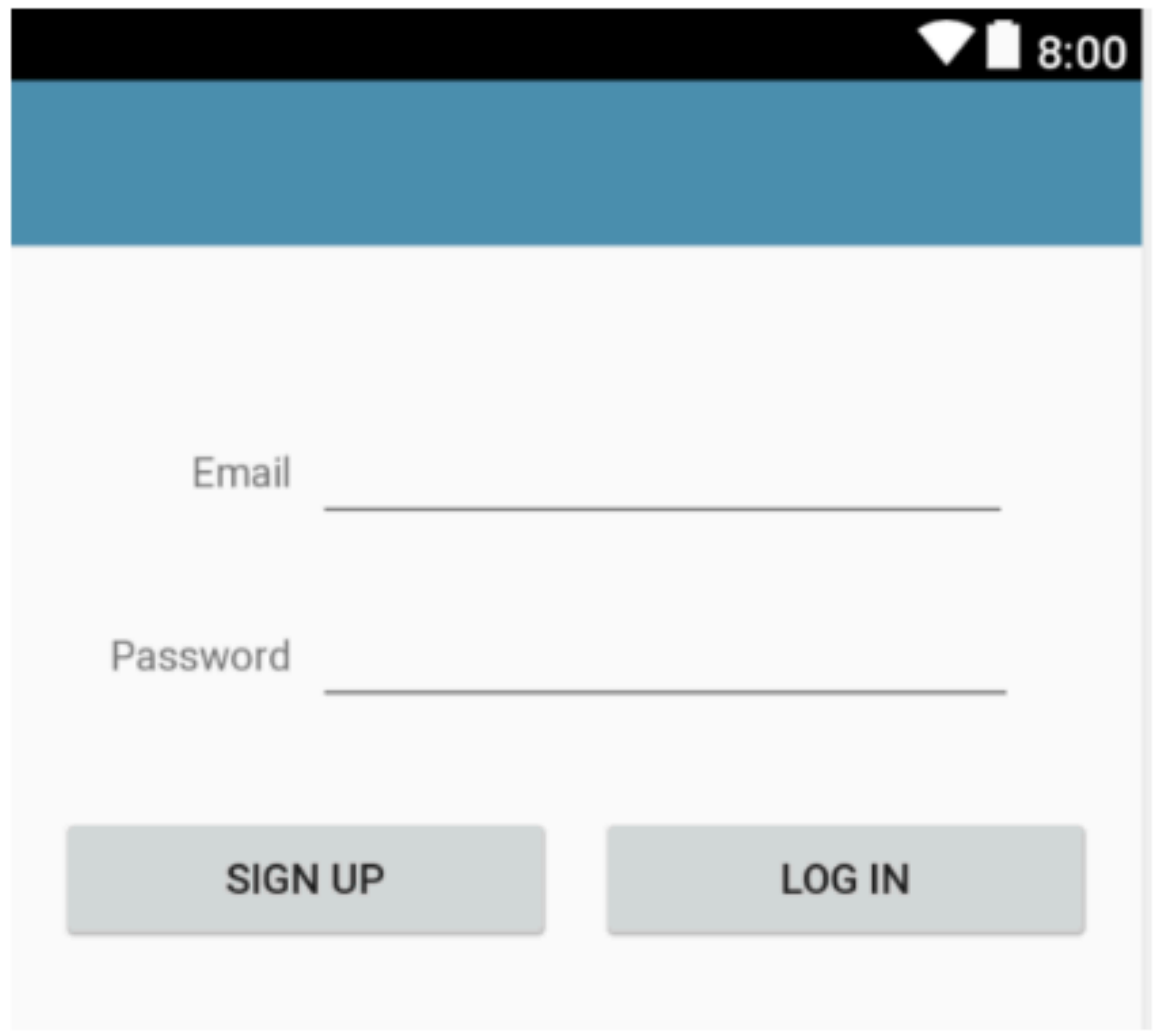
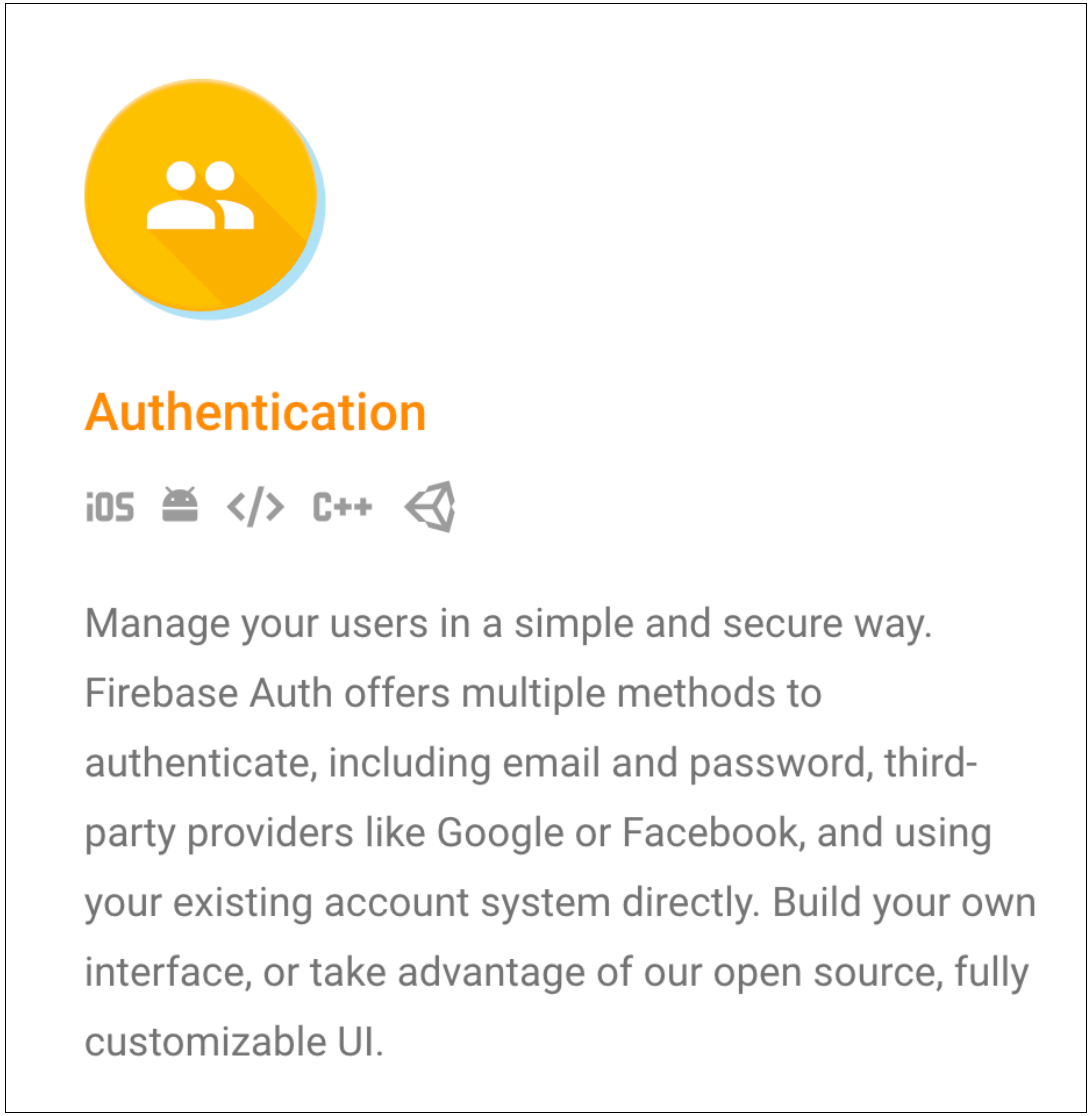
Firebase Auth

Firebase Auth



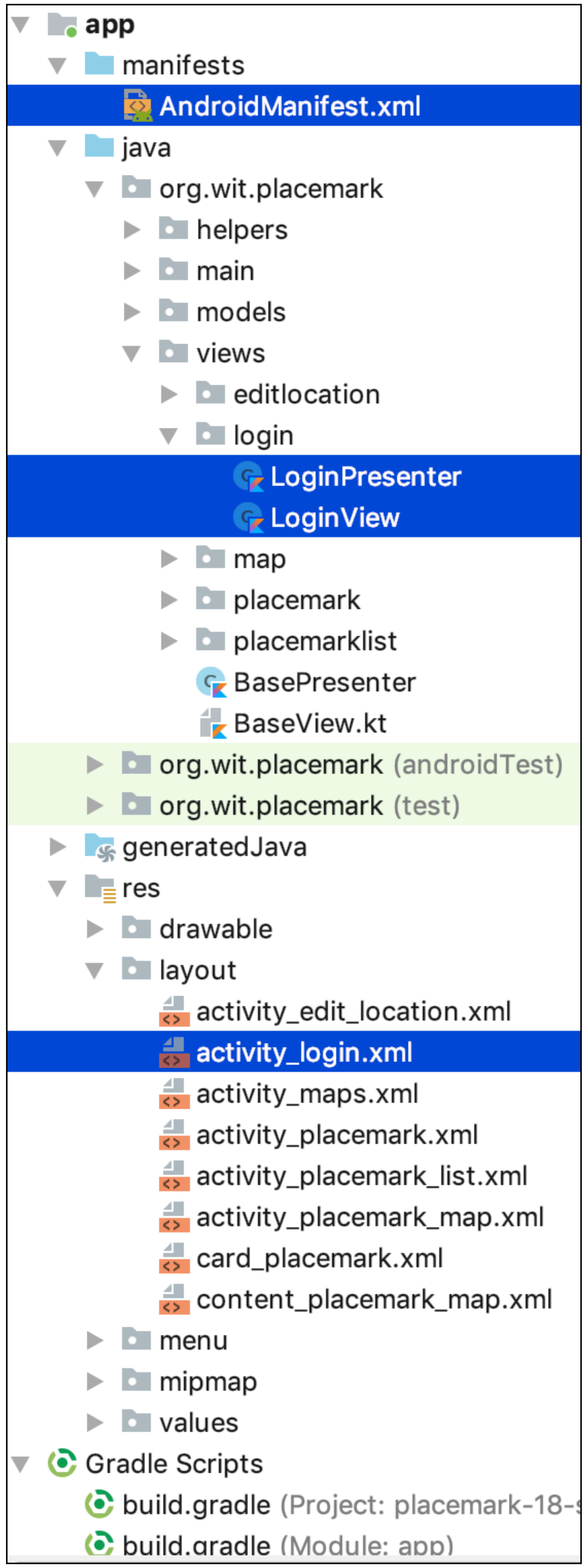
Signup, Login and Logout in Placemark



Authentication

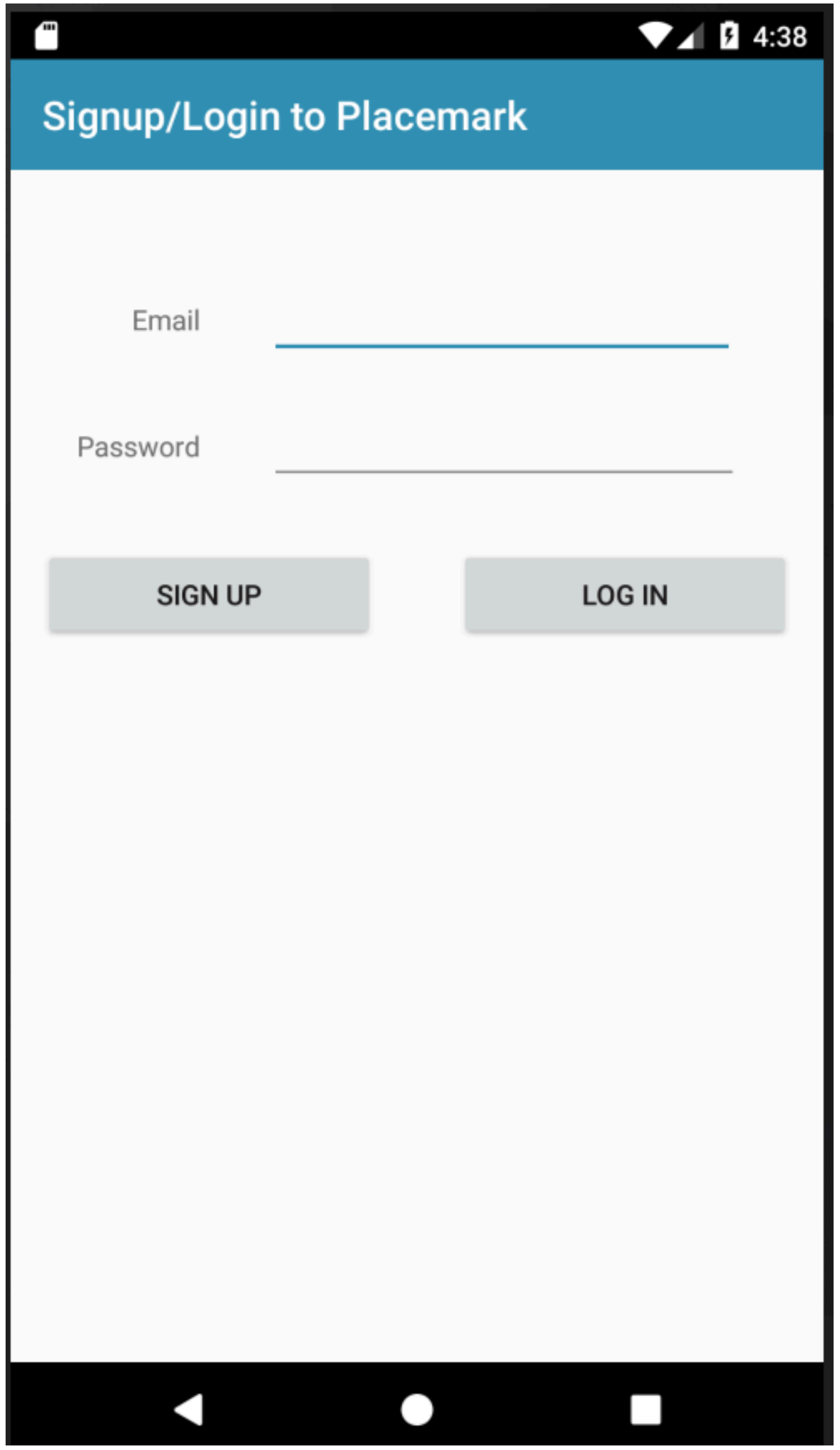
iOS </> C++

Manage your users in a simple and secure way. Firebase Auth offers multiple methods to authenticate, including email and password, third-party providers like Google or Facebook, and using your existing account system directly. Build your own interface, or take advantage of our open source, fully customizable UI.



```
app
  manifests
    AndroidManifest.xml
  java
    org.wit.placemark
      helpers
      main
      models
      views
        editlocation
        login
          LoginPresenter
          LoginView
        map
        placemark
        placemarklist
        BasePresenter
        BaseView.kt
    org.wit.placemark (androidTest)
    org.wit.placemark (test)
  generatedJava
  res
    drawable
    layout
      activity_edit_location.xml
      activity_login.xml
      activity_maps.xml
      activity_placemark.xml
      activity_placemark_list.xml
      activity_placemark_map.xml
      card_placemark.xml
      content_placemark_map.xml
    menu
    mipmap
    values
Gradle Scripts
  build.gradle (Project: placemark-18-
  build.gradle (Module: app)
```

Introduce new View/ Presenter/ Layout



Presenter/View

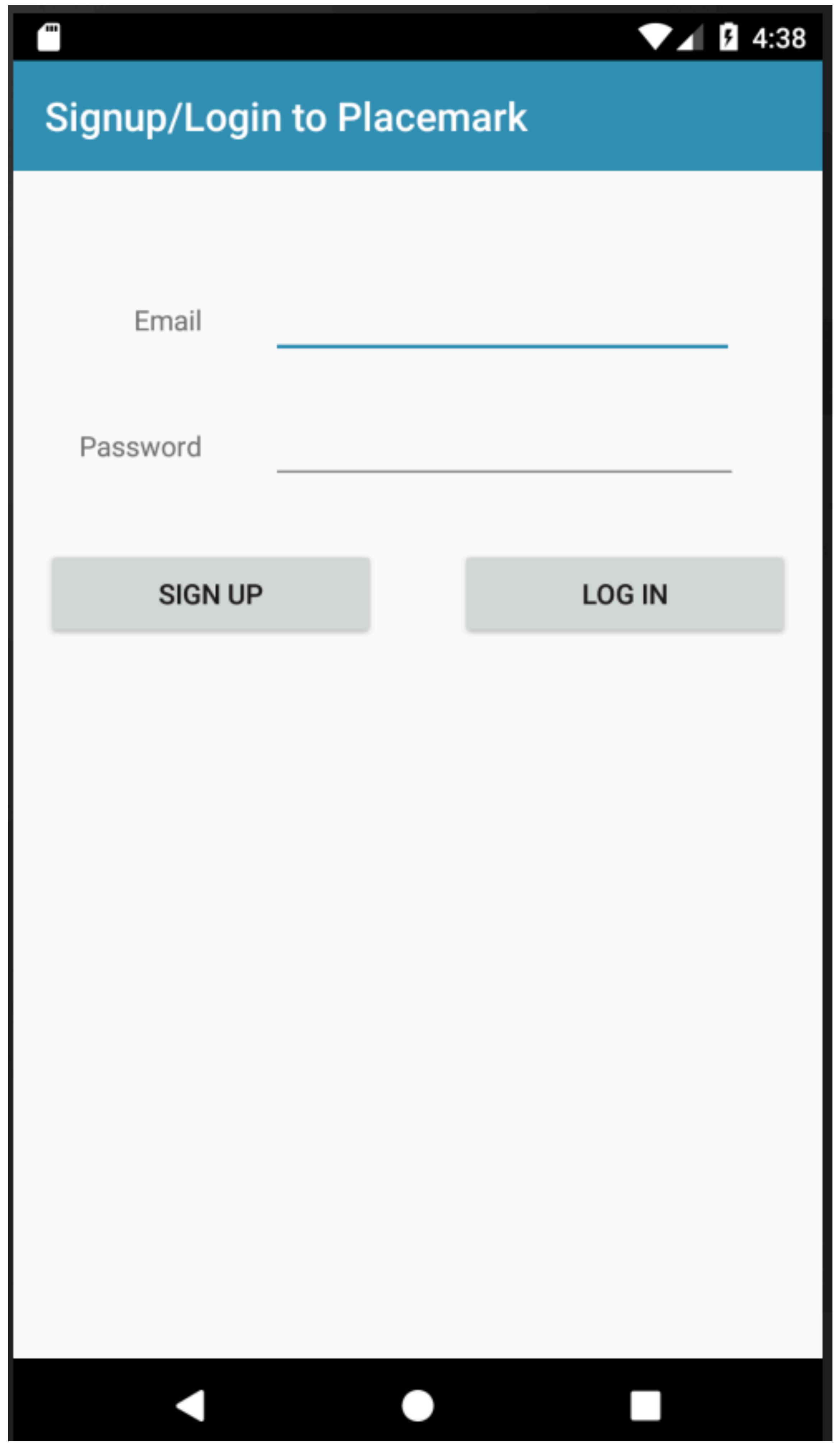
LoginPresenter

```kotlin
package org.wit.placemark.views.login

import org.wit.placemark.views.BasePresenter
import org.wit.placemark.views.BaseView
import org.wit.placemark.views.VIEW

class LoginPresenter(view: BaseView) : BasePresenter(view) {

  fun doLogin(email: String, password: String) {
    view?.navigateTo(VIEW.LIST)
  }

  fun doSignUp(email: String, password: String) {
    view?.navigateTo(VIEW.LIST)
  }
}
```

LoginView

```kotlin
package org.wit.placemark.views.login

import android.os.Bundle
import kotlinx.android.synthetic.main.activity_login.*
import org.jetbrains.anko.toast
import org.wit.placemark.R
import org.wit.placemark.views.BaseView

class LoginView : BaseView() {

  lateinit var presenter: LoginPresenter

  override fun onCreate(savedInstanceState: Bundle?) {
    super.onCreate(savedInstanceState)
    setContentView(R.layout.activity_login)
    init(toolbar, false)

    presenter = initPresenter(LoginPresenter(this)) as LoginPresenter

    signUp.setOnClickListener {
      val email = email.text.toString()
      val password = password.text.toString()
      if (email == "" || password == "") {
        toast("Please provide email + password")
      }
      else {
        presenter.doSignUp(email,password)
      }
    }

    logIn.setOnClickListener {
      val email = email.text.toString()
      val password = password.text.toString()
      if (email == "" || password == "") {
        toast("Please provide email + password")
      }
      else {
        presenter.doLogin(email,password)
      }
    }
  }
}
```

AndroidManifest.xml



```xml
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
  package="org.wit.placemark">

  <uses-permission android:name="android.permission.ACCESS_FINE_LOCATION" />

  <application
    android:name=".main.MainApp"
    android:allowBackup="true"
    android:icon="@mipmap/ic_launcher"
    android:label="@string/app_name"
    android:roundIcon="@mipmap/ic_launcher_round"
    android:supportsRtl="true"
    android:theme="@style/AppTheme">

    <activity android:name=".views.login.LoginView"
      android:label="@string/title_activity_login"
      android:launchMode="singleTop">
      <intent-filter>
        <action android:name="android.intent.action.VIEW" />
        <action android:name="android.intent.action.MAIN" />
        <category android:name="android.intent.category.LAUNCHER" />
      </intent-filter>
    </activity>

    <activity android:name=".views.placemarklist.PlacemarkListView"
      android:label="@string/title_activity_placemark_list"
      android:launchMode="singleTop">
    </activity>
```

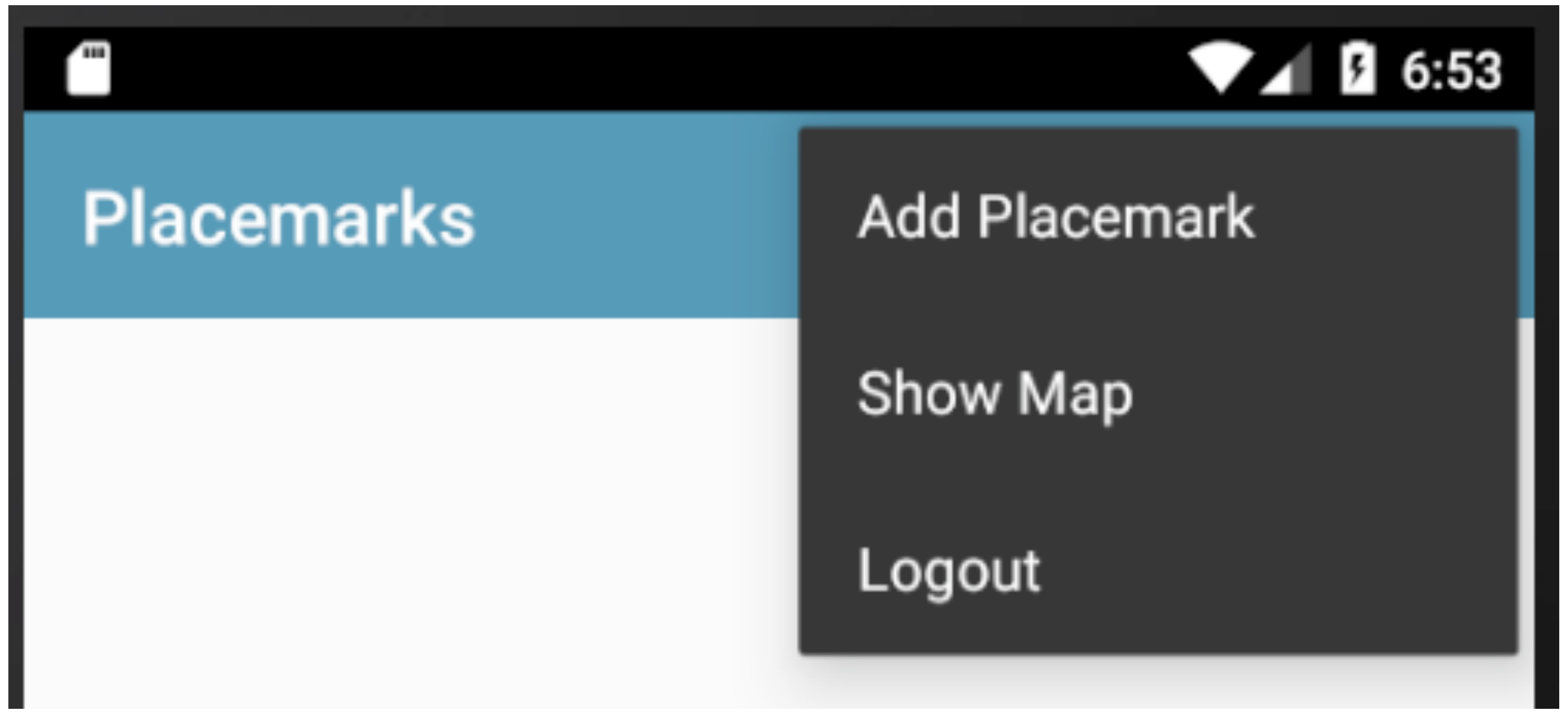
memu_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:app="http://schemas.android.com/apk/res-auto">

  <item
    android:id="@+id/item_add"
    android:icon="@android:drawable/ic_menu_add"
    android:title="@string/menu_addPlacemark"
    app:showAsAction="never"/>

  <item
    android:id="@+id/item_map"
    android:icon="@android:drawable/ic_menu_mapmode"
    android:title="@string/menu_showMap"
    app:showAsAction="never"/>

  <item
    android:id="@+id/item_logout"
    android:title="@string/menu_logout"
    android:visible="true"
    app:showAsAction="never" />
</menu>
```



Logout Menu Option

Logout Action

BaseView

```
...
import org.wit.placemark.views.login.LoginView
...
enum class VIEW {
  LOCATION, PLACEMARK, MAPS, LIST, LOGIN
}
...

  fun navigateTo(view: VIEW, code: Int = 0, key: String = "", value: Parcelable? = null) {
    var intent = Intent(this, PlacemarkListView::class.java)
    when (view) {
      VIEW.LOCATION -> intent = Intent(this, EditLocationView::class.java)
      VIEW.PLACEMARK -> intent = Intent(this, PlacemarkView::class.java)
      VIEW.MAPS -> intent = Intent(this, PlacemarkMapView::class.java)
      VIEW.LIST -> intent = Intent(this, PlacemarkListView::class.java)
      VIEW.LOGIN -> intent = Intent(this, LoginView::class.java)
    }
    if (key != "") {
      intent.putExtra(key, value)
    }
    startActivityForResult(intent, code)
  }
```

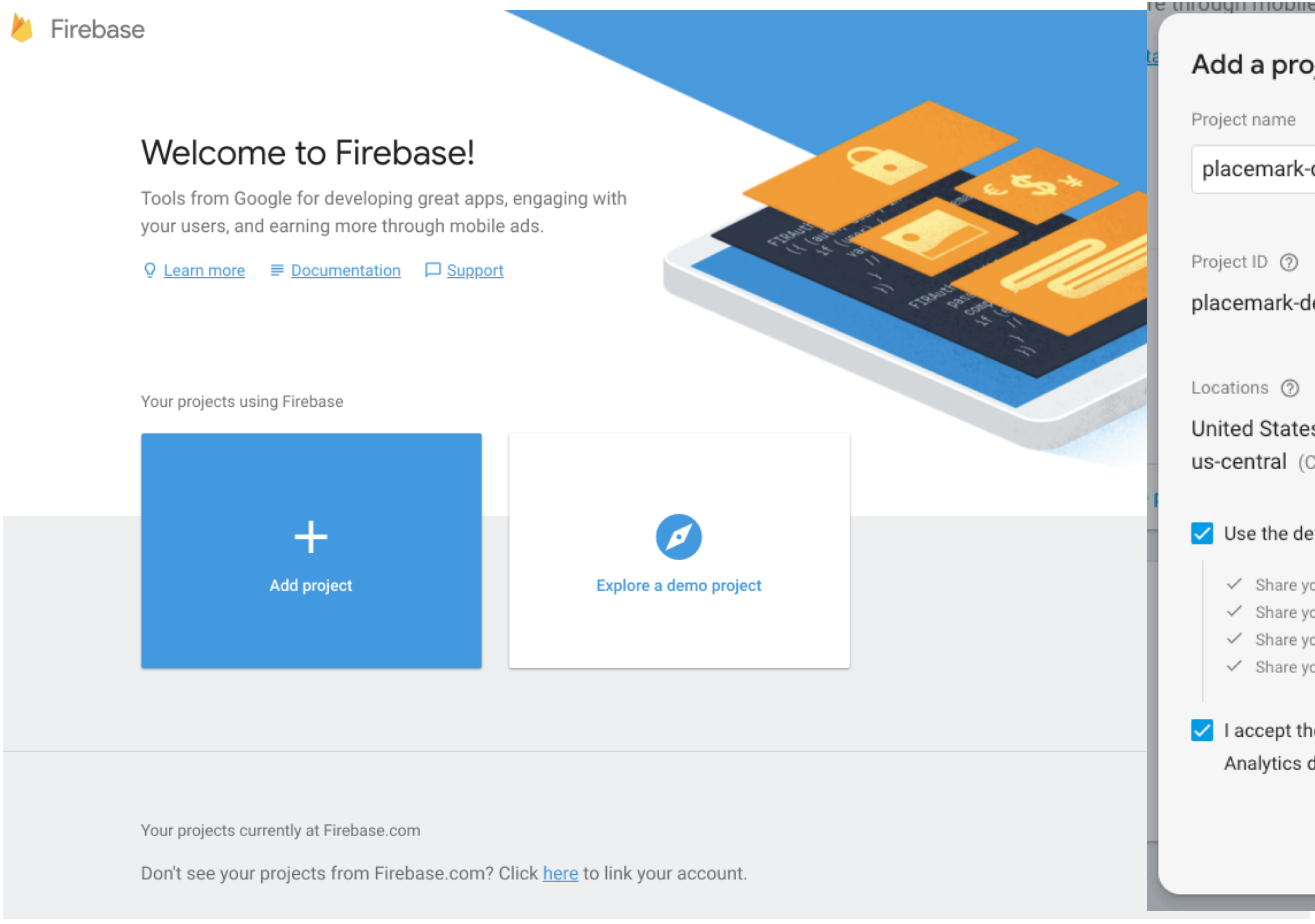
PlacemarkListView

```
  override fun onOptionsItemSelected(item: MenuItem?): Boolean {
    when (item?.itemId) {
      R.id.item_add -> presenter.doAddPlacemark()
      R.id.item_map -> presenter.doShowPlacemarksMap()
      R.id.item_logout ->presenter.doLogout()
    }
    return super.onOptionsItemSelected(item)
  }
```

PlacemarkListPresenter

```
  fun doLogout() {
    view?.navigateTo(VIEW.LOGIN)
  }
}
```

Signup to Firebase - Create Project



Firebase

Welcome to Firebase!

Tools from Google for developing great apps, engaging with your users, and earning more through mobile ads.

Learn more Documentation Support

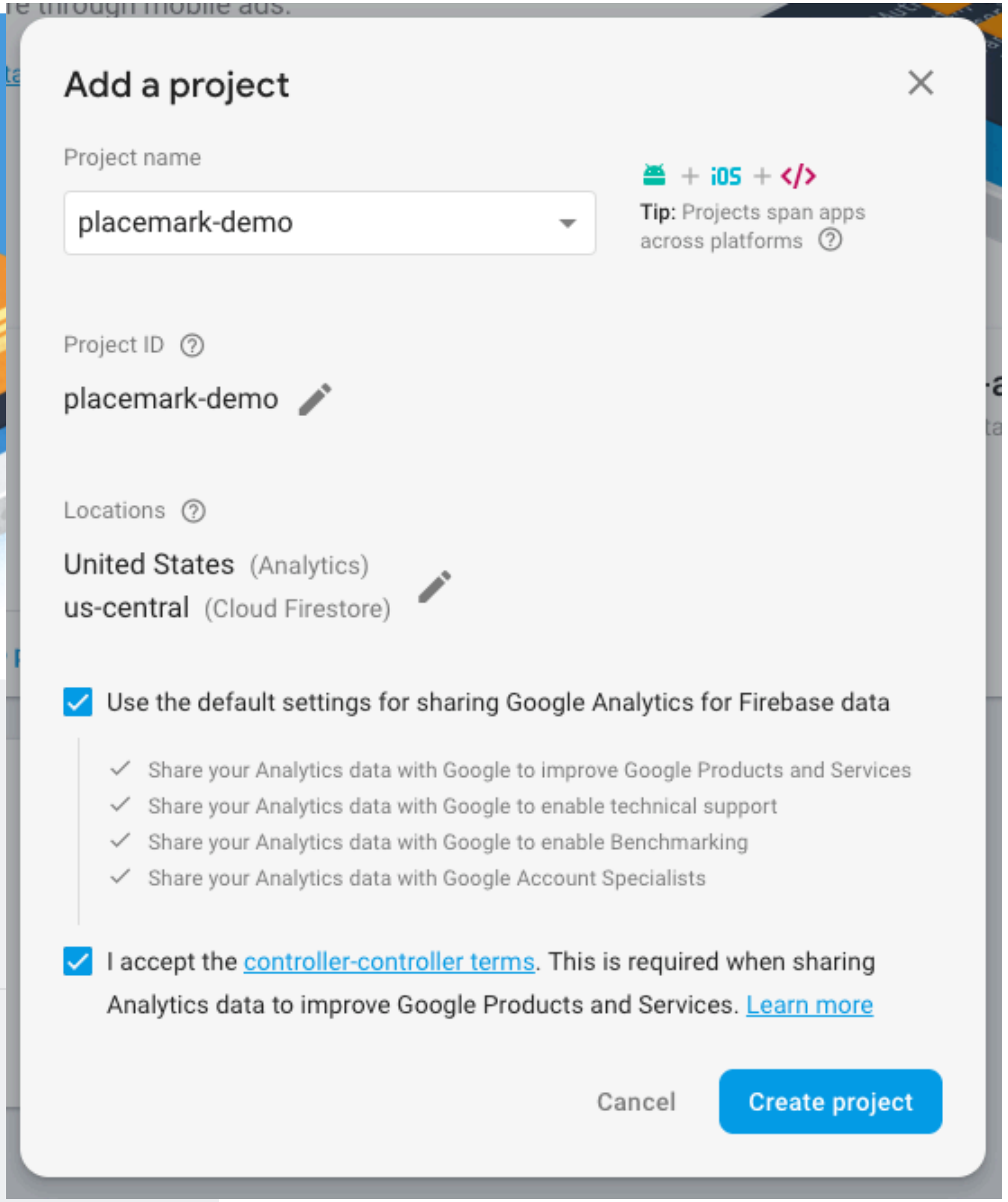
Your projects using Firebase

Add project

Explore a demo project

Your projects currently at Firebase.com

Don't see your projects from Firebase.com? Click here to link your account.



Add a project

Project name: placemark-demo

Tip: Projects span apps across platforms

Project ID: placemark-demo

Locations: United States (Analytics), us-central (Cloud Firestore)

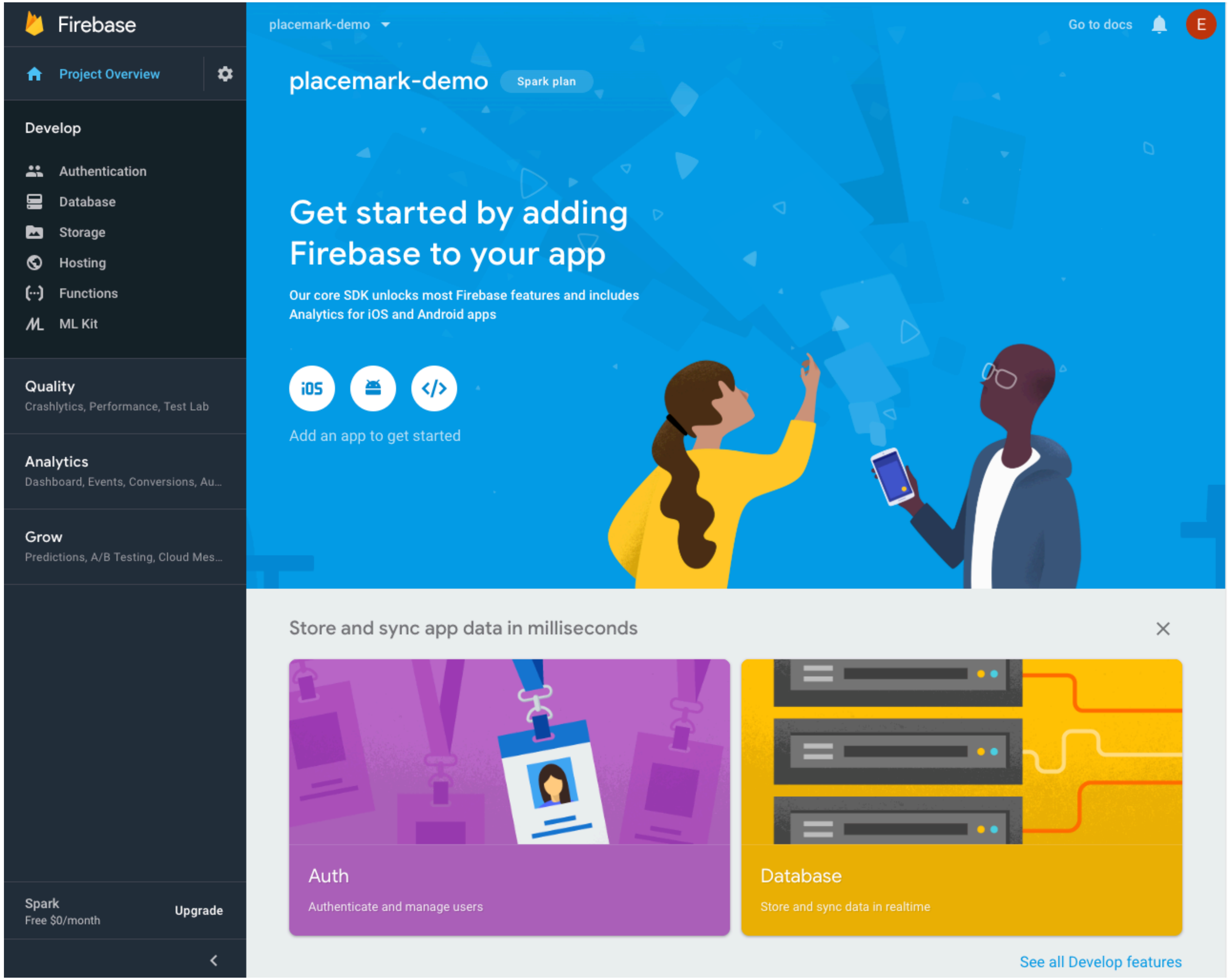
✓ Use the default settings for sharing Google Analytics for Firebase data

- ✓ Share your Analytics data with Google to improve Google Products and Services
- ✓ Share your Analytics data with Google to enable technical support
- ✓ Share your Analytics data with Google to enable Benchmarking
- ✓ Share your Analytics data with Google Account Specialists

✓ I accept the controller-controller terms. This is required when sharing Analytics data to improve Google Products and Services. Learn more

Cancel Create project

Firebase Console



Firebase

placemark-demo

Go to docs

Project Overview

Develop

Authentication

Database

Storage

Hosting

Functions

ML Kit

Quality

Crashlytics, Performance, Test Lab

Analytics

Dashboard, Events, Conversions, Au...

Grow

Predictions, A/B Testing, Cloud Mes...

Spark

Free $0/month

Upgrade

placemark-demo Spark plan

Get started by adding Firebase to your app

Our core SDK unlocks most Firebase features and includes Analytics for iOS and Android apps

Add an app to get started

Store and sync app data in milliseconds

Auth

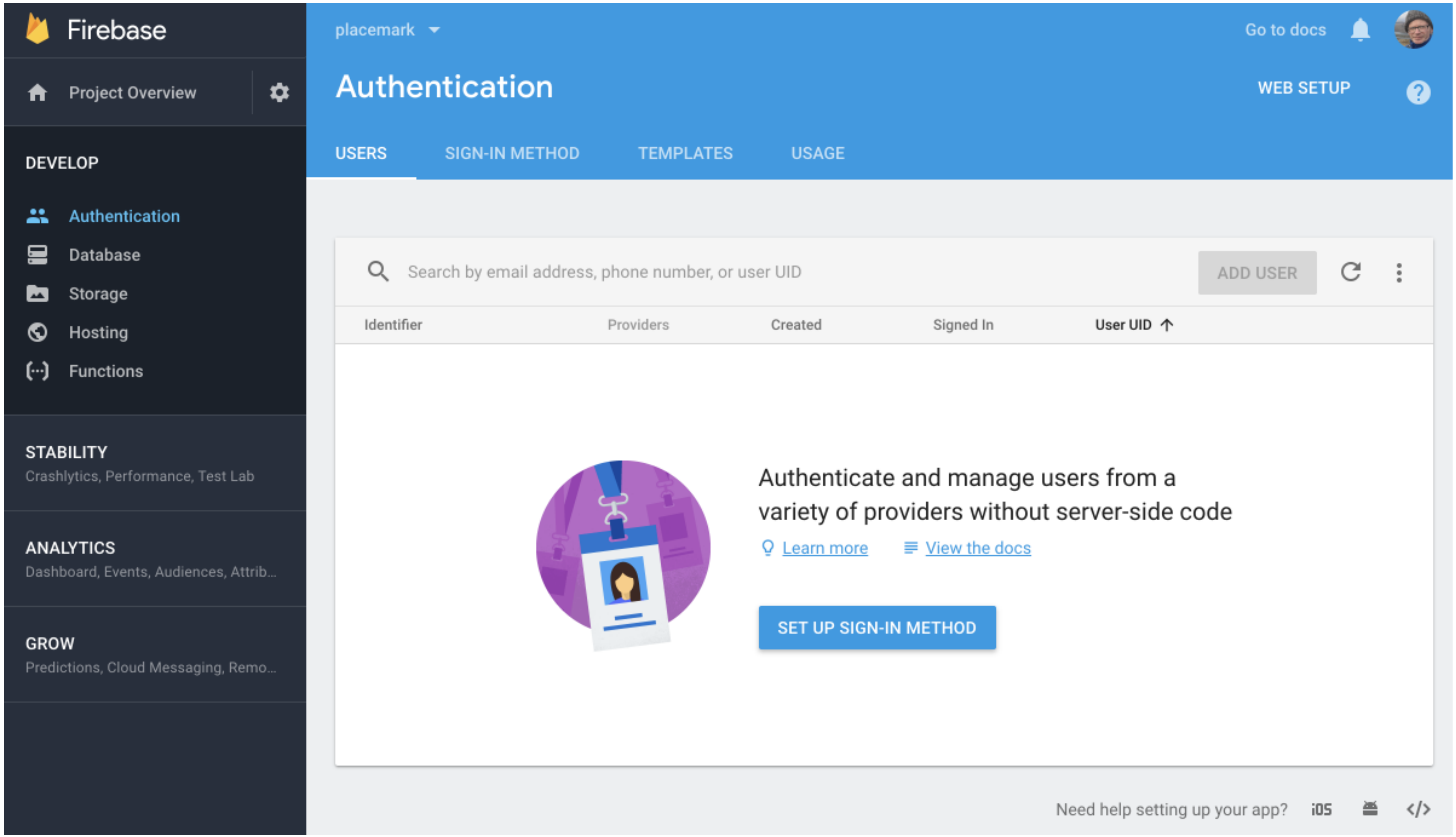
Authenticate and manage users

Database

Store and sync data in realtime

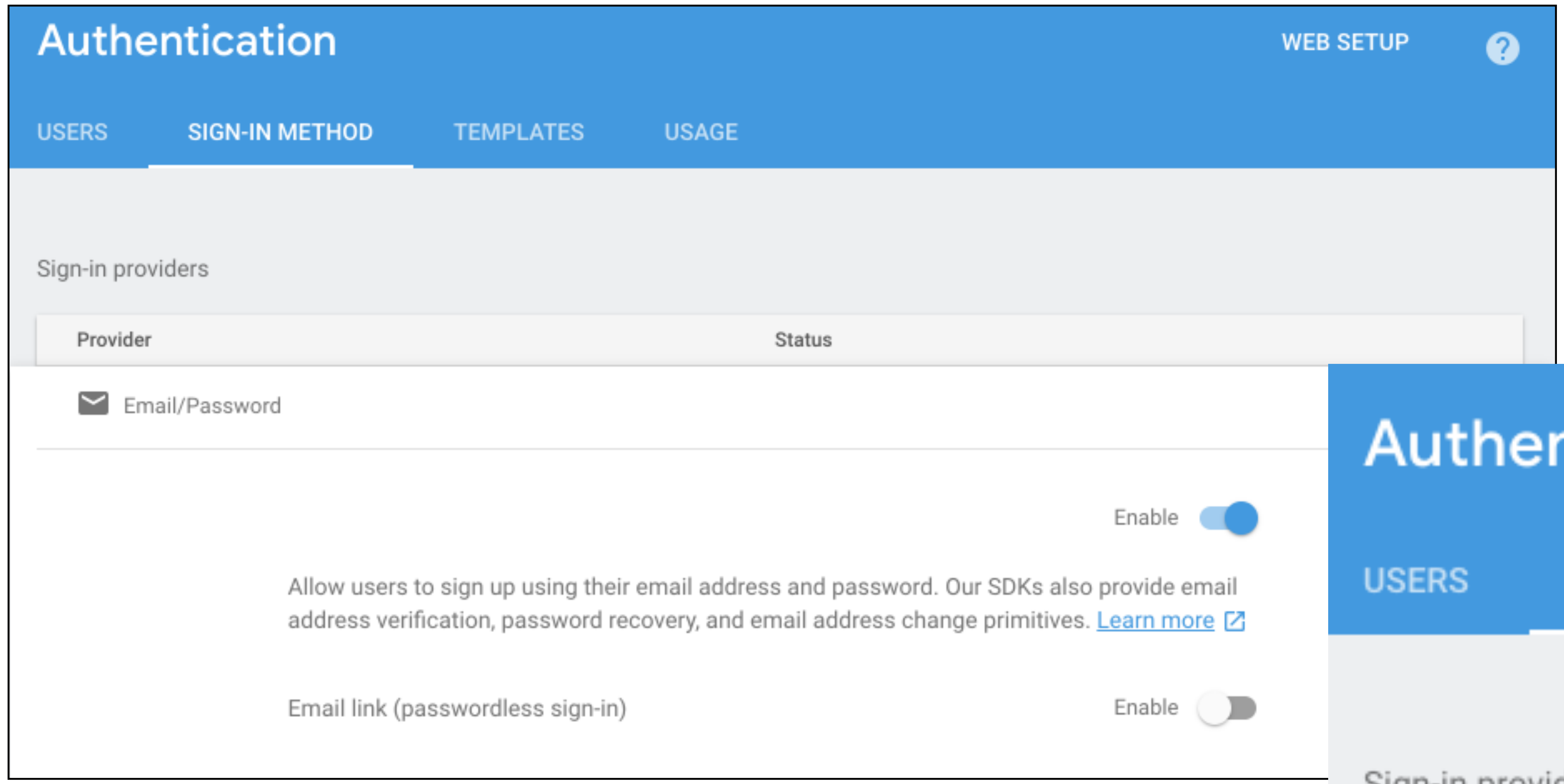
See all Develop features

Authentication Console



Authenticate and manage users from a variety of providers without server-side code

Sign-in Method -> Email/Password



Authentication WEB SETUP

USERS SIGN-IN METHOD TEMPLATES USAGE

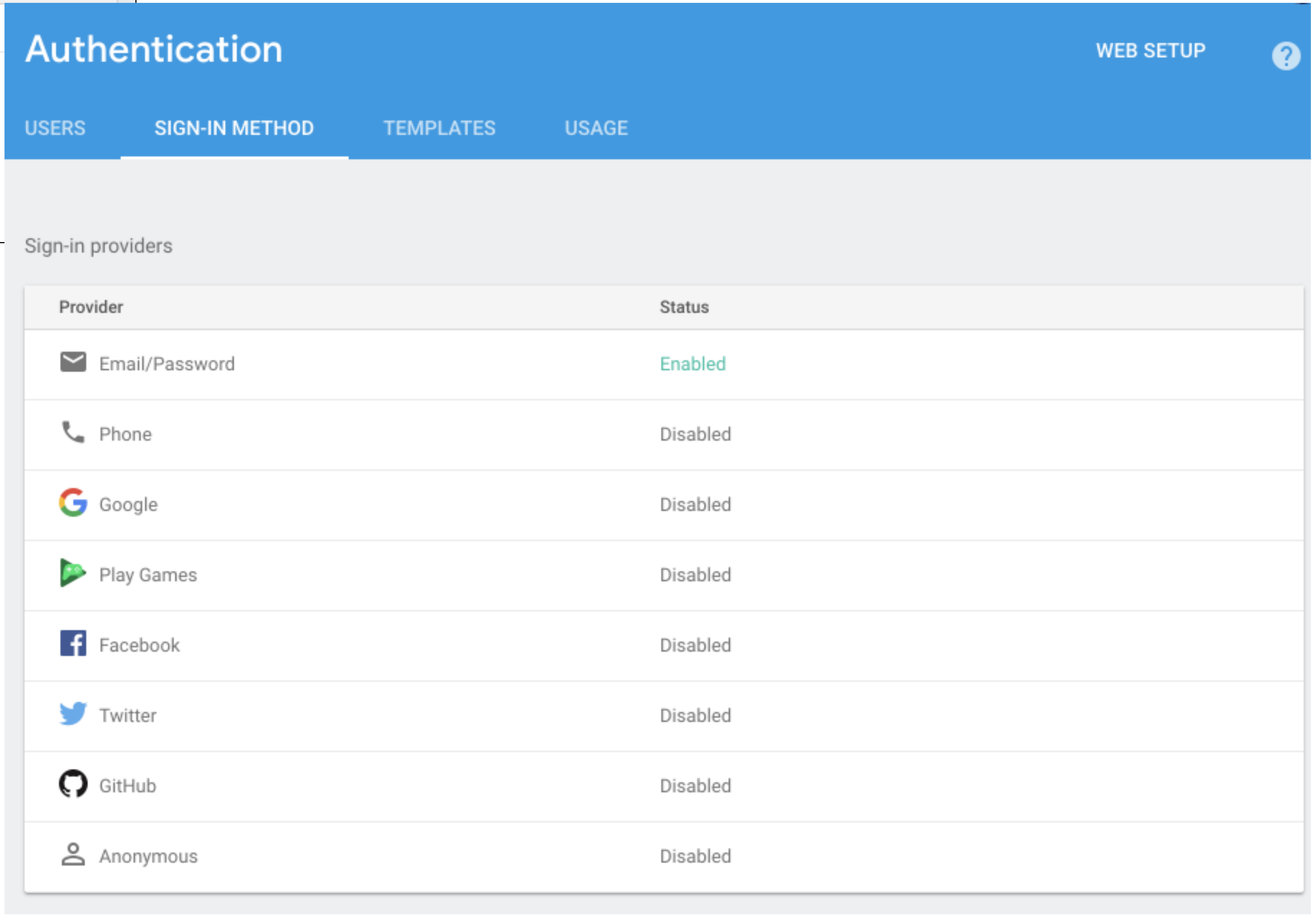
Sign-in providers

Provider	Status
Email/Password	

Enable

Allow users to sign up using their email address and password. Our SDKs also provide email address verification, password recovery, and email address change primitives. Learn more

Email link (passwordless sign-in) Enable



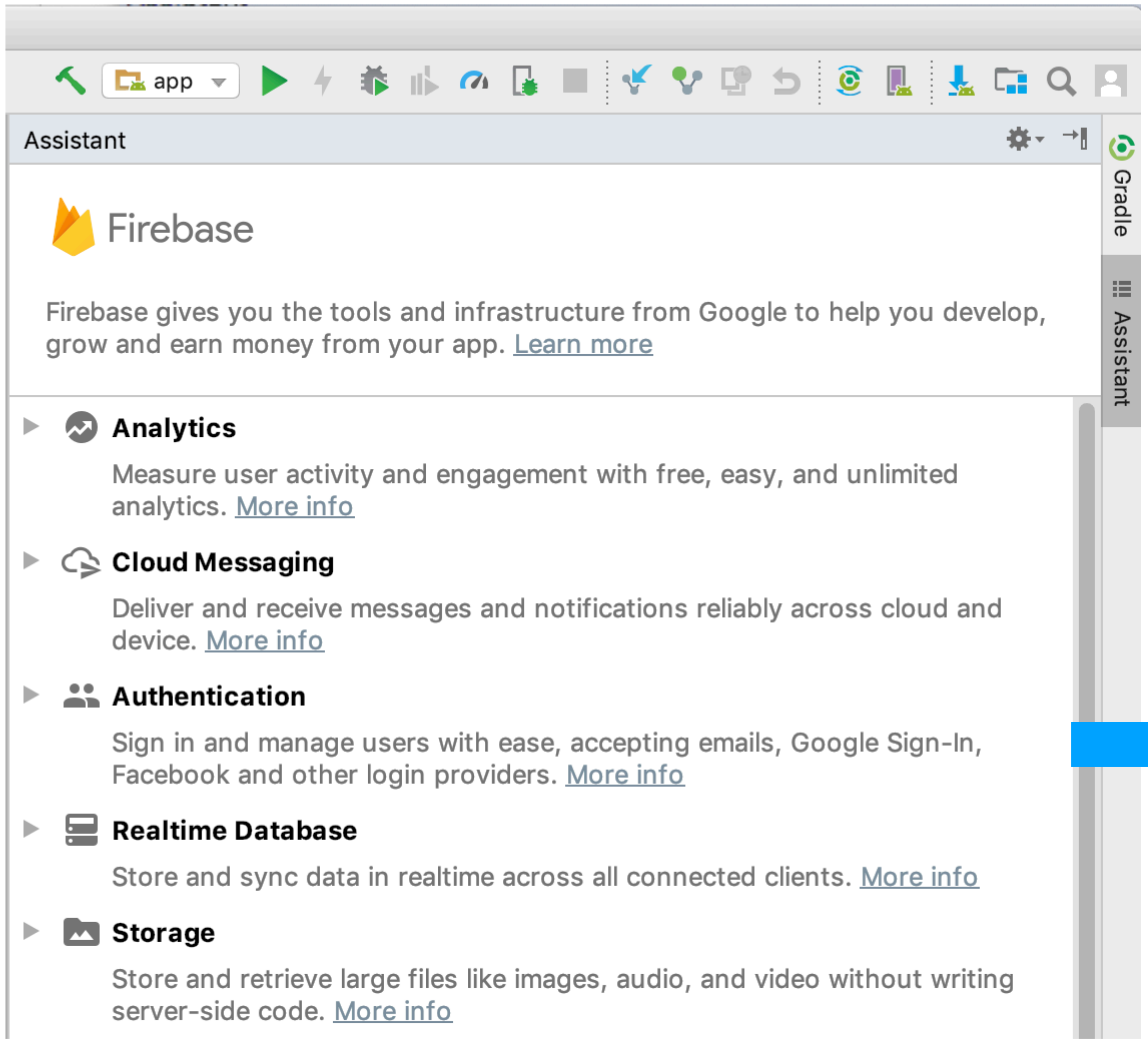
Authentication WEB SETUP

USERS SIGN-IN METHOD TEMPLATES USAGE

Sign-in providers

Provider	Status
Email/Password	Enabled
Phone	Disabled
Google	Disabled
Play Games	Disabled
Facebook	Disabled
Twitter	Disabled
GitHub	Disabled
Anonymous	Disabled

Android Studio Firebase Assistant



Assistant

Firebase

Firebase gives you the tools and infrastructure from Google to help you develop, grow and earn money from your app. Learn more

Analytics

Measure user activity and engagement with free, easy, and unlimited analytics. More info

Cloud Messaging

Deliver and receive messages and notifications reliably across cloud and device. More info

Authentication

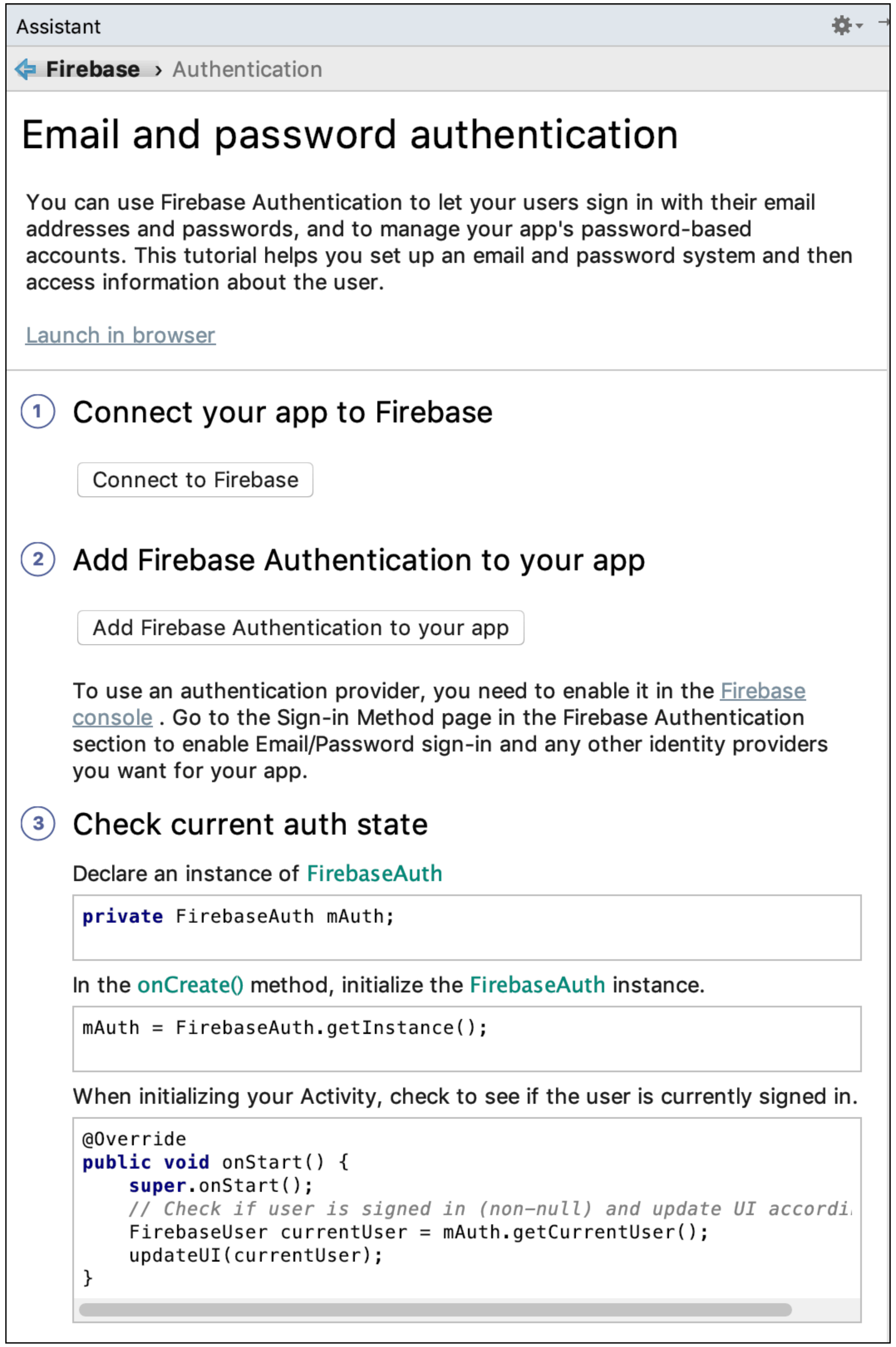
Sign in and manage users with ease, accepting emails, Google Sign-In, Facebook and other login providers. More info

Realtime Database

Store and sync data in realtime across all connected clients. More info

Storage

Store and retrieve large files like images, audio, and video without writing server-side code. More info



Assistant

Firebase › Authentication

Email and password authentication

You can use Firebase Authentication to let your users sign in with their email addresses and passwords, and to manage your app's password-based accounts. This tutorial helps you set up an email and password system and then access information about the user.

Launch in browser

1 Connect your app to Firebase

Connect to Firebase

2 Add Firebase Authentication to your app

Add Firebase Authentication to your app

To use an authentication provider, you need to enable it in the Firebase console . Go to the Sign-in Method page in the Firebase Authentication section to enable Email/Password sign-in and any other identity providers you want for your app.

3 Check current auth state

Declare an instance of FirebaseAuth

```
private FirebaseAuth mAuth;
```

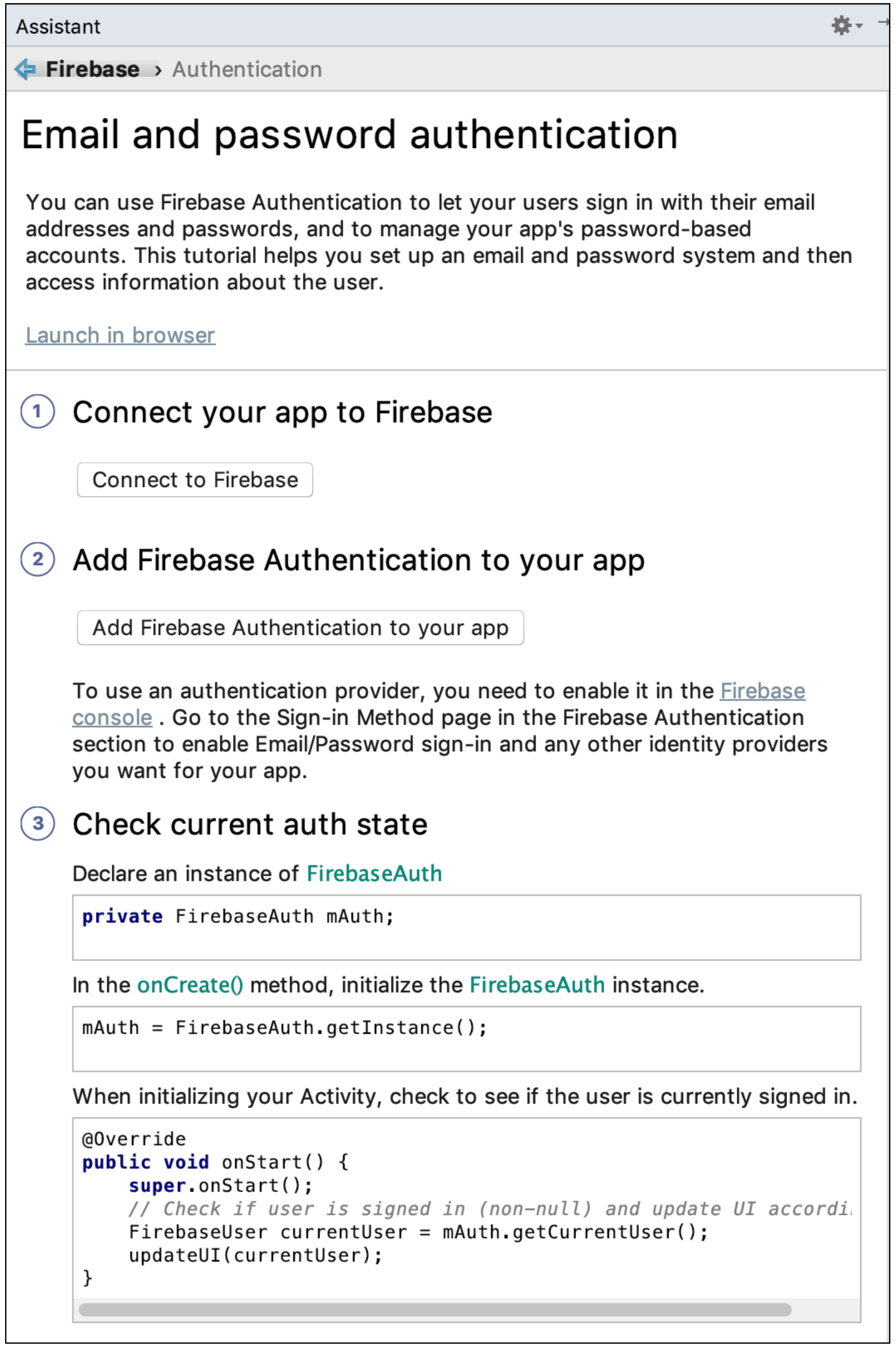
In the onCreate() method, initialize the FirebaseAuth instance.

```
mAuth = FirebaseAuth.getInstance();
```

When initializing your Activity, check to see if the user is currently signed in.

```
@Override
public void onStart() {
    super.onStart();
    // Check if user is signed in (non-null) and update UI accordi
    FirebaseUser currentUser = mAuth.getCurrentUser();
    updateUI(currentUser);
}
```

Connect Project to Firebase App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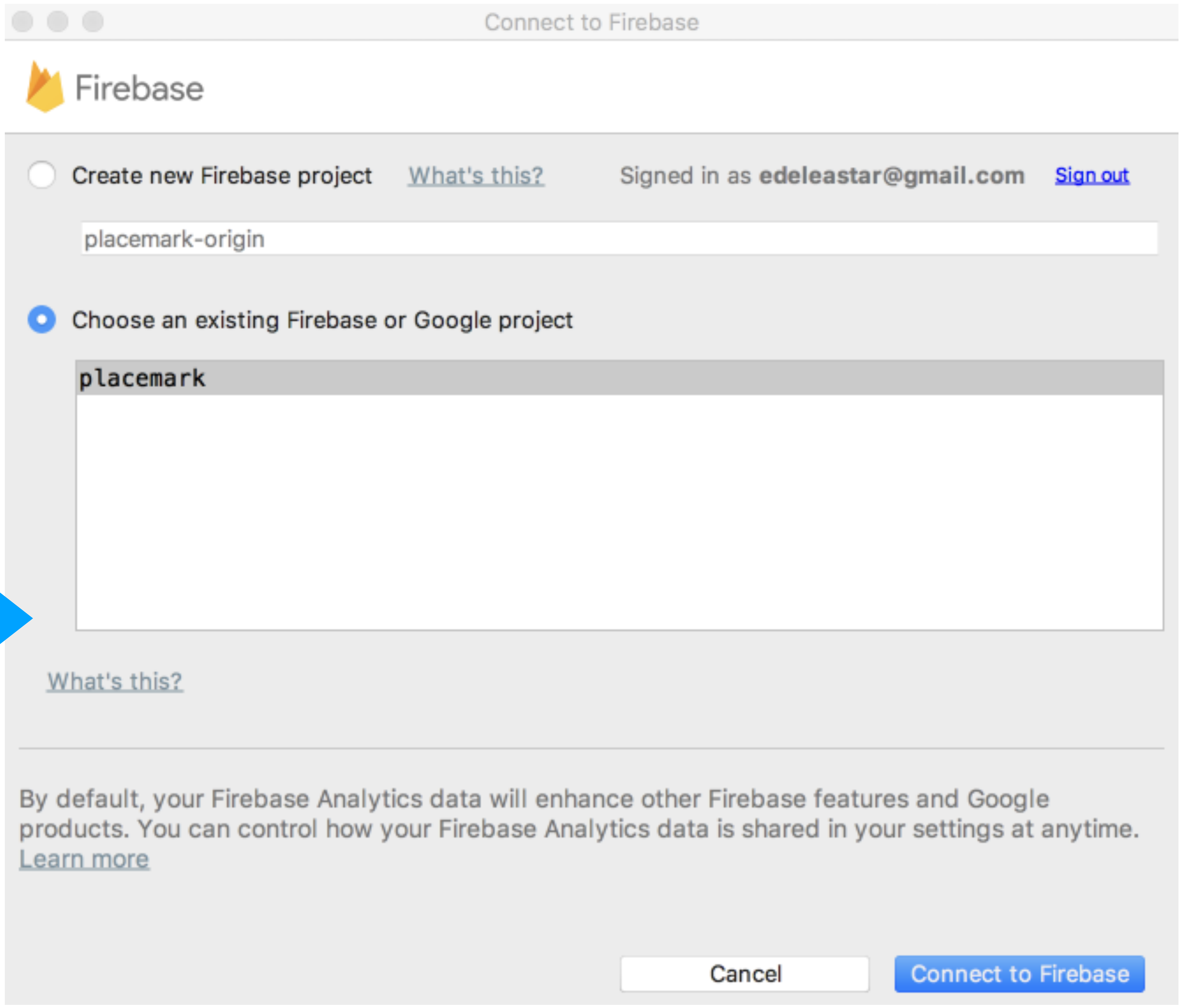
```


Connect to Firebase

Firebase

( ) Create new Firebase project What's this? Signed in as **edeleastar@gmail.com** Sign out

placemark-origin

(●) Choose an existing Firebase or Google project

placemark

What's this?

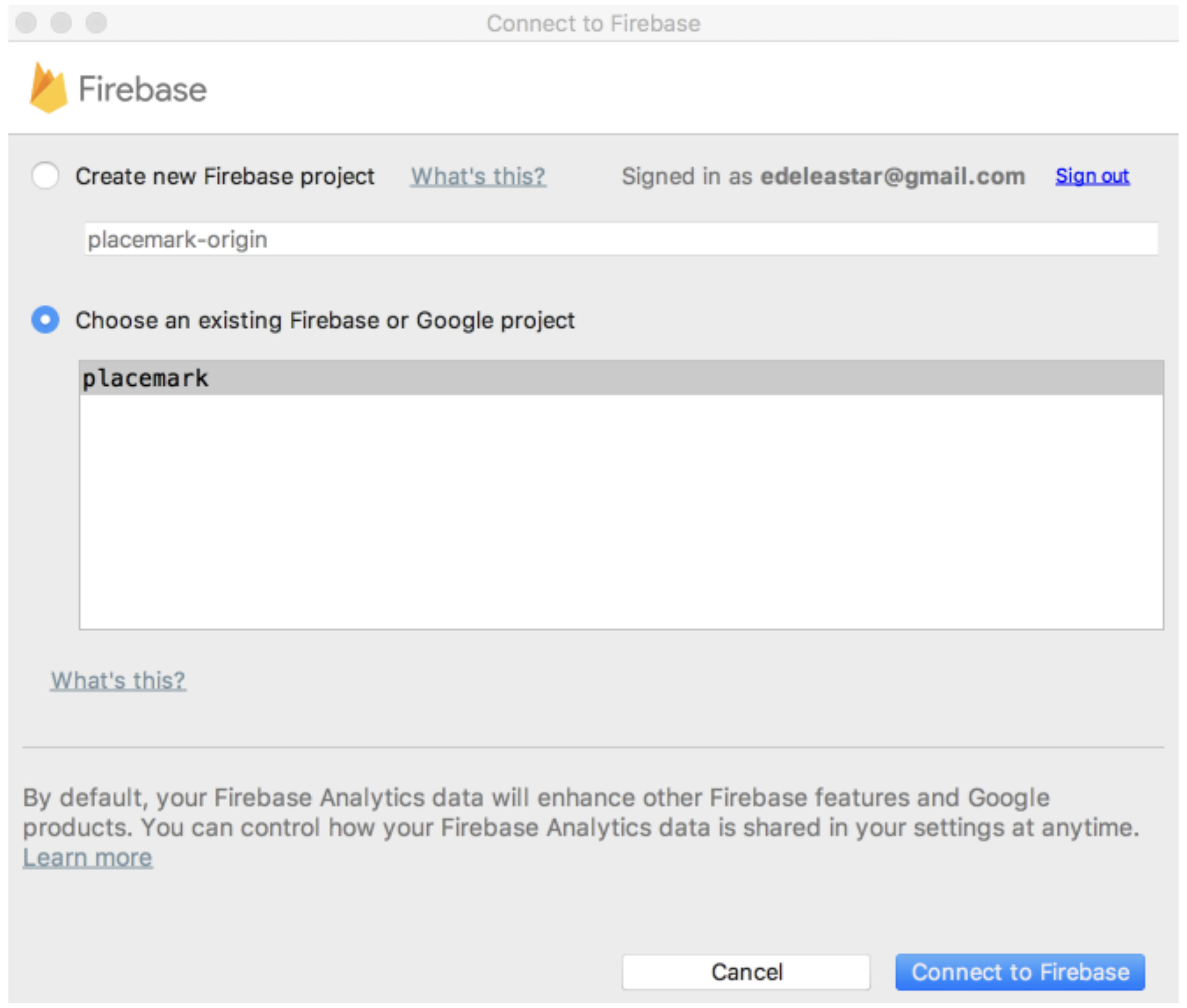
By default, your Firebase Analytics data will enhance other Firebase features and Google products. You can control how your Firebase Analytics data is shared in your settings at anytime. Learn more

Cancel | Connect to Firebase

```
...
apply plugin: 'com.google.gms.google-services'
...
  firebase_version = '16.0.5'
  ...
  implementation "com.google.firebase:firebase-auth:$firebase_version"
  implementation "com.google.firebase:firebase-database:$firebase_version"
...
```

build.gradle

google-service.json



Connect to Firebase

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placemark-origin

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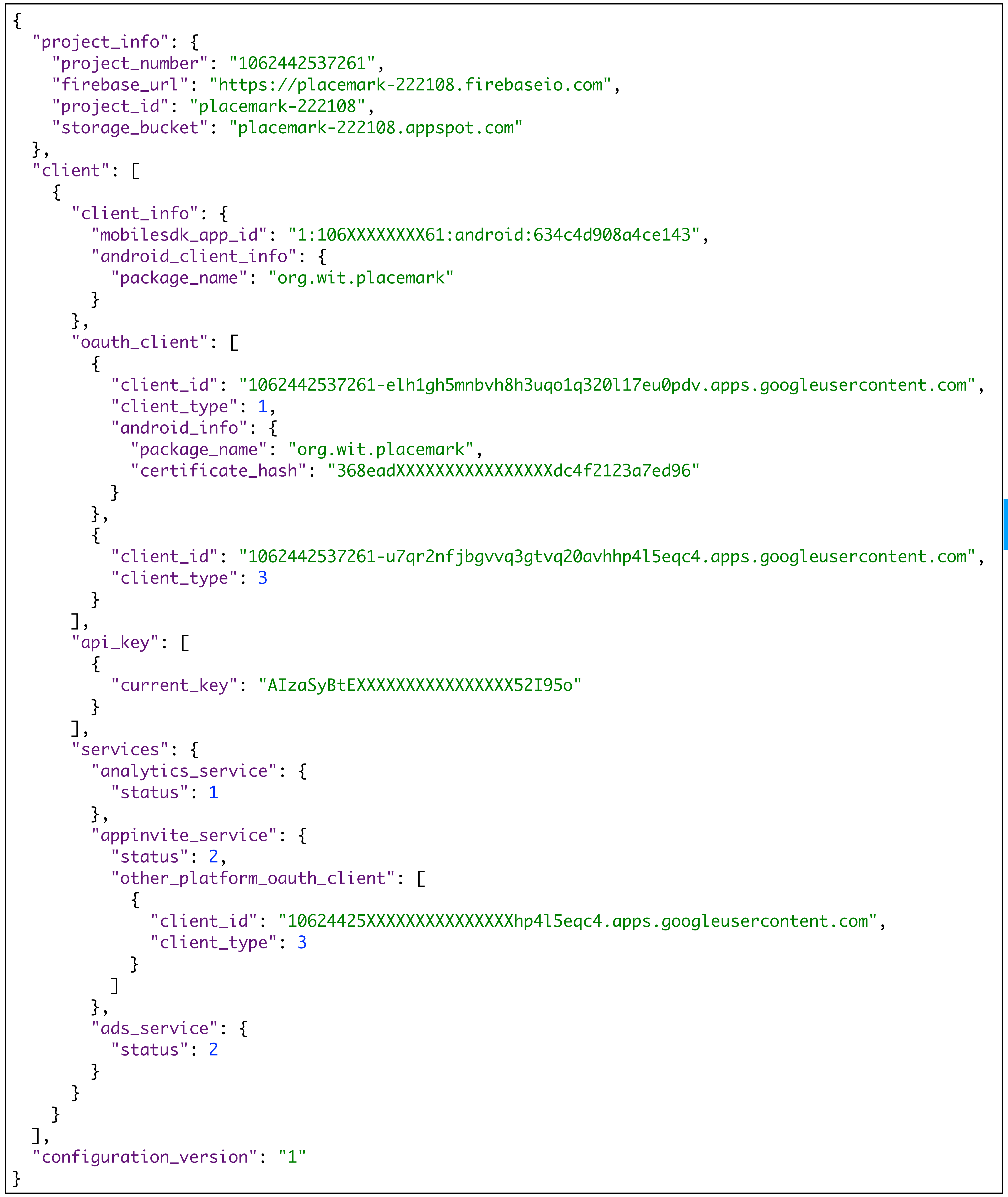
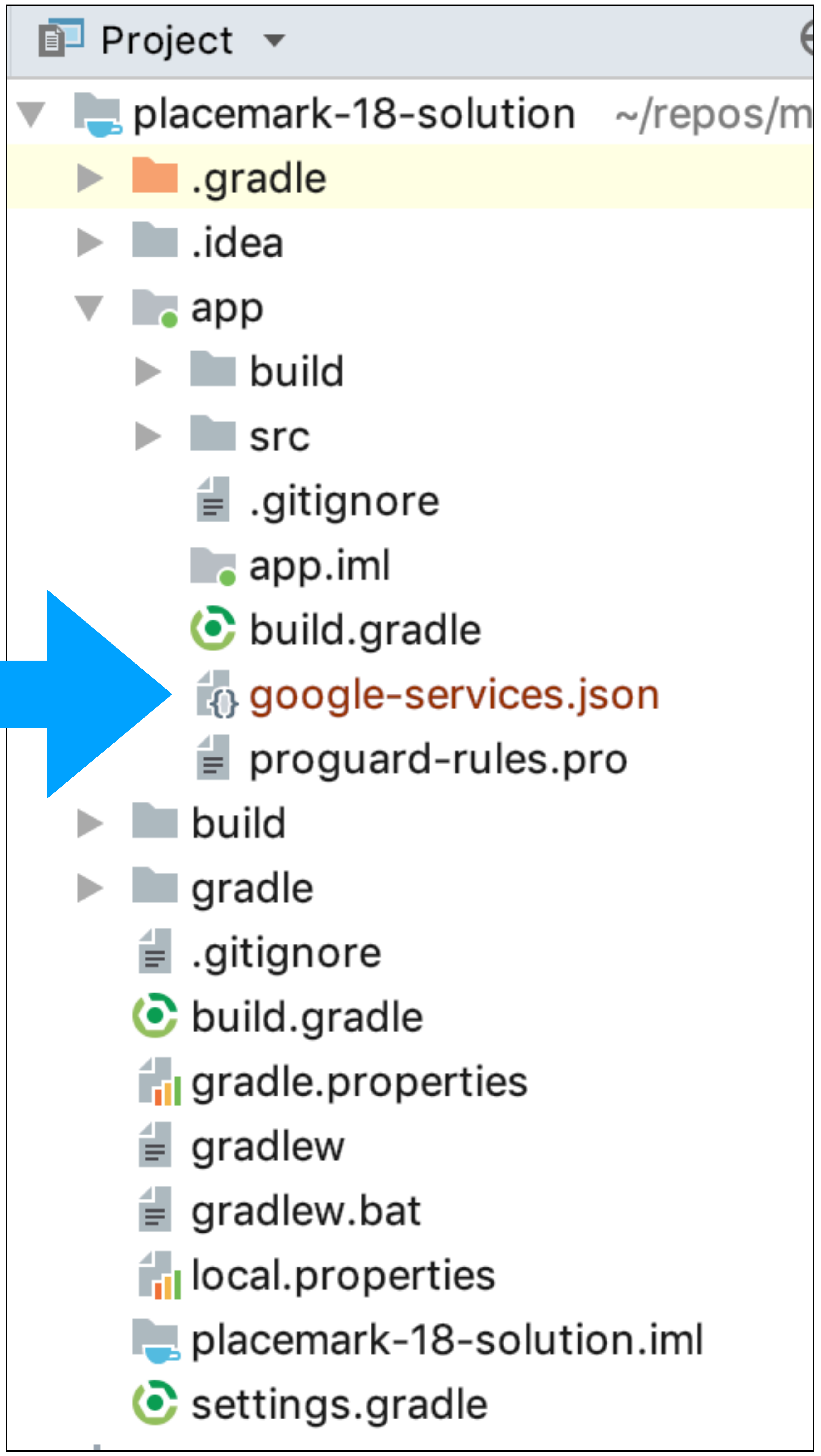
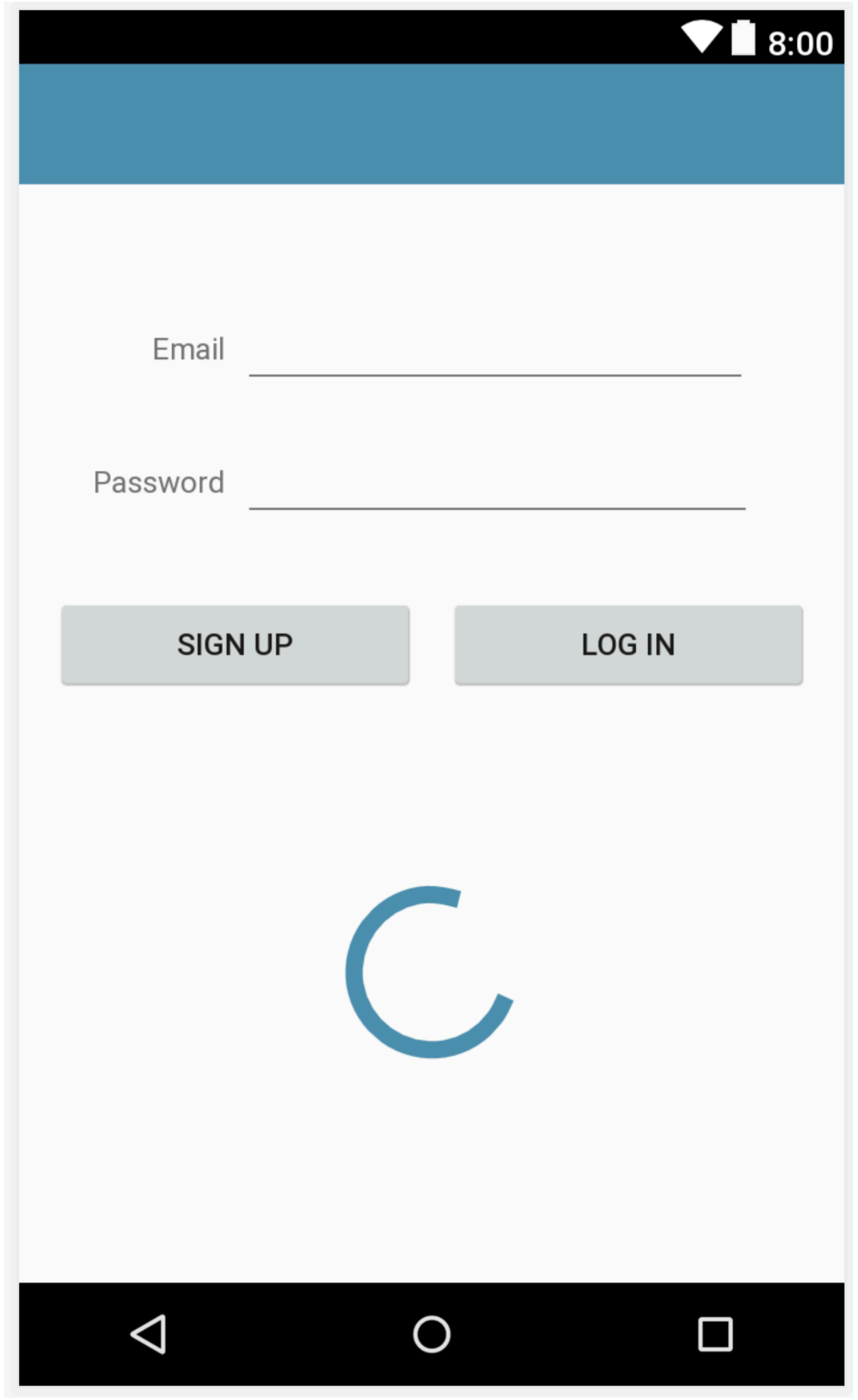


```
{
  "project_info": {
    "project_number": "1062442537261",
    "firebase_url": "https://placemark-222108.firebaseio.com",
    "project_id": "placemark-222108",
    "storage_bucket": "placemark-222108.appspot.com"
  },
  "client": [
    {
      "client_info": {
        "mobilesdk_app_id": "1:106XXXXXXXX61:android:634c4d908a4ce143",
        "android_client_info": {
          "package_name": "org.wit.placemark"
        }
      },
      "oauth_client": [
        {
          "client_id": "1062442537261-elh1gh5mnbvh8h3uqo1q320l17eu0pdv.apps.googleusercontent.com",
          "client_type": 1,
          "android_info": {
            "package_name": "org.wit.placemark",
            "certificate_hash": "368eadXXXXXXXXXXXXXXXXdc4f2123a7ed96"
          }
        },
        {
          "client_id": "1062442537261-u7qr2nfjbgvvq3gtvq20avhhp4l5eqc4.apps.googleusercontent.com",
          "client_type": 3
        }
      ],
      "api_key": [
        {
          "current_key": "AIzaSyBtEXXXXXXXXXXXXXXXXX52I95o"
        }
      ],
      "services": {
        "analytics_service": {
          "status": 1
        },
        "appinvite_service": {
          "status": 2,
          "other_platform_oauth_client": [
            {
              "client_id": "10624425XXXXXXXXXXXXXXXhp4l5eqc4.apps.googleusercontent.com",
              "client_type": 3
            }
          ]
        },
        "ads_service": {
          "status": 2
        }
      }
    }
  ],
  "configuration_version": "1"
}
```



```
Project
▼ placemark-18-solution  ~/repos/m
  ▶ .gradle
  ▶ .idea
  ▼ app
    ▶ build
    ▶ src
      .gitignore
      app.iml
      build.gradle
      google-services.json
      proguard-rules.pro
  ▶ build
  ▶ gradle
    .gitignore
    build.gradle
    gradle.properties
    gradlew
    gradlew.bat
    local.properties
    placemark-18-solution.iml
    settings.gradle
```



ProgressBar

activity_login.xml

```
...
    <ProgressBar
      android:id="@+id/progressBar"
      style="@style/Widget.AppCompat.ProgressBar"
      android:layout_width="196dp"
      android:layout_height="96dp"
      android:layout_marginStart="8dp"
      android:layout_marginTop="8dp"
      android:layout_marginEnd="8dp"
      android:layout_marginBottom="8dp"
      app:layout_constraintBottom_toBottomOf="parent"
      app:layout_constraintEnd_toEndOf="parent"
      app:layout_constraintStart_toStartOf="parent"
      app:layout_constraintTop_toBottomOf="@+id/signUp" />
...
```

LoginView

```
  override fun showProgress() {
    progressBar.visibility = View.VISIBLE
  }

  override fun hideProgress() {
    progressBar.visibility = View.GONE
  }
}
```

Revised LoginPresenter

```kotlin
class LoginPresenter(view: BaseView) : BasePresenter(view) {

  var auth: FirebaseAuth = FirebaseAuth.getInstance()

  fun doLogin(email: String, password: String) {
    view?.showProgress()
    auth.signInWithEmailAndPassword(email, password).addOnCompleteListener(view!!) { task ->
      if (task.isSuccessful) {
        view?.navigateTo(VIEW.LIST)
      } else {
        view?.toast("Sign Up Failed: ${task.exception?.message}")
      }
      view?.hideProgress()
    }
  }

  fun doSignUp(email: String, password: String) {
    view?.showProgress()
    auth.createUserWithEmailAndPassword(email, password).addOnCompleteListener(view!!) { task ->
      if (task.isSuccessful) {
        view?.navigateTo(VIEW.LIST)
      } else {
        view?.toast("Sign Up Failed: ${task.exception?.message}")
      }
      view?.hideProgress()
    }
  }
}
```

API: createUserWithEmailAndPassword()

```
var auth: FirebaseAuth = FirebaseAuth.getInstance()

 fun doSignUp(email: String, password: String) {
   view?.showProgress()
   auth.createUserWithEmailAndPassword(email, password).addOnCompleteListener(view!!) { task ->
     if (task.isSuccessful) {
       view?.navigateTo(VIEW.LIST)
     } else {
       view?.toast("Sign Up Failed: ${task.exception?.message}")
     }
     view?.hideProgress()
   }
 }
```

API: createUserWithEmailAndPassword()

```
var auth: FirebaseAuth = FirebaseAuth.getInstance()

 fun doSignUp(email: String, password: String) {
   view?.showProgress()
   auth.createUserWithEmailAndPassword(email, password).addOnCompleteListener(view!!) { task ->
     if (task.isSuccessful) {
       view?.navigateTo(VIEW.LIST)
     } else {
       view?.toast("Sign Up Failed: ${task.exception?.message}")
     }
     view?.hideProgress()
   }
 }
```

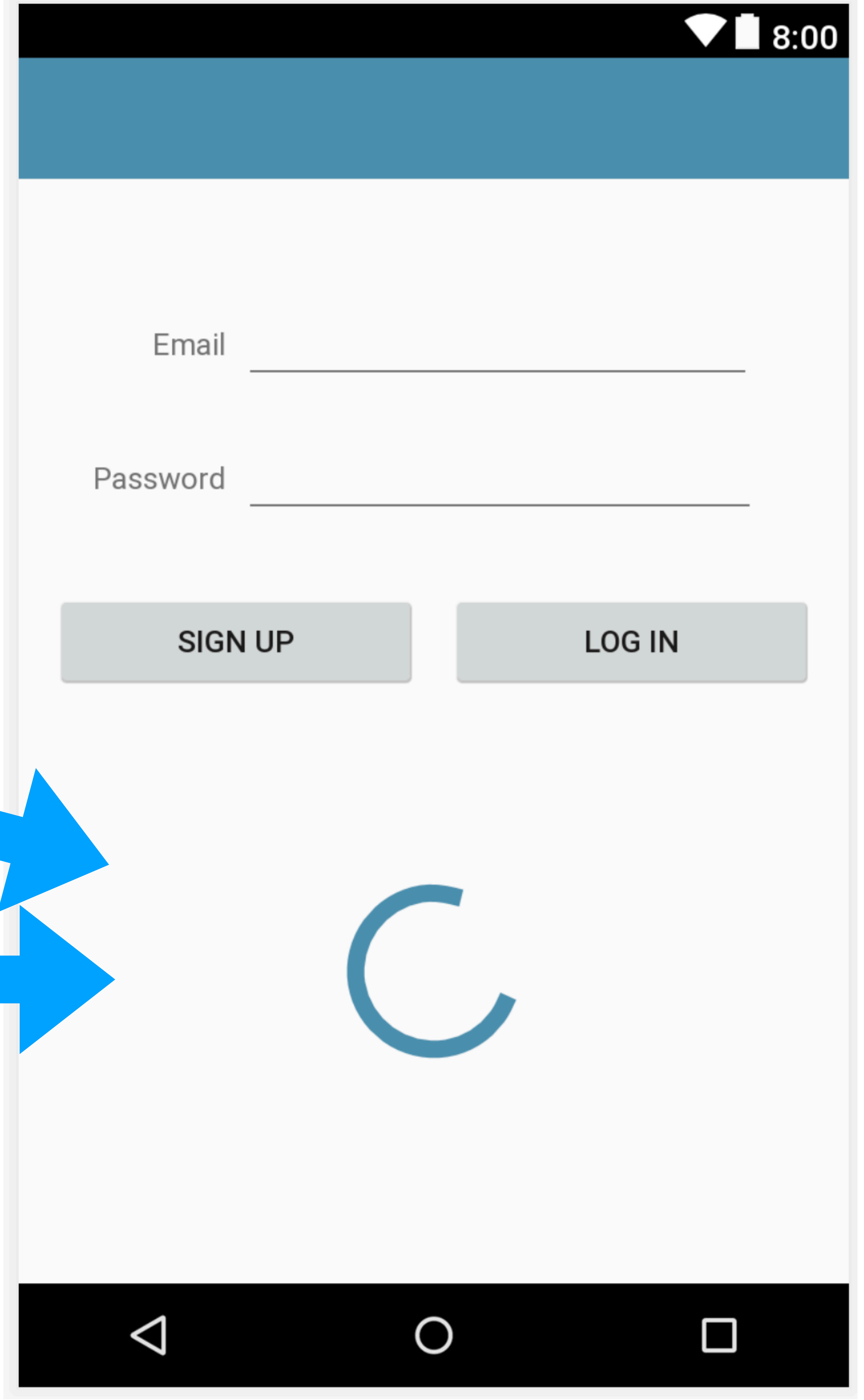
Lambda: task.isSuccessful => signed up and authenticated

Navigate to PlacemarkList

showProgress() / hideProgress()

```
var auth: FirebaseAuth = FirebaseAuth.getInstance()

 fun doSignUp(email: String, password: String) {
   view?.showProgress()
   auth.createUserWithEmailAndPassw      mail, password).addOnCompl
     if (task.isSuccessful) {
       view?.navigateTo(VIEW.LIST)
     } else {
       view?.toast("Sign Up Failed: ${task.exception?.message}")
     }
     view?.hideProgress()
   }
 }
```



API: singInWithEmailAndPassword()

```
class LoginPresenter(view: BaseView) : BasePresenter(view) {

  var auth: FirebaseAuth = FirebaseAuth.getInstance()

  fun doLogin(email: String, password: String) {
    view?.showProgress()
    auth.signInWithEmailAndPassword(email, password).addOnCompleteListener(view!!) { task ->
      if (task.isSuccessful) {
        view?.navigateTo(VIEW.LIST)
      } else {
        view?.toast("Sign Up Failed: ${task.exception?.message}")
      }
      view?.hideProgress()
    }
  }
 ...
}
```

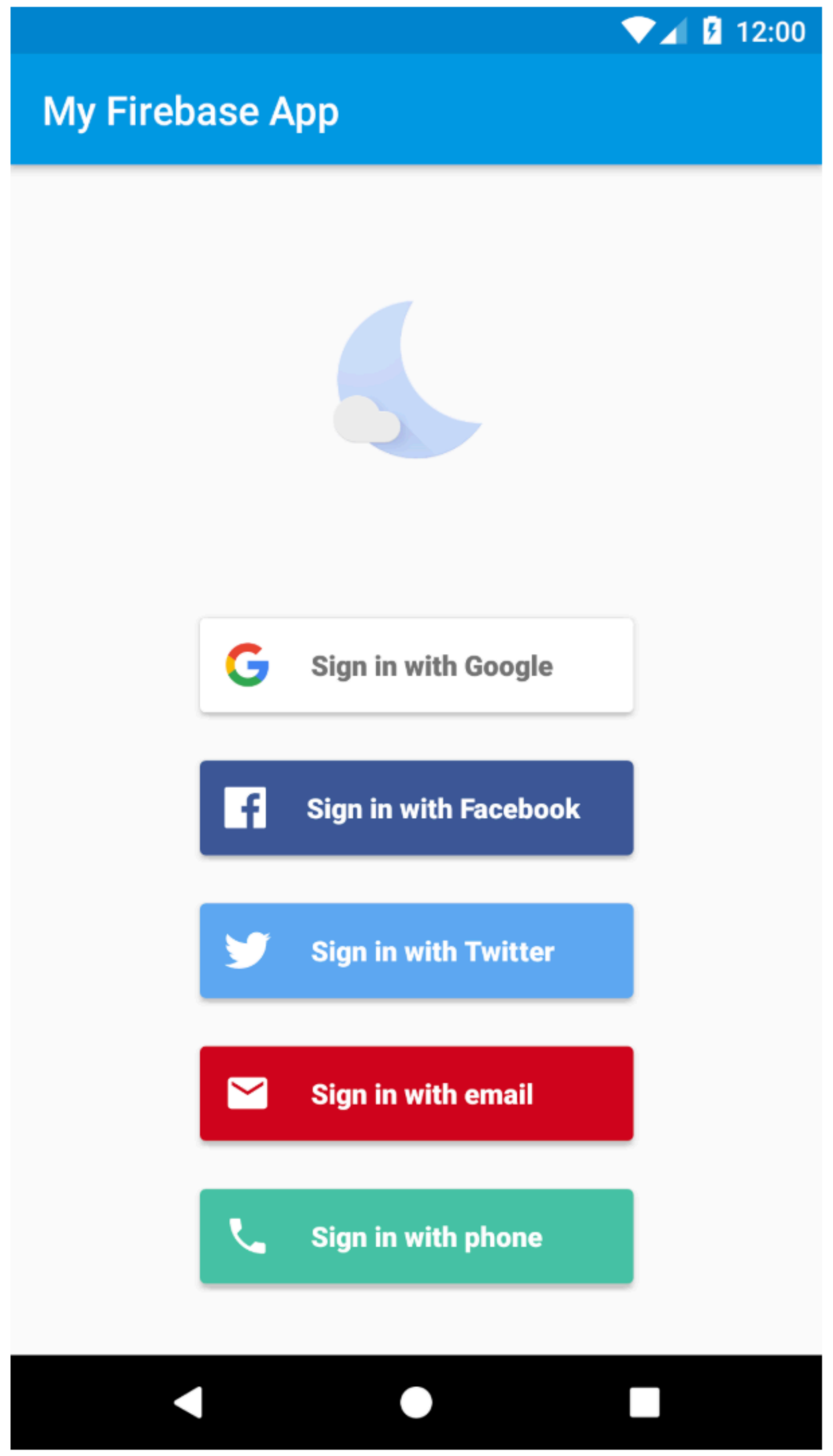
https://firebase.google.com/docs/auth

- Android
  - Sign in with a pre-built UI
  - Get Started with the Firebase SDK
  - Manage Users
  - Password Authentication
  - Email Link Authentication
  - Google Sign-In
  - Facebook Login
  - Twitter
  - GitHub
  - Play Games Sign-in β
  - Phone Number
  - Use a Custom Auth System
  - Anonymous Authentication
  - Link Multiple Auth Providers
  - Passing State in Email Actions

Easily add sign-in to your Android app with FirebaseUI

FirebaseUI is a library built on top of the Firebase Authentication SDK that provides drop-in UI flows for use in your app. FirebaseUI provides the following benefits:

- **Multiple Providers** - sign-in flows for email, phone authentication, Google Sign-In, Facebook Login, and Twitter Login.
- **Account Management** - flows to handle account management tasks, such as account creation and password resets.
- **Account Linking** - flows to safely link user accounts across identity providers.
- **Custom Themes** - customize the look of FirebaseUI to match your app. Also, because FirebaseUI is open source, you can fork the project and customize it exactly to your needs.
- **Smart Lock for Passwords** - automatic integration with Smart Lock for Passwords for fast cross-device sign-in.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