
SWE544-Internet Programming

Term Project - IRC (Internet Relay Chat) Protocol Implementation

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Introduction

This project aims to implement IRC(Internet Relay Chat) Protocol.

There are three threads in the project:

1. ReadThread Class: This is for reading socket message coming from the server
2. WriteThread Class: This is for writing socket messages for the server
3. QtDialog Class: This is for handling the screen messages

ReadThread Mechanism

This thread implements protocol table shown in Table_1.1 Istemci istekleri icin protokol o`zeti [1]

Server sends periodically "TIC" messages, when user is not registered and send "TOC" messages, user gets "ERL", therefore I only send "TOC" messages to server when user is authenticated.

Beside protocol implementation, thread concurrency mechanism was added.

What is not included in my implementation:

After registration, I did not add check for right username coming from server.

WriteThread Mechanism

This thread implements sending messages coming from thread.

Beside implementation, condition wait was added for CPU utilisation.

What is not included in my implementation:

I did not implement "TIC" message to check connection. It is better to add periodic "TIC" messages to check connection.

ClientDialog Mechanism

This class is for building GUI for the client user and also parsing the UI messages and preparing the suitable protocol messages for WriteThread class.

What is not included in my implementation:

User list is not automatically written on the right side, when user is connected to the system. Whenever a user sends /list message, list window is filled and also updated. It is not user friendly, better implementation should be like as when user is connected, list is filled and whenever an user is connected or disconnected, user list also be updated.

General Issues of my implementation

- I did not add handling mechanism when server stop the connection. For example, when I register with the username which has already been in the server, server send "REJ" and stop the connection.
- When connection is closed, I got socket exception. This is not an error condition, therefore has to be handled.

Issues with Server Side

- In the document, according to the protocol server should sends "SAY <message>", but it sends "SAY <username:message>". It is corrected in the code.
- In the document, according to the protocol server should sends private messages coming from one user as "MSG <username:message>", but it sends "MSG <sender_username:receiver_username message>". It is corrected in the code.
- When I close the terminal without "QUI" command, my username was registered, I could not delete my user and I could not register with same username again.

Errors in the code

- In ClientDialog class, there is "updateChannelWindow" function, in this function we can call cprint function not using append function.
- In WriteThread class, there is run function, in this function there is "break" statement, it causes error without a loop statement.

References

1. swe544_odev, Project Description File