

Instant Messaging Project Design Overview

UI Design

Login Page: Initially, our UI sketch featured a simplistic login menu where users were required to enter their USERNAME, SERVER IP, and PORT before signing in. In our final project, significant enhancements were made:

1. **Username and Password Fields:** We replaced the SERVER IP and PORT fields with a more conventional Username and Password combination, aligning with standard user expectations and enhancing security.
2. **Registration Menu:** A new registration menu was introduced to allow new users to create an account. This addition involves fields for Username, Password, Confirm Password, and Email, ensuring a smooth onboarding process for new users.
3. **App Name Display:** To solidify branding and improve user experience, we added the app name at the top of the login page. This not only makes the app look more professional but also helps in building brand identity.

Chat Interface: The chat interface underwent minimal changes, focusing on simplification and usability:

1. **Friend List:** We streamlined the friend list, allowing users to select contacts easily to start a conversation. This list displays usernames and their current status (online/offline).
2. **Group Chat Icon:** A dedicated group chat icon has been added, enabling users to select and participate in group conversations seamlessly.
3. **User Active Status Bar:** This new feature displays who is currently online, providing a real-time sense of availability among contacts.

By removing unnecessary elements, we achieved a cleaner and more intuitive user interface, enhancing the overall user experience.

Backend Implementation

For the backend, we opted for MySQL to store messages and chat history. Leveraging online tutorials, our backend setup includes:

1. **Message Storage:** Messages are stored in a dedicated database table, with fields for sender, receiver, timestamp, and message content. This ensures message integrity and allows for efficient querying.
2. **Chat History:** Each user's chat history is maintained, enabling users to scroll back through past conversations effortlessly. This functionality supports individual and group chats.
3. **User Authentication:** User credentials are securely stored, facilitating a robust login and registration process.

Project Reflections

This project, though not fully featured, represents a significant achievement given the limited timeframe. We encountered numerous challenges, particularly in implementing the chat

functionality and user active status feature. However, through perseverance and focused problem-solving, we successfully overcame these obstacles.

Key takeaways from this project include:

- **Improved Problem Solving:** Tackling real-world problems and finding solutions has greatly enhanced our technical and analytical skills.
- **Team Collaboration:** Working as a cohesive unit allowed us to leverage each member's strengths, leading to a more polished final product.
- **Learnt Technologies:** Our knowledge of MySQL and backend integration has deepened, setting a strong foundation for future projects.

While the app may not encompass all the functionalities of a typical messaging application, the progress made and the working features implemented are commendable. Moving forward, we aim to continue refining and expanding the app's capabilities.