

Mobile Programming

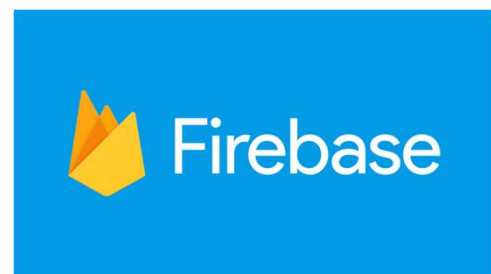
Chapter 6: GOOGLE FIREBASE

Mobile programming

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Introduction

- Firebase is a platform owned by google that helps us develop mobile and web applications.
- Firebase provides users with cloud-based database services with Google's extremely powerful servers.
- With firebase, you can create real-time applications like app chat, along with many features such as user authentication, Cloud Messaging.
- Firebase's services are free, but you'll need to pay extra if you want to upgrade. <https://firebase.google.com/pricing>



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Introduction

Firestore development history

- 2011: a startup founded by James Tamplin and Andrew Lee and created Firestore.
- 2012: Firestore was announced globally.
- 2014: Google acquires Firestore and becomes a cross-platform mobile and web app.

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Introduction

Firestore features

- Firestore Realtime Database
- Firestore Authentication
- Firestore Cloud Storage
- Firestore Cloud Function
- Machine Learning Kit
-

Authentication

Realtime Database

Firestore

Storage

ML


Hosting

Cloud Functions

Security Rules

App Check

Extensions



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Firestore with react native

Website: <https://rnfirebase.io/>

Install:

Using npm

npm install --save @react-native-firebase/app

Using Yarn

yarn add @react-native-firebase/app

Note: React Native Firebase cannot be used in the "Expo Go" app

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Firestore with react native

Configure Firestore with Android credentials

First, add the google-services plugin as a dependency inside of your **/android/build.gradle** file:

```
buildscript {
  dependencies {
    // ... other dependencies
    classpath 'com.google.gms:google-services:4.4.0'
    // Add me --- ^
  }
}
```

Lastly, execute the plugin by adding the following to your **/android/app/build.gradle** file:

```
apply plugin: 'com.android.application'
apply plugin: 'com.google.gms.google-services' // <- Add this line
```

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Firestore with react native

Create a new Firestore project

Login <https://console.firebase.google.com/u/0/> With a Google Account

Step 1: Add project.

Step 2: Enter your project name

....

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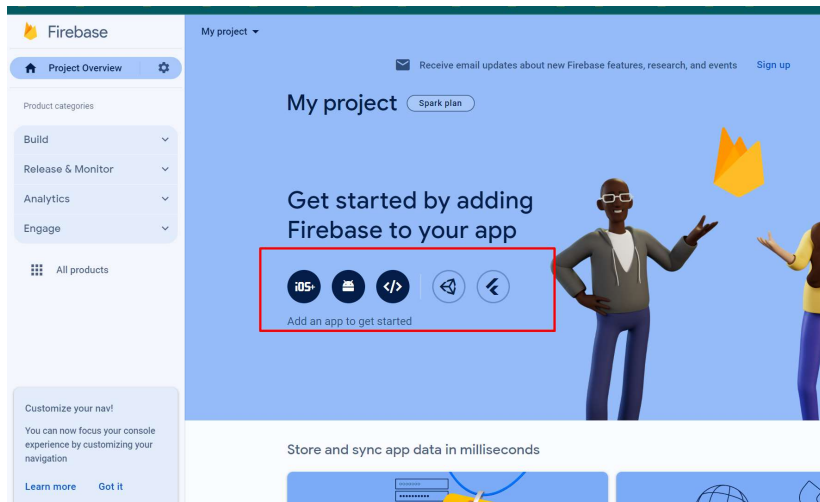
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Firestore with react native

Create a new Firestore project

Click android or iOS



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Firebase with react native

Create a new Firebase project

2. App nickname: package.json

```
s App.tsx 2 {} package.json X
{} package.json > ...
1 {
2   "name": "testlogin",
3   "version": "0.0.1",
4   "private": true,
5   "scripts": {
6     "android": "react-native run-android",
7     "ios": "react-native run-ios",
```

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Firebase with react native

Create a new Firebase project

3. SHA-1: cd android

./gradlew signingReport

```
Variant: debug
Config: debug
Store: C:\Lab\TestGoogleLogin\testlogin\android\app\debug.keystore
Alias: androiddebugkey
MD5: 20:F4:61:48:B7:2D:8E:5E:5C:A2:3D:37:A4:F4:14:90
SHA1: 5E:8F:16:06:2E:A3:CD:2C:4A:0D:54:78:76:BA:A6:F3:8C:AB:F6:25
SHA-256: FA:C6:17:45:DC:09:03:78:6F:B9:ED:E6:2A:96:2B:39:9F:73:48:F0:BB:6F:89:9B:83:32:66:75:91:03:3B:9C
Valid until: Wednesday, May 1, 2052
-----
Variant: release
Config: debug
Store: C:\Lab\TestGoogleLogin\testlogin\android\app\debug.keystore
Alias: androiddebugkey
MD5: 20:F4:61:48:B7:2D:8E:5E:5C:A2:3D:37:A4:F4:14:90
SHA1: 5E:8F:16:06:2E:A3:CD:2C:4A:0D:54:78:76:BA:A6:F3:8C:AB:F6:25
SHA-256: FA:C6:17:45:DC:09:03:78:6F:B9:ED:E6:2A:96:2B:39:9F:73:48:F0:BB:6F:89:9B:83:32:66:75:91:03:3B:9C
Valid until: Wednesday, May 1, 2052
-----
Variant: debugAndroidTest
Config: debug
Store: C:\Lab\TestGoogleLogin\testlogin\android\app\debug.keystore
Alias: androiddebugkey
MD5: 20:F4:61:48:B7:2D:8E:5E:5C:A2:3D:37:A4:F4:14:90
SHA1: 5E:8F:16:06:2E:A3:CD:2C:4A:0D:54:78:76:BA:A6:F3:8C:AB:F6:25
SHA-256: FA:C6:17:45:DC:09:03:78:6F:B9:ED:E6:2A:96:2B:39:9F:73:48:F0:BB:6F:89:9B:83:32:66:75:91:03:3B:9C
Valid until: Wednesday, May 1, 2052
-----
```

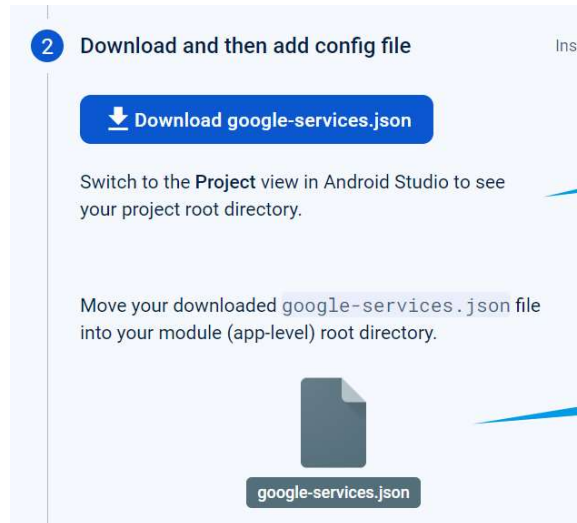
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Firestore with react native

Create a new Firestore project

Download and then add config file: android/app/google-services.json



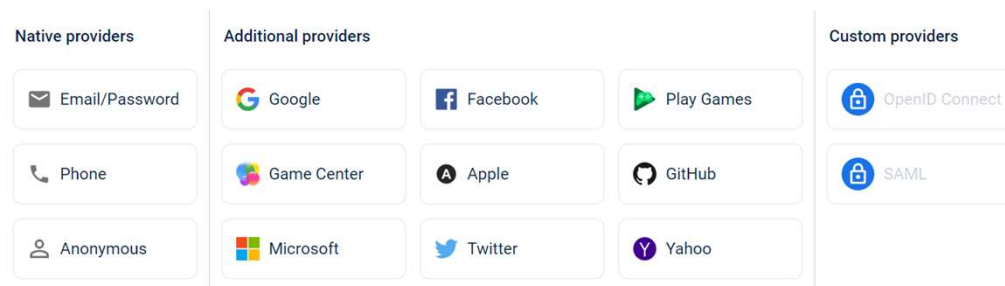
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Firestore with react native

Firestore Authentication

- Firestore Authentication is a function that authenticates users.
- Your app needs to be logged in/registered for an account to use it.
- Firestore provides us with the ability to authenticate users by email, phone number, or Facebook, Google accounts....

Get started with Firestore Auth by adding your first sign-in method



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Firestore with react native

Firestore Authentication: Google sign-in

Install: `npm install @react-native-google-signin/google-signin @react-native-firebase/auth`

```
GoogleSignin.configure({
  webClientId: '',
});
```

You can be found in the android/app/google-services.json file as the client/oauth_client/client_id property

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Firestore with react native

Firestore Authentication: Google sign-in

The function allows google account sign-in

```
async function onGoogleButtonPress() {
  // Check if your device supports Google Play
  await GoogleSignin.hasPlayServices({ showPlayServicesUpdateDialog: true });
  // Get the users ID token
  const { idToken } = await GoogleSignin.signIn();
  // Create a Google credential with the token
  const googleCredential = auth.GoogleAuthProvider.credential(idToken);
  // Sign-in the user with the credential
  return auth().signInWithCredential(googleCredential);
}
```

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Firestore with react native

Firestore Authentication: Google sign-in

The function allows google account sign-out

```
const handleSignOut = async () => {
  try {
    // Sign out the user
    await auth().signOut();
    // Set the user state to null
    // setUser(null);
  } catch (error) {
    console.log(error);
  }
};
```

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Firestore with react native

Firestore Authentication: Google sign-in

Apple sign-in: <https://rnfirebase.io/auth/social-auth#apple>

Facebook sign-in <https://rnfirebase.io/auth/social-auth#facebook>

Phone number sign-in: <https://rnfirebase.io/auth/phone-auth>

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Firestore with react native

Demo: <https://github.com/taitv86/DemoLoginGoogle>

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Exercise

Develop Login screen using Facebook authentication method



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The slide features a dark blue background with a large white 'Q&A' text in the center. On the left, there is a vertical strip showing a photograph of a university building with a large tree in the foreground. A light beige rectangular shape is positioned over the top left of the blue area. In the top right corner, the EIU logo is displayed, consisting of a stylized globe icon followed by the text 'EIU' and 'TRƯỜNG ĐẠI HỌC QUỐC TẾ MIỀN ĐÔNG' and 'EASTERN INTERNATIONAL UNIVERSITY' below it. A thin horizontal line is visible near the bottom of the slide.

Q&A

EIU
TRƯỜNG ĐẠI HỌC
QUỐC TẾ
MIỀN ĐÔNG
EASTERN
INTERNATIONAL
UNIVERSITY

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