

1.

Explanation of the source file

The Basic idea of the implementation

- The client is responsible for starting a connection with the server
- The server is ready to accept any incoming connection request from the client
- The client creates a TCP socket
- The client specifies the IP address of the server
- The client specifies the port number of the server's socket
- The client and the server's socket can then send and receive message between themselves.

Client.py implementation [Built for python 3.7.0]

- The server's IP address is specified
- The server's socket port number is specified
- Given the IP address and the port number a connection is attempted to the server
- Using a utility function "*select*", I can listen for messages from the server and also listen to user input

Server.py implementation [Built for python 3.7.0]

- The server is responsible for accepting connections from the clients
- So in a "while" loop that is always true. I listen for new client connections
- Every new client is added to a list .
- In the while loop if a message comes from a client, I use another function that takes the message and distribute it to other clients. This function also checks to avoid sending message to the sending client.

2.

Compilation Process

1. Unzip the files to your preferred working directory, lets say "/Desktop"
2. Open a terminal Window.
3. Type "python server.py". The server will be waiting for connections at port 3823
4. Open a new terminal window for client 1.
5. Type "python client.py". This client will be connected to the server at port 3823
6. From here you can type a message
7. Open a new terminal window for client2

8. Type “python client.py”
9. From here client2 can send a message to client 1 and vice versa
10. The same step if a new client is connected.

3.

Sample output

11.

```
Terminal Shell Edit View Window Help

Desktop — python server.py — 80x24
(socket_programming) Abdulsalam-Yazid:Desktop abdulsalamyazid$ python server.py
This server is activated on port 3823
Client (127.0.0.1, 52207) connected at time 2018-11-04 13:54:23.523052
Client (127.0.0.1, 52208) connected at time 2018-11-04 13:54:29.410079
[]

first client online
Desktop — python client.py — 80x24
(socket_programming) Abdulsalam-Yazid:Desktop abdulsalamyazid$ python client.py
Connection with the server has been established
You:
[127.0.0.1:52208] is Online
You: Hey am client1
('127.0.0.1', 52208) at 13:54:49: Hey am client2
You: Your homework is cool
('127.0.0.1', 52208) at 13:55:22: Yeah lets get 100% :)
You: Yeah lets see :)
You:

second client online
Desktop — python client.py — 80x24
(socket_programming) Abdulsalam-Yazid:Desktop abdulsalamyazid$ python client.py
Connection with the server has been established
You: Hey am client2
('127.0.0.1', 52207) at 13:54:39: Hey am client1
You: Hey am client2
('127.0.0.1', 52207) at 13:55:06: Your homework is cool
You: Yeah lets get 100% :)
('127.0.0.1', 52207) at 13:55:44: Yeah lets see :)
You: []
```