An-Najah Nation University
Faculty of Engineering and Information Technology

جامعة النجاح الوطنية
كلية الهندسة وتكنولوجيا المعلومات

Computer Engineering Department

Networks1 (10636454)

Programming HW 2

Chatting Between Peers

Instructor name:
Dr. Eng. Saed TARAPIAH

Academic Year: **2022-2023**
Semester: **Spring**
Credit Hours: **3**
Date: **2/April/2023**

Student Name:……

Serial number: رقم تسلسلي: :……

Registration Number: ……..
Section:…….
Total Exam Mark: **15**
Exam Weight: **15%**

Deadline: 30/April/2023 midnight

Question	Points	ILO's	ILO's%	Question Grade	Required Time
Q1	6				
Q2	9				
Student Grade					

Exam Notes:

1- Closed Books & Notes.
2- Read each problem carefully before attempting to solve it.
3- Write all work on this exam paper.

Q1: [6 points]

In this project Peer to Peer Application that runs on a Network. You will Write it in Java.

Project Parts (Assignments):

1. **Part 1 (Question1) Deadline 19/4/2023 midnight**

In this part, you are required to write Peer-to-peer Application Chatting Java UDP Socket Programming: Write a GUI application by using Java. Your program should have Text boxes, Buttons, Text Areas, Drop Downs etc. You should enter Source and destination IP addresses, port numbers. Also, you should display sent and received messages. See the sample for GUI Interface on Page 3. Two clients Are shown. The Buttons for Login, Logout, and the List of Online users is Not Required for This part. They are Required in Par2. Blocking Code is Not Accepted.

Page 2 Shows Two Clients and sample GUI

Extra requirements:

- Add the timestamp for each exchanged message (for both sent and received)
- Use red color for sent messages
- Use green color for received messages
- Add button to delete selected message or delete all conversation from both sides.

Q2: [9 points]

2. **Part 2 (Question2) Deadline 30/4/2023 midnight**

In this part you are required to apply TCP Java Socket programming, but we will add Two Parts: A TCP Client to the Application described in 1. This Client requires the additions of buttons to register to the TCP Server Described in 2.2. The Server will simply keep a list of UDP clients involved in the Chatting. The TCP Server will send a message to each TCP client in the Active Chatting Client described in 1 to inform it of the List of Active Clients. This is similar to Skype and other chatting Servers. The server just keeps a list of those that Active Chatting Clients. So, you will need to modify the code in 1 to accommodate this Requirement.

The Actual chatting will remain peer-to-peer. But the User chooses which Client to talk to from the List Provided by the Server. The login in the Clients is used for Registration to the TCP server to keep track of online Clients. You Should display the List of Active Client. See pages 4, 5

3

Add a TCP Server that keeps track of the Active Chatting Clients as described in 2.1. It should Show a GUI with the Active List of Clients. The login in the Clients is used for Registration. See pages 4, 5

Blocking Code is Not Accepted.

Part1(HW1):This Figure Shows Two Clients used in Part 1 and 2. The Login/Logout and TCP Server are not required in Part1 but will be Required in Part2.

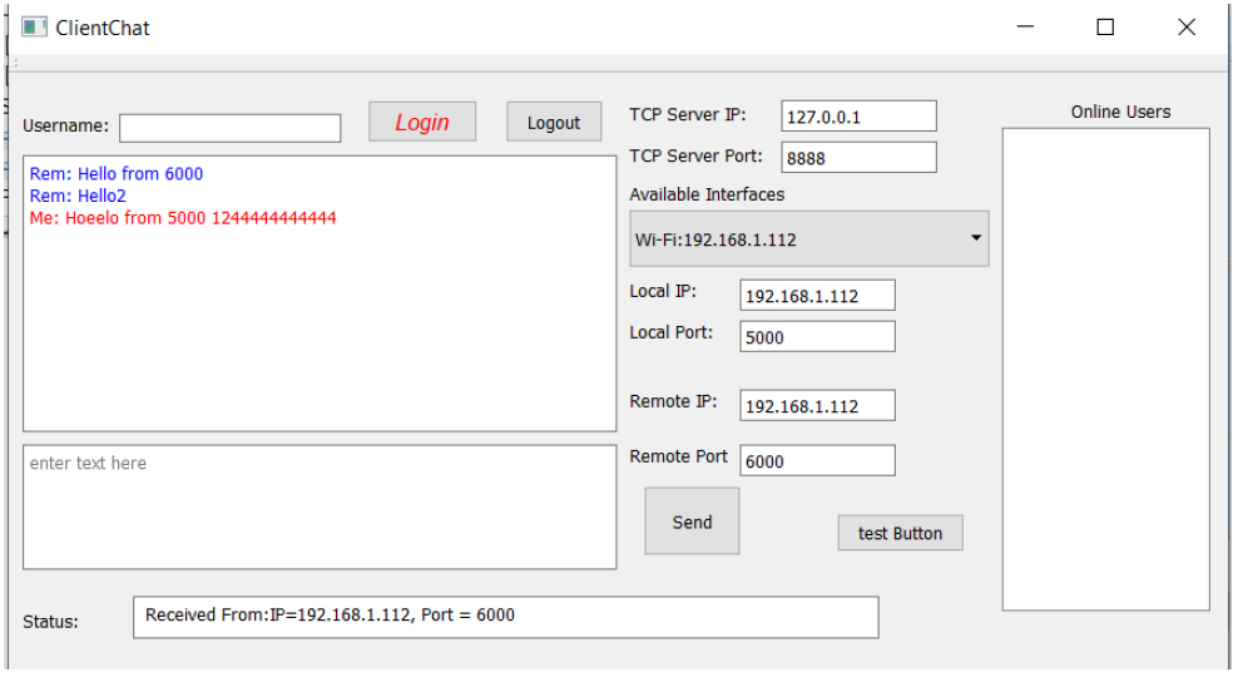
Extra requirements:

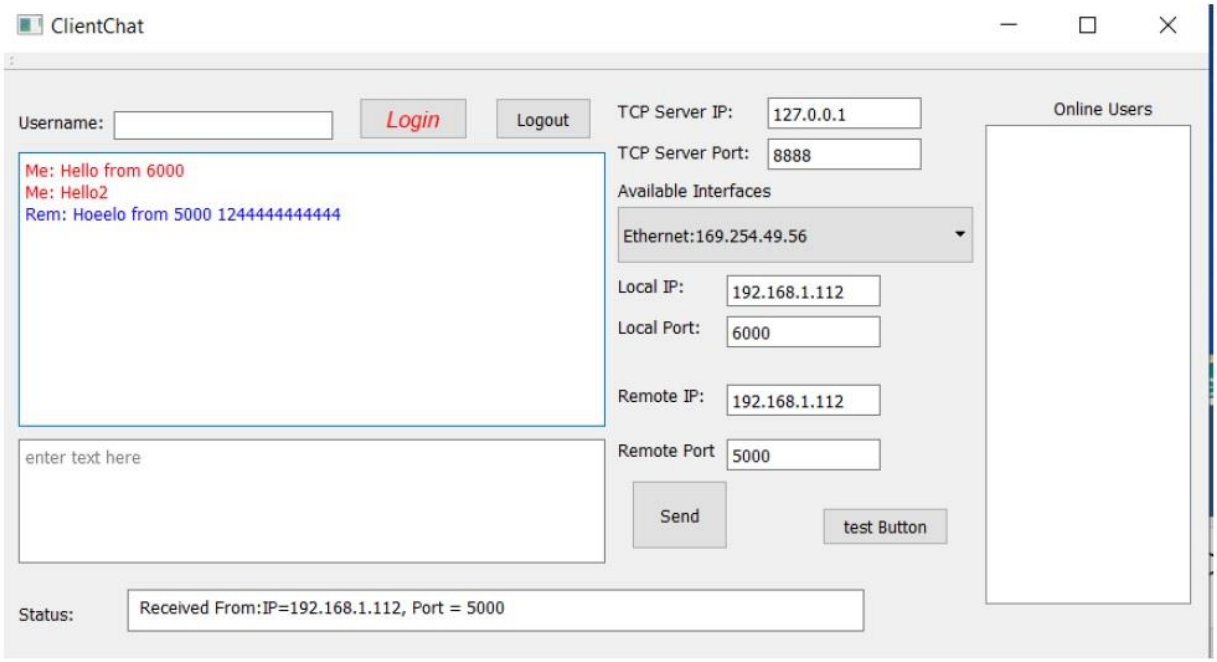
- Enable sent to all option
- Add the name for each online user next to its corresponding IP and port number i.e. Ali 192.168.1.25 600
- Add file at the TCP server side, which contains the credential for users, login information as user name and password as follows:

User Name	Password
Ali	1234
Saly	A20B
Aws	ABcd
Adam	1Cb2

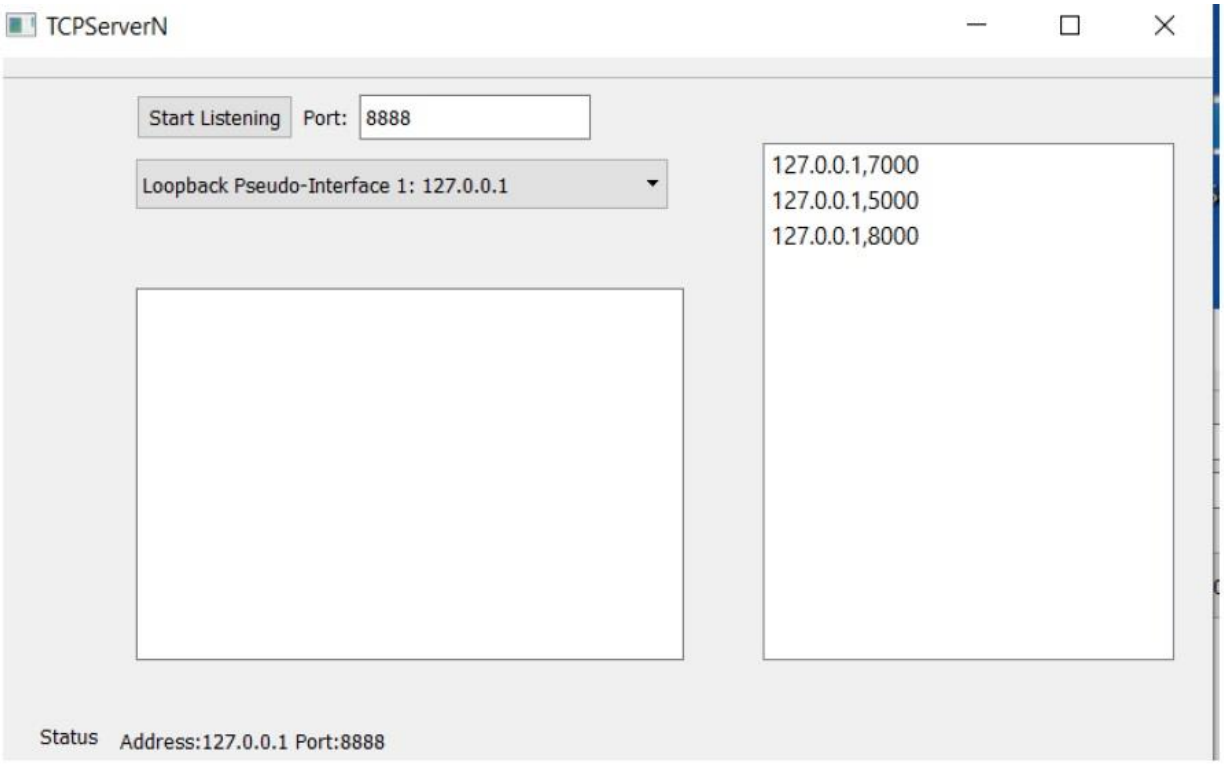
Both user name and password must be valid for login process, if OK, then the client can proceed and a notification can appear as (Logged in successful), else, a message will appear (invalid login information, either user name or password)

- enable the logout button.
- Use different test color for each user.



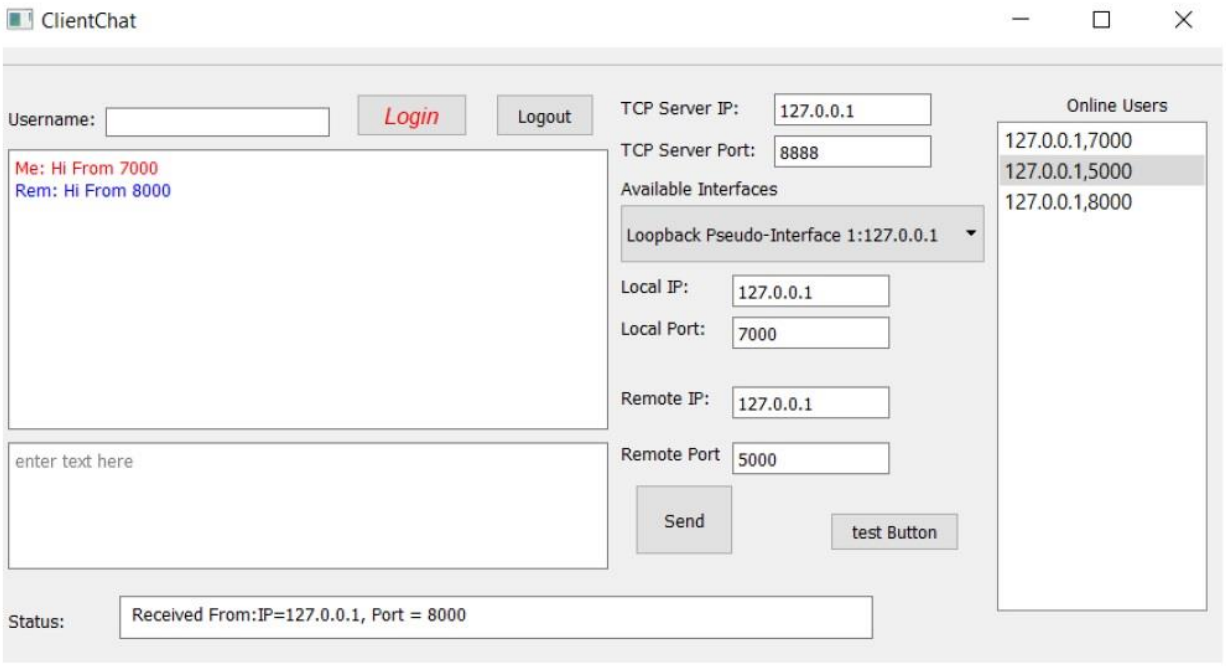


Part 2(HW2): Here we show The TCP Server and # Chatting Clients each has a UDP and a TCP Client in the Code. Same Code for the Clients

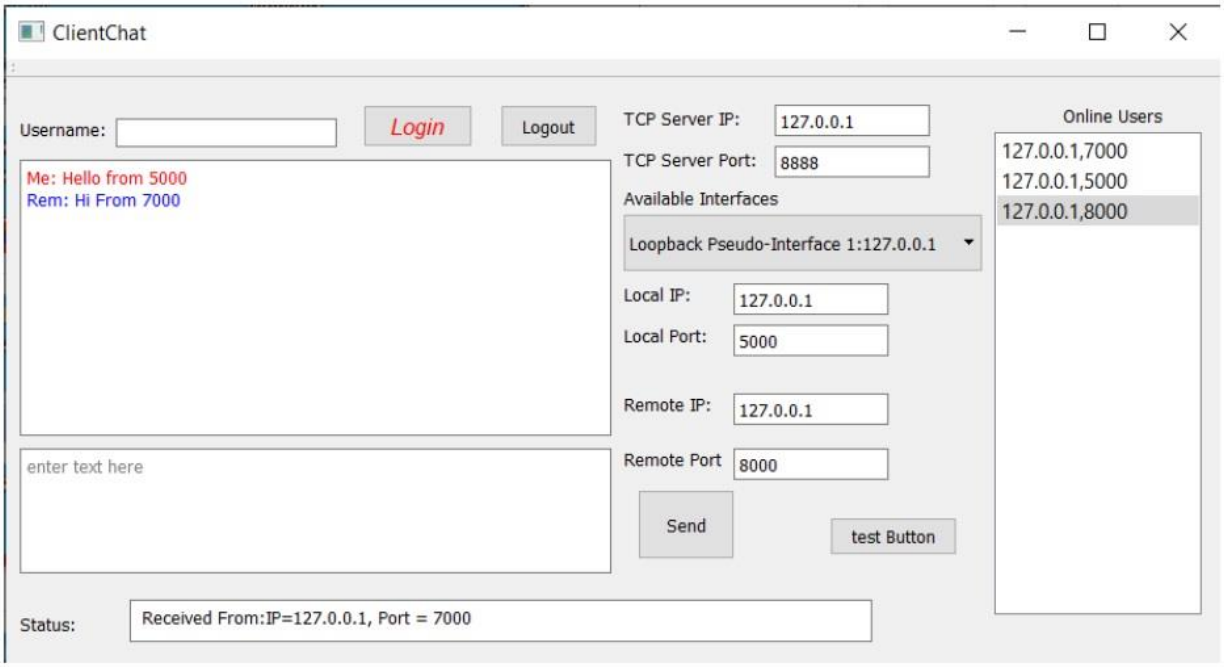


Client1

Client1

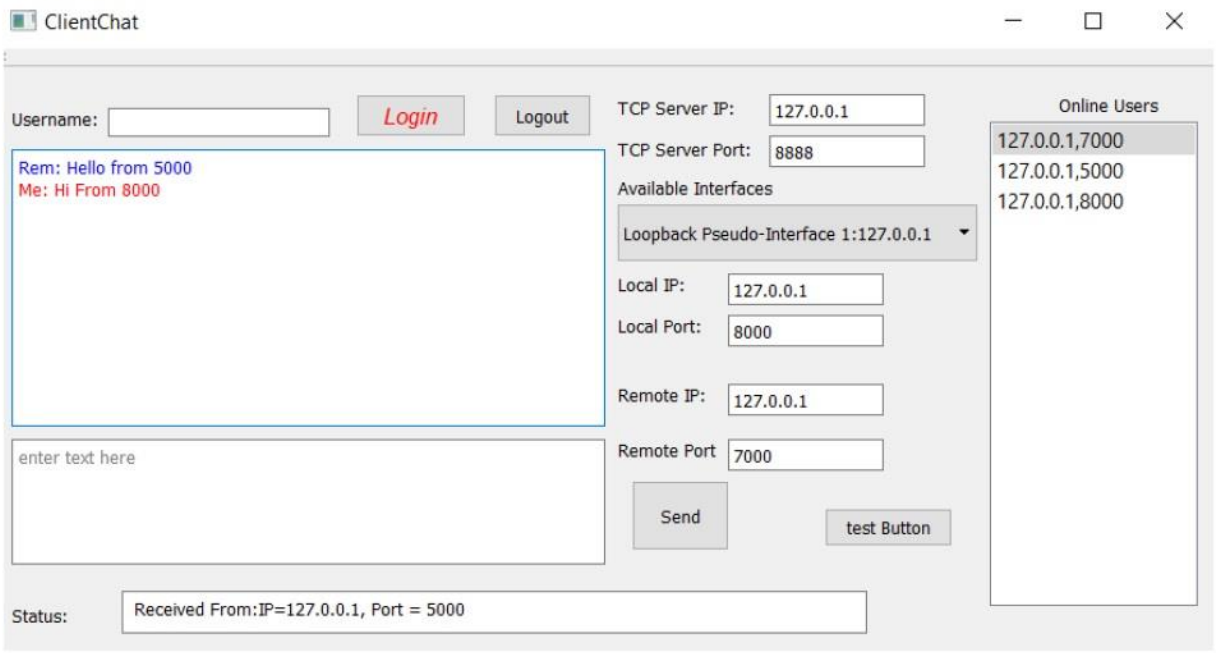


Client 2:



Client 3

Client 3


ClientChat
Username:
Login
Logout
Rem: Hello from 5000
Me: Hi From 8000
enter text here
TCP Server IP:
127.0.0.1
TCP Server Port:
8888
Available Interfaces
Loopback Pseudo-Interface 1:127.0.0.1
Local IP:
127.0.0.1
Local Port:
8000
Remote IP:
127.0.0.1
Remote Port
7000
Send
test Button
Online Users
127.0.0.1,7000
127.0.0.1,5000
127.0.0.1,8000
Status:
Received From:IP=127.0.0.1, Port = 5000