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Roll no - 49   Batch - C

Experiment - 6

Aim:- To Connect Flutter UI with fireBase database

Theory:-

Firebase is a comprehensive platform provided by Google for building mobile and web applications. It offers various services, including a real-time database, authentication, cloud storage, and more. Connecting a Flutter UI with a Firebase database enables developers to store, retrieve, and synchronize data in real-time, providing a seamless experience for users. Let's explore the theory behind connecting Flutter UI with Firebase Database:

Firebase Realtime Database:
- Firebase Realtime Database is a cloud-hosted NoSQL database that allows developers to store and sync data between users in real-time.
- It provides a JSON-based data model, making it easy to organize and structure data.
- The database automatically synchronizes data across all connected clients, ensuring that changes made by one client are immediately reflected on other clients.

Firebase SDK for Flutter:
- Google provides the Firebase Flutter plugin, which allows Flutter apps to integrate seamlessly with Firebase services.
- The Firebase plugin for Flutter provides APIs to interact with Firebase services, including authentication, database, cloud storage, etc.
- It simplifies the process of connecting Flutter apps to Firebase services, enabling developers to focus on building the app's functionality.

Integration Process:
- Step 1: Set up Firebase Project:
  - Create a Firebase project from the Firebase Console (https://console.firebase.google.com).
  - Add your Flutter app to the Firebase project by registering its package name.
  - Download the google-services.json configuration file and place it in the android/app directory of your Flutter project.
- Step 2: Configure Flutter Project:
  - Add the Firebase Flutter plugin to your Flutter project by adding the necessary dependencies in the pubspec.yaml file.
  - Initialize Firebase in your Flutter app by calling Firebase.initializeApp() in the main() function.
- Step 3: Access Firebase Database:

- Use the Firebase Database SDK for Flutter to interact with the Firebase Realtime Database.
- Create references to database locations using the FirebaseDatabase class.
- Perform CRUD (Create, Read, Update, Delete) operations on the database using methods like set(), push(), update(), remove(), etc.
- Step 4: Display Data in Flutter UI:
  - Retrieve data from the Firebase database and display it in the Flutter UI.
  - Use Flutter widgets like ListView, GridView, Text, Image, etc., to render database content in the app's UI.
  - Implement real-time data synchronization to automatically update the UI when changes occur in the database.

× **Add Firebase to your Android app**

1 **Register app**

Android package name ⑦

com.netflix.company

App nickname (optional) ⑦

My Android App

Debug signing certificate SHA-1 (optional) ⑦

00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:0

ⓘ Required for Dynamic Links, and Google Sign-In or phone number support in Auth.
   Edit SHA-1s in Settings.

Register app

2 Download and then add config file

Android package name: com.netflix.company

2 **Download and then add config file**   Instructions for Android Studio below | Unity ↗ C++ ↗

⬇ **Download google-services.json**

Switch to the **Project** view in Android Studio to see
your project root directory.

Move your downloaded `google-services.json` file
into your module (app-level) root directory.

google-services.json

Next

NETFLIX

> .dart_tool
> .vscode
∨ android
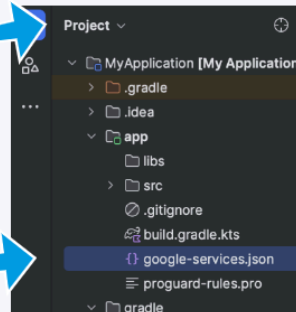   > .gradle
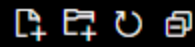   ∨ app
        > src
        build.gradle   M
        {} google-services.json
    > gradle
    .gitignore
    build.gradle   M
    gradle.properties
    gradlew
    gradlew.bat
    local.properties
    settings.gradle
> assets
> build
> lib
> screenshots
> test
.flutter-plugins
.flutter-plugins-dependencies
.gitignore
.metadata
! analysis_options.yaml
LICENSE
pubspec.lock   M
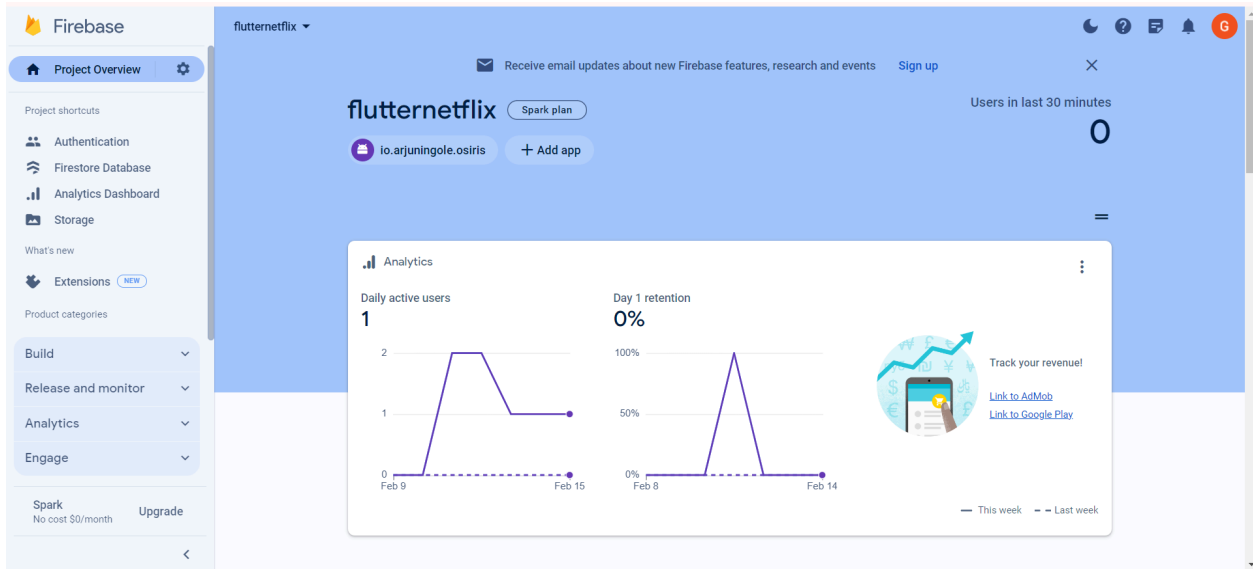! pubspec.yaml   M
(i) README.md

Project Overview

Project shortcuts

Authentication
Firestore Database
Analytics Dashboard
Storage

What's new

Extensions NEW

Product categories

Build
Release and monitor
Analytics
Engage

Spark
No cost $0/month   Upgrade

flutternetflix ▾

Receive email updates about new Firebase features, research and events   Sign up   ✕

flutternetflix   Spark plan

io.arjuningole.osiris   + Add app

Users in last 30 minutes

0

Analytics

Daily active users
1

Day 1 retention
0%

2

1

0
Feb 9   Feb 15

100%

50%

0%
Feb 8   Feb 14

Track your revenue!
Link to AdMob
Link to Google Play

— This week   – – Last week

flutternetflix ▾

Authentication

Users   Sign-in method   Templates   Usage   Settings   Extensions

Search by email address, phone number or user UID   Add user

Identifier	Providers	Created	Signed in	User UID
gaurang@gmail.com	✉	16 Feb 2024	16 Feb 2024	n5mSyO41nrXqmOq50Rphd5...
gaurangraorane@gmail...	G	11 Feb 2024	15 Feb 2024	ba01yLTQoveVepgmZ0xnVpxs...
2021.gaurang.raorane...	G	11 Feb 2024	16 Feb 2024	m9MZycFi2paOHSHq3HhpplO...

Rows per page   50 ▾   1 – 3 of 3   ‹ ›
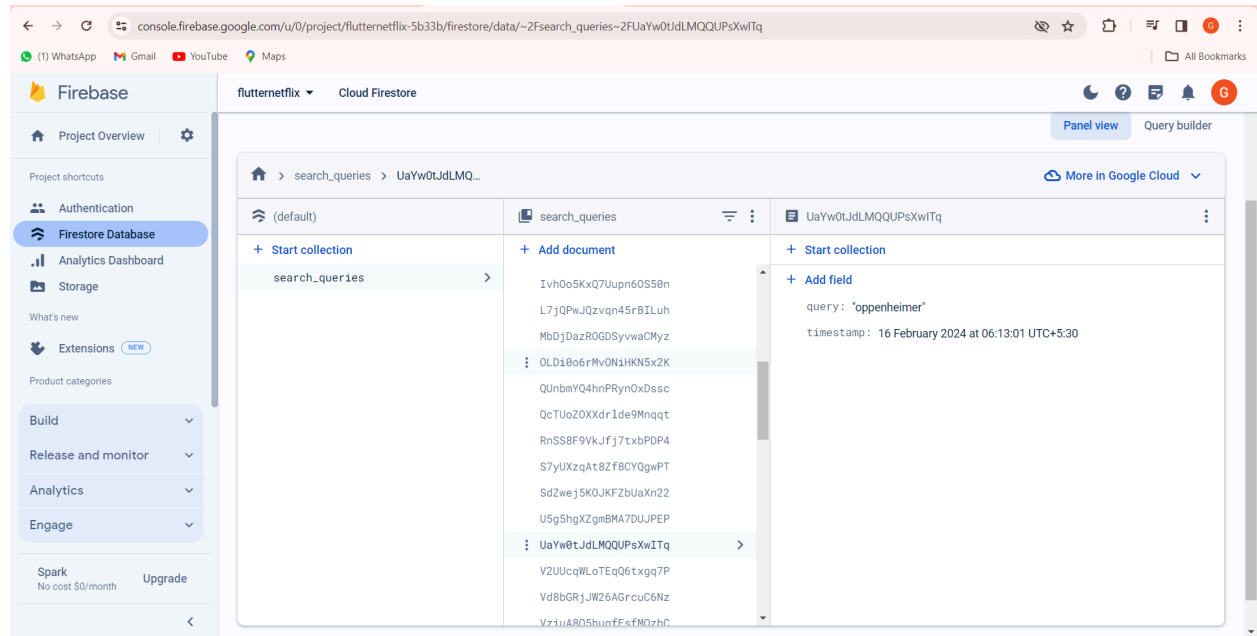
Hence Firebase is Successfully Connected.