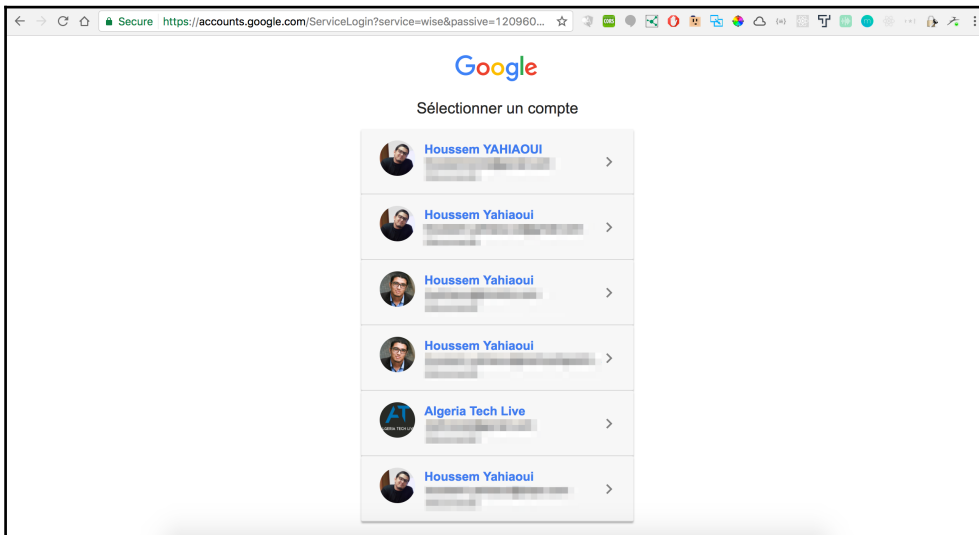
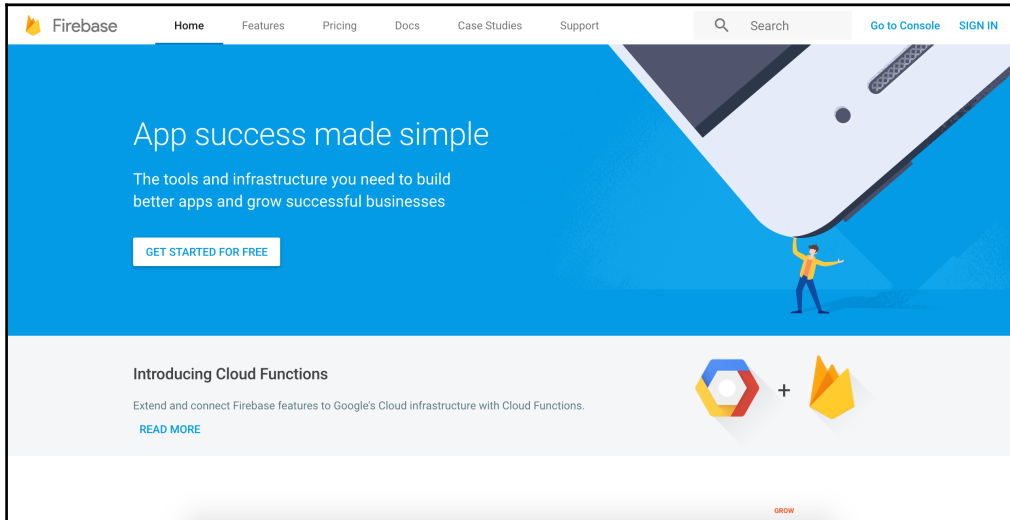
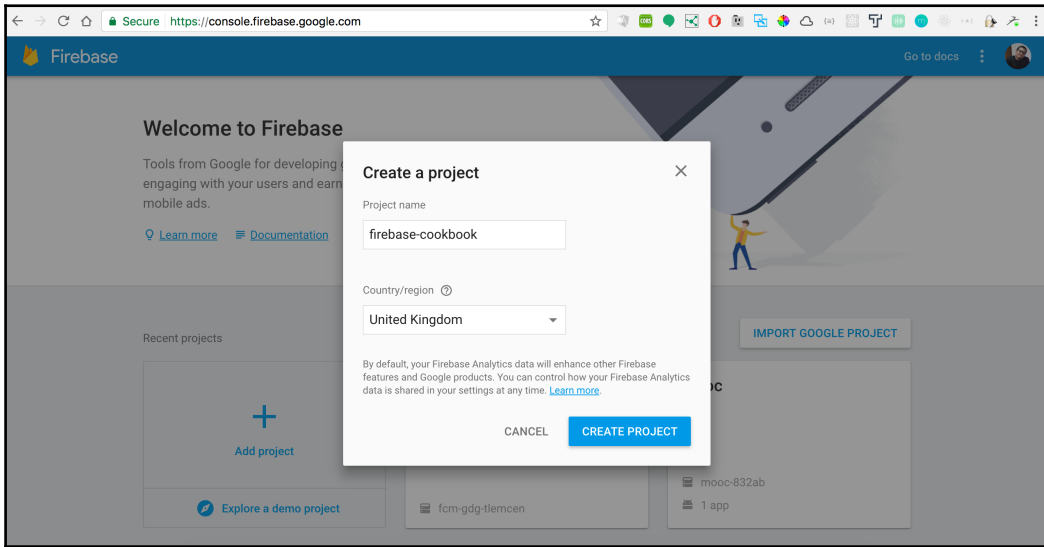
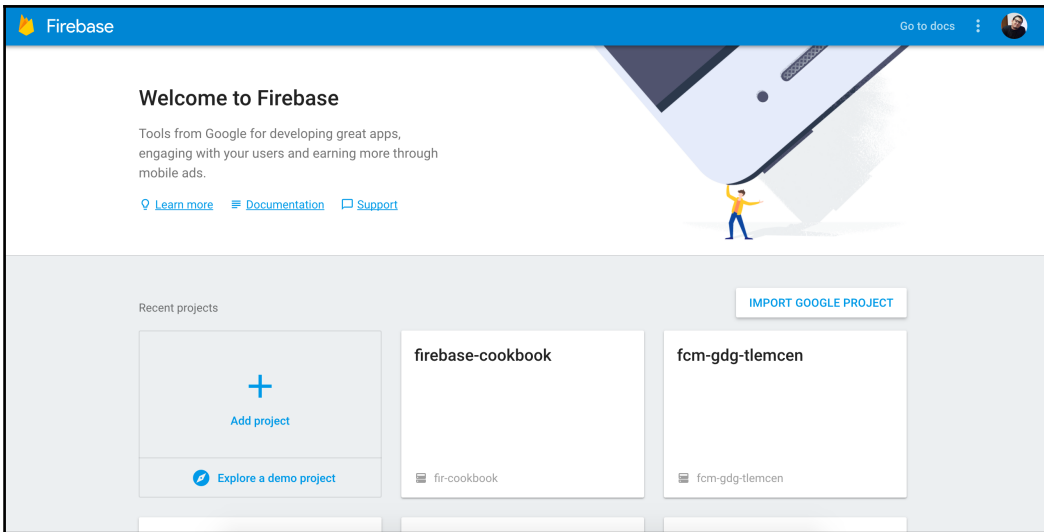
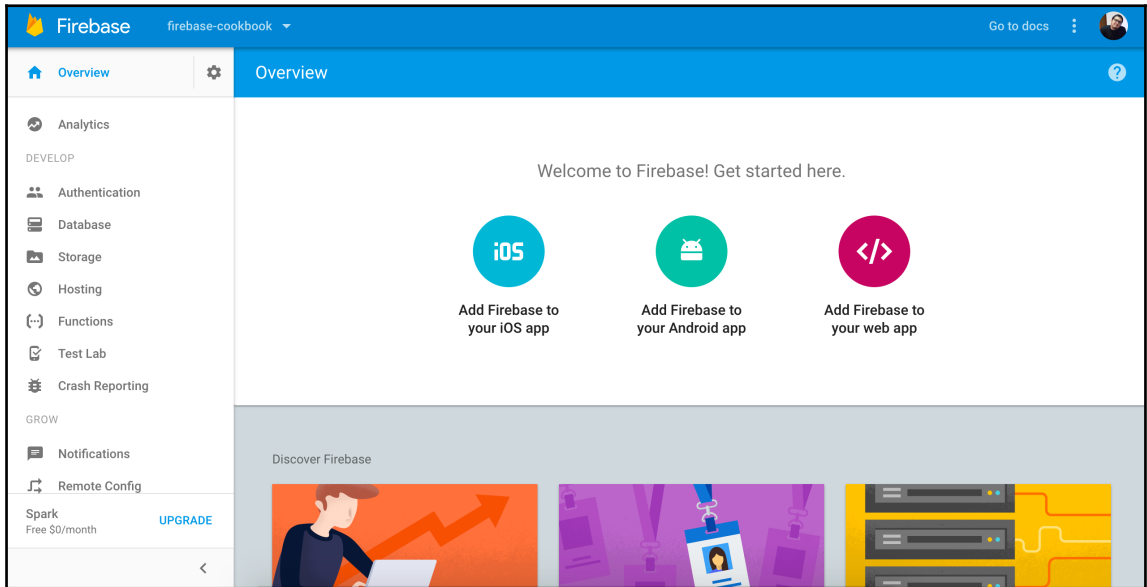
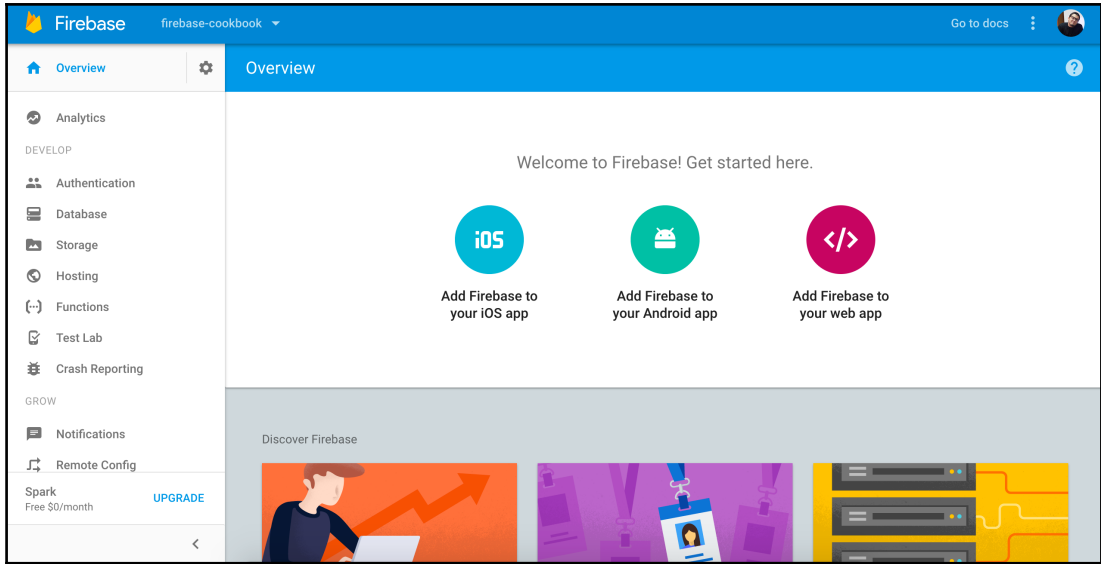


# Chapter 1: Firebase - Getting Started







The screenshot shows the Firebase console interface for a project named 'firebase-cookbook'. A modal window titled 'Add Firebase to your web app' is open, providing instructions and a code snippet. The modal text reads: 'Copy and paste the snippet below at the bottom of your HTML, before other script tags.' The code snippet is as follows:

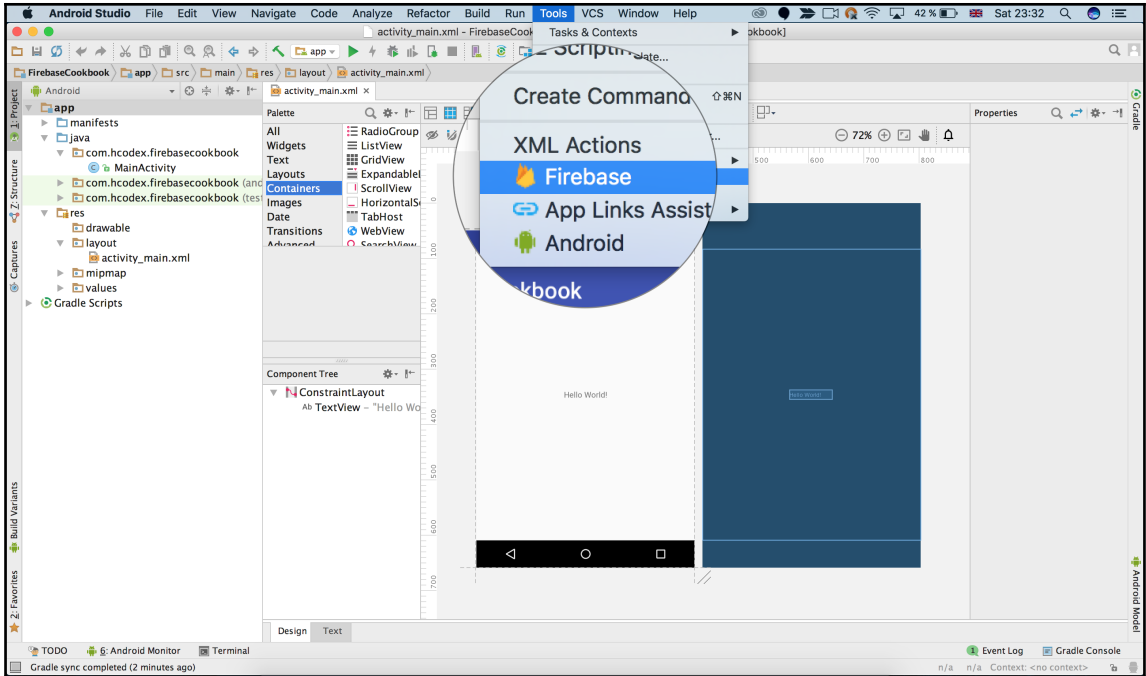
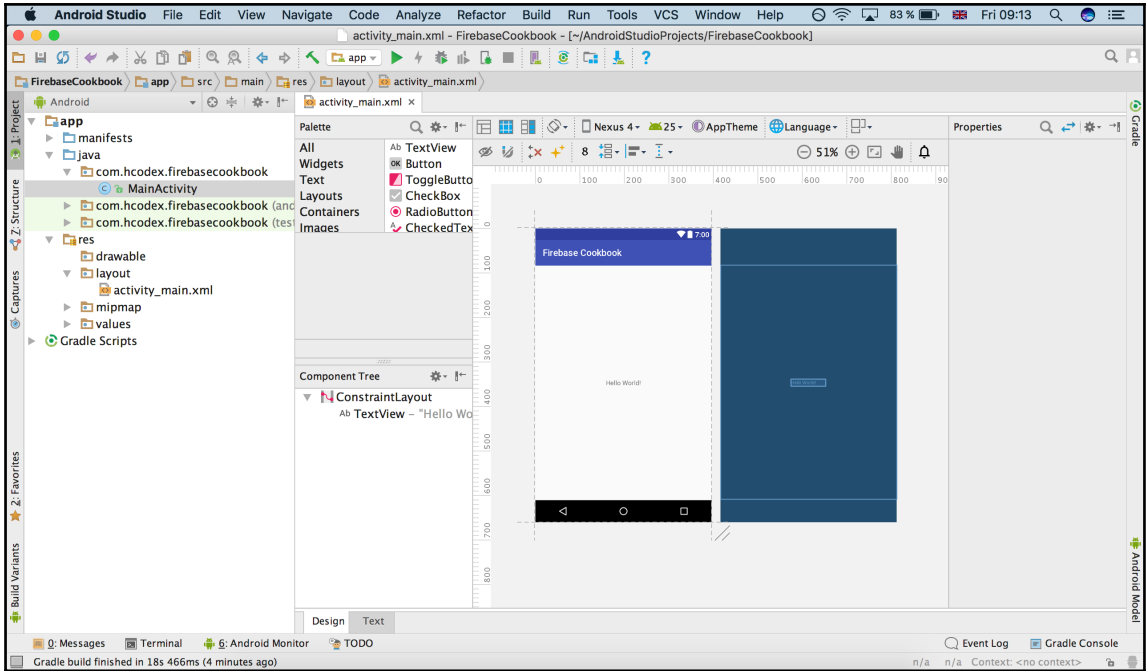
```
<script src="https://www.gstatic.com/firebasejs/3.9.0/firebase.js"></script>
<script>
// Initialize Firebase
var config = {
  apiKey: "AIzaSyB3amU4g4smm77PGOX39me9m71rW2G2vK8",
  authDomain: "fir-cookbook.firebaseio.com",
  databaseURL: "https://fir-cookbook.firebaseio.com",
  projectId: "fir-cookbook",
  storageBucket: "fir-cookbook.appspot.com",
  messagingSenderId: "329935171559"
};
firebase.initializeApp(config);
</script>
```

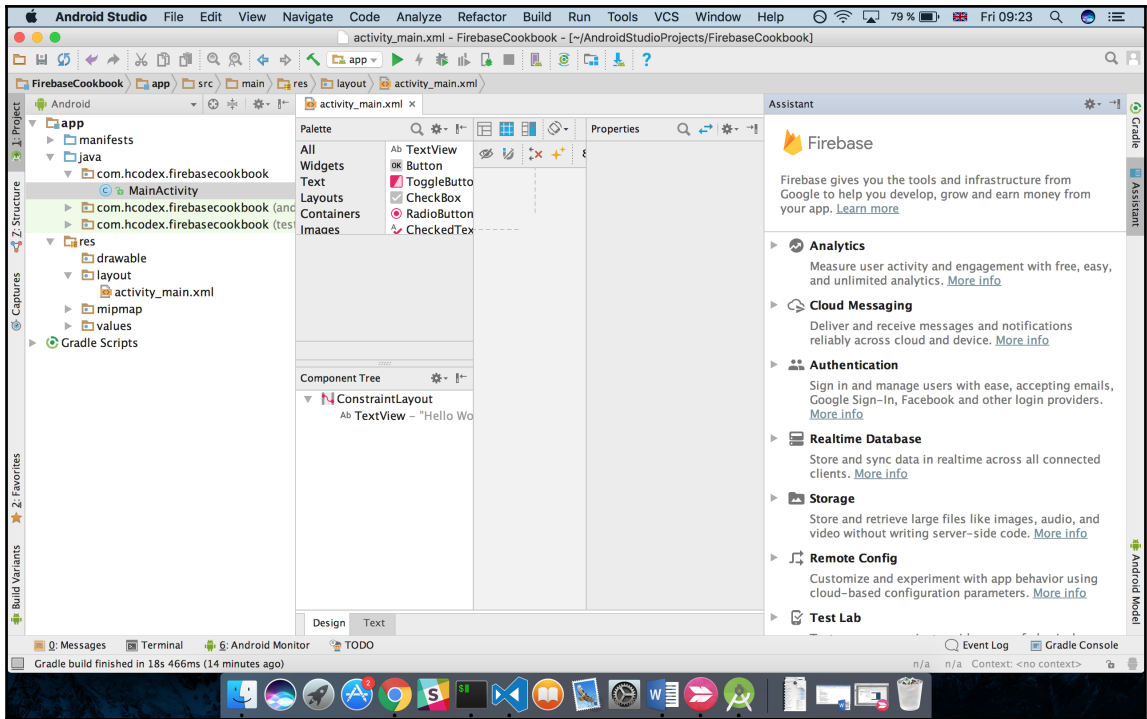
Below the code, there are three links: 'Get Started with Firebase for Web Apps', 'Firebase Web SDK API Reference', and 'Firebase Web Samples'. A 'COPY' button is also present.

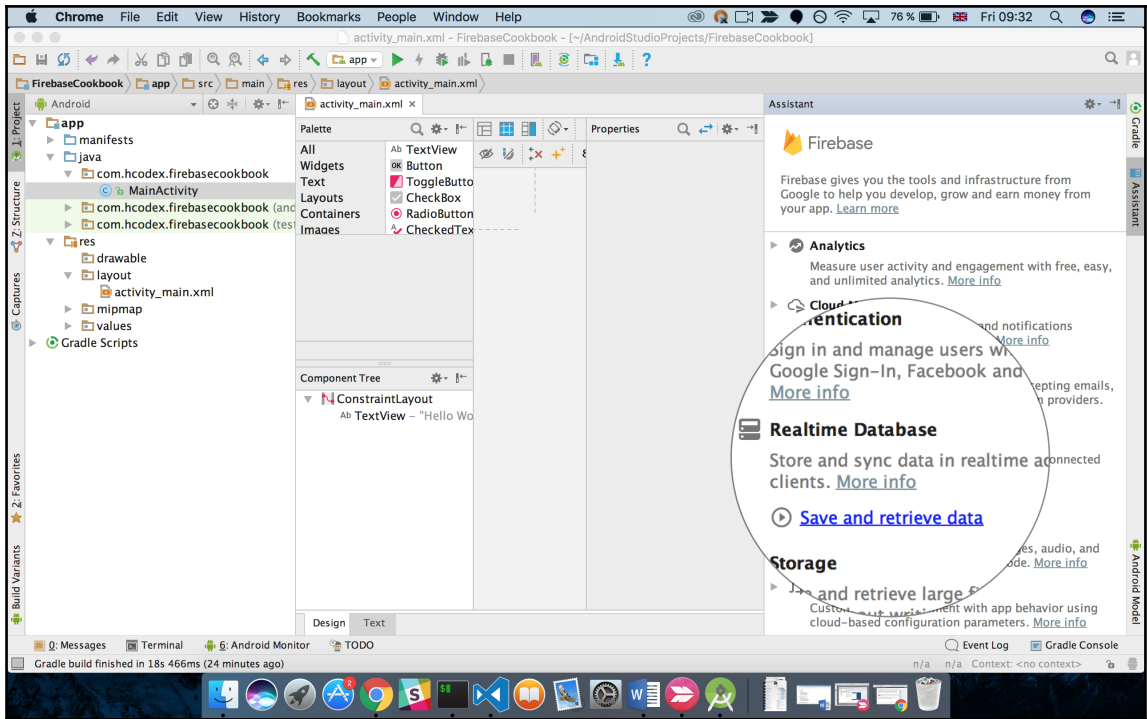
The screenshot shows the 'Welcome to Android Studio' window. At the top, it says 'Welcome to Android Studio'. Below this is the Android Studio logo, which consists of a green circle with a white gear and a white compass. The text 'Android Studio' is prominently displayed in the center, with 'Version 2.3.1' underneath it. Below the title, there are five main actions listed in a light blue box:

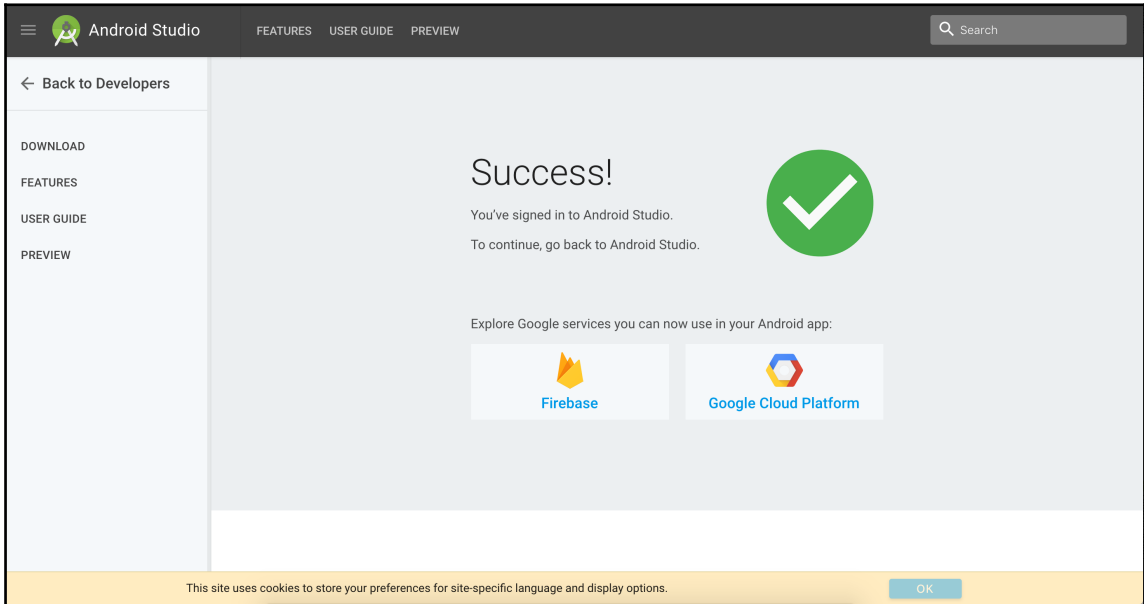
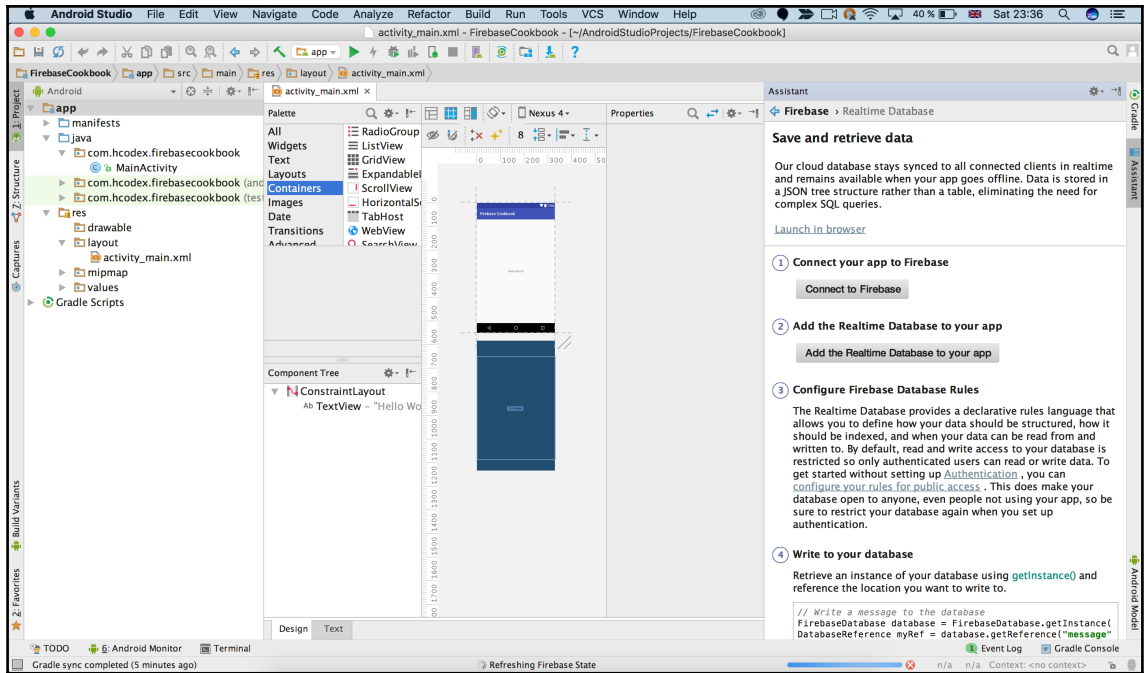
- Start a new Android Studio project
- Open an existing Android Studio project
- Check out project from Version Control
- Import project (Eclipse ADT, Gradle, etc.)
- Import an Android code sample

At the bottom right of the window, there are two options: 'Configure' and 'Get Help', both with dropdown arrows.

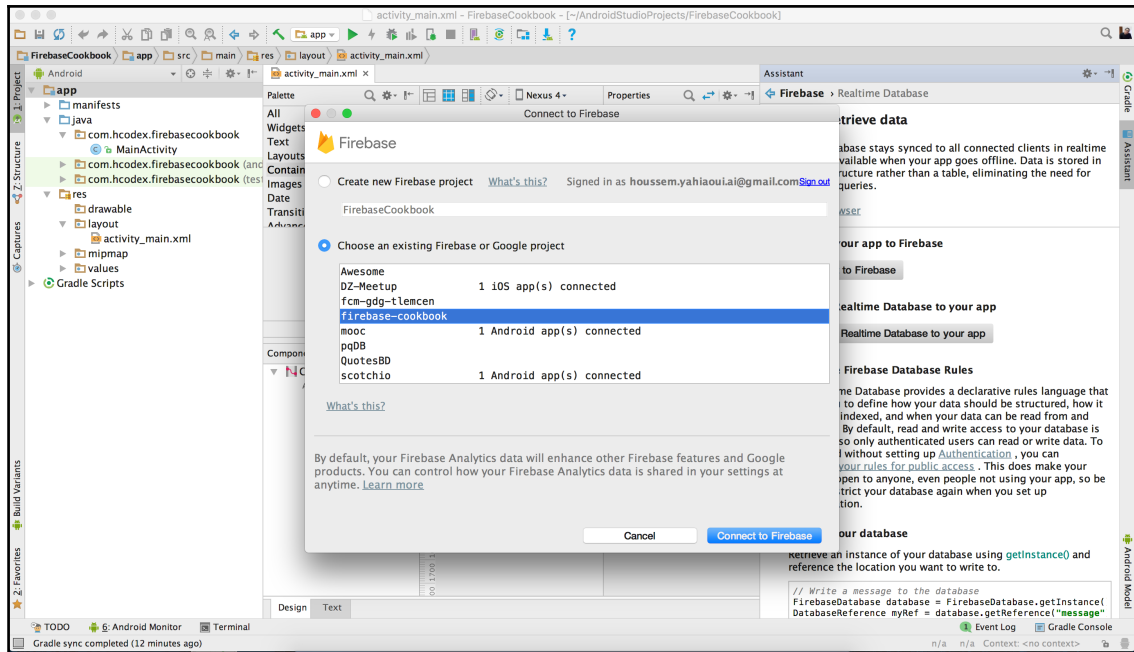












1 **Connect your app to Firebase**

**OK Connected**



# Welcome to Xcode

Version 8.3.2 (8E2002)



## Get started with a playground

Explore new ideas quickly and easily.



## Create a new Xcode project

Create an app for iPhone, iPad, Mac, Apple Watch or Apple TV.



## Check out an existing project

Start working on something from an SCM repository.

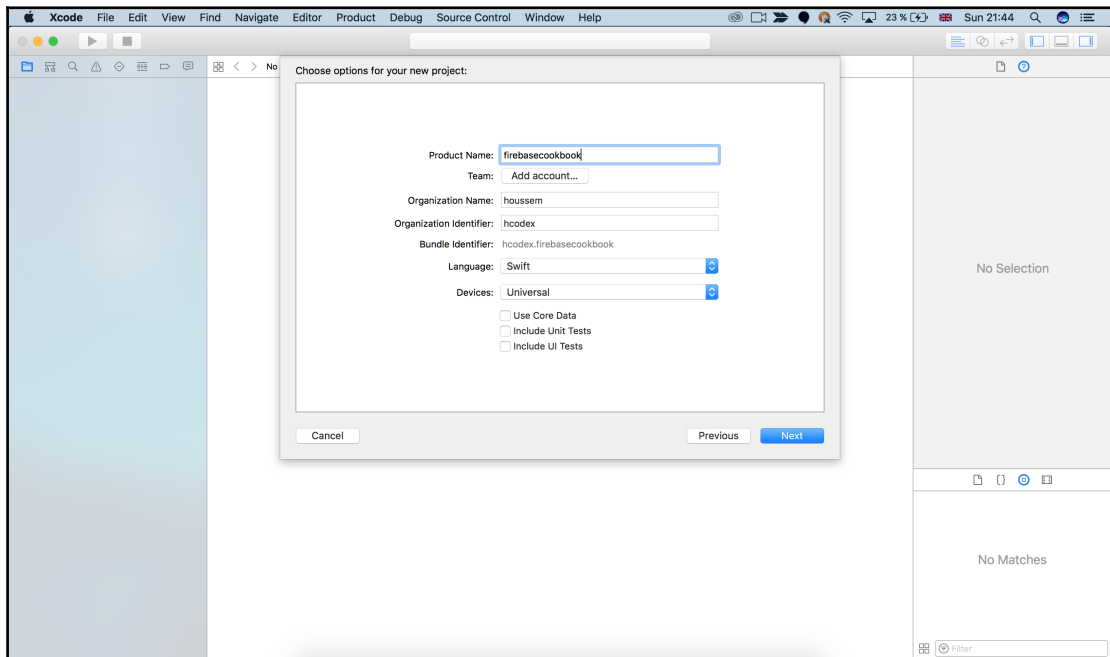


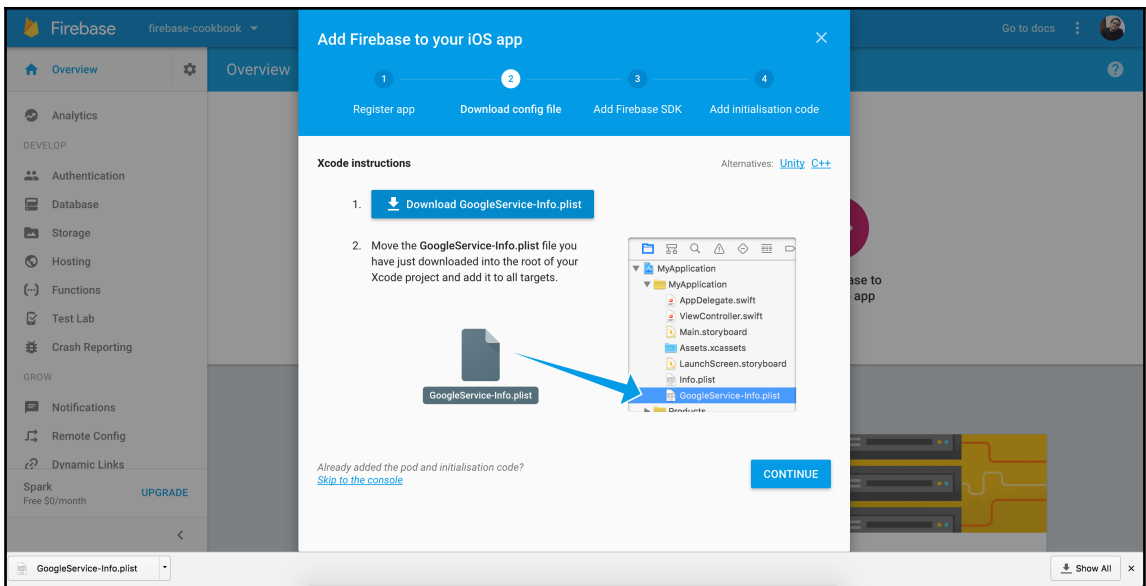
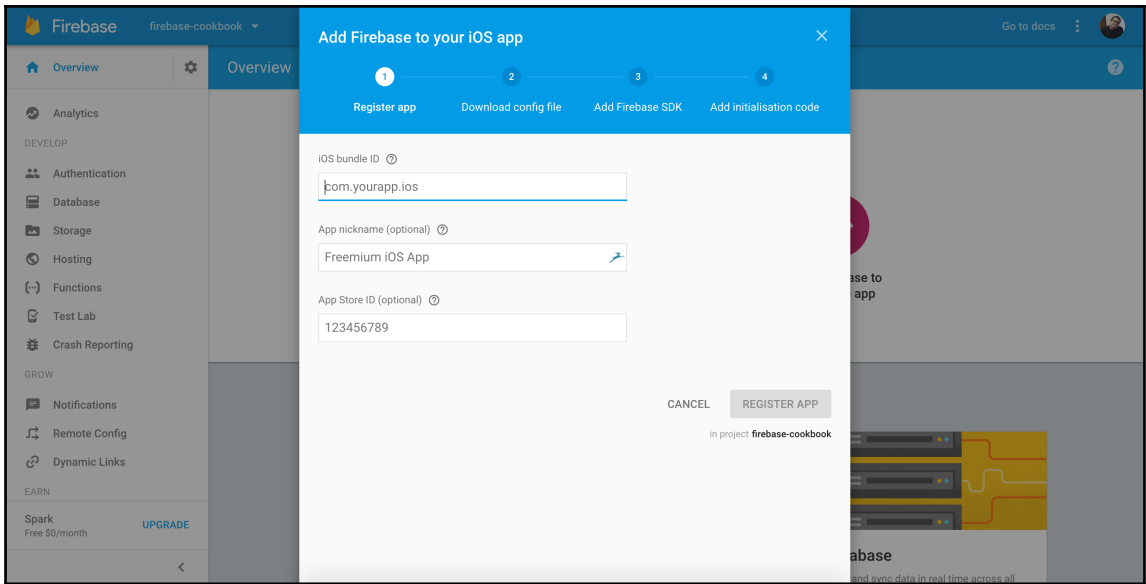
hl  
~/Desktop/my-oss

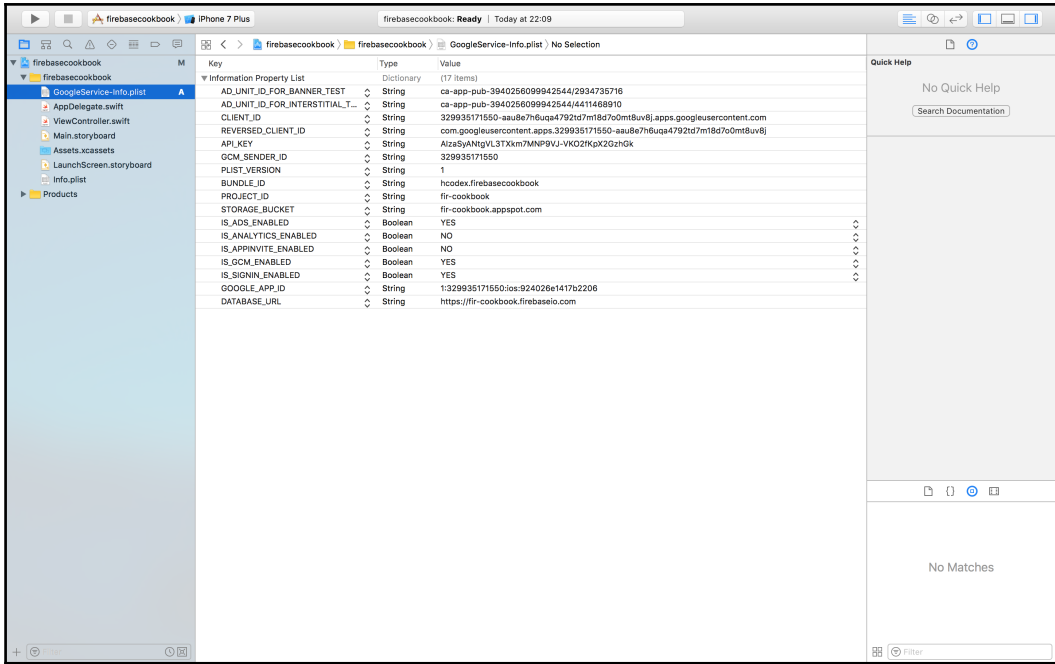


ThoughtToPoint  
...top/my-oss/iOS Project/Thought/thoughts

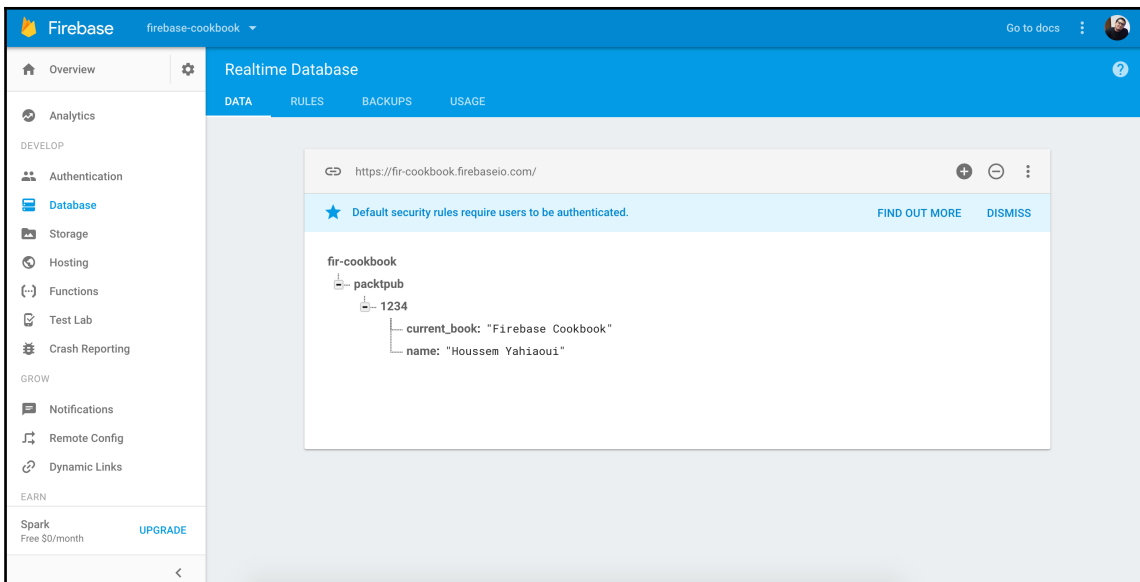
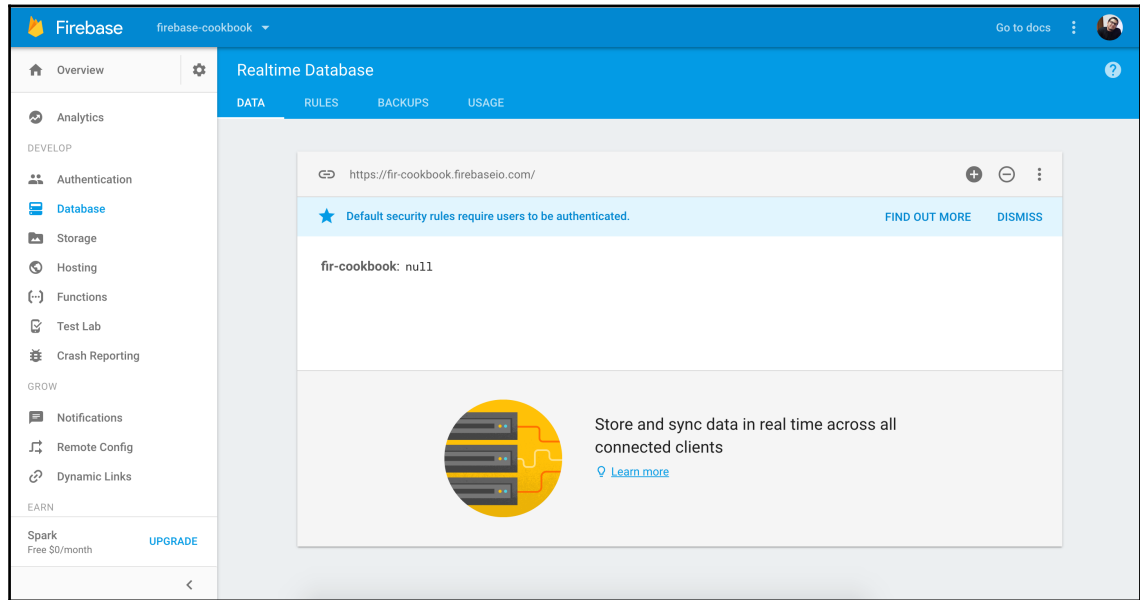
Open another project...





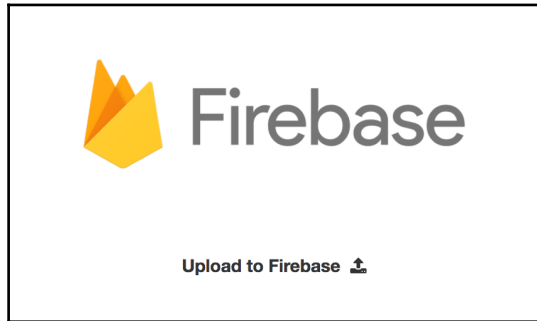


# Chapter 2: Firebase Real-Time Database



# Chapter 3:

## File Management with Firebase Storage



```
firebasestorage.googleapis.com/v0/b/fir-cookbook.appspot.com/o?name=images%2FScreen%20Shot%202017-06-04%20at%202.06.38%20AM.png:1
POST https://firebasestorage.googleapis.com/v0/b/fir-cookbook.appspot.com/o?name=images%2FScreen%20Shot%202017-06-04%20at%202.06.38%20AM.png 403 ( )
index.html:66
e {code_: "storage/Unauthorized", message_: "Firebase Storage: User does not have permission to..images/Screen Shot 2017-06-04
at 2.06.38 AM.png'." , serverResponse_: "{ \"error\": { \"code\": 403, \"message\": \"Pe..n denied. Could not perform this
operation\" } }", name_: "FirebaseError"}
code_: "storage/Unauthorized"
message_: "Firebase Storage: User does not have permission to access 'images/Screen Shot 2017-06-04 at 2.06.38 AM.png'."
name_: "FirebaseError"
serverResponse_: "{ \"error\": { \"code\": 403, \"message\": \"Permission denied. Could not perform this operation\" } }"
code: (...)
message: (...)
name: (...)
serverResponse: (...)
__proto__: Object
>
```

Firestore

firebase-cookbook

Go to docs

Overview

Storage

FILES RULES

```
1 service firebase.storage {
2   match /b/{bucket}/o {
3     match /{allPaths=**} {
4       allow read, write: if request.auth != null;
5     }
6   }
7 }
8
```

Analytics

DEVELOP

- Authentication
- Database
- Storage
- Hosting
- Functions
- Test Lab
- Crash Reporting
- Performance

GROW

- Notifications
- Remote Config
- Dynamic Links

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Firestore

firebase-cookbook

Go to docs

Overview

Storage

FILES RULES

```
1 service firebase.storage {
2   match /b/{bucket}/o {
3     match /{allPaths=**} {
4       allow read, write
5     }
6   }
7 }
8
```

Analytics

DEVELOP

- Authentication
- Database
- Storage
- Hosting
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- Test Lab
- Crash Reporting
- Performance

GROW

- Notifications
- Remote Config
- Dynamic Links

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firebase-cookbook
Go to docs

**Storage**

[FILES](#)
[RULES](#)

[gs://fir-cookbook.appspot.com](#)
UPLOAD FILE

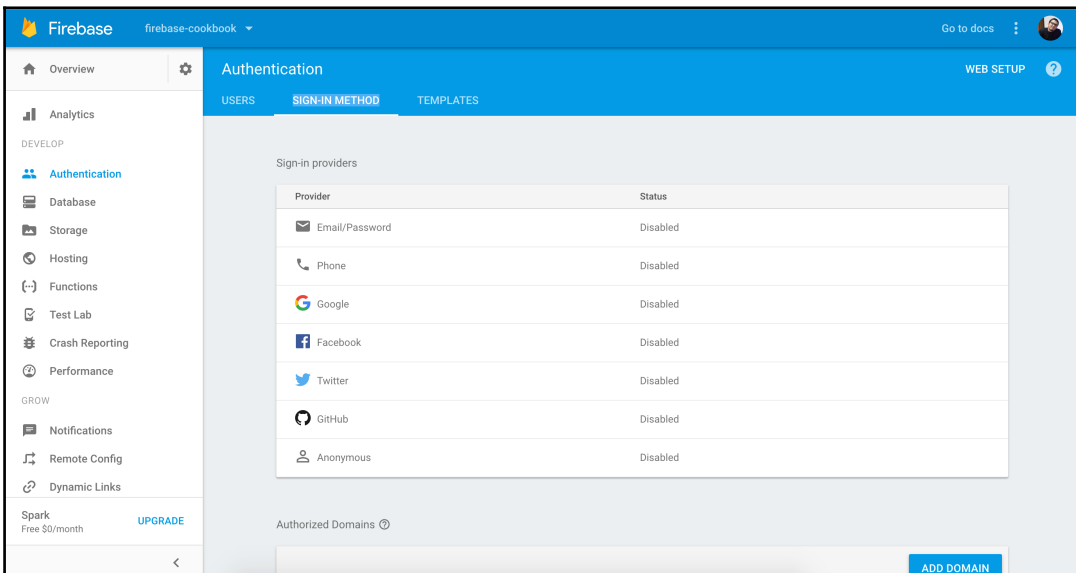
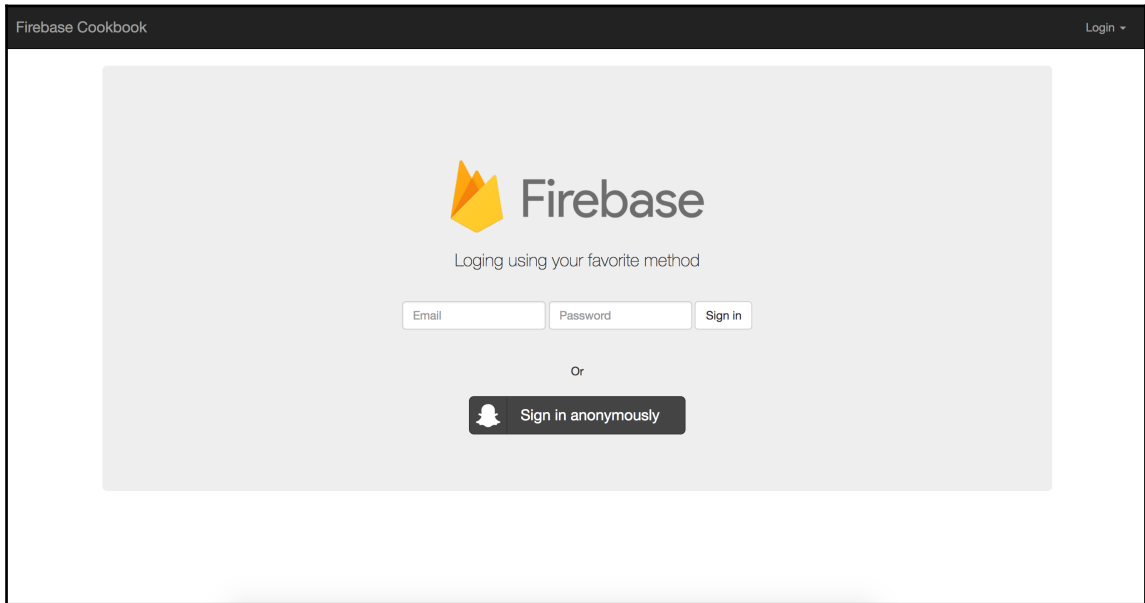
Name	Size	Type	Last modified
images/	—	Folder	—


Overview | Analytics | Authentication | Database | **Storage** | Hosting | Functions | Test Lab | Crash Reporting | Performance | Notifications | Remote Config | Dynamic Links | Spark Free \$0/month [UPGRADE](#)

Download Url : <https://firebasestorage.googleapis.com/v0/b/fir-cookbook.appspot.com/o/imaq...t%2011.44.18%20AM.png?alt=media&token=e39d5a92-811c-4227-bb26-ba6cb9536a68> [index.html:71](#)  
 file uploaded with success congrats [index.html:65](#)  
[>](#)



# Chapter 4: Firebase Authentication










**firebase-cookbook**
Go to docs

---

**Authentication**
WEB SETUP

USERS    SIGN-IN METHOD    TEMPLATES

Sign-in providers

Provider	Status
<div style="border: 1px solid #ccc; padding: 5px;">  Email/Password           </div>	<div style="text-align: right;">             Enable <input checked="" type="checkbox"/> </div> <p>               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. <a href="#">Learn more</a> </p> <div style="text-align: right;"> <span>CANCEL</span>    <span style="background-color: #007bff; color: white; padding: 2px 10px;">SAVE</span> </div>
 Phone	Disabled
 Google	Disabled
 Facebook	Disabled
 Twitter	Disabled
 GitHub	Disabled


**facebook for developers**
Products   Docs   Tools & Support   News   Videos


My Apps


---

# Connect on a global scale.


Build, grow and monetize your apps with Messenger




**Facebook Login**  
Account Creation in two taps




**Sharing on Facebook**  
Promote your app or website organically




**Facebook Analytics**  
Understand and optimize customer behavior



**Mobile Monetization**  
Monetize your mobile app or mobile website with ads



**Messenger Platform**  
Build your bot to reach 1 billion people



**Instagram Platform**  
Build tools for businesses to help them manage their presence on Instagram

View All Products

# Connect on a global scale

Build, grow and monetize your apps with Internet.org

- My Apps
- Add a New App
- Requests
- Developer Settings
- Company Settings
- Log Out of Facebook



### Facebook Login

Account Creation in two taps



### Sharing on Facebook

Promote your app or website organically



### Facebook Analytics

Understand and optimize customer behavior



### Mobile Monetization

Monetize your mobile app or mobile website with ads



### Messenger Platform

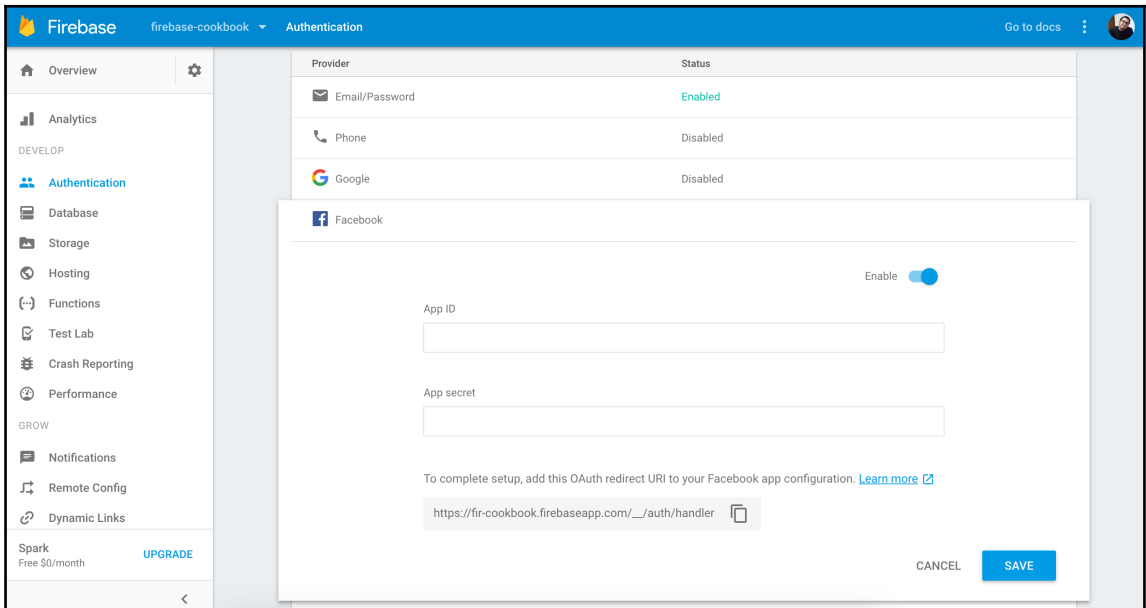
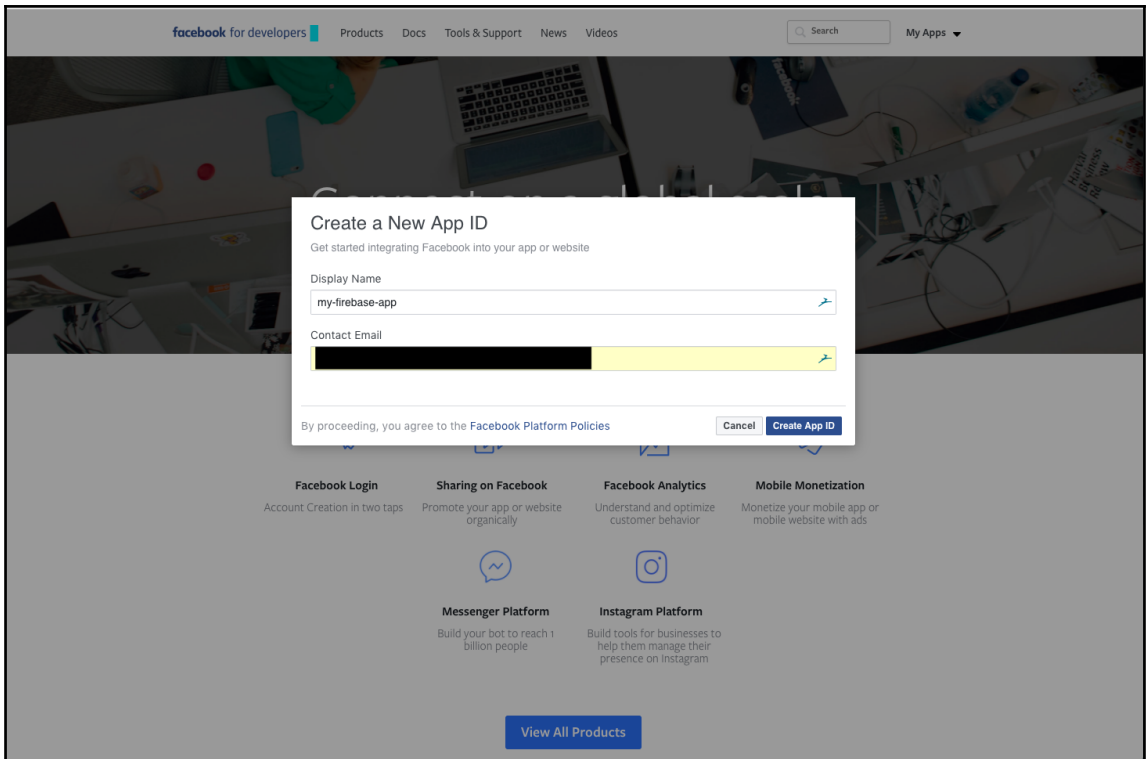
Build your bot to reach 1 billion people



### Instagram Platform

Build tools for businesses to help them manage their presence on Instagram

View All Products



APP ID: [REDACTED] View Analytics Tools & Support Docs

Easily add Facebook Login to your app with our Quickstart

### Client OAuth Settings

Client OAuth Login  
Enables the standard OAuth client token flow. Secure your application and prevent abuse by locking down which token redirect URIs are allowed with the options below. Disable globally if not used. [?]

Web OAuth Login  
Enables web based OAuth client login for building custom login flows. [?]

Embedded Browser OAuth Login  
Enables browser control redirect uri for OAuth client login. [?]

Force Web OAuth Reauthentication  
When on, prompts people to enter their Facebook password in order to log in on the web. [?]

Use Strict Mode for Redirect URIs  
Only allow redirects that use the Facebook SDK or that exactly match the Valid OAuth Redirect URIs. Strongly recommended. [?]

Valid OAuth redirect URIs

[?]  
Enables browser control redirect uri for smart TV [?]


### Deauthorize

Deauthorize Callback URL

What should we ping when a user deauthorizes your app?

Discard Save Changes

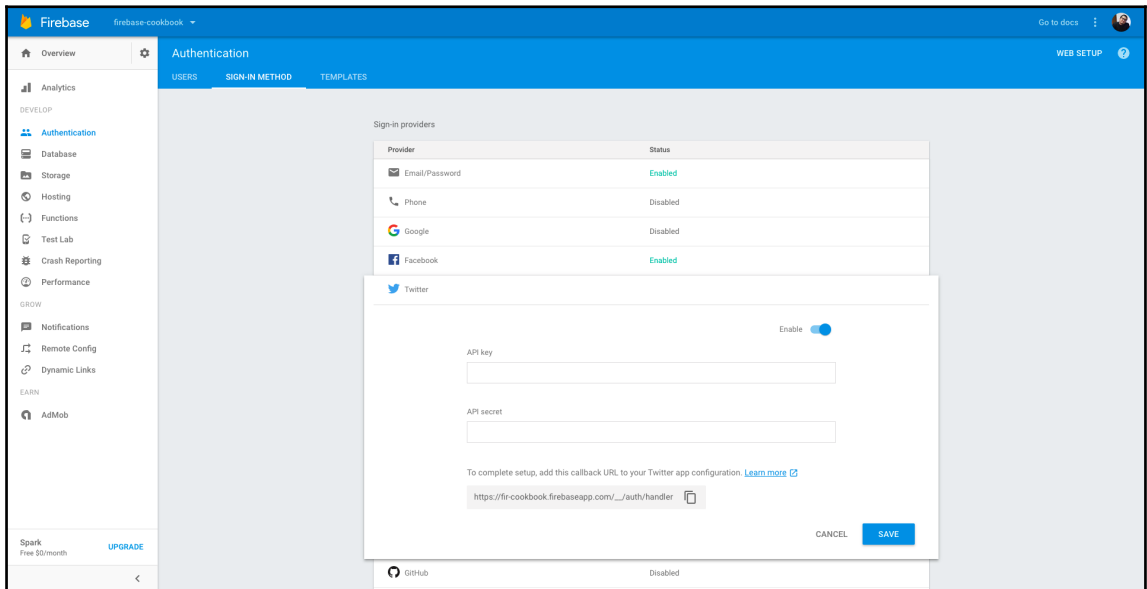
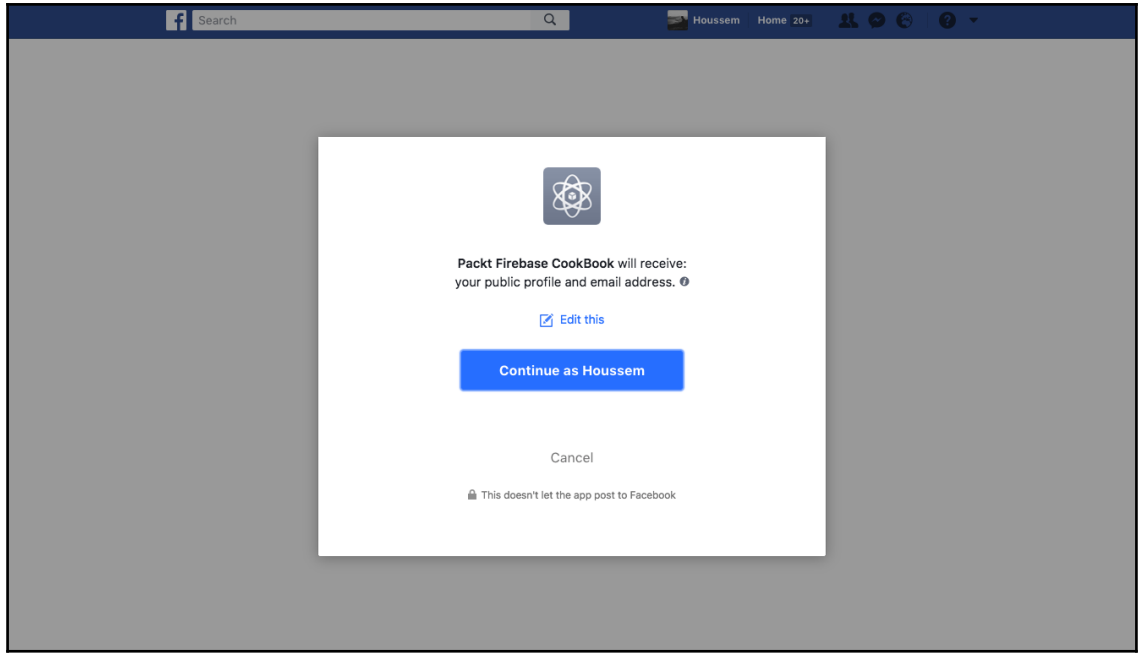
Firestore Cookbook Login



Logging using your favorite method

Email  Password


Or







Logging using your favorite method

Or

 Sign in anonymously

 Sign in with Twitter

 Sign in with Facebook



## Authorize Packt Firebase Cookbook to use your account?



Packt Firebase Cookbook  
fir-cookbook.firebaseio.com/

Firestore - Twitter connection proof of concept

Authorize app

Cancel

### This application will be able to:

- Read Tweets from your timeline.
- See who you follow.


### Will not be able to:

- Follow new people.
- Update your profile.
- Post Tweets for you.
- Access your direct messages.
- See your email address.
- See your Twitter password.

You can revoke access to any application at any time from the [Applications tab](#) of your Settings page.

By authorizing an application you continue to operate under [Twitter's Terms of Service](#). In particular, some usage information will be shared back with Twitter. For more, see our [Privacy Policy](#).




firebase-cookbook
Go to docs

**Authentication**
WEB SETUP

USERS    SIGN-IN METHOD    TEMPLATES

Sign-in providers

Provider	Status
Email/Password	Enabled
Phone	Disabled
Google	Enable <input checked="" type="checkbox"/>
Facebook	Enabled
Twitter	Enabled
GitHub	Disabled
Anonymous	Enabled


Google sign-in is automatically configured on your connected iOS and web apps. To set up Google sign-in for your Android apps, you need to add the [SHA1 fingerprint](#) for each app on your [Project Settings](#).

Whitelist client IDs from external projects (optional)

Web SDK configuration (optional)

Spark  
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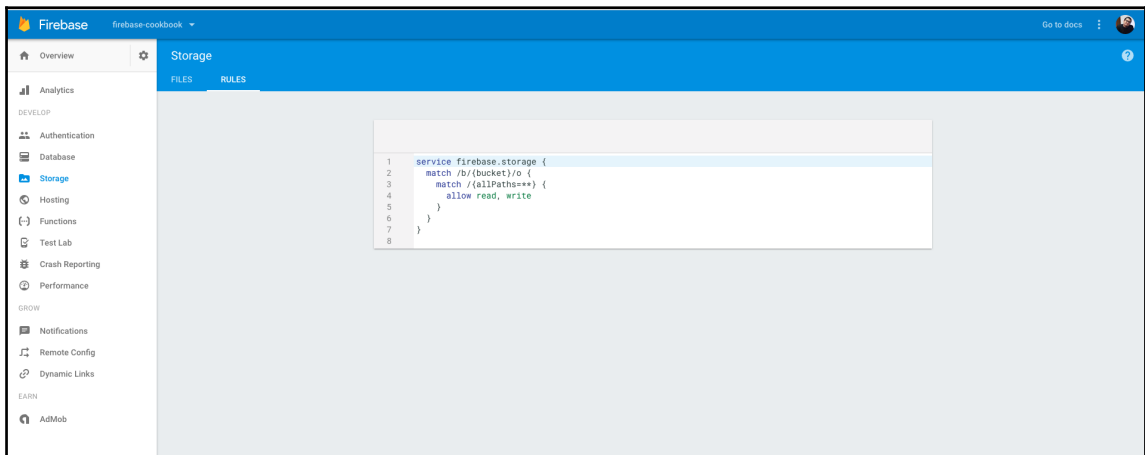
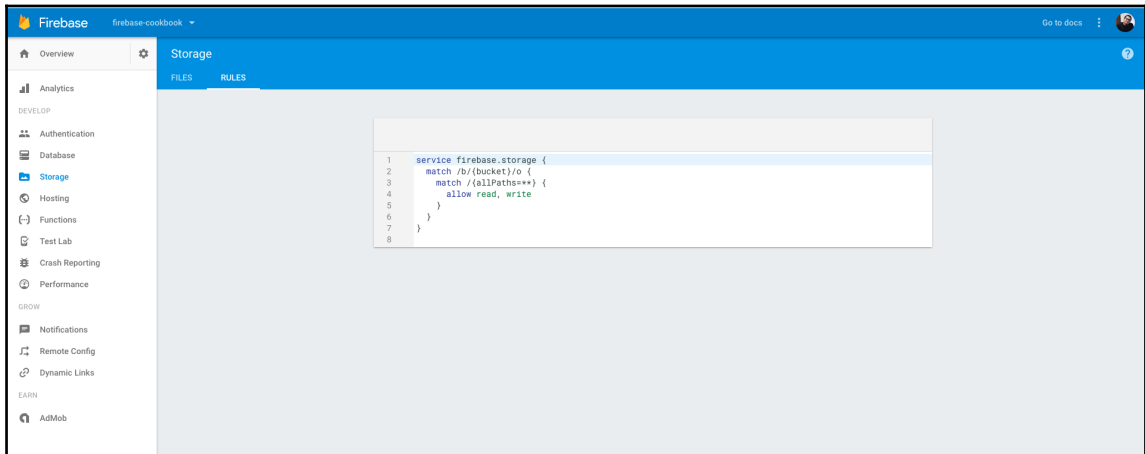
Firebase Cookbook Login



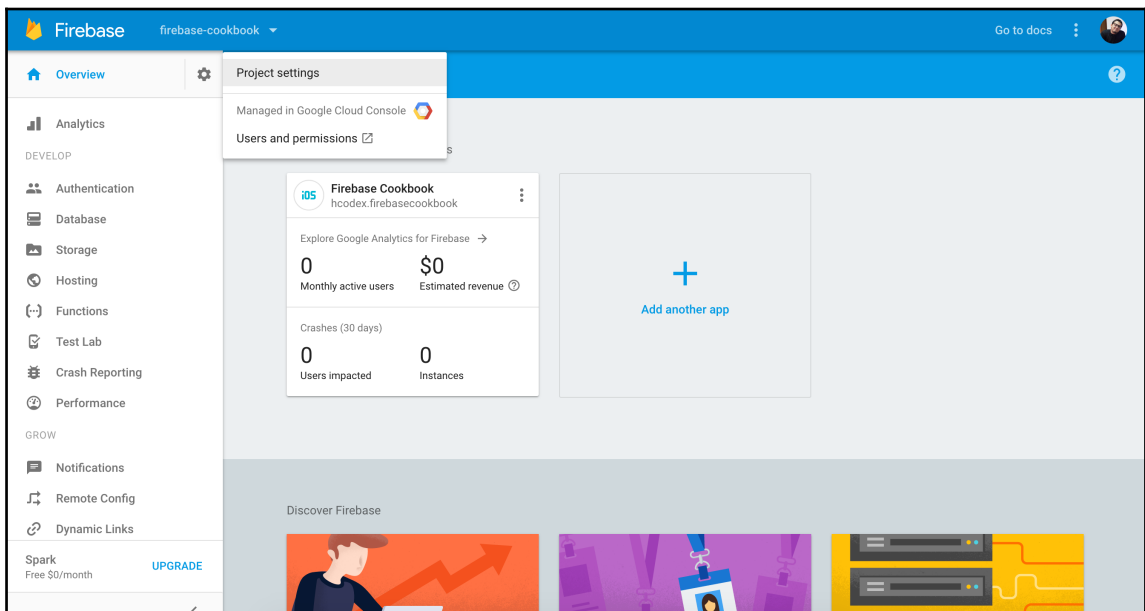
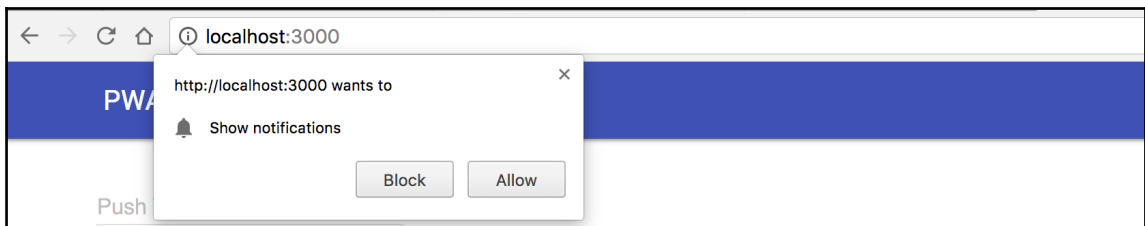
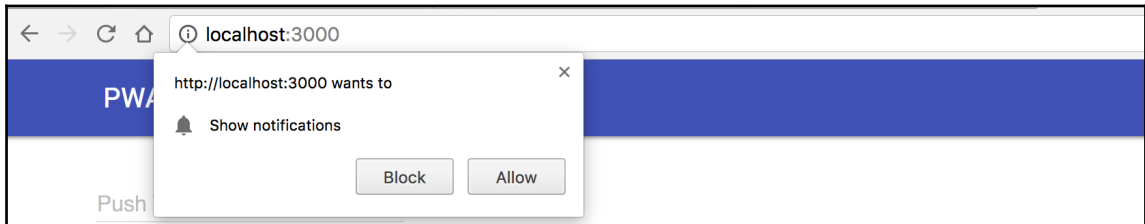
Logging using your favorite method

Or

# Chapter 5: Securing Application Flow with Firebase Rules



# Chapter 6: Progressive Applications Powered by Fireba se



firebase-cookbook

Go to docs

# Settings

GENERAL CLOUD MESSAGING ANALYTICS ACCOUNT LINKING SERVICE ACCOUNTS

Project credentials

[ADD SERVER KEY](#)

Key	Token
Server key	AAAAATNGiL94:APA91bFW1rYA74AUJaT_1A7JRhwbdS-W7lUKcQl9rxJJFSF6nGeN3laKXGlmY4wRRm3_qjL CmZiyvp8v93cARV5FaxYC7FH1fmJzk9SWL_ALpNbEsTzZ6EIfaj1Hg0v5SToIkphmEFP
Legacy server key <a href="#">?</a>	AlzaSyCK-ZX1PtOoAApw5mc_9m_ve3ZiIR_Fv7M
Sender ID <a href="#">?</a>	
329935171550	

iOS app configuration

iOS apps	
<b>iOS</b> <b>Firestore Cookbook</b> Not configured for Cloud Messaging	Firestore Cloud Messaging can use either an APNs authentication key or APNs certificate to connect with APNs
	<b>APNs Authentication Key</b>

Analytics

DEVELOP

- Authentication
- Database
- Storage
- Hosting
- Functions
- Test Lab
- Crash Reporting
- Performance

GROW

- Notifications
- Remote Config
- Dynamic Links

Spark  
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# Chapter 7: Firebase Admin SDK

The screenshot shows the Firebase console interface for the 'firebase-cookbook' project. The 'Settings' page is open, specifically the 'SERVICE ACCOUNTS' tab. The 'Firebase Admin SDK' section is active, displaying configuration options and a code snippet. The 'Legacy credentials' section shows the 'firebase-adminsdk-' prefix. The 'Admin SDK configuration snippet' section has radio buttons for 'Node.js' (selected), 'Java', and 'Python'. Below the snippet is a 'GENERATE NEW PRIVATE KEY' button. The left sidebar contains navigation options for various Firebase services, and the bottom left shows the 'Spark' plan with an 'UPGRADE' button.

**Settings**  
GENERAL CLOUD MESSAGING ANALYTICS ACCOUNT LINKING SERVICE ACCOUNTS

Manage all service accounts

**Over** Firebase Admin SDK

**Crash Reporting**

Legacy credentials

**Database Secrets**

Your Firebase service account can be used to authenticate multiple Firebase features, such as Database, Storage and Auth, programmatically via the unified Admin SDK. [Learn more](#)

Firebase service account  
firebase-adminsdk-████████████████████

Admin SDK configuration snippet

Node.js  Java  Python

```
var admin = require("firebase-admin");  
var serviceAccount = require("path/to/serviceAccountKey.json");  
  
admin.initializeApp({  
  credential: admin.credential.cert(serviceAccount),  
  databaseURL: "https://fir-cookbook.firebaseio.com"  
});
```

**GENERATE NEW PRIVATE KEY**

Spark  
Free \$0/month [UPGRADE](#)

The image shows a screenshot of the Firebase Admin SDK documentation page. A modal dialog box titled "Generate new private key" is centered on the screen. The dialog contains a warning message, instructions on how to handle the key, and two buttons: "CANCEL" and "GENERATE KEY".

**Generate new private key** [X]

**⚠ Your private key gives access to your project's Firebase services. Keep it confidential and never store it in a public repository.**

Store this file securely, because your new key can't be recovered if lost

CANCEL [GENERATE KEY]

**GENERATE NEW PRIVATE KEY**

**Firestore Admin SDK**

Your Firebase service account can be used to authenticate multiple Firebase features, such as Database, Storage and Auth, programmatically via the unified Admin SDK. [Learn more](#)

```
credential: admin.credential.cert(serviceAccount),
databaseURL: "https://fir-cookbook.firebaseio.com"
});
```

# Chapter 8:

## Extend Firebase with Cloud Functions

```

  FIREBASE
  You're about to initialize a Firebase project in this directory:
  /Users/macbook/Desktop/my-oss/firebase-cookbook/web/cloudfuncs
  ? Which Firebase CLI features do you want to setup for this folder? Press Space to select features, then Enter to confirm your choices.
  ○ Database: Deploy Firebase Realtime Database Rules
  > ● Functions: Configure and deploy Cloud Functions
  ○ Hosting: Configure and deploy Firebase Hosting sites

```

```

Project Setup
First, let's associate this project directory with a Firebase project.
You can create multiple project aliases by running firebase use --add,
but for now we'll just set up a default project.
? Select a default Firebase project for this directory:
[redacted]
> firebase-cookbook (fir-cookbook)
[redacted]
[create a new project]
(Move up and down to reveal more choices)

```



You're about to initialize a Firebase project in this directory:

/Users/macbook/Desktop

Before we get started, keep in mind:

\* You are initializing in an existing Firebase project directory

? Which Firebase CLI features do you want to setup for this folder? Press Space to select features, then Enter to confirm your choices. Functions: Configure and deploy Cloud Functions

#### Project Setup

First, let's associate this project directory with a Firebase project. You can create multiple project aliases by running `firebase use --add`, but for now we'll just set up a default project.

i .firebaserc already has a default project, skipping

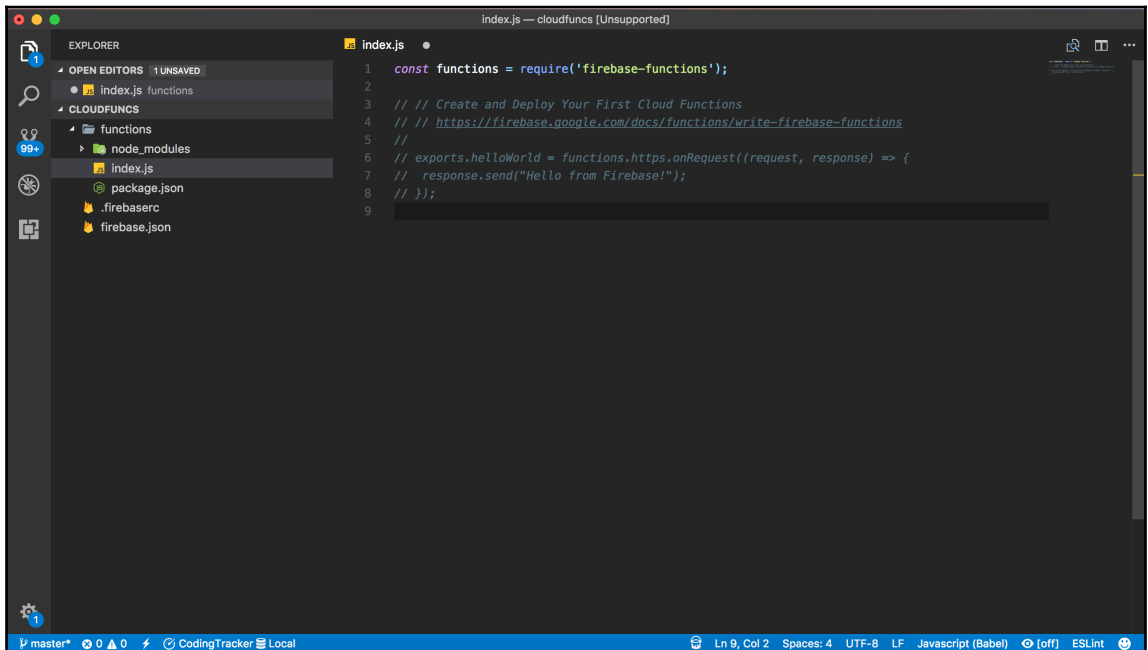
#### Functions Setup

A functions directory will be created in your project with a Node.js package pre-configured. Functions can be deployed with `firebase deploy`.

✓ Wrote functions/package.json

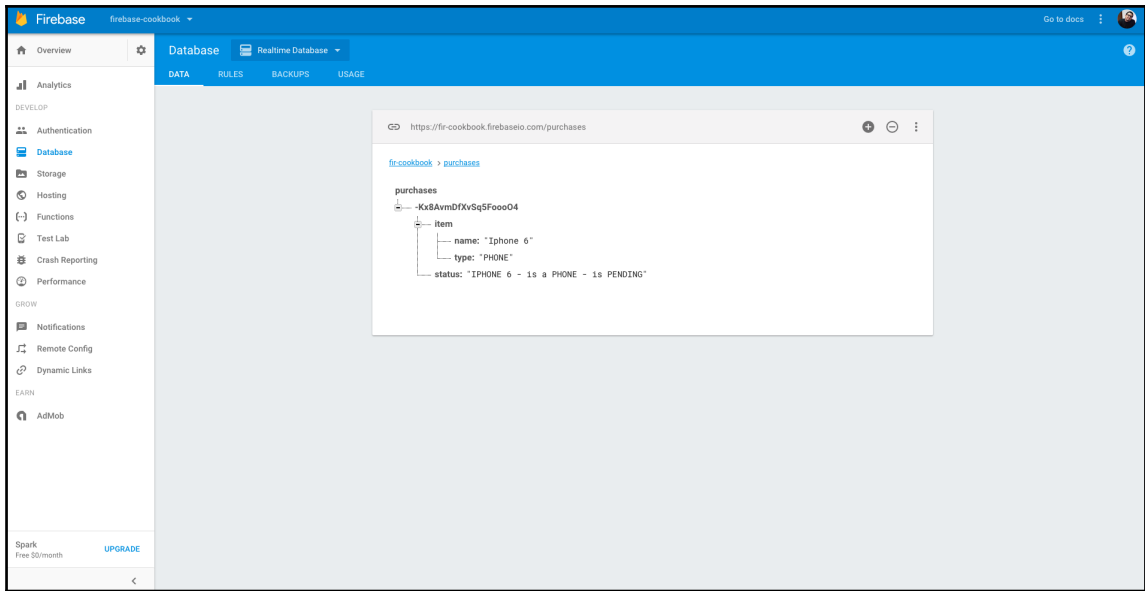
✓ Wrote functions/index.js

? Do you want to install dependencies with npm now? (Y/n)



```
index.js — cloudfuncs [Unsupported]
1  const functions = require('firebase-functions');
2
3  // // Create and Deploy Your First Cloud Functions
4  // // https://firebase.google.com/docs/functions/write-firebase-functions
5  //
6  // exports.helloWorld = functions.https.onRequest((request, response) => {
7  //   response.send("Hello from Firebase!");
8  // });
9
```



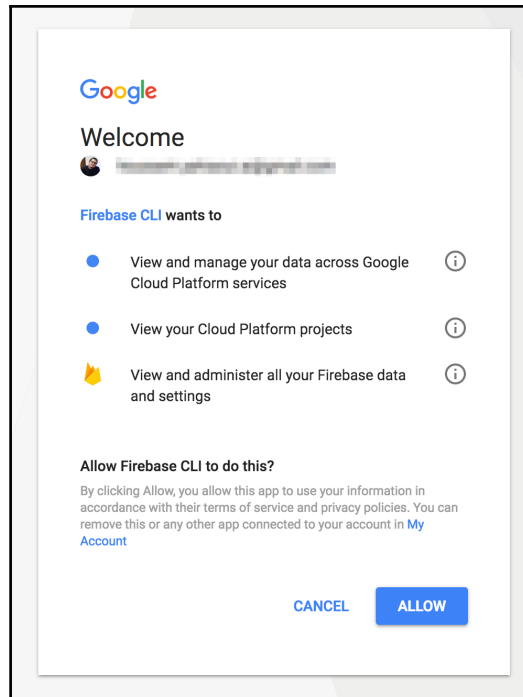


## Chapter 9: We're Done, Let's Deploy

```
x ~/Desktop/my-oss/firebase-cookbook/web/hosting master firebase login
? Allow Firebase to collect anonymous CLI usage information? Yes

Visit this URL on any device to log in:
https://accounts.google.com/o/oauth2/auth?

Waiting for authentication...
[]
```



```

FIREBASE
You're about to initialize a Firebase project in this directory:
  /Users/macbook/Desktop/my-oss/firebase-cookbook/web/hosting
? Which Firebase CLI features do you want to setup for this folder? Press Space to select features, then Enter to confirm your choices.
  ○ Database: Deploy Firebase Realtime Database Rules
  ○ Functions: Configure and deploy Cloud Functions
  > ○ Hosting: Configure and deploy Firebase Hosting sites

```

```

? Select a default Firebase project for this directory:
  [don't setup a default project]
  > firebase-cookbook (fir-cookbook)

```

```
Project Setup

First, let's associate this project directory with a Firebase project.
You can create multiple project aliases by running firebase use --add,
but for now we'll just set up a default project.

? Select a default Firebase project for this directory: firebase-cookbook (fir-cookbook)

Hosting Setup

Your public directory is the folder (relative to your project directory) that
will contain Hosting assets to be uploaded with firebase deploy. If you
have a build process for your assets, use your build's output directory.

? What do you want to use as your public directory? public
? Configure as a single-page app (rewrite all urls to /index.html)? No
✓ Wrote public/404.html
✓ Wrote public/index.html

i Writing configuration info to firebase.json...
i Writing project information to .firebaserc...

✓ Firebase initialization complete!
```

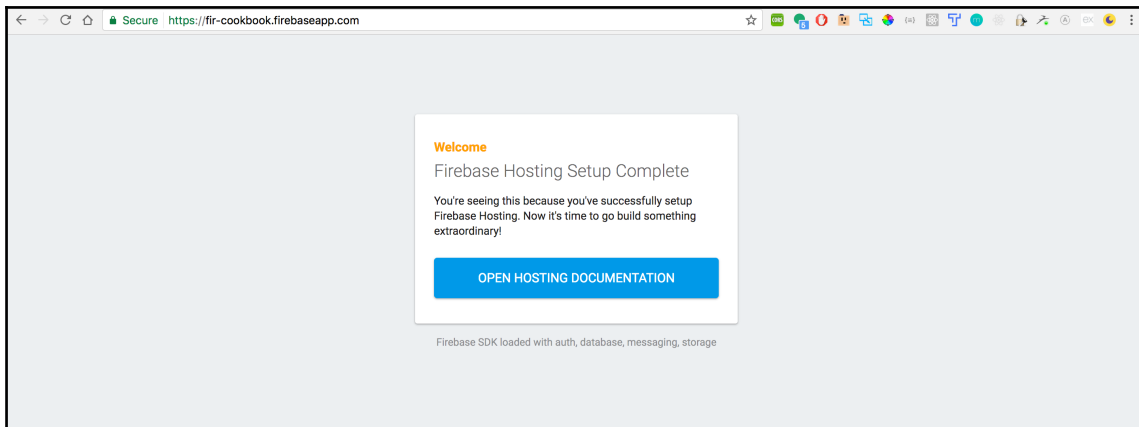
```
~/Desktop/my-oss/firebase-cookbook/web/hosting master → firebase deploy

Deploying to 'fir-cookbook'...

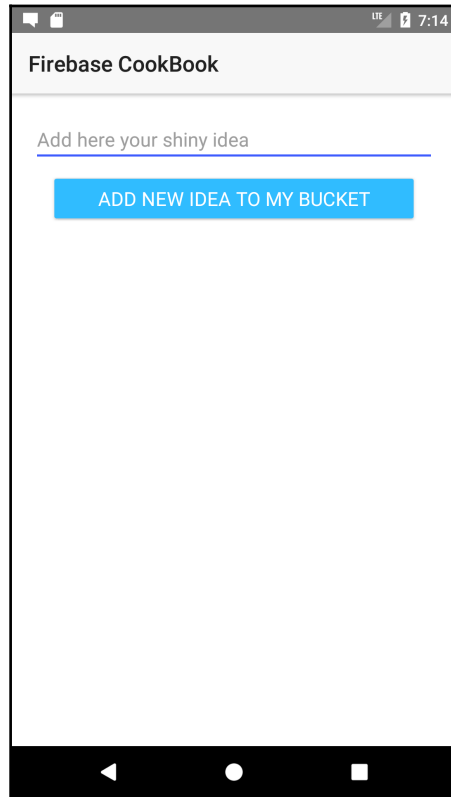
i deploying hosting
i hosting: preparing public directory for upload...
✓ hosting: 2 files uploaded successfully
i starting release process (may take several minutes)...

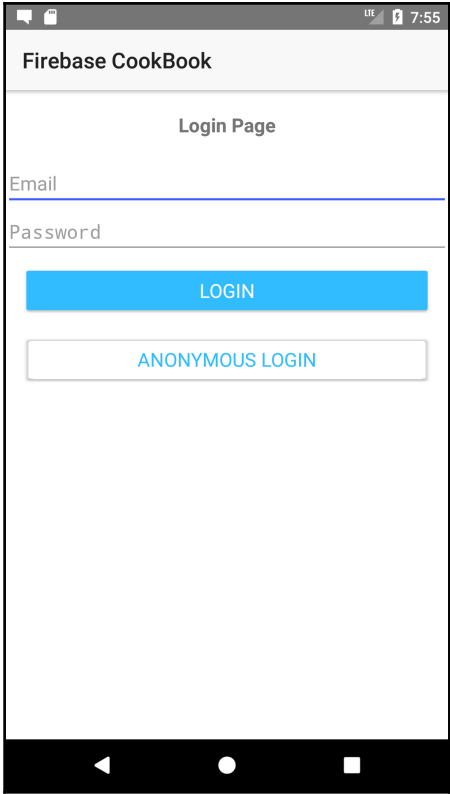
✓ Deploy complete!

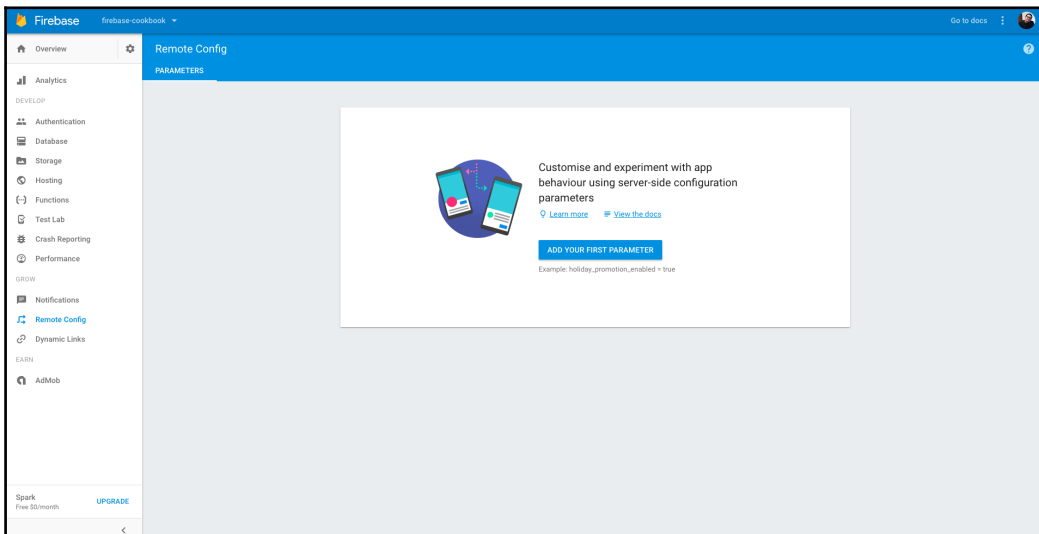
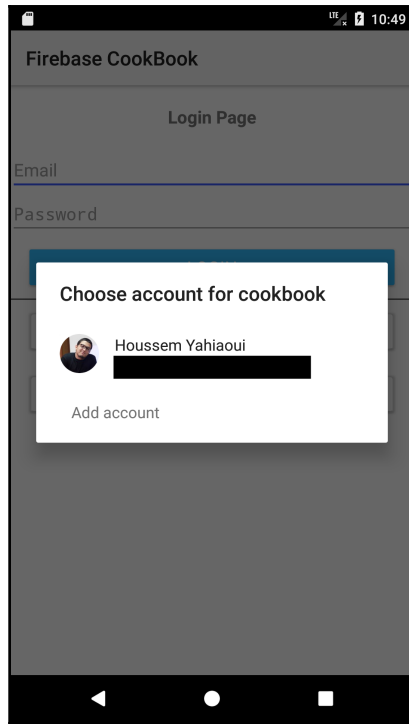
Project Console: https://console.firebase.google.com/project/fir-cookbook/overview
Hosting URL: https://fir-cookbook.firebaseio.com
```

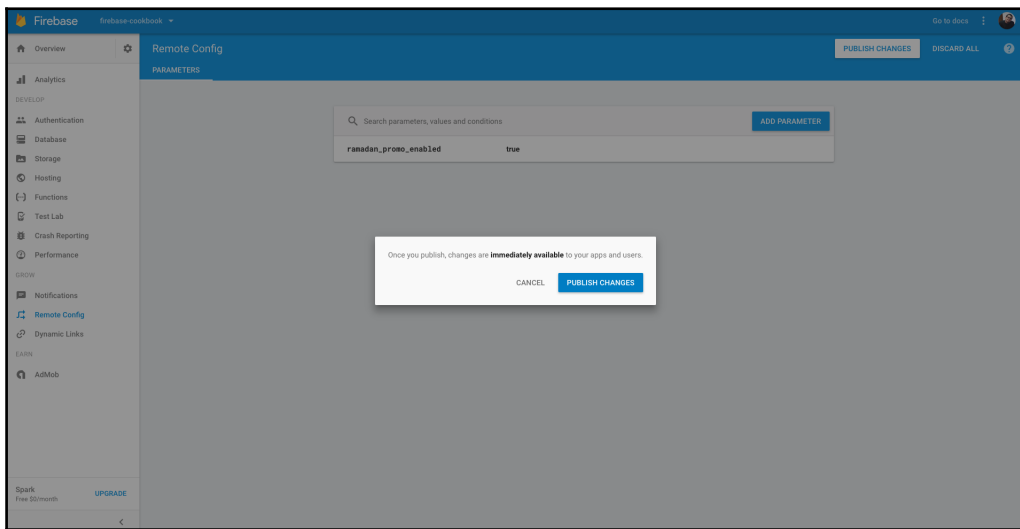
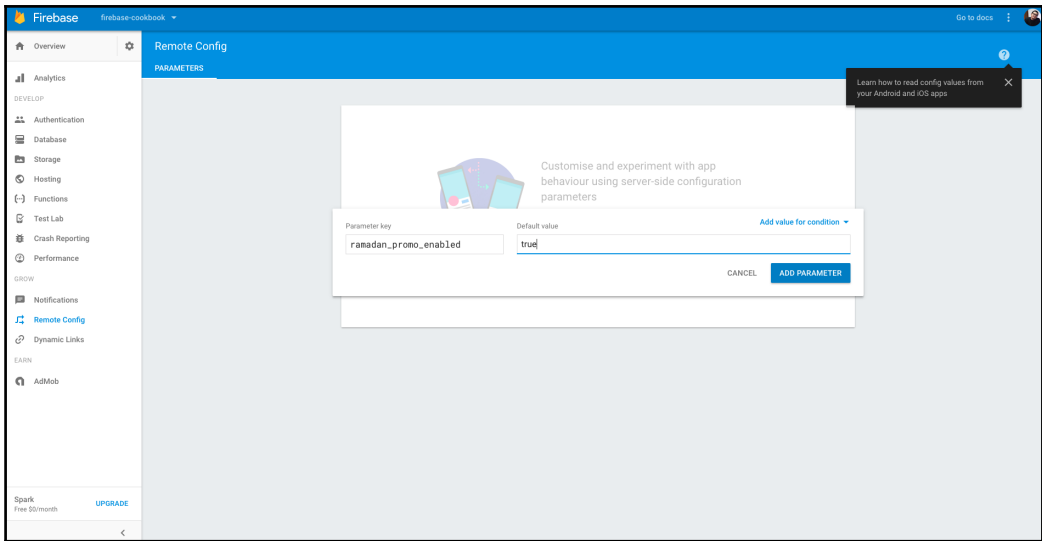


# Chapter 10: Integrating Firebase with NativeScript

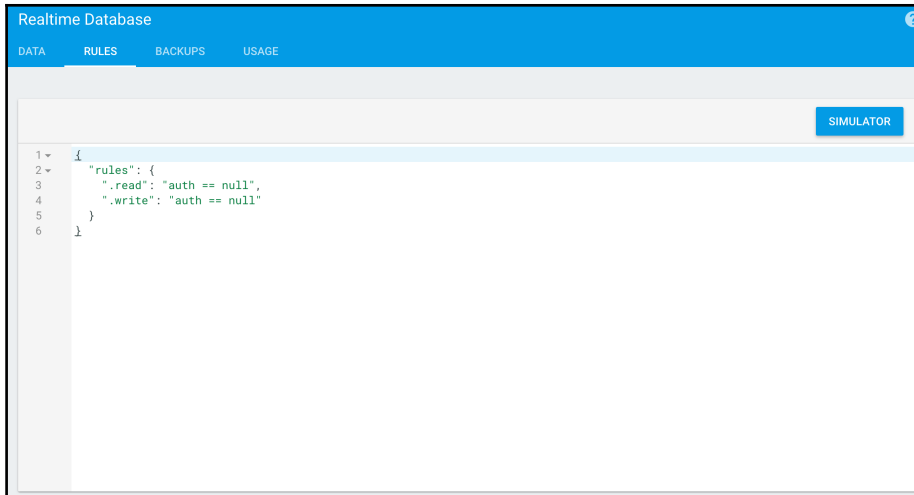
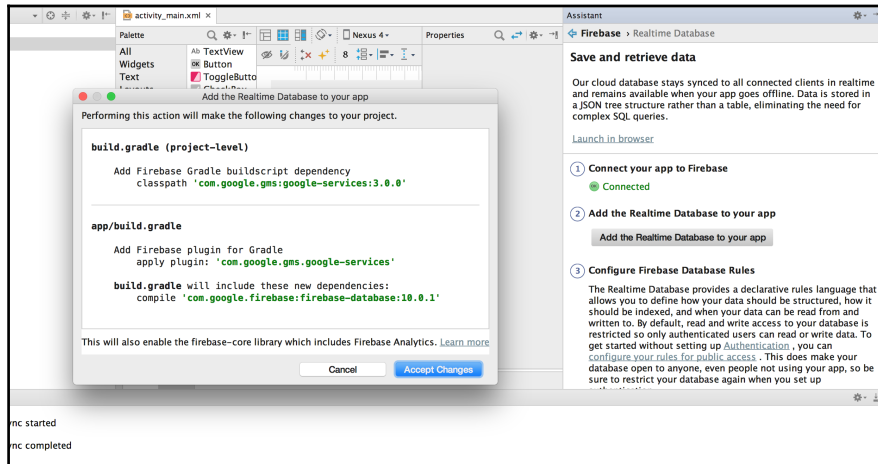








# Chapter 11: Integrating Firebase with Android/iOS Native ly





Realtime Database

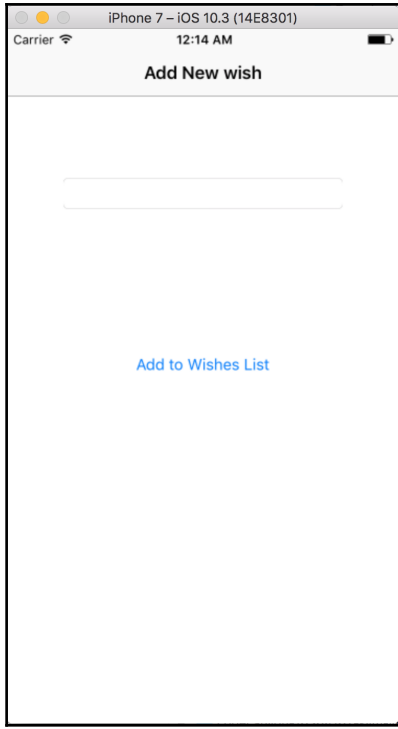
DATA RULES BACKUPS USAGE

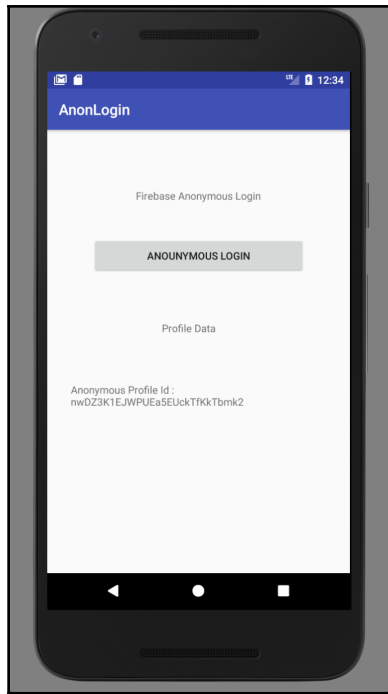
https://fir-cookbook.firebaseio.com/

```
fir-cookbook
├── wishes
│   ├── -KptbwP3pDtqkNNS77og: "Go To Paris"
│   └── -Kpte6MaKQHJFgjHjNaW: "Have A Life"
```

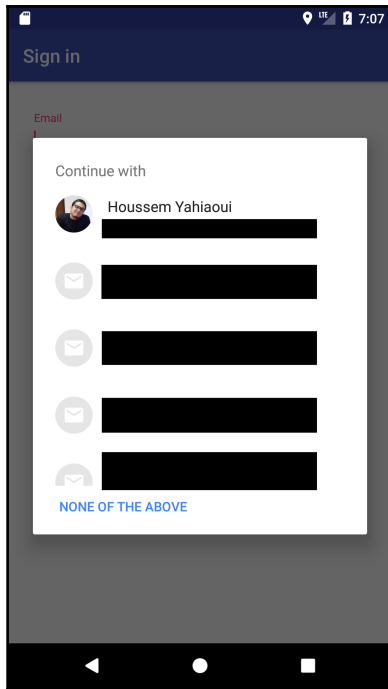
Carrier 12:14 AM

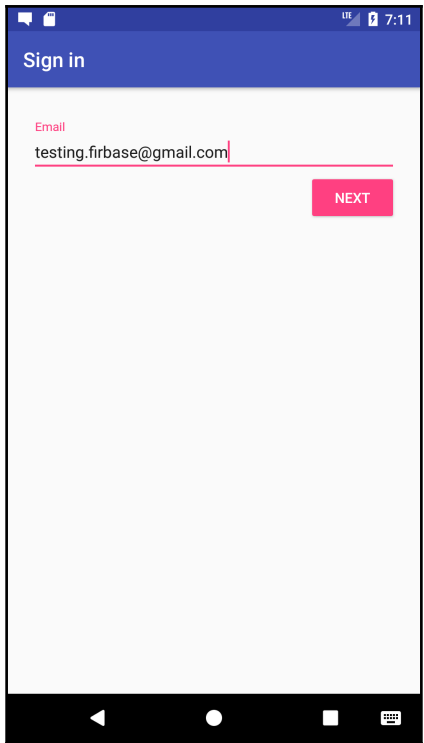
Wishes List +





[Connect Anonymously](#)





Sign up

Email  
testing.firbase@gmail.com

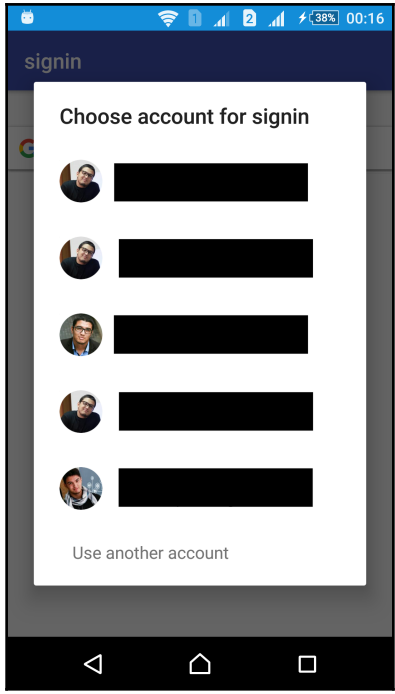
First & last name

Password

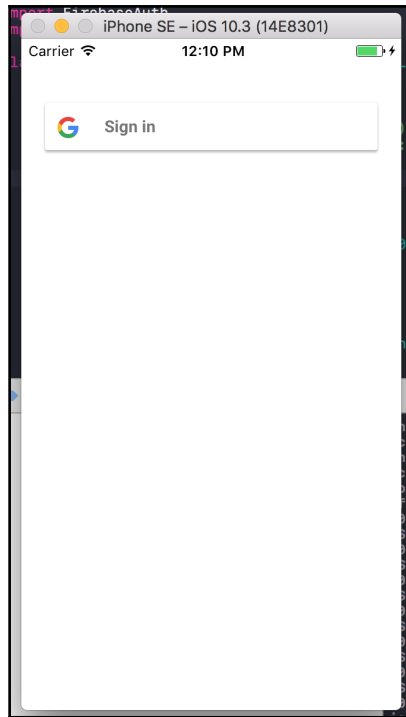
SAVE

Wish List


Sign in





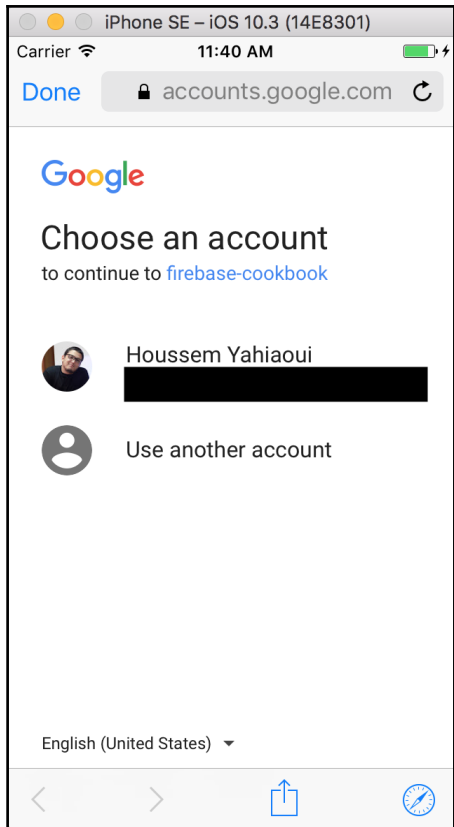


Untitled

	Identifier <input type="text" value="None"/>	URL Schemes <input type="text" value="com.googleusercontent.apps.329935171550-t7q0vaje5bkvqb5u4ij4lopct0n7f2"/>
	Icon <input type="text" value="None"/>	Role <input type="text" value="Editor"/>

▶ Additional url type properties (0)

+



# Packt Firebase CookBook

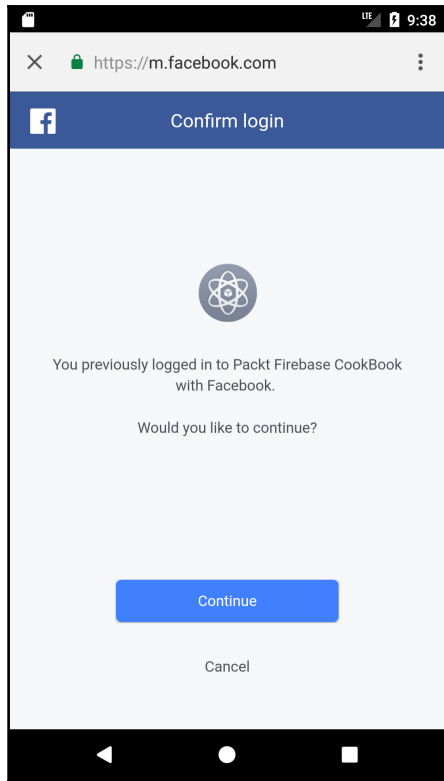
 Sign in with email

 Sign in with Google

 Sign in with Facebook

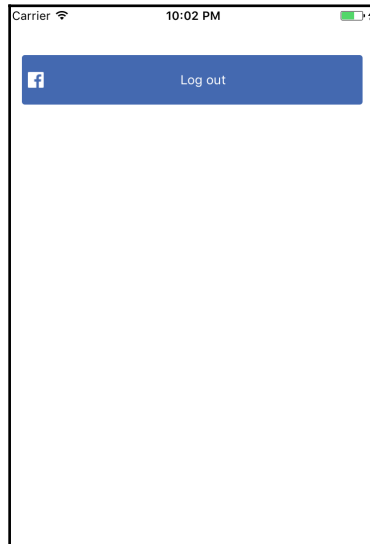
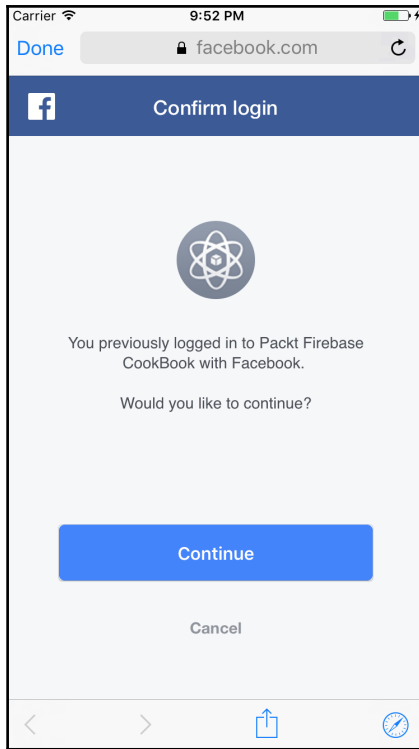


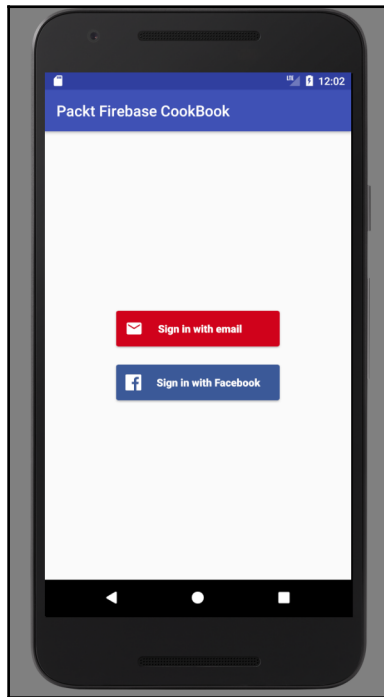
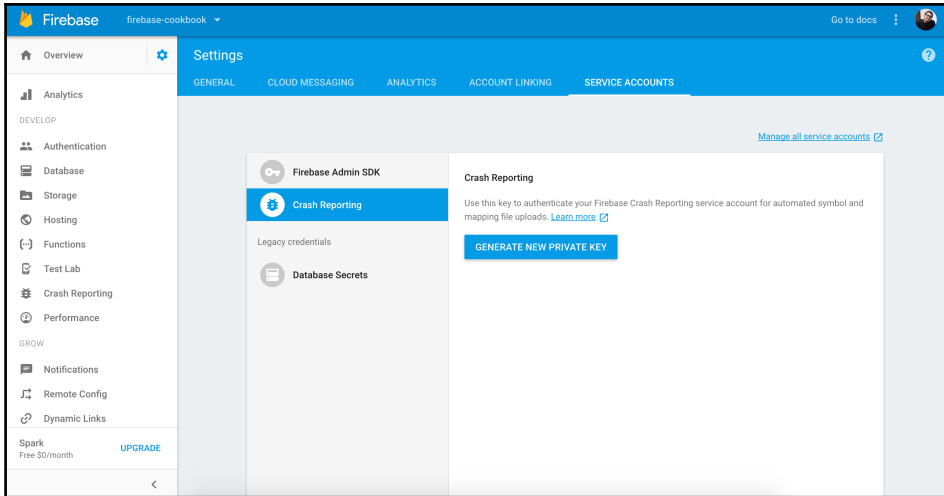




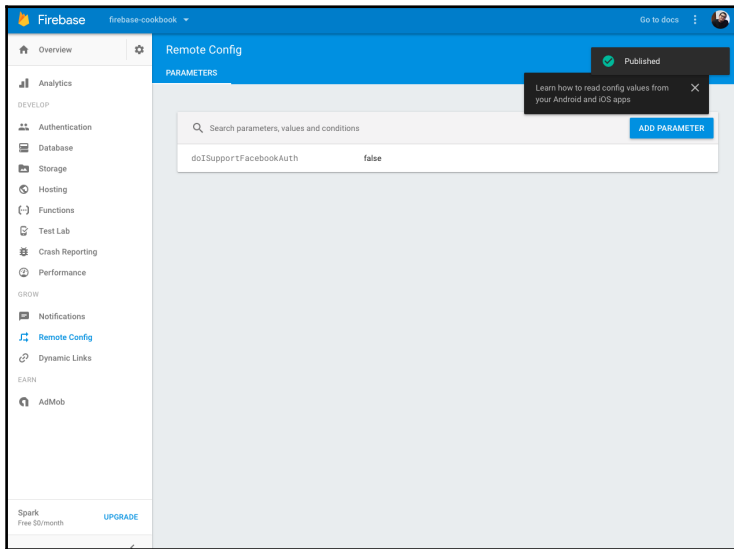
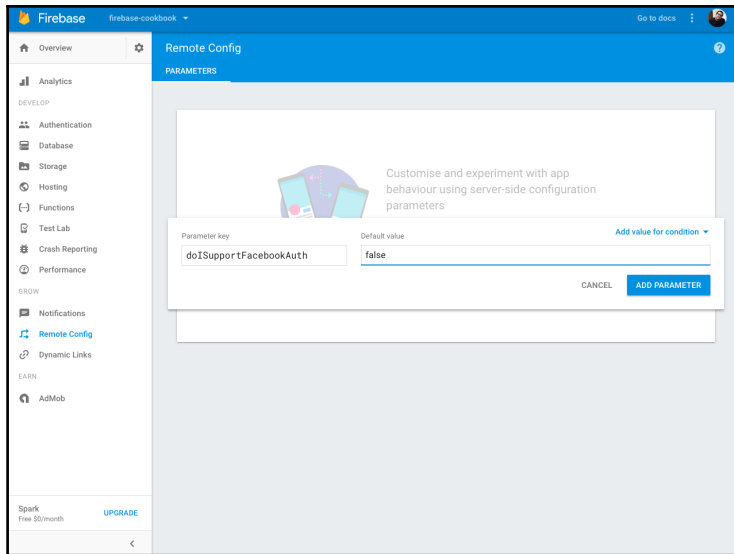


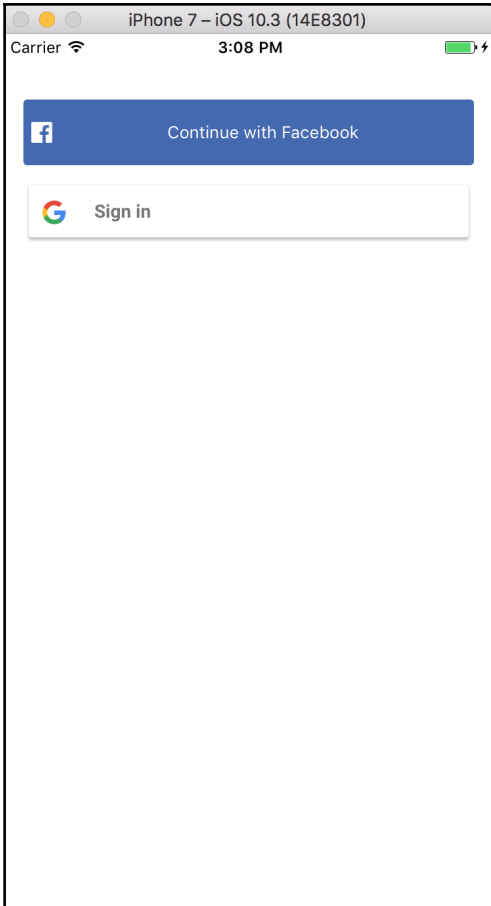
Continue with Facebook

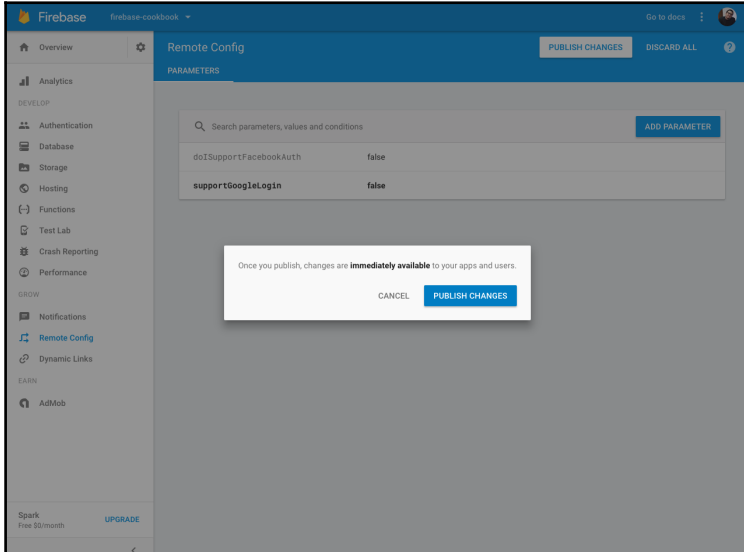
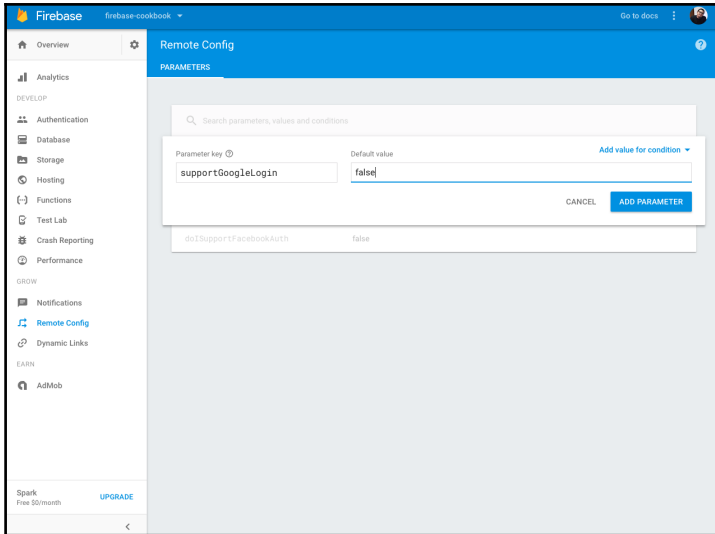




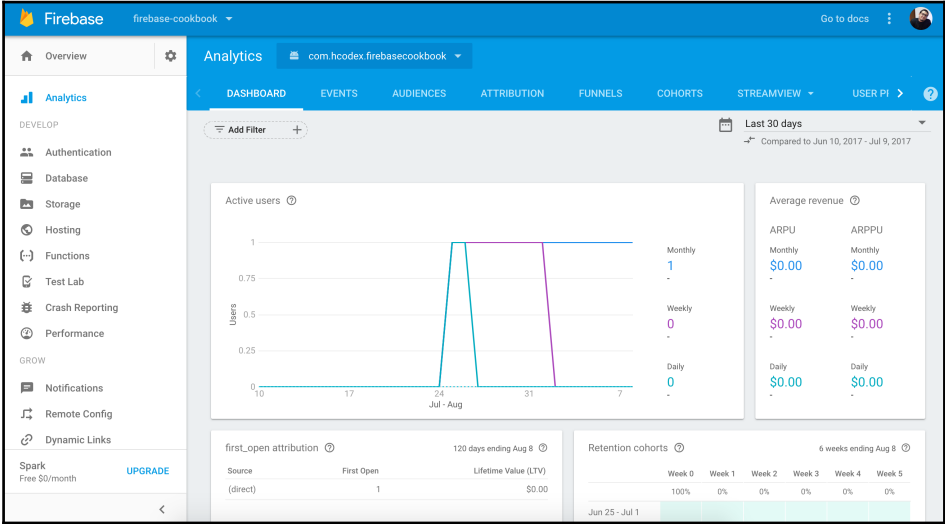









# Chapter 13: Adding Analytics and Maximizing Earnings



The screenshot shows the 'User Properties' page in the Firebase Analytics dashboard. A form is open to create a new user property. The 'User property name' is 'favorite\_movies' and the description is 'A user property that defines the users favorite movies'. There are 'CANCEL' and 'CREATE' buttons at the bottom of the form.


User property name	Description
favorite_movies	A user property that defines the users favorite movies
favorite_series	A User Property that showcase the Users favorite series.
GOT	

Ad units ? 


[EMAIL IMPLEMENTATION INSTRUCTIONS](#)


ADD AD UNIT
VIEW FILTERED REPORT ▾
MOVE
REMOVE

🔍 Search for ad units by ad unit name, ad unit ID and ad format

<input type="checkbox"/> Ad unit <sup>?</sup>	Ad unit ID <sup>?</sup>	Mediation groups <sup>?</sup>	Campaigns <sup>?</sup>	Frequency capping (per user) <sup>?</sup>
<input type="checkbox"/> Alpha Banner		0 active	0 enabled	Not applicable

Show rows 15
1 - 1 of 1
|< < > >|

× Create ad unit ? 


FirebaseCookbook  
Android


✓ Select ad format [Edit](#)  
 Ad format: **Native**

2 Name ad unit & select settings

**Introducing AdMob native ads**


**1 Design native ad styles**

Use our templates as a starting point and [customise their styles](#) to fit the design of your apps




**2 Validate ad designs instantly**

Validate custom ad styles in realtime without submitting them to a manual approval process




**3 Implement for native ads**

Use the on-screen instructions to integrate the SDK and request native ads to show in your apps




**4 Make changes on the fly**

Edit your ad units in AdMob to make changes to their native ad styles without updating your apps



GET STARTED
[Learn more](#)

× Create ad unit ? 


📱 FirebaseCookbook  
Android

✓ Select ad format [Edit](#)  
Ad format: **Native**

2 Name ad unit & select settings


**Let's select an ad size first**

• You can't change the ad size once the ad unit is saved.




**Small**

Width: 280dp - 1200dp  
Height: 80dp - 612dp



**Medium**


Width: 280dp - 1200dp  
Height: 132dp - 1200dp



**Large**

Width: 280dp - 1200dp  
Height: 250dp - 1200dp


Automatic refresh   Custom refresh rate: \_\_\_\_\_ seconds (30-120 sec)  
 Do not refresh


× Create ad unit ? 


✓ Select ad format [Edit](#)  
Ad format: **Native**

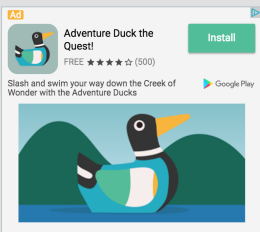
2 Name ad unit & select settings

**Select the large template that you want to customise**

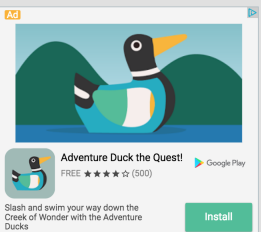




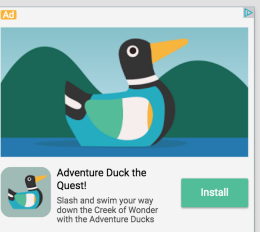




Template ID: L001



Template ID: L002



Template ID: L003

[< CHANGE TEMPLATE](#) **Customising template: L002** Size range: Width: 280dp - 1200dp Height: 250dp - 1200dp

**EDIT BASIC** **EDIT CSS** [RESET](#)

Ad type  App install  Video app install  Content

Preview settings Width: 360 dp Height: 320 dp Language: English (United Kingdom)

**Body**

Background  #FFFFFF  
Text  rgba(0,0,0,0.7)

**Title**

Text  #000000

**App info**

Price & review  rgba(0,0,0,0.5)  
Star rating  rgba(0,0,0,0.7)

**Button**

Background  #4CBE99  
Text  #FFFFFF

**URL**

Text  rgba(0,0,0,0.3)

**Ad**

**Adventure Duck the Quest!**  
FREE ★★★★★ (500) Google Play

Slash and swim your way down the Creek of Wonder with the Adventure Ducks

App install

Install

**Ad**

**Adventure Duck Goes West!**  
FREE ★★★★★ (500) Google Play

Journey your way through the Desert of Wonder with your favourite ducks!

Video app install

Install

**Ad**