

EXPERIMENT NO: - 06

Name:- Vaishnal Mali

Class:- D15A

Roll:No: - 26

AIM: - To connect Flutter UI with Firebase database.

Theory: -

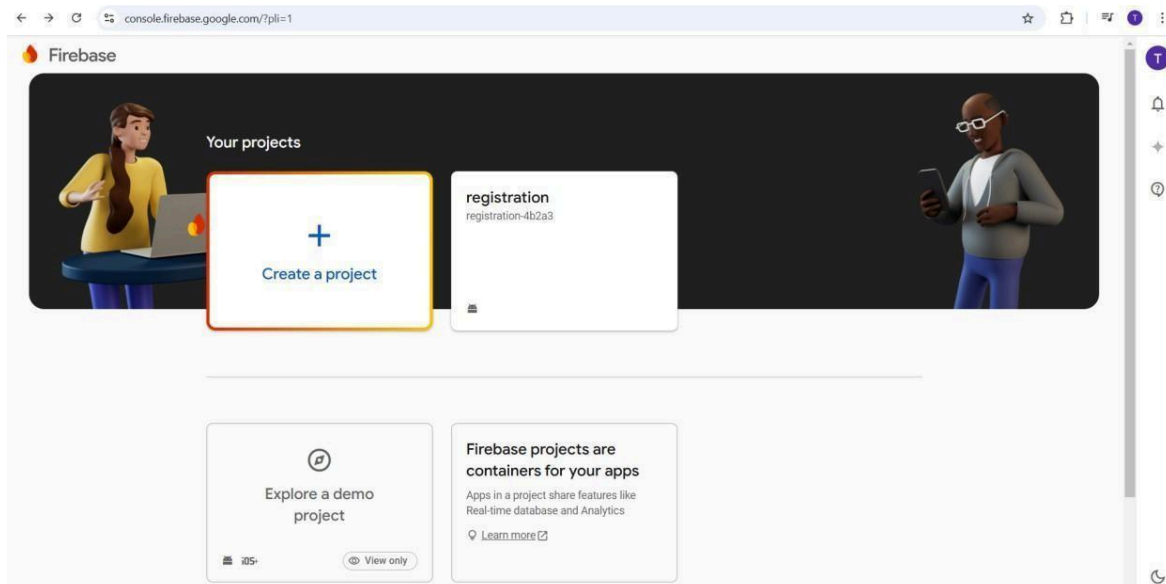
Flutter is an open-source UI toolkit developed by Google for building natively compiled applications for mobile, web, and desktop from a single codebase. Firebase, a Backend-as-a-Service (BaaS) platform, provides real-time database, authentication, and cloud storage services, making it a powerful backend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

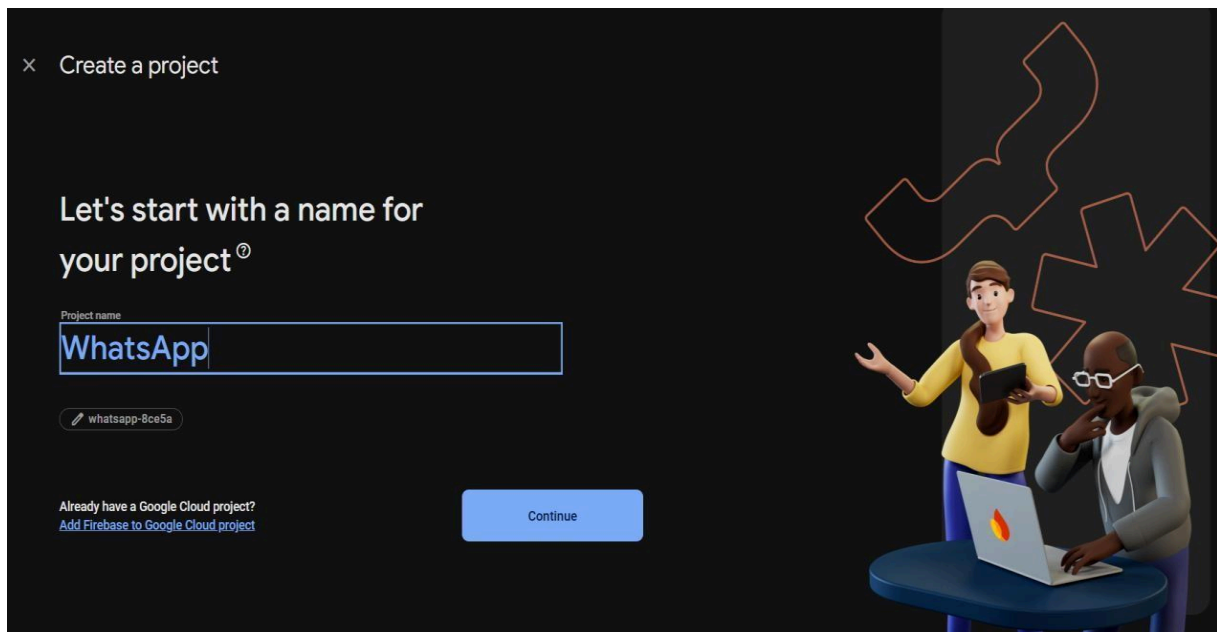
□ Steps to Connect Flutter UI with Firebase Database

Step 1:

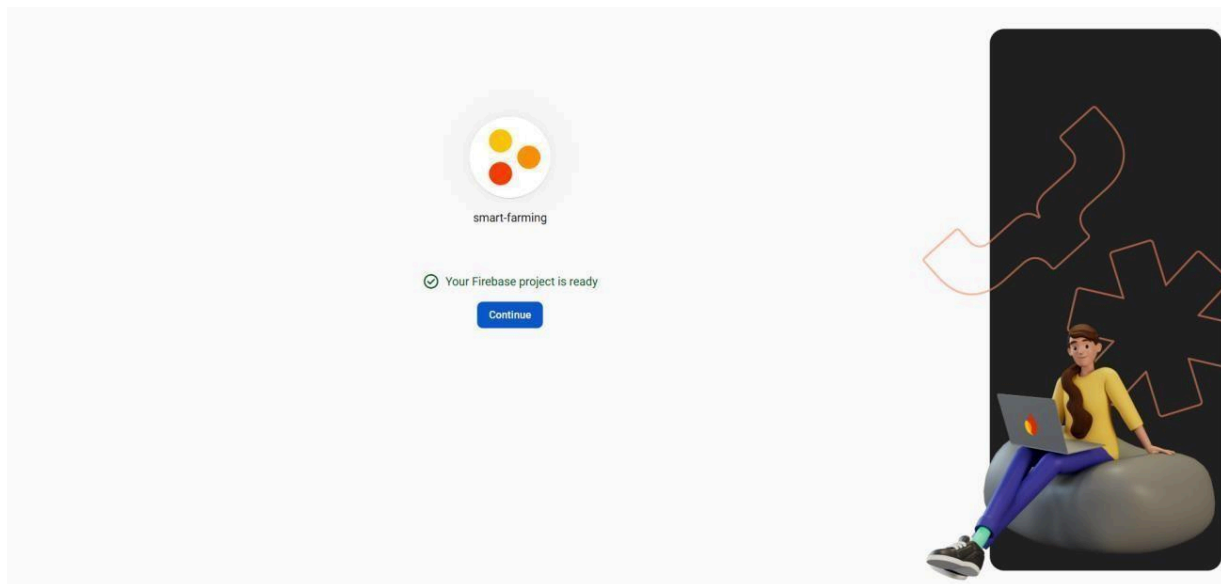
1.1) Go to Firebase Console and Create a Firebase Project




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



 **Firebase**

smart-farming

Project Overview

Generative AI

Build with Gemini

Genkit NEW

Product categories

Build

Run

Analytics

All products

Related development tools

[IDX](#)

[Checks](#)

Spark

No cost (\$0/month)

Upgrade

NEW

Receive email updates about new Firebase features, research and events

Sign up

smart-farming

Spark plan

Getting started? Tell Gemini about your project

Get started by adding
Firebase to your app

Android


iOS

Flutter

Web

Cloud Functions


Add an app to get started



Experiment with a Gemini 2.0 sample app

Learn about the Gemini API and how it works by experimenting with an AI-powered sample app

Try it now



[Go to docs](#)

×

Add Firebase to your Android app

1 Register app

Android package name ⓘ
com.example.agriapp

App nickname(optional) ⓘ
AgriApp

Debug signing certificate SHA-1 (optional) ⓘ

[00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00]


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

Register app

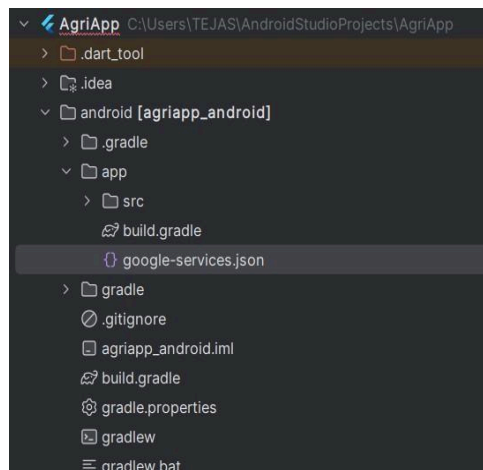
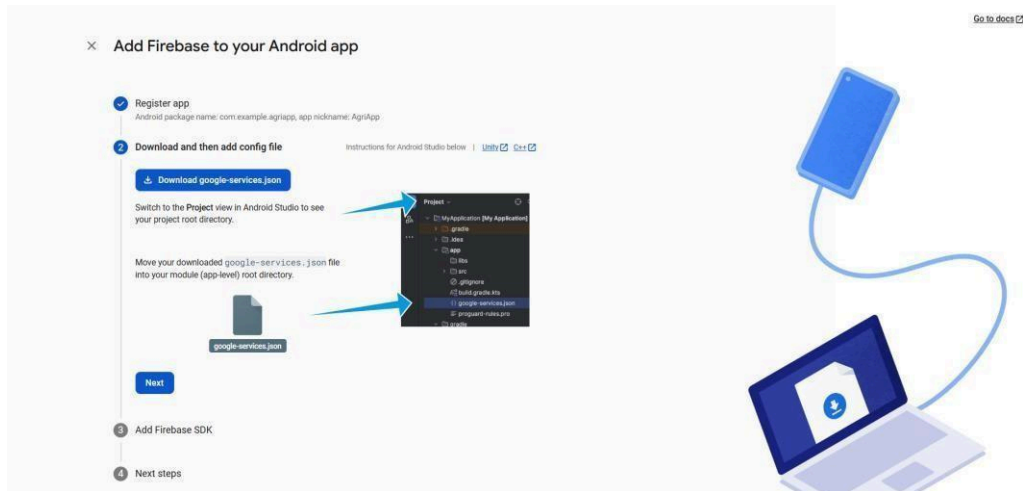
2 Download and then add config file

3 Add Firebase SDK

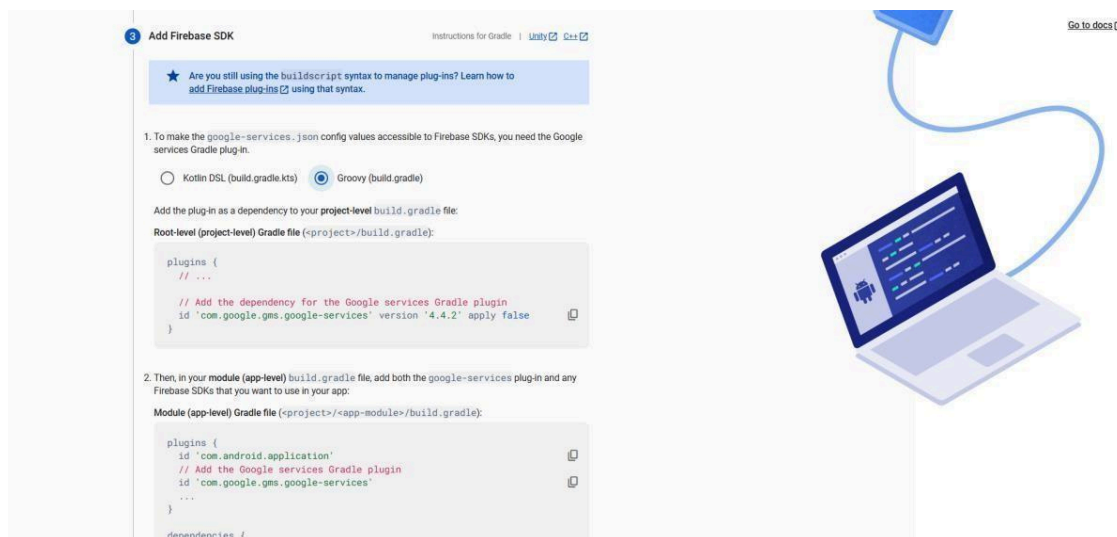
4 Next steps

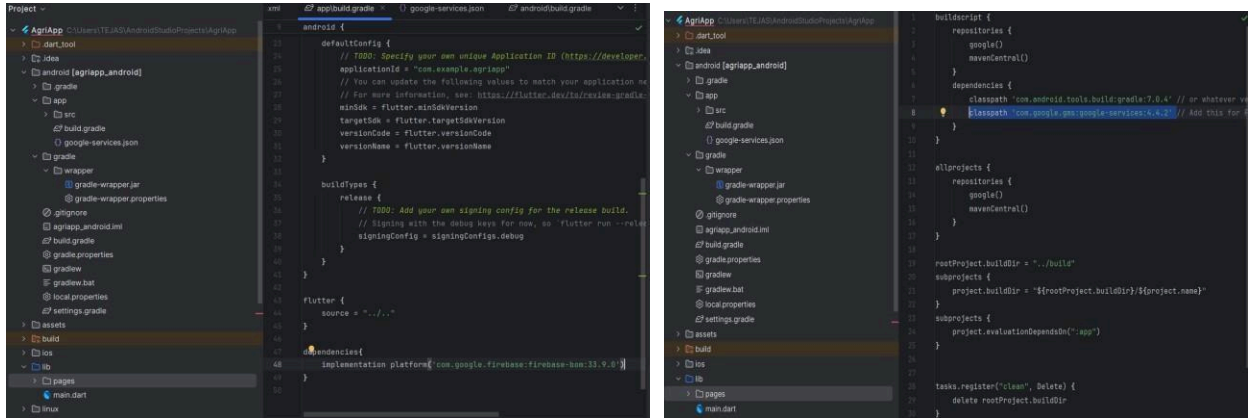


- 2.3) Download the google-services.json (for Android) & place the JSON file inside android/app/ directory.



- 2.4) Add Firebase SDK dependencies to android/build.gradle





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
```

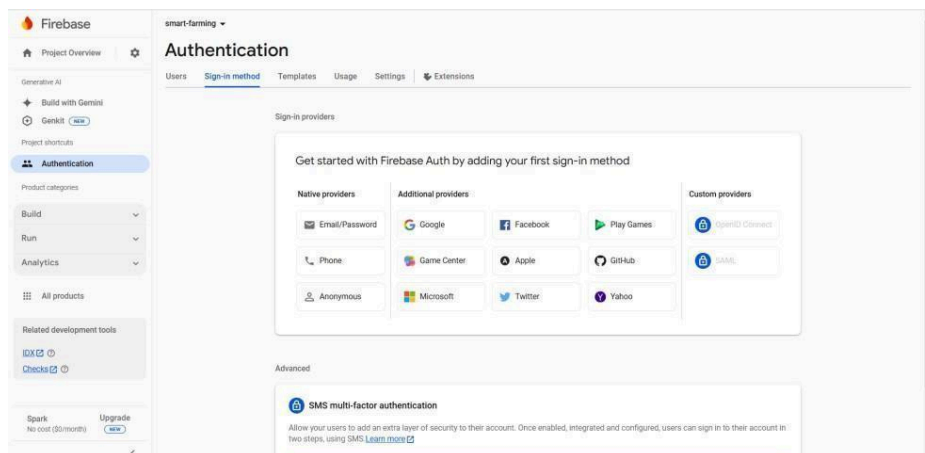
3.2) Enable Authentication in Firebase Console

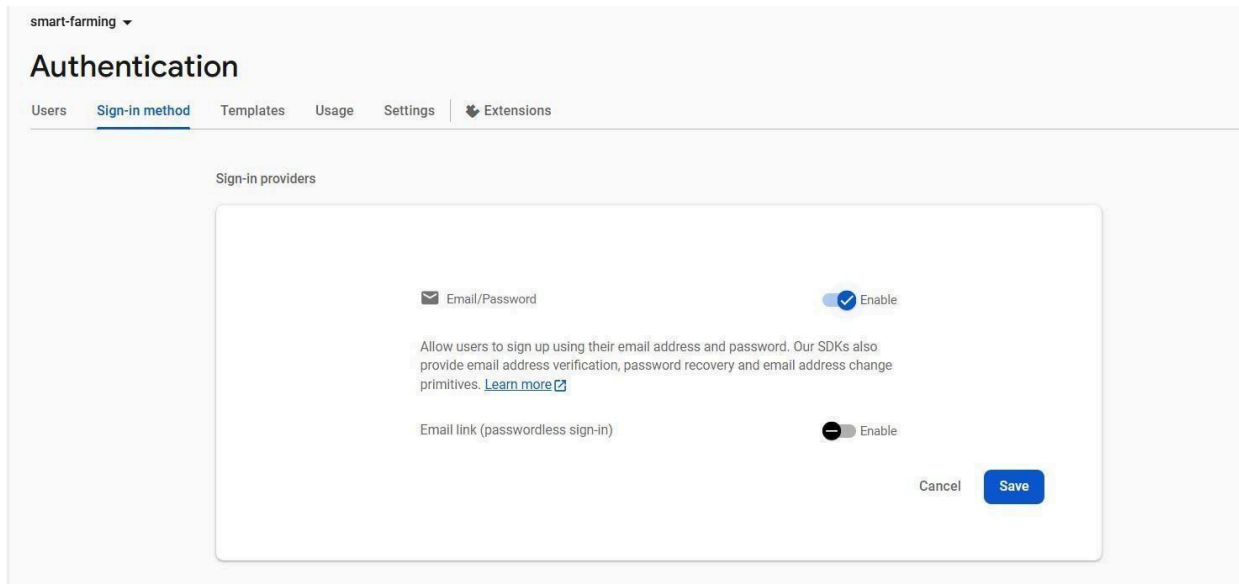
Go to **Firebase Console** →

Authentication.

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

Click Save





3.3) Implement Authentication in Flutter Modify main.dart

```
import 'package:firebase_core/firebase_core.dart';
import 'package:firebase_auth/firebase_auth.dart';

void main() async {
  WidgetsFlutterBinding.ensureInitialized();
  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**.

Code:-

Register_signup page

```
import 'package:flutter/material.dart';
import
'package:spotify_clone/features/auth/screens/sign_in_screen.dart';
import
'package:spotify_clone/features/auth/screens/register.dart';

class RegisterScreen extends
StatelessWidget {
  const RegisterScreen({Key? key}) :
super(key: key);

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      backgroundColor: const
Color(0xFF1C1B1B),
      body: SafeArea(
        child: Column(
          children: [
            Padding(
              padding: const
EdgeInsets.all(16.0),
              child: Row(
                children: [
                  IconButton(
                    icon: const
Icon(Icons.arrow_back, color:
Colors.white),
                    onPressed: () =>
Navigator.pop(context),
                  ),
                ],
              ),
            ),
            Expanded(
              child: SingleChildScrollView(
                child: Padding(
                  padding: const
EdgeInsets.symmetric(horizontal:
24.0),
                  child: Column(
                    crossAxisAlignment:
CrossAxisAlignment.center,
```

```
children: [
      Image.asset(
        'assets/images/spotify_logo.png',
        width: //235
        500,
        height: 150,
      ),
      const SizedBox(height:
32),
      const Text(
        'Enjoy Listening To
Music',
        style: TextStyle(
          color: Colors.white,
          fontSize: 24,
          fontWeight:
FontWeight.bold,
        ),
      ),
      const SizedBox(height:
16),
      const Text(
        'Spotify is a proprietary
Swedish audio\nstreaming and media
services provider',
        textAlign:
TextAlign.center,
        style: TextStyle(
          color: Colors.grey,
          fontSize: 16,
        ),
      ),
      const SizedBox(height:
32),
      SizedBox(
        width: double.infinity,
        height: 56,
        child: ElevatedButton(
          onPressed: () {
            Navigator.push(
              context,
              MaterialPageRoute(
                builder: (context)
=>
Register()), //
            Navigate to ThirdScreen
```

```

        style:
      ElevatedButton.styleFrom(
        backgroundColor:
      }, // Handle register
    const Color(0xFF42C83C), ],
      shape: ),
    RoundedRectangleBorder( ),
      borderRadius: );
    BorderRadius.circular(30), }
  ), }
),
child: const Text(
  'Register',
  style: TextStyle(
    color: Colors.white,
    fontSize: 16,
    fontWeight:
FontWeight.bold,
  ),
),
),
),
),
const SizedBox(height:
16),
TextButton(
  onPressed: () {
    Navigator.push(
      context,
      MaterialPageRoute(
        builder: (context)
=>
SignInScreen()), // Navigate to
ThirdScreen
);
// Handle sign in
},
child: const Text(
  'Sign in',
  style: TextStyle(
    color: Colors.white,
    fontSize: 16,
  ),
),
),
),
],
),
),
),
),
),
),

```


Register.dart

```
import 'package:flutter/material.dart';
import
'package:spotify_clone/features/auth/sc
reens/sign_in_screen.dart';
import
'package:spotify_clone/main.dart';

class Register extends StatefulWidget {
  const Register({Key? key}) :
  super(key: key);

  @override
  State<Register> createState() =>
  _RegisterState();
}

class _RegisterState extends
State<Register> {
  bool _obscurePassword = true;

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      backgroundColor: const
Color(0xFF1C1B1B),
      body: SafeArea(
        child: SingleChildScrollView(
          child: Padding(
            padding: const
EdgeInsets.all(24.0),
            child: Column(
              crossAxisAlignment:
CrossAxisAlignment.start,
              children: [
                Row(
                  children: [
                    IconButton(
                      icon: const
Icon(Icons.arrow_back, color:
Colors.white),
                      onPressed: () =>
Navigator.pop(context),
                    ),
                    const SizedBox(width: 10),
                    Image.asset(
'assets/images/spotify_logo.png',
```

```
height: 150,
                    ),
                  ],
                ),
                const SizedBox(height: 32),
                const Text(
                  'Register',
                  style: TextStyle(
                    color: Colors.white,
                    fontSize: 28,
                    fontWeight:
FontWeight.bold,
                  ),
                ),
                const SizedBox(height: 8),
                Row(
                  children: [
                    const Text(
                      'If You Need Any Support
',
                      style: TextStyle(color:
Colors.grey),
                    ),
                    ),
                    TextButton(
                      onPressed: () {},
                      child: const Text(
                        'Click Here',
                        style: TextStyle(color:
Colors.green),
                      ),
                      borderRadius:
),
                    ),
                  ],
                ),
                const SizedBox(height: 32),
                TextField(
                  style: const TextStyle(color:
Colors.white),
                  decoration:
InputDecoration(
                    hintText: 'Full Name',
                    hintStyle: const
TextStyle(color: Colors.grey),
                    filled: true,
                    fillColor:
Colors.grey.withOpacity(0.1),
                    border:
OutlineInputBorder(
                      borderRadius:
```

```

        BorderRadius.circular(12),
        borderSide:
BorderSide.none,
    ),
    ),
    ),
    const SizedBox(height: 16),
    TextField(
      style: const TextStyle(color:
Colors.white),
      decoration:
InputDecoration(
        hintText: 'Enter Email',
        hintStyle: const
TextStyle(color: Colors.grey),
        filled: true,
        fillColor:
Colors.grey.withOpacity(0.1),
        border:
OutlineInputBorder(
          BorderRadius.circular(12),
          borderSide:
BorderSide.none,
        ),
      ),
    ),
    const SizedBox(height: 16),
    TextField(
      obscureText:
_obscurePassword,
      style: const TextStyle(color:
Colors.white),
      decoration:
InputDecoration(
        hintText: 'Password',
        hintStyle: const
TextStyle(color: Colors.grey),
        filled: true,
        fillColor:
Colors.grey.withOpacity(0.1),
        border:
OutlineInputBorder(
          borderRadius:
BorderRadius.circular(12),
          borderSide:
BorderSide.none,
        ),
        suffixIcon: IconButton(

```

```

icon: Icon(
      _obscurePassword
        ? Icons.visibility_off
        : Icons.visibility,
      color: Colors.grey,
    ),
    onPressed: () {
      setState(() {
        _obscurePassword =
!_obscurePassword;
      });
    },
  ),
  ),
  ),
  const SizedBox(height: 32),
  SizedBox(
    width: double.infinity,
    height: 56,
    child: ElevatedButton(
      onPressed: () {
        Navigator.push(
          context,
          MaterialPageRoute(
            builder: (context) =>
const MainScreen(),
          );
        },
      style:
ElevatedButton.styleFrom(
        backgroundColor: const
Color(0xFF42C83C),
        shape:
RoundedRectangleBorder(
          borderRadius:
BorderRadius.circular(30),
        ),
      ),
      child: const Text(
        'Create Account',
        style: TextStyle(
          fontSize: 16,
          fontWeight:
FontWeight.bold,
        ),
      ),
    ),
  ),
  ),
  ),
  const SizedBox(height: 32),

```

```

        mainAxisAlignment:
MainAxisAlignment.center,
        children: [

Image.asset('assets/images/google_logo
.png', height: 40),
        const SizedBox(width: 20),

Image.asset('assets/images/apple_logo.
png', height: 40),
        ],
      ),
      const SizedBox(height: 32),
      Row(
        mainAxisAlignment:
MainAxisAlignment.center,
        children: [
          const Text(
            'Do You Have An
Account? ',
            style: TextStyle(color:
Colors.grey),
          ),
          TextButton(
            onPressed: () {
              Navigator.push(
                context,
                MaterialPageRoute(
                  builder: (context) =>
const SignInScreen(),
                );
            },
            child: const Text(
              'Sign In',
              style: TextStyle(color:
Colors.white),
            ),
          ),
        ],
      ),
    ],
  ),
),
),
),
),
),
);

```

```

}
}

Register.dart
import 'package:flutter/material.dart';
import
'package:spotify_clone/main.dart';

import 'register.dart';

class SignInScreen extends
StatefulWidget {
  const SignInScreen({Key? key}) :
super(key: key);

  @override
  State<SignInScreen> createState() =>
_SignInScreenState();
}

class _SignInScreenState extends
State<SignInScreen> {
  bool _obscurePassword = true;

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      backgroundColor: const
Color(0xFF1C1B1B),
      body: SafeArea(
        child: SingleChildScrollView(
          child: Padding(
            padding: const
EdgeInsets.all(24.0),
            child: Column(
              crossAxisAlignment:
CrossAxisAlignment.start,
              children: [
                Row(
                  children: [
                    IconButton(
                      Colors.green),
                  ),
                    icon: const Icon(Icons.arrow_back,
color: Colors.white),
                    onPressed: () =>
Navigator.pop(context),
                  ),
                    const SizedBox(width: 12),

```

```

'assets/images/spotify_logo.png',
  height: 150,
),
],
),
const SizedBox(height: 32),
const Text(
  'Sign In',
  style: TextStyle(
    color: Colors.white,
    fontSize: 28,
    fontWeight:
FontWeight.bold,
  ),
),
const SizedBox(height: 8),
Row(
  children: [
    const Text(
      'If You Need Any Support
',
      style: TextStyle(color:
Colors.grey),
    ),
    TextButton(
      onPressed: () {},
      child: const Text(
        'Click Here',
        style: TextStyle(color:
fillColor: Colors.grey.withOpacity(0.1),
      ),
    ],
  ),
const SizedBox(height: 32),
TextField(
  style: const TextStyle(color:
Colors.white),
  decoration:
InputDecoration(
    hintText: 'Enter Username
Or Email',
    hintStyle: const
TextStyle(color: Colors.grey),
    filled: true,
    fillColor:
Colors.grey.withOpacity(0.1),
    border:

```

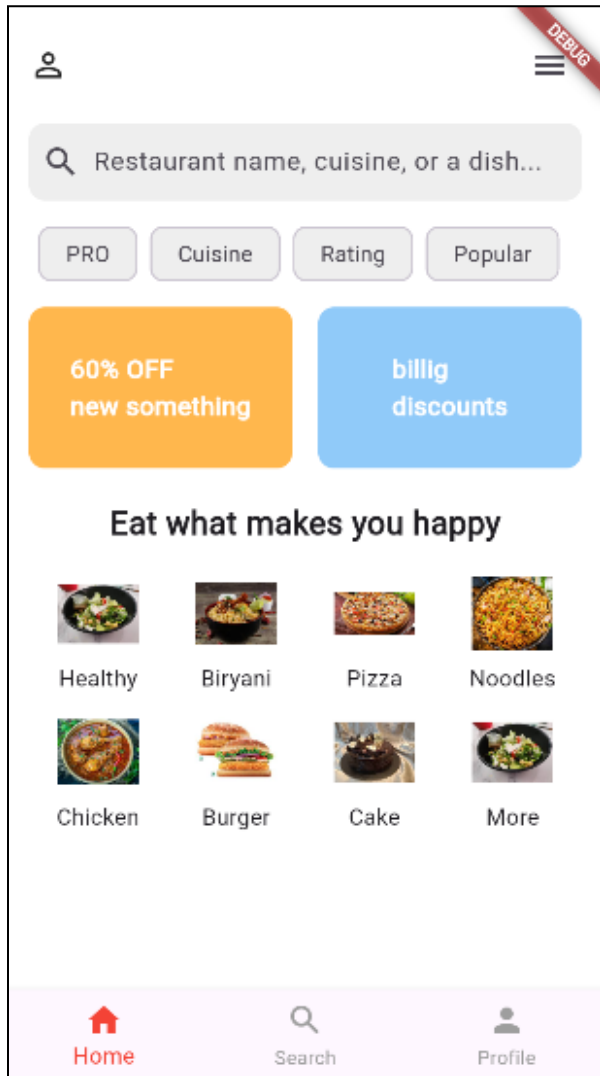
```

Image.asset(
OutlineInputBorder(
  borderRadius:
BorderRadius.circular(12),
  borderSide:
BorderSide.none,
),
),
const SizedBox(height: 16),
TextField(
  obscureText:
_obscurePassword,
  style: const TextStyle(color:
Colors.white),
  decoration:
InputDecoration(
    hintText: 'Password',
    hintStyle: const
TextStyle(color: Colors.grey),
    filled: true,
    SizedBox(
      width: double.infinity,
      border:
OutlineInputBorder(
        borderRadius:
BorderRadius.circular(12),
        borderSide:
BorderSide.none,
      ),
      suffixIcon: IconButton(
        icon: Icon(
          _obscurePassword
            ? Icons.visibility_off
            : Icons.visibility,
          color: Colors.grey,
        ),
        onPressed: () {
          setState(() {
            _obscurePassword =
!_obscurePassword;
          });
        },
      ),
    ),
const SizedBox(height: 16),
Align(
  alignment:

```



```
);  
}  
}
```



← Eat Healthy

4.2 ★ >

DEBUG

Naturally, Hyderabad



DELIVERY



DINING



REVIEWS

Full Menu

Healthy

● Plant Protein Bowl

★ 4.2

Veg preparation having raw plant based...



ADD

● Spring Veg Plater

★ 4.5

Veg preparation having raw plant based...



ADD





4.2 DEBUG



● Plant Protein Bowl

Add On

- | | |
|--|-----|
| <input type="checkbox"/> Veg protein | ₹40 |
| <input type="checkbox"/> Pepper | ₹40 |
| <input type="checkbox"/> Extra Veggies | ₹40 |
| <input type="checkbox"/> Mushrooms | ₹40 |
| <input type="checkbox"/> Corn | ₹40 |
| <input type="checkbox"/> Chilli Powder | ₹40 |

Choose Your Protein

- +

Add ₹199

User details get fetched from the database in the profile page.

The screenshot shows the Google Cloud Firestore console for a project named 'whatapp-messenger'. The 'Data' tab is selected, displaying a collection named 'users'. A specific document is selected, showing its fields: 'active' (true), 'groupId' (expanded to show 'lastSeen: 1741102062460', 'phoneNumber: *+919356229062*', 'profileImageUrl: ""', 'uid: "foaUwlbISEQyE1MqXTodj1lI0xm1"', and 'username: "ABC"'). The document ID is 'foaUwlbISEQyE1MqXTodj1lI0xm1'. The URL at the bottom indicates the document path: 'https://console.firebase.google.com/u/0/project/whatapp-messenger-8275a/firestore?fb_gclid=CjwKCAIA5pq-BhBuEjwAvkzVZctzmR79BRs232e4HoELv5N04lhCycmdUkn0f9hih7OW3PER-ECuRoChAUQAvD_BwE'.

whatapp-messenger ▾

Cloud Firestore

[Add database](#) [Ask Gemini how to get started with Firestore](#)

[Data](#) [Rules](#) [Indexes](#) [Disaster recovery](#) NEW [Usage](#) [Extensions](#)

Protect your Cloud Firestore resources from abuse, such as billing fraud or phishing [Configure App Check](#) ✕

[Panel view](#) [Query builder](#) ⋮

[More in Google Cloud](#) ▾

(default)	users	foaUwlbISEQyE1MqXTodj1lI0xm1
+ Start collection	+ Add document	+ Start collection
users >	foaUwlbISEQyE1MqXTodj1lI0xm1 >	+ Add field
		<code>active: true</code>
		<code>groupId</code>
		<code>lastSeen: 1741102062460</code>
		<code>phoneNumber: *+919356229062*</code>
		<code>profileImageUrl: ""</code>
		<code>uid: "foaUwlbISEQyE1MqXTodj1lI0xm1"</code>
		<code>username: "ABC"</code>

https://console.firebase.google.com/u/0/project/whatapp-messenger-8275a/firestore?fb_gclid=CjwKCAIA5pq-BhBuEjwAvkzVZctzmR79BRs232e4HoELv5N04lhCycmdUkn0f9hih7OW3PER-ECuRoChAUQAvD_BwE

