Experiment - 6

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DOP:	DOS:
Sign:	Grade:

AIM:

To connect Flutter to Firebase.

Theory:

Firebase is a Backend-as-a-Service (BaaS) platform by Google that provides a suite of cloud-based tools to help developers build and scale mobile applications. Flutter integrates seamlessly with Firebase to support real-time data storage, user authentication, cloud functions, push notifications, and more. **1. Firebase Integration with Flutter**

To connect Flutter with Firebase, the project must first be registered on the Firebase Console. The FlutterFire plugins (such as firebase_core, firebase_auth, cloud_firestore, etc.) are used to enable Firebase services in the app. These packages are added via pubspec.yaml. **2. Initialization** The firebase_core plugin is essential to initialize Firebase in a Flutter app. Initialization is typically done in the main() method using WidgetsFlutterBinding.ensureInitialized() followed by Firebase.initializeApp().

3. Common Firebase Services in Flutter

- **Firebase Authentication**: Supports user sign-in with email/password, Google, phone
- number, etc.
- **Cloud Firestore**: A NoSQL cloud database used for storing and syncing real-time data.
- **Firebase Storage**: For storing user-generated files such as images or videos.

  Firebase Realtime Database: Another real-time data syncing option with a simpler structure.

4. Advantages of Using Firebase

● Easy integration with minimal backend setup.

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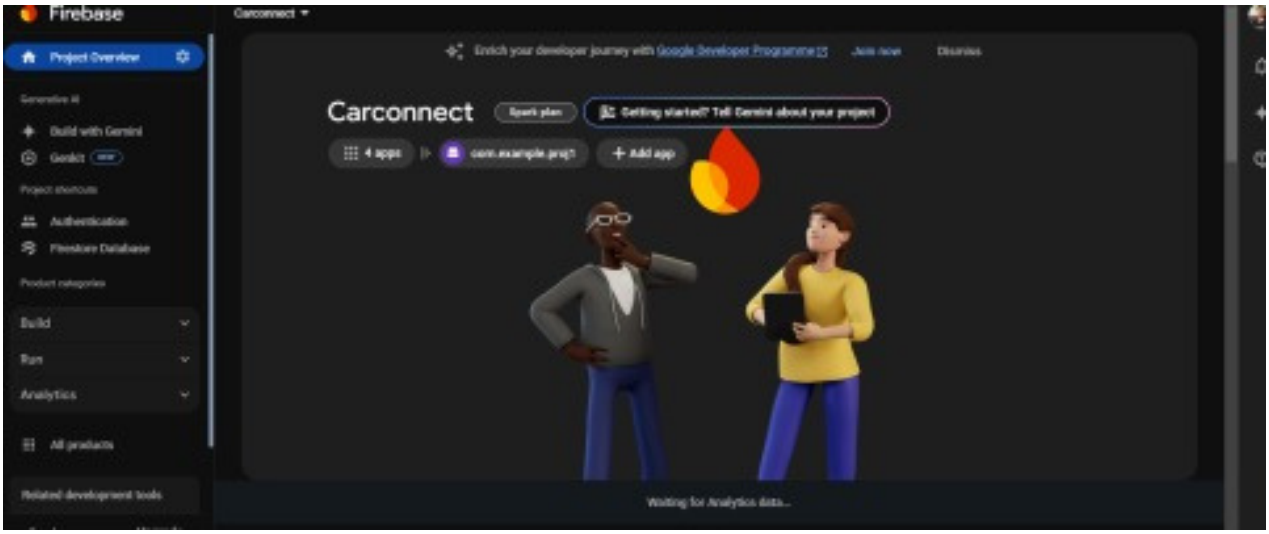
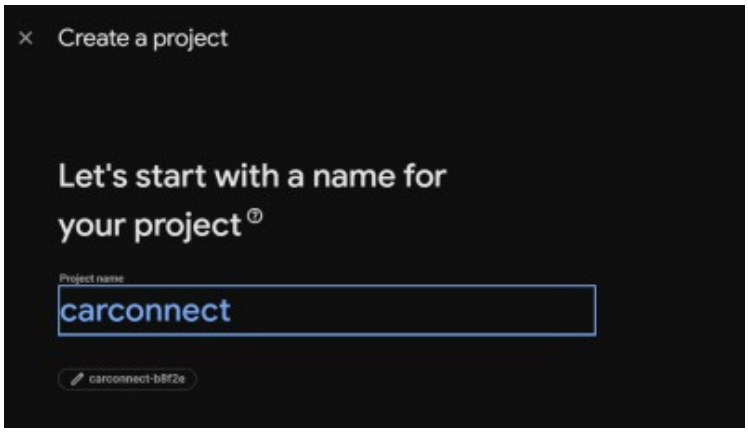
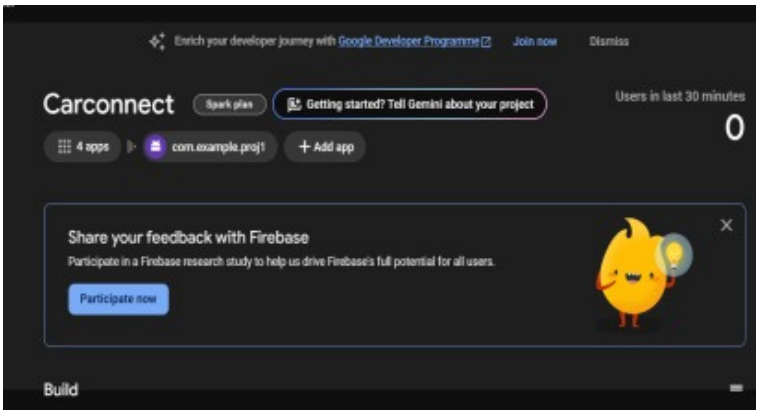
- Real-time database syncing.
- Scalable cloud infrastructure.
- Built-in security and analytics tools.







Conclusion: Connecting Flutter to Firebase allows developers to build full-featured apps with cloud-based backend services. It simplifies authentication, database management, and data storage, enabling faster development and scalable solutions.