

NA1 Project Report

By: Shuchita Khandelwal(16186181)
Anuja Sawant(16210449)

Screenshots:

1. Creating Slice:

Home → Project *NA-1-Spring16Course* → Create Slice in project *NA-1-Spring16Course*

Create New Slice

A GENI slice is a container for reserving and managing a set of GENI resources.

Project name	NA-1-Spring16Course
Slice name	Spring16Echo -- Required
Slice description	Project

Note: Slice names must not contain whitespace. Use at most 19 alphanumeric characters or hyphen (no leading hyphen) : "a-zA-Z0-9-".

Note: Slice names are public and must be unique across your project.

[Create slice](#) [Cancel](#)

2. Adding resource:

GENI Portal Home Tools Partners Help Khandelwal, Shuchita (UMKC-Student)

Slice: Spring16Echo Project: NA-1-Spring16Course Slice expires in 4 days ✓ Project expires in 58 days ✓ [Add Resources](#) [Renew](#) [Tools](#)

Manage Resources

Resources on Missouri InstaGENI are ready. [View Rspec](#)

```
graph TD; Client[Client] --- Server[Server];
```

Renew Delete SSH Restart Snapshot Details [Add Resources](#) [Expand](#)

3. Resource details page:

GENI Portal

Home → Project NA-1-Spring16Course → Slice Spring16Echo → Resources on Slice Spring16Echo

Resources on slice: Spring16Echo

Queried 1 of 1 aggregates.

[Refresh All Details](#) [Refresh Status Only](#)

Status	Aggregate
READY	Missouri-InstaGENI

Aggregate Missouri InstaGENI's Resources:

Node #1:

Status	Client ID	Component ID	Expiration	Type	Hostname
READY	Client	pc2	2016-03-28T01:14:23.000Z	default-vm	Client.Spring16Echo.ch-geni-net.instageni.rnet.missouri.edu
Login	ssh_hpac778ec2.instageni.rnet.missouri.edu_p_32314 ssh_chujiy8ec2.instageni.rnet.missouri.edu_p_32314 ssh_skr46ec2.instageni.rnet.missouri.edu_p_32314				
Interfaces	MAC		Layer 3		
interface-0	pc2:1a0	0295c1d6d1d6	ipn4: 10.0.0.1		

Node #2:

Status	Client ID	Component ID	Expiration	Type	Hostname
READY	Server	pc2	2016-03-28T01:14:23.000Z	default-vm	Server.Spring16Echo.ch-geni-net.instageni.rnet.missouri.edu
Login	ssh_hpac778ec2.instageni.rnet.missouri.edu_p_32315 ssh_chujiy8ec2.instageni.rnet.missouri.edu_p_32315 ssh_skr46ec2.instageni.rnet.missouri.edu_p_32315				
Interfaces	MAC		Layer 3		
interface-1	pc2:1a0	02d1a970ed46	ipn4: 1.0.0.2		

Link #1:

Client ID	Endpoint #0	Endpoint #1
Link-0	interface-0	interface-1

4. Question 1 part a) : Server:

```
skr46@server: ~  
skr46@server:~$ python server.py  
(Got connection from', ('172.17.2.14', 58290))  
Message received is: Hello!  
Enter your message:Hey!  
Echoed message: Hey!  
continue connection...  
(Got connection from', ('172.17.2.14', 58294))  
Message received is: How are you?  
Enter your message:I am good. How are you?  
Echoed message: I am good. How are you?  
continue connection...  
(Got connection from', ('172.17.2.14', 58299))  
Message received is: When can I meet you?  
Enter your message:3 pm?  
Echoed message: 3 pm?  
continue connection...  
(Got connection from', ('172.17.2.14', 58304))  
Message received is: Yes, Thats good  
Enter your message:See you.  
Echoed message: See you.  
Message received is: bye from client.Closing connection !!  
skr46@server:~$
```

Client:

```
skr46@client: ~  
skr46@client:~$ python client.py  
Enter your message:Hello!  
Message received is: Hey!  
Echoed message: Hello!  
Do you want to continue ?(y/n)y  
Enter your message:How are you?  
Message received is: I am good. How are you?  
Echoed message: How are you?  
Do you want to continue ?(y/n)y  
Enter your message:When can I meet you?  
Message received is: 3 pm?  
Echoed message: When can I meet you?  
Do you want to continue ?(y/n)y  
Enter your message:Yes, That's good  
Message received is: See you.  
Echoed message: Yes, That's good  
Do you want to continue ?(y/n)n  
Message received was: bye from server.Closing connection !!  
skr46@client:~$
```

5. Question 1 part b) :

Server:

```
skr46@server: ~  
skr46@server:~$ python server1b.py  
Server listening...  
(Got connection from', ('172.17.2.14', 51842))  
Received File is:  
  
The gift of the Magi-by O. Henry  
  
ONE DOLLAR AND EIGHTY-SEVEN CENTS. THAT WAS ALL. AND SIXTY CENTS of it was in pennies. Pennies saved one and two at a time by bulldozing the grocer and the vegetable man and the butcher until one's cheeks burned with the silent imputation of parsimony that such close dealing implied. Three times Della counted it. One dollar and eighty-seven cents. And the next day would be Christmas.  
  
There was clearly nothing left to do but flop down on the shabby little couch and howl. So Della did it. Which instigates the moral reflection that life is made up of sobs, sniffles, and smiles, with sniffles predominating.  
  
While the mistress of the home is gradually subsiding from the first stage to the second, take a look at the home. A furnished flat at $8 per week. It did not exactly beggar description, but it certainly had that word on the look-out for the mendicancy squad.  
  
In the vestibule below was a letter-box into which no letter would go, and an electric button from which no mortal finger could coax a ring. Also appertaining thereto was a card bearing the name "Mr. James Dillingham Young."  
  
The "Dillingham" had been flung to the breeze during a former period of prosperity when its possessor was being paid $30 per week. Now, when the income was shrunk to $20, the letters of "Dillingham" looked blurred, as though they were thinking seriously of contracting to a modest and unassuming D. But whenever Mr. James Dillingham Young came home and reached his flat above he was called "Jim" and greatly hugged by Mrs. James Dillingham Young, already introduced to you as Della. Which is all very good.
```

Client:

```
skr46@client: ~
Jim had not yet seen his beautiful present. She held it out to him eagerly upon
her open palm. The dull precious metal seemed to flash with a reflection of her
bright and ardent spirit.

"Isn't it a dandy, Jim? I hunted all over town to find it. You'll have to look a
t the time a hundred times a day now. Give me your watch. I want to see how it l
ooks on it."

Instead of obeying, Jim tumbled down on the couch and put his hands under the ba
ck of his head and smiled.

"Dell," said he, "let's put our Christmas presents away and keep 'em a while. Th
ey're too nice to use just at present. I sold the watch to get the money to buy
your combs. And now suppose you put the chops on."

The magi, as you know, were wise men--wonderfully wise men--who brought gifts to
the Babe in the manger. They invented the art of giving Christmas presents. Bein
g wise, their gifts were no doubt wise ones, possibly bearing the privilege of e
xchange in case of duplication. And here I have lamely related to you the uneven
tful chronicle of two foolish children in a flat who most unwisely sacrificed fo
r each other the greatest treasures of their house. But in a last word to the wi
se of these days let it be said that of all who give gifts these two were the wi
sest. Of all who give and receive gifts, such as they are wisest. Everywhere the
y are wisest.

They are the magi.

*****ADDITIONAL LINE*****
end
skr46@client:~$
```

6. Question 2 part a) : Server and Client

```
Terminal
skr46@server: ~
Done !!

Received File Is:

skr46@server:~$ clear

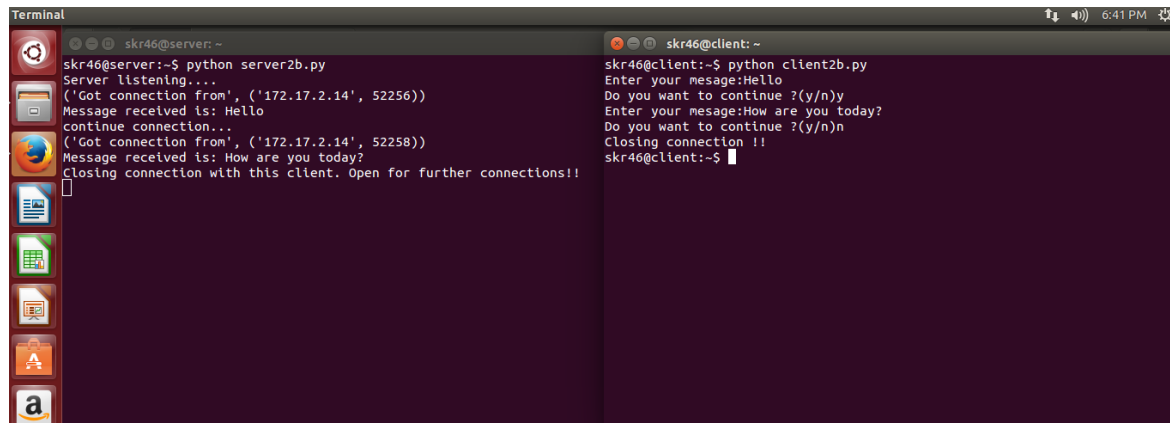
skr46@server:~$ python server2a.py
Server listening...
('Got connection from', ('172.17.2.14', 51903))
Message received is: Hey!
continue connection...
('Got connection from', ('172.17.2.14', 51910))
Message received is: How are you?
continue connection...
('Got connection from', ('172.17.2.14', 51916))
Message received is: What are you doing?
continue connection...
('Got connection from', ('172.17.2.14', 51919))
Message received is: Send me a message
continue connection...
('Got connection from', ('172.17.2.14', 51923))
Message received is: exit.Closing connection !!
skr46@server:~$

skr46@client: ~
They are the magi.

*****ADDITIONAL LINE*****
end
skr46@client:~$ clear

skr46@client:~$ python client2a.py
Enter your message:Hey!
Do you want to continue ?(y/n)y
Enter your message:How are you?
Do you want to continue ?(y/n)y
Enter your message:What are you doing?
Do you want to continue ?(y/n)y
Enter your message:Send me a message
Do you want to continue ?(y/n)y
Enter your message:exit
Closing connection !!
skr46@client:~$
```

7. Question 2 part b) : Server and Client



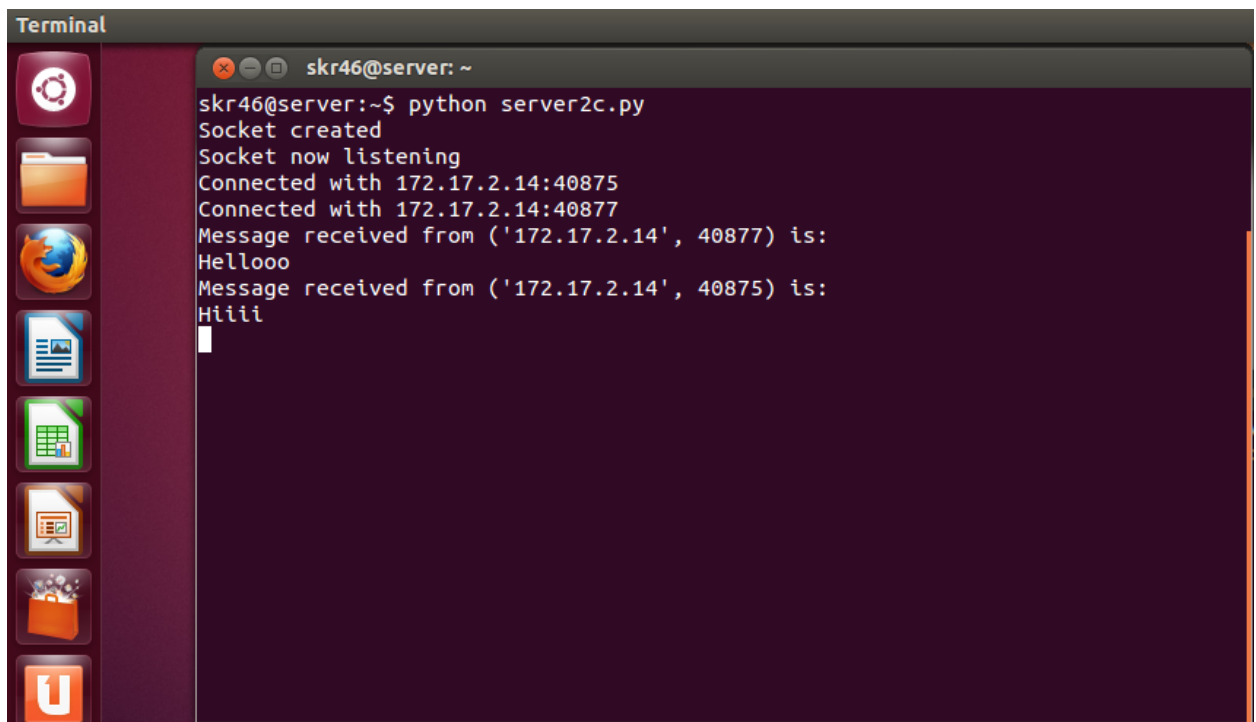
The screenshot shows two terminal windows side-by-side. The left window is titled 'skr46@server: ~' and shows the execution of 'python server2b.py'. It displays two successful connections from '172.17.2.14' with messages 'Hello' and 'How are you today?'. The right window is titled 'skr46@client: ~' and shows the execution of 'python client2b.py'. It shows the user entering 'Hello' and 'How are you today?' in response to the server's prompts, and then the connection closing.

```
skr46@server:~$ python server2b.py
Server listening....
('Got connection from', ('172.17.2.14', 52256))
Message received is: Hello
continue connection...
('Got connection from', ('172.17.2.14', 52258))
Message received is: How are you today?
Closing connection with this client. Open for further connections!!

skr46@client:~$ python client2b.py
Enter your message:Hello
Do you want to continue ?(y/n)y
Enter your message:How are you today?
Do you want to continue ?(y/n)n
Closing connection !!
skr46@client:~$
```

8. Question 2 part c) :

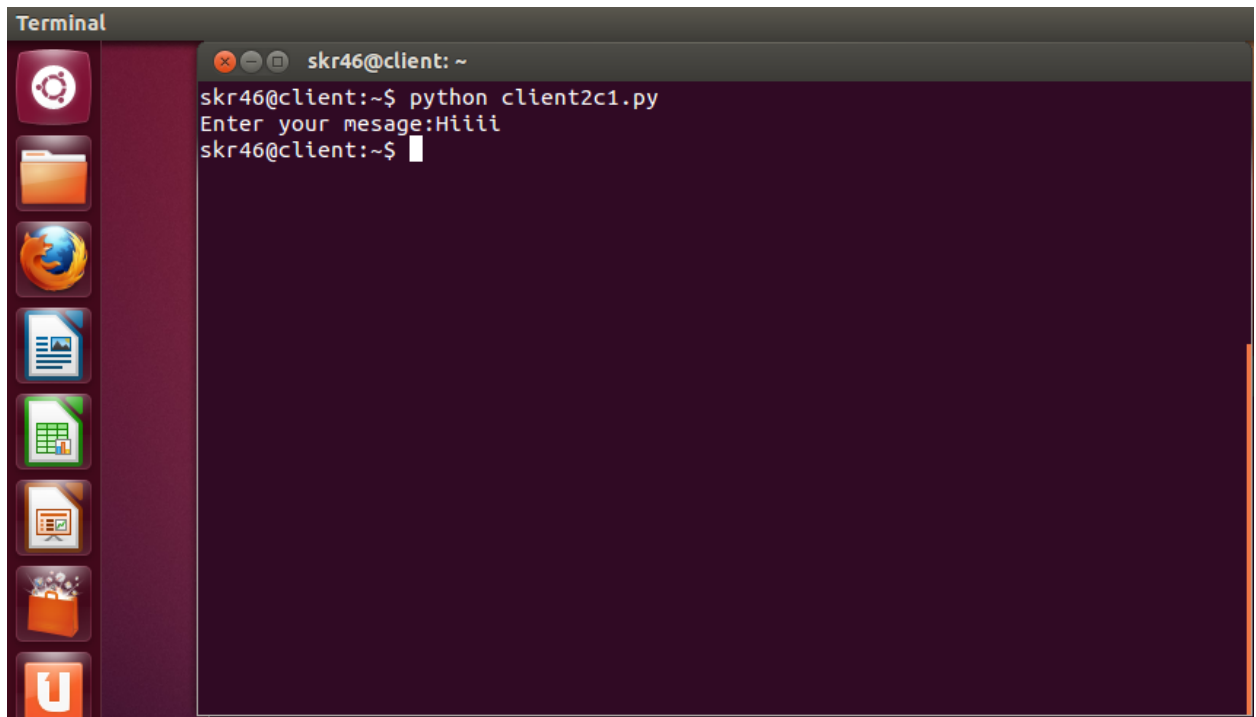
Server:



The screenshot shows a terminal window titled 'skr46@server: ~'. The user has run 'python server2c.py'. The output shows the socket being created and listening, followed by two connections from '172.17.2.14' with messages 'Hellooo' and 'Hiiii'.

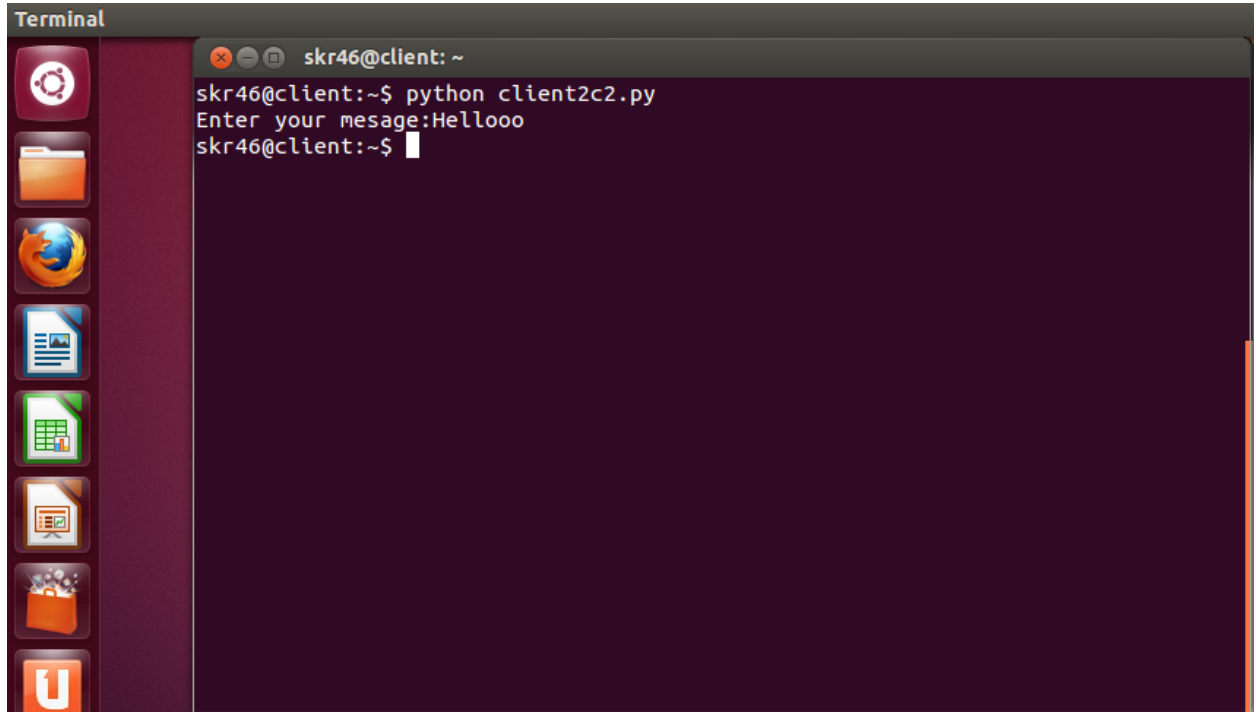
```
skr46@server:~$ python server2c.py
Socket created
Socket now listening
Connected with 172.17.2.14:40875
Connected with 172.17.2.14:40877
Message received from ('172.17.2.14', 40877) is:
Hellooo
Message received from ('172.17.2.14', 40875) is:
Hiiii
```

Client1:

A terminal window titled "Terminal" with a dark purple background. The window has a sidebar on the left with icons for various applications. The terminal text shows a user named "skr46" at a machine named "client" in the home directory. They run the command "python client2c1.py", which prompts them to "Enter your mesage:Hiii". The user then enters the message "Hiii" and the prompt returns.

```
Terminal
skr46@client: ~
skr46@client:~$ python client2c1.py
Enter your mesage:Hiii
skr46@client:~$
```

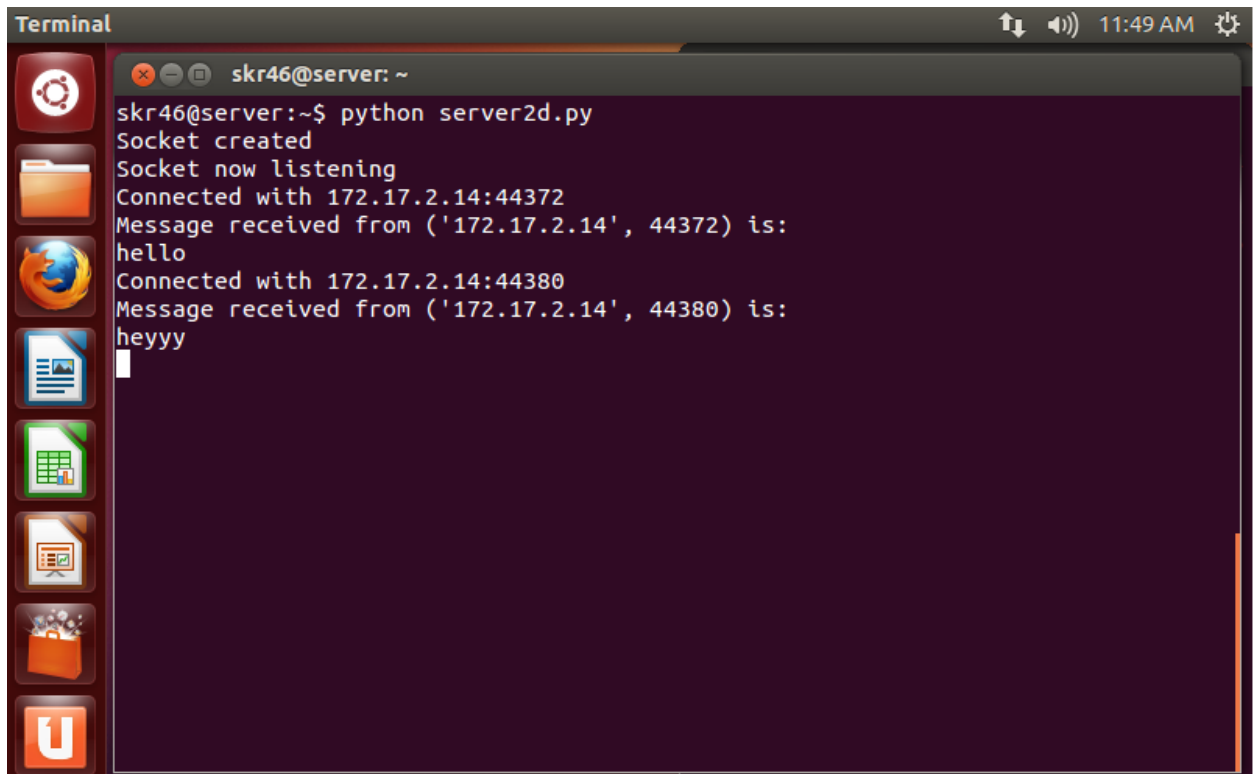
Client2:

A terminal window titled "Terminal" with a dark purple background. The window has a sidebar on the left with icons for various applications. The terminal text shows a user named "skr46" at a machine named "client" in the home directory. They run the command "python client2c2.py", which prompts them to "Enter your mesage:Hellooo". The user then enters the message "Hellooo" and the prompt returns.

```
Terminal
skr46@client: ~
skr46@client:~$ python client2c2.py
Enter your mesage:Hellooo
skr46@client:~$
```

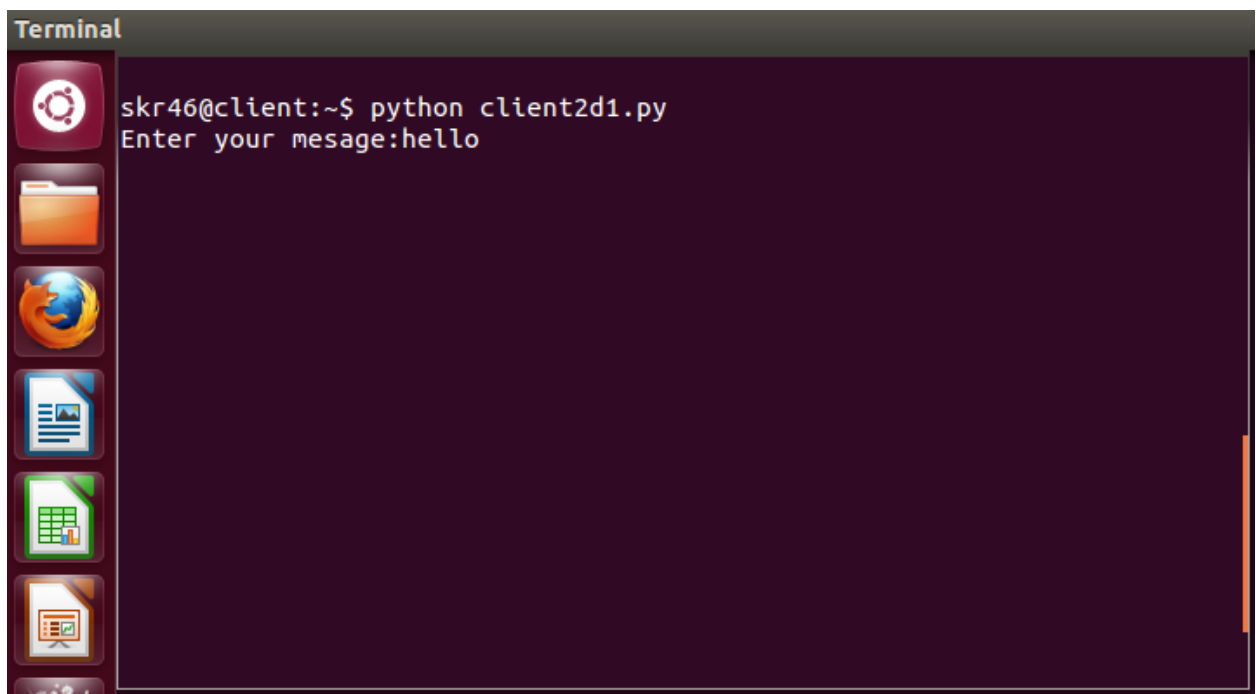
9. Question 2 part d) :

Server:

A terminal window titled "Terminal" with a dark background and a light-colored title bar. The title bar includes standard window controls (minimize, maximize, close) and system status icons (network, volume, time 11:49 AM, settings). The terminal content shows the execution of a Python script "server2d.py" on a machine named "skr46@server". The output indicates that a socket was created and is now listening. It then shows two successful connections from the IP address 172.17.2.14. The first connection at port 44372 received the message "hello". The second connection at port 44380 received the message "heyyy". The terminal has a vertical scrollbar on the right side.

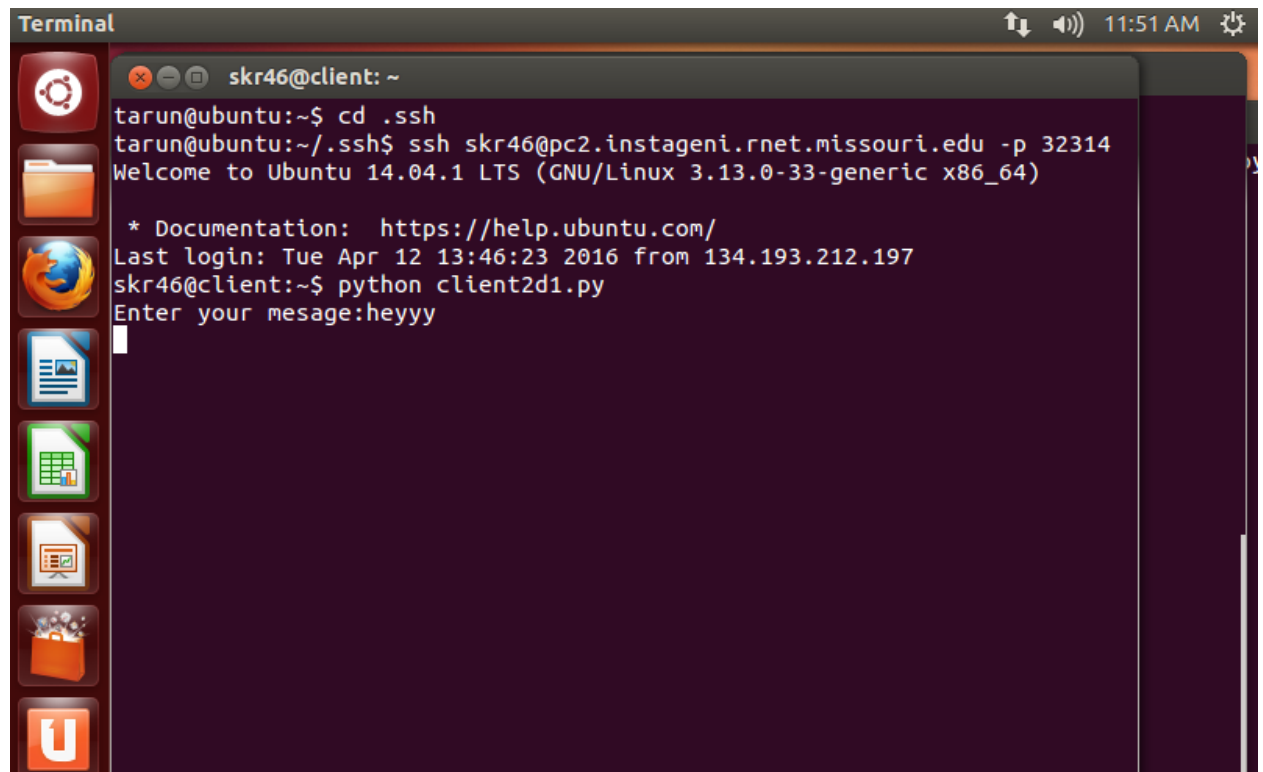
```
Terminal
skr46@server: ~
skr46@server:~$ python server2d.py
Socket created
Socket now listening
Connected with 172.17.2.14:44372
Message received from ('172.17.2.14', 44372) is:
hello
Connected with 172.17.2.14:44380
Message received from ('172.17.2.14', 44380) is:
heyyy
```

Client1:

A terminal window titled "Terminal" with a dark background and a light-colored title bar. The title bar includes standard window controls (minimize, maximize, close) and system status icons (network, volume, time 11:49 AM, settings). The terminal content shows the execution of a Python script "client2d1.py" on a machine named "skr46@client". The prompt "Enter your message:" is displayed, and the user has entered the message "hello". The terminal has a vertical scrollbar on the right side.

```
Terminal
skr46@client:~$ python client2d1.py
Enter your message:hello
```

Client2:



The image shows a terminal window titled "Terminal" with a dark background. The window has a title bar with standard Ubuntu window controls (minimize, maximize, close) and system status icons (network, volume, time) on the right. The time is 11:51 AM. On the left side of the terminal, there is a vertical dock with icons for Dash, Home Folder, Firefox, LibreOffice Writer, LibreOffice Calc, LibreOffice Impress, and the Ubuntu logo. The terminal content shows a shell session where tarun@ubuntu connects to skr46@client via SSH. The session includes a welcome message, documentation link, last login time, and the execution of a Python script named client2d1.py which prompts for a message.

```
Terminal 11:51 AM
skr46@client: ~
tarun@ubuntu:~$ cd .ssh
tarun@ubuntu:~/.ssh$ ssh skr46@pc2.instageni.rnet.missouri.edu -p 32314
Welcome to Ubuntu 14.04.1 LTS (GNU/Linux 3.13.0-33-generic x86_64)

 * Documentation:  https://help.ubuntu.com/
Last login: Tue Apr 12 13:46:23 2016 from 134.193.212.197
skr46@client:~$ python client2d1.py
Enter your mesage:heyyy
```