

EXPERIMENT NO: - 06

Name:- Aryan Patankar

Class:- D15A

Roll:No: - 33

AIM: - To connect Flutter UI with Firebase database.

Theory: -

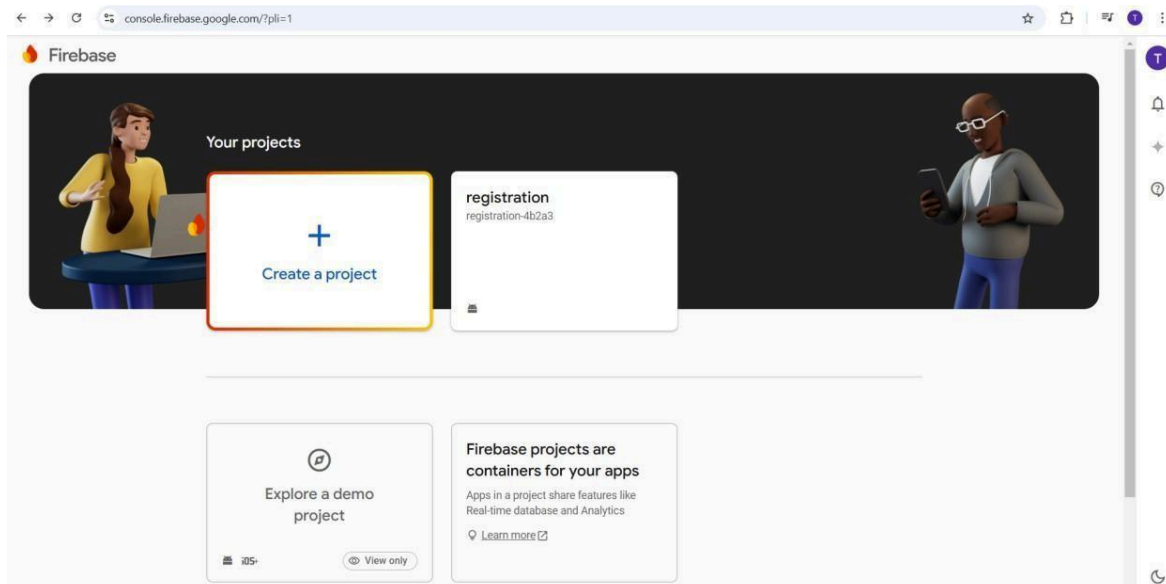
Flutter is an open-source UI toolkit developed by Google for building natively compiled applications for mobile, web, and desktop from a single codebase. Firebase, a Backend-as-a-Service (BaaS) platform, provides real-time database, authentication, and cloud storage services, making it a powerful backend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

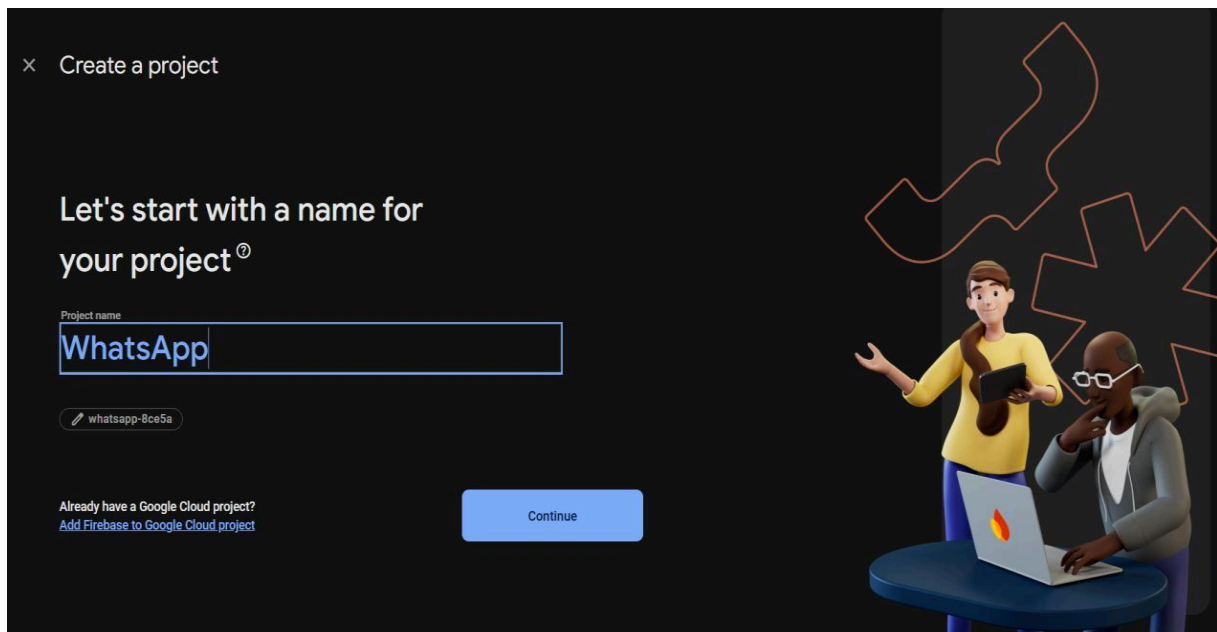
□ Steps to Connect Flutter UI with Firebase Database

Step 1:

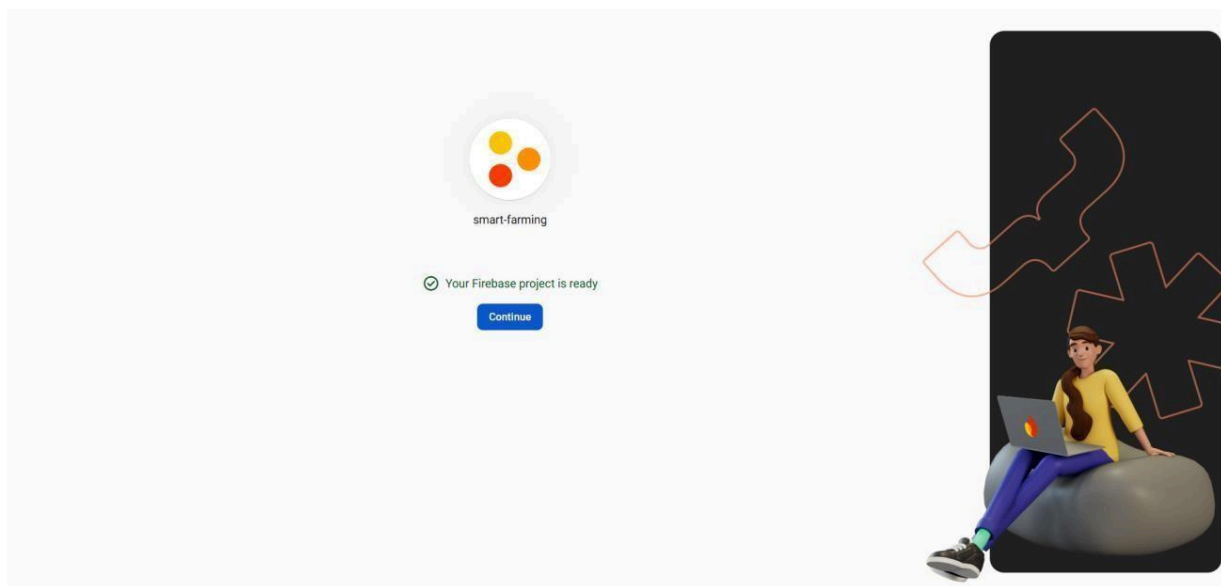
1.1) Go to Firebase Console and Create a Firebase Project



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

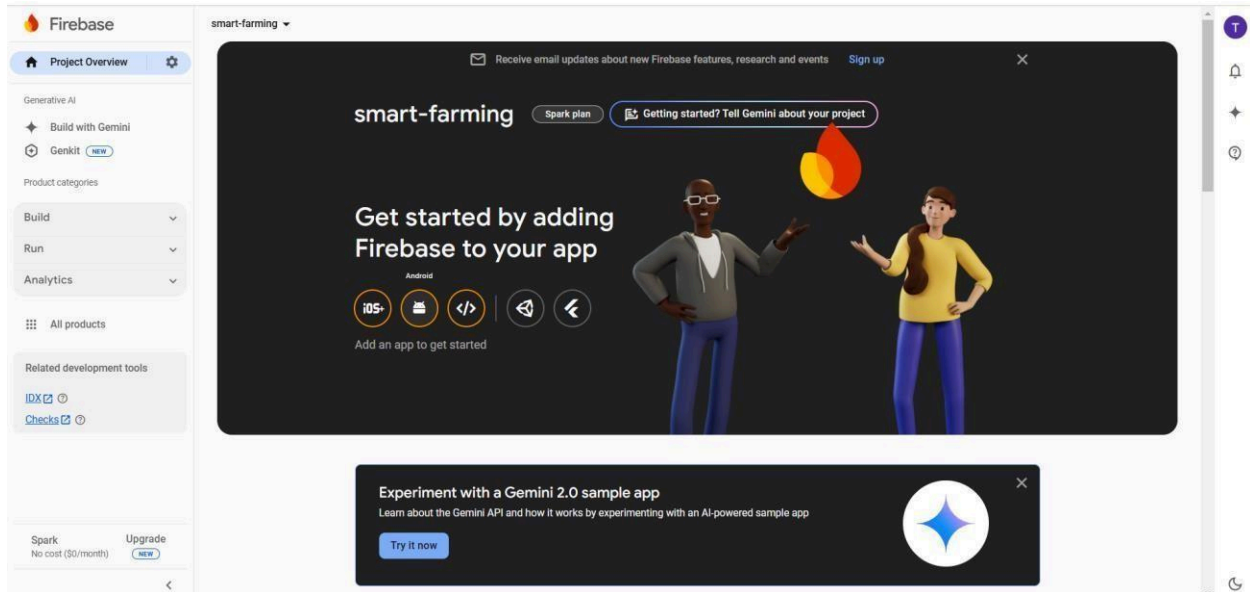


1.3) Enable Google Analytics (optional) & Click continue and complete the setup

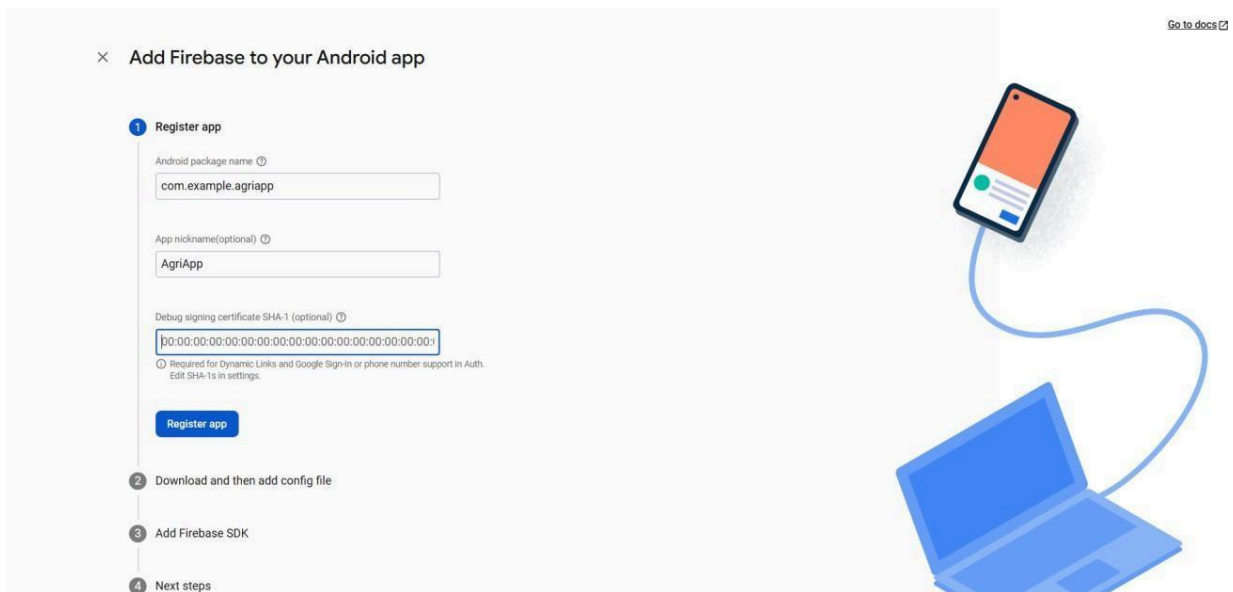


Step 2:- Add Firebase to Your Flutter App

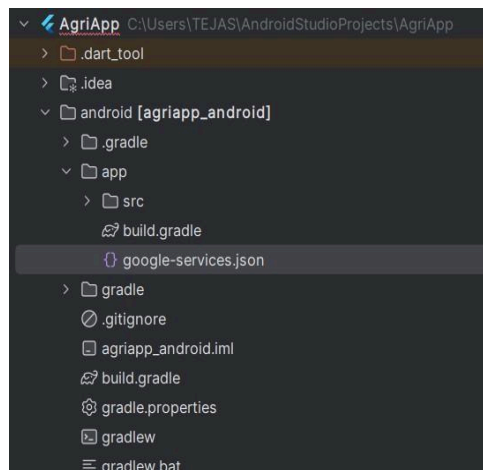
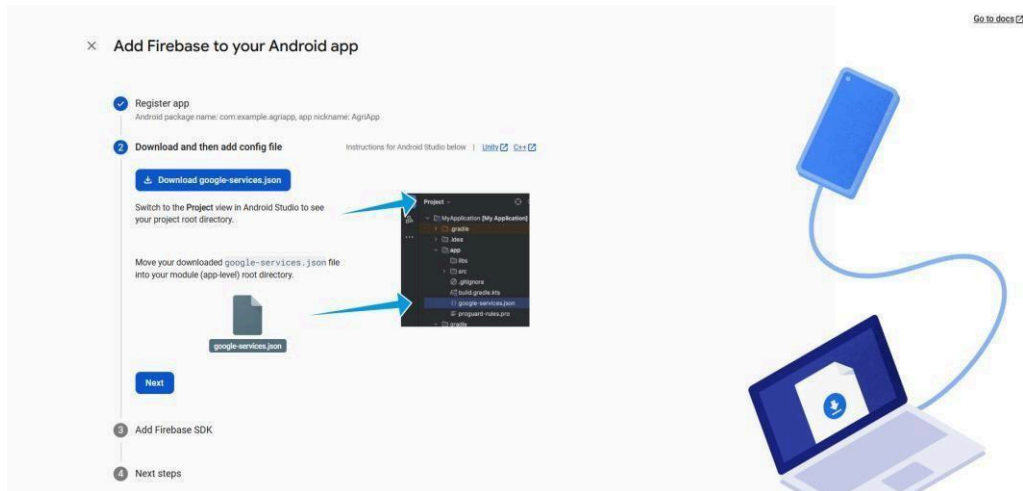
2.1) Click on Android/iOS/Web based on your Flutter application



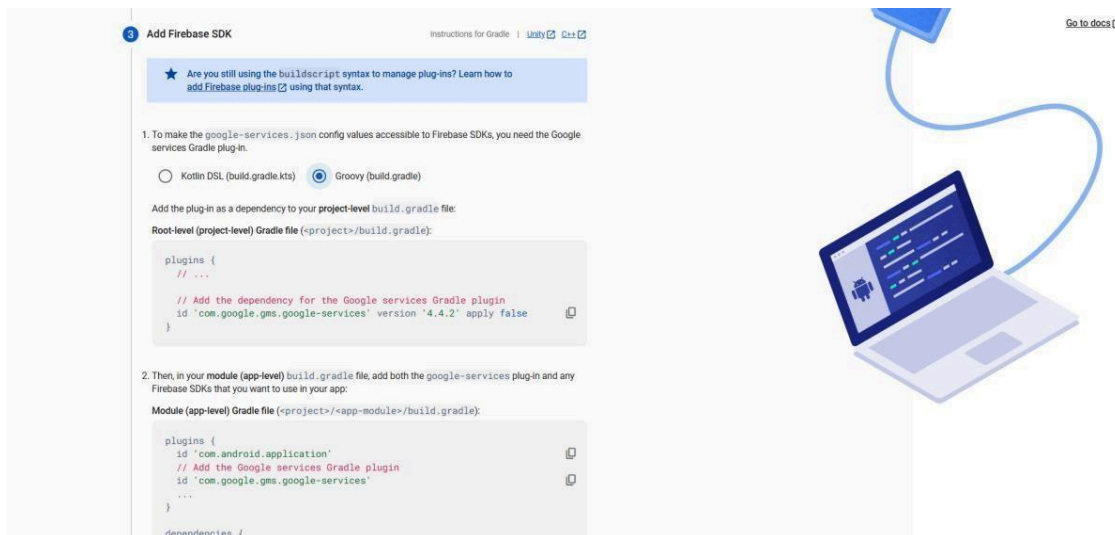
2.2) Register your app with a unique package name (found in android/app/build.gradle for Android).

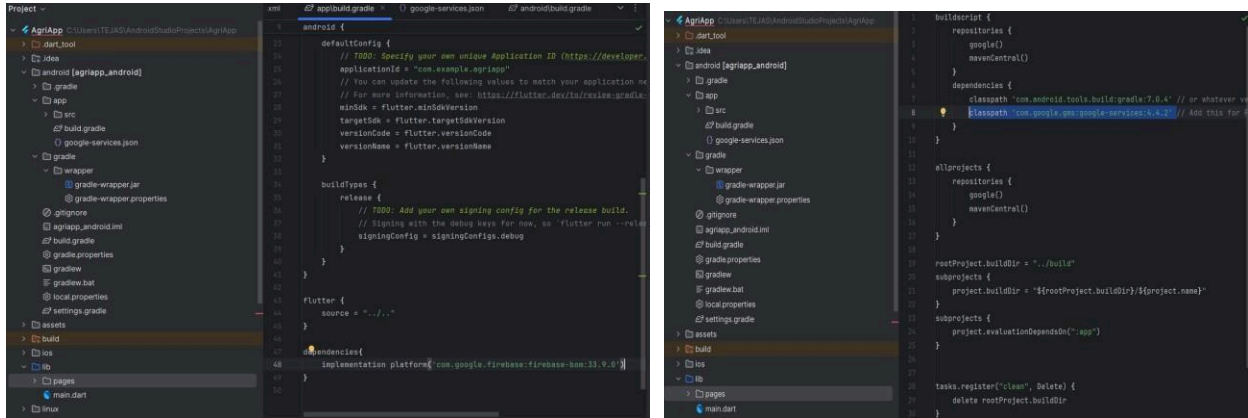


- 2.3) Download the google-services.json (for Android) & place the JSON file inside android/app/ directory.



- 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
```

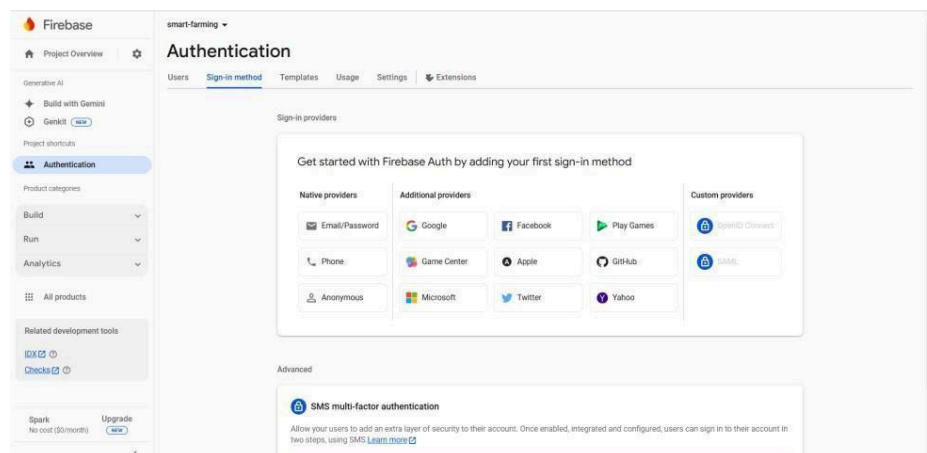
3.2) Enable Authentication in Firebase Console

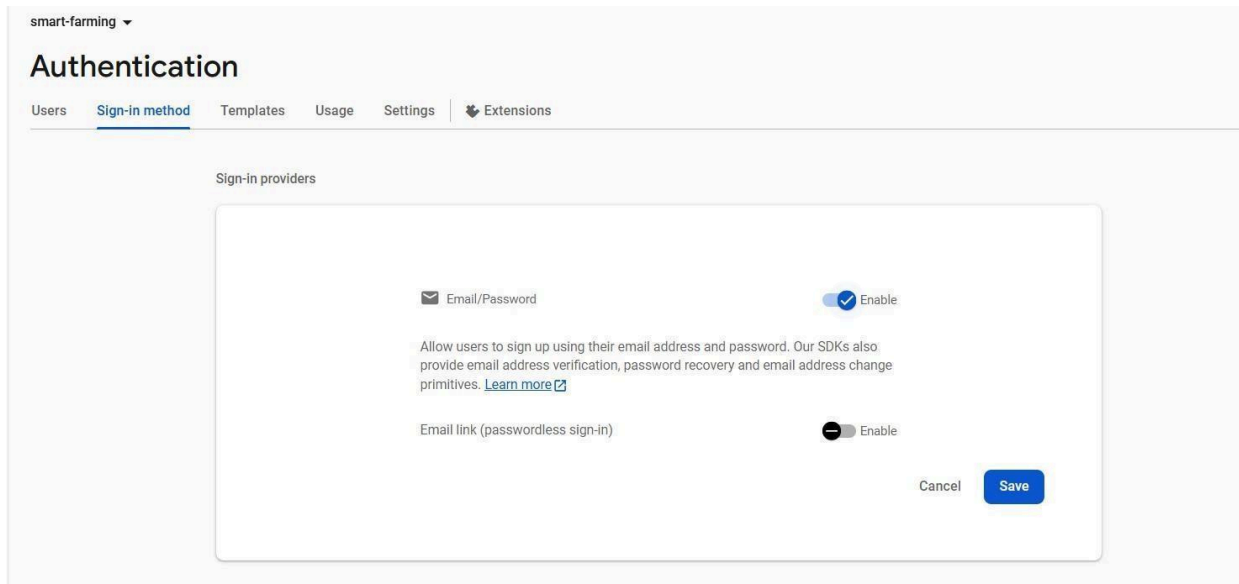
Go to **Firebase Console** →

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/screens/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:

```



```
);  
}  
}
```

23:55 23:55 M M • You LTE+ 85%


← Spotify®

Register



If You Need Any Support [Click Here](#)

Full Name

Enter Email

Password 

Create Account

Do You Have An Account? [Sign In](#)

||| ○ <



Sign In

If You Need Any Support [Click Here](#)



[Recovery Password](#)

Sign In

Or



Not A Member? [Register Now](#)

23:56

VoLTE+ 85%



All

Music

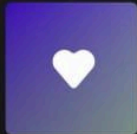
Podcasts



On Repeat



Trending Now India



Liked Songs



Your top mixes



Perfect
One Direction



Home



Search



Library



Profile



23:58

VoLTE+ 85%

perfect 1d



One Direction -
Perfect (Official
Video)



OneDirectionVEVO



One Direction -
Perfect (Lyrics)



Authentic Music



One Direction -
Perfect (Audio)



OneDirectionVEVO



One Direction -
Perfect (Lyrics)



VinnyTalks



One Direction
Performs
'Perfect'



Jimmy Kimmel Live



Home



Search



Library



Profile





Aryan

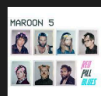
1 follower • 19 following

Playlists



My playlist #3

0 saves



CHILL

0 saves



Home



Search



Library



Profile

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 document in the 'users' collection. The document ID is 'foaUw1biSEqyE1MqXTodj1l10xm1'. The document contains the following fields:

- active: true
- groupId
- lastSeen: 1741102062460
- phoneNumber: "+919356229062"
- profileImageUrl: ""
- uid: "foaUw1biSEqyE1MqXTodj1l10xm1"
- username: "ABC"

The console interface includes a sidebar with navigation icons, a top navigation bar with 'Cloud Firestore' and 'Data' tabs, and a bottom status bar with the URL: https://console.firebase.google.com/u/0/project/whatapp-messenger-8275a/firestore?fb_gclid=CjwKCAiASpq-BhBuEwAvkzVZctzmR79BRs232e4HoELV5N04lhCymdUkn0f9hih7OW3Pfr-ECuRoChAUQAvD_BwE.

