Firebase Realtime Database - Read

[**Introduction**](#_9tkodqh75f0m) **1**

[**Create a project**](#_wo2g4xoo5awx) **1**

[**Add a web application to your project**](#_l0v20whdfyqs) **4**

[**Create index.html and initialize firebase application**](#_bl37wwafqr6f) **6**

[**Create Realtime Database**](#_iskf47ps6vj4) **9**

[**Update index.html to read from Realtime Database**](#_sp0jmza5iuv1) **12**

[**Test/view index.html**](#_y19q45r2mm40) **13**

[**A “complete” index.html**](#_mgskbok7twdf) **14**

[**References**](#_whor0k9m0o1d) **14**

[**Firebase - google authentication**](#_pmlorihmk63) **15**

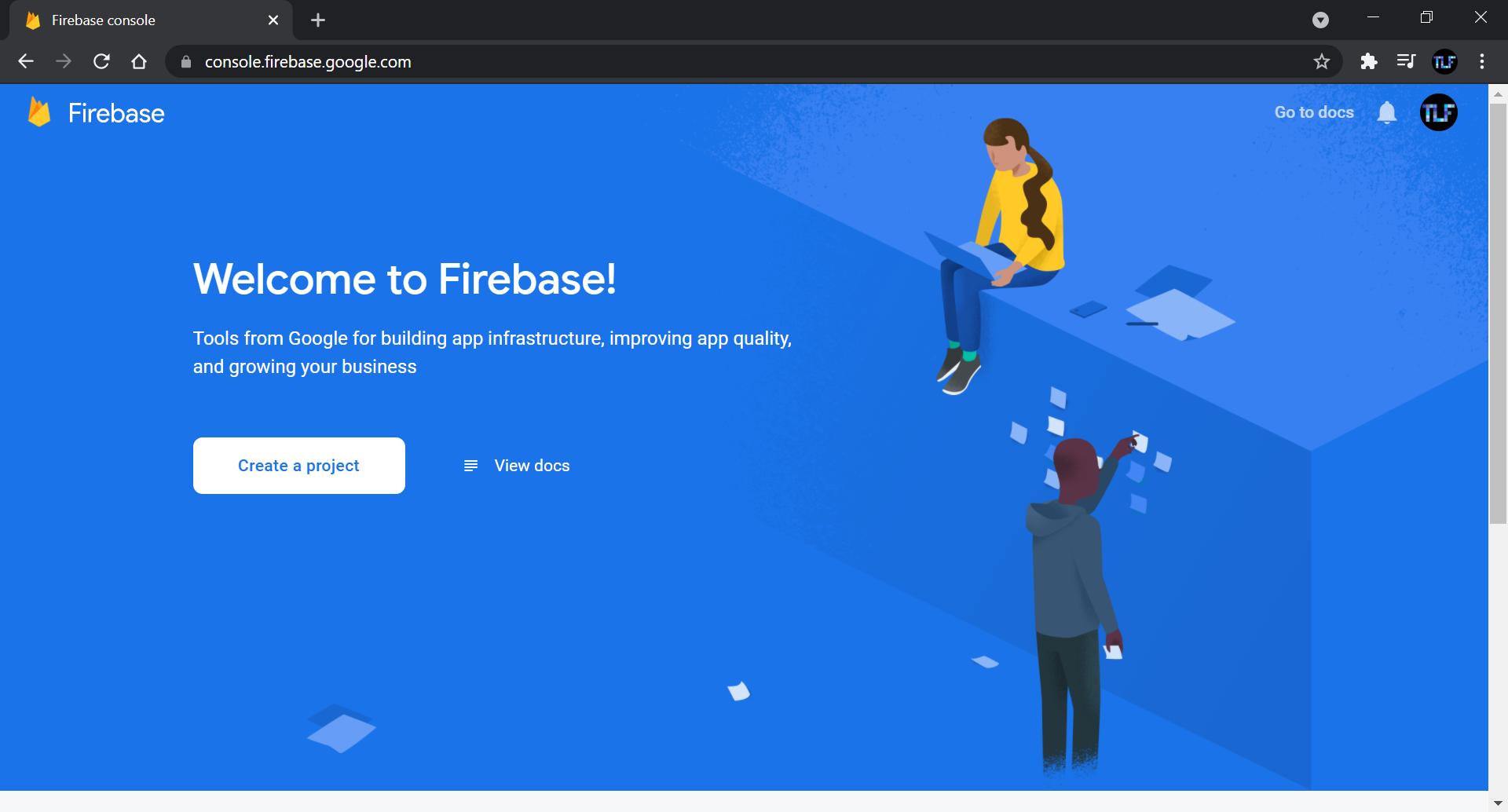
[**Create Billing Alerts**](#_dx5ry5vx05vt) **15**

# Introduction

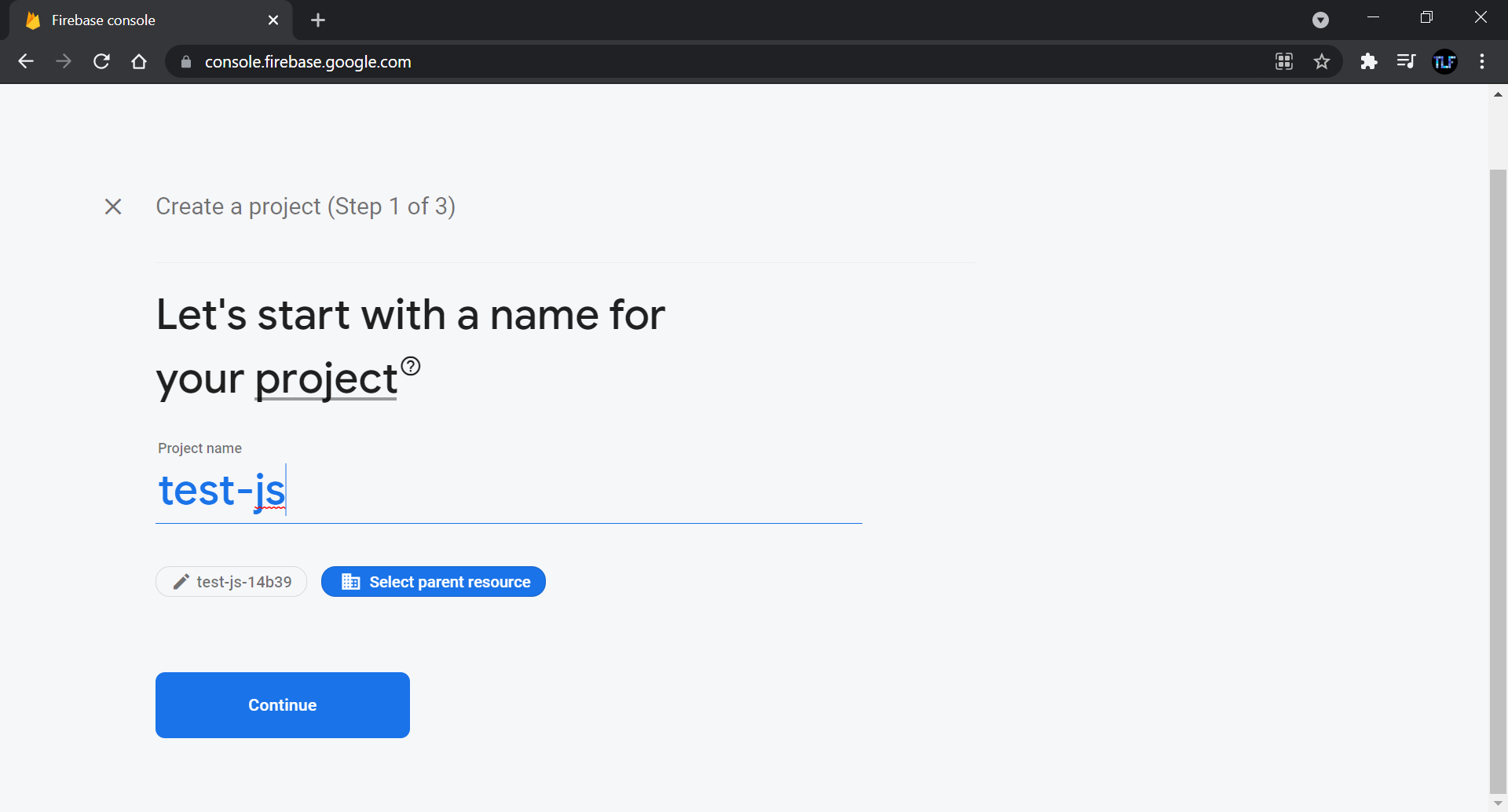
This is a step-by-step guide to create a simple web application that reads from firebase realtime database.

# Create a project

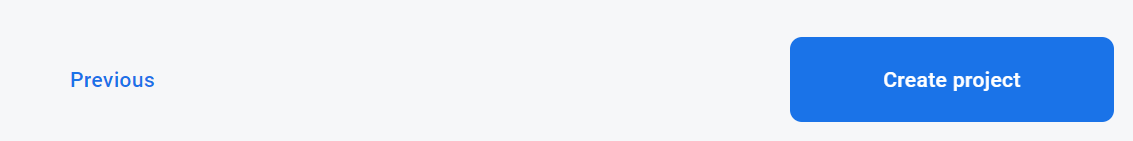
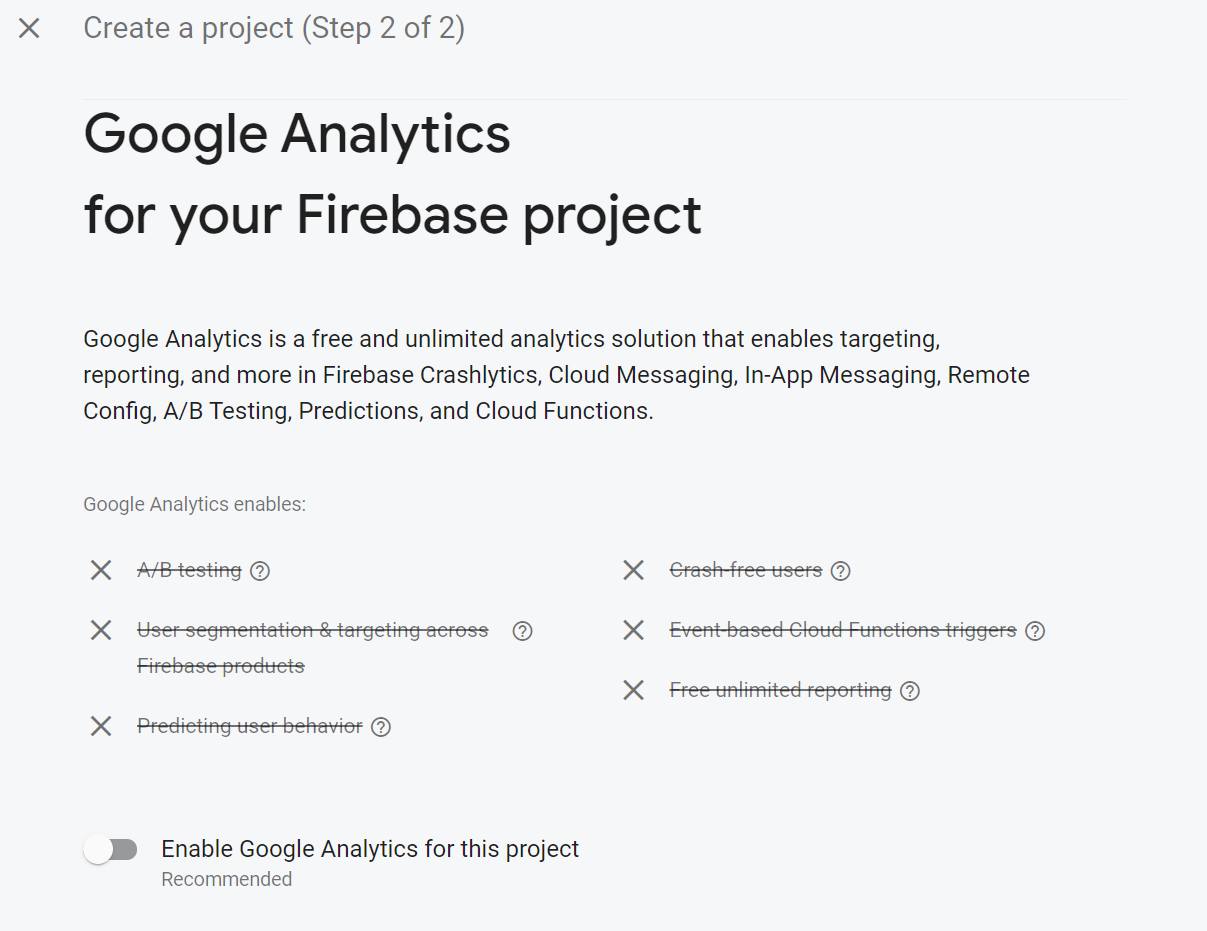
1. Go <https://console.firebase.google.com/>

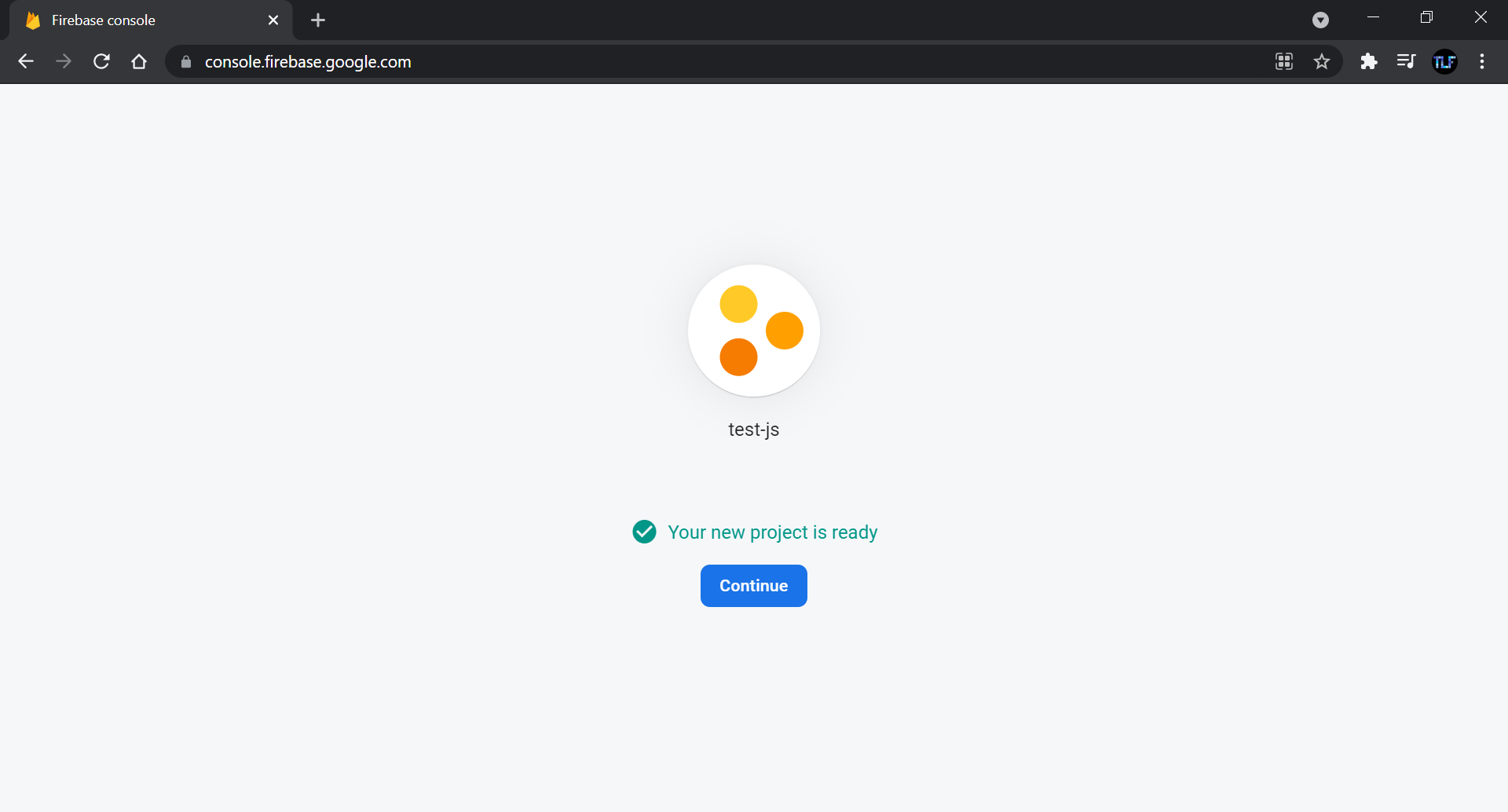


1. Create a project
   1. Give a project name
2. Continue

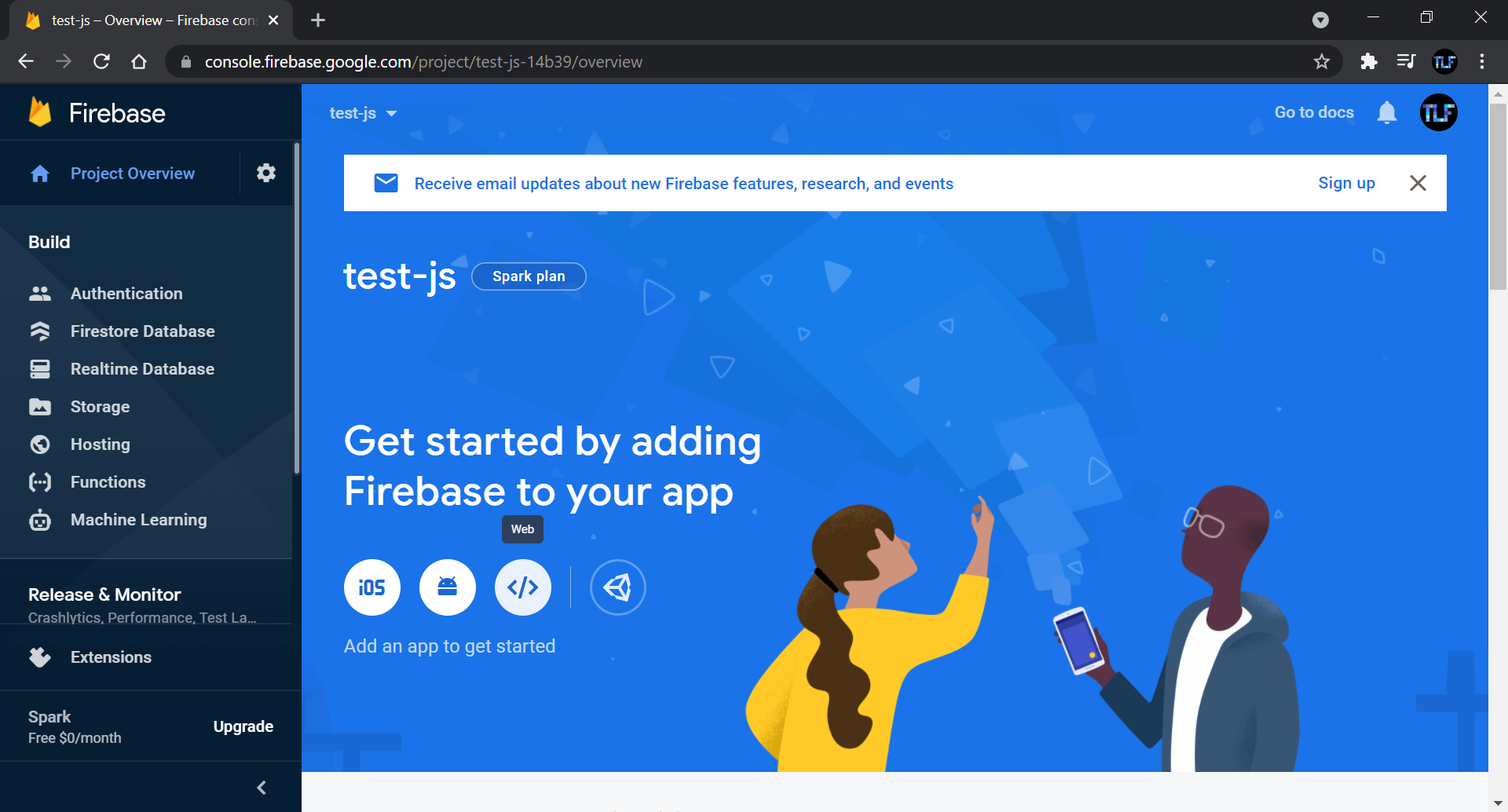


1. Disable google analytics (unless you want it).
2. Create project



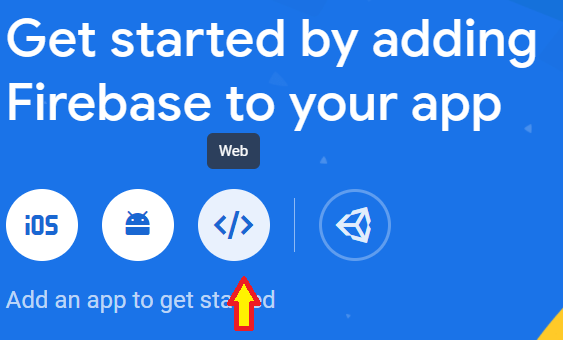


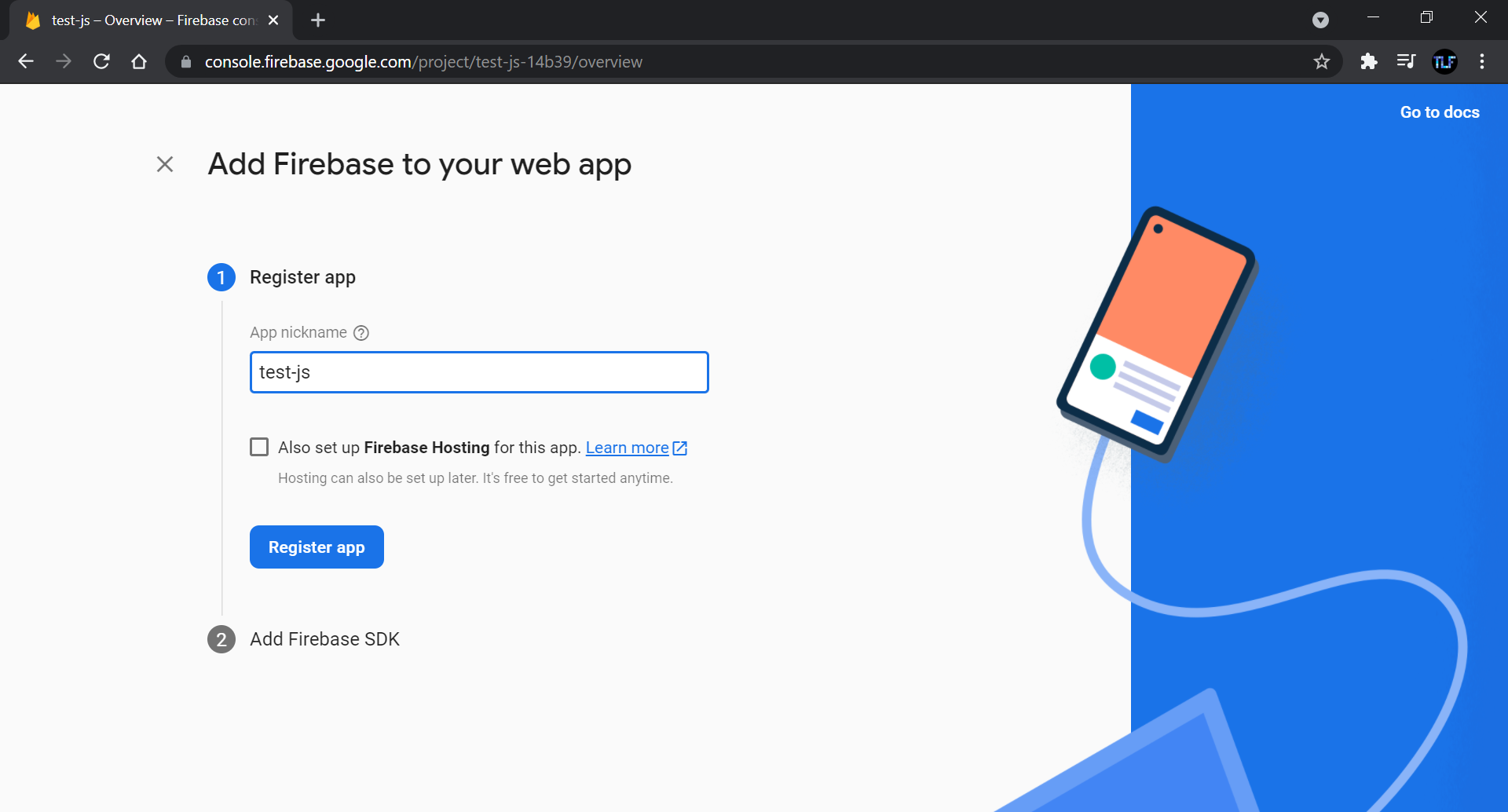
1. Continue (and go back to the main page)



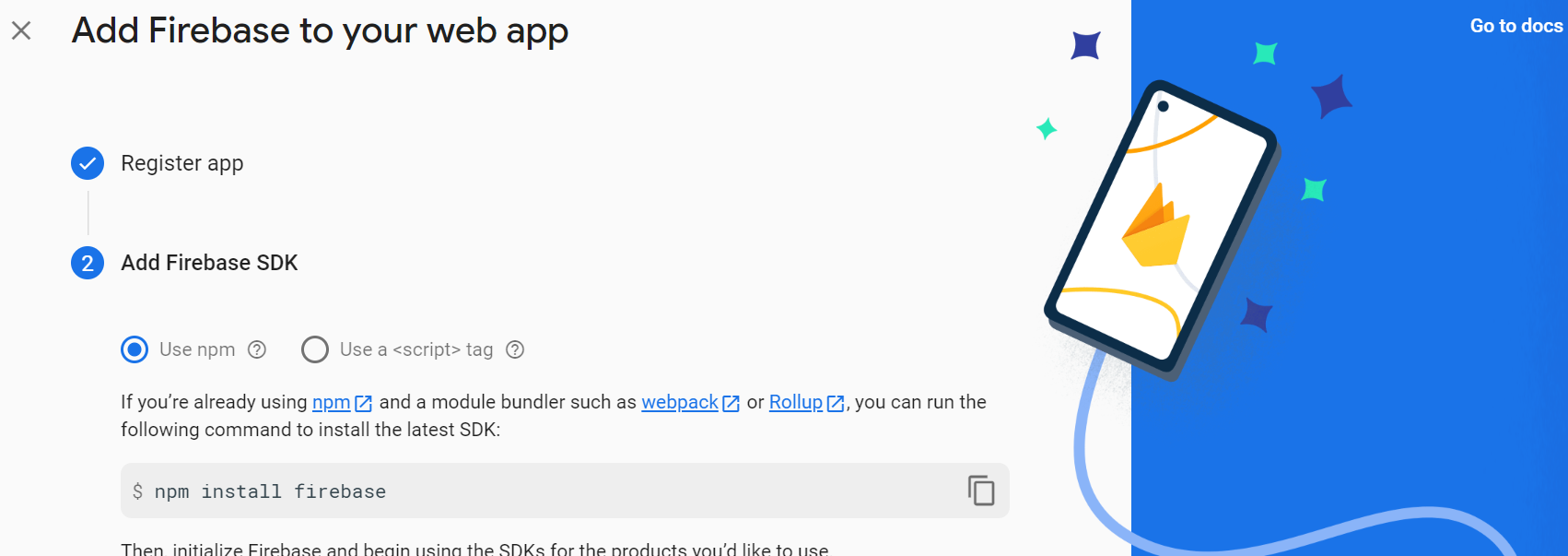
# Add a web application to your project

1. Add a web app by clicking on the 





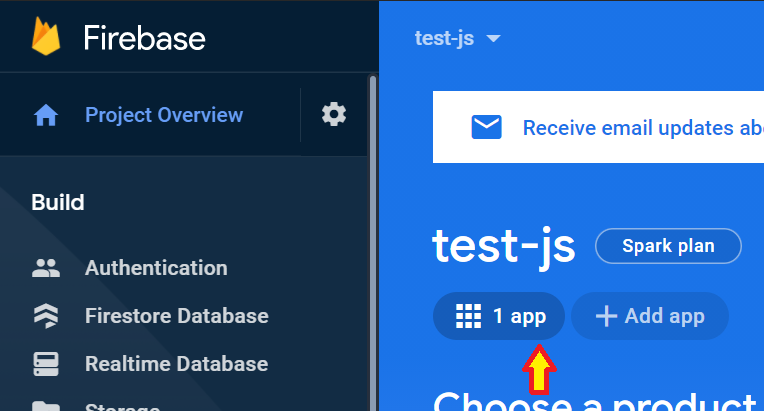
1. Give your app a name
2. I don’t need hosting for this simple demo, thus, I didn’t check the option.
3. Register app



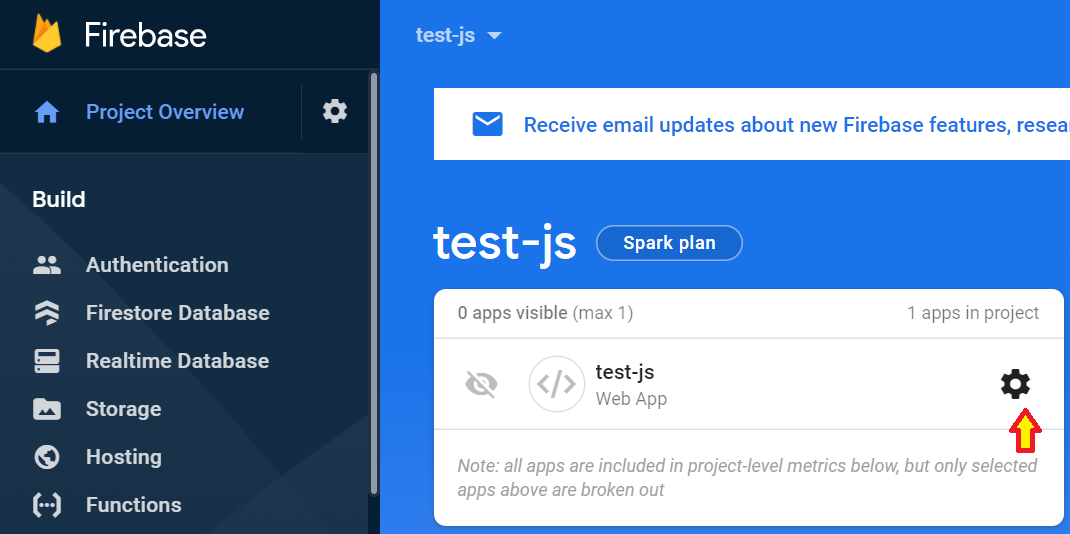
1. Continue to console

# Create index.html and initialize firebase application

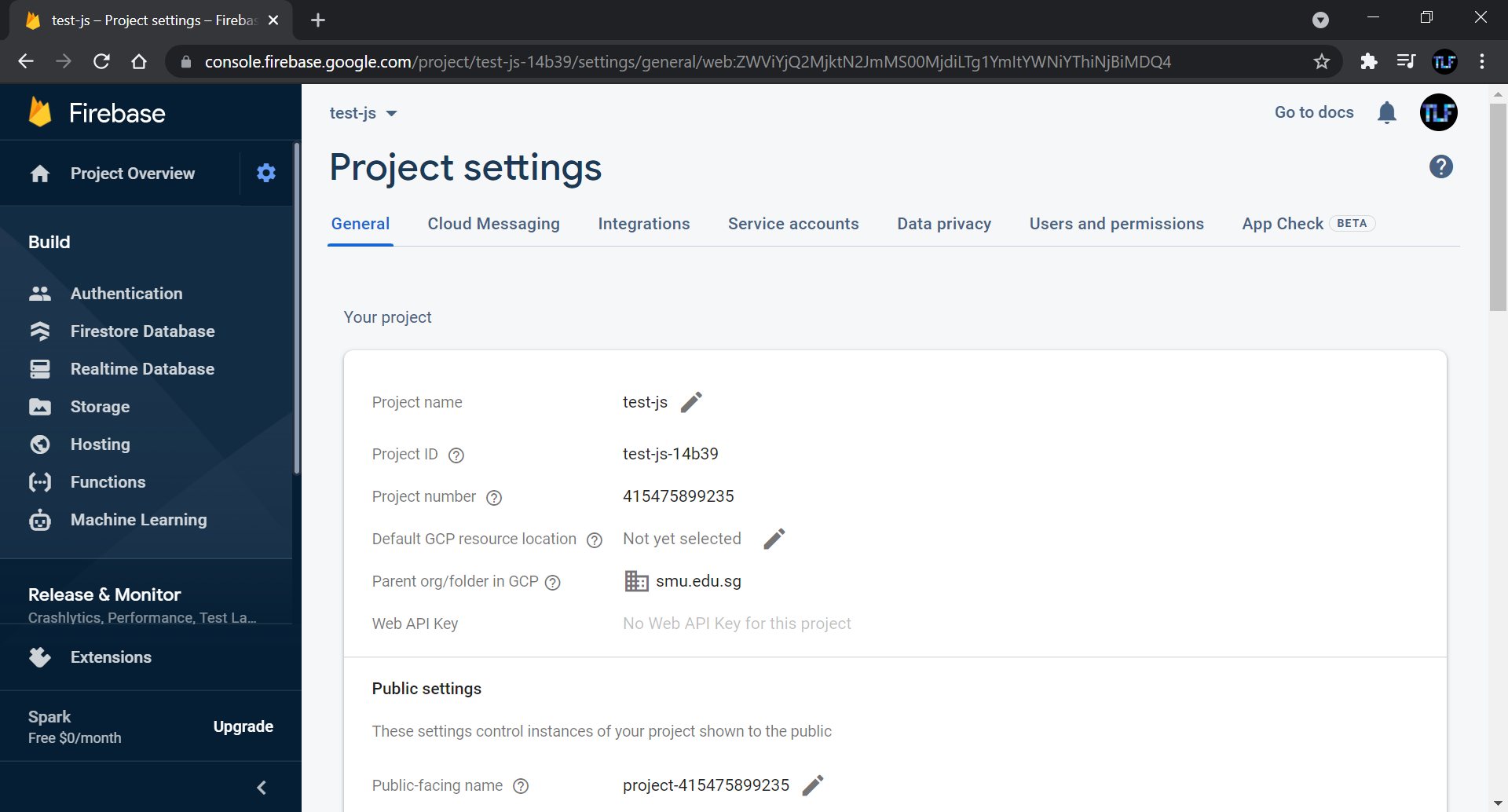
1. Click 



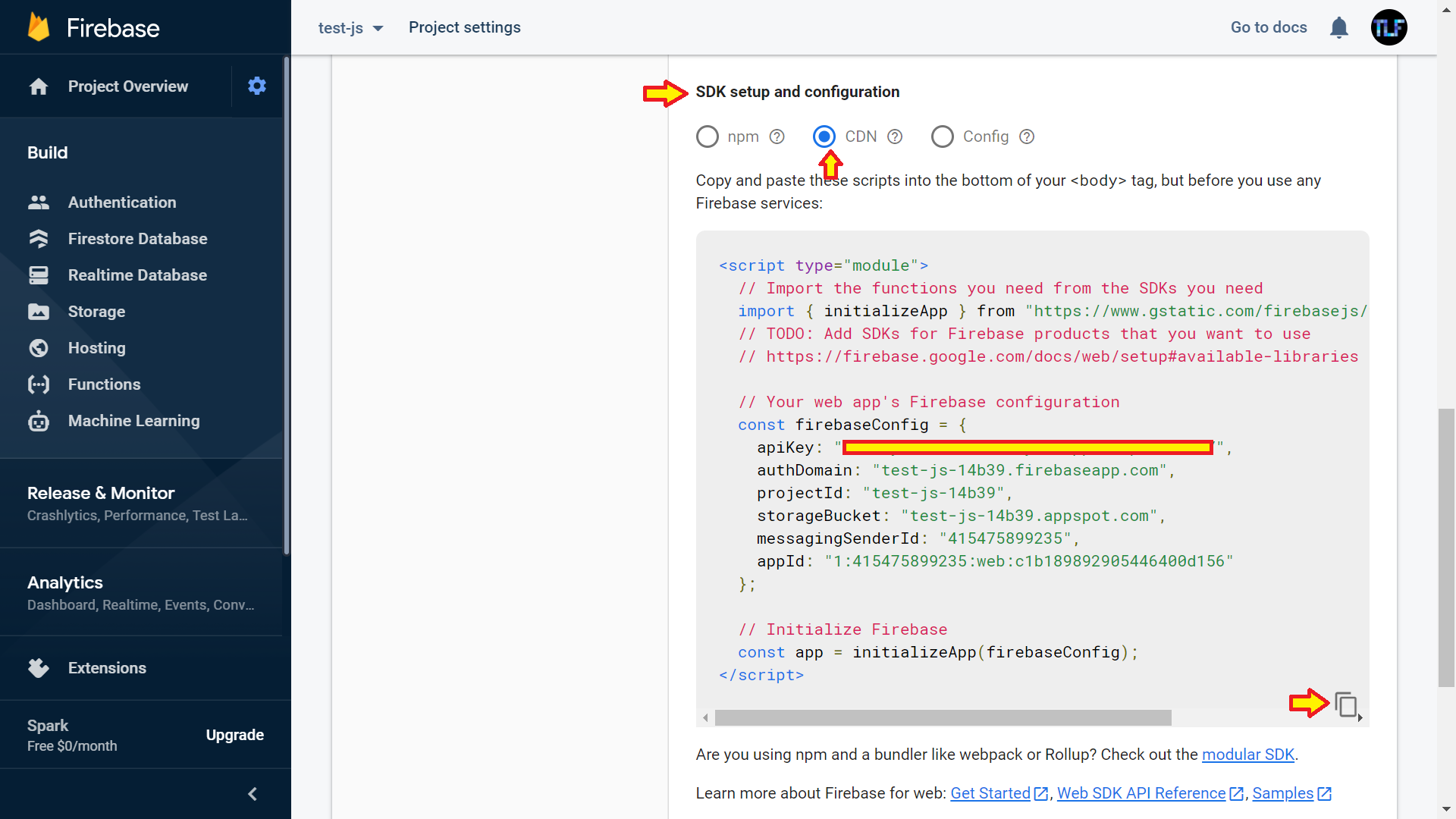
1. Click  for your app



1. The settings page



1. Scroll down until you see ‘SDK setup and configuration’.
   1. Select CDN
   2. Copy the code

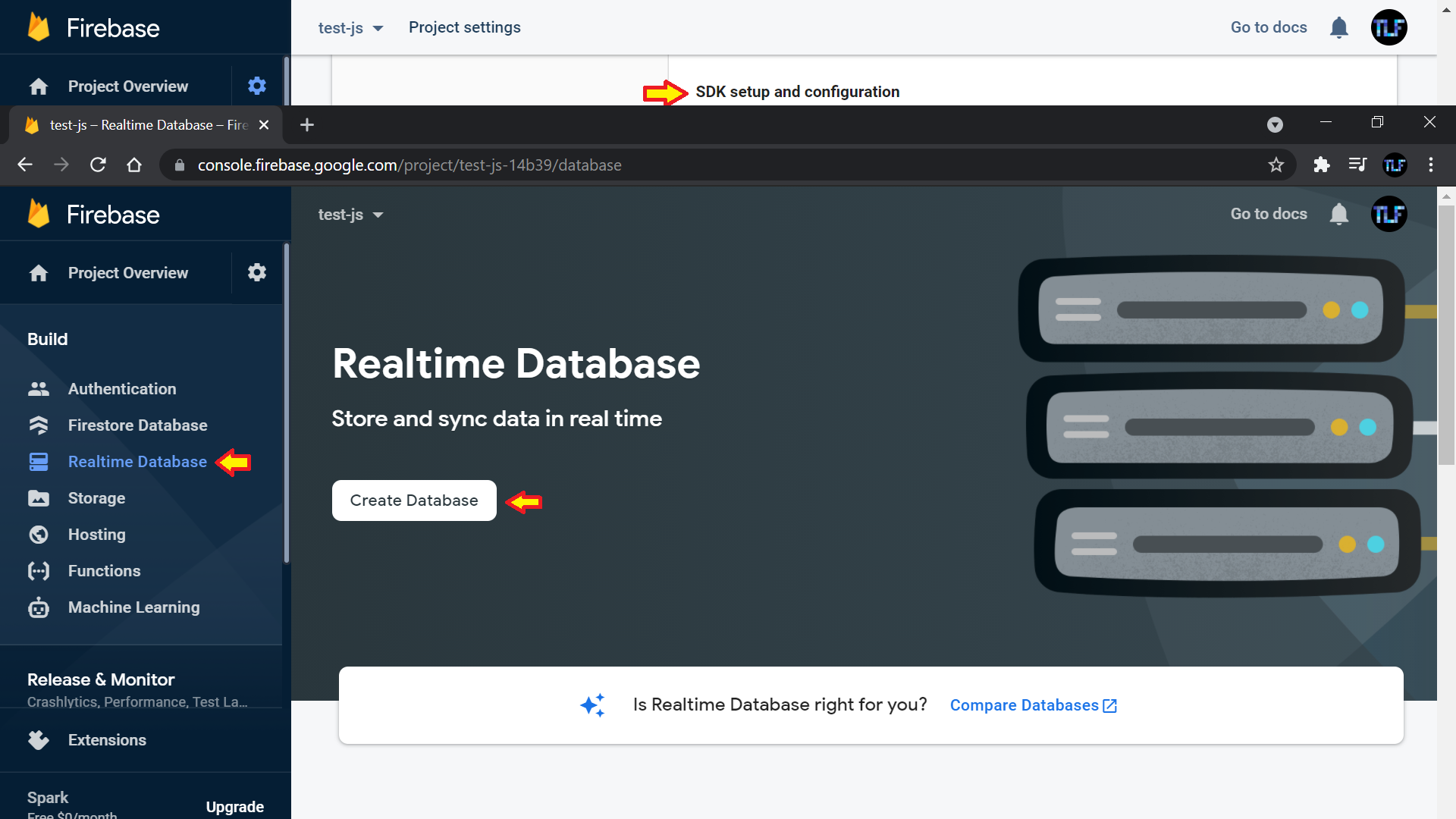


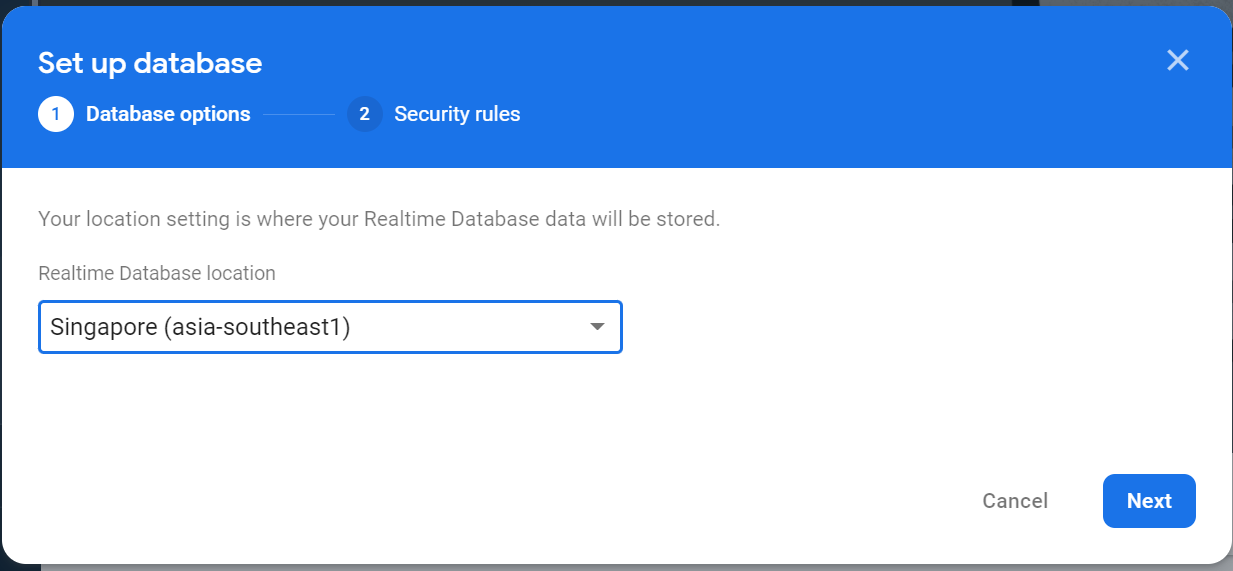
1. Create index.html with standard HTML template
   1. Add <h1 id='target'></h1>
   2. Paste the copied code into the body.

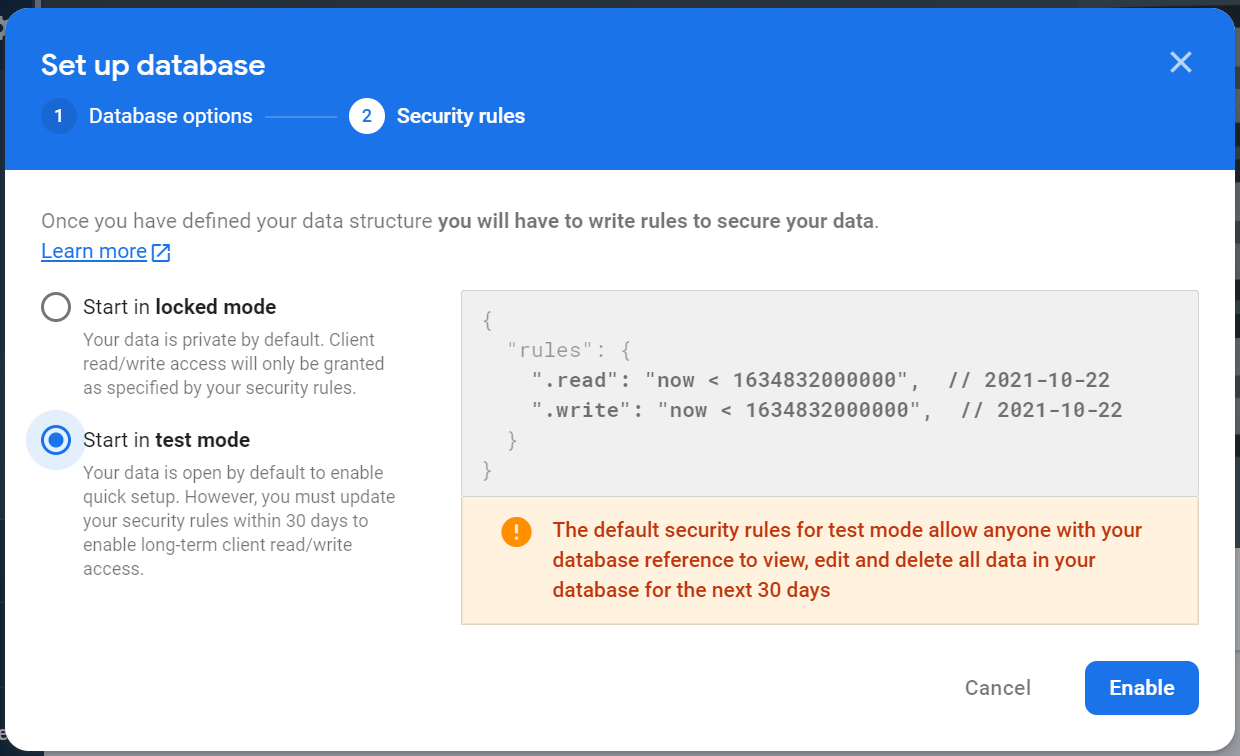
|  |
| --- |
| <!DOCTYPE html>  <html lang="en">  <head>  <meta charset="UTF-8">  <meta http-equiv="X-UA-Compatible" content="IE=edge">  <meta name="viewport" content="width=device-width, initial-scale=1.0">  <title>Firebase JS</title>  </head>  <body>  <h1 id='target'></h1>  <script type="module">  // Import the functions you need from the SDKs you need  import { initializeApp } from "https://www.gstatic.com/firebasejs/9.0.2/firebase-app.js";  // TODO: Add SDKs for Firebase products that you want to use  // https://firebase.google.com/docs/web/setup#available-libraries    // Your web app's Firebase configuration  const firebaseConfig = {  apiKey: "\*\*\*dun tell you\*\*\*",  authDomain: "test-js-14b39.firebaseapp.com",  projectId: "test-js-14b39",  storageBucket: "test-js-14b39.appspot.com",  messagingSenderId: "415475899235",  appId: "1:415475899235:web:c1b189892905446400d156"  };    // Initialize Firebase  const app = initializeApp(firebaseConfig);  </script>    </body>  </html> |

# Create Realtime Database

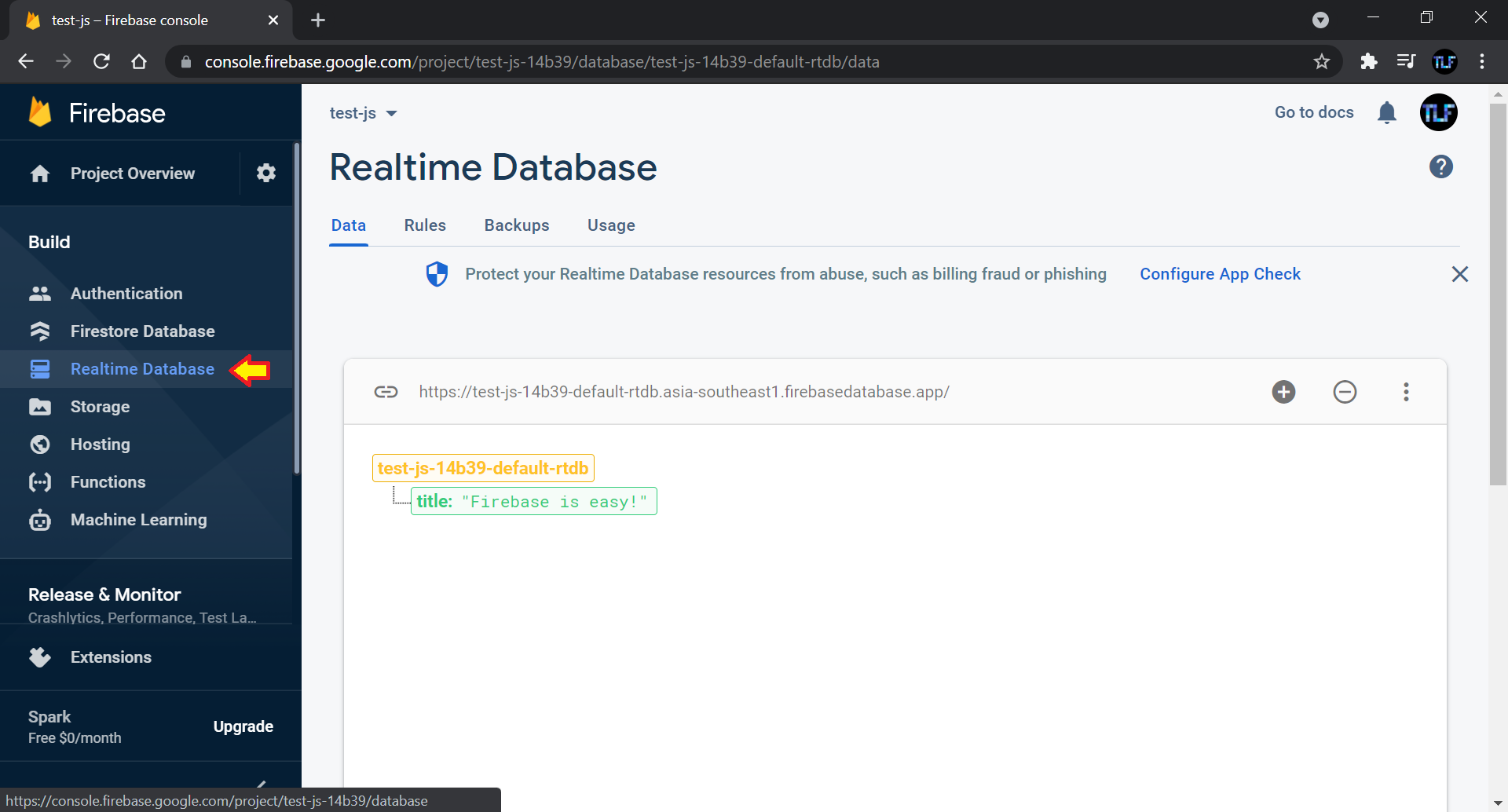
1. Go back to firebase console to create realtime database





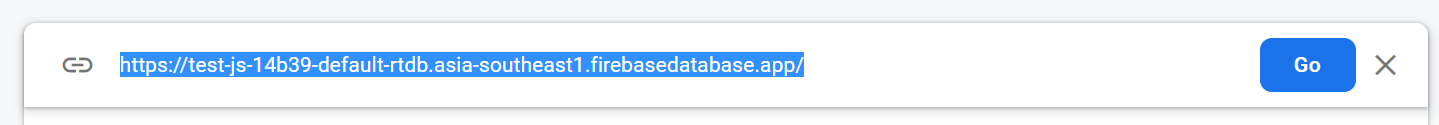


1. For simplicity sake, we use ‘test mode’.
   1. To learn more about firebase security, see <https://firebase.google.com/docs/database/security/get-started?authuser=0>
2. Enable
3. Left pane > Realtime Database



# Update index.html to read from Realtime Database

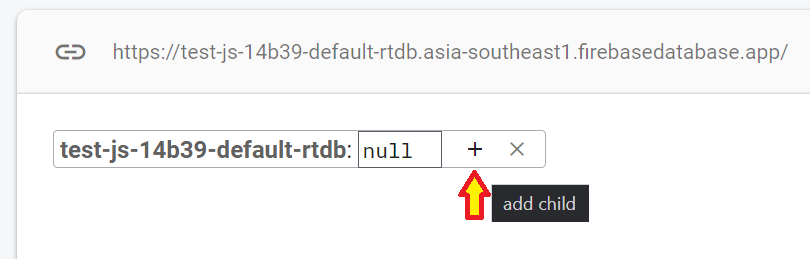
1. Copy the URL for your Realtime Database



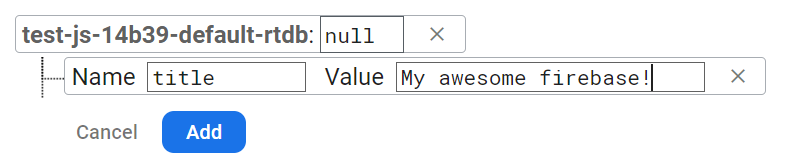
1. Add to your firebaseConfig code: databaseURL: "<url>"

|  |
| --- |
| // Your web app's Firebase configuration  const firebaseConfig = {  … // Code not shown to keep this short  appId: "1:415475899235:web:c1b189892905446400d156",  databaseURL: "https://test-js-14b39-default-rtdb.asia-southeast1.firebasedatabase.app/"  }; |

1. Go back to the firebase console for the realtime database.
2. Mouseover until you see the + sign. Click the + sign.



1. Enter new data
   1. Name: title
   2. Value: anything you like
2. Click Add



Side note: Quote from <https://firebase.google.com/docs/database/web/structure-data>

All Firebase Realtime Database data is stored as JSON objects. You can think of the database as a cloud-hosted JSON tree.

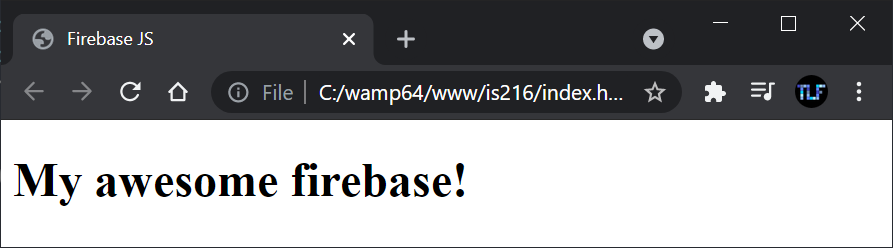
It is a NoSQL database.

1. Add the following code to index.html to
   1. Read the data ‘title’ and
   2. Display its value at the <h1>.
2. Read the comments in the code to see what each line does.

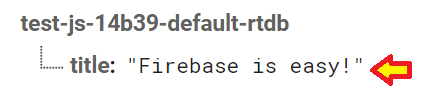
|  |
| --- |
| // Initialize Firebase  const app = initializeApp(firebaseConfig);  **/\* CODE ADDED: START \*/**  // Import the functions needed to read from realtime database  import { getDatabase, ref, onValue } from "https://www.gstatic.com/firebasejs/9.0.2/firebase-database.js";  // connect to the realtime database  const db = getDatabase();  // get a reference to the data 'title'  const title = ref(db, 'title');  // when value of 'title' changes, update to our <h1 id='target'>  onValue(title, (snapshot) => {  const data = snapshot.val(); // get the new value  document.getElementById('target').innerText = data;  });  **/\* CODE ADDED: END \*/** |

# Test/view index.html

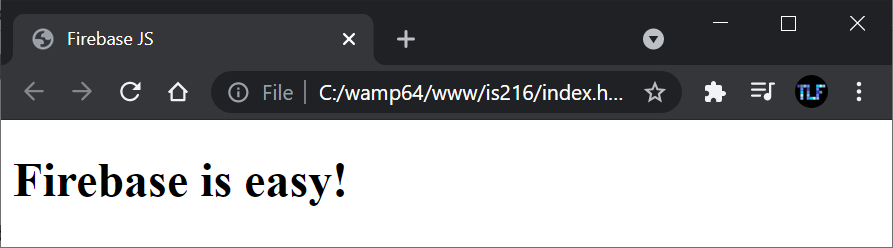
1. If done correctly, you should see the following when you view index.html in your browser.



1. Change the value of ‘title’ in the firebase console



1. index.html is updated without refreshing the browser.

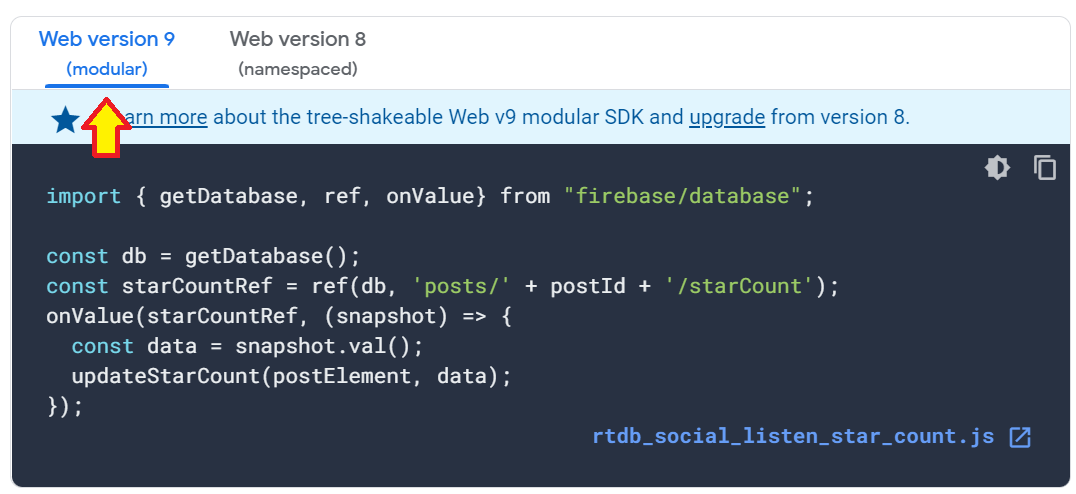


# A “complete” index.html

A “complete” [index.html](https://drive.google.com/file/d/1HsPTN1--zXXN0LgZo2-lje0J5b00GJ6e/view?usp=sharing) can be downloaded from [here](https://drive.google.com/file/d/1HsPTN1--zXXN0LgZo2-lje0J5b00GJ6e/view?usp=sharing).

You will need to replace the relevant code from your firebase project/app.

# References

* Official documentation on reading Realtime Database. <https://firebase.google.com/docs/database/web/read-and-write>
  + I’m using ‘Web Version 9 (modular)” code above.  
    
  + **Important note:** Replace all your import lines to use 'https://www.gstatic.com/firebasejs/9.0.2/firebase-database.js'  
    E.g.  
    import { getDatabase, ref, onValue} from ~~"firebase/database"~~ "<https://www.gstatic.com/firebasejs/9.0.2/firebase-database.js>";
* Special thanks to <https://www.youtube.com/watch?v=S8D9Cxb2lLA> which this guide is based on.
  + This video is for firebase version 7.
  + Even though outdated, the initial steps of creating a project and Realtime database are fairly similar. Only the database reading code has changed a lot.

# Firebase - google authentication

<https://docs.google.com/document/d/1BRy-urkvPRprxCaMfM6bJf4OCx2TtCtkggXZixbN45I/edit?usp=sharing>

# Create Billing Alerts

Although the default Firebase pricing plan is [Sparks](https://firebase.google.com/pricing) (lots of free stuff with caps), if you have set up a billing account, it is still good to set up billing/spending alerts.

See <https://cloud.google.com/billing/docs/how-to/budgets> on how to set alerts on your billing account.

You may want to delete app/project in firebase console when you no longer need it.

* <https://support.google.com/firebase/answer/9137886?hl=en>
* <https://support.google.com/firebase/answer/7047853?hl=en>