

# Building a backend for your app with Firebase

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# 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

```
let itemList = [  
  {  
    word: 'consider',  
    definition: 'deem to be'  
  }, ...  
];  
  
let getNext = () => {  
  //get a random word from the List...  
}
```

# Demo v1.0

## Bigger Words

evident

Show Definition

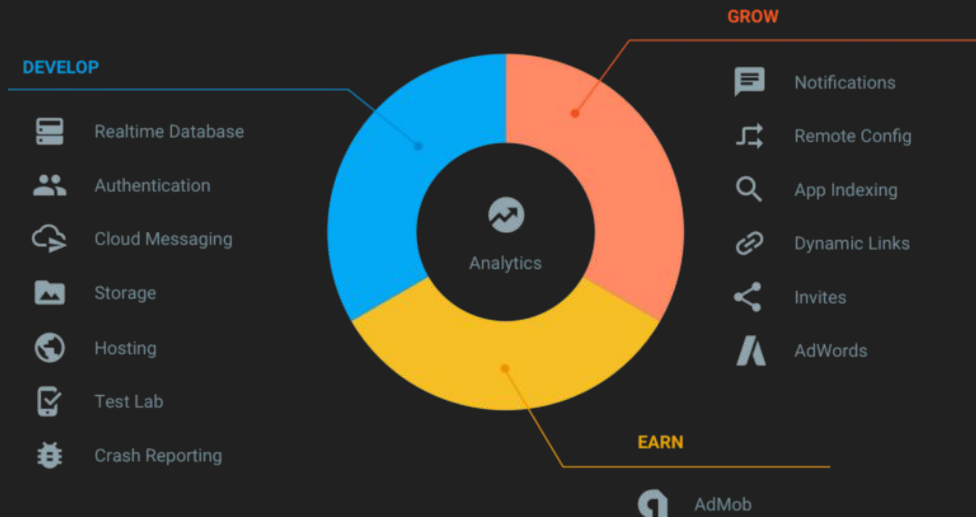
The screenshot shows a web browser's developer console with the 'Console' tab selected. The console displays a message indicating navigation to `https://bigger-words.firebaseio.com/index2.html`. Below this, a log entry from `index2.html:122` shows a JSON object: `{word: "evident", definition: "clearly revealed to the mind or the senses or judgment"}`. The object is expanded, showing the `definition` property with the value `"clearly revealed to the mind or the s..."` and the `word` property with the value `"evident"`. The `__proto__` property is also visible, pointing to an `Object`.

```
Navigated to https://bigger-words.firebaseio.com/index2.html
index2.html:122
{word: "evident", definition: "clearly revealed to the mind or the senses or judgment"}
  definition: "clearly revealed to the mind or the s..."
  word: "evident"
  __proto__: Object
```

# Avaricious

Having or showing an extreme greed for wealth or material gain

# Firebase: Platform as a Service





# Host on Firebase

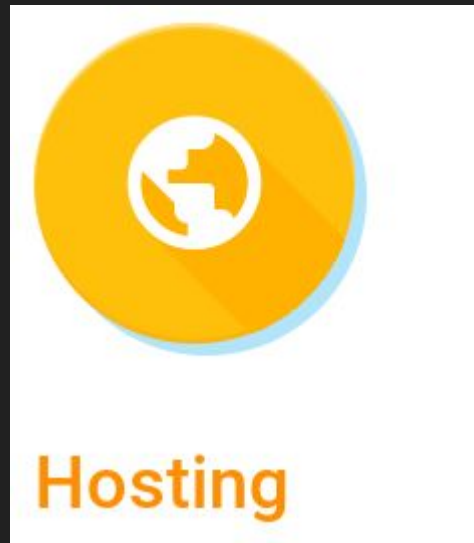
Create Project at [console.firebase.google.com](https://console.firebase.google.com)

```
> firebase login;
```

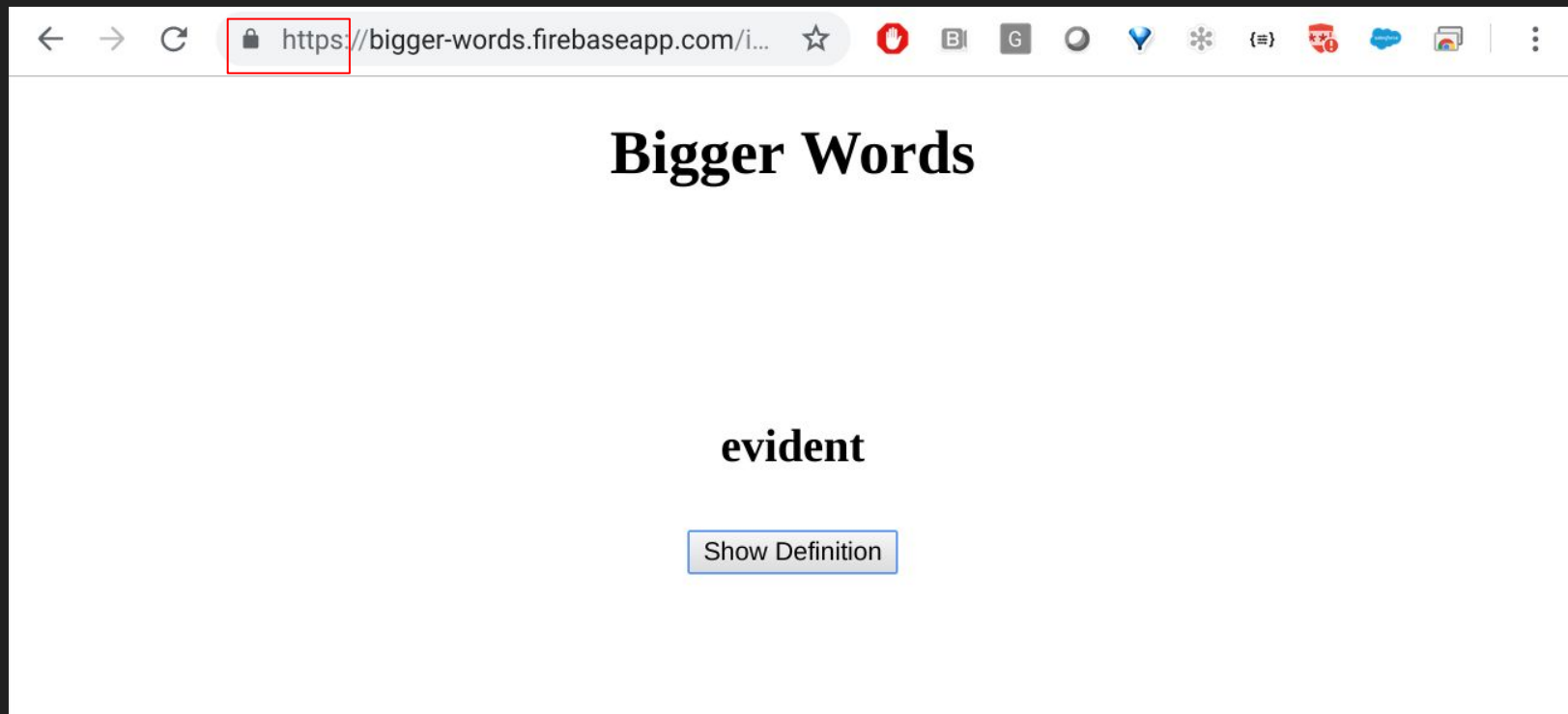
```
> firebase init;
```

Move files

```
> firebase deploy;
```



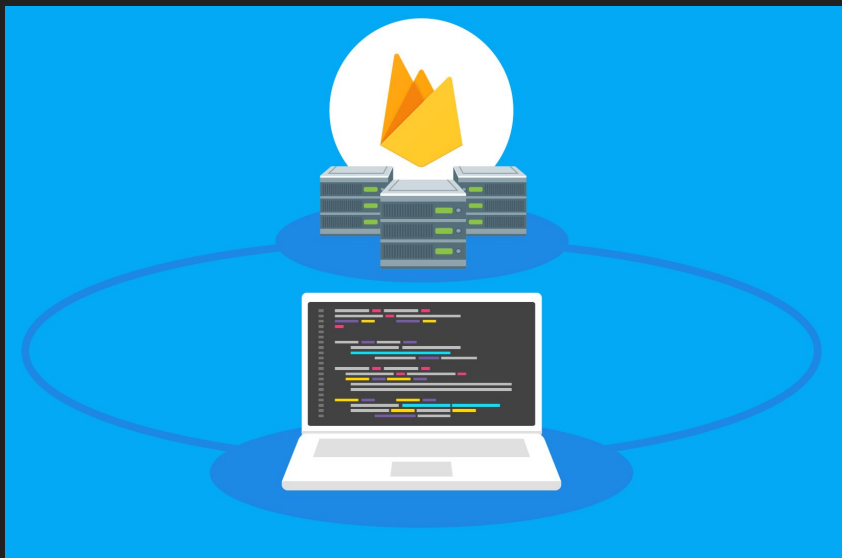
# Demo v2.0 - Hosted with https



# 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

```
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

```
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

```
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

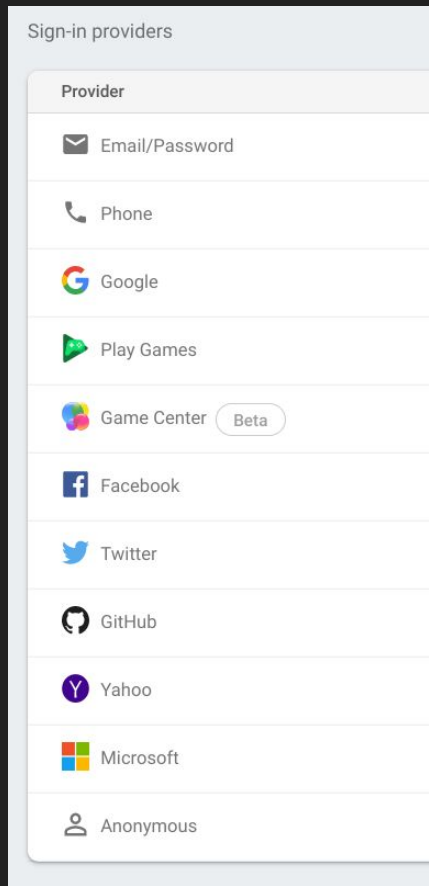
# Circumspect

watchful and discreet; cautious; prudent

# Firebase Auth

Edit Project at [console.firebase.google.com](https://console.firebase.google.com)

Enable sign-in providers



# Start Auth Flow

```
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

```
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

🏠 > words > accord		
📁 vocablearner-e0c8d	📁 words ⋮	📁 accord ⋮
+ Add collection	+ Add document	+ Add collection
words >	accord >	+ Add field
	approach commit concern consider evident intend issue minute practice	definition: "concurrence of opinion" timesViewed: 5 word: "accord"

# 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?

```
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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