

DataByte

The Official Machine Learning and Data Science Club of
NITT

FIRST-YEAR INDUCTION

TASK-2

APP DEVELOPMENT

Task: Basic Real-time Chat Application

Description:

Develop a basic real-time chat application that allows users to send and receive text messages in real-time. Users should be able to create an account, log in, and participate in chat conversations.

Requirements:

1. User Registration and Authentication:

- Implement user registration functionality, including capturing the user's name, email, and password.
- Store user account information securely in a database.
- Implement user authentication using a suitable mechanism.

2. User Interface Design:

- Design a simple and intuitive chat interface.
- Display chat messages in a conversation-style format, with user avatars and timestamps for each message.
- Include a list of active users to show who is online.

3. Real-time Communication:

- Enable real-time messaging .
- Users should receive instant message updates without refreshing the page.

4. Chat Features:

- Implement the ability to send and receive text messages within the chat interface.
- Provide a text input field for users to type their messages.
- Display new messages as they arrive, and allow users to scroll through previous messages.

5. User Management:

- Allow users to create an account and log in with their credentials.
- Implement basic account management features such as password reset or account deletion.

6. Error Handling and Validation:

- Implement proper error handling and validation for user input, such as invalid email format or weak password.
- Display meaningful error messages to users in case of failures.

7. Security:

- Implement appropriate security measures to protect user data and ensure secure transmission of messages.
- Use encryption or hashing algorithms to store user passwords securely.

Deliverables:

- A functioning real-time chat application that allows users to send and receive text messages in real-time.
- User registration and authentication system with proper error handling and validation.
- Demonstrate the application's functionality by creating user accounts, logging in, and participating in chat conversations.
- Ensure the code is well-structured, documented, and follows best practices.

Evaluation Criteria:

- Successful implementation of real-time messaging functionality.
- User-friendly chat interface with message display and input field.
- Proper error handling and validation of user input.
- Secure user registration and authentication mechanism.
- Code quality, structure, and documentation.

Please note that you can expand the functionality by adding features such as chat rooms, message history, online/offline status, or multimedia messaging as per your requirements.

Resources :

<https://www.freecodecamp.org/news/build-a-chat-app-ui-with-flutter/>

<https://firebase.flutter.dev/docs/overview/>

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