

Desktop chat application

Step 1: Create a Login and Register Form (10 points)

You need to implement a user authentication system for your chat application. Create a graphical user interface (GUI) for the login and registration forms using Java Swing.

- Design and implement a login form where users can enter their username and password.
- Design and implement a registration form where new users can enter their desired username and password to create an account.
- Implement the functionality to validate user input, ensuring that usernames are unique during registration.

Step 2: Use MySQL Database and Create Tables (15 points)

In this step, you will set up a MySQL database to store user account information and chat messages for your chat application. You will also establish a connection to the database from your Java application.

- Create a MySQL database with a suitable name (e.g., "ChatAppDB").
- Within the database, create two tables: Users and Messages.
 - Users table should have fields like id (auto-increment), username, and password to store user account information.
 - Messages table should have fields like id (auto-increment), sender, recipient, and message_content to store chat messages.
- Establish a connection to the MySQL server from your Java application using JDBC (Java Database Connectivity).
- Implement the functionality to insert new user accounts into the Users table when a user registers.
- Implement the ability to store chat messages in the Messages table when a user sends a message.

Step 3: Create User Dashboard and Send Message Form (15 points)

In this step, you'll develop the user dashboard with inbox and sent box tabs and implement the functionality for sending messages.

- Design and implement a user dashboard interface with two tabs: "Inbox" and "Sent Box." You can use Java Swing for creating the GUI.
- Within the "Send Message" tab, create a form with two fields: one for entering the recipient's user ID and another for typing the message.
- Implement a "Send" button to send messages to the recipient specified by their user ID.
- When a user sends a message, the message should be saved in the "Messages" table in your MySQL database, with the sender's ID, recipient's ID, and the message content.
- Messages sent by the user should be displayed in the "Sent Box" tab.
- Messages received by the user should be displayed in the "Inbox" tab.