UNIVERSITY OF ASIA PACIFIC

Department of Computer Science and Engineering

Project Report – Fall 2023

Course Code: CSE 202

Course Title: Object Oriented Programming-I Lab

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Submitted By:

22201075 Sumayea Akter Samia

22201096 Rakib Hasan Bhuiyan

22201100 Mahinur Akther

Semester: 2nd Year 1st Semester

Section: B-2

Group: 3

Submitted To:

Musfequa Rahman,

Lecturer,

Department of CSE,

University of Asia Pacific

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Title: Chat Application System.

1. Introduction:

A chat application system is a platform that allows users to communicate with each other in real-time through text messages. It typically involves a user interface where users can type and send messages, and a server that facilitates message delivery between users.

The main purpose of our project is to create a Chat Application, througn which we can communicate with each other.

2. Project Management Plan:

Rakib Hasan Bhuiyan (22201096):

- Design And Planning
- Notification
- Receive Message

Mahinur Akther (22201100):

- Sign Up
- Login
- Deliver message

Sumayea Akter Samia (22201075):

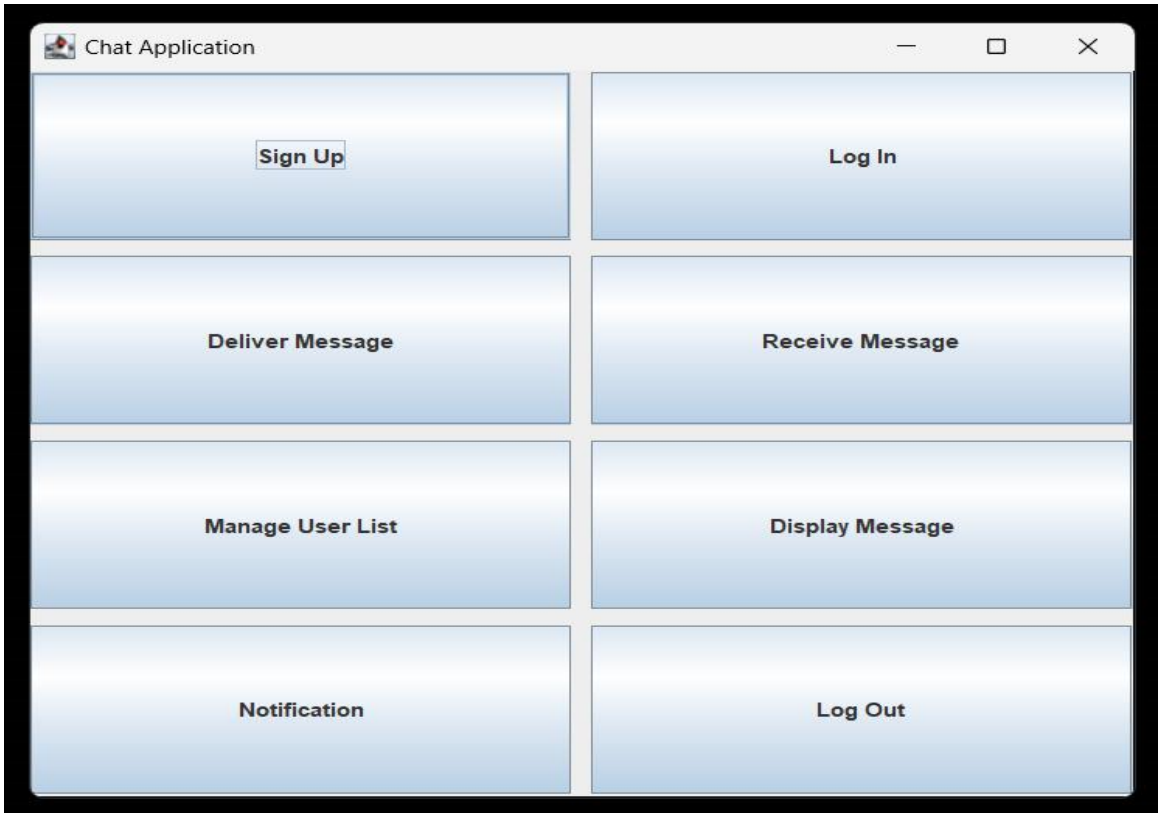
- Manage User list
- Display
- Log Out

3. Project Task Description:

Developing a chat application system using GUI and Swing involves several key tasks. First, we'll need to design the graphical user interface (GUI) with Swing components like buttons, text fields, and chat panels. This interface should be intuitive and visually appealing, making it easy for users to navigate and interact with the application. Next, we'll implement user authentication functionality, allowing users to securely log in with their credentials. Once logged in, users should be able to view their contacts, initiate new chats, and join existing conversations. Implementing message sending and receiving capabilities is crucial; users should be able to compose messages, send them to their contacts, and receive responses. Additionally, we can enhance the application with features like message formatting and message history. Throughout the development process, thorough testing and debugging are essential to ensure the application functions reliably. By completing these tasks, we can create a user-friendly chat application system using GUI and Swing that meets the needs of its users.

4. GUI Design:

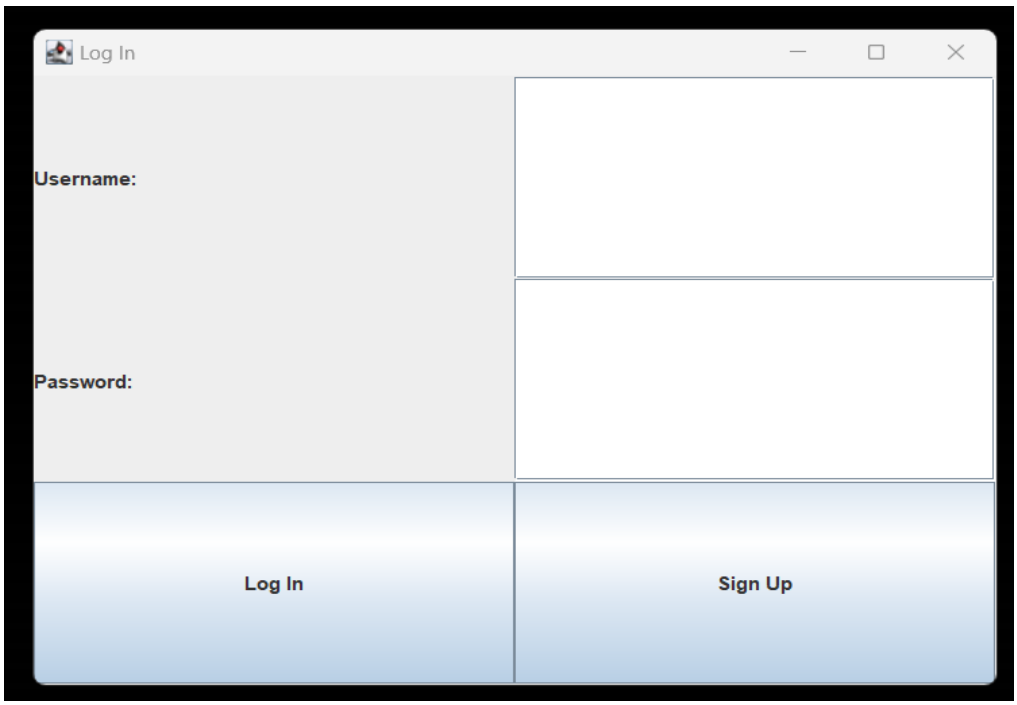
Main front page Design of our Project Design and Planning with Graphical User Interface (GUI**).**



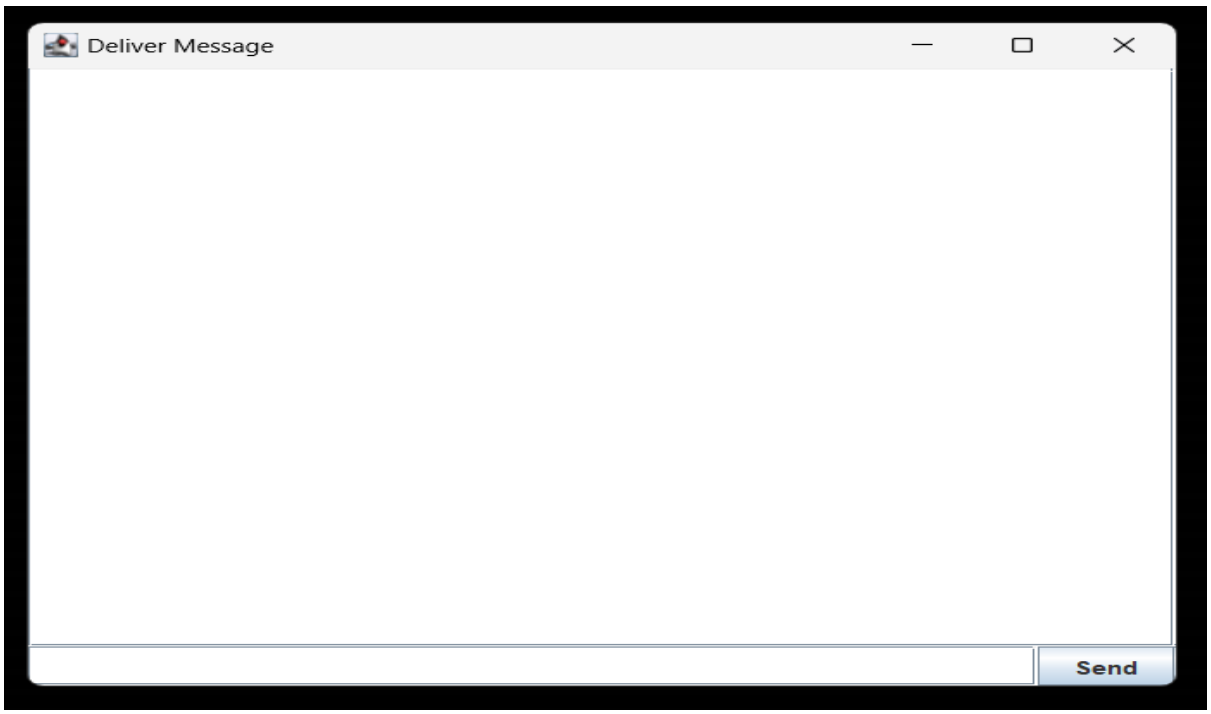
The main menu screen displays options for starting the Chat Application.

Here, the user is shown the task of new account Sing Up.

Here the user is given the direction of account Log in after Sing Up a new account

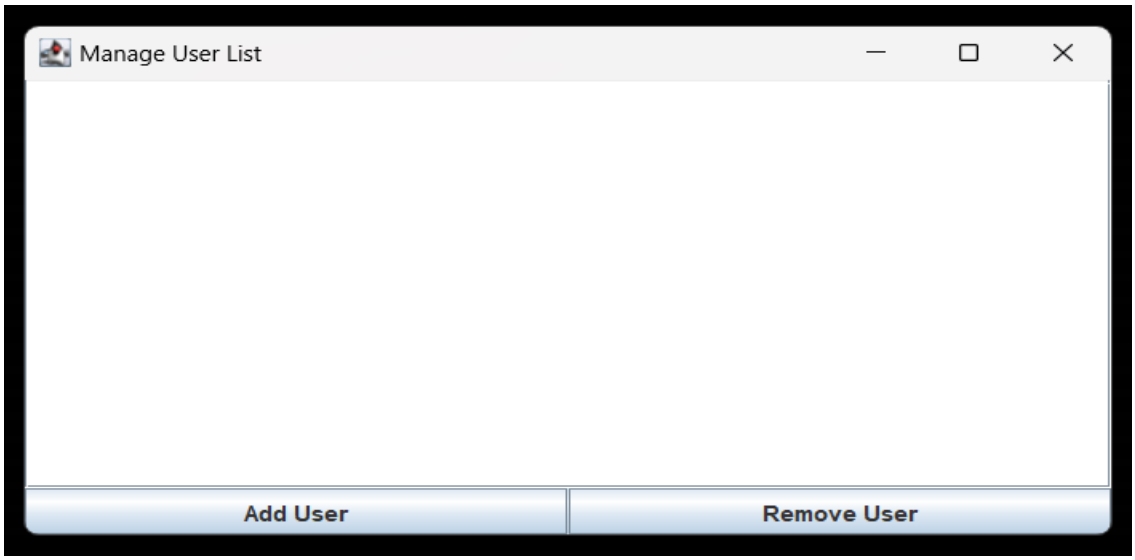


When the user sends a text to someone to communicate or talk, then the test is delivered from here .



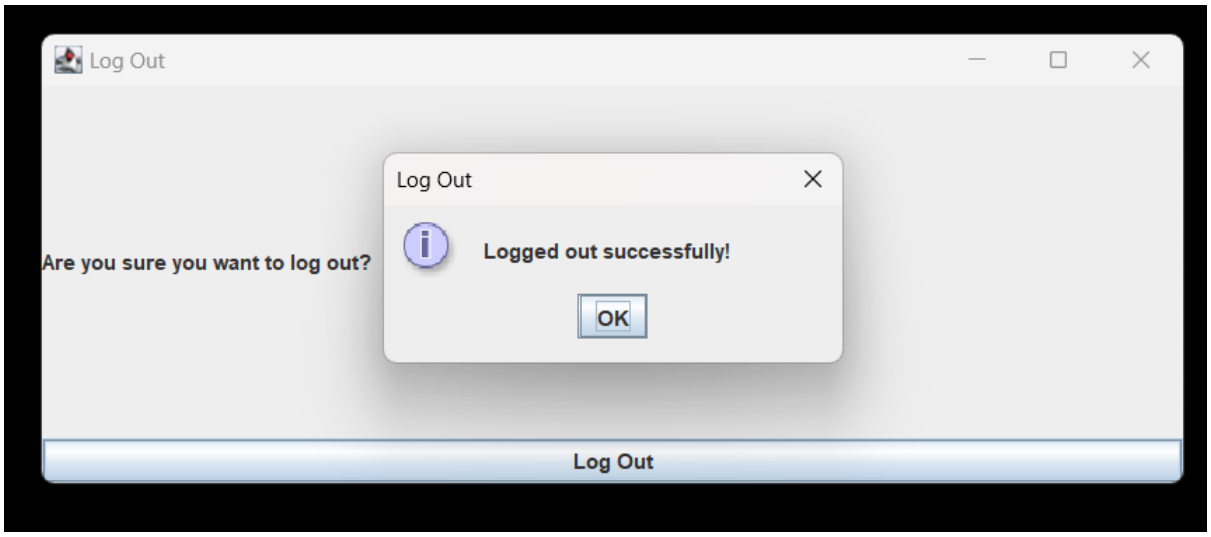
When the text sent from the user reaches the person on the other side, it is displayed in Receive Message

We can increase the users of our Chat Application System through User Management System. Here we can add the public ones in our contract list .



Chat Application System users can view their exchanged text through the Display Function.

The Log out function has used for the security of Chat Application users, when a user ends his communication, if he logs out all documents he has, his security increases, the possibility of any information beings stolen or hacked is less.



5. Implementation Phase Outcomes:

1. Desing And Planning: This source file encompasses the initial planning and design phase of the Chat Application System. It outlines the system architecture, user interface design, and overall project structure.

2. Signup: SignUp.java handles the user registration process, allowing new users to create accounts by providing necessary information such as username, password,. It ensures data validation and securely stores user credentials.

3. LogIn: LogIn.java facilitates user authentication, enabling registered users to log in to the Chat Application System securely. It verifies user credentials and grants access to the system's features upon successful authentication.

4. Deliver Message: This source file manages the delivery of messages between users within the Chat Application System. It handles the transmission of messages from sender to recipient, ensuring timely and reliable communication.

5. Receive Message: Receive Message handles the reception of messages by users within the Chat Application System. It processes incoming messages and displays them to the intended recipients, maintaining the continuity of conversations.

6. Manage User List: ManageUserList.java is responsible for maintaining and updating the list of active users within the Chat Application System. It allows users to view online/offline status, add friends, and manage contacts efficiently.

7. Display Message: Display Message governs the presentation of messages within the user interface of the Chat Application System. It formats messages for readability, organizes conversations, and provides a seamless user experience.

8. Notification: Notification handles the generation and delivery of notifications to users within the Chat Application System. It informs users about new messages, friend requests, or other relevant events, enhancing user engagement.

9. Logout: Log Out facilitates the secure logout process for users, ensuring the termination of active sessions and safeguarding user privacy. It clears session data and redirects users to the login screen upon logout.

6. Conclusion:

After hours of diligent effort, our project group has demonstrated unwavering dedication and proficiency in developing the chat application system. We successfully accomplished all our set goals, implementing suggested changes effectively. Our commitment to transforming conceptual designs into an engaging and user-friendly chat experience has been evident throughout the project. Each member of our team has gained valuable insights into the realm of software development, particularly in creating intuitive user interfaces and ensuring smooth communication functionalities. This project has inspired us to pursue further endeavours' in software development, with a focus on crafting innovative applications that cater to a wider audience and incorporate more advanced features from the Chat Application . .

7. References:

Academic literature on the topic 'Chat application':
https://www.grafiati.com/en/literature-selections/chat-application/

Application of Reference Guidelines in Chat Reference Interactions :
https://www.tandfonline.com/doi/abs/10.1300/J106v13n04_02

Youtube : https://www.youtube.com/watch?v=st7qtH8ysCo

GitHub: https://github.com/topics/chat-application

Textbook: Java the Complete Reference, 11th edition, Herbert Schildt .
Recommended References: www.tutorialspoint.com