

Raed Albloushy HW2 Report

Solution approach:

I made two Java files, Server and Client, the server has a client thread that handles all the connecting clients and in that thread the function to broadcast to each client is also managed. All the connected clients are stored in an arraylist of clientthreads called clients and this way we keep track of all clients for server to broadcast to. The server has to helper functions login() and tryloginagain() in the main function of the program if the server receives the wrong code, it runs tryloginagain() which basically promotes the client to type code again, if the code is correct then login() function is called and the server is allowed to broadcast the message to all other clients. Login() function can only run the client thread, only when the user enters the right code.

As for the client we have a start() function that get the username of the user and asks for the code of access. The main function of the client basically has two threads one is called sendMsg() and what it does is handling the sending of messages from client to server with the name. readservermsg() is the other thread to handle incoming messages from the server. If the wrong code is sent to the server the server will keep on asking for the right code and never broadcast that client's message to other clients

The Java files also include clientcopy1 and clientcopy besides client they are just copies of the client as the name suggests for testing multiple clients running at the same time.

Screenshots of runtime:

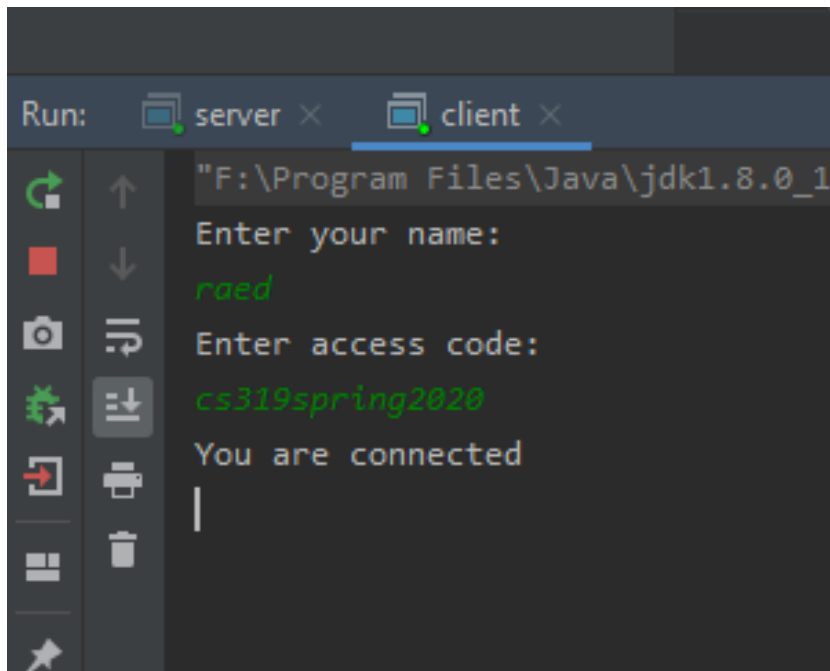


Figure 1: Correct login

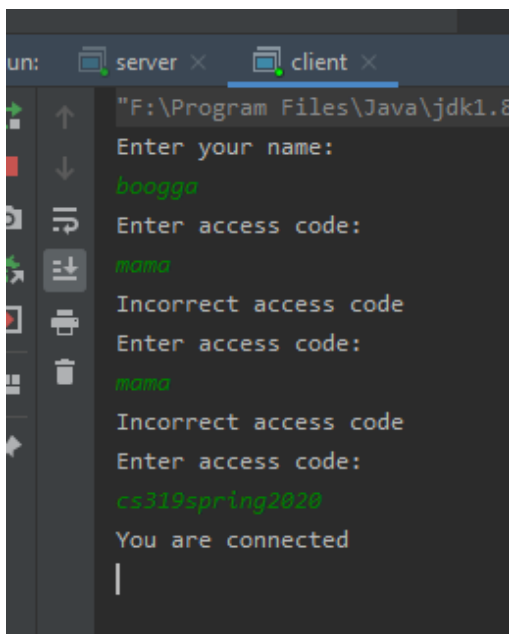


Figure 2: incorrect login

Figure 1 shows the correct login being done and how the server response by verification of connection while figure 2 show incorrect login and the server keeps on asking for the right passcode until the right passcode is provided.

```
Run: server x client x clientcopy x clientcopy1 x
"F:\Program Files\Java\jdk1.8.0_144\bin\java.exe" ...
Enter your name:
jhon
Enter access code:
cs319spring2020
You are connected
hello
moona:it is me
raed:I know
```

Figure 3:client 1 login

```
Run: server x client x clientcopy x clientcopy1 x
"F:\Program Files\Java\jdk1.8.0_144\bin\java.exe" ...
Enter your name:
raed
Enter access code:
cs319spring2020
You are connected
jhon:hello
moona:it is me
I know
|
```

Figure 4:client 2 login

```
Run: server x client x clientcopy x clientcopy1 x
"F:\Program Files\Java\jdk1.8.0_144\bin\java.exe" ...
Enter your name:
moona
Enter access code:
cs319spring2020
You are connected
jhon:hello
it is me
raed:I know
|
```

Figure 53:client 3 login

Figure 3 to 6 show 3 clients connecting to the server at the same time and you can see the broadcast feature throughout the clients and how the server has all their messages with usernames.

```
75 Run: server x client x clientcopy x clientcopy1 x
76 "F:\Program Files\Java\jdk1.8.0_144\bin\java.exe" ...
77 accepts : /127.0.0.1:51345
78 raed:cs319spring2020
79 accepts : /127.0.0.1:51347
80 moona:cs319spring2020
81 accepts : /127.0.0.1:51349
82 jhon:cs319spring2020
83 jhon:hello
84 moona:it is me
85 raed:I know
86 |
87
88
```

Figure 6:server response