NAME: Bhushan Malpani DIV: D15C ROLL NO: 33

Experiment 06: To connect flutter with firebase

Theory:

Firebase is a powerful Backend-as-a-Service (BaaS) platform provided by Google that supports features like authentication, real-time database, Firestore, cloud functions, and more. Connecting Firebase with a Flutter app allows developers to integrate these backend services easily. Flutter interacts with Firebase using plugins like firebase_core, firebase_auth, and cloud_firestore. This integration enables building scalable, real-time, and secure mobile applications.

Steps to Connect Flutter with Firebase:

1. **Create a Firebase Project**:
    - ○ Go to Firebase Console → Create Project → Register App (Android/iOS).

2. **Register your App**:
    - ○ For Android: Add your app's package name (com.example.appname), download google-services.json and place it in android/app.

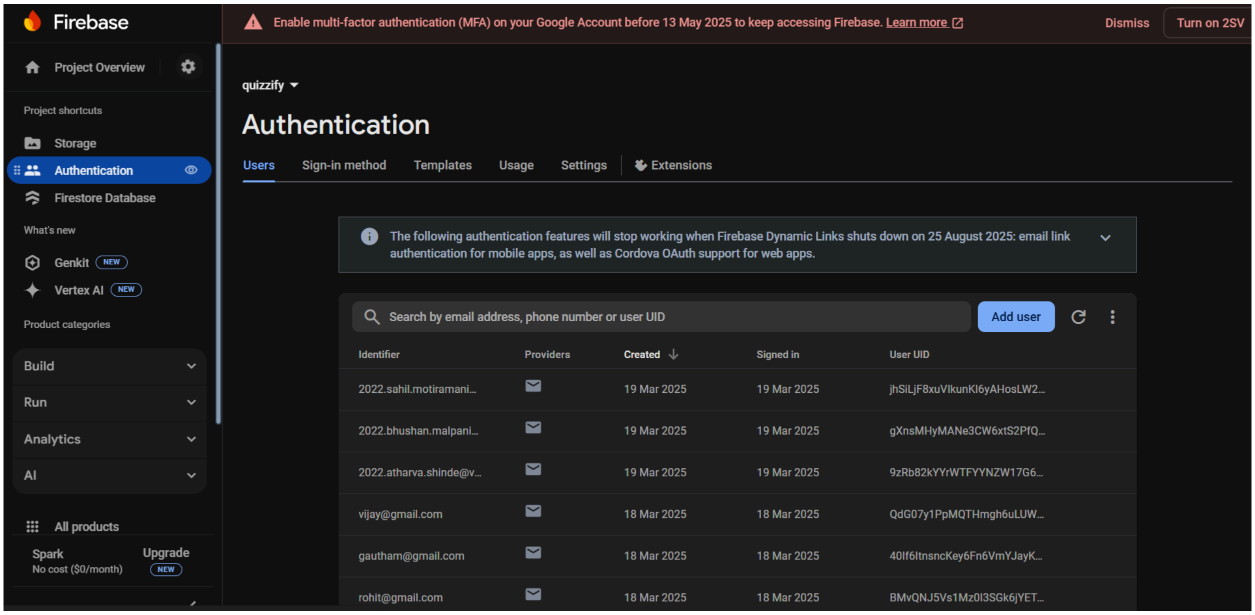
3. **Add Firebase SDK**:
    - ○ In android/build.gradle, add Google services classpath.
    - ○ In android/app/build.gradle, apply the google-services plugin.

4. **Add Dependencies** in pubspec.yaml:

5. **Initialize Firebase in Flutter**:
    - ○ In main.dart, ensure WidgetsFlutterBinding.ensureInitialized() and await Firebase.initializeApp();.

6. **Set up Firebase Authentication and Firestore**:
    - ○ Use FirebaseAuth for login/register and FirebaseFirestore to read/write data.

7. **Run & Test**:
    - ○ Use a real or virtual device to run the app and test Firebase functions like sign-in, data fetch, etc.



Enable multi-factor authentication (MFA) on your Google Account before 13 May 2025 to keep accessing Firebase. Learn more

Authentication

The following authentication features will stop working when Firebase Dynamic Links shuts down on 25 August 2025: email link authentication for mobile apps, as well as Cordova OAuth support for web apps.

Identifier	Providers	Created ↓	Signed in	User UID
2022.sahil.motiramani...	✉	19 Mar 2025	19 Mar 2025	jhSiLjF8xuVIkunKI6yAHosLW2...
2022.bhushan.malpani...	✉	19 Mar 2025	19 Mar 2025	gXnsMHyMANe3CW6xtS2PfQ...
2022.atharva.shinde@v...	✉	19 Mar 2025	19 Mar 2025	9zRb82kYYrWTFYYNZW17G6...
vijay@gmail.com	✉	18 Mar 2025	18 Mar 2025	QdG07y1PpMQTHmgh6uLUW...
gautham@gmail.com	✉	18 Mar 2025	18 Mar 2025	40If6ItnsncKey6Fn6VmYJayK...
rohit@gmail.com	✉	18 Mar 2025	18 Mar 2025	BMvQNJ5Vs1Mz0I3SGk6jYET...

Conclusion:

Flutter and Firebase integration enables real-time backend features like user authentication and cloud storage. Using plugins like firebase_core, firebase_auth, and cloud_firestore, Flutter apps can securely access Firebase services. The connection setup involves configuration in both the Firebase console and the Flutter project. This experiment allows seamless two-way communication between the app UI and backend. Overall, Firebase provides a scalable and efficient backend for Flutter applications.