

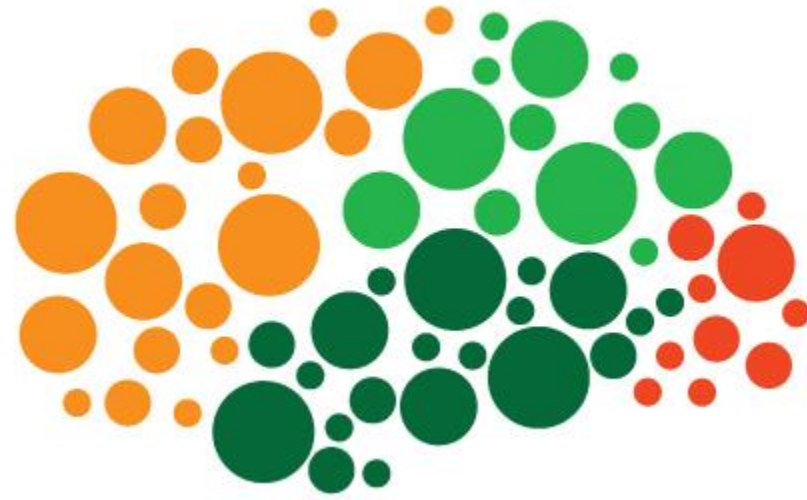
A decorative graphic on the left side of the slide, consisting of white and light blue lines and circles that resemble a circuit board or a network diagram. The lines are vertical and horizontal, with small circles at the ends, creating a stylized, abstract representation of a digital network.

GOOGLE FIREBASE EXPERIMENTS

HOW TO MAKE AN EXPERIMENT ON THE INTERNET

WHAT I'LL COVER

- Basic experiment creation in jspsych
- Project creation in Firebase
- Installing Firebase tools
- Deploying the experiment as a website



jspsych

A JavaScript library for creating and running behavioral experiments in a web browser.

BASIC HTML FRAME

- Start by declaring the document type
- Use src lines to link to the different jspsych files in use

```
<!doctype html>
<html>
  <head>
    <script src="https://ajax.googleapis.com/ajax/libs/jquery/1.11.1/jquery.min.js"></script>
    <script src="jspsych-5.0.3/jspsych.js"></script>
    <script src="jspsych-5.0.3/plugins/jspsych-text.js"></script>
    <script src="jspsych-5.0.3/plugins/jspsych-survey-text.js"></script>
    <script src="jspsych-5.0.3/plugins/jspsych-single-stim.js"></script>
    <script src="jspsych-5.0.3/plugins/jspsych-survey-likert.js"></script>
    <script src="jspsych-5.0.3/plugins/jspsych-instructions.js"></script>
    <link rel="stylesheet" href="jspsych-5.0.3/css/jspsych.css"></link>
  </head>
```

JSPSYCH BLOCK

- There are some general similarities
 - Stored in a variable
 - Declare type of block
 - Other parameters depend on the type
- The details on the type are on the [jspsych website](#)
- There are also examples in the zip for jspsych

```
var instructions = {  
  type: 'instructions',  
  pages: [  
    'Welcome to the experiment. Click next to begin.',  
    'This is the second page of instructions.',  
    'This is the final page.'  
  ],  
  show_clickable_nav: true  
}
```

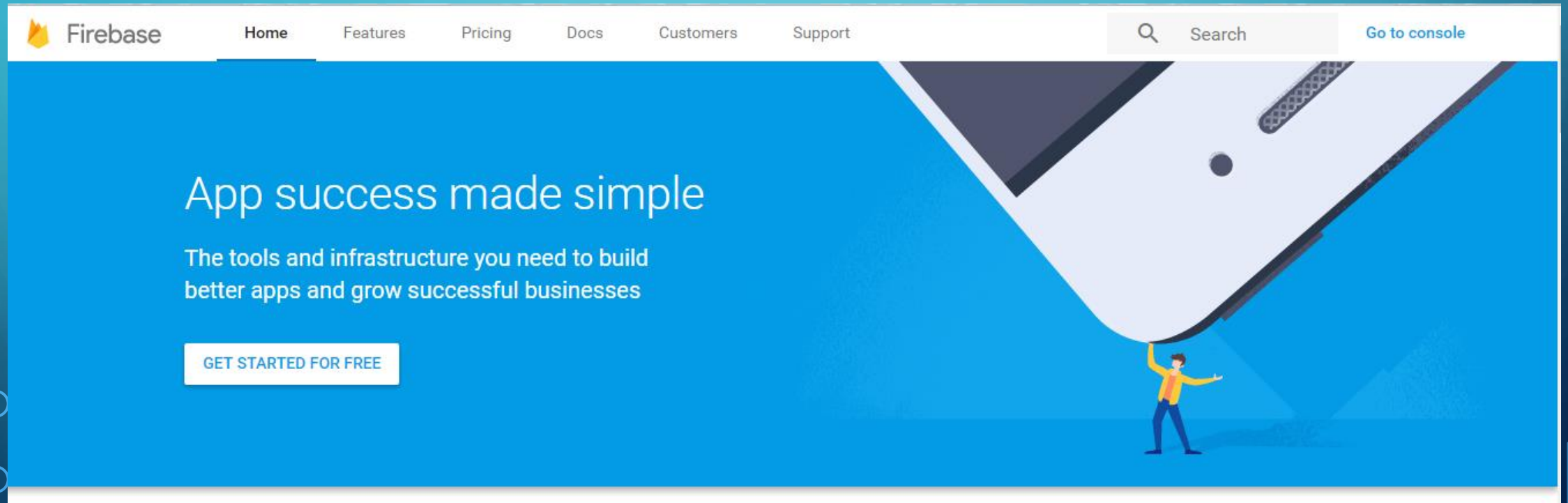
MORE BLOCKS

- Keep adding blocks until you have a full experiment
- Then at the end, include the experiment initialization
- Then you have an experiment!

```
--var trial = {  
  type: 'single-stim',  
  stimulus: "<p>This is some html test stimulus text!</p>",  
  is_html: true,  
  choices: [70, 74], // f or j  
  prompt: '<p class="center-content">Press f or j</p>',  
  data: {  
    node_data: true  
  }  
}  
  
--experiment.push(instructions)  
--experiment.push(trial)  
  
--jsPsych.init({  
  timeline: experiment,  
  on_finish: function() {  
    jsPsych.data.displayData();  
  },  
});  
  
--</script>  
</html>
```

BUT THAT'S NOT ALL!

- The experiment alone won't save the data.
- You need a firebase project to connect it to

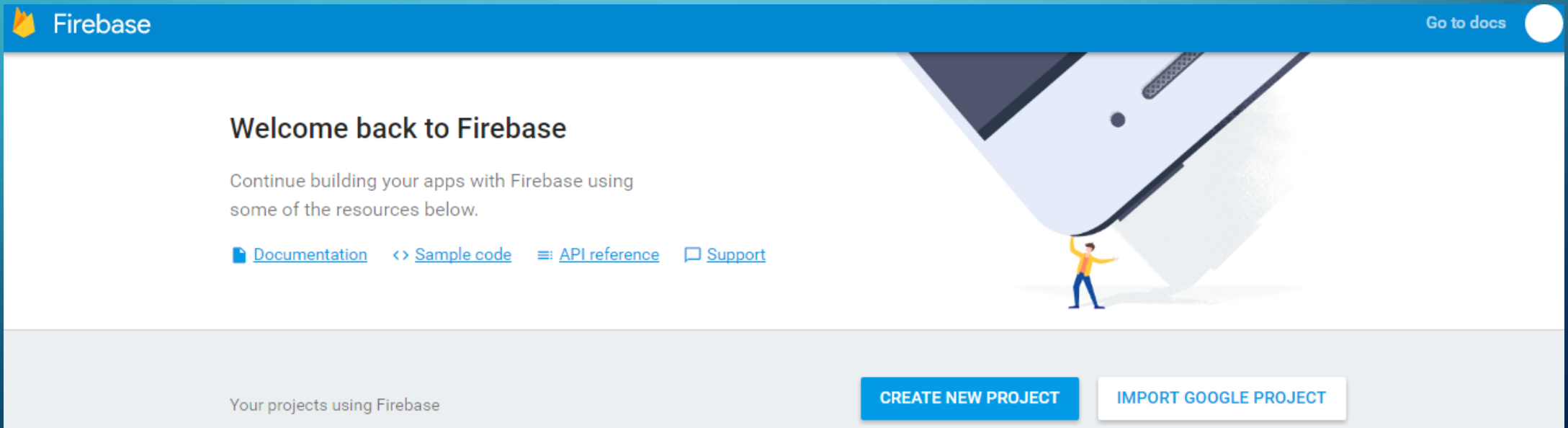


COMMAND LINE TOOLS

- Before you can deploy a firebase site, you need the tools
- First, install node.js
- Then, in the command line/terminal, run “npm install -g firebase-tools”
- Once the tools are installed, use the “firebase login” and log in. (It will open a browser window for you to do so.)

NEW PROJECT

- From the main firebase page, go to console
- Create a new project!



THE PROJECT

- The project only needs a name
- Then you can see its home page.

Create a project

Project name

Country/region ⓘ

United States ▼

The screenshot displays the Firebase console interface. At the top, a blue header bar contains the 'Firebase' logo on the left and 'Tutorial Project' with a dropdown arrow and a 'Go to docs' link on the right. Below the header, a left-hand sidebar lists various services: 'Analytics', a 'DEVELOP' section containing 'Auth', 'Database', 'Storage', 'Hosting', 'Remote Config', 'Test Lab', and 'Crash', and a 'GROW' section at the bottom. The main content area is titled 'Overview' and features a 'Welcome to Firebase! Get started here.' message. Below this message are three large, colorful circular buttons: a blue one for 'iOS' with the text 'Add Firebase to your iOS app', a green one for 'Android' with the text 'Add Firebase to your Android app', and a pink one for 'Web' with the text 'Add Firebase to your web app'.

ADDING FIREBASE TO THE EXPERIMENT

- Start by getting the code from the project
- Click the button to add firebase to your web app
- Add the code below your links to the jspsych package.

Add Firebase to your web app

Copy and paste the snippet below at the bottom of your HTML or before other `script` tags.

```
<script src="https://www.gstatic.com/firebasejs/3.3.0/firebase.js"></script>
<script>
  // Initialize Firebase
  var config = {
    apiKey: "AIzaSyAJz-nVyRK5QzaFT9R5sU3sVtkki35iEYM",
    authDomain: "tutorial-project-6f8ed.firebaseio.com",
    databaseURL: "https://tutorial-project-6f8ed.firebaseio.com",
    storageBucket: "tutorial-project-6f8ed.appspot.com",
  };
  firebase.initializeApp(config);
</script>
```

COPY

Check these resources to
learn more about Firebase for
web apps:

[Get Started with Firebase for Web Apps](#) 

[Firebase Web SDK API Reference](#) 

[Firebase Web Samples](#) 

DATA SUBMISSION

- To get the data to submit, you need an additional block in your experiment
- It runs for .001 seconds, and takes that time to save the data to the Firebase database

```
function saveToFirebase(code, filedata){  
  var ref = firebase.database().ref(code).set(filedata);  
}  
  
var submit_block = {  
  type: 'single-stim',  
  stimuli: [" "],  
  choices: ['none'],  
  timing_response: .001,  
  timing_post_trial: 0,  
  on_finish: function() {  
    saveToFirebase('subject_code', jsPsych.data.getData());  
  }  
}  
  
experiment.push(submit_block)
```

DATABASE PERMISSIONS

- I usually leave two sets of rules (database open, and database closed) in the rules and comment out one
- You can access the database from the sidebar



LAST SETUP DETAILS

- Make sure your experiment is in a folder *in a folder* where you'll initialize firebase hosting.
 - For example:
User/your_name/Experiments/Firebase_experiment/Tutorial_project/experiment.html
- In the command line/terminal, use the “cd” command to Choose the Directory for the experiment
 - The outer directory. In the example above, it would be “Firebase_experiment”
- Name your experiment “index.html”. This will make it the main page for the experiment

INITIALIZING AND DEPLOYING FIREBASE

- First use “firebase init” to initialize firebase in the directory.
- Use spacebar to de-select the database from the options. (It’s handled on the website console.)
- Use your project as the default, and the inner directory name as the public directory
- Don’t make it a single page app, and don’t overwrite index.

```
C:\Users\Rebecca\Documents\college\RA Work\Firebase Tutorial>firebase init

##### 
##      ##      ##      ##      ##      ##      ##      ##      ##      ##
##### 
##      ##      ##      ##      ##      ##      ##      ##      ##      ##
##      ##      ##      ##      ##      ##      ##      ##      ##      ##
##      ##      ##      ##      ##      ##      ##      ##      ##      ##

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

  C:\Users\Rebecca\Documents\college\RA Work\Firebase Tutorial

? Are you ready to proceed? Yes
? What Firebase CLI features do you want to setup for this folder? Hosting: Con
figure 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.

? What Firebase project do you want to associate as default? Tutorial Project (
tutorial-project-6f8ed)

=== Hosting Setup

Your public directory is the folder (relative to your project directory) that
will contain Hosting assets to 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? example_experiment
? Configure as a single-page app (rewrite all urls to /index.html)? No
+ Wrote example_experiment/404.html
? File example_experiment/index.html already exists. Overwrite? No
i Skipping write of example_experiment/index.html

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

+ Firebase initialization complete!
```


FINALLY...

- Use the “firebase deploy” command to put the experiment online! (It can take a bit of time to change sometimes, so make sure to check on it.)
- Use the same command if you ever need to deploy changes to your experiment.

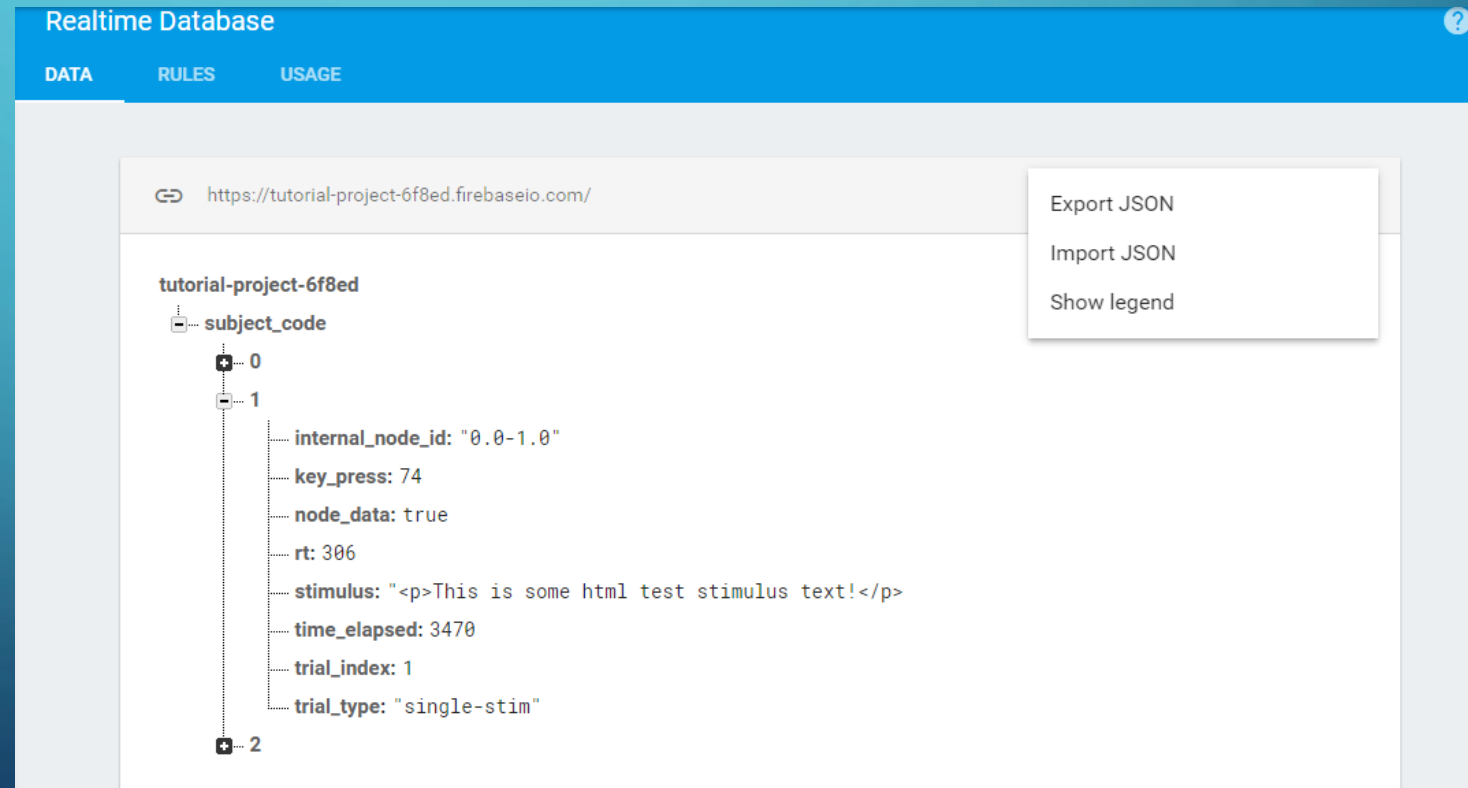
The screenshot shows the Firebase Hosting dashboard for a project named 'Tutorial Project'. The left sidebar contains navigation links for Analytics, DEVELOP (Auth, Database, Storage, Hosting, Remote Config, Test Lab, Crash), GROW (Notifications, Dynamic Links), and Spark. The main content area is titled 'Hosting' and has tabs for 'DASHBOARD' and 'USAGE'. Under 'Domain', there is a card for 'tutorial-project-6f8ed' with the URL 'https://tutorial-project-6f8ed.firebaseio.com' and a 'CONNECT CUSTOM DOMAIN' button. Below this is the 'Deployment history' section, which contains a table with one deployment entry.

Status	Time	Deploy	Files
★ Current	Aug 18, 2016 12:11 AM	rebeccawy12@gmail.com 5ajaJ2	30

At the bottom right of the deployment history table, there is a pagination control showing 'Rows per page: 10', '1-1 of 1', and navigation arrows.

AND GET YOUR RESULTS!

- Check the database tab again to see your data!
- You can export it as a json, and convert it to a csv
- You're done!



HELPFUL RESOURCES

- The google firebase homepage
 - <https://firebase.google.com/>
- Instructions for installing the Firebase Tools
 - <https://firebase.google.com/docs/cli/>
- Jspsych homepage
 - <http://www.jspsych.org/>