

The following sample run was done on a single Linux machine. A separate terminal window was opened for each, the server and the three clients, creating 4 unique socket addresses.

#### REGISTERED USERS TO USE FOR TESTING:

Username	Password
Liz	pw1
Steve	pw2
Bailey	pw3

#### *Terminal command to run server:*

```
lizmclaughlin@Elizabeths-MacBook-Pro toSubmit % ./server.py  
>> Running on port 33318  
>> Listening....
```

#### *Terminal command to run client:*

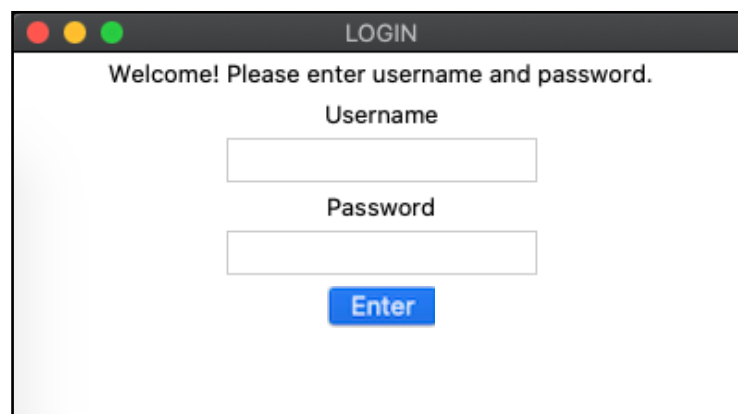
```
lizmclaughlin@Elizabeths-MacBook-Pro tp544 % ./client.py
```

*NOTE: I left "HOST" variable blank, as program is currently run on same machine, through different terminals to represent ea client. You can press enter to elect a black HOST, or enter a HOST address.*

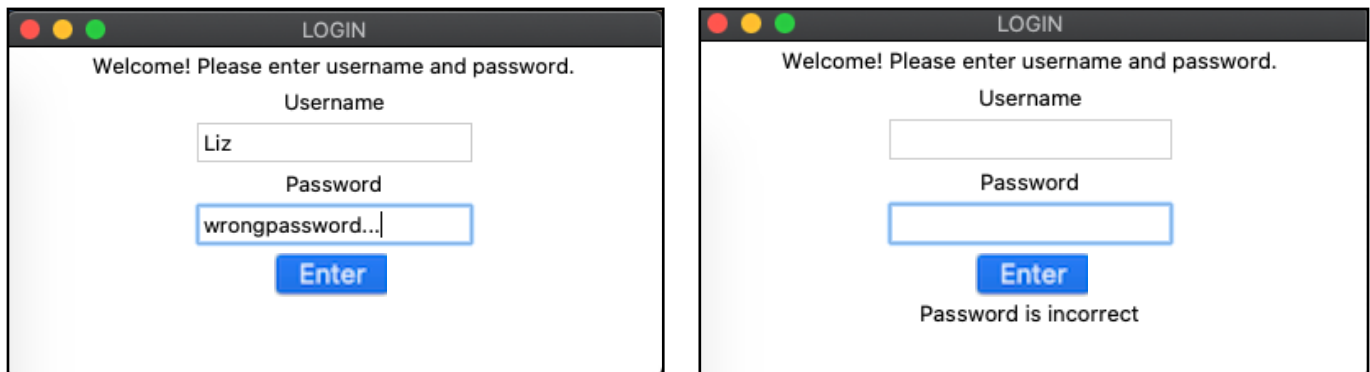
*Enter the preferred encoding for the client's system.*

```
>> Host:  
>> Encode format: utf8  
>> socket address: 127.0.0.1..50732
```

*Upon successful connection with server, GUI login window pops up on client's screen. Remaining communication takes place through the GUI interface.*



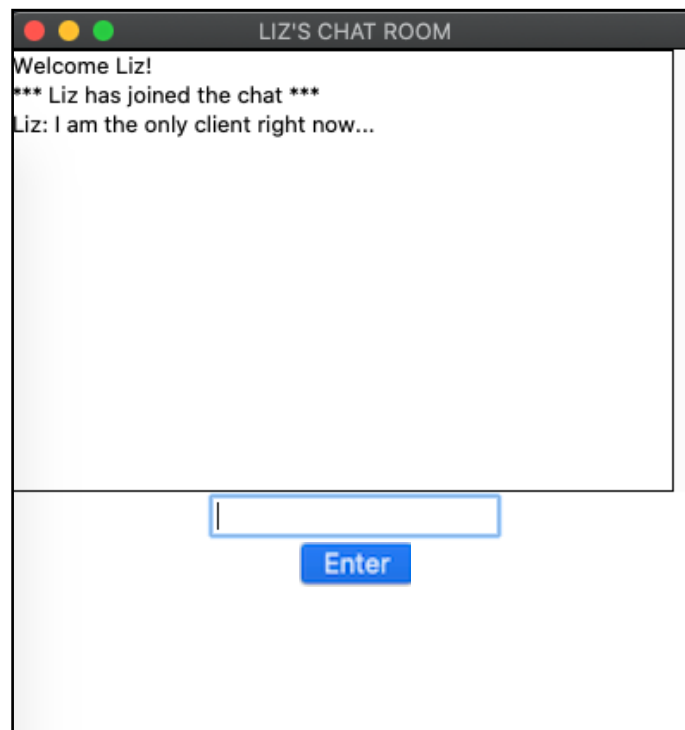
*When the wrong credentials are entered, the server rejects and notifies via a label on the login screen:*



The image shows two screenshots of a 'LOGIN' window. The left screenshot shows the login form with 'Liz' in the Username field and 'wrongpassword...' in the Password field, with an 'Enter' button below. The right screenshot shows the same form but with the Password field empty and a message 'Password is incorrect' displayed below the 'Enter' button.

>> user credentials sent to server

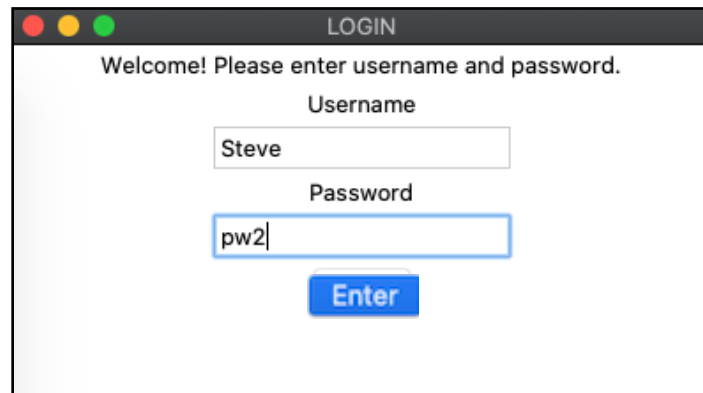
*Once server has verified login credentials, the chat window opens for the client.*



The image shows a chat window titled 'LIZ'S CHAT ROOM'. The window displays a welcome message 'Welcome Liz!', a status message '\*\*\* Liz has joined the chat \*\*\*', and a message from Liz: 'Liz: I am the only client right now...'. At the bottom, there is a text input field and an 'Enter' button.

*Open new terminal session to create an additional client connection:*

```
lizmclaughlin@Elizabeths-MacBook-Pro tp544 % ./client.py  
>> Host:  
>> socket address: 127.0.0.1..50955
```



LOGIN

Welcome! Please enter username and password.

Username

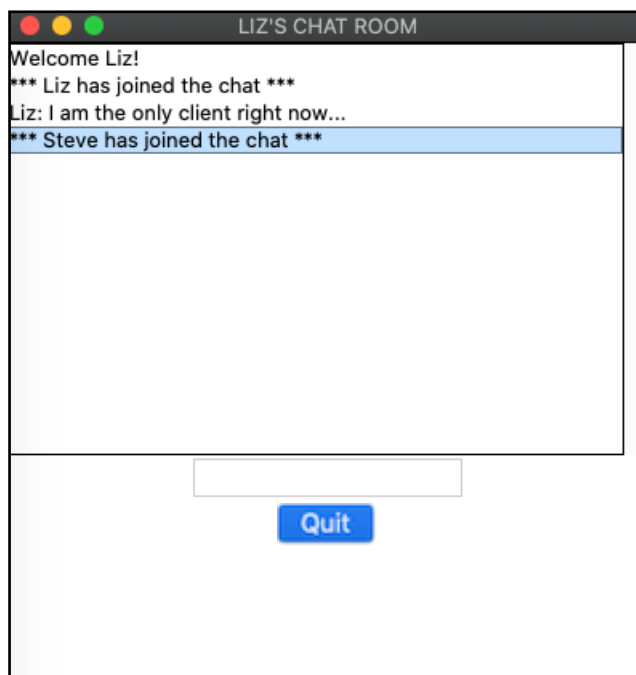
Steve

Password

pw2

Enter

*Once credentials are verified, a chat window is opened for the new client (Steve), and a notification is sent to all current connections announcing his entrance into the chat.*



LIZ'S CHAT ROOM

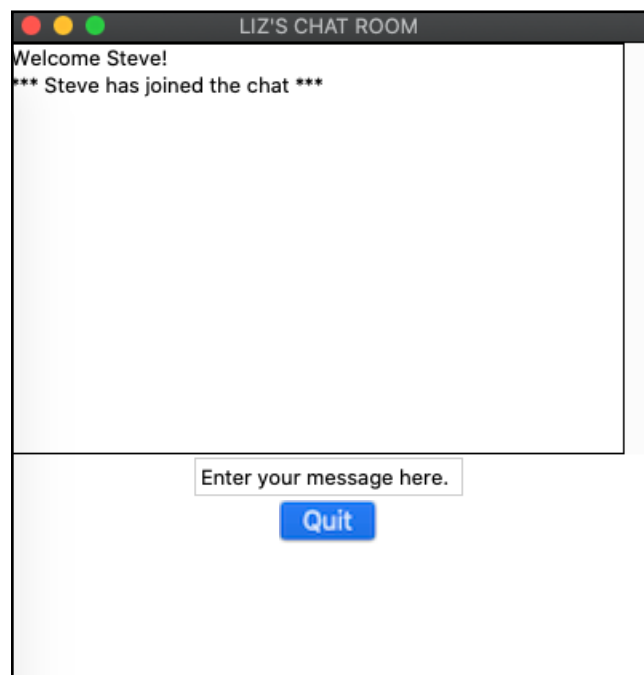
Welcome Liz!

\*\*\* Liz has joined the chat \*\*\*

Liz: I am the only client right now...

\*\*\* Steve has joined the chat \*\*\*

Quit



LIZ'S CHAT ROOM

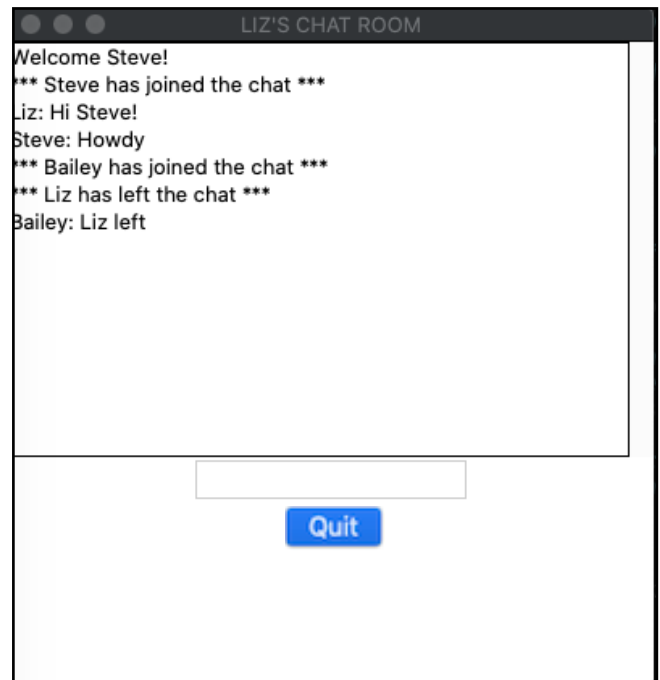
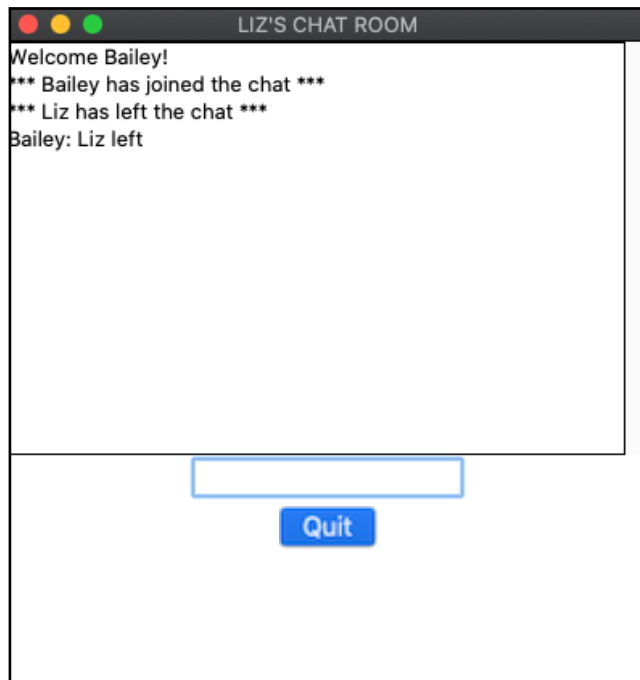
Welcome Steve!

\*\*\* Steve has joined the chat \*\*\*

Enter your message here.

Quit

*An additional user joined, Liz left (hit 'quit' button) after Bailey joins, and Bailey sent a message.*



*Upon 'quit', Liz's chat window remains for access to chat history, but the entry field disappears.*

