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Project 4: Client-Server Chat
6.4.22

Run in python3

- python3 server.py
- python3 client.py (repeat in separate terminals for multiple clients)

```
server.py cs372 U X
21
22 def broadcast(message):
23     for client in clients:
24         client.send(message)
25
26
27 def receive_message(client_socket):
28     try:
29         message_header = client_socket.recv(HEADER_LENGTH)
30
31         if not len(message_header):
32             return False
33
34         message_length = int(message_header.decode("utf-8").strip())
35         return {'header': message_header, 'data': client_socket.recv(message_length)}
36
37     except:
38         return False
39
40
41 while True:
42     read_sockets, _, exception_sockets = select.select(sockets_list, [], , 1)
43
44     for notified_socket in read_sockets:
45         if notified_socket == server_socket:
```

```
client.py cs372 U X
15 my_username = input('Username: ')
16 client_socket = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
17 client_socket.connect((IP, PORT))
18 client_socket.setblocking(False)
19
20 username = my_username.encode('utf-8')
21 username_header = f"({len(username):<{HEADER_LENGTH}})".encode('utf-8')
22 client_socket.send(username_header + username)
23
24
25 def kill_thread():
26     print('killed')
27     sys.exit()
28
29
30 def thread(stop):
31     while True:
32         if exitflag1:
33             break
34     exitflag1 = False
35
36
37 def receive_message():
38     while True:
39         try:
40             # receive things
41             username_header = client_socket.recv(HEADER_LENGTH)
42             if not len(username_header):
```

```
bash-4.2$ python3 server.py
Jon has joined the chat
David has joined the chat
Jon: hello, my name is jon
David: hey everyone, i'm david
Jon: nice to meet y'all, i have to go now
Jon has left the chat

bash-4.2$ python3 client.py
Username: Jon
Jon > hello, my name is jon
David > hey everyone, i'm david
Jon > nice to meet y'all, i have to go now
connection closed
bash-4.2$

bash-4.2$ python3 client.py
Username: Mark
Jon > hello, my name is jon
David > hey everyone, i'm david
Jon > nice to meet y'all, i have to go now

bash-4.2$ python3 client.py
Username: David
Jon > hello, my name is jon
Mark > hello jon, nice to meet you
David > hey everyone, i'm david
Jon > nice to meet y'all, i have to go now
```

Threading allows for multiple clients to receive messages immediately.

Use 'q' to exit chat.