Building a backend for your app with Firebase

Matt Kaufman

About

Slides
http://bit.ly/biggerWordsSlides

Repo
http://bit.ly/biggerWordsGithub

App
http://bit.ly/biggerWordsApp

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Lexicomane

Lover of a dictionary. One who enjoys looking up words in the dictionary

Bigger Words v1.0

1. List of words and Definitions

2. Display a word

3. Display the definition on click

4. Click a button to start over with a new word

Simple JavaScript App

```javascript
let itemList = [
  {

    word: 'consider',

    definition: 'deem to be'

  },...
];

let getNext = () => {
  //get a random word from the List...
}
```
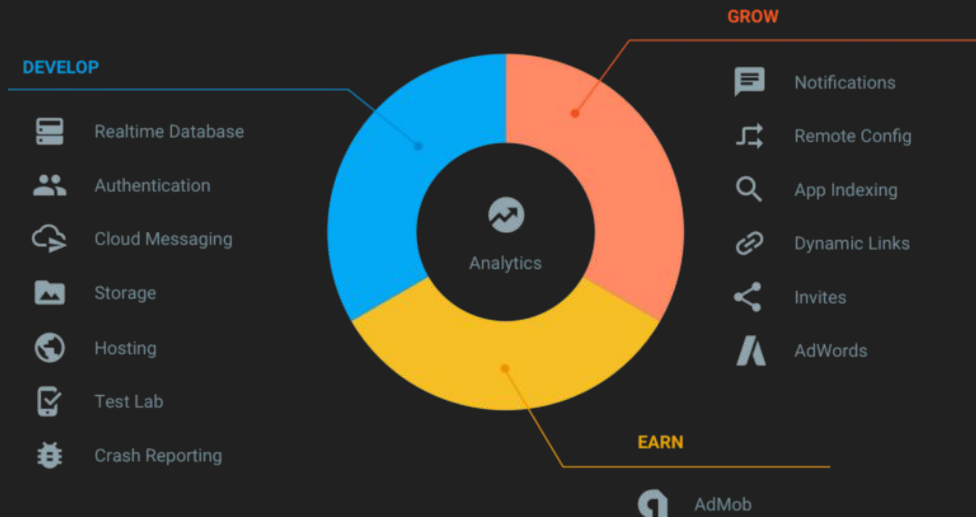
Demo v1.0

Avaricious

Having or showing an extreme greed for wealth or material gain

Firebase: Platform as a Service

Host on Firebase
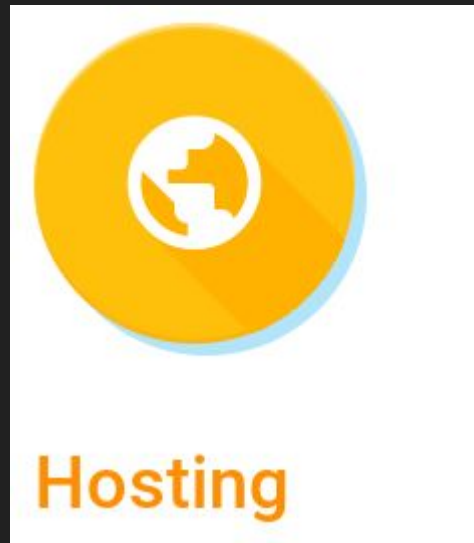
Create Project at console.firebase.google.com
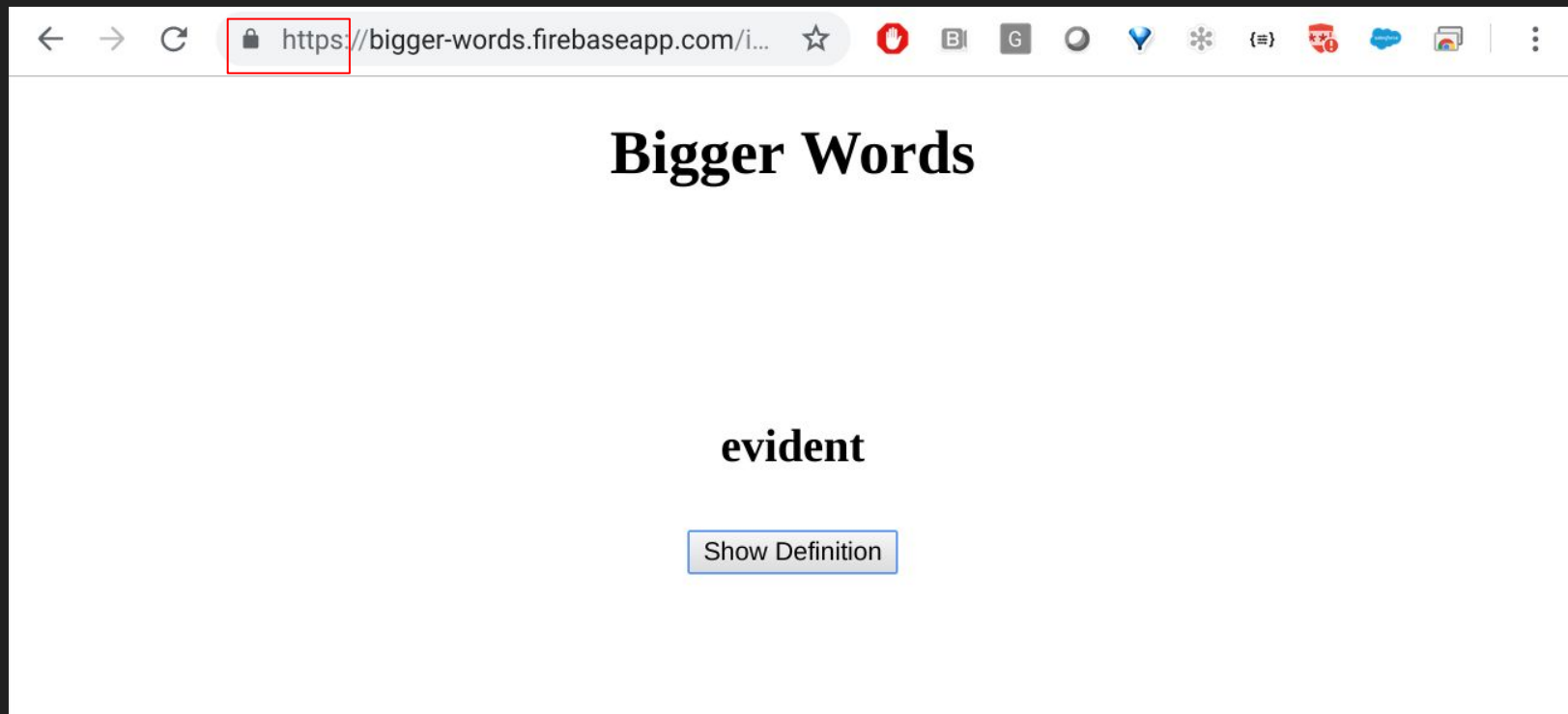
```
> firebase login;
```

```
> firebase init;
```

Move files

```
> firebase deploy;
```


Hosting

Demo v2.0 - Hosted with https

Demure

characterized by shyness and modesty; reserved.

Cloud Functions for Firebase
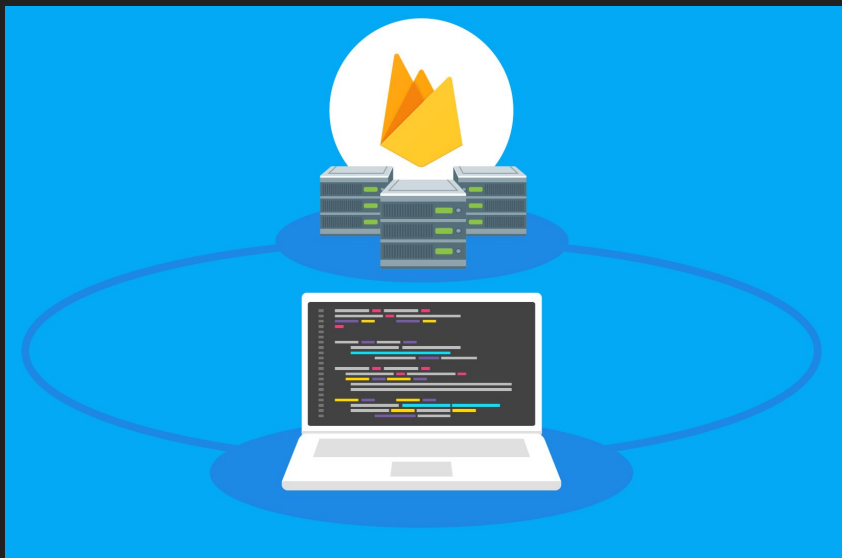
JavaScript Function

Managed Node.js environment

Scale automatically

Just write and deploy

Cloud Function - index.js

```js
const functions = require('firebase-functions');

const admin = require('firebase-admin');

const app = admin.initializeApp();

let db = admin.firestore();


exports.getNext = functions.https.onCall((data) => {
  return _getNext()
});
```

Demo v3.0 - Logic moved to Cloud Function

Proliferation

a rapid and often excessive spread or increase

Cloud Firestore

Cloud Hosted

NoSQL database

Accessible via Web and Functions

Automatically Scales

Live Synchronization and offline
support

Loading existing words into Firestore with a Function

```javascript
exports.populateData = functions.https.onCall(() => {
  let batch = db.batch();
  for ( let i in items ){
    items[i].num = i;
    batch.set(wordsCollection.doc(items[i].word),items[i]);
  }
  return batch.commit().then(() => {
    return;
  })
...
```

Getting an item from Firestore with a Function

```javascript
let _getNext = async (num) => {
  let next = await wordsCollection.where('num','==',num)
  .limit(1).get().then( querySnapshot => {
    let res;
    querySnapshot.forEach( (doc) => {
      res = doc.data();
    });
    return res;
  });
```
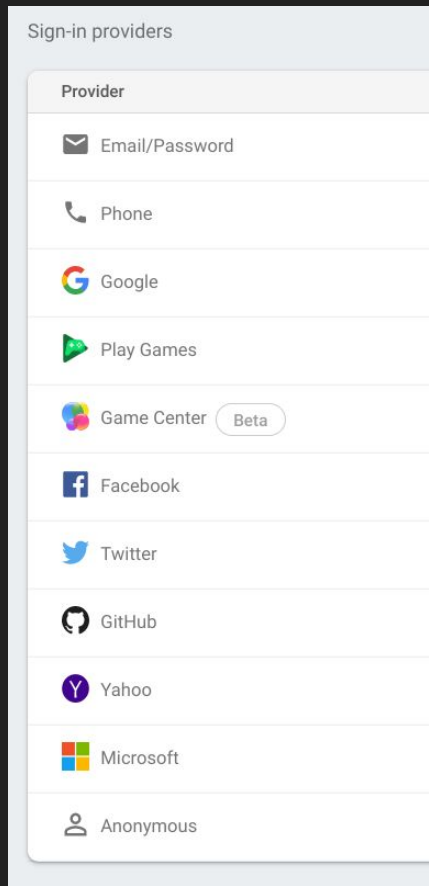
Demo v4.0 - Data stored in Firestore

Circumspect

watchful and discreet; cautious; prudent

Firebase Auth

Edit Project at console.firebase.google.com

Enable sign-in providers

Start Auth Flow

```javascript
let toggleSignIn = () => {
  if (!firebase.auth().currentUser) {
    let provider = new firebase.auth.GoogleAuthProvider();
    provider.addScope('...');
    firebase.auth().signInWithRedirect(provider);
  } else {
    firebase.auth().signOut()
  }
}
```

Handle auth response and change

```javascript
firebase.auth().getRedirectResult().then( (result) => {
    //save result.user to Firestore
    //use result.credential.accessToken to do more
}).catch(function(error) {
  ...
});


firebase.auth().onAuthStateChanged( (user) => {
  ...
});
```

Listen for DB changes

```
db.collection("users").doc(user.uid)
.onSnapshot(function(doc) {
  console.log("User Listener: ", doc.data());
  setPlayerFromUser(doc.data());
  setState();
});
```

Watching the database increment

Demo v5.0 - Firebase Auth

Pragmatic

of or relating to a practical point of view or practical considerations.

What if we want to call from outside our web app?

```javascript
exports.getWord = functions.https.onRequest((request, response) => {
  _getWord()
  .then( word => {
    response.json(word);
    return word
  })
  .catch ( err => {
    response.json({error: err});
  });
});
```

Demo Bigger Words 6.0 - API Support

```
curl https://us-central1-bigger-words.cloudfunctions.net/getWord6

{

  "word":"commit",

  "definition":"perform an act, usually with a negative connotation"

}
```

Recap

Thank You

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