

CS 408 – Computer Networks – Fall 2022 – In-Lab Assignment (A)

- No collaboration is allowed. You are not allowed to ask and get help from your classmates. Any such activity will directly result in failure in this lab.
- All cell phones must be totally switched off.
- Any type of online communication via email, DM, Whatsapp, etc. with another human being will be treated as plagiarism.
- IP-sharing is strictly prohibited, you should connect to SU-NET using your own SU account credentials only.

Your Task

Your task in this lab is to develop a *Chat Client* via Graphical User Interface (GUI). IP and port number will be taken as inputs from the user GUI via text boxes. Moreover, the user will enter his/her full name without Turkish characters (e.g. “Faik Kerem Ors”) in another text box. In addition to these three text boxes, there will be only one “connect button” and a rich text box to show the message received from server. There will not be any other boxes or buttons on the GUI.

When user clicks to “Connect” button, the client should connect to the server using server’s IP and port number. Server’s IP and port number will be written on the board by your TAs during the lab. You do not need to do anything for the server part. You will only implement the client part.

After the connection is established, the scenario that you will implement is as follows:

- 1) Write the connection status (fail, success) in the rich text box (hint: use try-catch).
- 2) Before the client sends anything to server, the server will send the client an integer number (token). You have to parse this incoming integer value and show it in a rich text box.
- 3) Then, sum up the ascii values of the characters in your full name (that was entered via text box before the connection) excluding the empty spaces and multiply the resulting sum with the token received from the server. **Note that all calculations in this part should be done automatically inside the code. You should NOT calculate the ascii values by looking at the ascii table. Also, you have to get the full name from the text box, it should NOT be hardcoded inside the code. We may test your program with another full name and it should work.**

Example:

- Full name written in the GUI: Faik Kerem Ors
- Full name without empty spaces: FaikKeremOrs

- Summation of the ascii values of the characters in the full name without spaces:

```
Name: Faik Kerem Ors

char: F - its ascii value: 70
char: a - its ascii value: 97
char: i - its ascii value: 105
char: k - its ascii value: 107
char: K - its ascii value: 75
char: e - its ascii value: 101
char: r - its ascii value: 114
char: e - its ascii value: 101
char: m - its ascii value: 109
char: O - its ascii value: 79
char: r - its ascii value: 114
char: s - its ascii value: 115
Ascii values sum: 1187
```

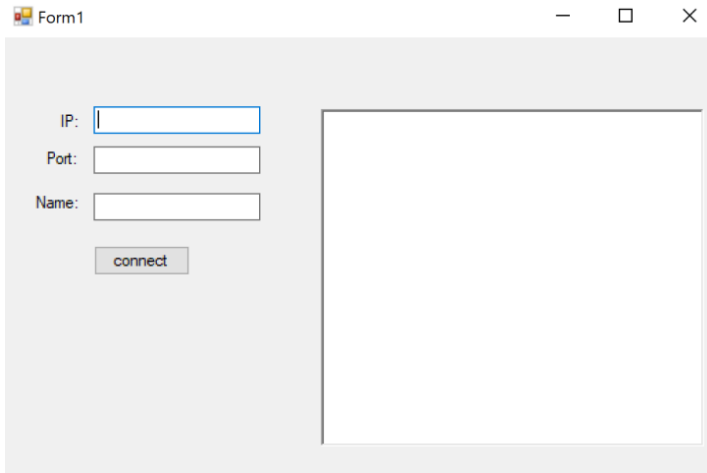
- Token: 2405
 - Multiplication Result = $2405 * 1187 = 2854735$
 - String that should be sent to the server: 2854735 Faik Kerem Ors
- 4) Send the multiplication result and your full name (that was entered via text box before the connection) to the server in the same message. Please put a space between the multiplication result and your full name. Ex: MultiplicationResult FullName (e.g. 2854735 Faik Kerem Ors).
Caution: You should send your full name correctly, but without any Turkish letters. If you send a nickname or something other than your full name, a deduction policy will be applied to your grade!
 - 5) After sending this message, the server will send you a response message indicating whether your application was successful or not. The socket must be closed automatically after you get this message.

After you get the success message from the server (see the images below), the steps that you should follow are:

- 1) Check whether your full name is in the successful attempts table (Webpage will be indicated by your TAs).
- 2) Do not forget to submit your application (whole project folder) to the assignment “In-lab Exercise A” in a zip file on SuCourse+. (Name your zip file as "yourSuNetusername_lastname_othersnames.zip")

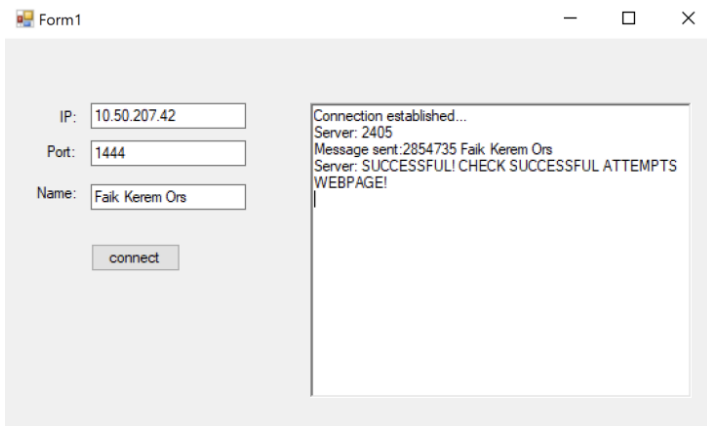
Please follow the steps carefully and verify whether your attempt was successful (check your name on the successful attempts webpage). Also, do not forget to submit your client application. Otherwise, we cannot grade your work!

Initial state of the GUI



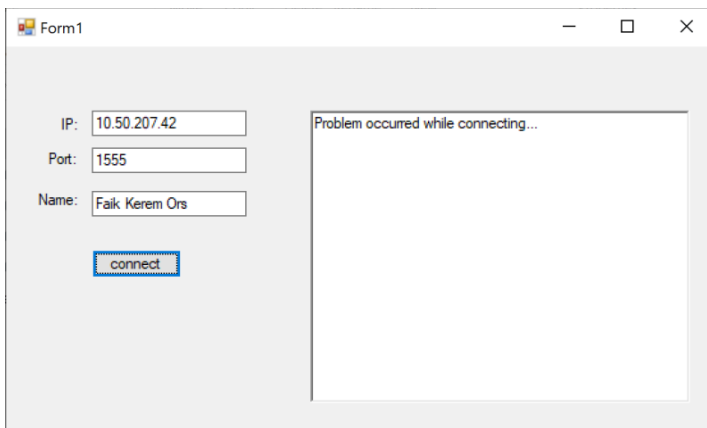
The image shows a Windows-style window titled "Form1". On the left side, there are three input fields labeled "IP:", "Port:", and "Name:". Below these fields is a button labeled "connect". To the right of the input fields is a large, empty rectangular area, likely a text display or log window.

After connecting:



The image shows the same "Form1" window after a successful connection. The "IP:" field now contains "10.50.207.42", the "Port:" field contains "1444", and the "Name:" field contains "Faik Kerem Ors". The "connect" button is still present. The large rectangular area on the right now displays the following text: "Connection established...
Server: 2405
Message sent:2854735 Faik Kerem Ors
Server: SUCCESSFUL! CHECK SUCCESSFUL ATTEMPTS
WEBPAGE!
|".

IP or port number is wrong:



The image shows the "Form1" window with an error message. The "IP:" field contains "10.50.207.42", the "Port:" field contains "1555", and the "Name:" field contains "Faik Kerem Ors". The "connect" button is highlighted with a blue border. The large rectangular area on the right now displays the text: "Problem occurred while connecting...".