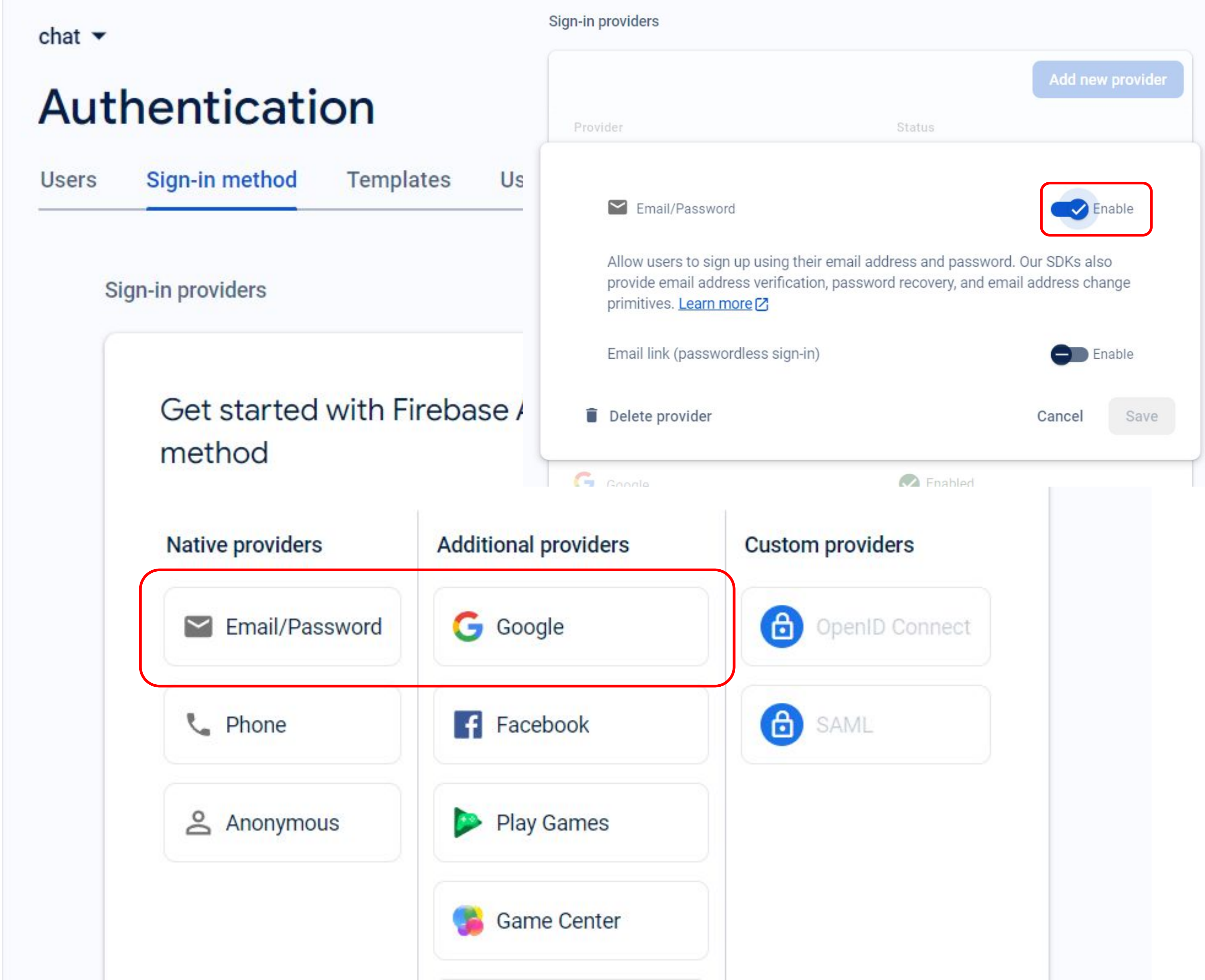
# Lab

- Setting up Firebase Auth
- Setting up Google Sign In
- Setting up Image Picker
- Running the Chat App

# Setting Up Firebase Auth

- Enable Email sign-in
- Enable Google auth
  - Needs SHA-1 release fingerprint for Android apps
  - Terminal: `keytool -list -v -alias androiddebugkey -keystore ~/.android/debug.keystore` (for Mac)
  - Paste SHA fingerprint in “Project Settings > Your apps” section
  - Replace “google-services.json” and “GoogleService-Info.plist” files in “android/app”, “ios/Runner”, and “macos/Runner” folders



chat

Authentication

Users | Sign-in method | Templates | Us

Sign-in providers

Get started with Firebase
method

Native providers

- Email/Password
- Phone
- Anonymous

Additional providers

- Google
- Facebook
- Play Games
- Game Center

Custom providers

- OpenID Connect
- SAML

Sign-in providers

Add new provider

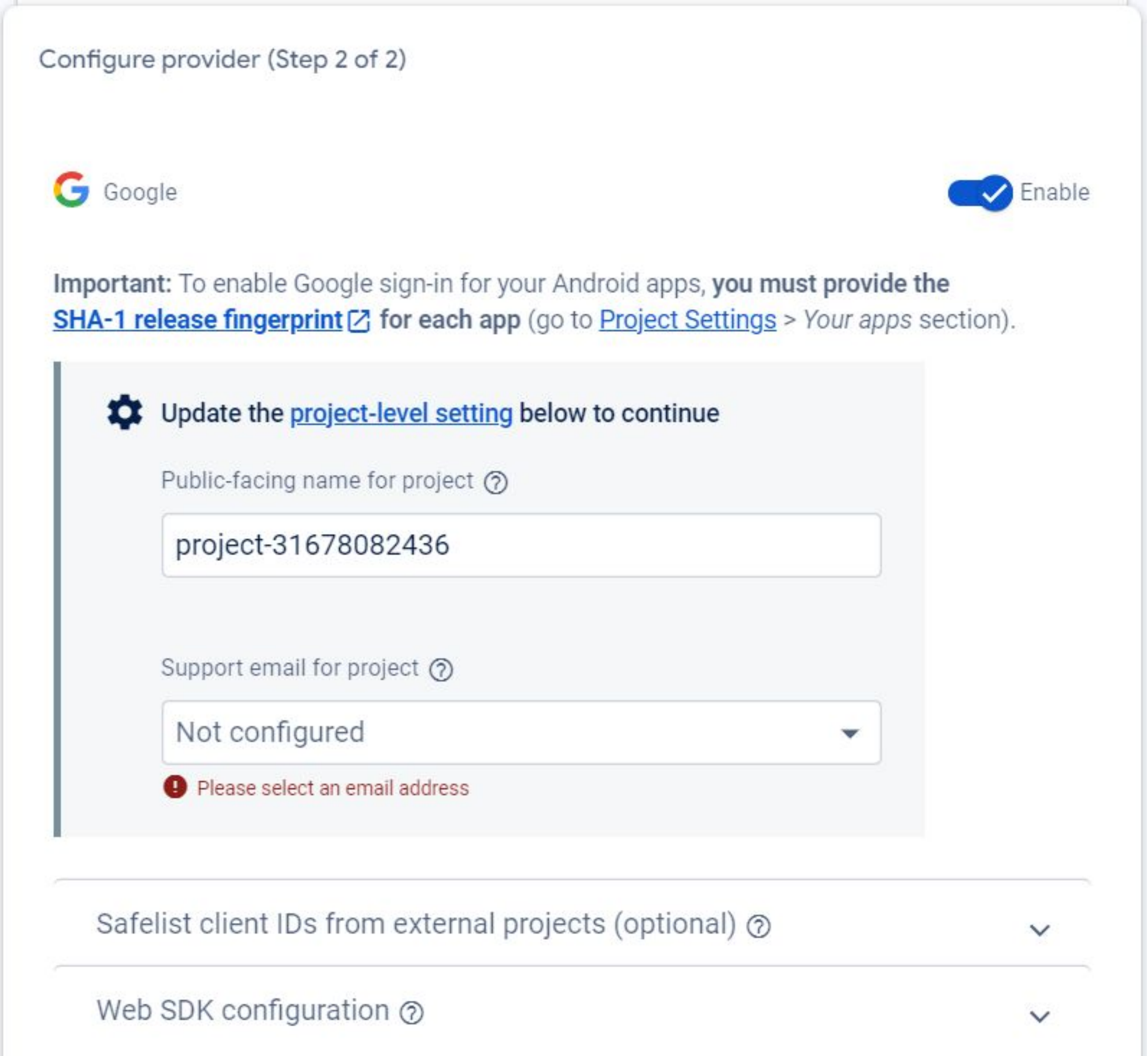
| Provider | Status |
|---|---|
| Google | Enabled |

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

Delete provider | Cancel | Save



Configure provider (Step 2 of 2)

Google

Enable ✓

**Important:** To enable Google sign-in for your Android apps, **you must provide the SHA-1 release fingerprint for each app** (go to Project Settings > *Your apps* section).

**Update the project-level setting below to continue**

Public-facing name for project

project-31678082436

Support email for project

Not configured

Please select an email address

Safelist client IDs from external projects (optional)

Web SDK configuration

## SHA-1 release fingerprint (Windows)

- Download Java x64 installer: https://www.oracle.com/tw/java/technologies/downloads/#jdk17-windows

- Add C:\Program Files\Java\jdk-{version}\bin to System Path
  In cmd: java -version for checking Java successfully installed.

- In cmd:
  keytool -list -v -alias androiddebugkey -keystore "C:\Users\{your user name}\.android\debug.keystore"
  Default Password: android

- It should print your fingerprint like this: (This is just an example)
  Certificate fingerprint: SHA1:
  DA:39:A3:EE:5E:6B:4B:0D:32:55:BF:EF:95:60:18:90:AF:D8:07:09

- Go back to Firebase **Project Setting**.

## SHA-1 release fingerprint (Mac)

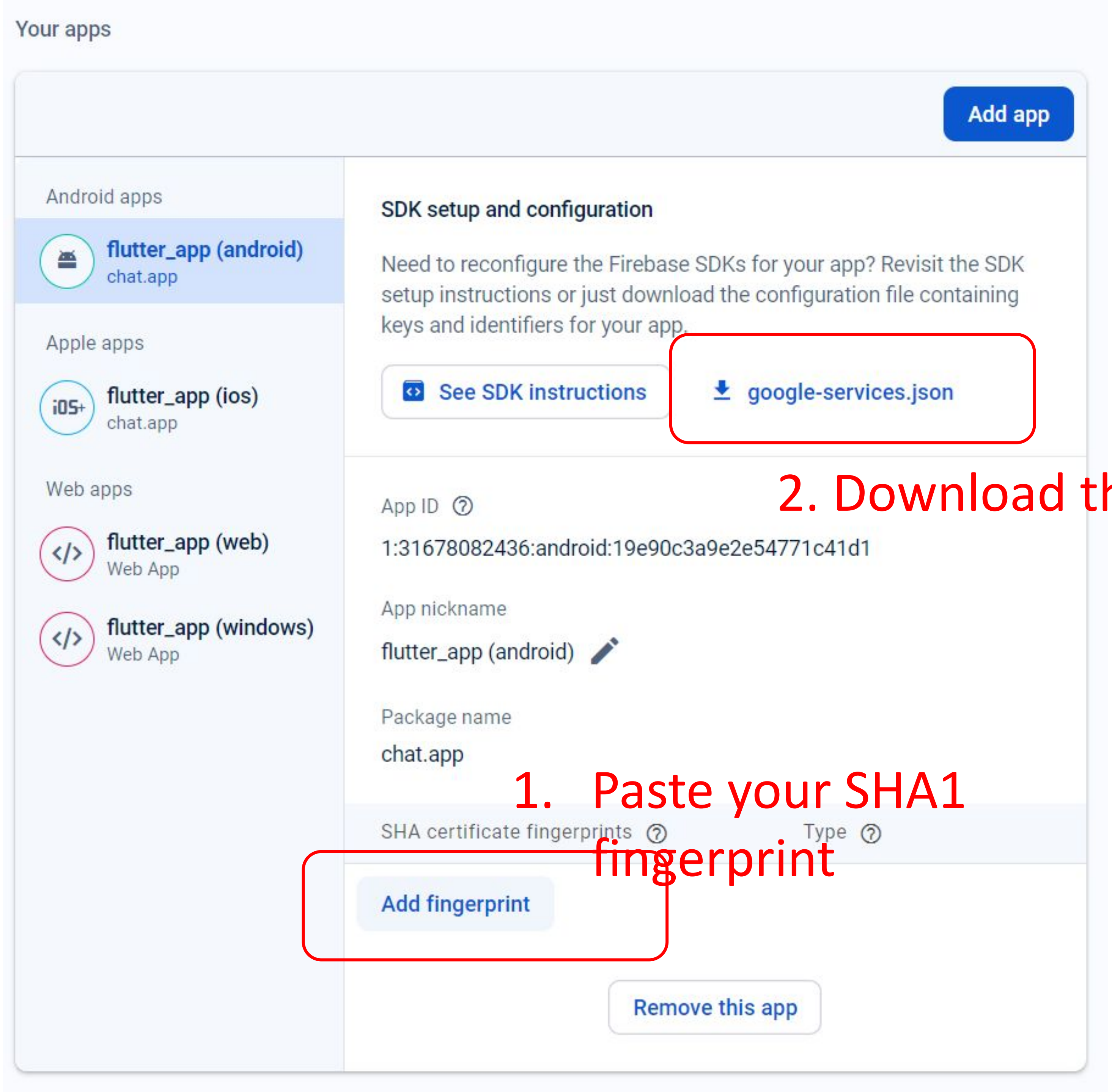
- Download Java 17 x64 DMG Installer:
  https://www.oracle.com/tw/java/technologies/downloads/#jdk17-mac

- In terminal:
- `mkdir ~/.android`
- `keytool -genkey -v -keystore ~/.android/debug.keystore -storepass android -alias androiddebugkey -keypass android -keyalg RSA -keysize 2048 -validity 10000`
- Enter your name and skip other quetions
- `keytool -list -v -alias androiddebugkey -keystore ~/.android/debug.keystore`
  Default Password: `android`

- It should print your fingerprint like this: (This is just an example)

```
Certificate fingerprint: SHA1:
DA:39:A3:EE:5E:6B:4B:0D:32:55:BF:EF:95:60:18:90:AF:D8:07:09
```

- Go back to Firebase **Project Setting**.



Your apps

Android apps

flutter_app (android)
chat.app

Apple apps

flutter_app (ios)
chat.app

Web apps

flutter_app (web)
Web App

flutter_app (windows)
Web App

SDK setup and configuration

Need to reconfigure the Firebase SDKs for your app? Revisit the SDK setup instructions or just download the configuration file containing keys and identifiers for your app.

2. Download this

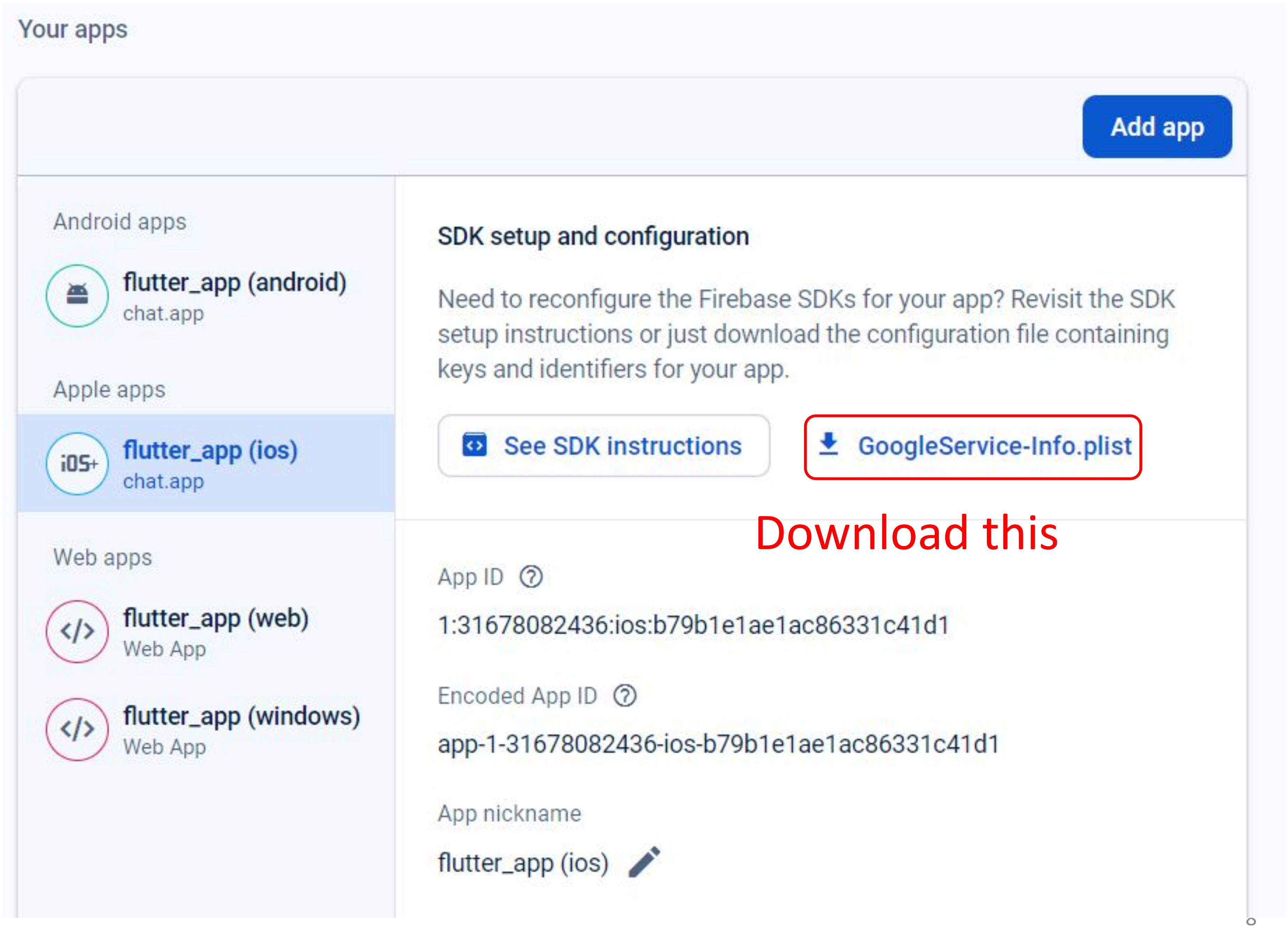
App ID
1:31678082436:android:19e90c3a9e2e54771c41d1

App nickname
flutter_app (android)

Package name
chat.app

1. Paste your SHA1 fingerprint

| SHA certificate fingerprints | Type |
|---|---|



Your apps

Add app

Android apps

flutter_app (android)
chat.app

Apple apps

flutter_app (ios)
chat.app

Web apps

flutter_app (web)
Web App

flutter_app (windows)
Web App

SDK setup and configuration

Need to reconfigure the Firebase SDKs for your app? Revisit the SDK setup instructions or just download the configuration file containing keys and identifiers for your app.

See SDK instructions

GoogleService-Info.plist

Download this

App ID

1:31678082436:ios:b79b1e1ae1ac86331c41d1

Encoded App ID

app-1-31678082436-ios-b79b1e1ae1ac86331c41d1

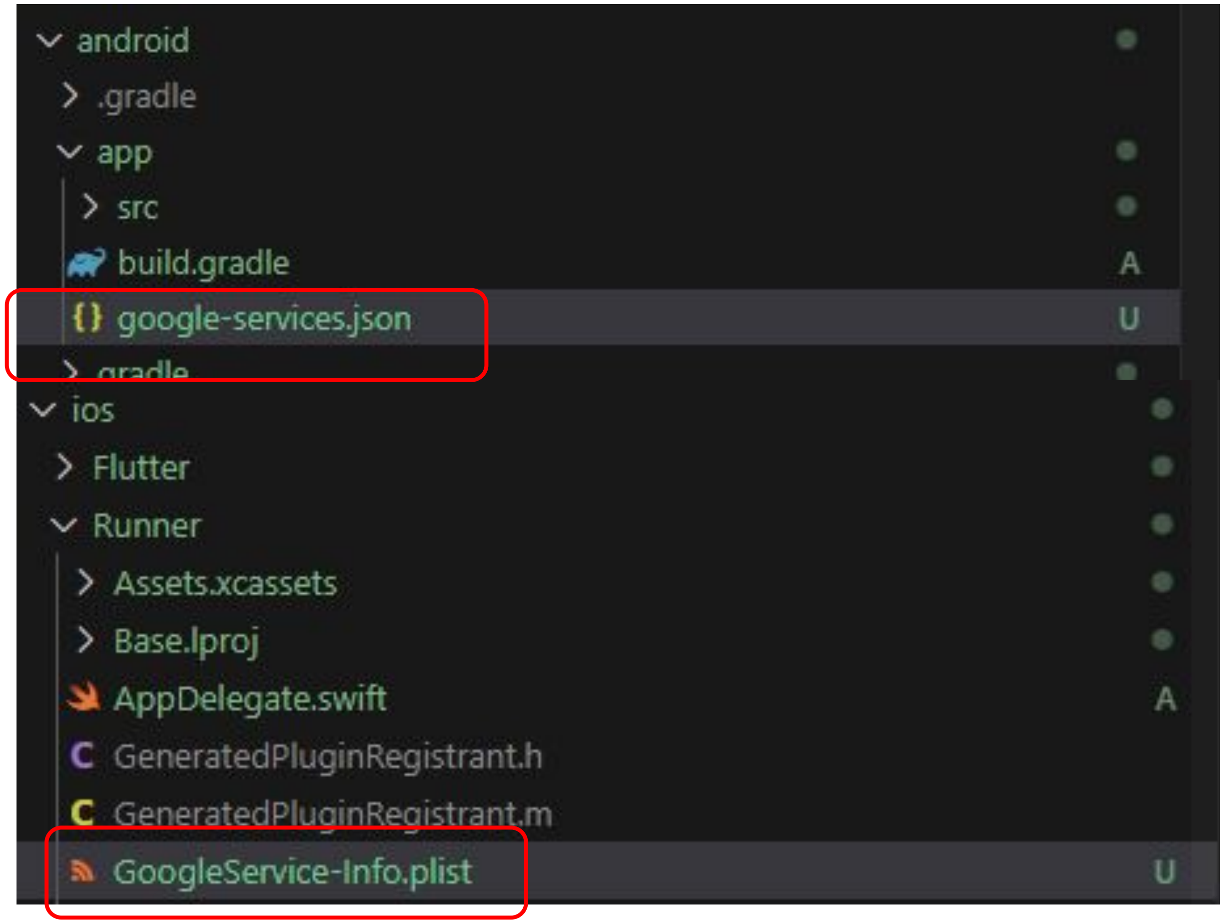
App nickname

flutter_app (ios)

If you don’t have android or ios folder, you can run:

```
flutter create --platforms=ios .
flutter create --platforms=android .
flutter create --platforms=web .
```

(If error occurs, change your directory name by replacing - to _)



```
android
  .gradle
  app
    src
    build.gradle                      A
    google-services.json              U
  gradle
ios
  Flutter
  Runner
    Assets.xcassets
    Base.lproj
    AppDelegate.swift                 A
    GeneratedPluginRegistrant.h
    GeneratedPluginRegistrant.m
    GoogleService-Info.plist          U
```

## Lab

- Setting up Firebase Auth
- Setting up Google Sign In
- Setting up Image Picker
- Running the Chat App

## google_sign_in Package

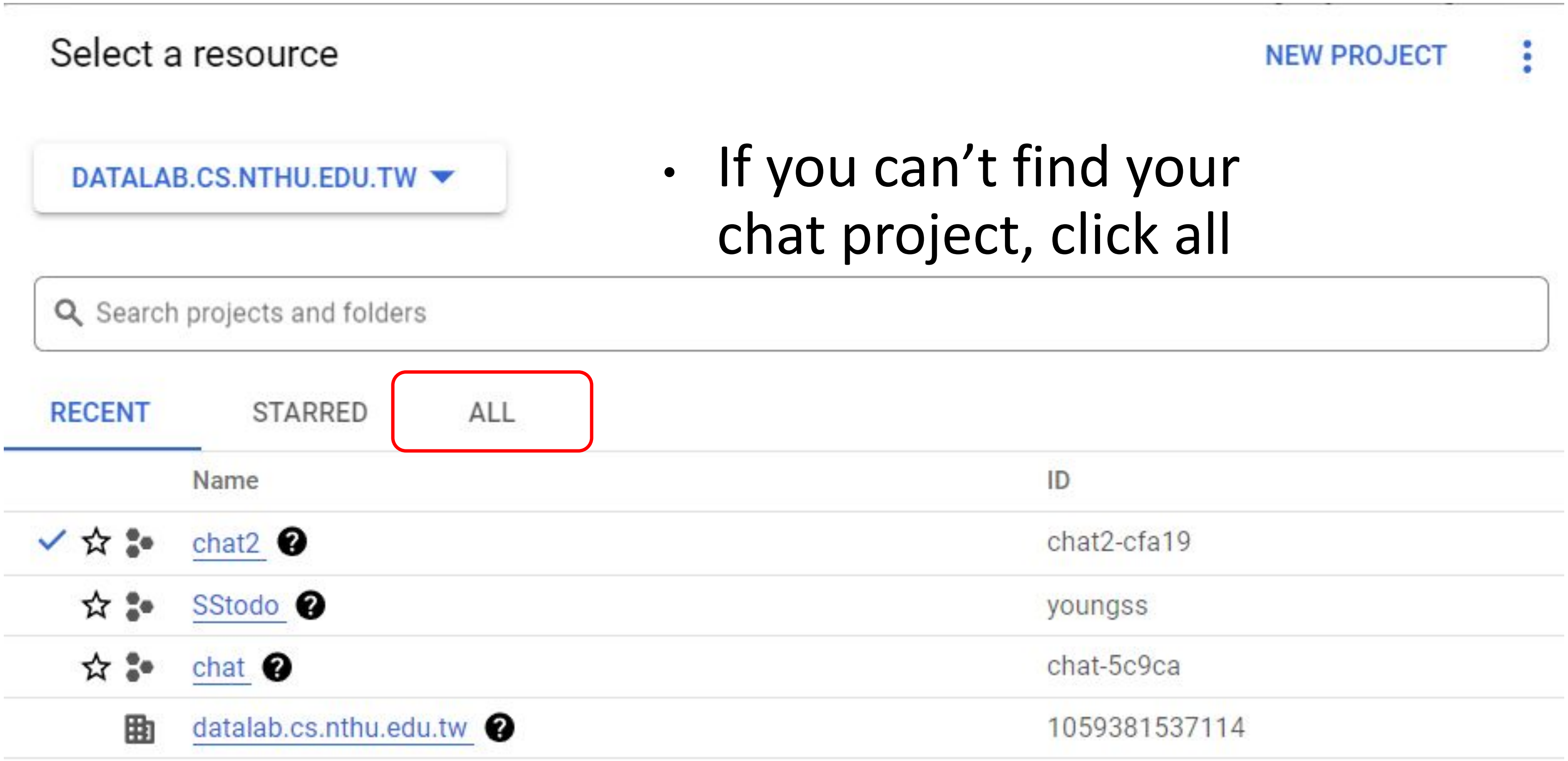
- Run `flutterfire configure`
- Android (See following page)
  - Filled out all required fields (if any) in OAuth consent screen
- iOS (See following page)
  - Follow the instructions
  - Add to “ios/Runner/Info.plist”:
    - `<key>GIDClientID</key> <string>...</strng>`
    - `<key>CFBundleURLTypes</key> <array>...</array>`

## google_sign_in install

- $ flutter pub add google_sign_in
  (run in your project)

- OAuth consent screen

# google_sign_in install



- If you can't find your chat project, click all

Select a resource

NEW PROJECT

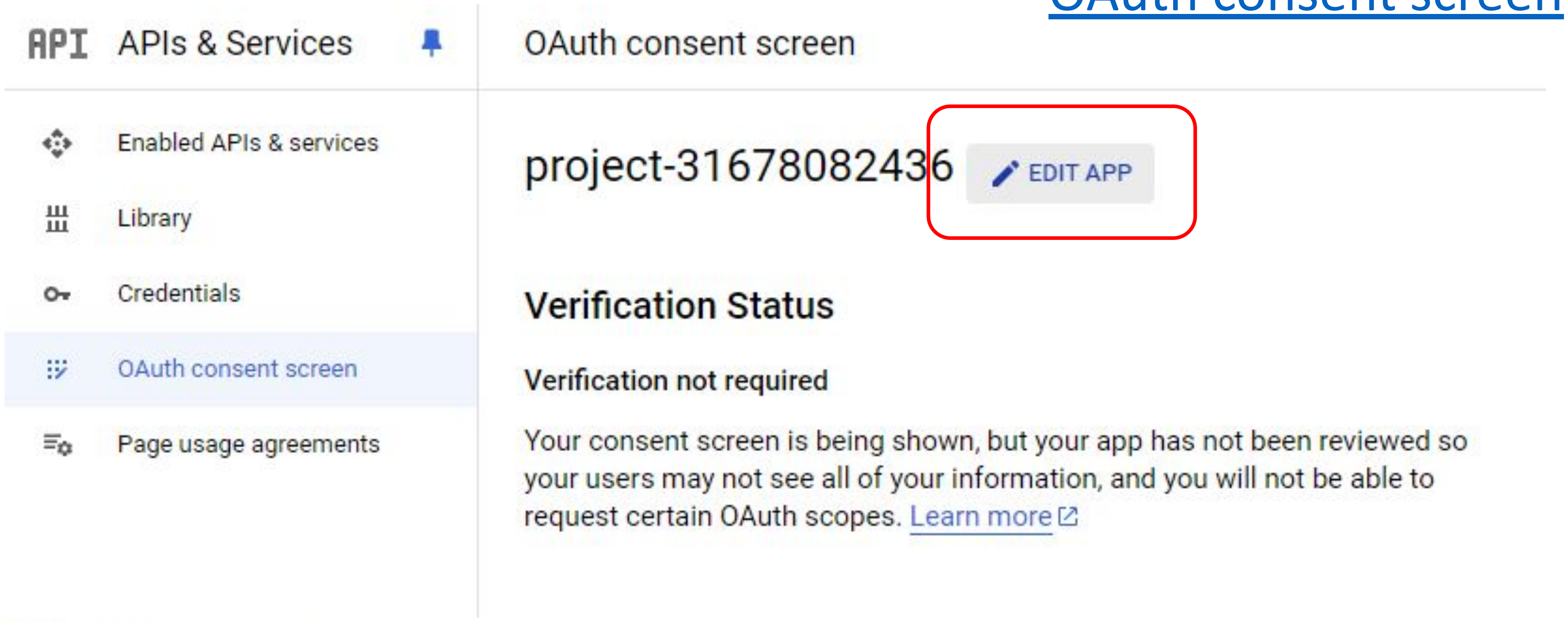
DATALAB.CS.NTHU.EDU.TW

Search projects and folders

RECENT STARRED ALL

| | Name | ID |
|---|---|---|
| ✓ ☆ | chat2 | chat2-cfa19 |
| ☆ | SStodo | youngss |
| ☆ | chat | chat-5c9ca |
| | datalab.cs.nthu.edu.tw | 1059381537114 |

- OAuth consent screen

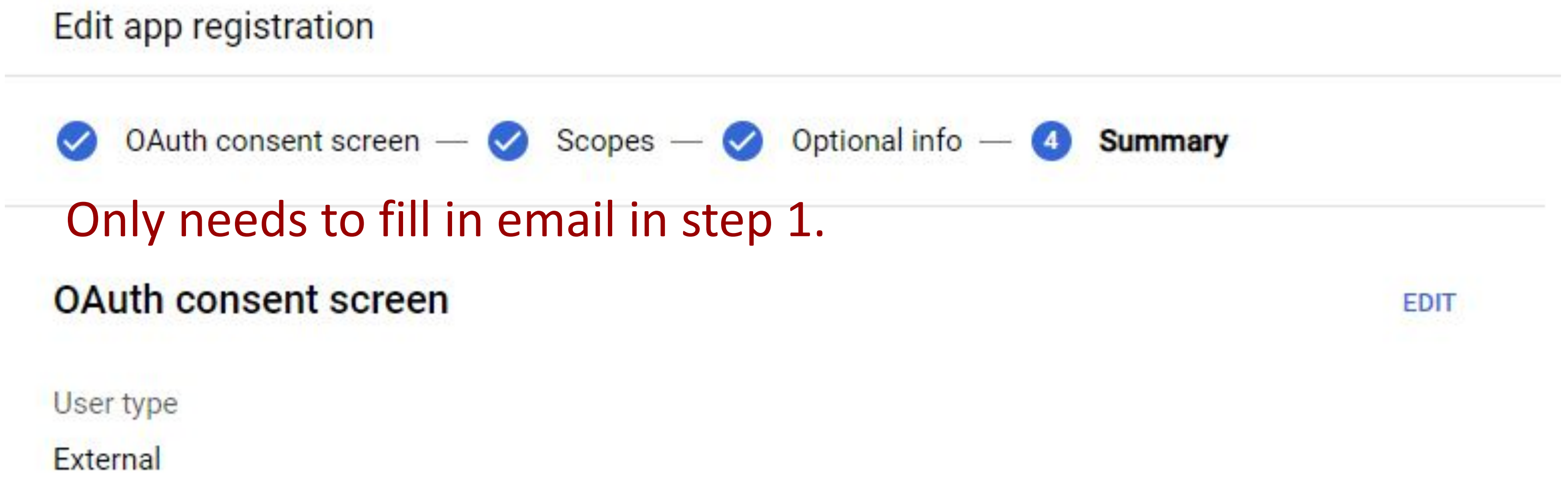


project-316780824З6

**Verification Status**

**Verification not required**

Your consent screen is being shown, but your app has not been reviewed so your users may not see all of your information, and you will not be able to request certain OAuth scopes. Learn more



Edit app registration

Only needs to fill in email in step 1.

**OAuth consent screen**

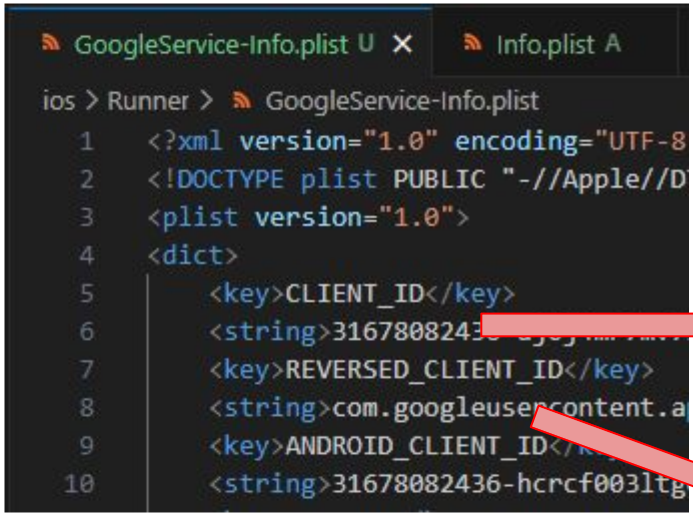
User type

External

## ios app (see next page)

```
<key>GIDClientID</key>
<string>[YOUR IOS CLIENT ID]</string>


<key>CFBundleURLTypes</key>

<array>
	<dict>
		<key>CFBundleTypeRole</key>
		<string>Editor</string>
		<key>CFBundleURLSchemes</key>
		<array>

	   <string>com.googleusercontent.apps.861823949799-vc35cprkp249096uujjn0vvnmcvjppkn</string>

		</array>

	</dict>
</array>
```

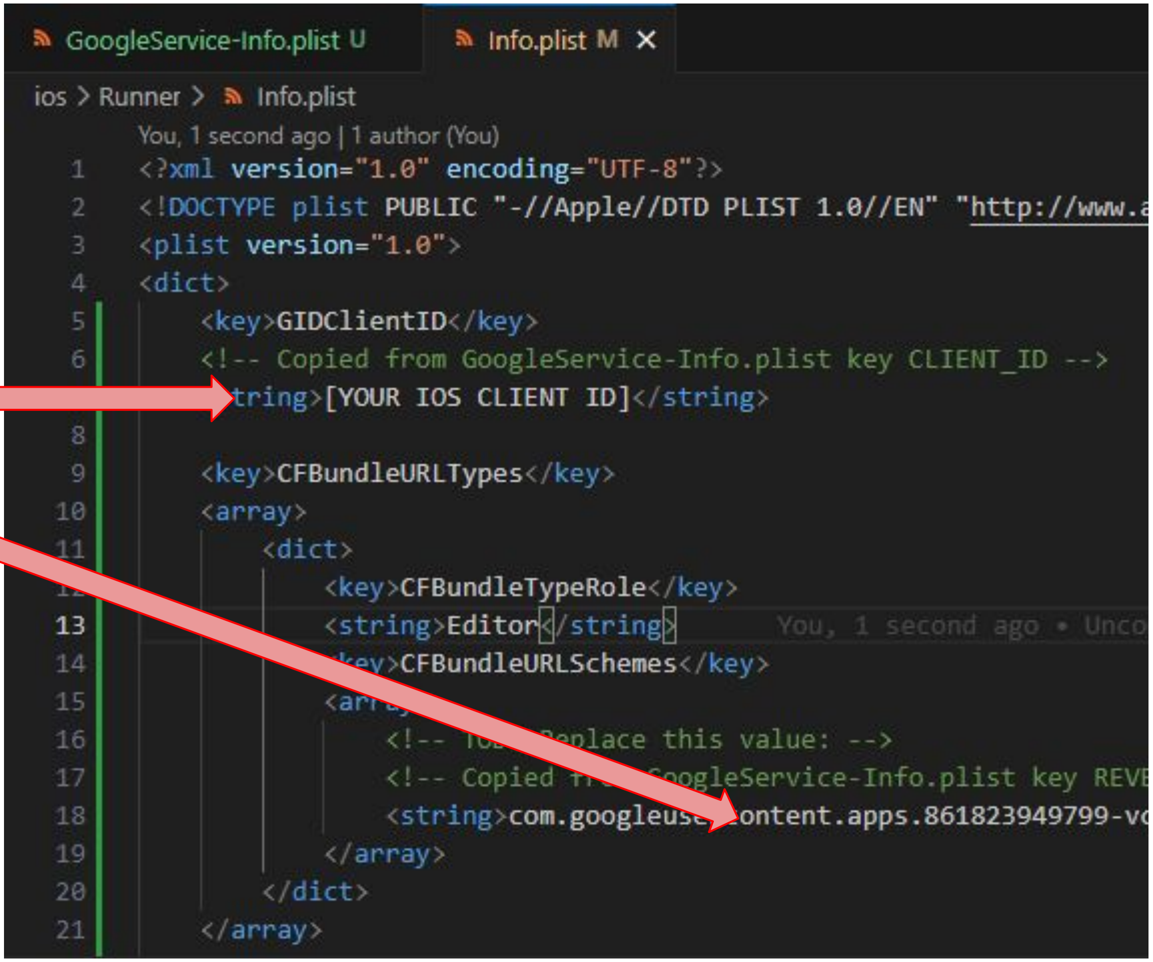
## IOS app



GoogleService-Info.plist U × Info.plist A

ios > Runner > GoogleService-Info.plist

```
<?xml version="1.0" encoding="UTF-8
<!DOCTYPE plist PUBLIC "-//Apple//D
<plist version="1.0">
<dict>
    <key>CLIENT_ID</key>
    <string>3167808243
    <key>REVERSED_CLIENT_ID</key>
    <string>com.googleusercontent.a
    <key>ANDROID_CLIENT_ID</k
    <string>31678082436-hcrcf003ltg
```



GoogleService-Info.plist U Info.plist M ×

ios > Runner > Info.plist

You, 1 second ago | 1 author (You)

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE plist PUBLIC "-//Apple//DTD PLIST 1.0//EN" "http://www.a
<plist version="1.0">
<dict>
    <key>GIDClientID</key>
    <!-- Copied from GoogleService-Info.plist key CLIENT_ID -->
    <string>[YOUR IOS CLIENT ID]</string>

    <key>CFBundleURLTypes</key>
    <array>
        <dict>
            <key>CFBundleTypeRole</key>
            <string>Editor</string>        You, 1 second ago • Unco
            <key>CFBundleURLSchemes</key>
            <array>
                <!-- TODO Replace this value: -->
                <!-- Copied from GoogleService-Info.plist key REVE
                <string>com.googleusercontent.apps.861823949799-vc
            </array>
        </dict>
    </array>
```

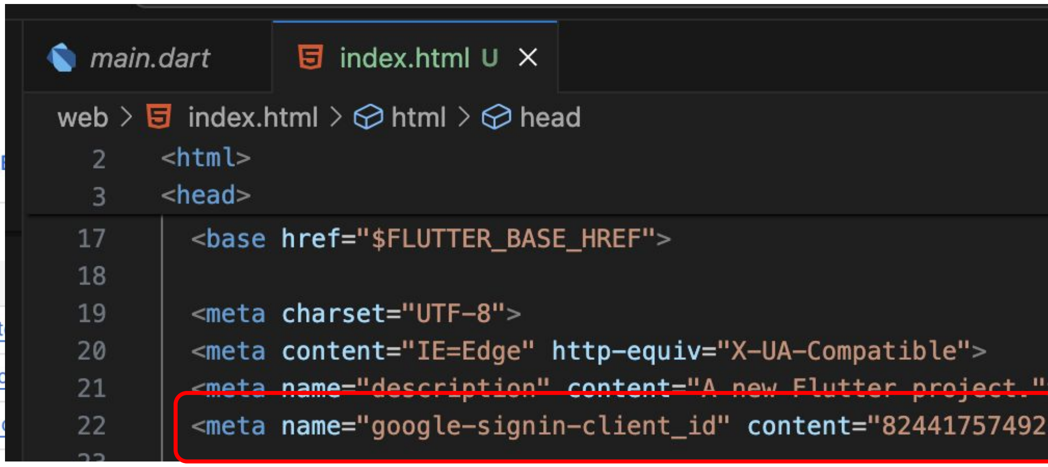
- the instructions
  step 4 and step 6

# Web

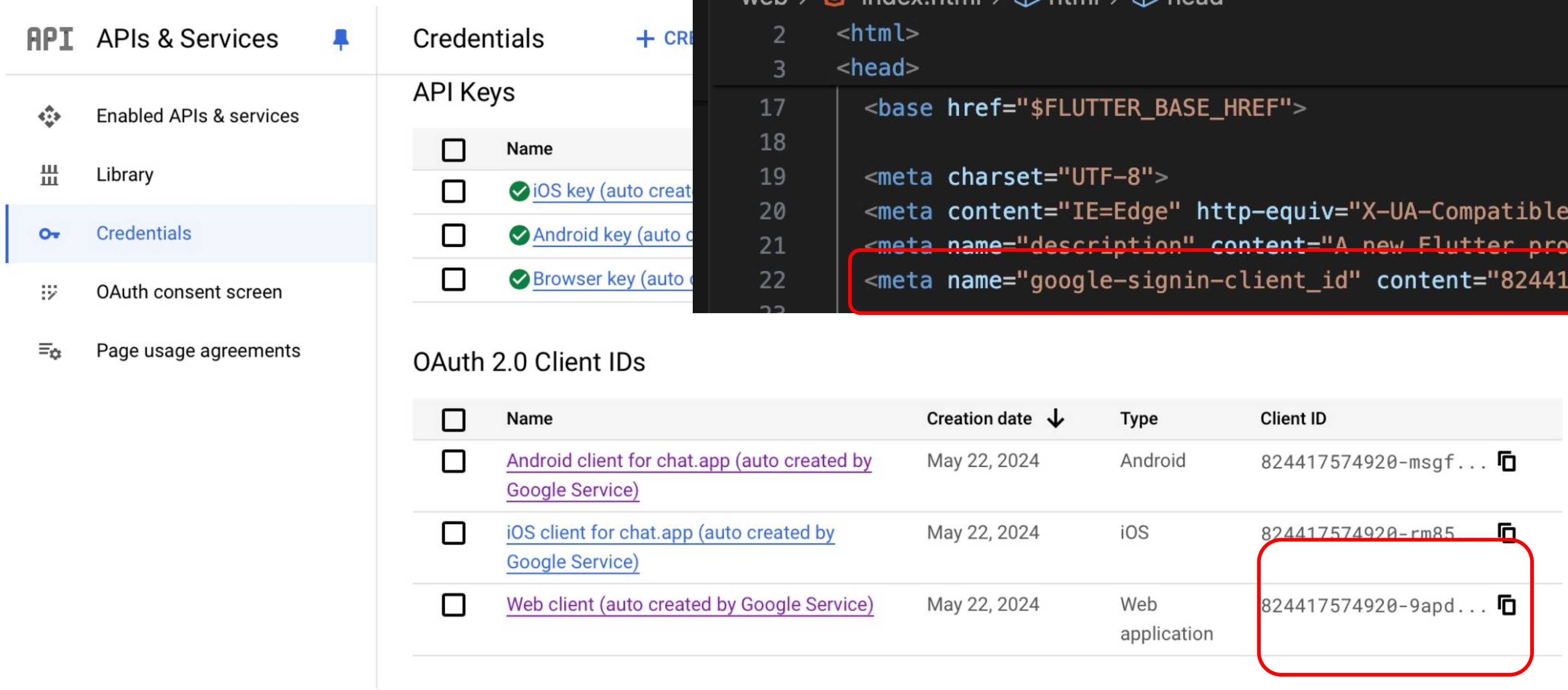
In web/index.html add:

```
<meta name="google-signin-client_id"  content="YOUR CLIENT ID">
```

Get client id in OAuth page:



```
<html>
<head>
  <base href="$FLUTTER_BASE_HREF">

  <meta charset="UTF-8">
  <meta content="IE=Edge" http-equiv="X-UA-Compatible">
  <meta name="description" content="A new Flutter project.
  <meta name="google-signin-client_id" content="82441757492
```



API Keys

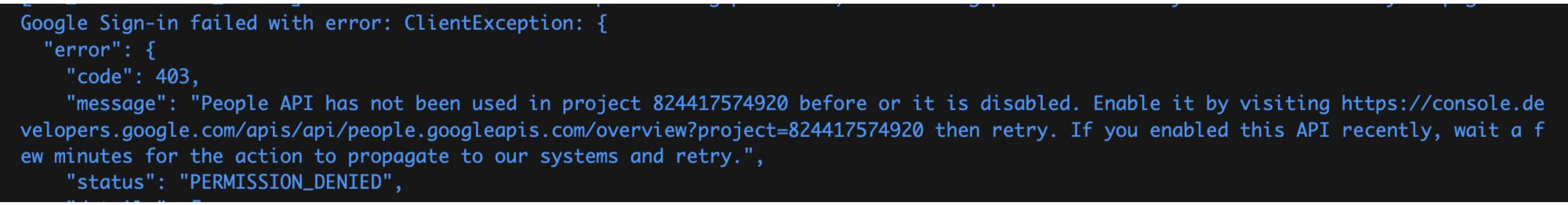
| | Name |
|---|---|
| ☐ | iOS key (auto creat |
| ☐ | Android key (auto c |
| ☐ | Browser key (auto c |

OAuth 2.0 Client IDs

| | Name | Creation date ↓ | Type | Client ID |
|---|---|---|---|---|
| ☐ | Android client for chat.app (auto created by Google Service) | May 22, 2024 | Android | 824417574920-msgf... |
| ☐ | iOS client for chat.app (auto created by Google Service) | May 22, 2024 | iOS | 824417574920-rm85... |
| ☐ | Web client (auto created by Google Service) | May 22, 2024 | Web application | 824417574920-9apd... |

# Web

If encounter problem, check error message.
You might see a link to google people API.
Just open and enable it.

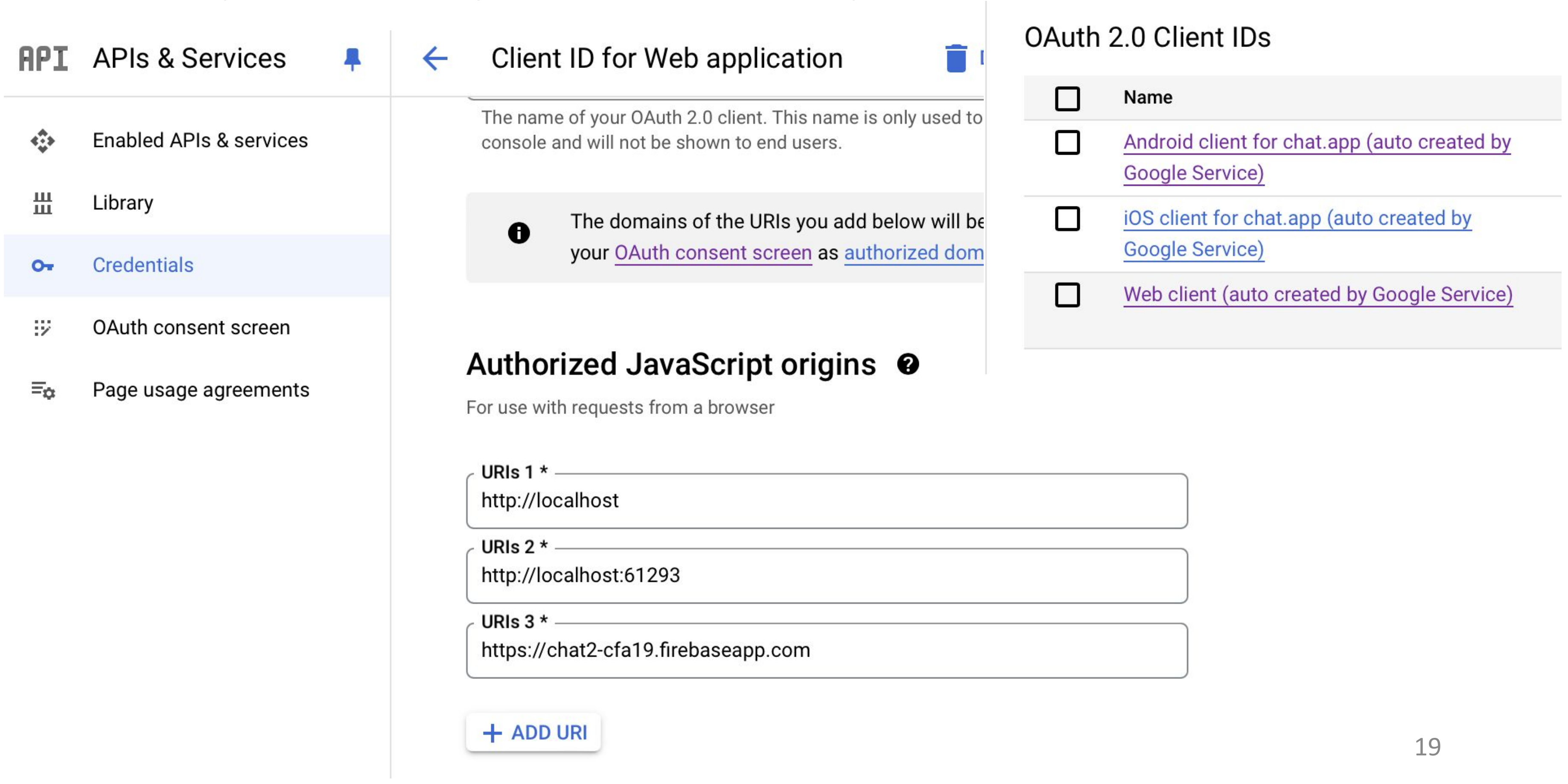


```
Google Sign-in failed with error: ClientException: {
  "error": {
    "code": 403,
    "message": "People API has not been used in project 824417574920 before or it is disabled. Enable it by visiting https://console.de
velopers.google.com/apis/api/people.googleapis.com/overview?project=824417574920 then retry. If you enabled this API recently, wait a f
ew minutes for the action to propagate to our systems and retry.",
    "status": "PERMISSION_DENIED",
```

[https://console.developers.google.com/apis/api/people.googleapis.com/overview?project=31678082436](https://console.developers.google.com/apis/api/people.googleapis.com/overview?project=31678082436)

# Web

If you can’t link two sign-in method, click Web client
Modify URLs to your localhost port:



The name of your OAuth 2.0 client. This name is only used to
console and will not be shown to end users.

The domains of the URIs you add below will be
your OAuth consent screen as authorized dom

Authorized JavaScript origins

For use with requests from a browser

| | |
|---|---|
| URIs 1 * | http://localhost |
| URIs 2 * | http://localhost:61293 |
| URIs 3 * | https://chat2-cfa19.firebaseapp.com |

OAuth 2.0 Client IDs

| | Name |
|---|---|
| ☐ | Android client for chat.app (auto created by Google Service) |
| ☐ | iOS client for chat.app (auto created by Google Service) |
| ☐ | Web client (auto created by Google Service) |

## Lab

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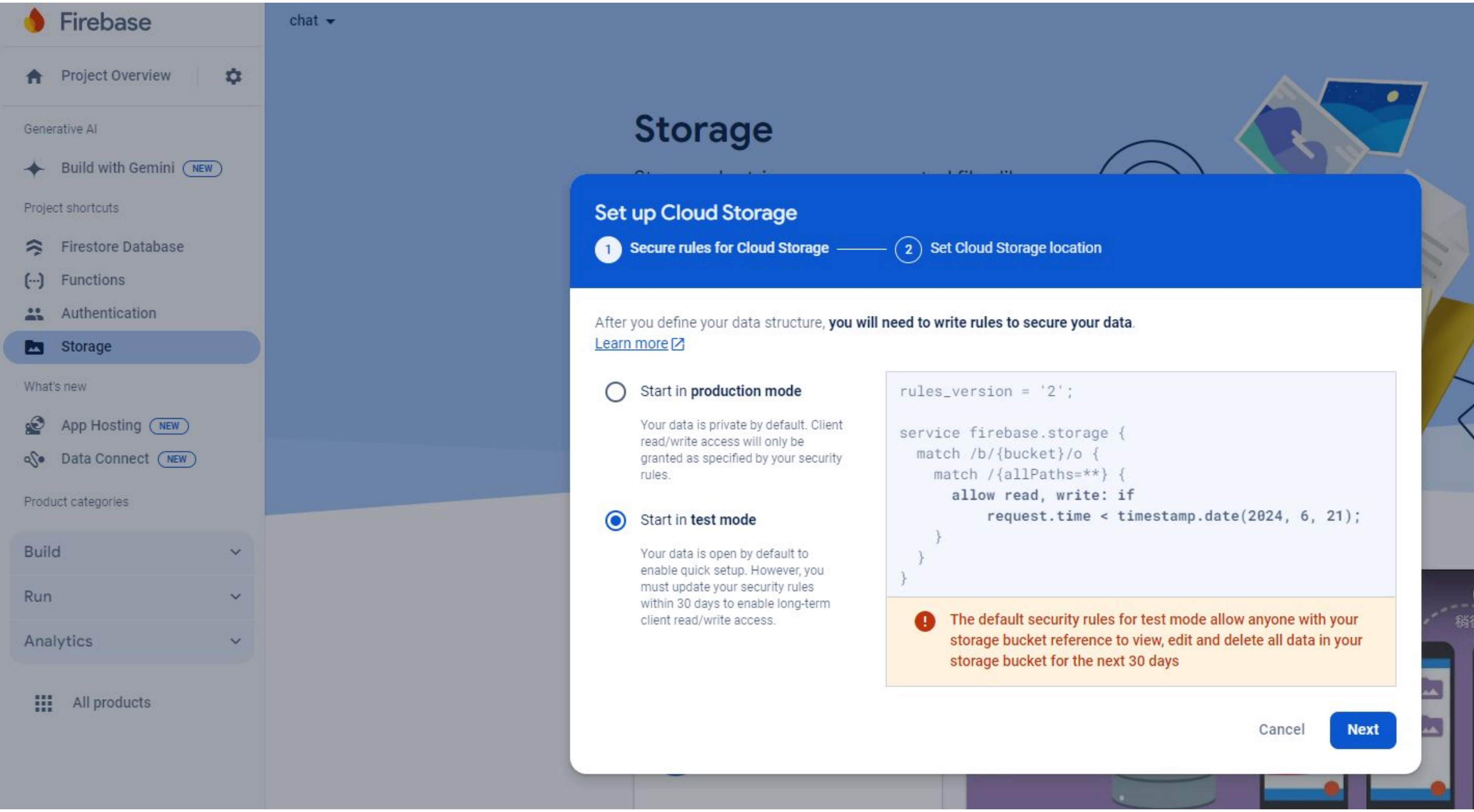


Set up Cloud Storage

1 Secure rules for Cloud Storage —— 2 Set Cloud Storage location

After you define your data structure, **you will need to write rules to secure your data**.
Learn more

○ Start in **production mode**

Your data is private by default. Client read/write access will only be granted as specified by your security rules.

[✓ Start in **test mode**]

Your data is open by default to enable quick setup. However, you must update your security rules within 30 days to enable long-term client read/write access.

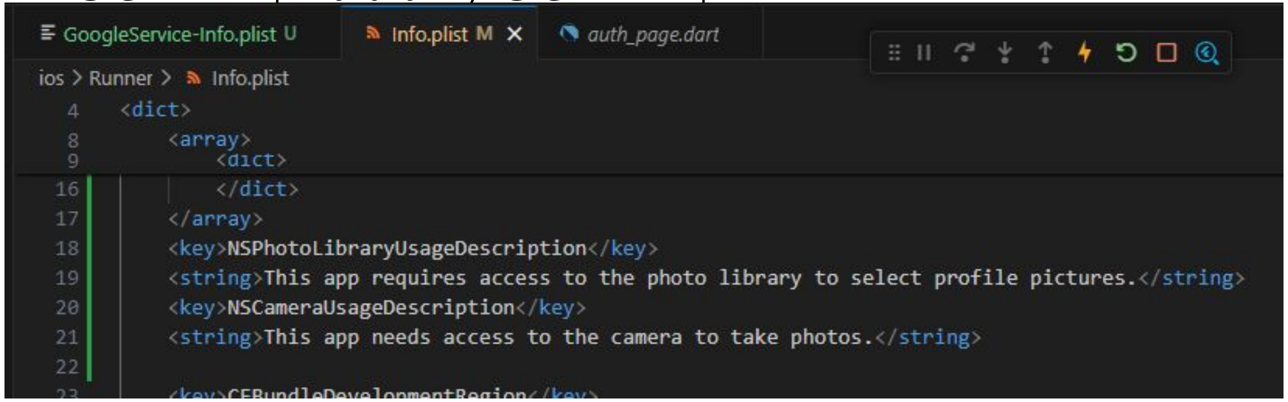
```
rules_version = '2';

service firebase.storage {
  match /b/{bucket}/o {
    match /{allPaths=**} {
      allow read, write: if
          request.time < timestamp.date(2024, 6, 21);
    }
  }
}
```

The default security rules for test mode allow anyone with your storage bucket reference to view, edit and delete all data in your storage bucket for the next 30 days

Cancel Next

# Image Picker

- $ flutter pub add image_picker
- iOS: Add to "ios/Runner/Info.plist":
  - `<key>NSPhotoLibraryUsageDescription</key> <string>...</string>`
  - `<key>NSCameraUsageDescription</key> <string>...</string>`



GoogleService-Info.plist U | Info.plist M | auth_page.dart

ios > Runner > Info.plist

```
<dict>
    <array>
        <dict>
        </dict>
    </array>
    <key>NSPhotoLibraryUsageDescription</key>
    <string>This app requires access to the photo library to select profile pictures.</string>
    <key>NSCameraUsageDescription</key>
    <string>This app needs access to the camera to take photos.</string>

    <key>CFBundleDevelopmentRegion</key>
```

- Follow the [installation guide]() for more details

## (Optional) MacOS

- `google_sign_in` package requires higher platform target than default
  - Set `platform :osx, '10.15'` in “macos/Podfile”

- `image_picker` package:
  - Add to “macos/Runner/*.entitlements”:
  - `<key>com.apple.security.files.user-selected.read-only</key>`
    `<true/>`

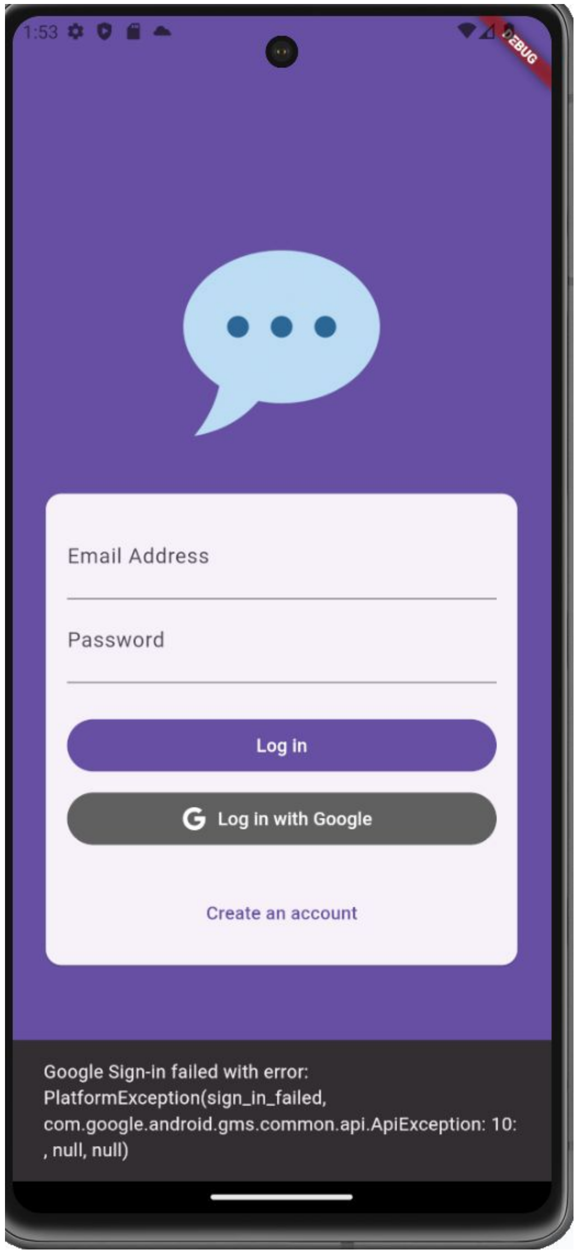
# Running Chat App

- Sign up using your email address
- Send some chat messages
- Log out, then log in with Google using same email address
  - Account linking will be triggered
- Check:
  - Image picker runs correctly, and selected file stored in Cloud Storage
  - User and Message docs created in Firestore
  - After account linking, your User doc should record two log-in methods

## For android app

You will probably encounter this error when trying to use google sign in.
But the email sign in way should be correct.

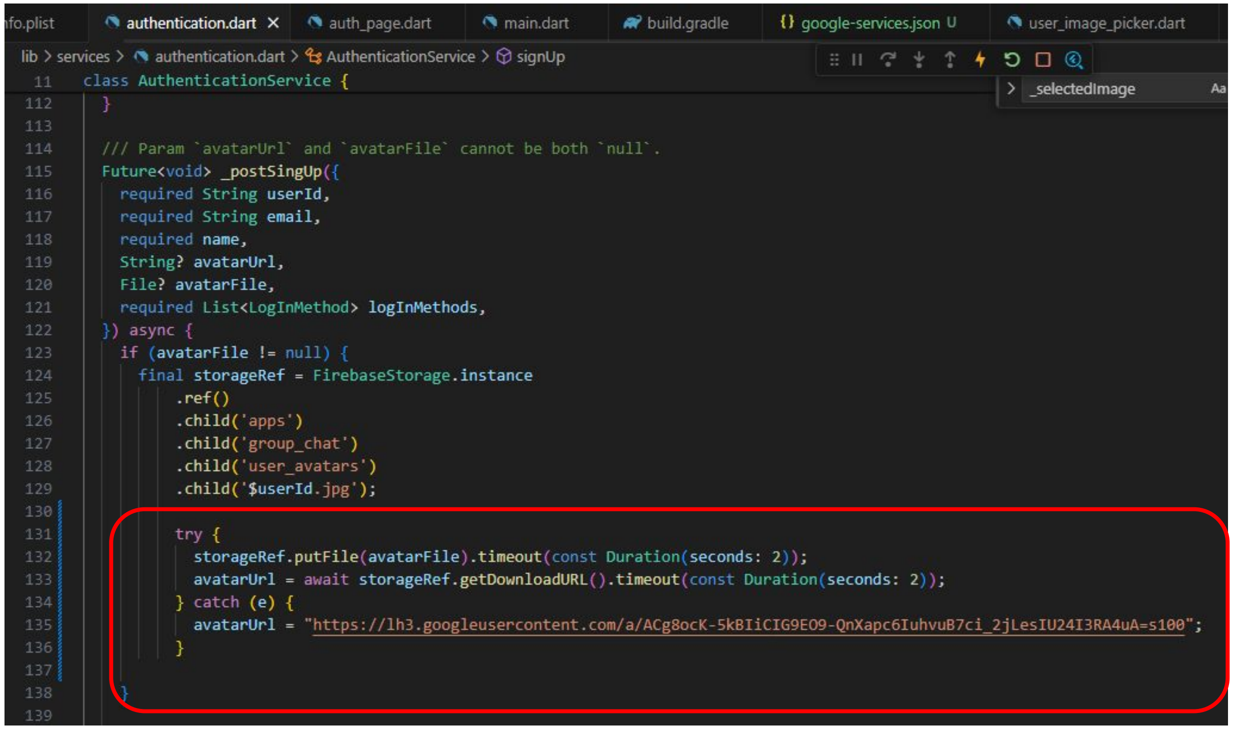
For google sign in, please try web instead.



```
Google Sign-in failed with error:
PlatformException(sign_in_failed,
com.google.android.gms.common.api.ApiException: 10:
, null, null)
```

# For web

Since image picker for web and app is different.
There might be some error while getting avatarUrl.
You can try this first:



```dart
class AuthenticationService {
  }

  /// Param `avatarUrl` and `avatarFile` cannot be both `null`.
  Future<void> _postSingUp({
    required String userId,
    required String email,
    required name,
    String? avatarUrl,
    File? avatarFile,
    required List<LogInMethod> logInMethods,
  }) async {
    if (avatarFile != null) {
      final storageRef = FirebaseStorage.instance
          .ref()
          .child('apps')
          .child('group_chat')
          .child('user_avatars')
          .child('$userId.jpg');

      try {
        storageRef.putFile(avatarFile).timeout(const Duration(seconds: 2));
        avatarUrl = await storageRef.getDownloadURL().timeout(const Duration(seconds: 2));
      } catch (e) {
        avatarUrl = "https://lh3.googleusercontent.com/a/ACg8ocK-5kBIiCIG9EO9-QnXapc6IuhvuB7ci_2jLesIU24I3RA4uA=s100";
      }

    }
```