EXPERIMENT NO: - 06

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Class:- D15A   **Roll:No: -** 19

AIM: - To connect Flutter UI with Firebase database.
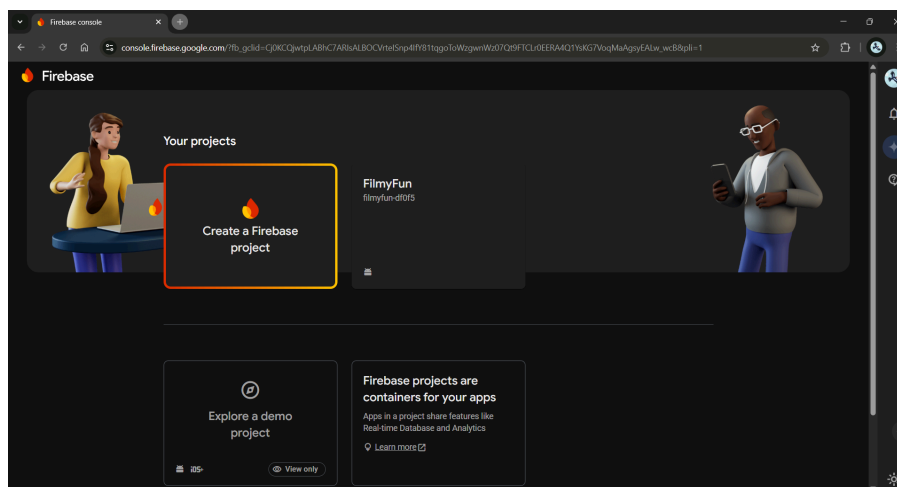
Theory: -

Flutter is an open-source UI toolkit developed by Google for building natively compiled applications for mobile, web, and desktop from a single codebase. Firebase, a Backend-as-a- Service (BaaS) platform, provides real-time database, authentication, and cloud storage services, making it a powerful backend solution for Flutter applications.

By integrating Firebase with Flutter, developers can store and retrieve data in real time, authenticate users, and manage cloud-based data efficiently. This is particularly useful for applications requiring dynamic content updates and user interactions.
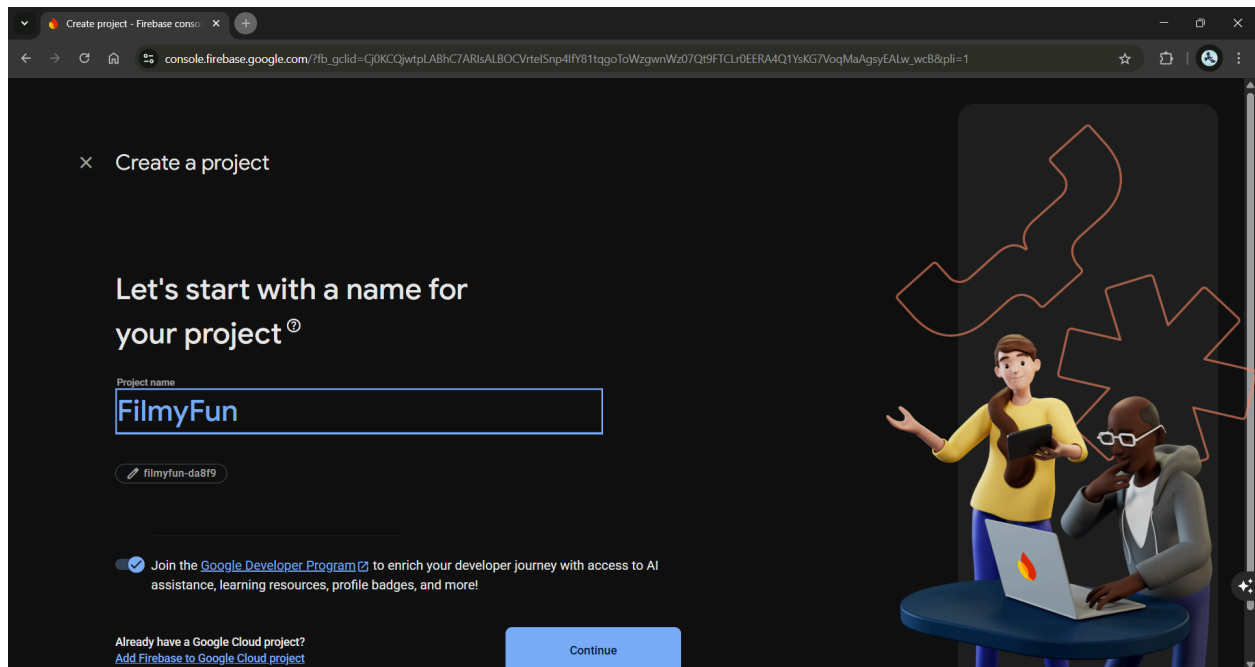
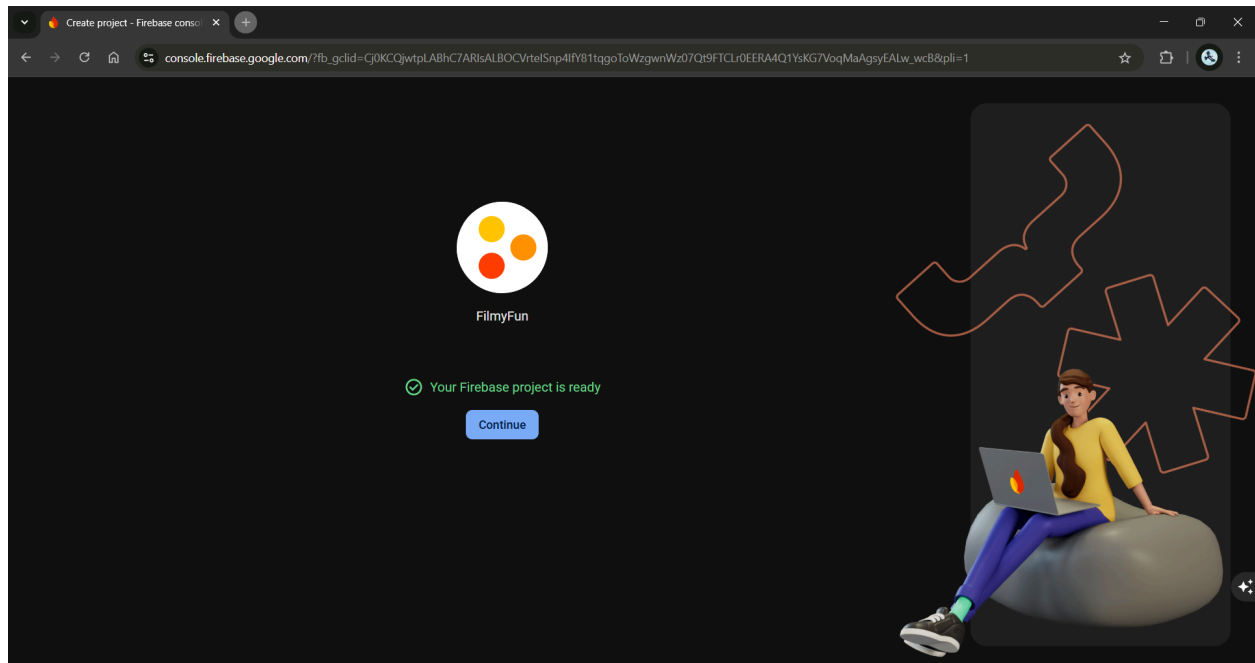# Steps to Connect Flutter UI with Firebase Database

Step 1:

1.1)   Go to Firebase Console and Create a Firebase Project

1.2)   Click on Create a Project and give it a suitable name.
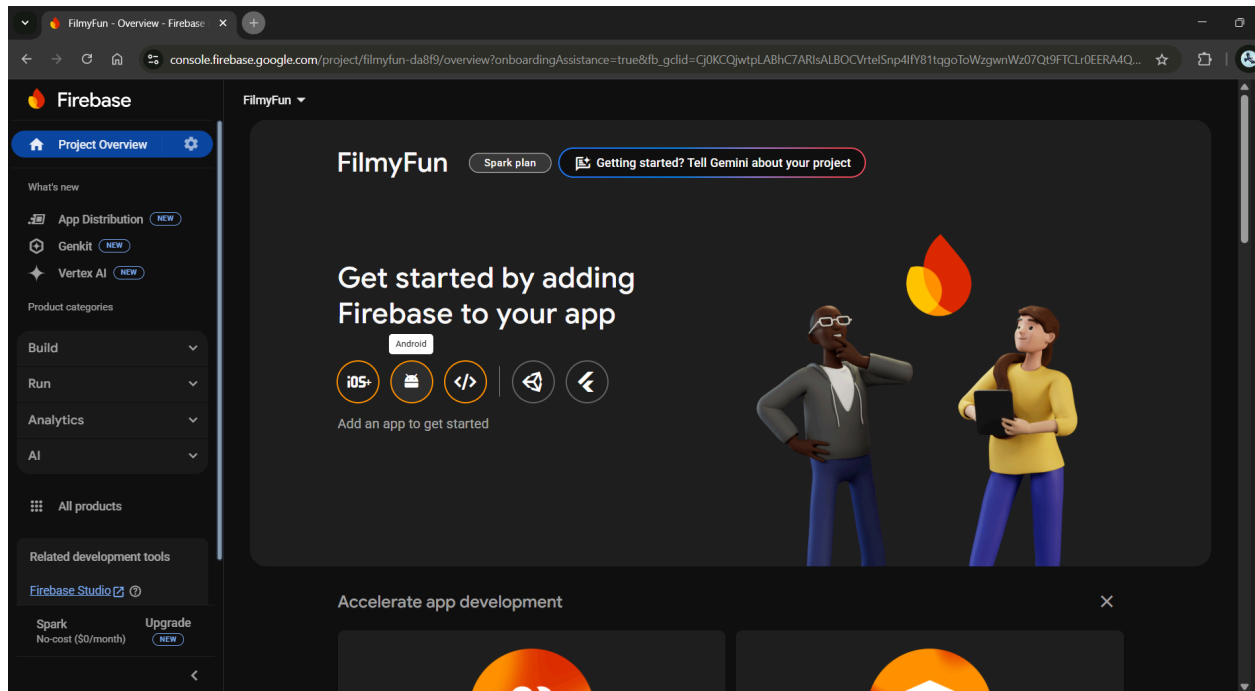

1.3) Enable Google Analytics (optional) & Click continue and complete the setup
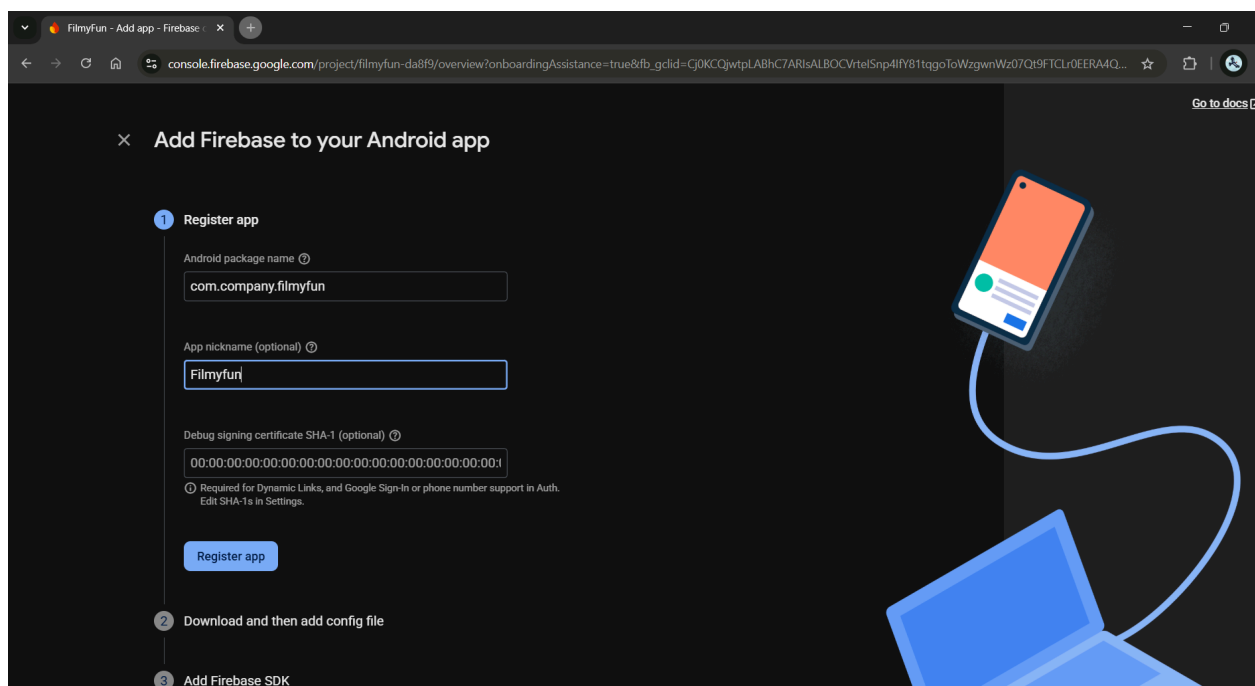
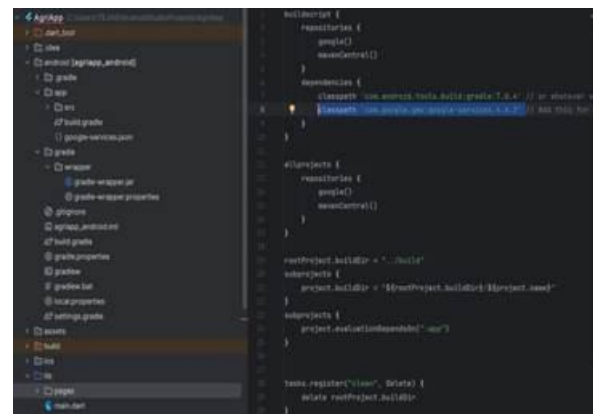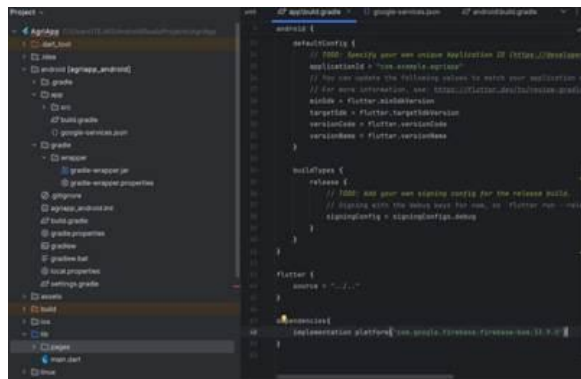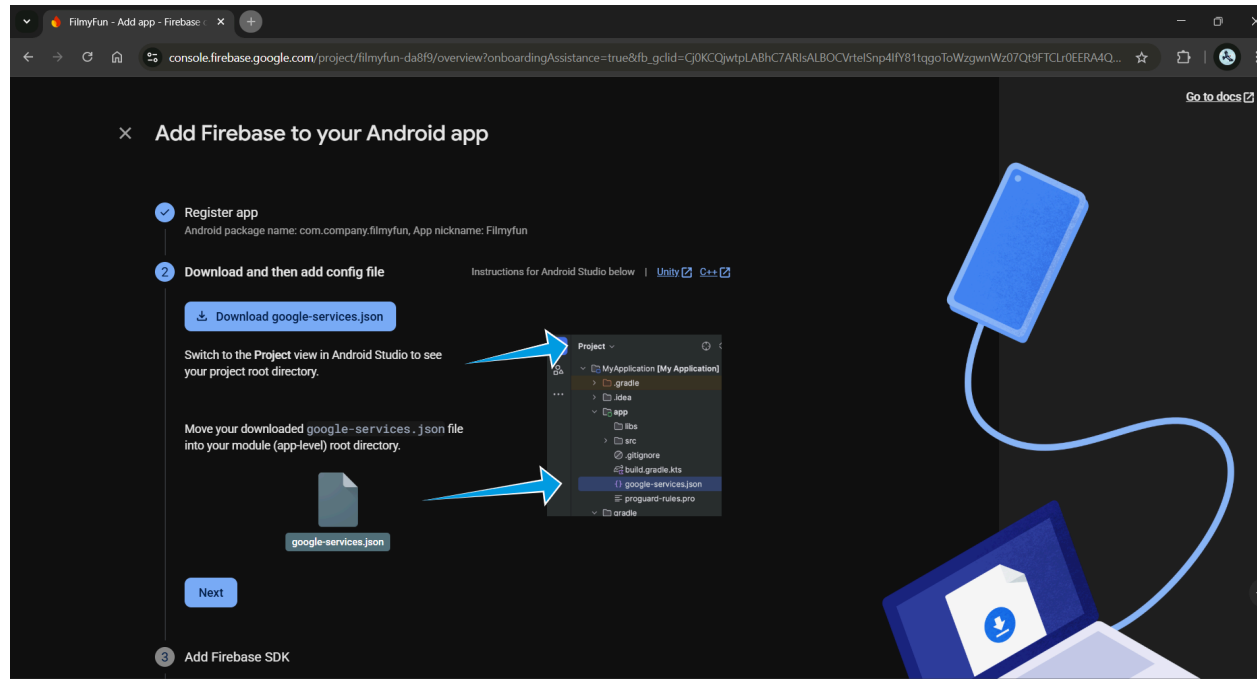# Step 2:- Add Firebase to Your Flutter App

2.1)   Click on Android/iOS/Web based on your Flutter application

2.2)   Register your app with a unique package name (found in android/app/build.gradle for Android).

2.3)   Download the google-services.json (for Android) & place the JSON file inside android/app/ directory.
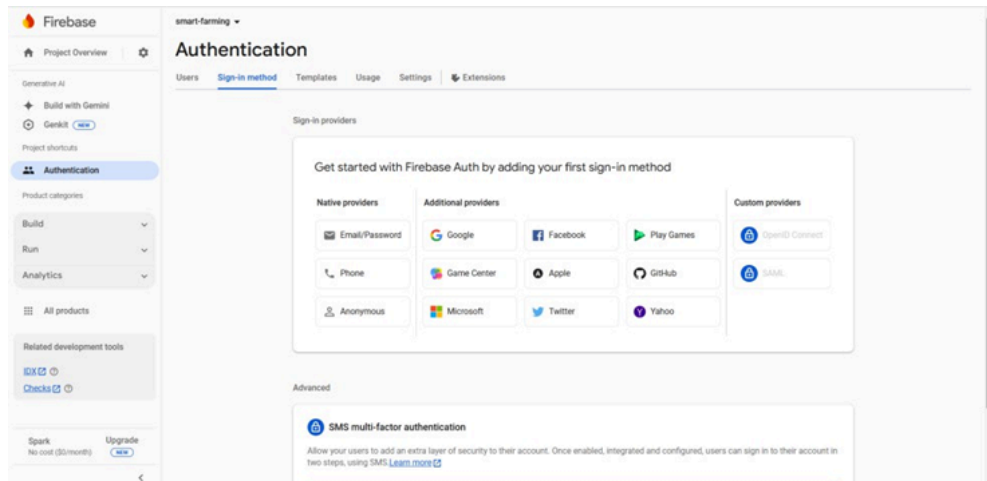
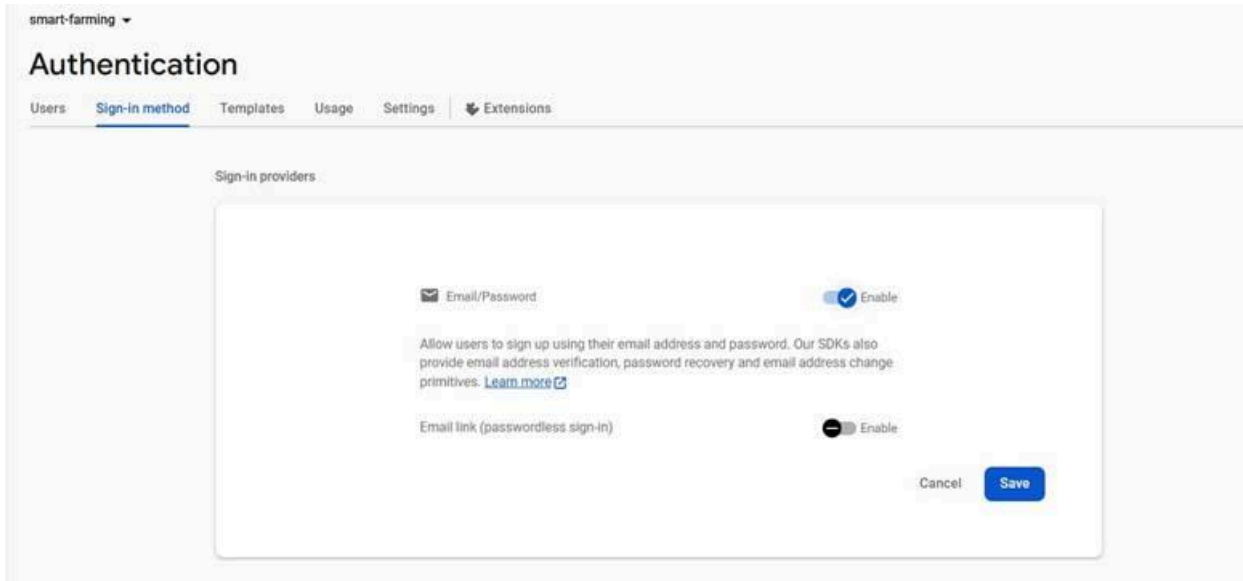# Step 3: - Add Firebase Authentication to Your App

3.1)   Add Firebase Authentication Dependencies

```
dependencies:
  flutter:
    sdk: flutter
  firebase_core: ^3.11.0
  firebase_auth: ^5.4.2  # For authentication
  cloud_firestore: ^5.6.3  # For Firestore, if you need it
  firebase_messaging: ^15.2.2
  http: ^0.13.3
  image_picker: ^1.0.4
  tflite_flutter: ^0.11.0
  image: ^3.2.0
  url_launcher: ^6.1.14
```

3.2)   Enable Authentication in Firebase Console Go to Firebase Console → Authentication.

Click on Sign-in method and enable Email/Password (or any other method like Google).

3.3) **Implement Authentication**
in Flutter Modify main.dart

```
import
'package:firebase_core/firebase_co
re.dart'; import
'package:firebase_auth/firebase_au
th.dart';


void main() async {
  WidgetsFlutterBinding.ensu
  reInitialized(); await
  Firebase.initializeApp();
  runApp(MyApp());
}
```

Step 4: -Configure Firebase Realtime Database

4.1) **Go to Firebase Console → Realtime Database.**

> **4.2)** **Click Create Database → Choose location → Set rules (for development, set read/write to true).**

4.3) **Click Publish.**

After that data gets stored in database