

Topic: Building a Real-time Chat Application with Flutter and Firebase

Problem Statement:

In today's fast-paced digital world, communication plays a crucial role in connecting people globally. To address the need for seamless and real-time communication, we aim to develop a modern chat application using Flutter and Firebase. The primary challenge lies in creating a user-friendly interface, implementing real-time messaging, and ensuring secure data storage in the cloud.

Software Requirements:

1. Flutter SDK:

Flutter is an open-source UI software development toolkit used to build natively compiled applications for mobile, web, and desktop from a single codebase.

2. Dart:

Dart is the programming language used with Flutter.

Install Dart as it is the primary language for Flutter.

Dart installation is included with the Flutter SDK.

3. Firebase Account:

Create a Firebase account to utilize Firebase services.

Set up a new Firebase project from the Firebase Console.

4. Firebase SDK:

Integrate Firebase SDK into the Flutter project to leverage features like authentication, real-time database, and cloud messaging.

5. IDE (Integrated Development Environment):

Use a compatible IDE for Flutter development, such as Visual Studio Code or IntelliJ IDEA.

6. Version Control System:

Set up version control using Git to track changes and collaborate with others effectively.

7. Flutter Packages:

Utilize relevant packages from the pub.dev repository to enhance the functionality of the application.

Hardware Requirement:

Development Machine:

A computer with a minimum of 4GB RAM and a dual-core processor.

Mobile Device or Emulator:

A physical mobile device or emulator with sufficient resources to run the application for testing.