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EXPERIMENT NO: - 06

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AIM: - To connect Flutter UI with Firebase database.

Theory: -

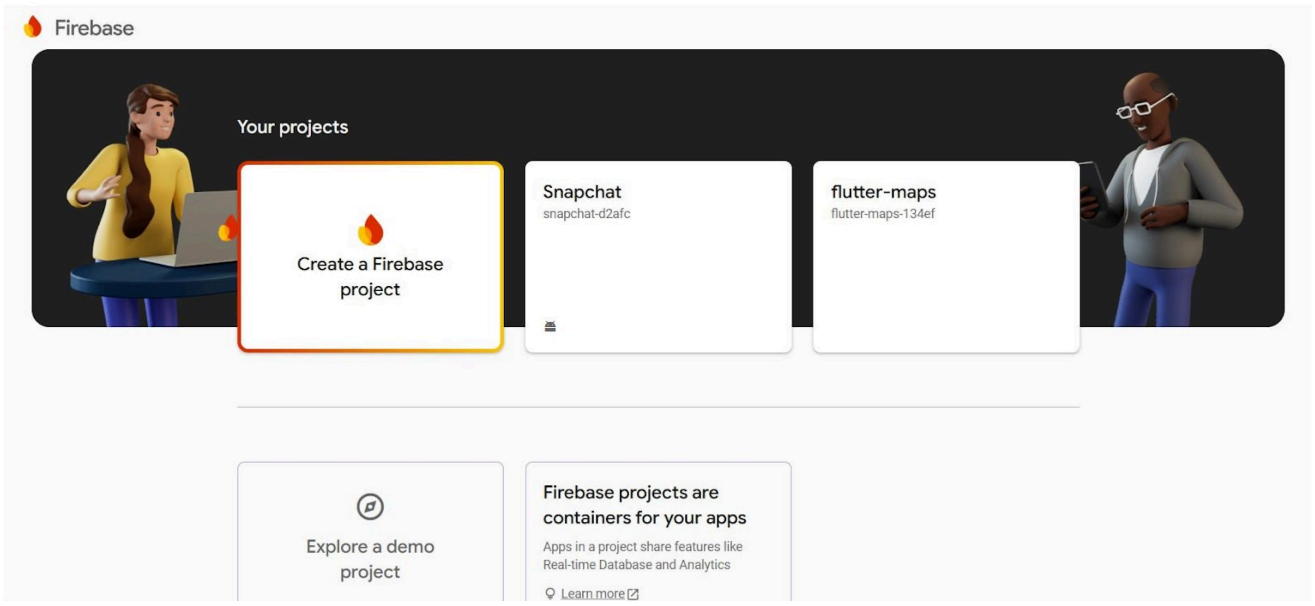
Flutter is an open-source UI toolkit developed by Google for building natively compiled applications for mobile, web, and desktop from a single codebase. Firebase, a Backend-as-a-Service (BaaS) platform, provides real-time database, authentication, and cloud storage services, making it a powerful backend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


Firebase
Your projects
Create a Firebase project
Snapchat
snapchat-d2afc
flutter-maps
flutter-maps-134ef
Explore a demo project
Firebase projects are containers for your apps
Apps in a project share features like Real-time Database and Analytics
Learn more

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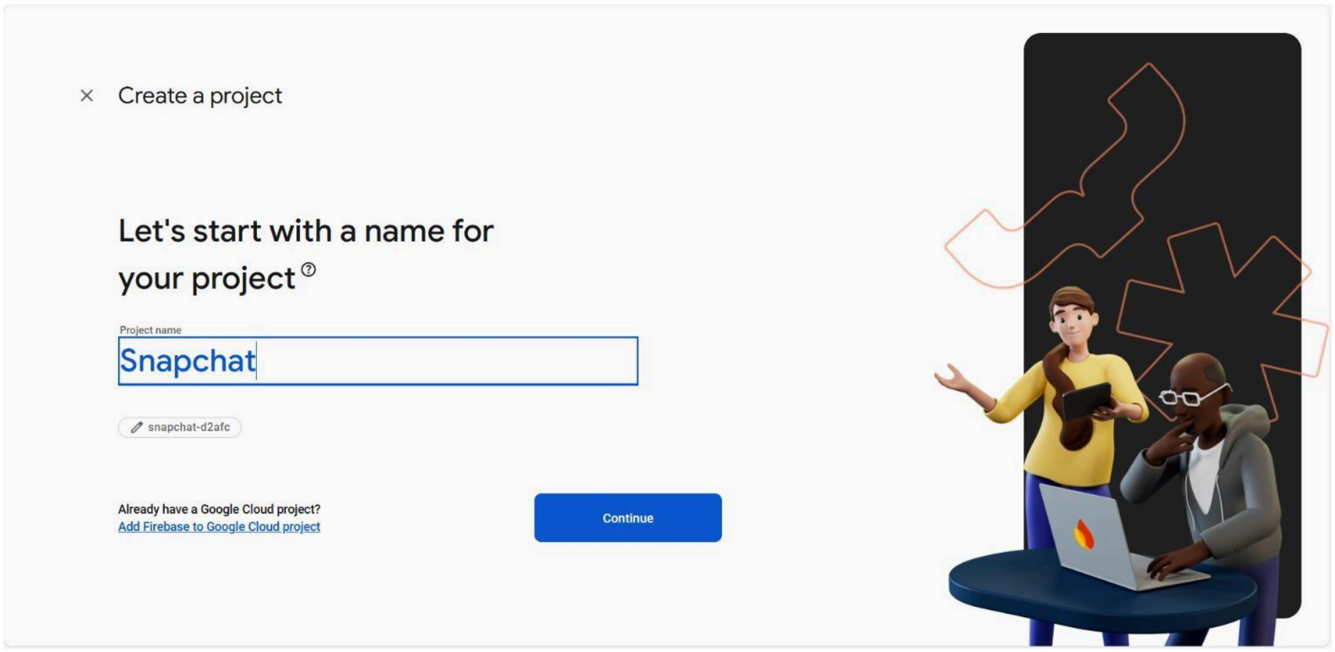
1.2) Click on Create a Project and give it a suitable name.



Create a project

Let's start with a name for your project

Project name

Snapchat

snapchat-d2afc

Already have a Google Cloud project?
Add Firebase to Google Cloud project

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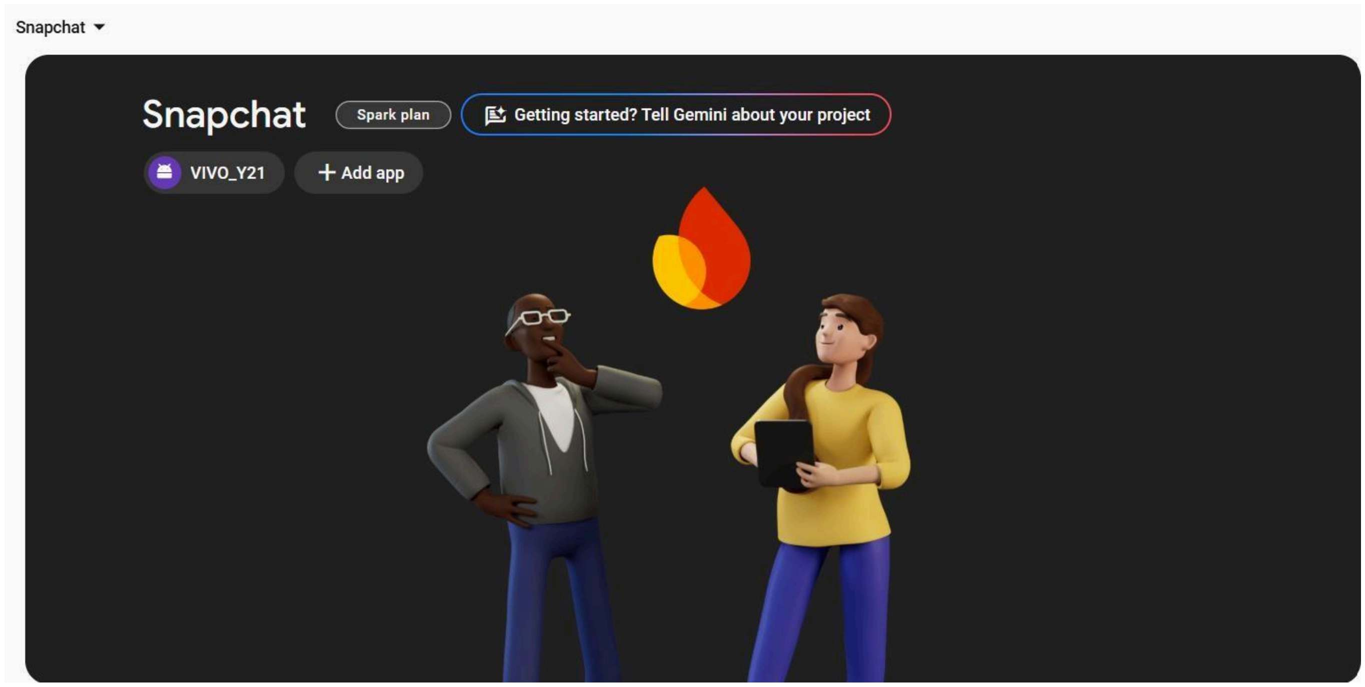
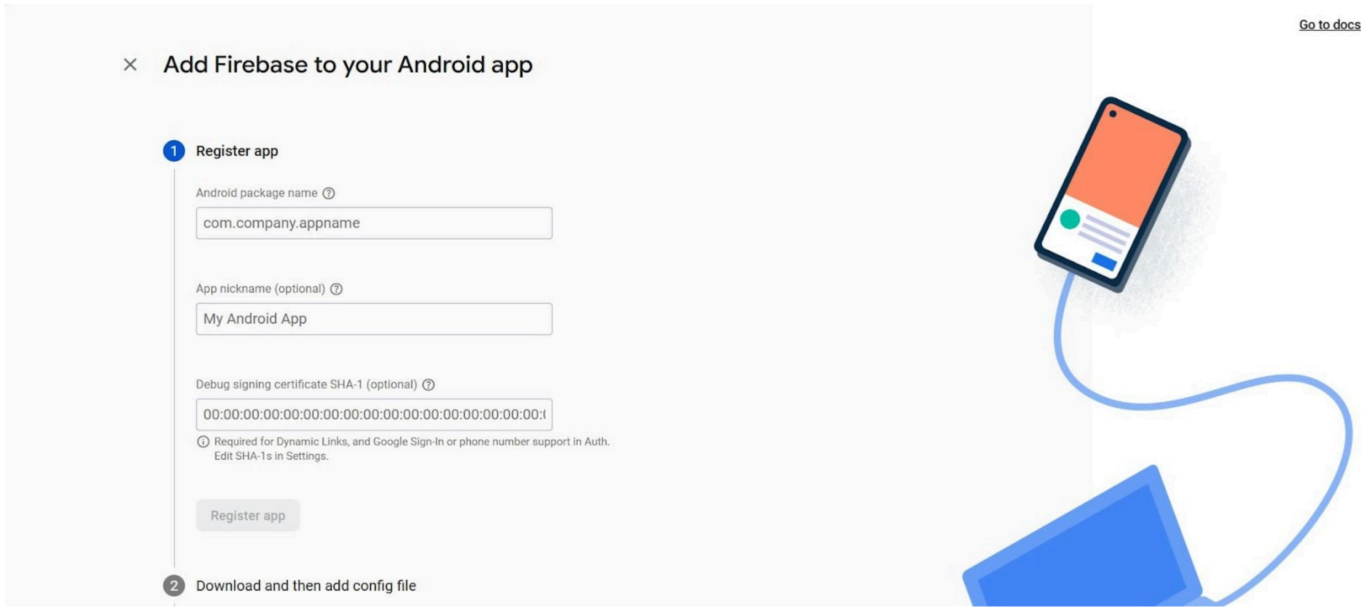
Step 2:- Add Firebase to Your Flutter App

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).



Go to docs

× Add Firebase to your Android app

1 Register app

Android package name

com.company.appname

App nickname (optional)

My Android App

Debug signing certificate SHA-1 (optional)

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

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

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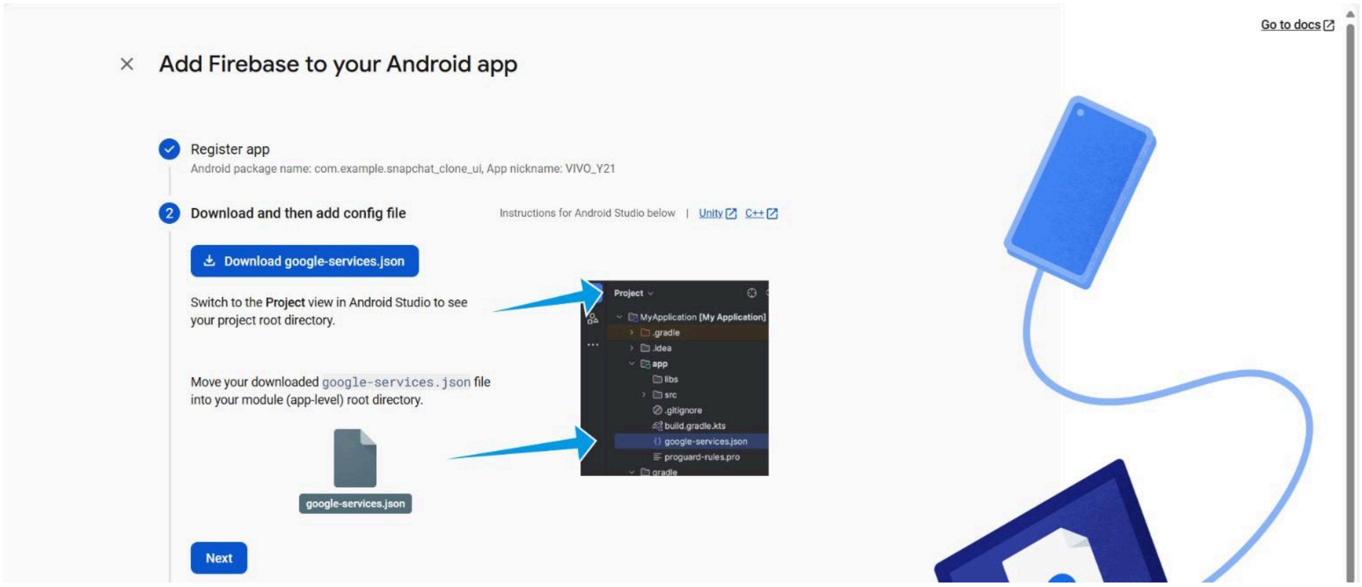
2.3) Download the google-services.json (for Android) & place the JSON file inside android/app/ directory.



Add Firebase to your Android app

Register app
Android package name: com.example.snapchat_clone_ui, App nickname: VIVO_Y21

2 Download and then add config file

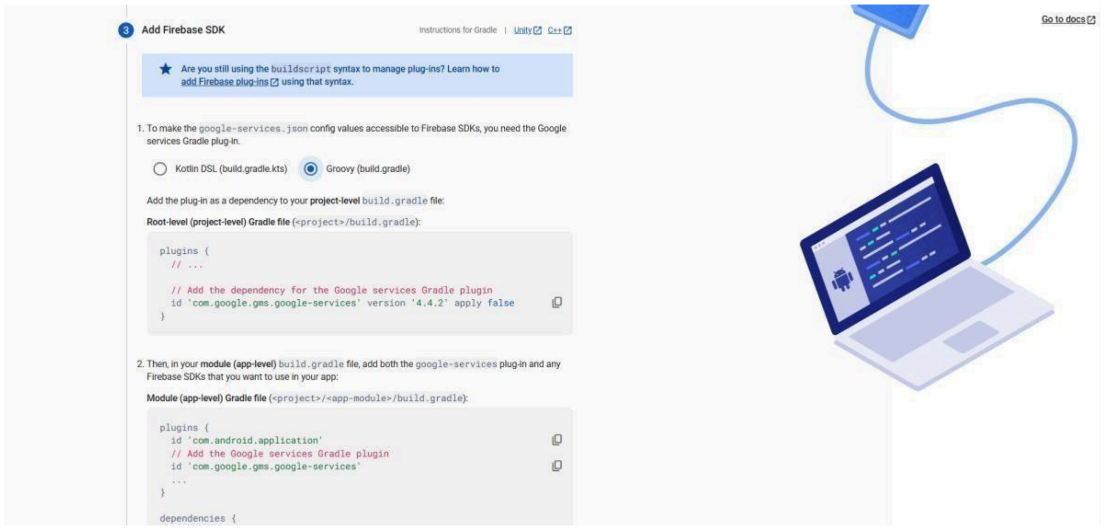
Instructions for Android Studio below | Unity C++

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.

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



3 Add Firebase SDK

Instructions for Gradle | Unity C++

Are you still using the `buildscript` syntax to manage plug-ins? Learn how to add Firebase plug-ins using that syntax.

1. To make the `google-services.json` config values accessible to Firebase SDKs, you need the Google services Gradle plug-in.

   Kotlin DSL (build.gradle.kts) [✓ Groovy (build.gradle)]

   Add the plug-in as a dependency to your **project-level** `build.gradle` file:

   Root-level (project-level) Gradle file (`<project>/build.gradle`):

```
plugins {
  // ...

  // Add the dependency for the Google services Gradle plugin
  id 'com.google.gms.google-services' version '4.4.2' apply false
}
```

2. Then, in your **module (app-level)** `build.gradle` file, add both the `google-services` plug-in and any Firebase SDKs that you want to use in your app:

   Module (app-level) Gradle file (`<project>/<app-module>/build.gradle`):

```
plugins {
  id 'com.android.application'
  // Add the Google services Gradle plugin
  id 'com.google.gms.google-services'
  ...
}

dependencies {
```

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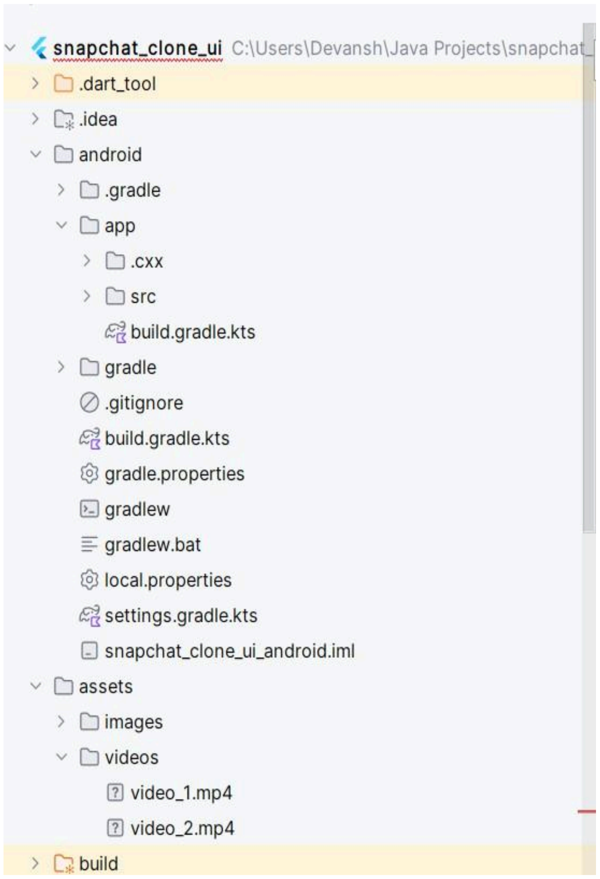
```
snapchat_clone_ui C:\Users\Devansh\Java Projects\snapchat_
  .dart_tool
  .idea
  android
    .gradle
    app
      .cxx
      src
      build.gradle.kts
    gradle
    .gitignore
    build.gradle.kts
    gradle.properties
    gradlew
    gradlew.bat
    local.properties
    settings.gradle.kts
    snapchat_clone_ui_android.iml
  assets
    images
    videos
      video_1.mp4
      video_2.mp4
  build
```

<u>Step 3: - Add Firebase Authentication to Your App</u>

3.1) Add Firebase Authentication Dependencies

```
firebase_core: ^3.12.1
flutter_web_auth: ^0.6.0
firebase_auth: ^5.5.1
http: ^1.3.0
```

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

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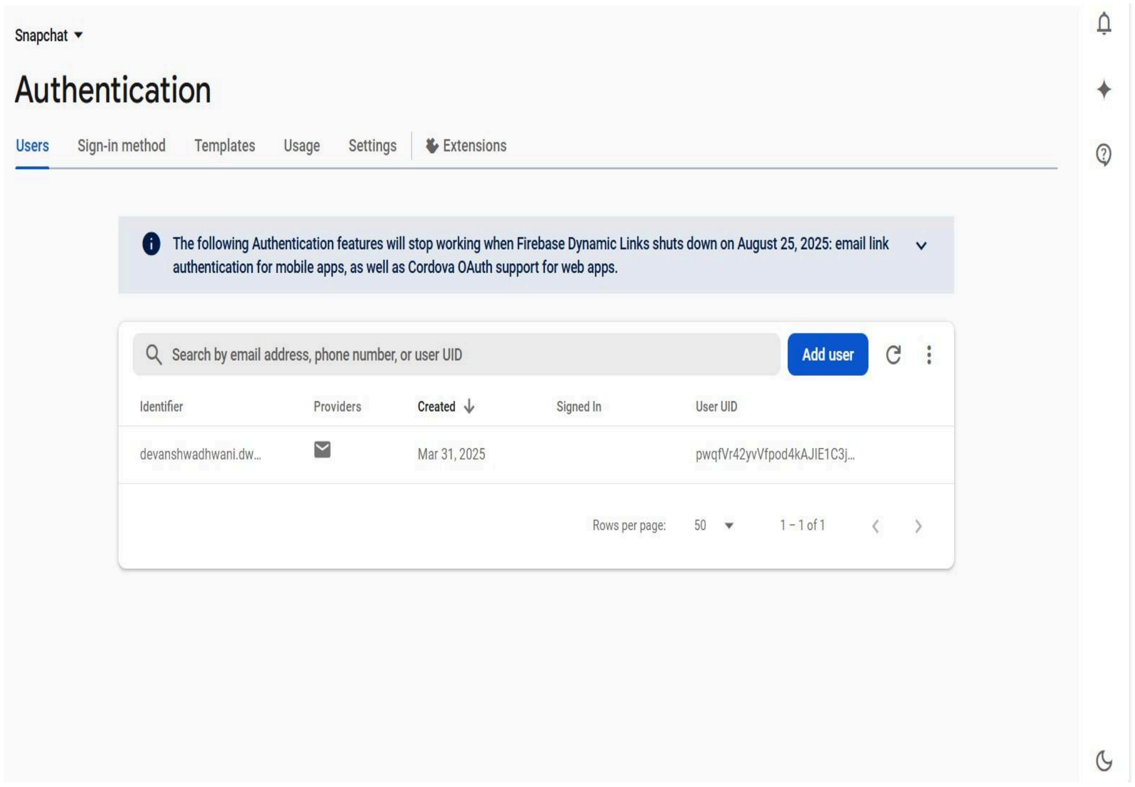

Snapchat

Authentication

Users | Sign-in method | Templates | Usage | Settings | Extensions

The following Authentication features will stop working when Firebase Dynamic Links shuts down on August 25, 2025: email link authentication for mobile apps, as well as Cordova OAuth support for web apps.

Search by email address, phone number, or user UID

Add user

Identifier	Providers	Created	Signed In	User UID
devanshwadhwani.dw…	✉	Mar 31, 2025		pwqfVr42yvVfpod4kAJlE1C3j…

Rows per page: 50 1 – 1 of 1

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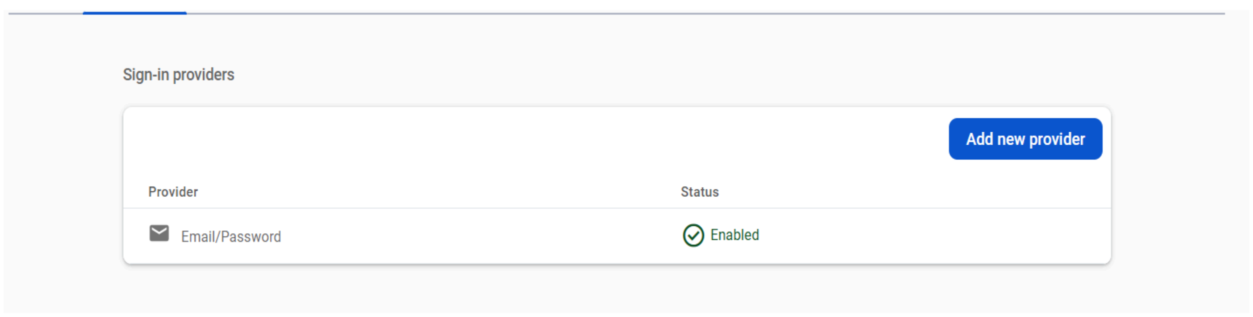

Provider	Status
Email/Password	Enabled

3.3) Implement Authentication in Flutter Modify main.dart

```
import 'package:flutter/material.dart';
import 'package:snapchat_clone_ui/screens/home_screen.dart';
import 'package:snapchat_clone_ui/screens/initial_screen.dart';
import 'package:snapchat_clone_ui/screens/login_screen.dart';
import 'package:snapchat_clone_ui/screens/signup_screen.dart';
import ‘package:firebase_core’

void main() {
 runApp(MyApp());
}

class MyApp extends StatelessWidget {
 @override
 Widget build(BuildContext context) {
  return MaterialApp(
  debugShowCheckedModeBanner: false,
   theme: ThemeData(primaryColor: Color(0xFF838486)),
   initialRoute: '/',
   routes: {
    '/': (context) => InitialScreen(),
    '/login_screen': (context) => LoginScreen(),
    '/signup_screen': (context) =>
    SignupScreen(), '/home_screen': (context) =>
    HomeScreen(),
   },
  );
 }
}
```

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).

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4.3) Click **Publish**.

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- Code:

- Login_Screen.dart

```
import 'package:flutter/material.dart';
import 'package:font_awesome_flutter/font_awesome_flutter.dart';
import 'package:snapchat_clone_ui/custom_widgets/custom_widgets.dart';

const FaIcon hiddenEye = FaIcon(FontAwesomeIcons.eyeSlash);
const FaIcon eye = FaIcon(FontAwesomeIcons.eye);

class LoginScreen extends StatefulWidget {
  @override
  _LoginScreenState createState() => _LoginScreenState();
}

class _LoginScreenState extends State<LoginScreen> {
  bool _obscureText = true;
  Widget eyeStatus = hiddenEye;

  void _toggle() {
    setState(() {
      _obscureText = !_obscureText;
      if (_obscureText == false) {
      eyeStatus = eye;
      } else {
        eyeStatus = hiddenEye;
      }
    });
  }

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        leading: GestureDetector(
          onTap: () {
          Navigator.pop(context);
          },
          child: Icon(Icons.arrow_back_ios, color: Colors.grey),
        ),
        elevation: 0,
        backgroundColor: Colors.white,
      ),
      body: Center(
```

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```
child: SingleChildScrollView(
  child: Center(
    child: Column(
      mainAxisAlignment: MainAxisAlignment.spaceEvenly,
      children: [
        Text(
          "Log
          in",
          style: TextStyle(fontSize: 40, color: Colors.black),
        ),
        SizedBox(height: 20),
        CustomSnapTextField(
          label: "USERNAME OR EMAIL",
          isPasswordField: false,
          autoFocus: true,
        ),
        SizedBox(height: 20),
        Column(
          children: [
            Container(
              alignment: Alignment.centerLeft,
              margin: EdgeInsets.symmetric(horizontal: 50),
              child: Text(
                "PASSWORD",
                style: TextStyle(
                  fontSize: 18,
                  fontWeight: FontWeight.bold,
                  color: Color(0xFF51B5E5),
                ),
              ),
            ),
            Padding(
              padding: const EdgeInsets.symmetric(horizontal: 50),
              child: TextField(
                obscureText: _obscureText,
                autofocus: false,
                cursorHeight: 33,
                cursorWidth: 2,
                decoration: InputDecoration(
                  suffixIcon: GestureDetector(
                  onTap: () {
                      _toggle();
                    },
                    child: eyeStatus,
                  ),
                  floatingLabelBehavior: FloatingLabelBehavior.never,
                  contentPadding: EdgeInsets.all(6),
                ),
                cursorColor: Color(0xFF69B77D),
              ),
            ),
```

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],

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```
            ),
            SizedBox(height: 60),
            //Forgot your password
            GestureDetector(
            onTap: () {
              //forgot your password
             },
             child: Text(
               "Forgot your password?",
               style: TextStyle(
               fontSize: 17,
                 fontWeight: FontWeight.bold,
                 color: Color(0xFF51B5E5),
               ),
             ),
            ),
            SizedBox(height: 90),

            //Login button
            Padding(
             padding: const EdgeInsets.symmetric(horizontal: 80),
             child: GestureDetector(
               onTap: () {
                 Navigator.pushNamed(context, '/home_screen');
               },
               child: Container(
                 margin: EdgeInsets.only(top: 20),
                 child: Text(
                   "Log in",
                   style: TextStyle(
                     fontSize: 25,
                     color: Colors.white,
                     fontWeight: FontWeight.bold,
                   ),
                 ),
                 alignment: Alignment.center,
                 height: 55,
                 width: double.infinity,
                 decoration: BoxDecoration(
                 color: Color(0xFFADB6BD),
                   borderRadius: BorderRadius.circular(80),
                 ),
               ),
             ),
            ),
          ],
        ),
      ),
    ),
  ),
);
```

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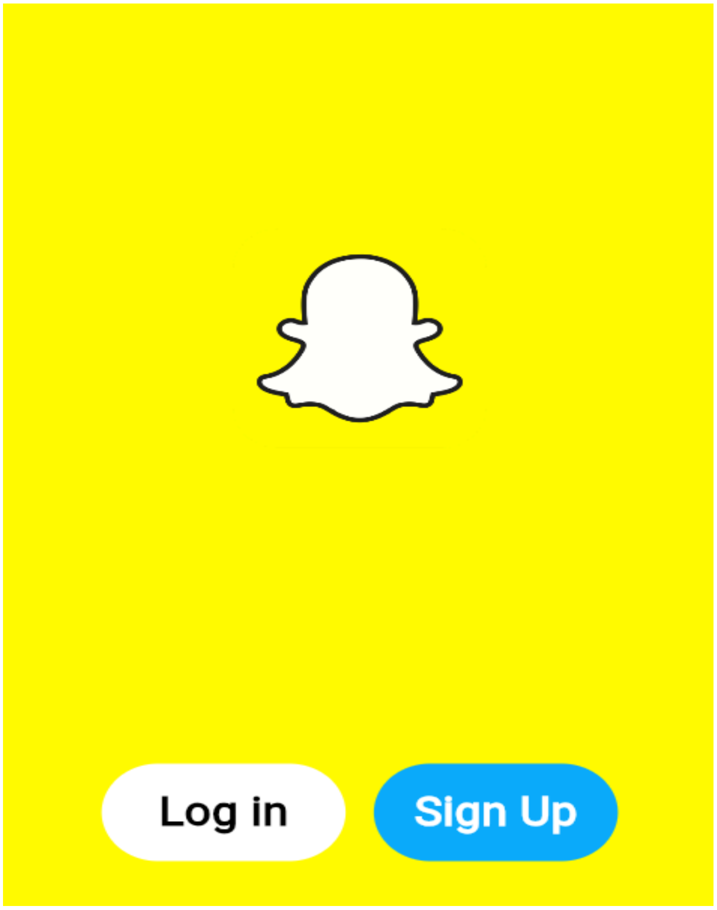

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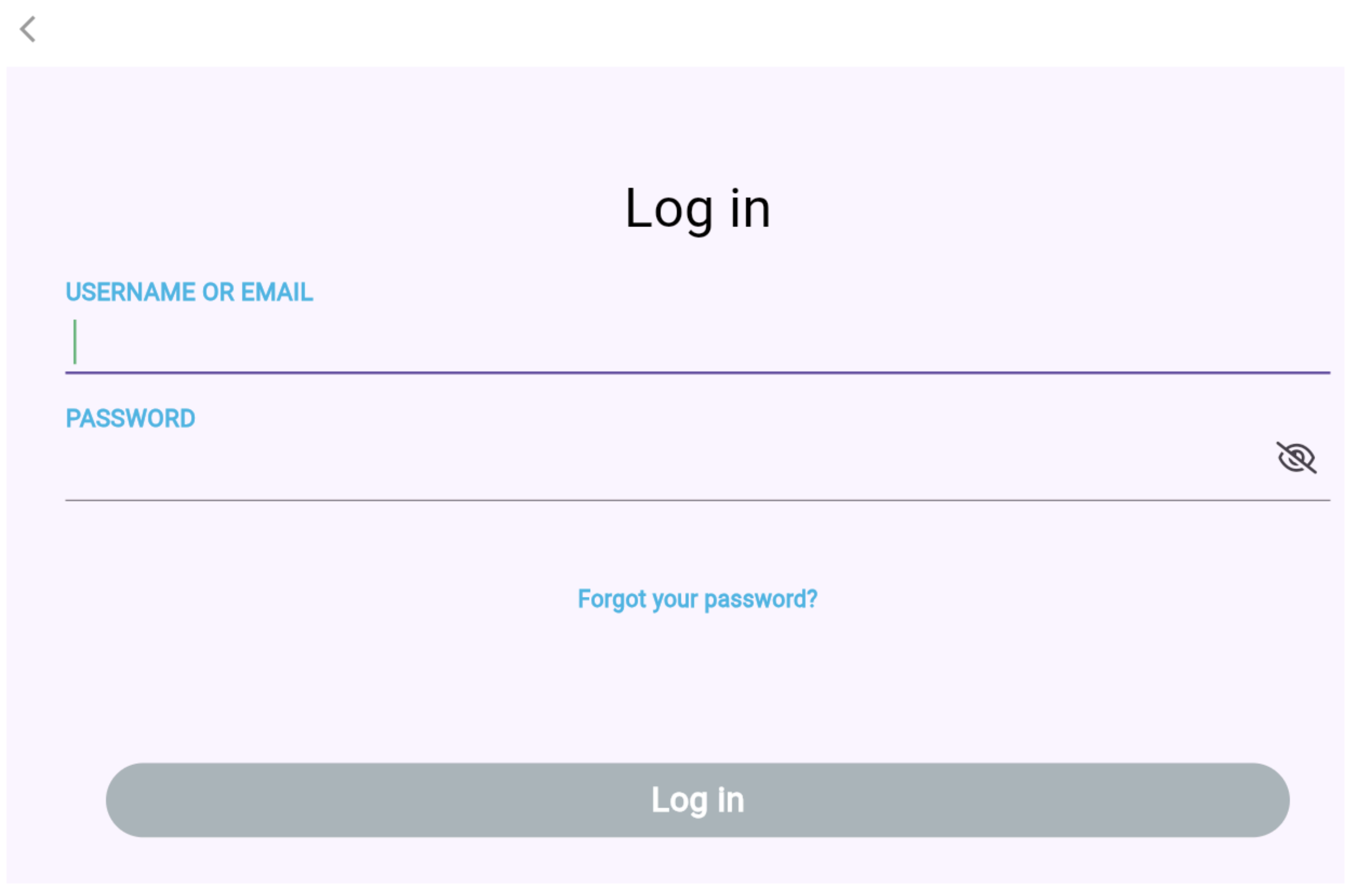
Log in
USERNAME OR EMAIL
PASSWORD
Forgot your password?
Log in

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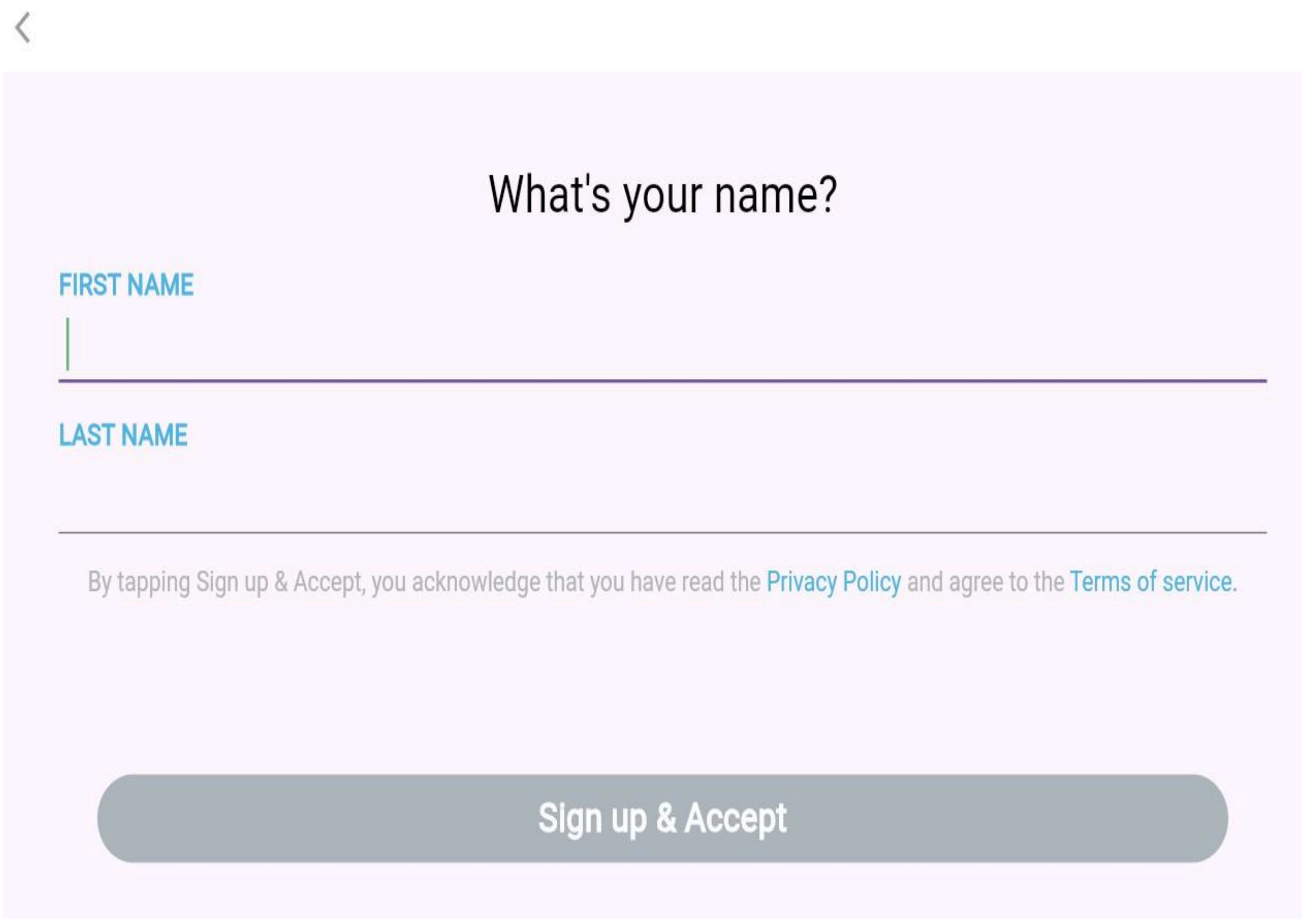

What's your name?

FIRST NAME

LAST NAME

By tapping Sign up & Accept, you acknowledge that you have read the Privacy Policy and agree to the Terms of service.

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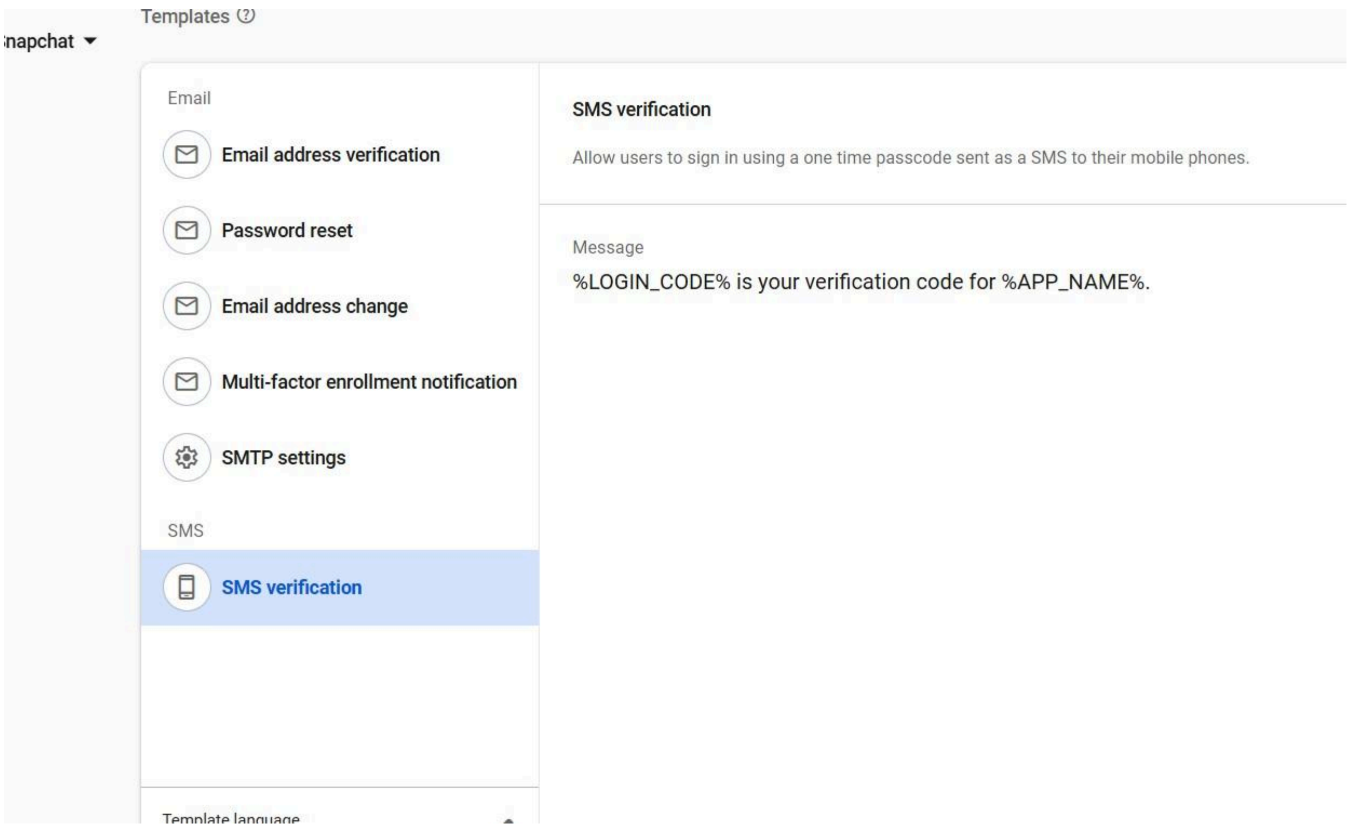

SMS verification

Allow users to sign in using a one time passcode sent as a SMS to their mobile phones.

Message

%LOGIN_CODE% is your verification code for %APP_NAME%.