VIETNAM NATIONAL UNIVERSITY HO CHI MINH CITY
HO CHI MINH CITY UNIVERSITY OF TECHNOLOGY
FACULTY OF COMPUTER SCIENCE AND ENGINEERING

COMPUTER NETWORKS (CO3093)

ASSIGNMENT 1 REPORT

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HO CHI MINH CITY, November 2022

CONTENT

1 Requirement elicitation

1.1 Objectives

- Build a chat application according to the communication protocols defined by each group, using the TCP/IP protocols.

1.2 Stakeholders (Actors)

- User

1.3 User stories

- As a user, I want to log in, so that I can log into the system
- As a user, I want to have a online list, so that I can know who are online
- As a user, I want to search using a username, so that I can find friend
- As a user, I want to view my friends list, so that I can start a chat with my friend
- As a user, I want to send and receive messages, so that I can chat with my friend
- As a user, I want to send file during chat, so that I can send the file in real time

1.4 Functional and non-functional requirements

1.4.1 Functional requirements

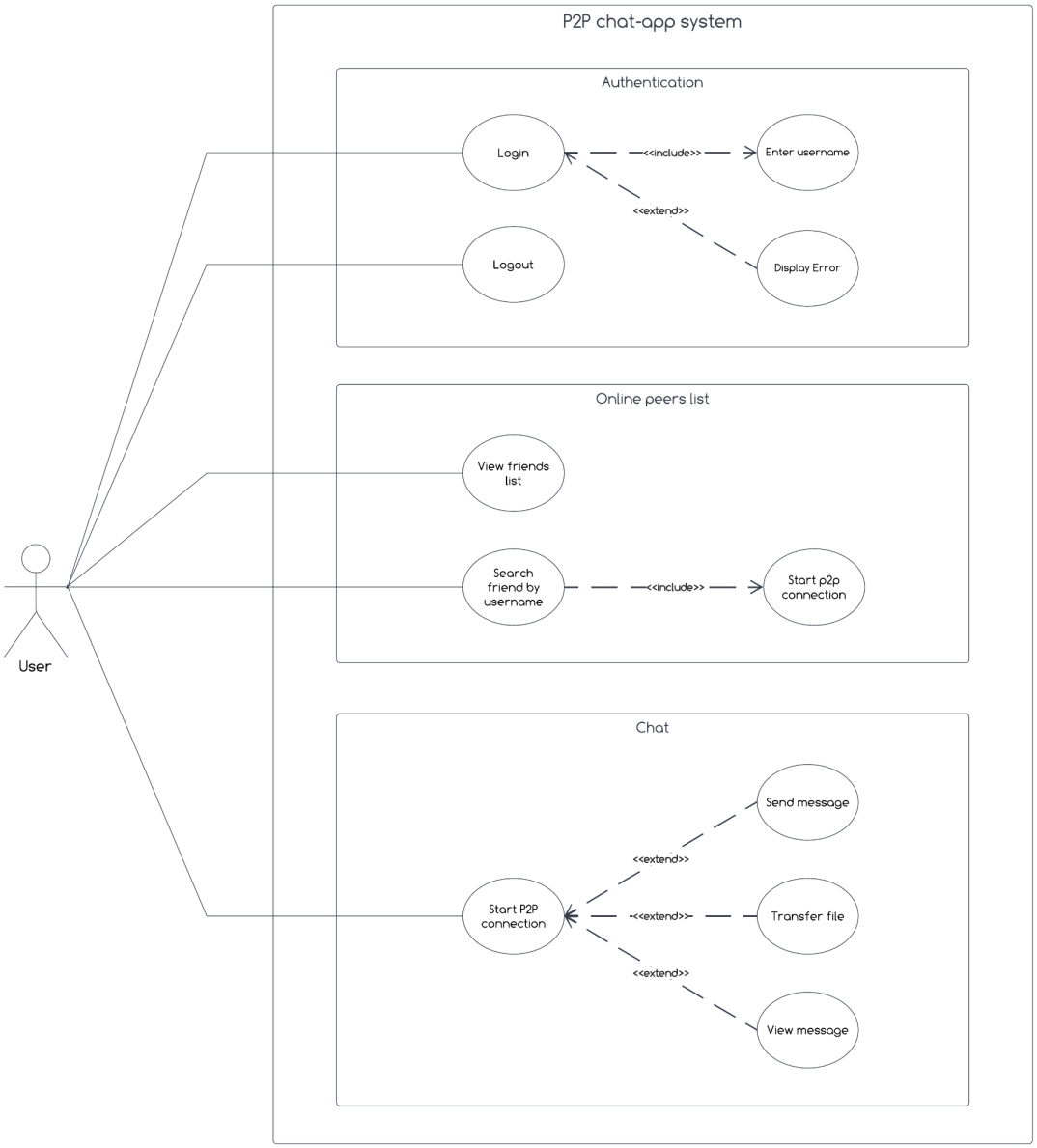
- Be able to manage personal account on the system (log in)
- Be able to search for a friends by his/her username
- Be able to add friends who have created an account on the system to friends list
- Be able to view list of friends
- Be able to directly send text messages in real-time and peer-to-peer with friends
- Be able to transfer file during chat session

1.4.2 Non-functional requirements

Performance	- The application should have a response time of less than 2 second. - The messages should be sent and received in a real-time manner with a delay of less than 1 second. - System response time must be less than 1 second.

	- Be able to handle feedback from 100 users concurrently.
Ease of use	- Be able to get used to using the application without any prior experience with about 5 minutes of initial using. - The language for the application should be English.
Reliabilities	- The system must operate 24/7. - The average number of failable real-time access to the system is 2 out of 1000 access times.
Security	- System grants access just when user log in with correct password and username - Using peer-to-peer chat to protect your privacy

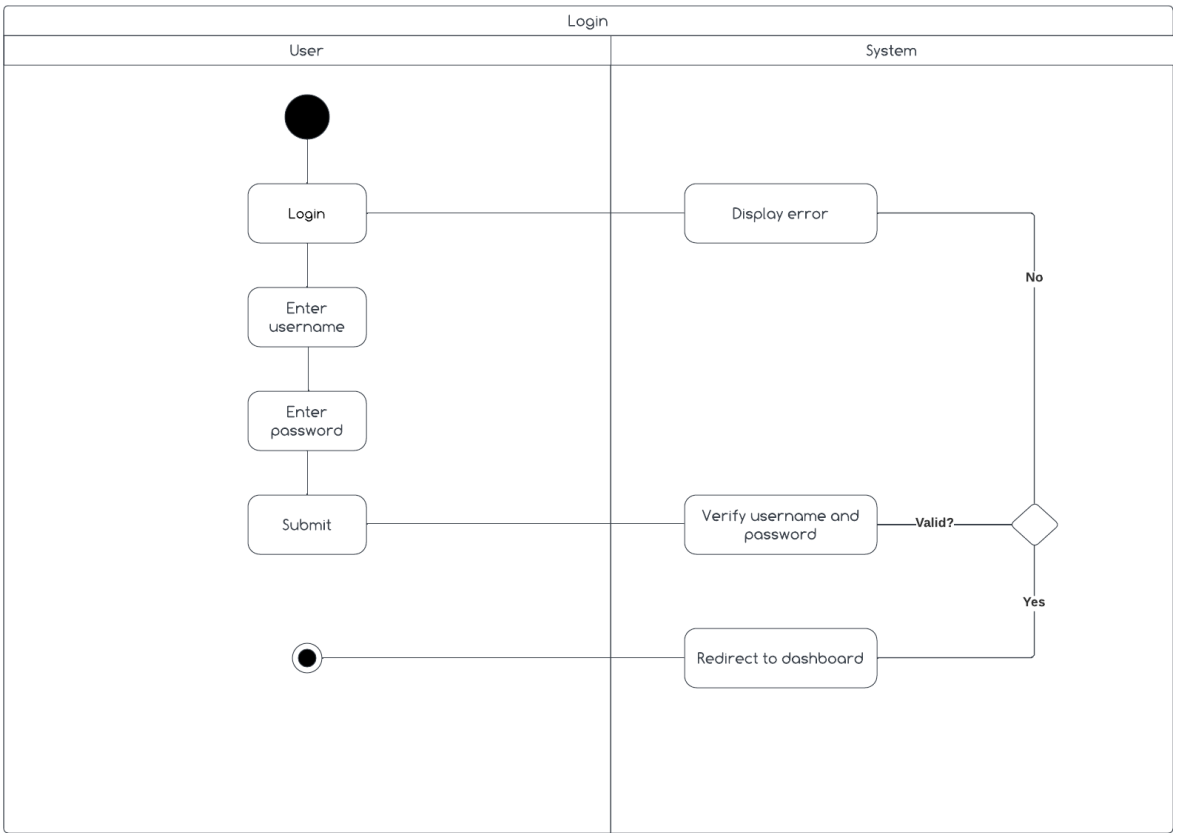
1.5 Use-case diagram



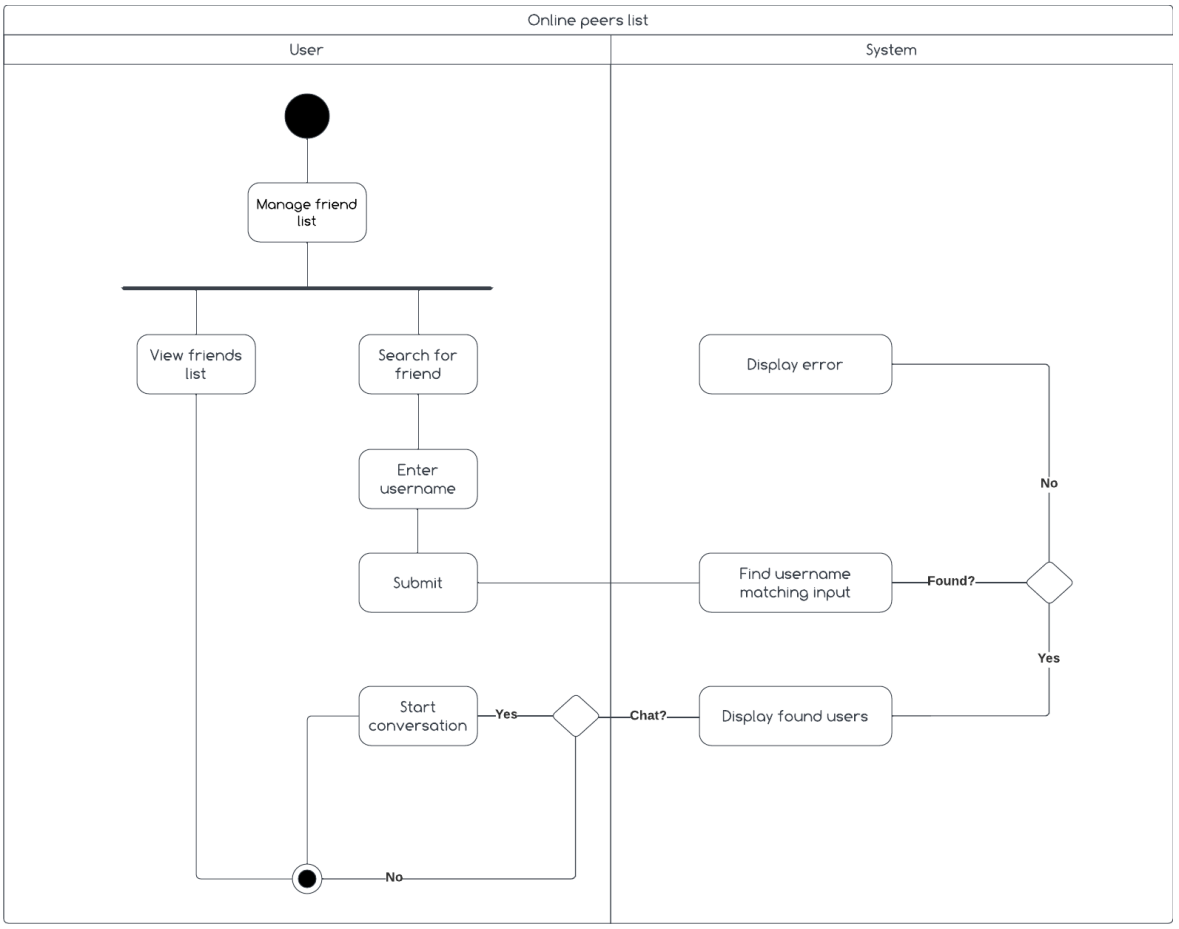
2 Application design

2.1 Activitity diagrams

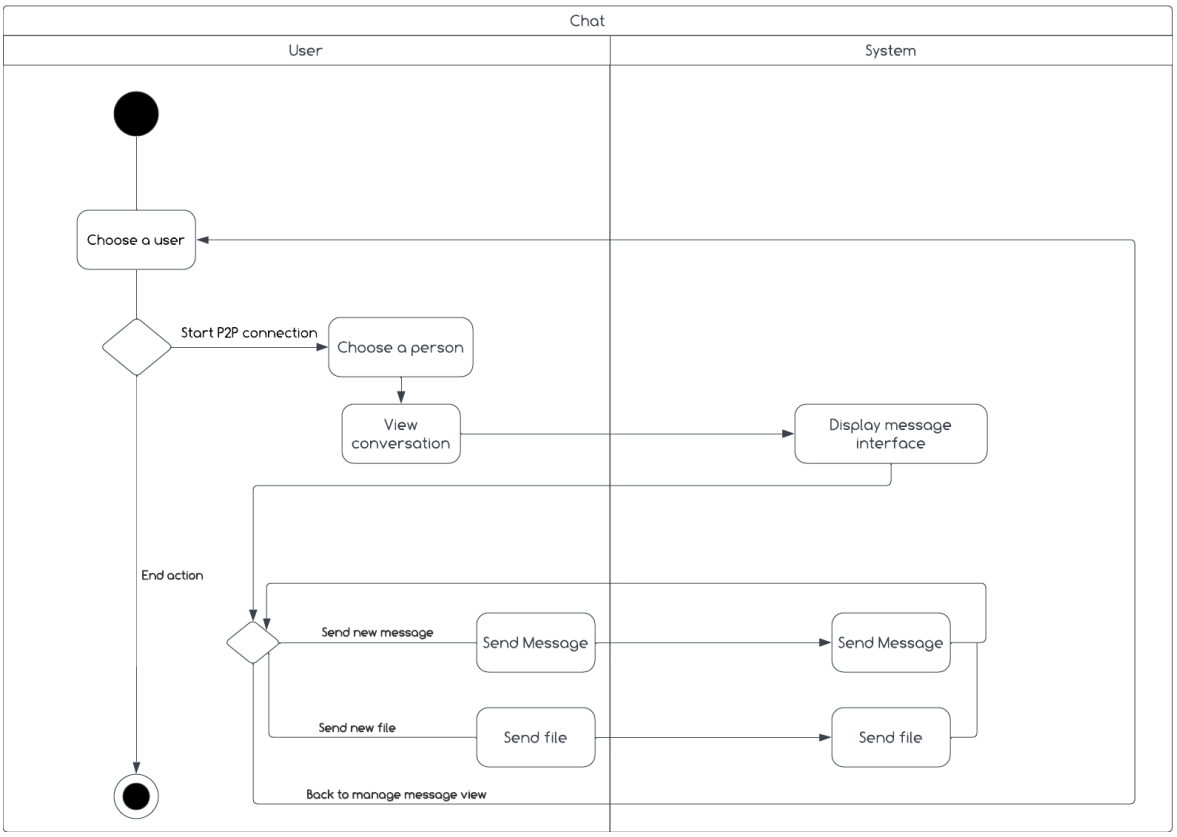
2.1.1 Login



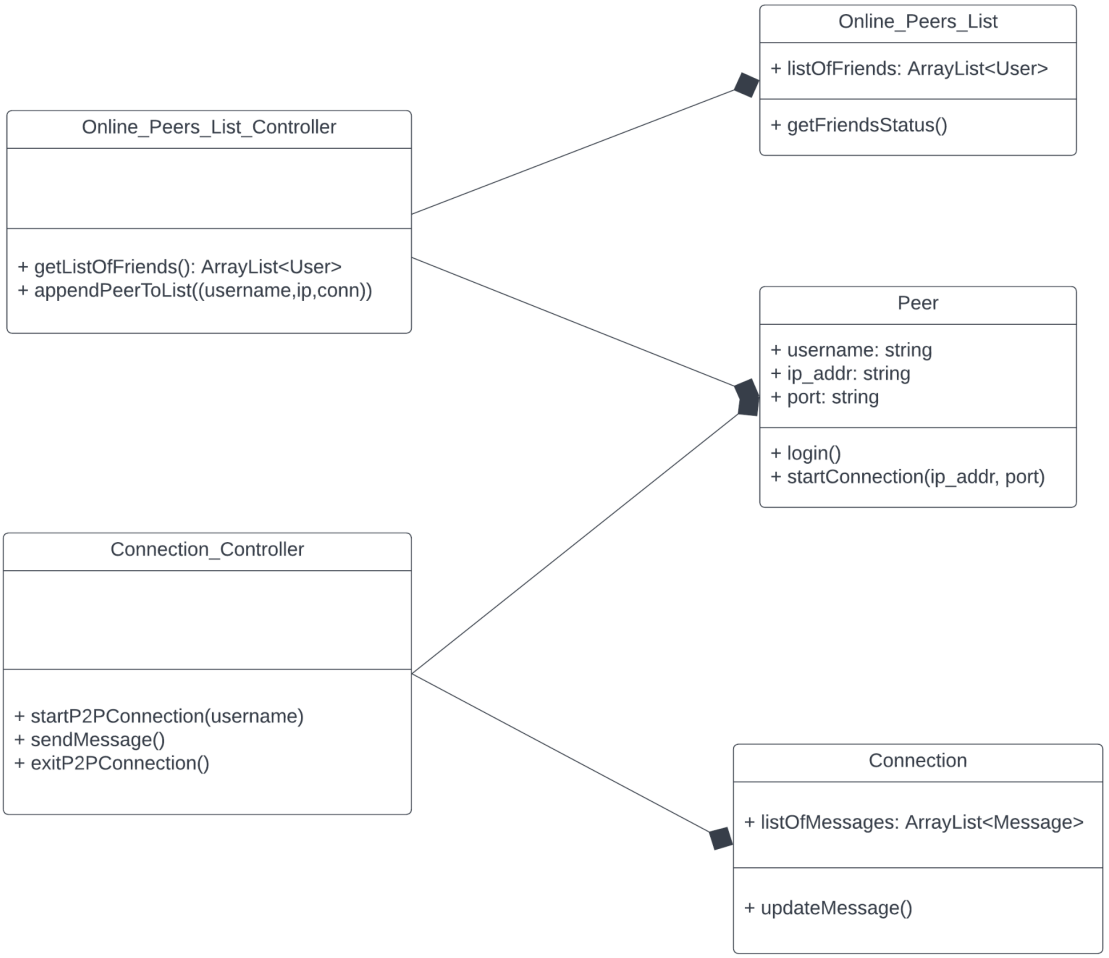
2.1.2 Online peers list



2.1.3 Chat

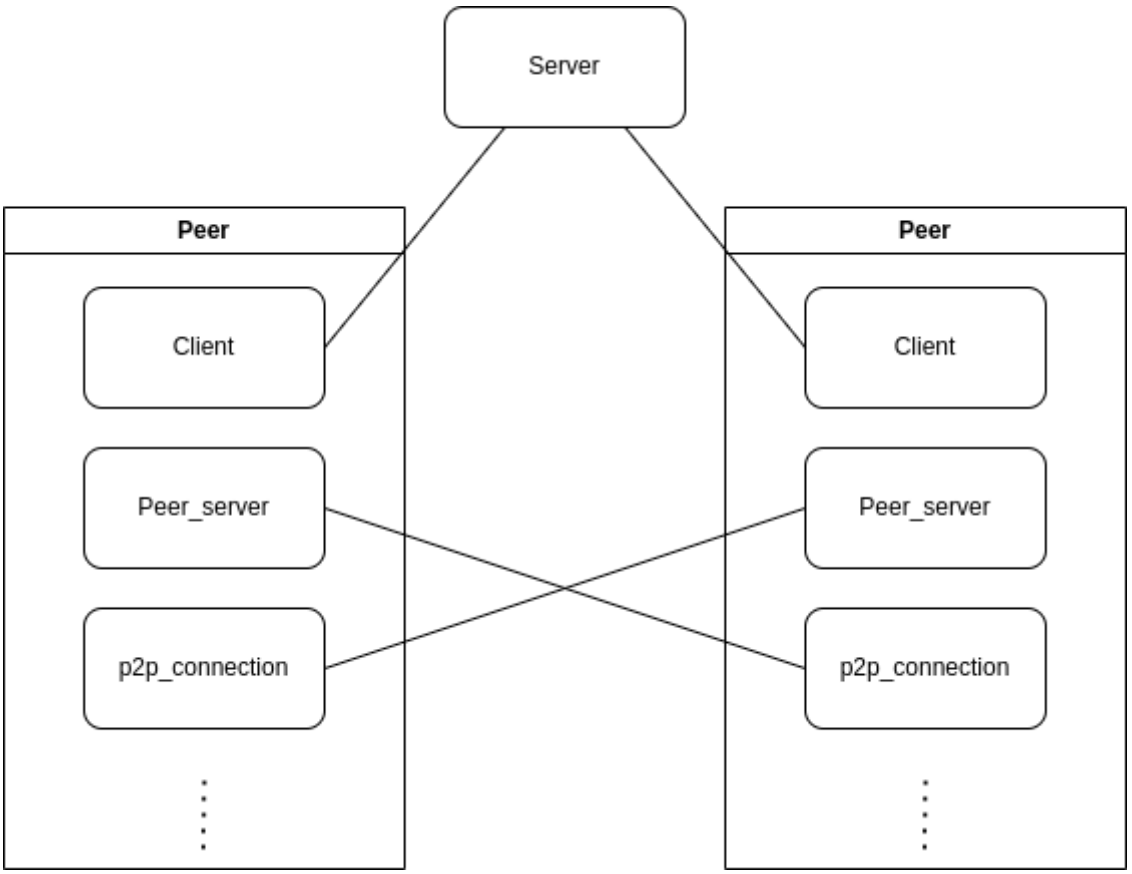

Chat
User
System
Choose a user
Start P2P connection
Choose a person
View conversation
Display message interface
End action
Send new message
Send Message
Send Message
Send new file
Send file
Send file
Back to manage message view

2.2 Class diagram



2.3 Protocol

This app uses TCP as its primary protocol.



3 Source code

3.1 GitHub

https://github.com/TanLoc-CS/p2p-chat-app