

CENG421

Project Report

Arif Burak Demiray – 250201022

Server/Client Chat Program

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1. DESCRIPTION

This project is a server/client chat program. Users can chat with each other. It is implemented in thread way. The book is the main resource for this project.

Why threads? Because I know them. I know how to implement threads so I used them to make project in a good way. Also, it uses pool mechanism to hold registered users. Server firstly, opens its connection and starts its main function. While accepting connections it starts new threads for the coming clients. And in this thread it receives commands and responds. In client, it creates its connection and creates a thread for receiving and in main takes input and sends to the server.

Why a chat program? I always wanted to make a chat program. I wanted to know its details.

It this project it can be improved by adding DHKE. I wanted to add it. And pool management can be refined.

2. SCREENSHOTS

<pre>[euxinos@localhost build]\$ server bash: server: command not found... [euxinos@localhost build]\$./server [INFO][2022-06-02T10:07:56Z] Server started to listen port 8080 █</pre>	<pre>[euxinos@localhost server-client-chat]\$ █</pre>	<pre>[euxinos@localhost server-client-chat]\$ █</pre>
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Figure 2.1 Server Start

<pre>[euxinos@localhost build]\$ server bash: server: command not found... [euxinos@localhost build]\$./server [INFO][2022-06-02T10:07:56Z] Server started to listen port 8080 [INFO][2022-06-02T10:21:19Z] Client connected on socket 4 █</pre>	<pre>[euxinos@localhost server-client-chat]\$ cd build/ [euxinos@localhost build]\$./client [INFO][2022-06-02T10:21:19Z] Connected to the server [INFO] To see the available users type "contracts" [INFO] To chat with a user type "chat <USER_NAME> <MESSAGE>" █</pre>	<pre>[euxinos@localhost server-client-chat]\$ cd build/ [euxinos@localhost build]\$ █</pre>
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Figure 2.2 Success client connection and instructions

<pre>[euxinos@localhost build]\$ server bash: server: command not found... [euxinos@localhost build]\$./server [INFO][2022-06-02T10:07:56Z] Server started to listen port 8080 [INFO][2022-06-02T10:21:19Z] Client connected on socket 4 [INFO][2022-06-02T10:22:19Z] Client connected on socket 5 █</pre>	<pre>[euxinos@localhost server-client-chat]\$ cd build/ [euxinos@localhost build]\$./client [INFO][2022-06-02T10:21:19Z] Connected to the server [INFO] To see the available users type "contracts" [INFO] To chat with a user type "chat <USER_NAME> <MESSAGE>" contracts [NEW MSG][2022-06-02T10:22:23Z] User2 : Socket-5 chat User2 hello █</pre>	<pre>[euxinos@localhost server-client-chat]\$ cd build/ [euxinos@localhost build]\$./client [INFO][2022-06-02T10:22:19Z] Connected to the server [INFO] To see the available users type "contracts" [INFO] To chat with a user type "chat <USER_NAME> <MESSAGE>" [NEW MSG][2022-06-02T10:22:32Z] User1: hello █</pre>
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Figure 2.3 contracts command and chat a user

<pre>[euxinos@localhost build]\$ server bash: server: command not found... [euxinos@localhost build]\$./server [INFO][2022-06-02T10:07:56Z] Server started to listen port 8080 [INFO][2022-06-02T10:21:19Z] Client connected on socket 4 [INFO][2022-06-02T10:22:19Z] Client connected on socket 5 █</pre>	<pre>[euxinos@localhost server-client-chat]\$ cd build/ [euxinos@localhost build]\$./client [INFO][2022-06-02T10:21:19Z] Connected to the server [INFO] To see the available users type "contracts" [INFO] To chat with a user type "chat <USER_NAME> <MESSAGE>" contracts [NEW MSG][2022-06-02T10:22:23Z] User2 : Socket-5 chat User2 hello [NEW MSG][2022-06-02T10:23:18Z] User2: hello there █</pre>	<pre>[euxinos@localhost server-client-chat]\$ cd build/ [euxinos@localhost build]\$./client [INFO][2022-06-02T10:22:19Z] Connected to the server [INFO] To see the available users type "contracts" [INFO] To chat with a user type "chat <USER_NAME> <MESSAGE>" [NEW MSG][2022-06-02T10:22:32Z] User1: hello chat user1 hello there █</pre>
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Figure 2.4 Respond to user (user area can be UserX, userx, USERx)

<pre>[euxinos@localhost build]\$ server bash: server: command not found... [euxinos@localhost build]\$./server [INFO][2022-06-02T10:07:56Z] Server started to listen port 8080 [INFO][2022-06-02T10:21:19Z] Client connected on socket 4 [INFO][2022-06-02T10:22:19Z] Client connected on socket 5 ^C[ERROR][2022-06-02T10:24:38Z] Cannot accept connections! [INFO][2022-06-02T10:24:38Z] Server is disconnected [euxinos@localhost build]\$</pre>	<pre>[euxinos@localhost server-client-chat]\$ cd build/ [euxinos@localhost build]\$./client [INFO][2022-06-02T10:21:19Z] Connected to the server [INFO] To see the available users type "contracts" [INFO] To chat with a user type "chat <USER_NAME> <MESSAGE>" contracts [NEW MSG][2022-06-02T10:22:23Z]User2 : Socket-5 chat User2 hello [NEW MSG][2022-06-02T10:23:18Z] User2: hello there [NEW MSG][2022-06-02T10:24:29Z] User2: bababa ^C[INFO][2022-06-02T10:24:37Z] Disconnecting... [euxinos@localhost build]\$</pre>	<pre>[euxinos@localhost server-client-chat]\$ cd build/ [euxinos@localhost build]\$./client [INFO][2022-06-02T10:22:19Z] Connected to the server [INFO] To see the available users type "contracts" [INFO] To chat with a user type "chat <USER_NAME> <MESSAGE>" [NEW MSG][2022-06-02T10:22:32Z] User1: hello chat user1 hello there contracts [NEW MSG][2022-06-02T10:24:17Z]User1 : Socket-4 h deneme chat user1 bababa ^C[INFO][2022-06-02T10:24:37Z] Disconnecting... [euxinos@localhost build]\$</pre>
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Figure 2.5 Finish connections

3. REFERENCES

- [1] K. Davis, J. Turner, and N. Yocom, "The Definitive Guide to Linux Network Programming," Jan. 2004, doi: 10.1007/978-1-4302-0748-1.