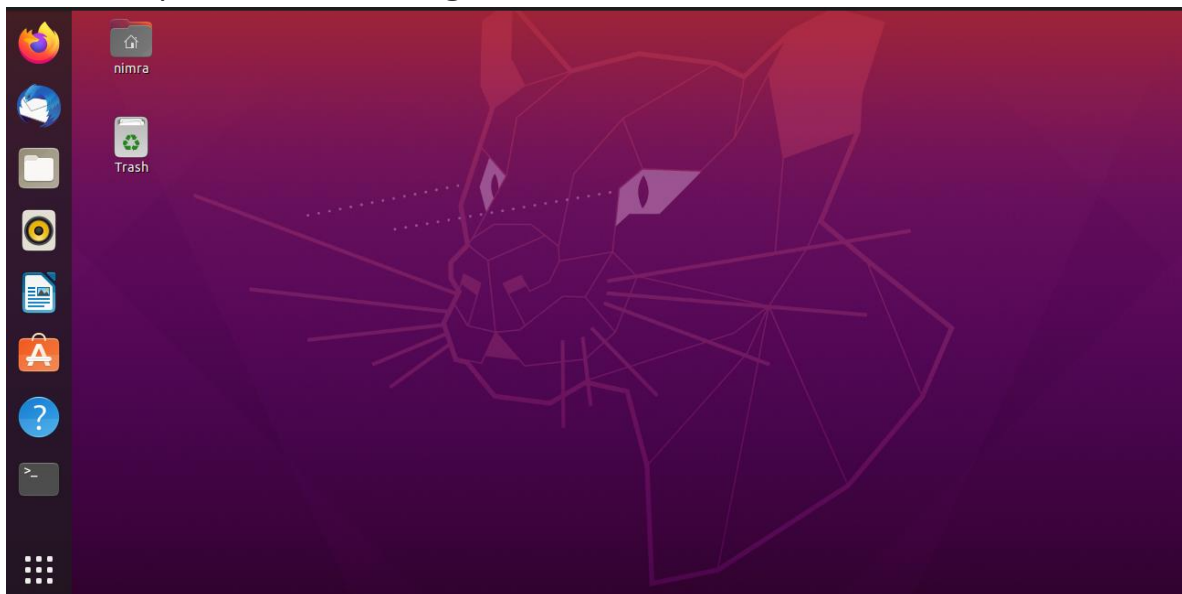


```
nimra@ubuntu: ~/Desktop
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.
nimra@ubuntu:~/Desktop$
```

- b. Exit from the shell; the terminal window will close.

Answer:

To exit press CTRL + D. Or give exit command.

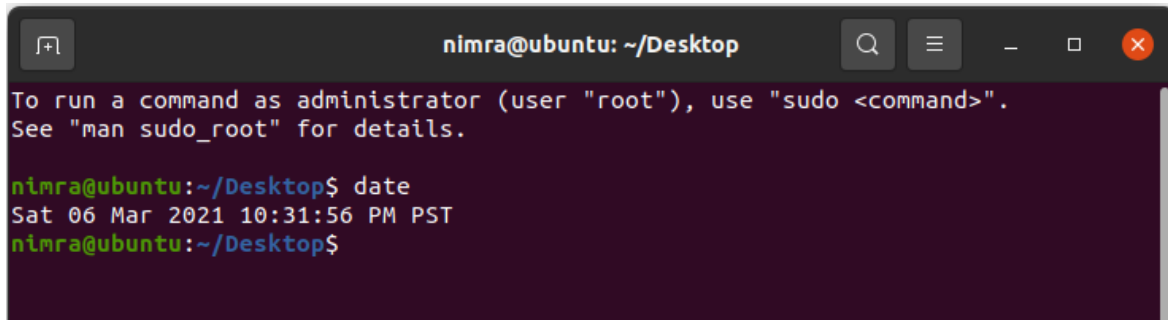


c. Start another shell. Enter each of the following commands in turn.

i. Date

Answer:

Displays the date and time.

A terminal window titled 'nimra@ubuntu: ~/Desktop'. It contains a message: 'To run a command as administrator (user "root"), use "sudo <command>". See "man sudo_root" for details.' Below this, the command 'date' is entered and executed, showing the output 'Sat 06 Mar 2021 10:31:56 PM PST'.

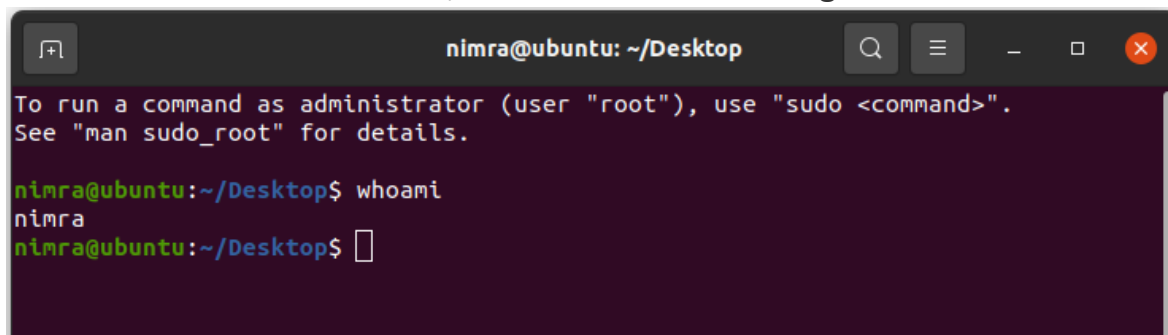
```
nimra@ubuntu: ~/Desktop
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

nimra@ubuntu:~/Desktop$ date
Sat 06 Mar 2021 10:31:56 PM PST
nimra@ubuntu:~/Desktop$
```

ii. whoami

Answer:

Prints the user name i.e., owner of the current login session.

A terminal window titled 'nimra@ubuntu: ~/Desktop'. It contains a message: 'To run a command as administrator (user "root"), use "sudo <command>". See "man sudo_root" for details.' Below this, the command 'whoami' is entered and executed, showing the output 'nimra'.

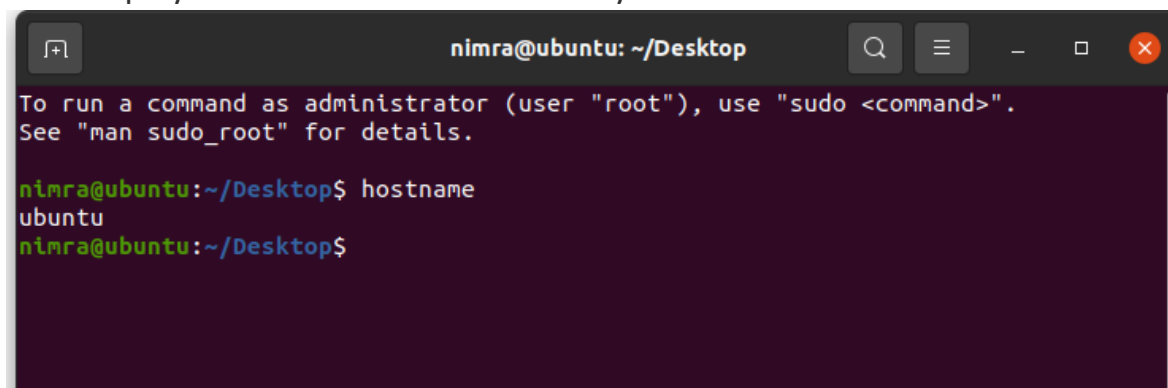
```
nimra@ubuntu: ~/Desktop
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

nimra@ubuntu:~/Desktop$ whoami
nimra
nimra@ubuntu:~/Desktop$
```

iii. hostname

Answer:

Displays name of the current host system

A terminal window titled 'nimra@ubuntu: ~/Desktop'. It contains a message: 'To run a command as administrator (user "root"), use "sudo <command>". See "man sudo_root" for details.' Below this, the command 'hostname' is entered and executed, showing the output 'ubuntu'.

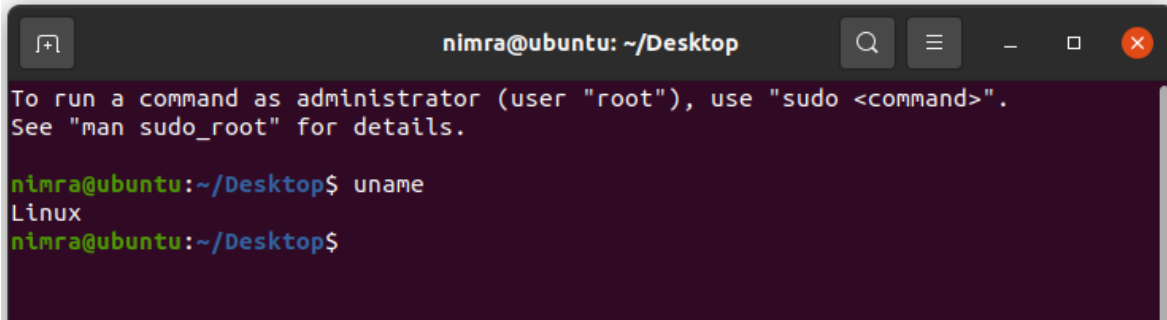
```
nimra@ubuntu: ~/Desktop
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

nimra@ubuntu:~/Desktop$ hostname
ubuntu
nimra@ubuntu:~/Desktop$
```

iv. **uname**

Answer:

Displays the Linux Kernel name.

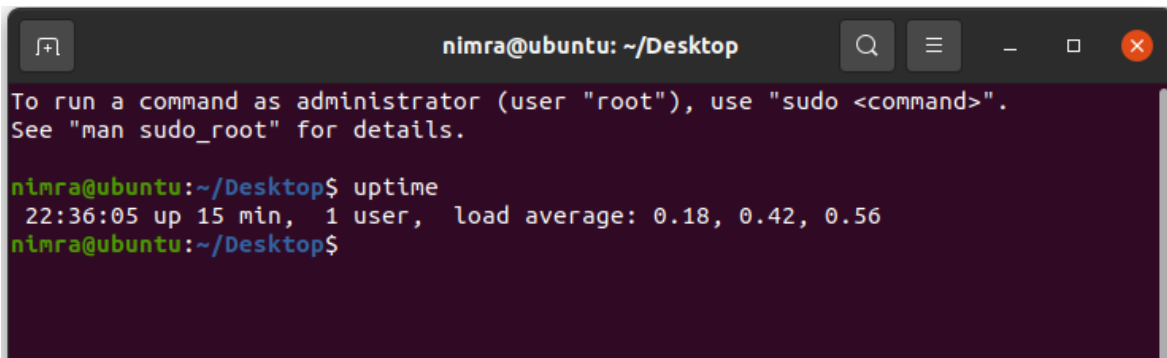
A terminal window titled 'nimra@ubuntu: ~/Desktop' with search, menu, and window control icons. It displays a message about running commands as administrator. The user enters 'uname' and the output is 'Linux'.

```
nimra@ubuntu: ~/Desktop$ uname
Linux
nimra@ubuntu: ~/Desktop$
```

v. **uptime**

Answer:

Displays the current time, how long the system has been running, how many users currently logged in.

A terminal window titled 'nimra@ubuntu: ~/Desktop' with search, menu, and window control icons. It displays a message about running commands as administrator. The user enters 'uptime' and the output shows the current time, system uptime, number of users, and load averages.

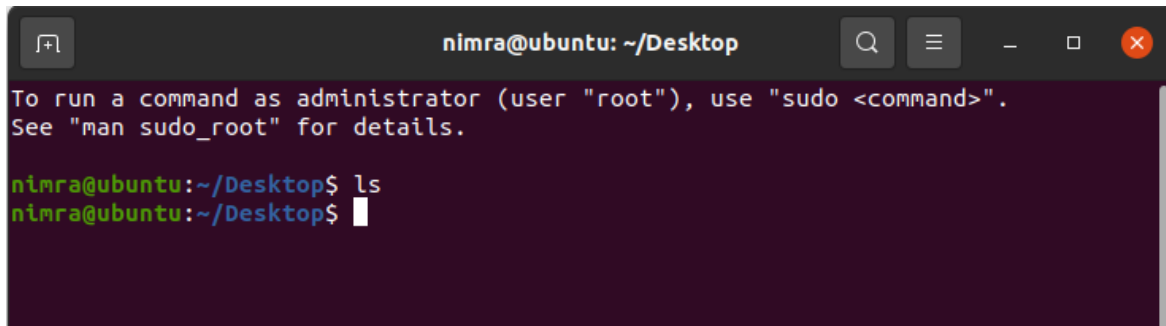
```
nimra@ubuntu: ~/Desktop$ uptime
22:36:05 up 15 min,  1 user,  load average: 0.18, 0.42, 0.56
nimra@ubuntu: ~/Desktop$
```

Question#2:

a. **Use the ls command to see if you have any files.**

Answer:

\$ ls



```
nimra@ubuntu: ~/Desktop
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

nimra@ubuntu:~/Desktop$ ls
nimra@ubuntu:~/Desktop$
```

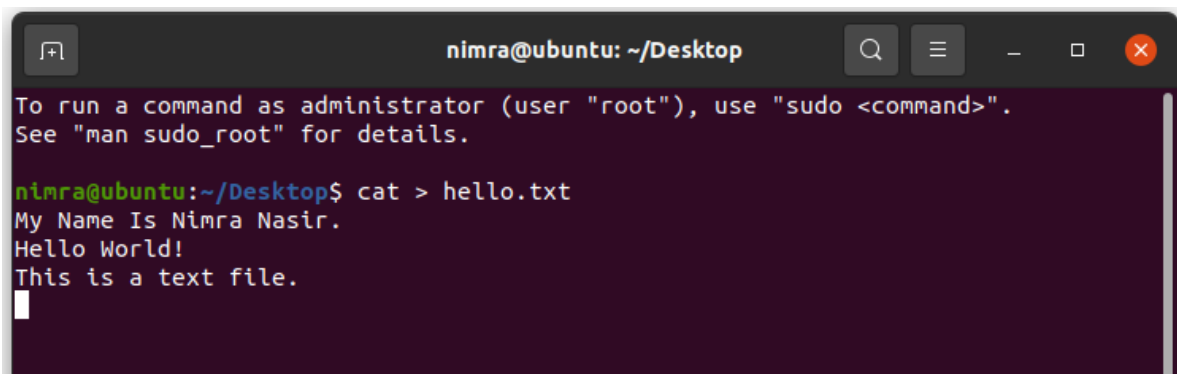
b. Create a new file using the cat command as follows:

```
$ cat > hello.txt
```

```
Hello world!
```

```
This is a text file.
```

Answer:

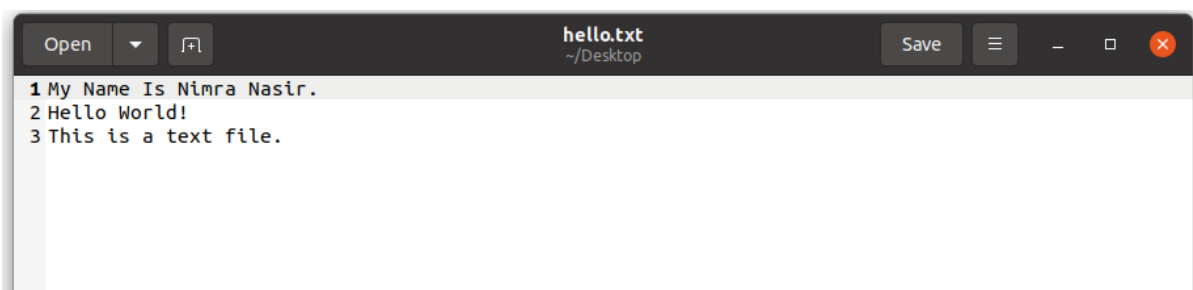


```
nimra@ubuntu: ~/Desktop
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

nimra@ubuntu:~/Desktop$ cat > hello.txt
My Name Is Nimra Nasir.
Hello World!
This is a text file.

```

Output:

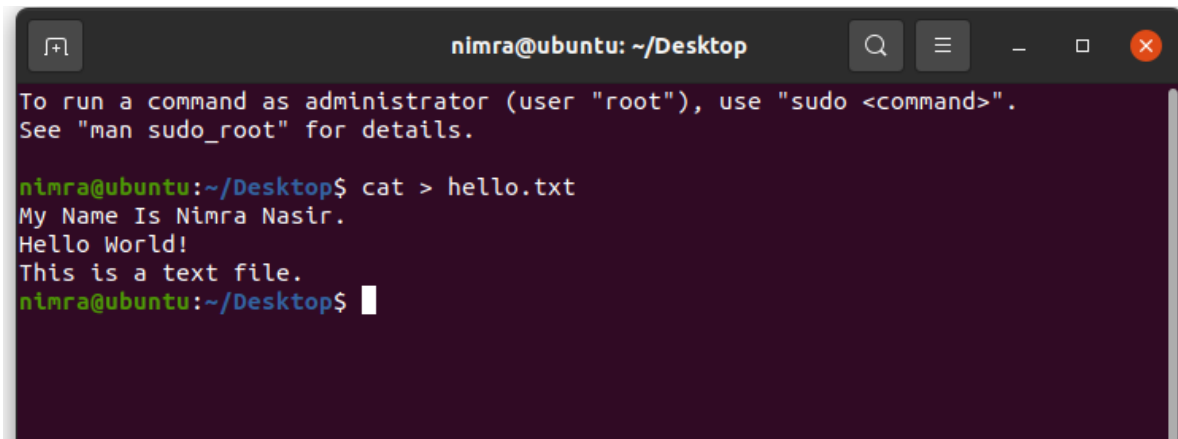


```
hello.txt
~/Desktop
1 My Name Is Nimra Nasir.
2 Hello World!
3 This is a text file.
```

- c. Press Enter at the end of the last line, then Ctrl + D to denote the end of the file.

Answer:

Go to the shell prompt and create a file using `cat > filename`. Enter the above contents into it.



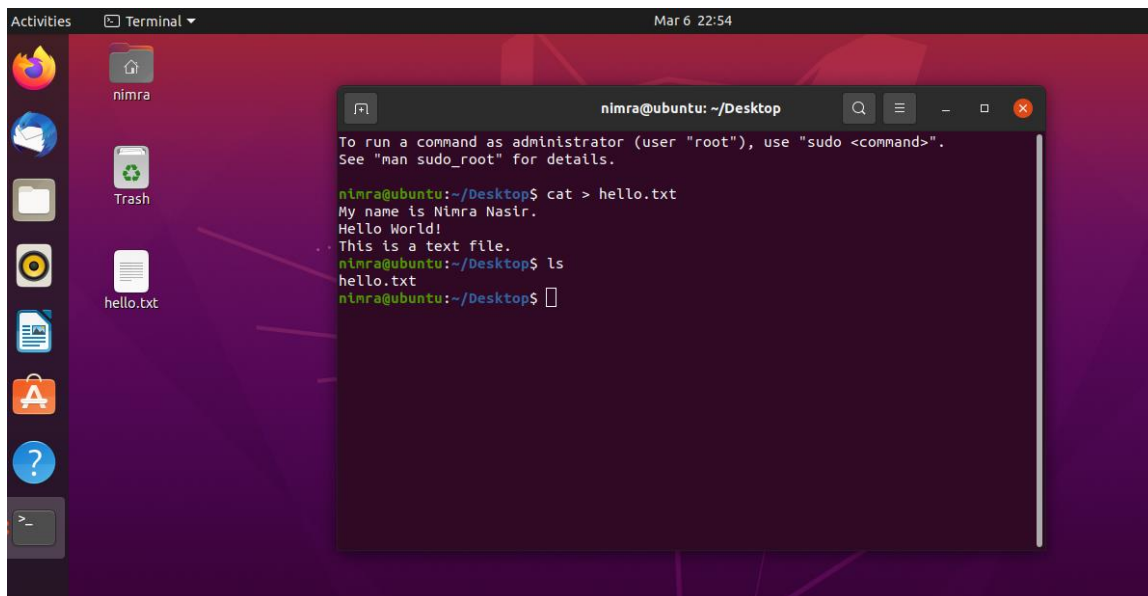
```
nimra@ubuntu: ~/Desktop
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

nimra@ubuntu:~/Desktop$ cat > hello.txt
My Name Is Nimra Nasir.
Hello World!
This is a text file.
nimra@ubuntu:~/Desktop$
```

- d. Use `ls` again to verify that the new file exists.

Answer:

`$ ls`



```
Activities Terminal Mar 6 22:54
nimra
Trash
hello.txt

nimra@ubuntu: ~/Desktop
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

nimra@ubuntu:~/Desktop$ cat > hello.txt
My name is Nimra Nasir.
Hello World!
This is a text file.
nimra@ubuntu:~/Desktop$ ls
hello.txt
nimra@ubuntu:~/Desktop$
```

e. Display the contents of the file.

Answer:


\$ cat hello.txt

```
nimra@ubuntu:~/Desktop$ cat hello.txt
My name is Nimra Nasir.
Hello World!
This is a text file.
nimra@ubuntu:~/Desktop$
```

f. Display the file again, but use the cursor keys to execute the same command again without having to retype it.

Answer:

Use the up arrow key & press enter.



The image shows a terminal window titled "nimra@ubuntu: ~/Desktop". It contains the following text:

```
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

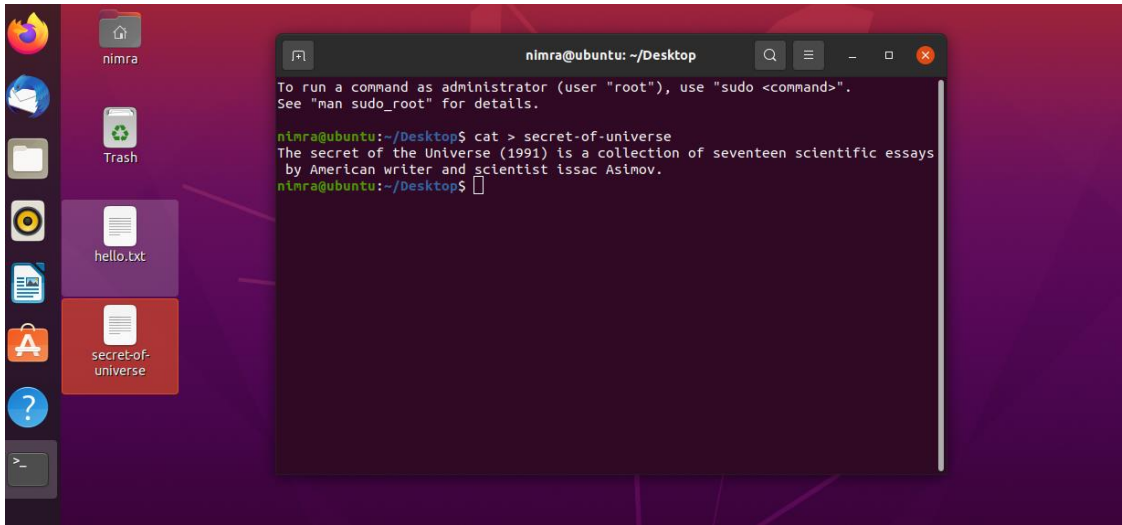
nimra@ubuntu:~/Desktop$ cat > hello.txt
My name is Nimra Nasir.
Hello World!
This is a text file.
nimra@ubuntu:~/Desktop$ ls
hello.txt
nimra@ubuntu:~/Desktop$ cat hello.txt
My name is Nimra Nasir.
Hello World!
This is a text file.
nimra@ubuntu:~/Desktop$ cat > hello.txt
```

Question#3:

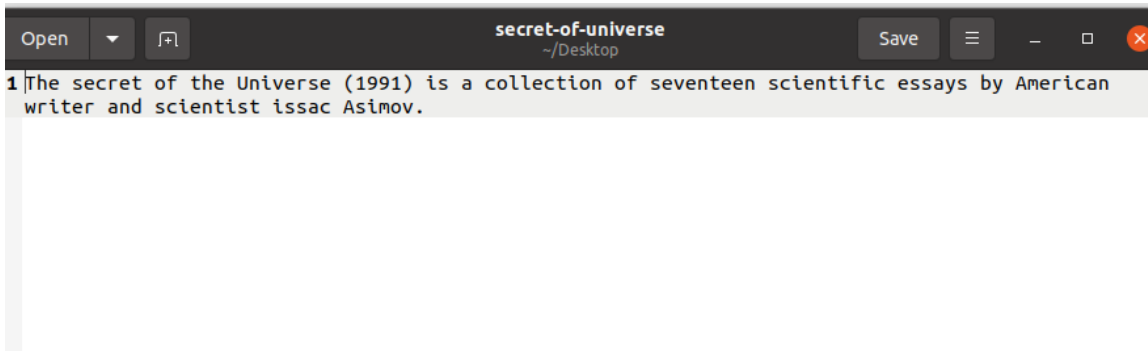
a. Create a second file. Call it secret-of-the-universe, and put in whatever content you deem appropriate.

Answer:

\$cat > secret-of-the-universe



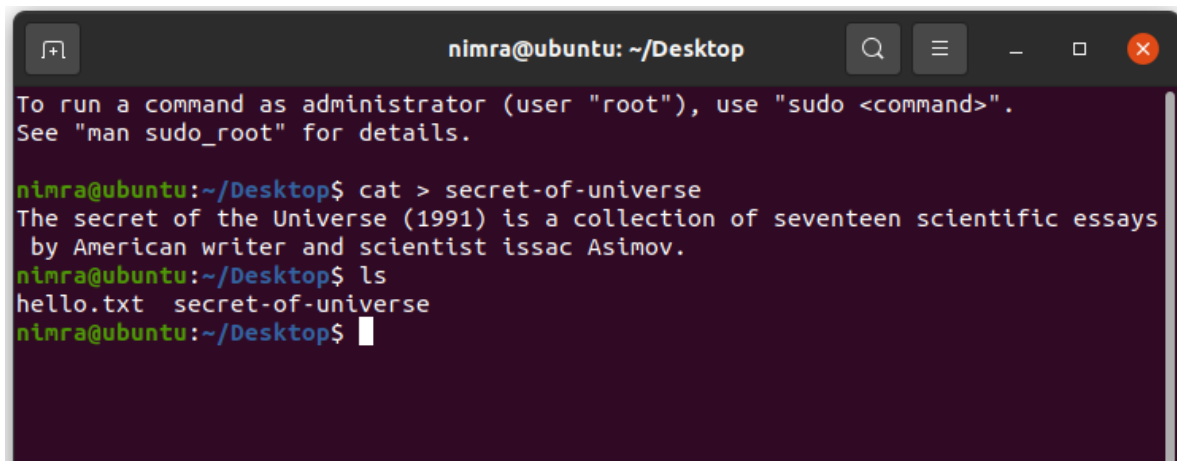
Output:



b. Check its creation with ls

Answer:

```
$ ls
```

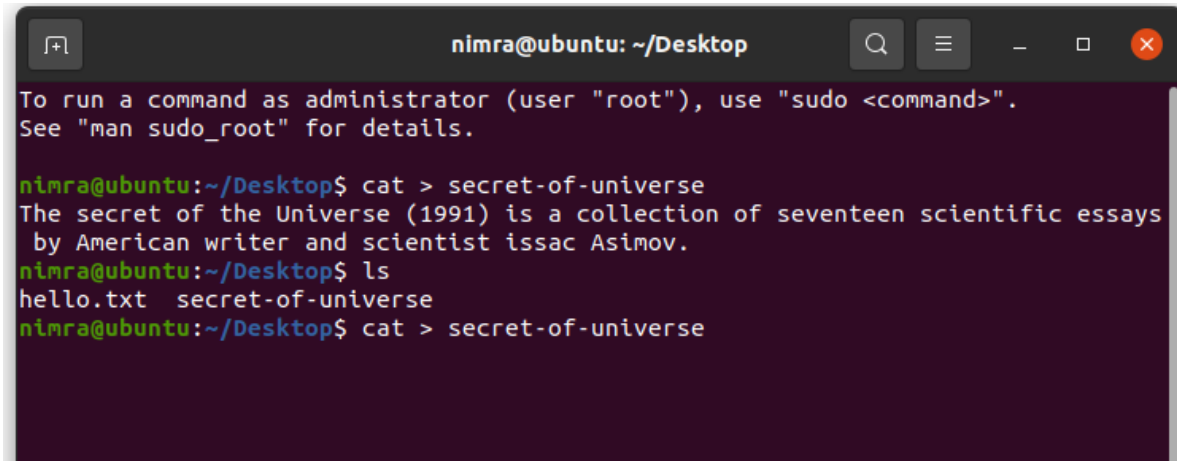


c. Display the contents of this file. Minimize the typing needed to do this:

i. Scroll back through the command history to the command you used to create the file.

Answer:

Use the up arrow key, there you can find `cat > secret-of-the-universe`



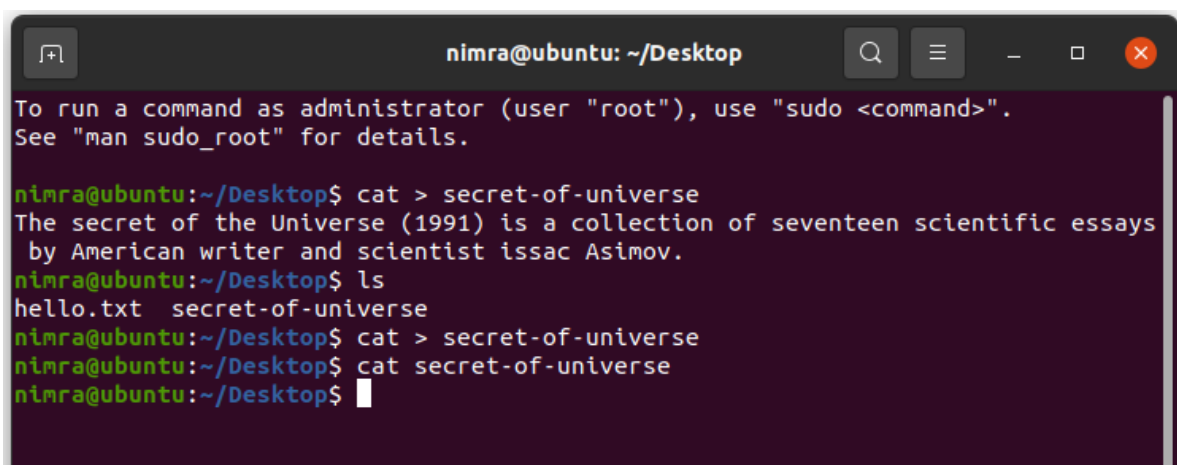
```
nimra@ubuntu: ~/Desktop
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

nimra@ubuntu:~/Desktop$ cat > secret-of-universe
The secret of the Universe (1991) is a collection of seventeen scientific essays
by American writer and scientist issac Asimov.
nimra@ubuntu:~/Desktop$ ls
hello.txt  secret-of-universe
nimra@ubuntu:~/Desktop$ cat > secret-of-universe
```

ii. Change that command to display secret-of-the-universe instead of creating it.

Answer:

Remove the symbol '`>`' and press enter.



```
nimra@ubuntu: ~/Desktop
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

nimra@ubuntu:~/Desktop$ cat > secret-of-universe
The secret of the Universe (1991) is a collection of seventeen scientific essays
by American writer and scientist issac Asimov.
nimra@ubuntu:~/Desktop$ ls
hello.txt  secret-of-universe
nimra@ubuntu:~/Desktop$ cat > secret-of-universe
nimra@ubuntu:~/Desktop$ cat secret-of-universe
nimra@ubuntu:~/Desktop$
```

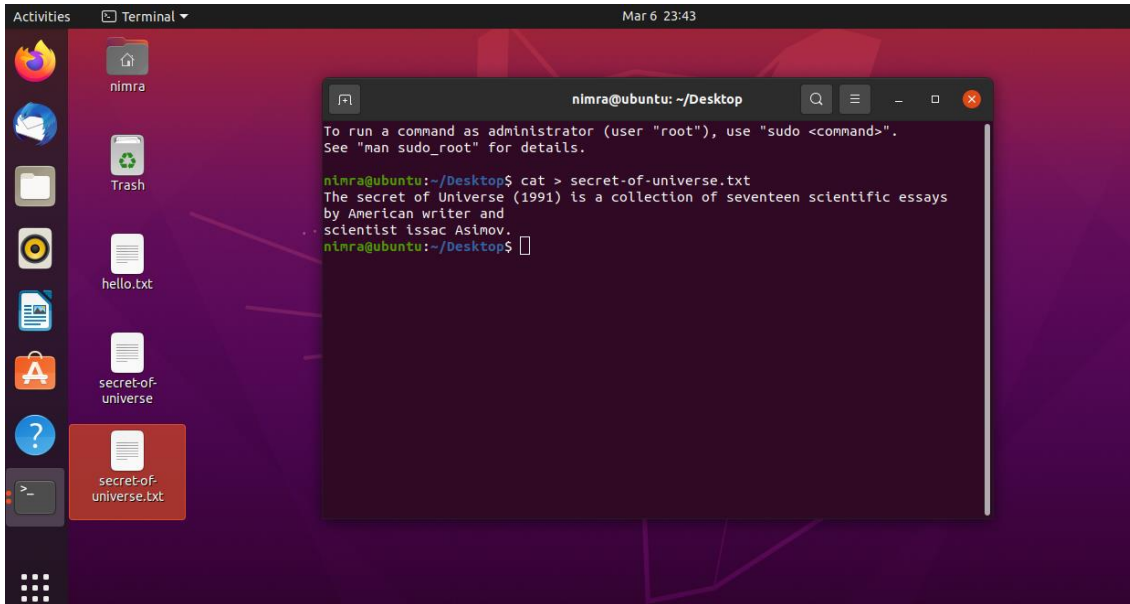

Question#4:

After each of the following steps, use ls and cat to verify what has happened.

- a. Copy secret-of-the-universe to a new file called answer.txt. Use Tab to avoid typing the existing file's name in full.

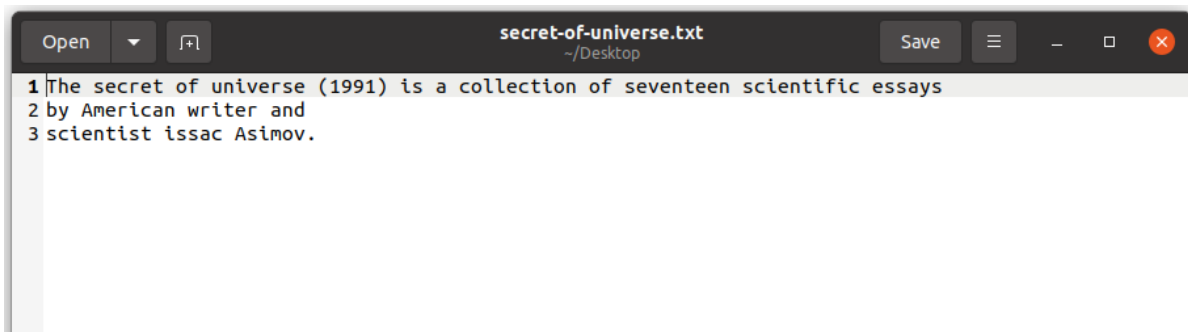
Answer:

Cat > secret-of-the-universe answer.txt

A screenshot of a Linux desktop environment. On the left is a vertical dock with icons for Firefox, a file manager, Trash, a terminal, and several text files including 'hello.txt', 'secret-of-universe', and 'secret-of-universe.txt'. The main area shows a terminal window titled 'nimra@ubuntu: ~/Desktop'. The terminal displays a message about running commands as administrator, followed by the command 'cat > secret-of-universe.txt' and its output: 'The secret of Universe (1991) is a collection of seventeen scientific essays by American writer and scientist issac Asimov.' The prompt 'nimra@ubuntu:~/Desktop\$' is visible at the bottom of the terminal.

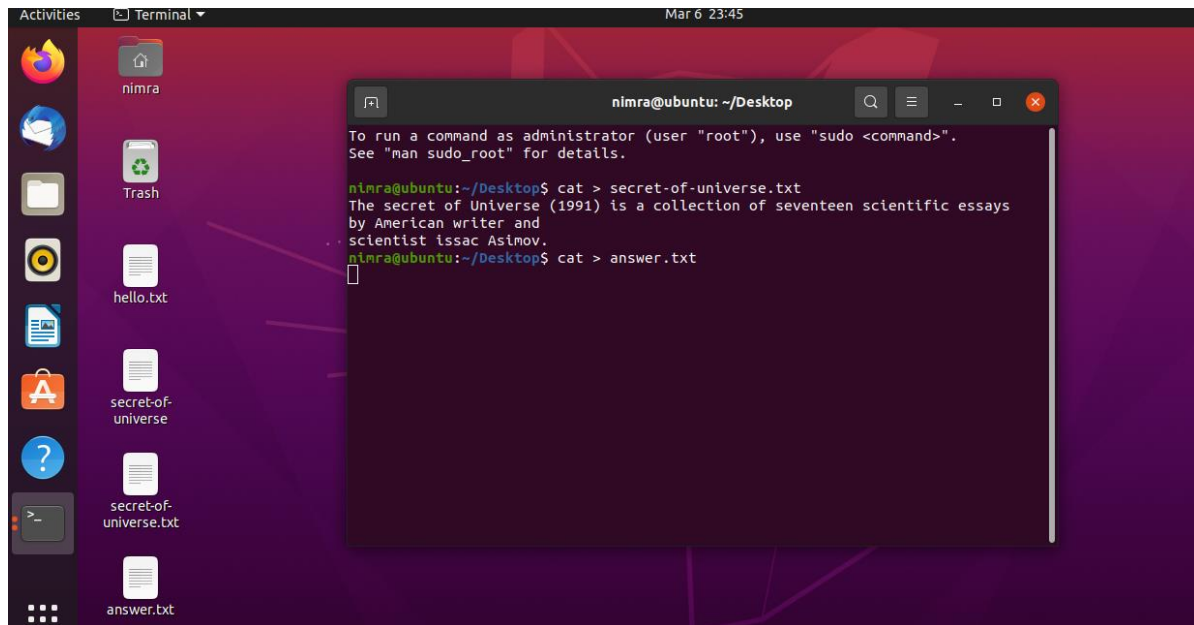
```
Activities Terminal Mar 6 23:43
nimra@ubuntu: ~/Desktop
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.
nimra@ubuntu:~/Desktop$ cat > secret-of-universe.txt
The secret of Universe (1991) is a collection of seventeen scientific essays
by American writer and
scientist issac Asimov.
nimra@ubuntu:~/Desktop$
```

Output:

A screenshot of a text editor window titled 'secret-of-universe.txt' with the path '~/Desktop'. The window has 'Open', 'Save', and menu icons. The text inside the editor is: '1 The secret of universe (1991) is a collection of seventeen scientific essays', '2 by American writer and', and '3 scientist issac Asimov.'.

```
secret-of-universe.txt ~/Desktop
Open Save
1 The secret of universe (1991) is a collection of seventeen scientific essays
2 by American writer and
3 scientist issac Asimov.
```

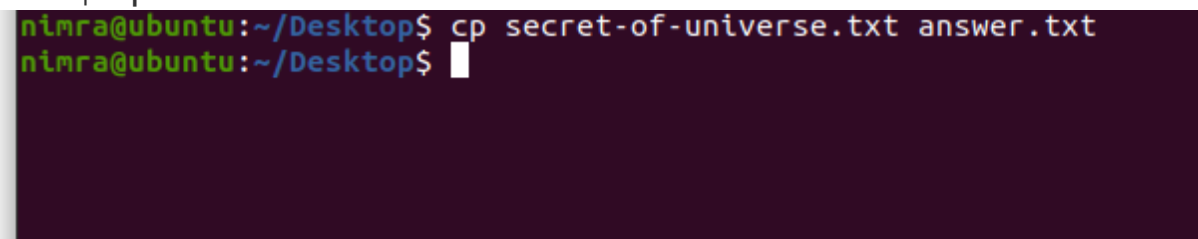
\$ cat > answer.txt



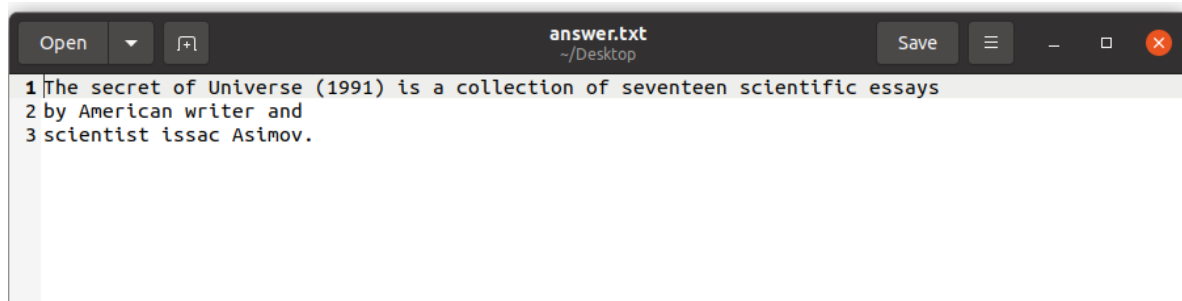
Output:



\$ cp secret-of-the-universe.txt answer.txt.



Output:



```
Open  [icon]  answer.txt  Save  [icon]  [icon]  [icon]
1 The secret of Universe (1991) is a collection of seventeen scientific essays
2 by American writer and
3 scientist issac Asimov.
```

\$ cat answer.txt

```
nimra@ubuntu:~/Desktop$ cat answer.txt
The secret of universe (1991) is a collection of seventeen scientific essays
by American writer and
scientist issac Asimov.
nimra@ubuntu:~/Desktop$
```

\$ ls

```
nimra@ubuntu:~/Desktop$ cat answer.txt
The secret of universe (1991) is a collection of seventeen scientific essays
by American writer and
scientist issac Asimov.
nimra@ubuntu:~/Desktop$ ls
answer.txt  hello.txt  secret-of-universe  secret-of-universe.txt
nimra@ubuntu:~/Desktop$
```

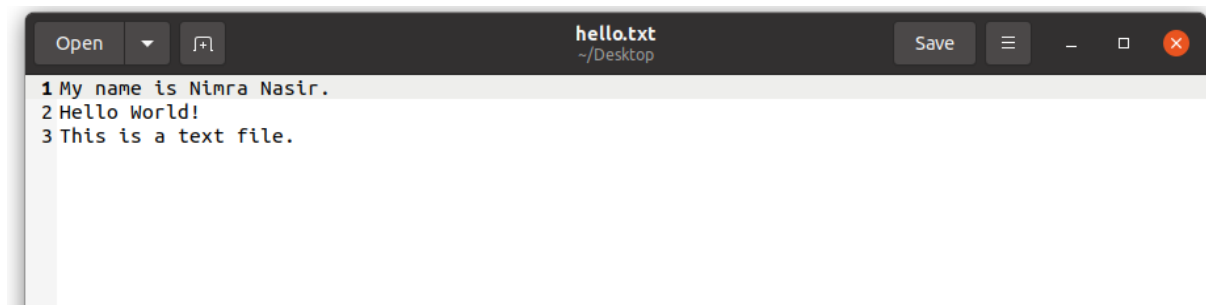
b. Now copy hello.txt to answer.txt. What's happened now?

Answer:

\$ cat hello.txt

```
nimra@ubuntu:~/Desktop$ cat hello.txt
My name is Nimra Nasir.
Hello World!
This is a text file.
nimra@ubuntu:~/Desktop$
```

Output:

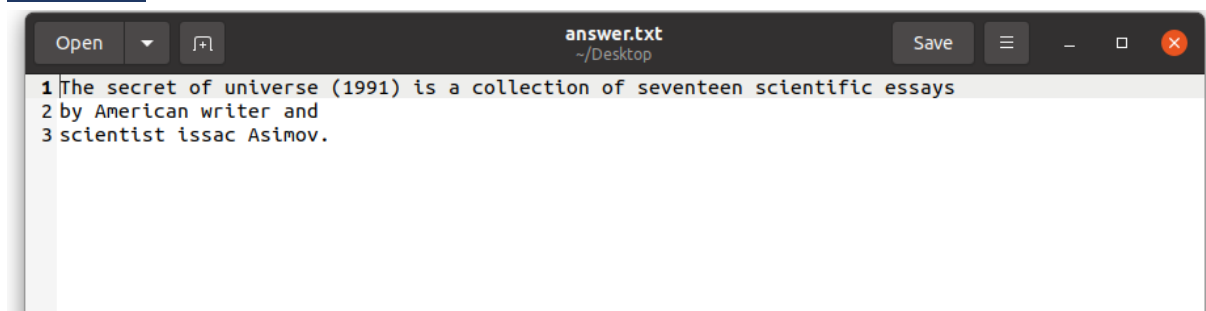


```
Open  hello.txt  Save  ~/Desktop
1 My name is Nimra Nasir.
2 Hello World!
3 This is a text file.
```

\$ cat answer.txt

```
nimra@ubuntu:~/Desktop$ cat answer.txt
The secret of universe (1991) is a collection of seventeen scientific essays
by American writer and
scientist issac Asimov.
nimra@ubuntu:~/Desktop$
```

Output:



```
Open  answer.txt  Save  ~/Desktop
1 The secret of universe (1991) is a collection of seventeen scientific essays
2 by American writer and
3 scientist issac Asimov.
```

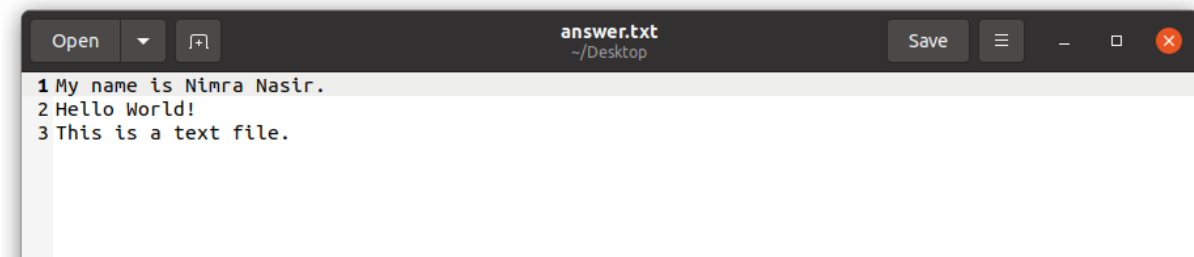
\$ cp hello.txt answer.txt

```
nimra@ubuntu:~/Desktop$ cp hello.txt answer.txt
nimra@ubuntu:~/Desktop$ ls
answer.txt  hello.txt  secret-of-universe  secret-of-universe.txt
nimra@ubuntu:~/Desktop$
```

\$ cat answer.txt

```
nimra@ubuntu:~/Desktop$ cat answer.txt
My name is Nimra Nasir.
Hello World!
This is a text file.
nimra@ubuntu:~/Desktop$
```

Output:

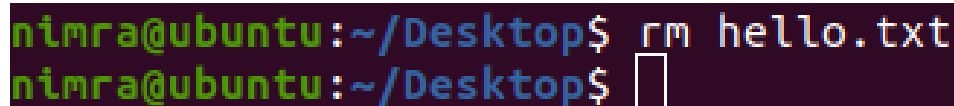


```
Open  [icon]  answer.txt ~/Desktop  Save  [icon]  [icon]  [icon]  [icon]
1 My name is Nimra Nasir.
2 Hello World!
3 This is a text file.
```

- c. Delete the original file, hello.txt.

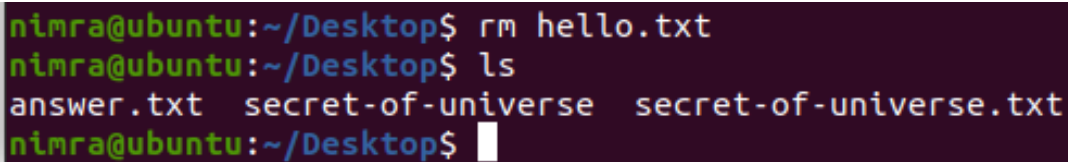
Answer:

\$ rm hello.txt



```
nimra@ubuntu:~/Desktop$ rm hello.txt
nimra@ubuntu:~/Desktop$
```

\$ ls (makes sure the removal of hello.txt)



```
nimra@ubuntu:~/Desktop$ rm hello.txt
nimra@ubuntu:~/Desktop$ ls
answer.txt  secret-of-universe  secret-of-universe.txt
nimra@ubuntu:~/Desktop$
```

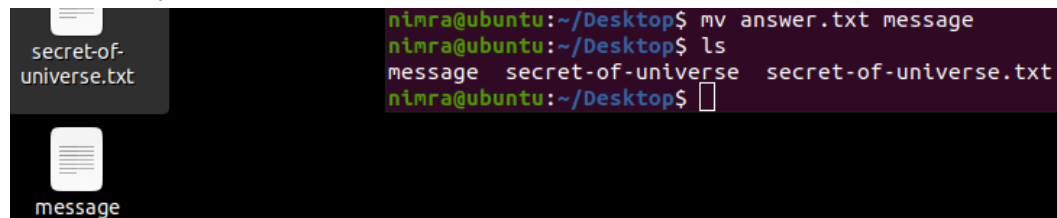
- d. Rename answer.txt to message.

Answer:

\$ mv answer.txt message.

mv – this command operates like copying and deleting

\$ ls (makes sure the removal of answer.txt & creation of message file)



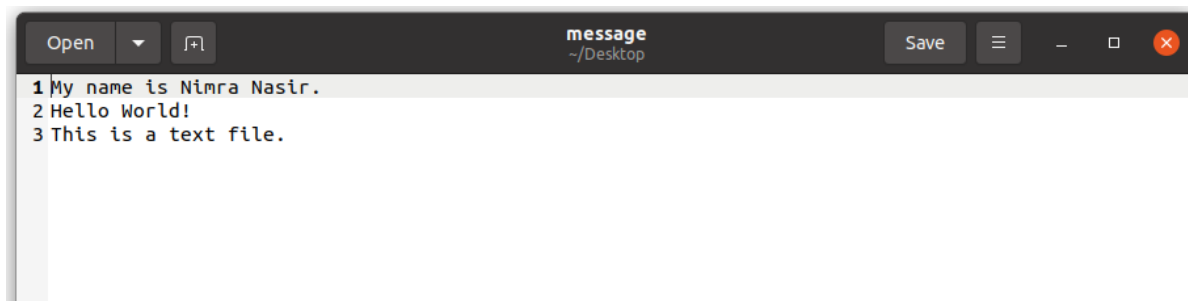
```
secret-of-universe.txt
message

nimra@ubuntu:~/Desktop$ mv answer.txt message
nimra@ubuntu:~/Desktop$ ls
message  secret-of-universe  secret-of-universe.txt
nimra@ubuntu:~/Desktop$
```

\$ cat message (displays the contents of answer.txt file)

```
nimra@ubuntu:~/Desktop$ cat message
My name is Nimra Nasir.
Hello World!
This is a text file.
nimra@ubuntu:~/Desktop$
```

Output:



- e. Try asking rm to delete a file called missing. What happens?

Answer:

\$ rm answer.txt

```
nimra@ubuntu:~/Desktop$ rm answer.txt
rm: cannot remove 'answer.txt': No such file or directory
nimra@ubuntu:~/Desktop$
```

- f. Try copying secret-of-the-universe again, but don't specify a filename to which to copy. What happens now?

Answer:

\$ cp secret-of-the-universe

```
nimra@ubuntu:~/Desktop$ cp secret-of-the-universe
cp: missing destination file operand after 'secret-of-the-universe'
Try 'cp --help' for more information.
nimra@ubuntu:~/Desktop$
```
