

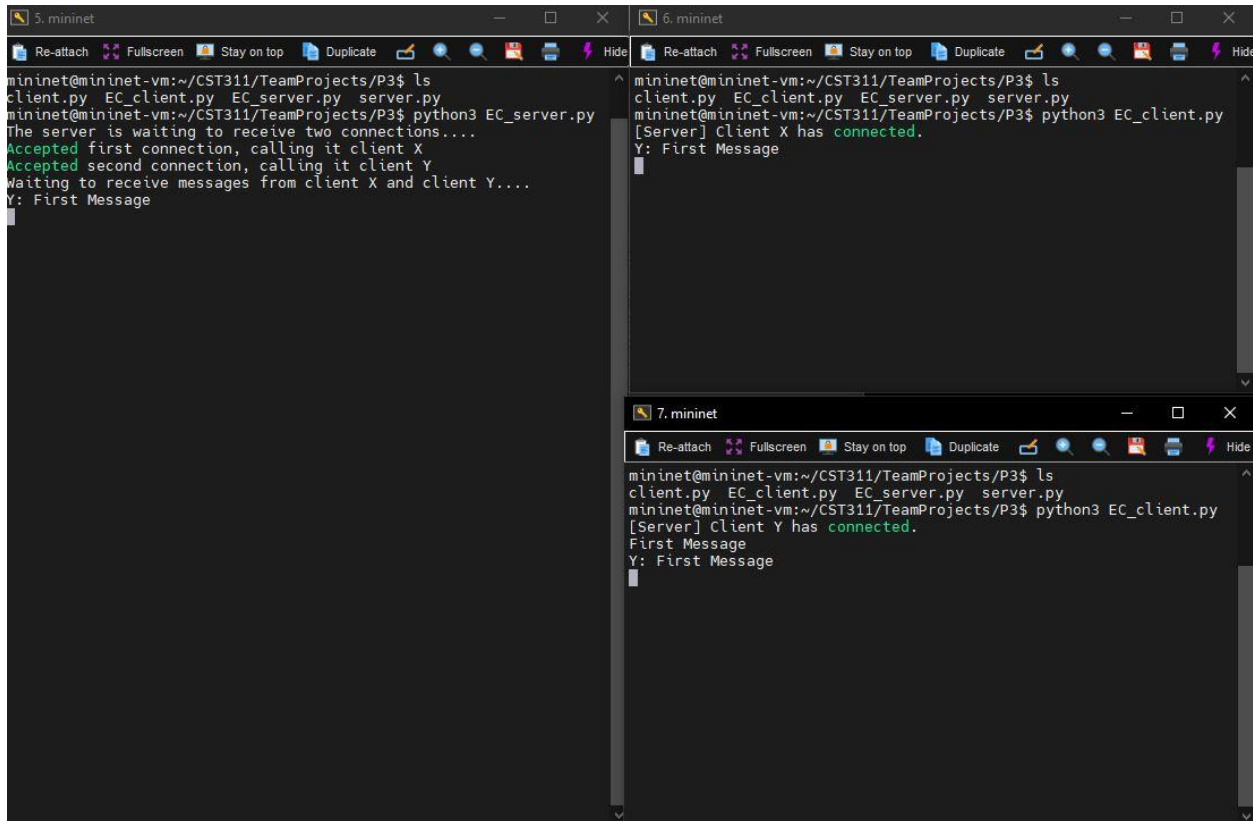
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DUE DATE: June 8, 2021

ASSIGNMENT: Team Programming Assignment #3

DESCRIPTION: Screenshots for PA#3, Extra Credit Assignment

Group #2: PA 3 – EC – TCP Client-Server



```
5. mininet
mininet@mininet-vm:~/CST311/TeamProjects/P3$ ls
client.py EC_client.py EC_server.py server.py
mininet@mininet-vm:~/CST311/TeamProjects/P3$ python3 EC_server.py
The server is waiting to receive two connections....
Accepted first connection, calling it client X
Accepted second connection, calling it client Y
Waiting to receive messages from client X and client Y....
Y: First Message

6. mininet
mininet@mininet-vm:~/CST311/TeamProjects/P3$ ls
client.py EC_client.py EC_server.py server.py
mininet@mininet-vm:~/CST311/TeamProjects/P3$ python3 EC_client.py
[Server] Client X has connected.
Y: First Message

7. mininet
mininet@mininet-vm:~/CST311/TeamProjects/P3$ ls
client.py EC_client.py EC_server.py server.py
mininet@mininet-vm:~/CST311/TeamProjects/P3$ python3 EC_client.py
[Server] Client Y has connected.
First Message
Y: First Message
```

Figure 1 - Both clients are connected. Client Y sends message, relayed from Server to X.

The image shows three terminal windows from a Mininet environment. Window 5 (left) shows the server's perspective: it lists files, runs a Python script, and logs the acceptance of two connections, client X and client Y. It then shows the first message from client Y and the second and third messages from client X. Window 6 (top right) shows client X's perspective: it lists files, runs a Python script, and logs the connection to the server. It then shows the first, second, and third messages received from the server. Window 7 (bottom right) shows client Y's perspective: it lists files, runs a Python script, and logs the connection to the server. It then shows the first message received from the server.

```
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mininet@mininet-vm:~/CST311/TeamProjects/P3$ ls
client.py EC_client.py EC_server.py server.py
mininet@mininet-vm:~/CST311/TeamProjects/P3$ python3 EC_server.py
The server is waiting to receive two connections....
Accepted first connection, calling it client X
Accepted second connection, calling it client Y
Waiting to receive messages from client X and client Y....
Y: First Message
X: Second Message
X: Third Message

6. mininet
mininet@mininet-vm:~/CST311/TeamProjects/P3$ ls
client.py EC_client.py EC_server.py server.py
mininet@mininet-vm:~/CST311/TeamProjects/P3$ python3 EC_client.py
[Server] client X has connected.
Y: First Message
Second Message
X: Second Message
Third Message
X: Third Message

7. mininet
mininet@mininet-vm:~/CST311/TeamProjects/P3$ ls
client.py EC_client.py EC_server.py server.py
mininet@mininet-vm:~/CST311/TeamProjects/P3$ python3 EC_client.py
[Server] client Y has connected.
First Message
Y: First Message
X: Second Message
X: Third Message
```

Figure 2 - Client X responds twice, relayed from Server to Y

The image shows the same three terminal windows as Figure 2, but with more output. Window 5 shows the server sending the second and third messages to client X, then the fourth, fifth, sixth, and seventh messages to client Y. It then shows client X sending 'Bye' and the server waiting for connections to close. Window 6 shows client X receiving the second, third, and fourth messages from the server, then the fifth, sixth, seventh, and 'Bye' messages. It then shows the server ending the connection. Window 7 shows client Y receiving the second, third, fourth, fifth, sixth, and seventh messages from the server, then the 'Bye' message and the server ending the connection.

```
5. mininet
mininet@mininet-vm:~/CST311/TeamProjects/P3$ ls
client.py EC_client.py EC_server.py server.py
mininet@mininet-vm:~/CST311/TeamProjects/P3$ python3 EC_server.py
The server is waiting to receive two connections....
Accepted first connection, calling it client X
Accepted second connection, calling it client Y
Waiting to receive messages from client X and client Y....
Y: First Message
X: Second Message
X: Third Message
Y: Fourth Message
Y: Fifth Message
Y: Sixth Message
X: Seventh Message
X: Bye
Waiting a bit for clients to close their connections
Done.
mininet@mininet-vm:~/CST311/TeamProjects/P3$

6. mininet
mininet@mininet-vm:~/CST311/TeamProjects/P3$ ls
client.py EC_client.py EC_server.py server.py
mininet@mininet-vm:~/CST311/TeamProjects/P3$ python3 EC_client.py
[Server] client X has connected.
Y: First Message
Second Message
X: Second Message
Third Message
Y: Fourth Message
Y: Fifth Message
Y: Sixth Message
Seventh Message
X: Seventh Message
Bye
X: Bye
[Server] Ended your connection.
mininet@mininet-vm:~/CST311/TeamProjects/P3$

7. mininet
mininet@mininet-vm:~/CST311/TeamProjects/P3$ ls
client.py EC_client.py EC_server.py server.py
mininet@mininet-vm:~/CST311/TeamProjects/P3$ python3 EC_client.py
[Server] client Y has connected.
First Message
Y: First Message
X: Second Message
X: Third Message
Fourth Message
Y: Fourth Message
Fifth Message
Y: Fifth Message
Sixth Message
Y: Sixth Message
X: Seventh Message
X: Bye
[Server] Ended your connection.
mininet@mininet-vm:~/CST311/TeamProjects/P3$
```

Figure 3 - Client X sends "Bye" after conversation, relayed to Y. Server ends connection to both clients.