



CSE4074-Computer Networks

Socket Programming Chat Application

Report

Ahmet Hakan Şimşek 150117060

Mücahit Tanacioğlu 150115006

Project Summary

In this socket programming project we have design chat application program which provides join, search, chat operations. Users can send message privately or as group by entering specific commands in TCP socket. Users send private message request to each other and server returns appropriate messages to users. Online user are determined in UDP socket by server. Also program provides log file about registration, log in, private message connection by users etc.

Encountered problems and solutions

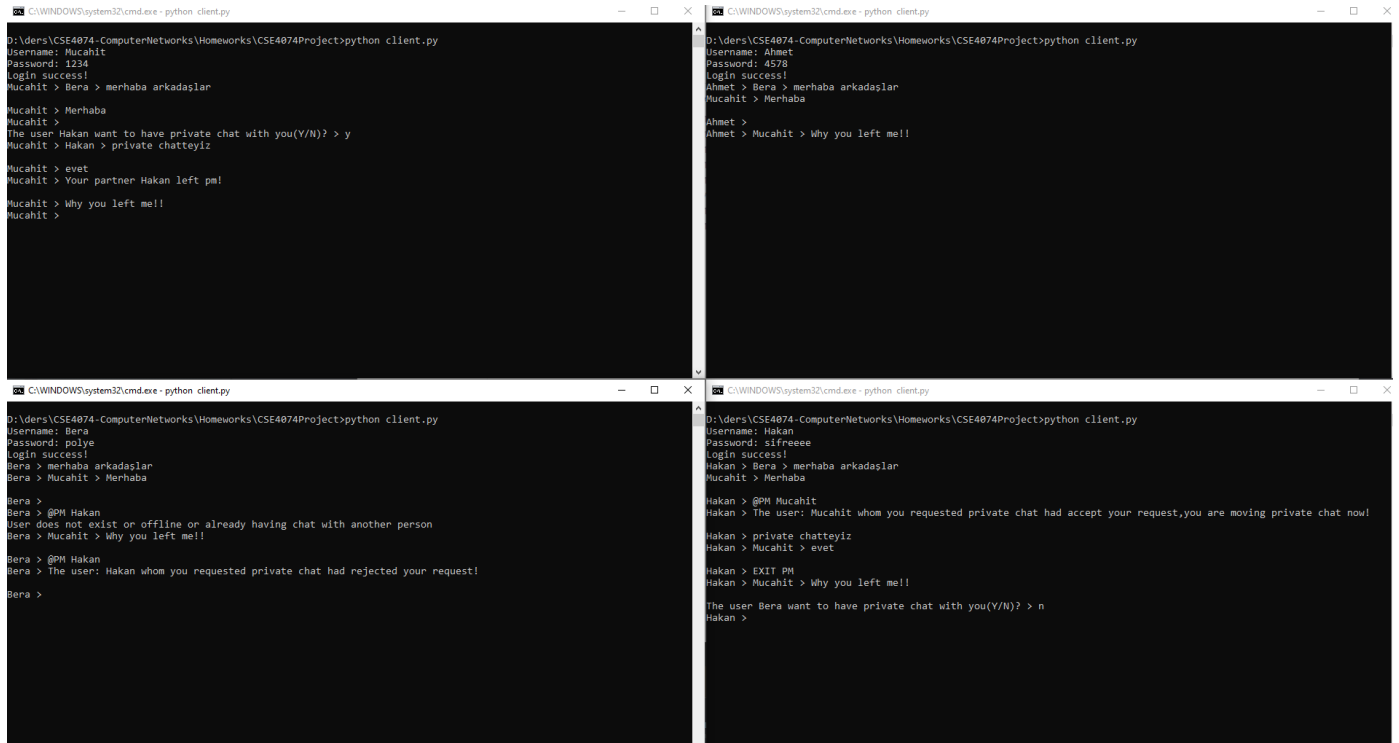
Problem : In first trials we designed chat application by socket programming but user could not see the message of other users directly, they had to press enter to see message that are in socket.

Solution : We used threads to solve this problem because input function waits to enter input from user but at the same time message is already in socket. Threads helped us to get message and input at the same time

Usage

First of all user enters the system by entering username and password, if username is not exist it sign up automatically or if username exist but password is wrong, system ask to enter again . After log in successfully users enter to group chat where all users can send message to everyone. User enters “@PM user”, pm request send to user to ask whether want to chat privately or not, also response is sent back again to inform user who sent invite. Now other users except these 2 users can still chat as group.

Below there is sample of private and group chat



```
C:\WINDOWS\system32\cmd.exe - python client.py
D:\ders\CSE4074-ComputerNetworks\Homeworks\CSE4074Project>python client.py
Username: Mucahit
Password: 1234
Login success!
Mucahit > Bera > merhaba arkadaşlar

Mucahit > Merhaba
Mucahit >
The user Hakan want to have private chat with you(Y/N)? > y
Mucahit > Hakan > private chatteyiz

Mucahit > evet
Mucahit > Your partner Hakan left pm!

Mucahit > Why you left me!!
Mucahit >

C:\WINDOWS\system32\cmd.exe - python client.py
D:\ders\CSE4074-ComputerNetworks\Homeworks\CSE4074Project>python client.py
Username: Ahmet
Password: 4578
Login success!
Ahmet > Bera > merhaba arkadaşlar
Mucahit > Merhaba

Ahmet >
Ahmet > Mucahit > Why you left me!!

C:\WINDOWS\system32\cmd.exe - python client.py
D:\ders\CSE4074-ComputerNetworks\Homeworks\CSE4074Project>python client.py
Username: Bera
Password: polye
Login success!
Bera > merhaba arkadaşlar
Bera > Mucahit > Merhaba

Bera >
Bera > @PM Hakan
User does not exist or already having chat with another person
Bera > Mucahit > Why you left me!!

Bera > @PM Hakan
Bera > The user: Hakan whom you requested private chat had rejected your request!
Bera >

C:\WINDOWS\system32\cmd.exe - python client.py
D:\ders\CSE4074-ComputerNetworks\Homeworks\CSE4074Project>python client.py
Username: Hakan
Password: sifreeee
Login success!
Hakan > Bera > merhaba arkadaşlar
Mucahit > Merhaba

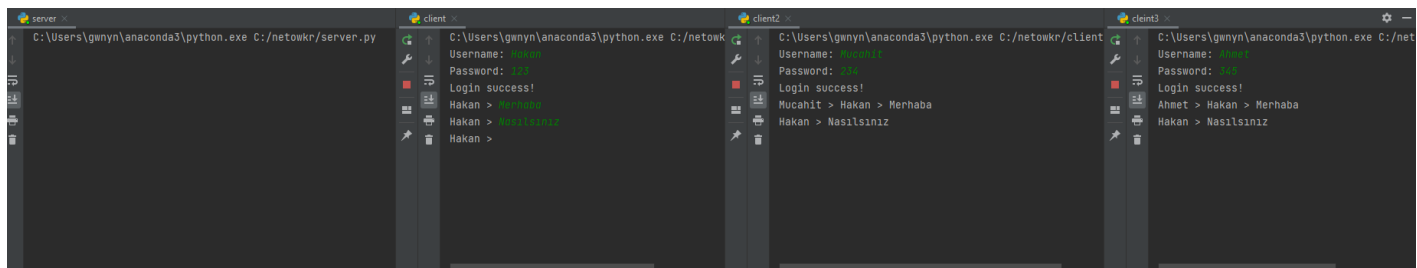
Hakan > @PM Mucahit
Hakan > The user: Mucahit whom you requested private chat had accept your request,you are moving private chat now!

Hakan > private chatteyiz
Hakan > Mucahit > evet

Hakan > EXIT PM
Hakan > Mucahit > Why you left me!!

The user Bera want to have private chat with you(Y/N)? > n
Hakan >
```

Also below there is a sample of group chat.



```
server > C:\Users\gwnyn\anaconda3\python.exe C:/netowkr/server.py

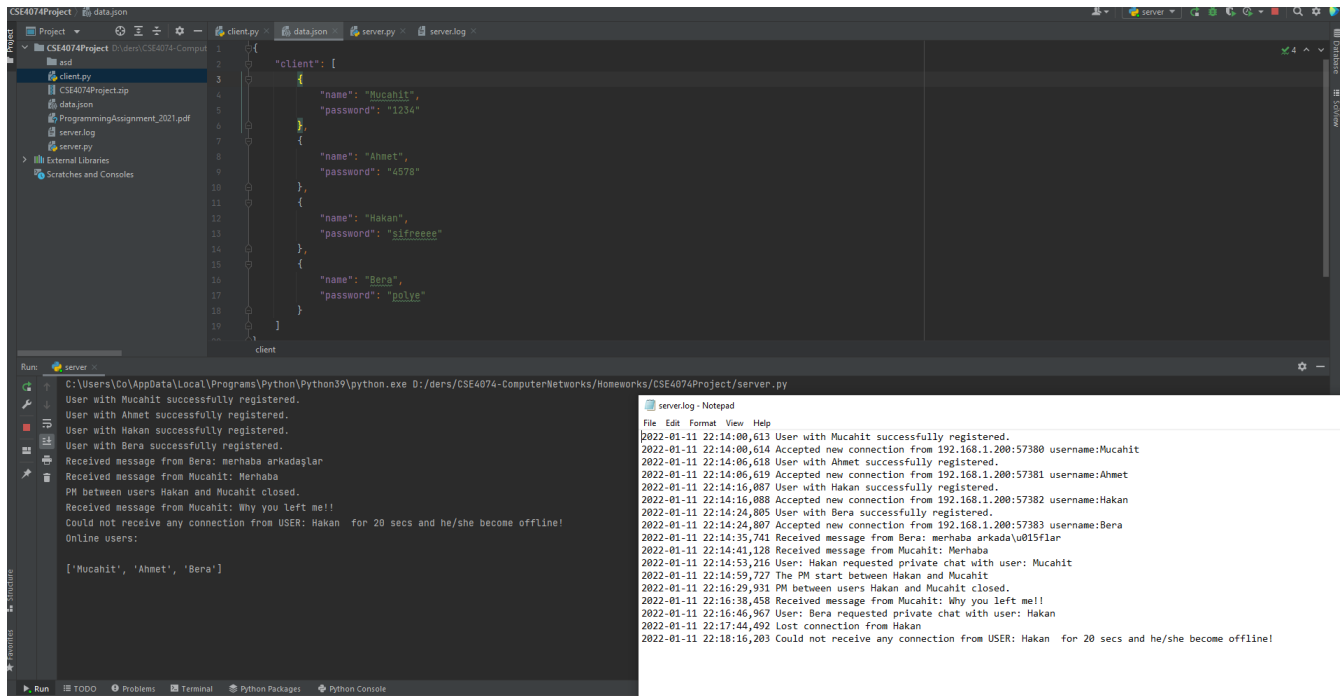
client > C:\Users\gwnyn\anaconda3\python.exe C:/netowkr/client.py
Username: Hakan
Password: 123
Login success!
Hakan > Merhaba
Hakan > Nasilsiniz
Hakan >

client2 > C:\Users\gwnyn\anaconda3\python.exe C:/netowkr/client.py
Username: Mucahit
Password: 123
Login success!
Mucahit > Hakan > Merhaba
Hakan > Nasilsiniz

client3 > C:\Users\gwnyn\anaconda3\python.exe C:/netowkr/client.py
Username: Ahmet
Password: 123
Login success!
Ahmet > Hakan > Merhaba
Hakan > Nasilsiniz
```

When one of user decided to exit private chat, then user enters “EXIT PM”, at the end connection is broken they turn into initial condition. At the end of the program if user want to exit from the chat application user enters “LOGOUT” to exit totally from the program.

Below there is a sample of log file



```
1 {
2   "client": {
3     {
4       "name": "Mucahit",
5       "password": "1234"
6     },
7     {
8       "name": "Ahmet",
9       "password": "4578"
10    },
11    {
12      "name": "Hakan",
13      "password": "sifrenee"
14    },
15    {
16      "name": "Bera",
17      "password": "polve"
18    }
19  }
20 }
client
```

```
Run
C:\Users\Co\AppData\Local\Programs\Python\Python39\python.exe D:/ders/CSE4074-ComputerNetworks/Homeworks/CSE4074Project/server.py
User with Mucahit successfully registered.
User with Ahmet successfully registered.
User with Hakan successfully registered.
User with Bera successfully registered.
Received message from Bera: merhaba arkadaşlar
Received message from Mucahit: Merhaba
PM between users Hakan and Mucahit closed.
Received message from Mucahit: Why you left me!!
Could not receive any connection from USER: Hakan for 20 secs and he/she become offline!
Online users:
['Mucahit', 'Ahmet', 'Bera']
```

```
server.log - Notepad
File Edit Format View Help
2022-01-11 22:14:00,613 User with Mucahit successfully registered.
2022-01-11 22:14:00,614 Accepted new connection from 192.168.1.200:57380 username:Mucahit
2022-01-11 22:14:06,618 User with Ahmet successfully registered.
2022-01-11 22:14:06,619 Accepted new connection from 192.168.1.200:57381 username:Ahmet
2022-01-11 22:14:16,087 User with Hakan successfully registered.
2022-01-11 22:14:16,088 Accepted new connection from 192.168.1.200:57382 username:Hakan
2022-01-11 22:14:24,805 User with Bera successfully registered.
2022-01-11 22:14:24,807 Accepted new connection from 192.168.1.200:57383 username:Bera
2022-01-11 22:14:35,741 Received message from Bera: merhaba arkadaşlar
2022-01-11 22:14:41,128 Received message from Mucahit: Merhaba
2022-01-11 22:14:53,216 User: Hakan requested private chat with user: Mucahit
2022-01-11 22:14:59,727 The PM start between Hakan and Mucahit
2022-01-11 22:16:29,931 PM between users Hakan and Mucahit closed.
2022-01-11 22:16:38,458 Received message from Mucahit: Why you left me!!
2022-01-11 22:16:46,967 User: Bera requested private chat with user: Hakan
2022-01-11 22:17:44,492 Lost connection from Hakan
2022-01-11 22:18:16,203 Could not receive any connection from USER: Hakan for 20 secs and he/she become offline!
```