

BUILDING HYBRID MOBILE APPS



KYLE MCKEE

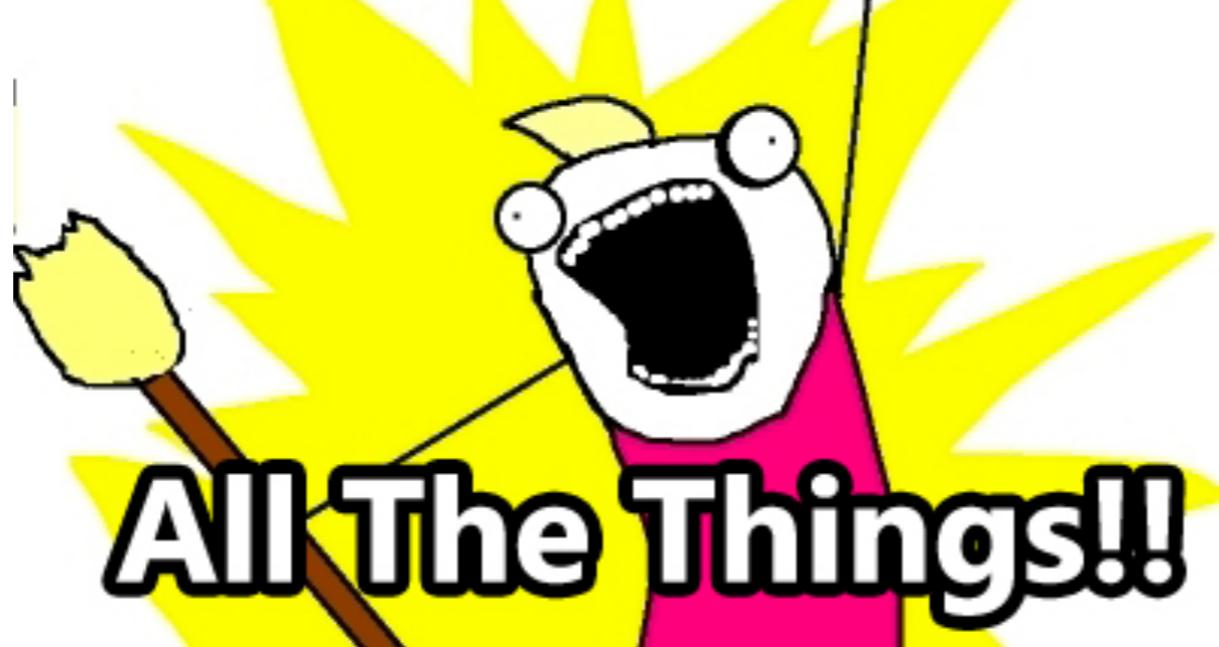


NodeSchool CLE

Downloads

`npm install -g cordova ionic`

Download



All The Things!!!

APTOBITS.COM/HYBRID-DL

TOP SECRET PASSWORD: codemash

What is a Hybrid App?



How does it work?



How does it work?



How does it work?



Visual Studio®

What about Native Functionality?

Camera
Take pictures and video from your device



Geolocation
Track location once, or repeatedly



SMS
Easily send SMS



Touch ID
Leverage iOS TouchID authentication



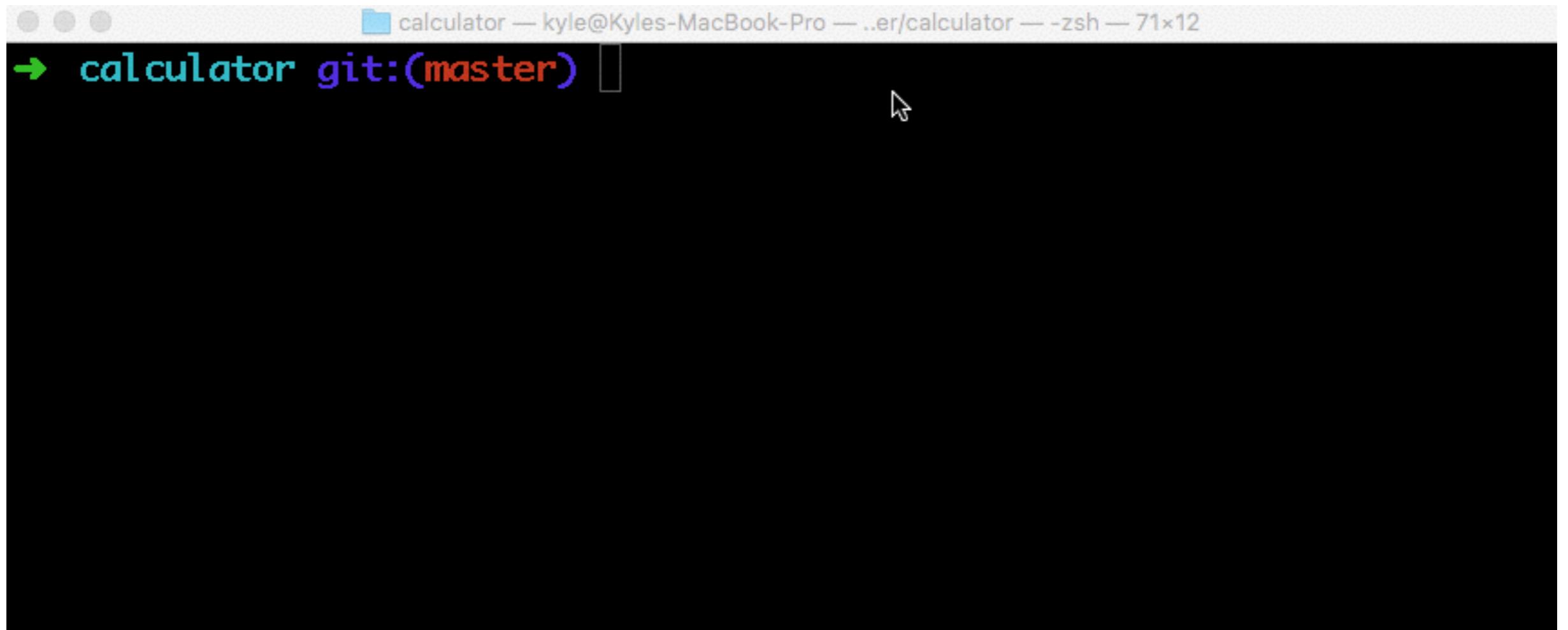
Clipboard
Easily move data into and out of the device's clipboard



Push Notifications
Easily handle remote push notifications



Plugins to the Rescue!



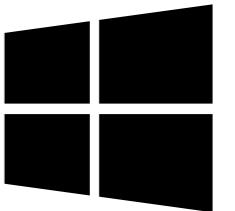
```
navigator.camera.getPicture(onSuccess, onFail);
```

```
function onSuccess(imageData) {  
    var image = document.getElementById('myImage');  
    image.src = "data:image/jpeg;base64," + imageData;  
}
```

```
function onFail(message) {  
    alert('Failed because: ' + message);  
}
```

The Cordova Bridge

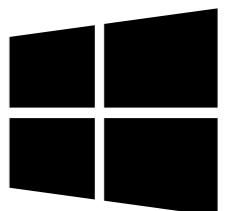
```
navigator.camera.getPicture(onSuccess, onFail);
```



The Cordova Bridge

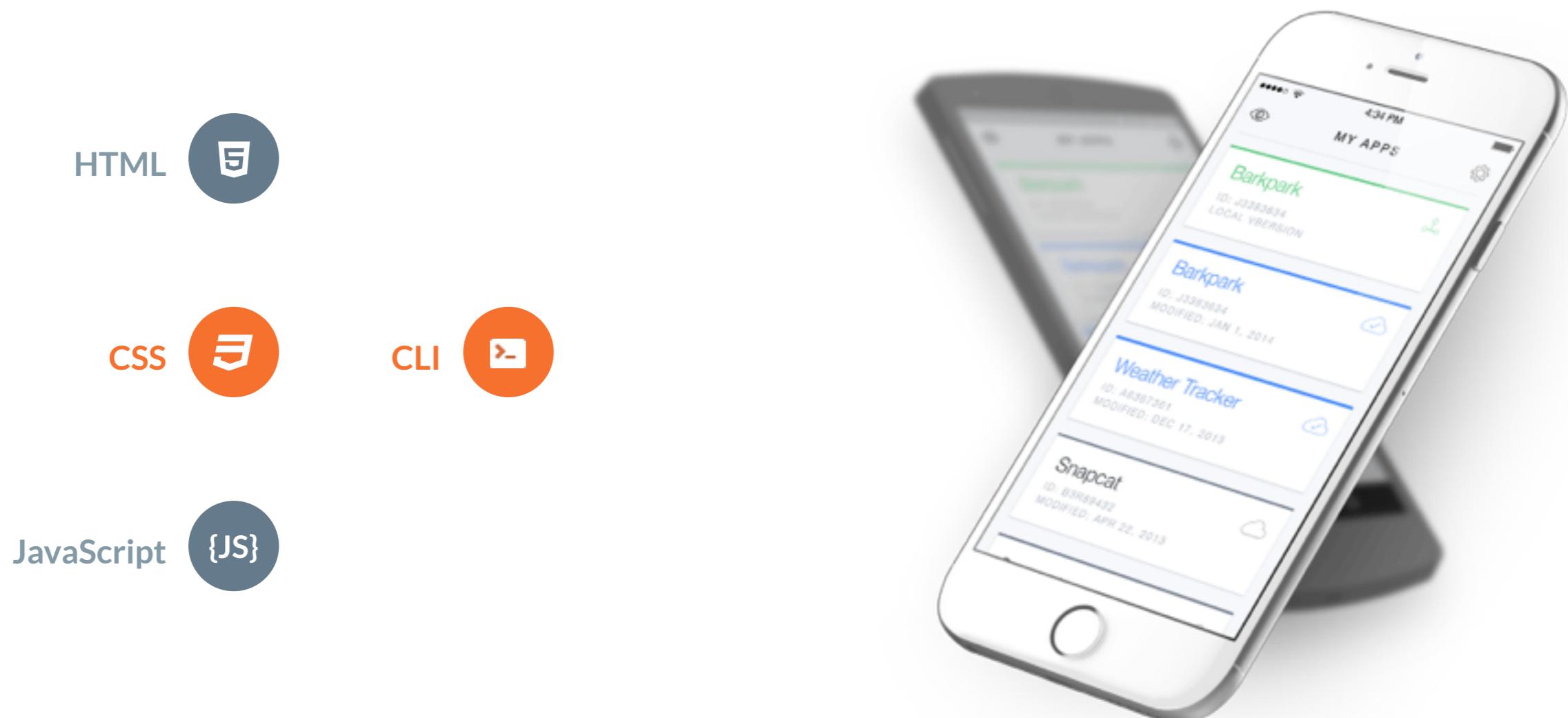


```
navigator.camera.getPicture(onSuccess, onFail);
```



What is Ionic?

“Bootstrap for Hybrid Mobile Apps”



What is Ionic?

“Bootstrap for Hybrid Mobile Apps”



BEFORE WE CODE

LOGISTICS

Logistics



Help your neighbors!

...thats what makes conferences great.



Code on Github

Peeking is allowed



Questions

Ask them!



Presentations

...between exercises

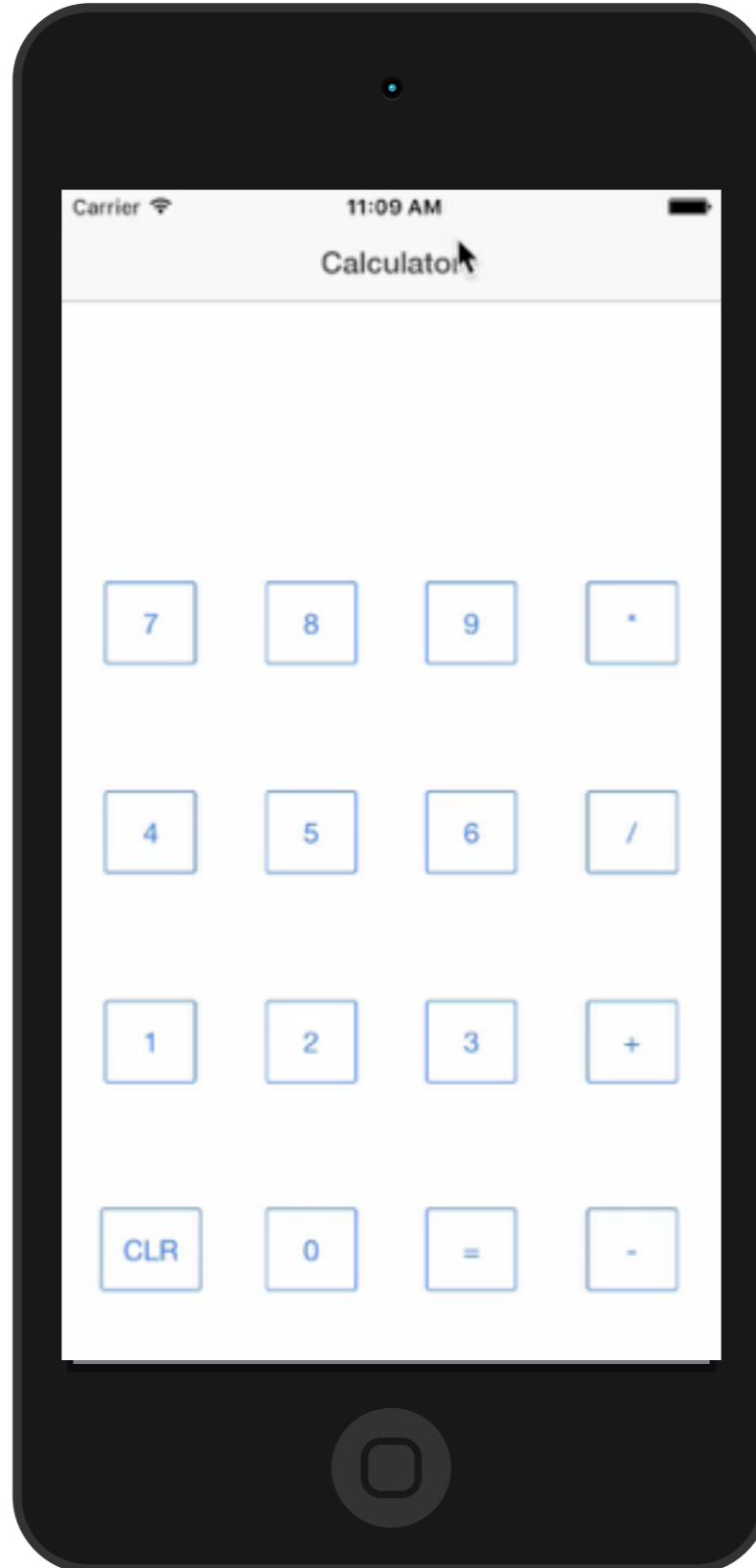


Blog Posts

Detailing out the exercise are online. aptobits.com

**LETS BUILD
STUFF!**

What are we building?



Simple Domain

We all know how it should work



Adding Plugins

We'll use a plugin to make the phone vibrate



Angular Basics

While not our focus, you'll learn about controllers, factories, scope & bindings



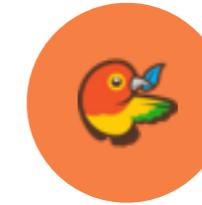
Grid Layout

Uses Ionic grid for it's layout



Bower Components

We'll use a third party library to parse the expressions

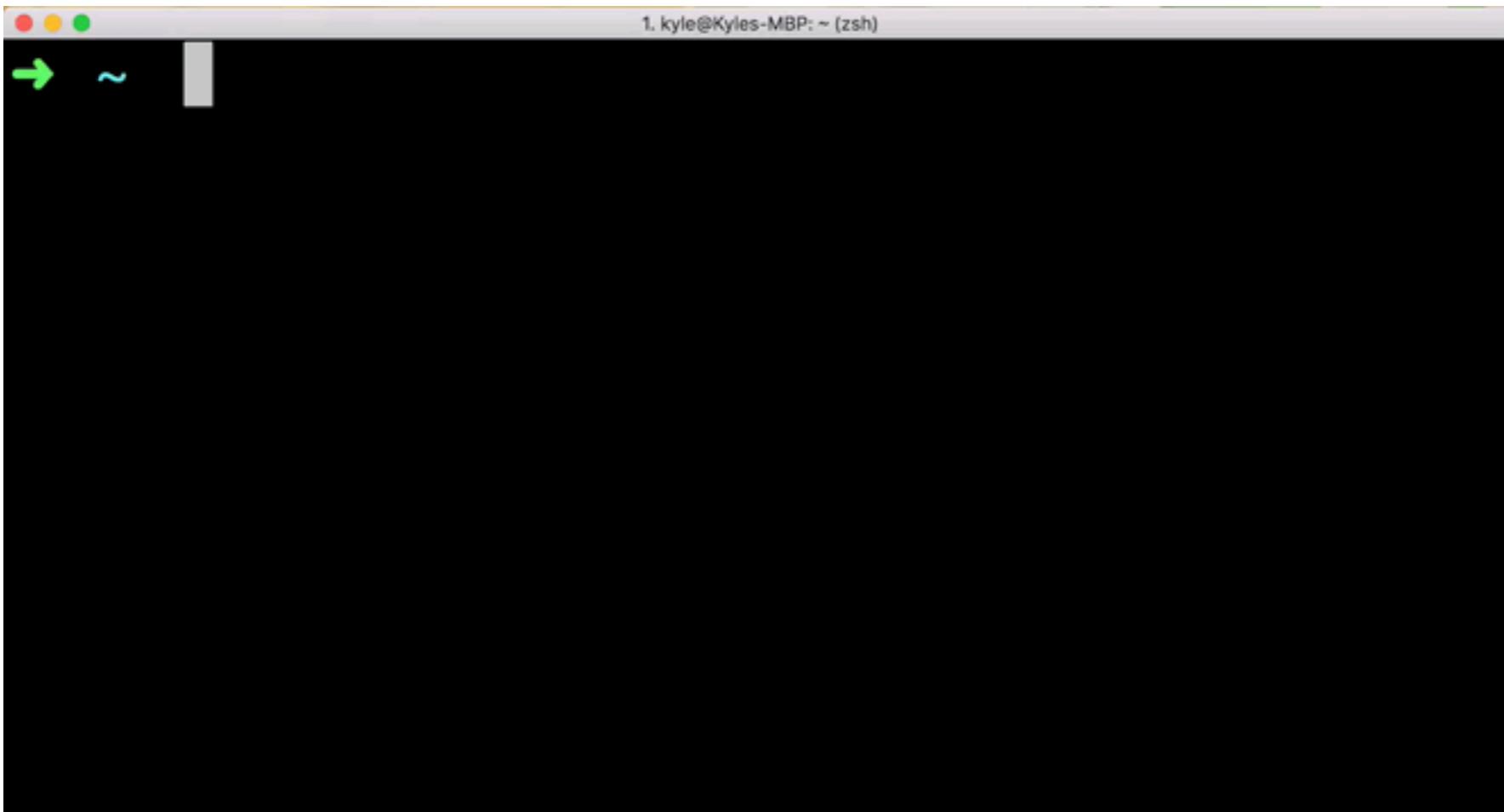


Databases

We'll gold plate our calculator with a history browser to learn PouchDB



Turn on the Lights



```
1. kyle@Kyles-MBP: ~ (zsh)
```

- 1 Open Terminal
- 2 CD into workspace
- 3 cordova create hello_cordova
- 4 cd hello_cordova

What did that make for us?

Our web app lives here

```
1. kyle@Kyles-MBP: ~/code/hello_cordova (zsh)
→ hello_cordova tree
.
├── config.xml
├── hooks
│   └── README.md
├── platforms
├── plugins
└── www
    ├── css
    │   └── index.css
    ├── img
    │   └── logo.png
    ├── index.html
    └── js
        └── index.js

7 directories, 6 files
→ hello_cordova █
```

What did that make for us?

Cordova plugins are installed here

```
1. kyle@Kyles-MBP: ~/code/hello_cordova (zsh)
→ hello_cordova tree
.
├── config.xml
├── hooks
│   └── README.md
├── platforms
└── plugins
    └── www
        ├── css
        │   └── index.css
        ├── img
        │   └── logo.png
        ├── index.html
        └── js
            └── index.js

7 directories, 6 files
→ hello_cordova █
```

What did that make for us?

iOS, Android, WP, etc
projects & binaries

```
1. kyle@Kyles-MBP: ~/code/hello_cordova (zsh)
→ hello_cordova tree
.
├── config.xml
├── hooks
│   └── README.md
└── platforms
    └── android
        ├── build
        ├── bin
        ├── lib
        └── resources
            └── www
                ├── css
                │   └── index.css
                ├── img
                │   └── logo.png
                ├── index.html
                └── js
                    └── index.js
7 directories, 6 files
→ hello_cordova █
```

What did that make for us?

Cordova config

```
1. kyle@Kyles-MBP: ~/code/hello_cordova (zsh)
→ hello_cordova tree
    ├── config.xml
    ├── hooks
    │   └── README.md
    ├── platforms
    ├── plugins
    └── www
        ├── css
        │   └── index.css
        ├── img
        │   └── logo.png
        ├── index.html
        └── js
            └── index.js

7 directories, 6 files
→ hello_cordova █
```

What did that make for us?

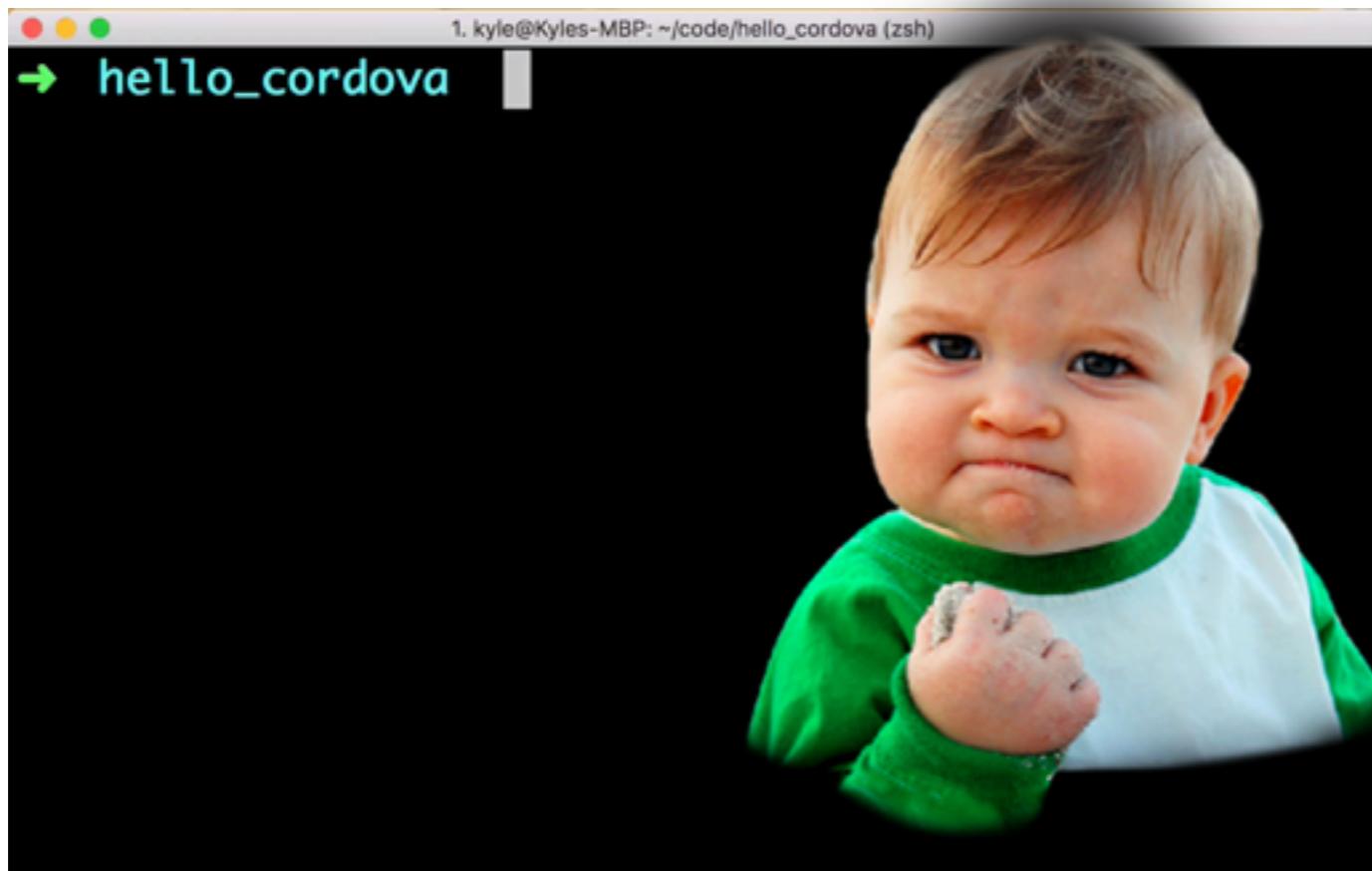
build hooks (exotic)

```
1. kyle@Kyles-MBP: ~/code/hello_cordova (zsh)
→ hello_cordova tree
.
├── config.xml
└── hooks
    └── README.md
├── platforms
├── plugins
└── www
    ├── css
    │   └── index.css
    ├── img
    │   └── logo.png
    ├── index.html
    └── js
        └── index.js

7 directories, 6 files
→ hello_cordova
```

Run it!

1 cordova platform add iOS



2 cordova run iOS



If you finish early, please offer to help your neighbors.



1 Open Terminal

2 CD into workspace

3 `cordova create
hello_cordova`

4 `cd hello_cordova`

1 `cordova platform add iOS`

2 `cordova run iOS`

Let's use Ionic this time...

Video removed

- 1 CD into workspace
- 2 ionic start calculator blank
- 3 cd calculator

What did that make for us?

Angular boiler plate

```
calculator tree -L 2
.
├── bower.json
├── config.xml
├── gulpfile.js
└── hooks
    ├── README.md
    └── after_prepare
├── ionic.project
├── package.json
└── platforms
    ├── ios
    └── platforms.json
└── plugins
    ├── cordova-plugin-console
    ├── cordova-plugin-device
    ├── cordova-plugin-splashscreen
    ├── cordova-plugin-statusbar
    ├── cordova-plugin-whitelist
    ├── fetch.json
    └── ionic-plugin-keyboard
    └── ios.json
└── scss
    └── ionic.app.scss
└── www
    ├── css
    ├── img
    ├── index.html
    ├── js
    └── lib
17 directories, 11 files
→ calculator
```

What did that make for us?

Sassy CSS

```
calculator tree -L 2
.
├── bower.json
├── config.xml
├── gulpfile.js
└── hooks
    ├── README.md
    └── after_prepare
├── ionic.project
└── package.json
├── platforms
    └── ios
        └── platforms.json
└── plugins
    ├── cordova-plugin-console
    ├── cordova-plugin-device
    ├── cordova-plugin-splashscreen
    ├── cordova-plugin-statusbar
    ├── cordova-plugin-whitelist
    ├── fetch.json
    └── ionic-plugin-keyboard
        └── ios.json
└── scss
    └── ionic.app.scss
.
├── css
├── img
├── index.html
└── js
└── lib

17 directories, 11 files
→ calculator
```

What did that make for us?

Default plugins

```
1. kyle@Kyles-MBP: ~/Code/calculator (zsh)
→ calculator tree -L 2
.
├── bower.json
├── config.xml
├── gulpfile.js
└── hooks
    ├── README.md
    └── after_prepare
├── ionic.project
└── package.json
├── platforms
    └── ios
        └── platforms.json
└── plugins
    ├── cordova-plugin-console
    ├── cordova-plugin-device
    ├── cordova-plugin-splashscreen
    ├── cordova-plugin-statusbar
    ├── cordova-plugin-whitelist
    ├── fetch.json
    └── ionic-plugin-keyboard
        └── ios.json
└── scss
    └── ionic.app.scss
└── www
    ├── css
    ├── img
    ├── index.html
    ├── js
    └── lib

17 directories, 11 files
→ calculator
```

What did that make for us?

iOS added by default

```
calculator tree -L 2
.
├── bower.json
├── config.xml
├── gulpfile.js
└── hooks
    ├── README.md
    └── after_prepare
├── ionic.project
├── package.json
└── platforms
    └── ios
        └── platforms.json
plugins
├── cordova-plugin-console
├── cordova-plugin-device
├── cordova-plugin-splashscreen
├── cordova-plugin-statusbar
├── cordova-plugin-whitelist
├── fetch.json
└── ionic-plugin-keyboard
    └── ios.json
└── scss
    └── ionic.app.scss
└── www
    ├── css
    ├── img
    ├── index.html
    ├── js
    └── lib

17 directories, 11 files
→ calculator
```

What did that make for us?

npm dependencies

```
1. kyle@Kyles-MBP: ~/Code/calculator (zsh)
→ calculator tree -L 2
.
├── bower.json
├── config.xml
├── gulpfile.js
└── hooks
    ├── README.md
    └── after_prepare
├── ionic.project
└── package.json
    └── platforms
        ├── ios
        └── platforms.json
└── plugins
    ├── cordova-plugin-console
    ├── cordova-plugin-device
    ├── cordova-plugin-splashscreen
    ├── cordova-plugin-statusbar
    ├── cordova-plugin-whitelist
    ├── fetch.json
    └── ionic-plugin-keyboard
        └── ios.json
└── scss
    └── ionic.app.scss
└── www
    ├── css
    ├── img
    ├── index.html
    ├── js
    └── lib

17 directories, 11 files
→ calculator
```

What did that make for us?

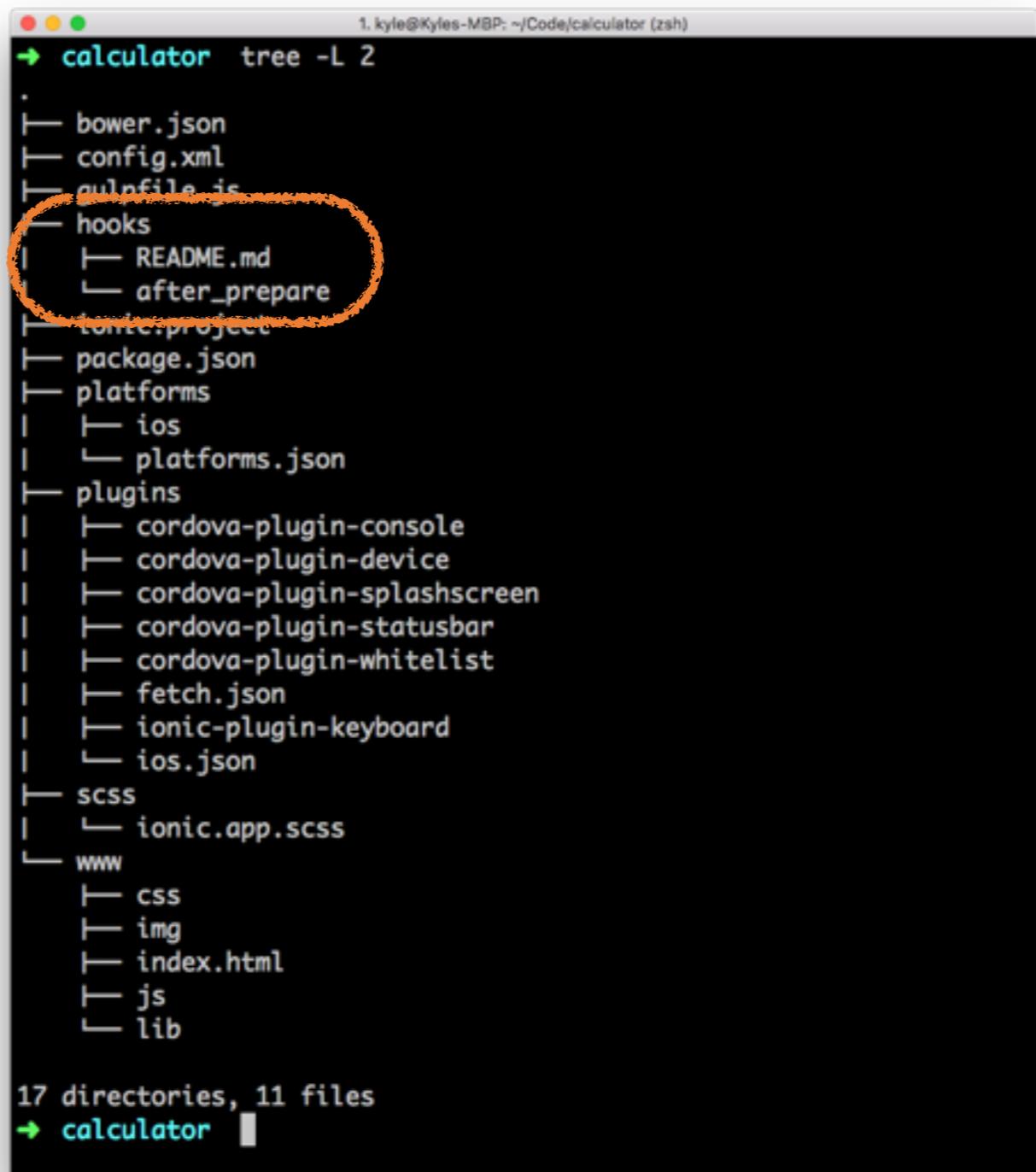
used for ionic services

```
calculator tree -L 2
.
├── bower.json
├── config.xml
├── gulpfile.js
└── hooks
    └── README.md
    └── after_prepare
├── ionic.project
├── package.json
└── platforms
    └── ios
        └── platforms.json
└── plugins
    ├── cordova-plugin-console
    ├── cordova-plugin-device
    ├── cordova-plugin-splashscreen
    ├── cordova-plugin-statusbar
    ├── cordova-plugin-whitelist
    ├── fetch.json
    └── ionic-plugin-keyboard
        └── ios.json
└── scss
    └── ionic.app.scss
└── www
    ├── css
    ├── img
    ├── index.html
    ├── js
    └── lib

17 directories, 11 files
→ calculator
```

What did that make for us?

BLACK MAGIC



```
1. kyle@Kyles-MBP: ~/Code/calculator (zsh)
→ calculator tree -L 2
.
├── bower.json
├── config.xml
├── gulpfile.js
└── hooks
    ├── README.md
    └── after_prepare
├── ionic.project
├── package.json
├── platforms
│   └── ios
│       └── platforms.json
└── plugins
    ├── cordova-plugin-console
    ├── cordova-plugin-device
    ├── cordova-plugin-splashscreen
    ├── cordova-plugin-statusbar
    ├── cordova-plugin-whitelist
    ├── fetch.json
    └── ionic-plugin-keyboard
        └── ios.json
└── scss
    └── ionic.app.scss
└── www
    ├── css
    ├── img
    ├── index.html
    ├── js
    └── lib

17 directories, 11 files
→ calculator
```

What did that make for us?

build tasks

```
1. kyle@Kyles-MBP: ~/Code/calculator (zsh)
→ calculator tree -L 2
.
├── bower.json
└── config
    └── ...
        ├── gulpfile.js
        └── books
            ├── README.md
            ├── after_prepare
            ├── ionic.project
            ├── package.json
            ├── platforms
            │   ├── ios
            │   └── platforms.json
            ├── plugins
            │   ├── cordova-plugin-console
            │   ├── cordova-plugin-device
            │   ├── cordova-plugin-splashscreen
            │   ├── cordova-plugin-statusbar
            │   ├── cordova-plugin-whitelist
            │   ├── fetch.json
            │   ├── ionic-plugin-keyboard
            │   └── ios.json
            └── scss
                └── ionic.app.scss
        └── www
            ├── css
            ├── img
            ├── index.html
            ├── js
            └── lib

17 directories, 11 files
→ calculator
```

What did that make for us?

cordova config

```
calculator tree -L 2
.
├── bower.json
├── config.xml
└── gulpfile.js
├── hooks
│   ├── README.md
│   └── after_prepare
├── ionic.project
├── package.json
├── platforms
│   ├── ios
│   └── platforms.json
└── plugins
    ├── cordova-plugin-console
    ├── cordova-plugin-device
    ├── cordova-plugin-splashscreen
    ├── cordova-plugin-statusbar
    ├── cordova-plugin-whitelist
    ├── fetch.json
    └── ionic-plugin-keyboard
        └── ios.json
└── scss
    └── ionic.app.scss
└── www
    ├── css
    ├── img
    ├── index.html
    ├── js
    └── lib

17 directories, 11 files
→ calculator
```

What did that make for us?

app dependencies

```
1. kyle@Kyles-MBP: ~/Code/calculator (zsh)
→ calculator tree -L 2
+-- bower.json
+-- config.xml
+-- gulpfile.js
+-- hooks
|   +-- README.md
|   +-- after_prepare
+-- ionic.project
+-- package.json
+-- platforms
|   +-- ios
|   +-- platforms.json
+-- plugins
|   +-- cordova-plugin-console
|   +-- cordova-plugin-device
|   +-- cordova-plugin-splashscreen
|   +-- cordova-plugin-statusbar
|   +-- cordova-plugin-whitelist
|   +-- fetch.json
|   +-- ionic-plugin-keyboard
|   +-- ios.json
+-- scss
|   +-- ionic.app.scss
+-- www
|   +-- css
|   +-- img
|   +-- index.html
|   +-- js
|   +-- lib

17 directories, 11 files
→ calculator
```



01_ionic_started

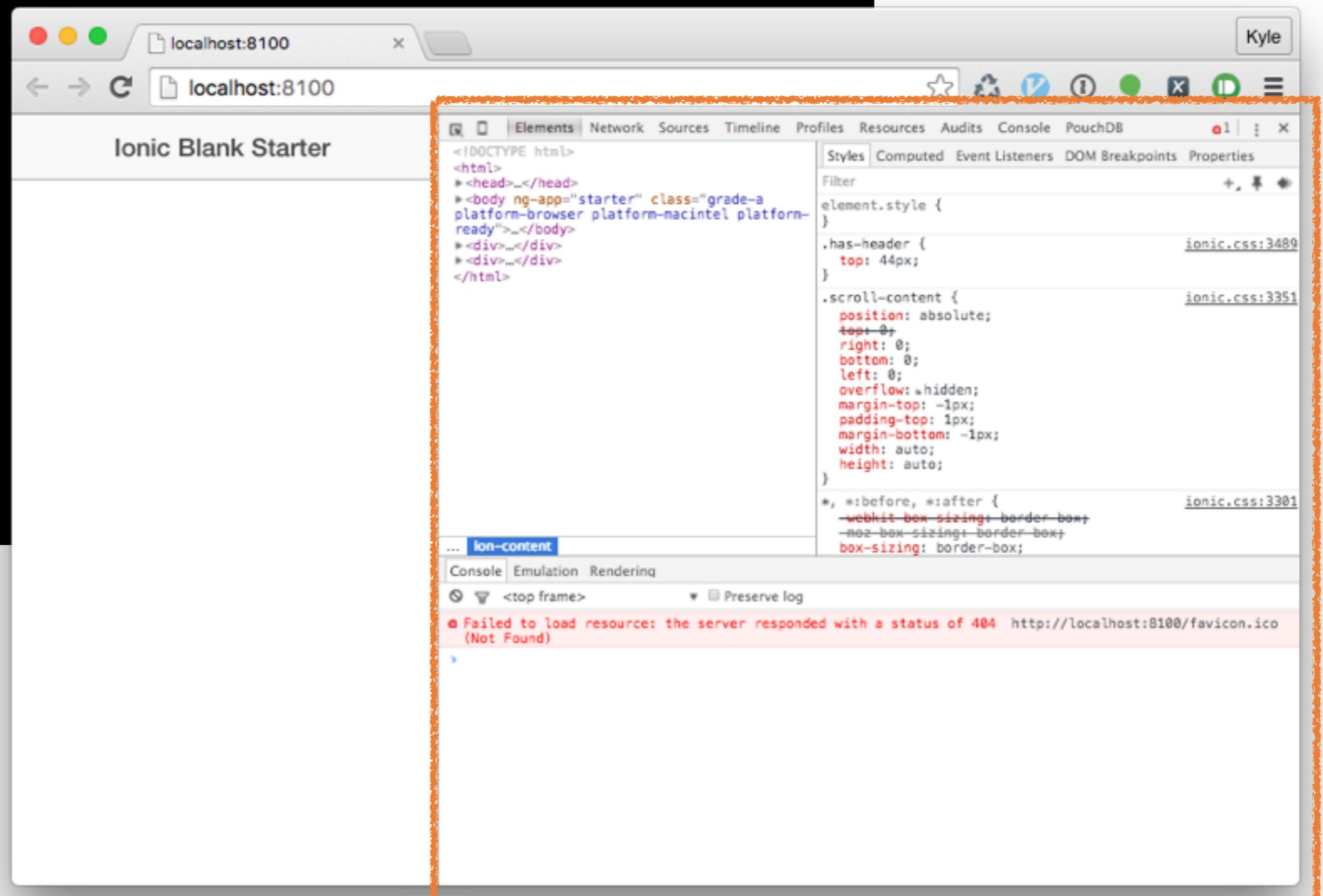
Let's serve it up

1

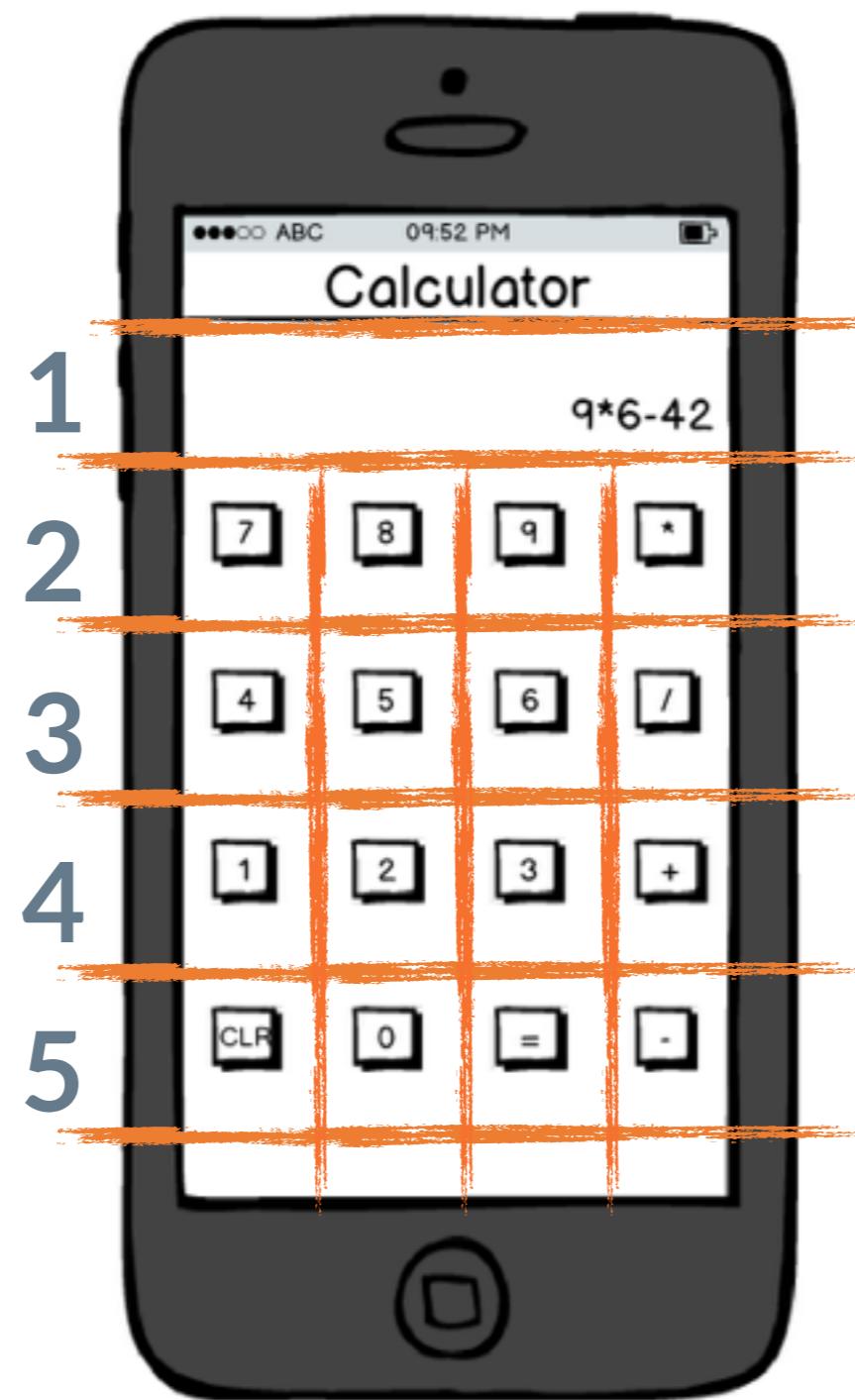
ionic serve

1. kyle@Kyles-MBP: ~/Code/calculator (zsh)

calculator git:(master) ↵



The Layout



<http://ionicframework.com/docs/components/#grid>

If you finish early, please
offer to help your neighbors.



The Layout

```
1 <div class="row">
2   <div class="col">display text goes here</div>
3 </div>
4 <div class="row">
5   <div class="col">btn</div>
6   <div class="col">btn</div>
7   <div class="col">btn</div>
8   <div class="col">btn</div>
9 </div>
10 <div class="row">
11   <div class="col">btn</div>
12   <div class="col">btn</div>
13   <div class="col">btn</div>
14   <div class="col">btn</div>
15 </div>
16 <div class="row">
17   <div class="col">btn</div>
18   <div class="col">btn</div>
19   <div class="col">btn</div>
20   <div class="col">btn</div>
21 </div>
22 <div class="row">
23   <div class="col">btn</div>
24   <div class="col">btn</div>
25   <div class="col">btn</div>
26   <div class="col">btn</div>
27 </div>
```



The Layout

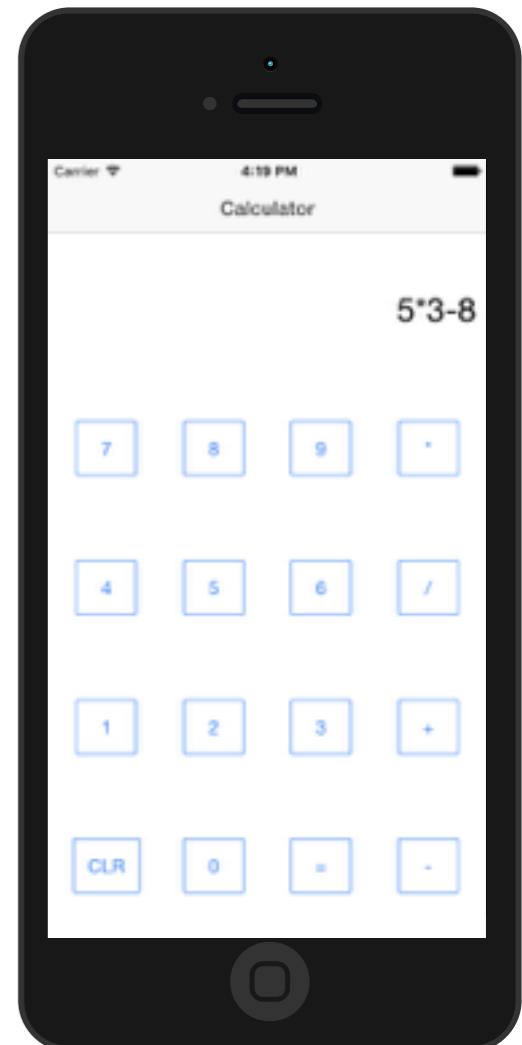
www/index.html

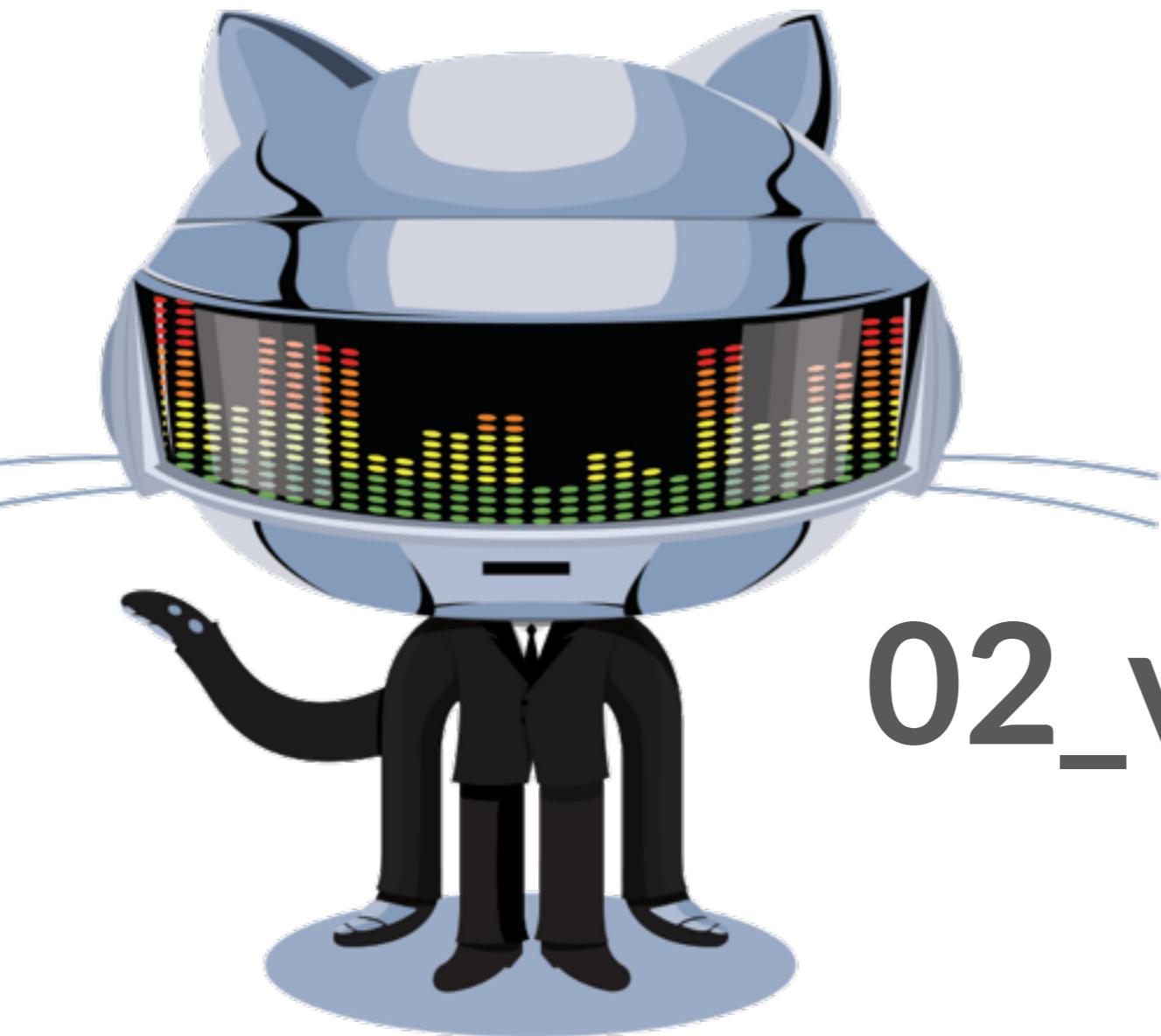
```
1 <ion-content scroll="false" class="fill-height">
2   <div class="row row-center">
3     <div class="col display">5*3-8</div>
4   </div>
5   <div class="row row-center">
6     <div class="col">
7       <!-- Look at all the duplication!  Css mixins or an
8         angular directive could help here. -->
9       <button class="button button-outline button-positive">
10      7
11    </button>
12  </div>
13  <div class="col">
14    <button class="button button-outline button-positive">
15      8
16    </button>
17  </div>
18  <div class="col">
19    <button class="button button-outline button-positive">
20      9
21    </button>
22  </div>
23  <div class="col">
24    <button class="button button-outline button-positive">
25      *
26    </button>
27  </div>
28 </div>
29 <div class="row row-center">
30   <div class="col">
31     <button class="button button-outline button-positive">
32       4
33     </button>
34   </div>
35   <div class="col">
36     <button class="button button-outline button-positive">
37       5
38     </button>
39   </div>
40   <div class="col">
```

www/css/style.css

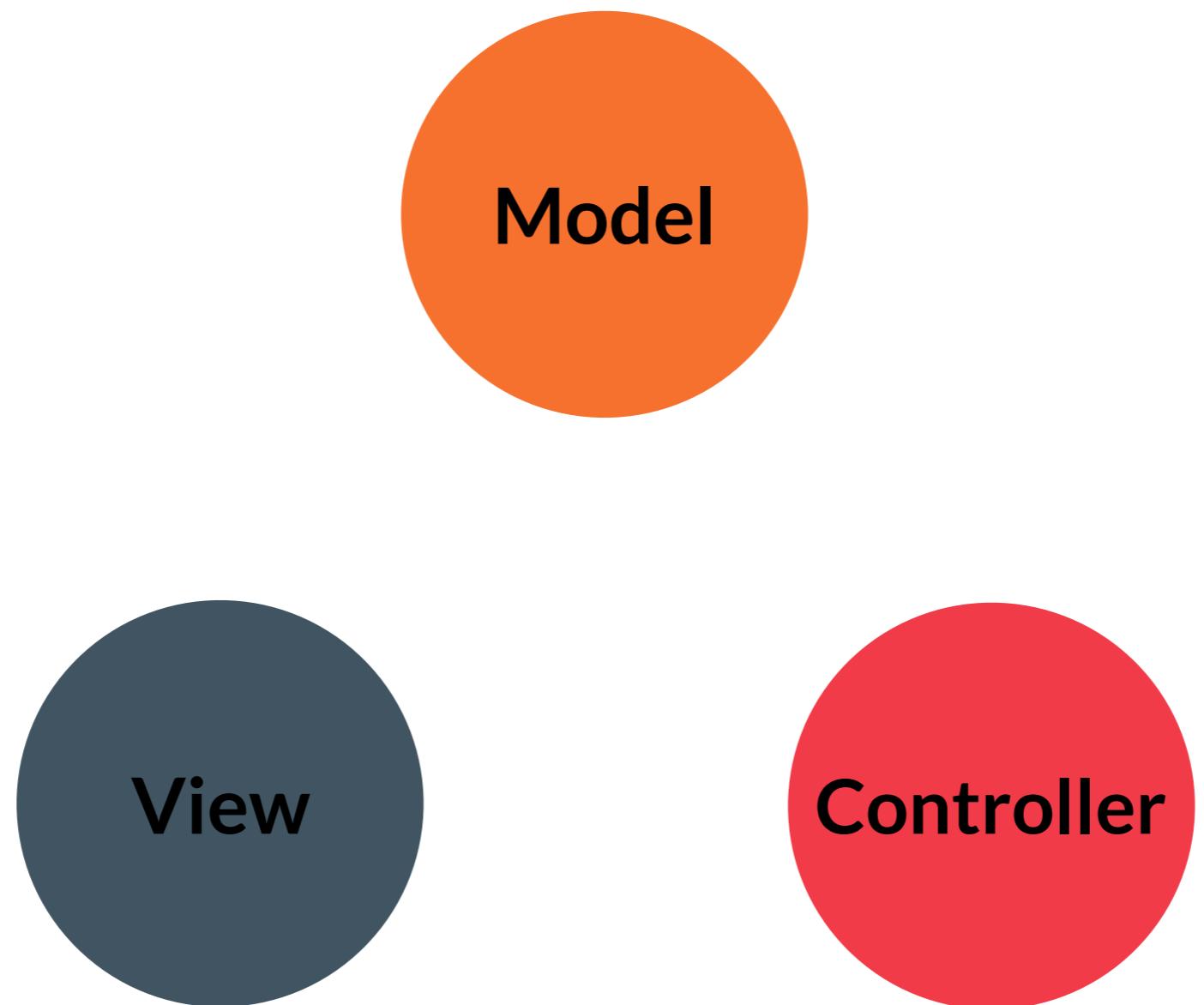
```
1  /* These two classes are used to make the button
2   * grid stretch vertically to fill the available
3   * space
4   */
5   .fill-height {
6     display: flex;
7     flex-direction: column;
8   }
9   .fill-height > div.row {
10    flex: 1;
11  }

14  /* These two classes center the buttons in their
15   * cells and right align the display text.
16   * The second selector has a higher specificity,
17   * so it overrides the centering.
18   */
19   ion-content .col {
20     text-align: center;
21   }
22   ion-content div.display {
23     font-size: 2em;
24     text-align: right;
25   }
```

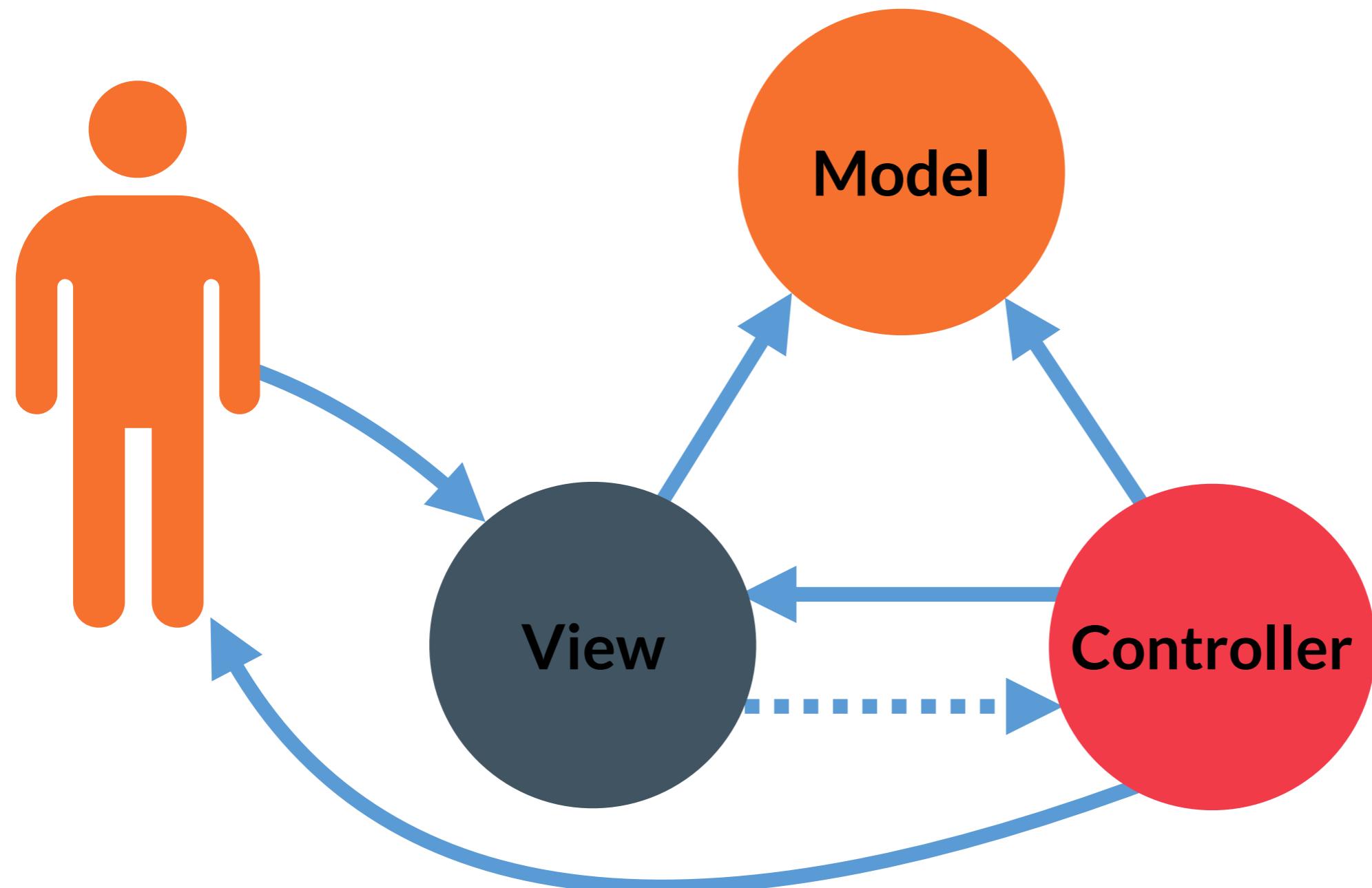




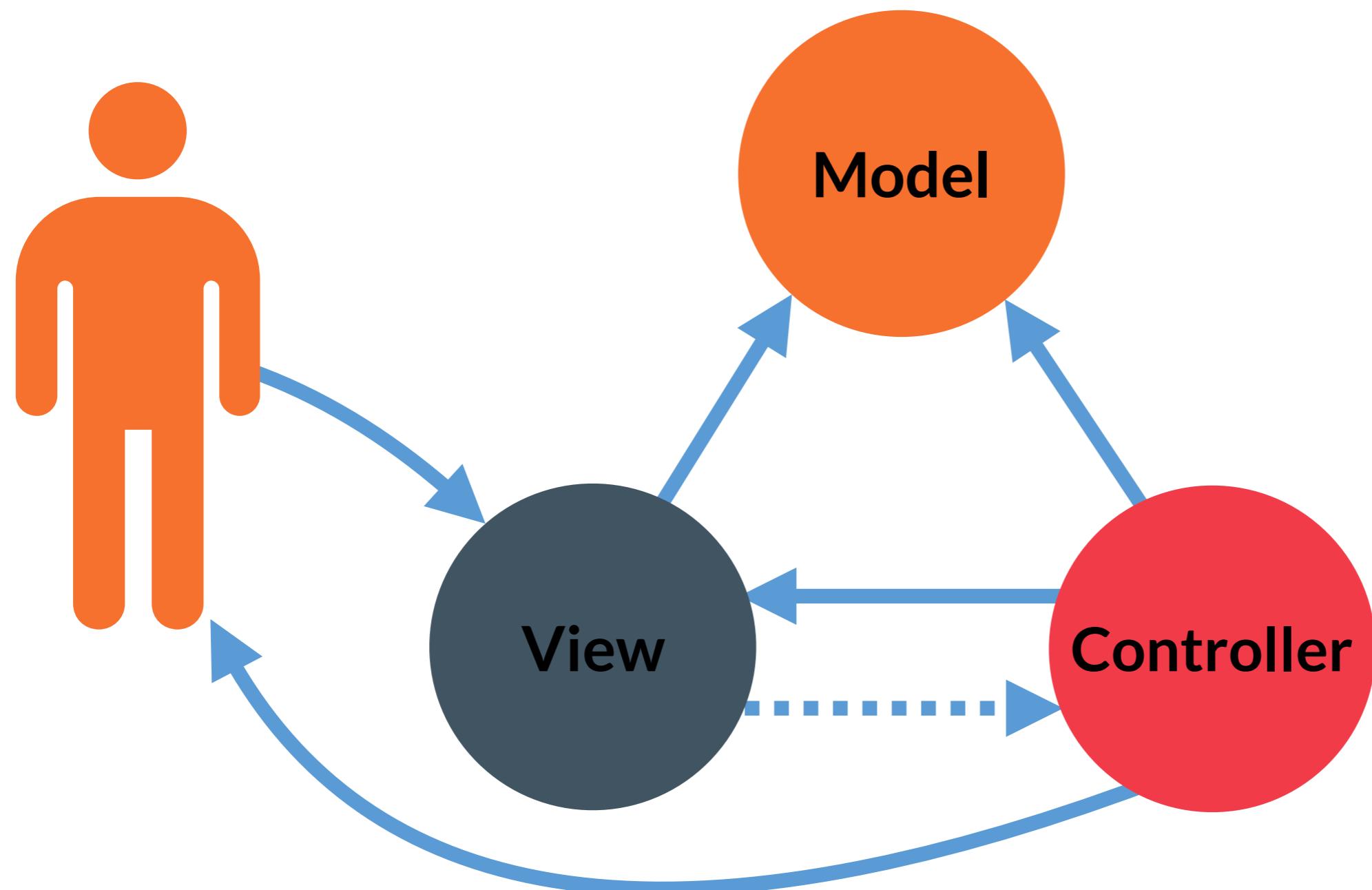
02_view_completed



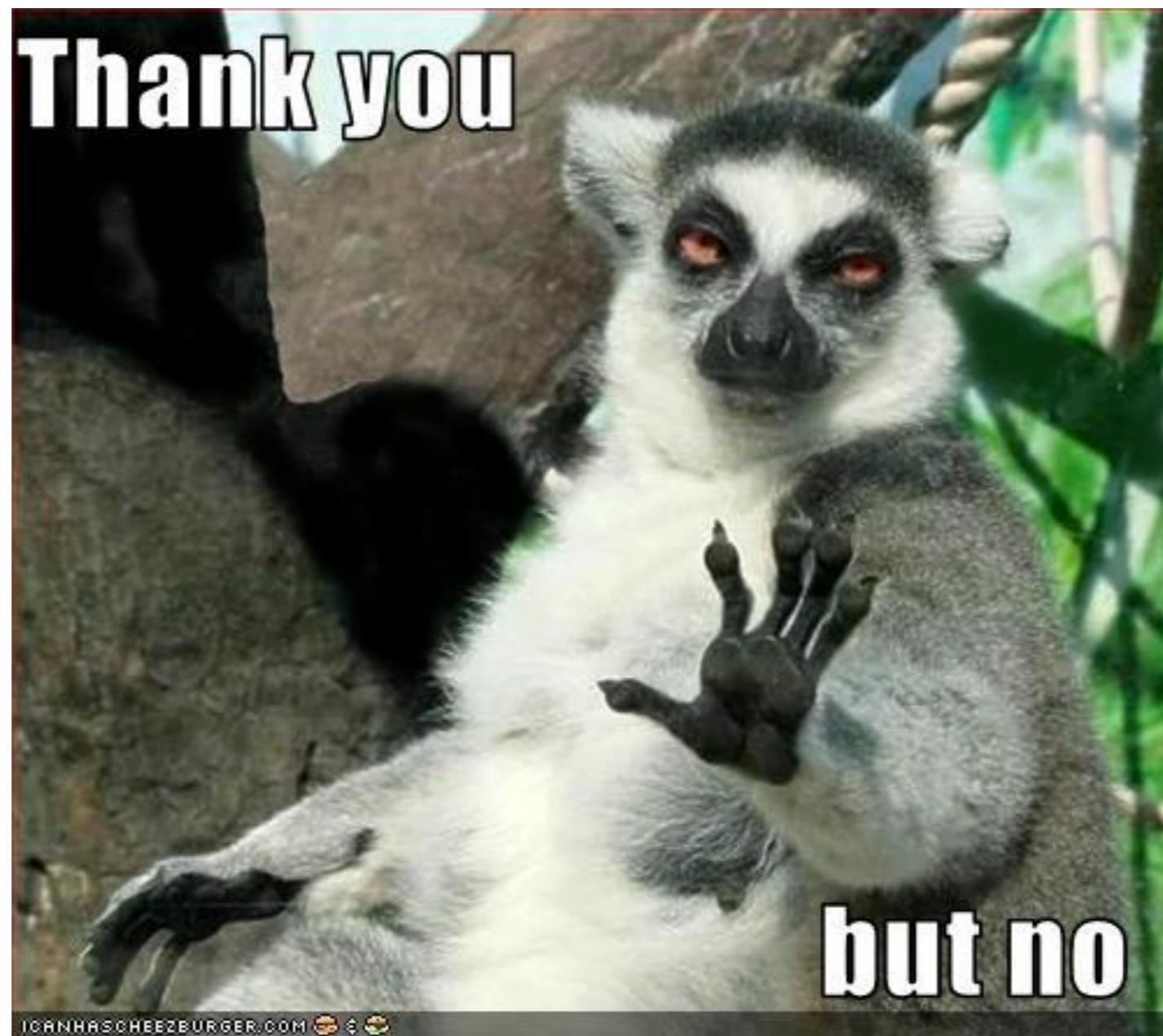
MVC in however long it takes



MVC in 30 seconds



30_s



Adding a Controller

www/index.html

```
1 <body ng-app="starter" ng-controller="CalculatorController">
2   <!-- ... -->
3 </body>
```

www/index.html

```
1 <button class="button button-outline button-positive"
2   ng-click="clear()">
3   CLR
4 </button>
```

+ www/js/controller.js

```
1 angular.module('starter')
2 .controller('CalculatorController', function($scope) {
3   $scope.clear = function() {
4     alert('Clear!');
5   };
6 });
```

If you finish early, please
offer to help your neighbors.



A bit of Plumbing...

www/index.html

```
1 <head>
2   <!-- ... -->
3   <!-- your app's js -->
4   <script src="js/app.js"></script>
5   <script src="js/controller.js"></script>
6 </head>
```

Your Turn

1

Add equals() and appendToDisplay(character) to scope

You can just `console.log` or `alert` in them for now.

2

Bind them to your buttons

All buttons should have a click handler when you're done.

3

Add a “display” property to scope and bind it

This property will hold the `value` currently being displayed.

4

Make “equals()” set the display to “100”

We'll make this smarter later, for now just **hard code** it.

5

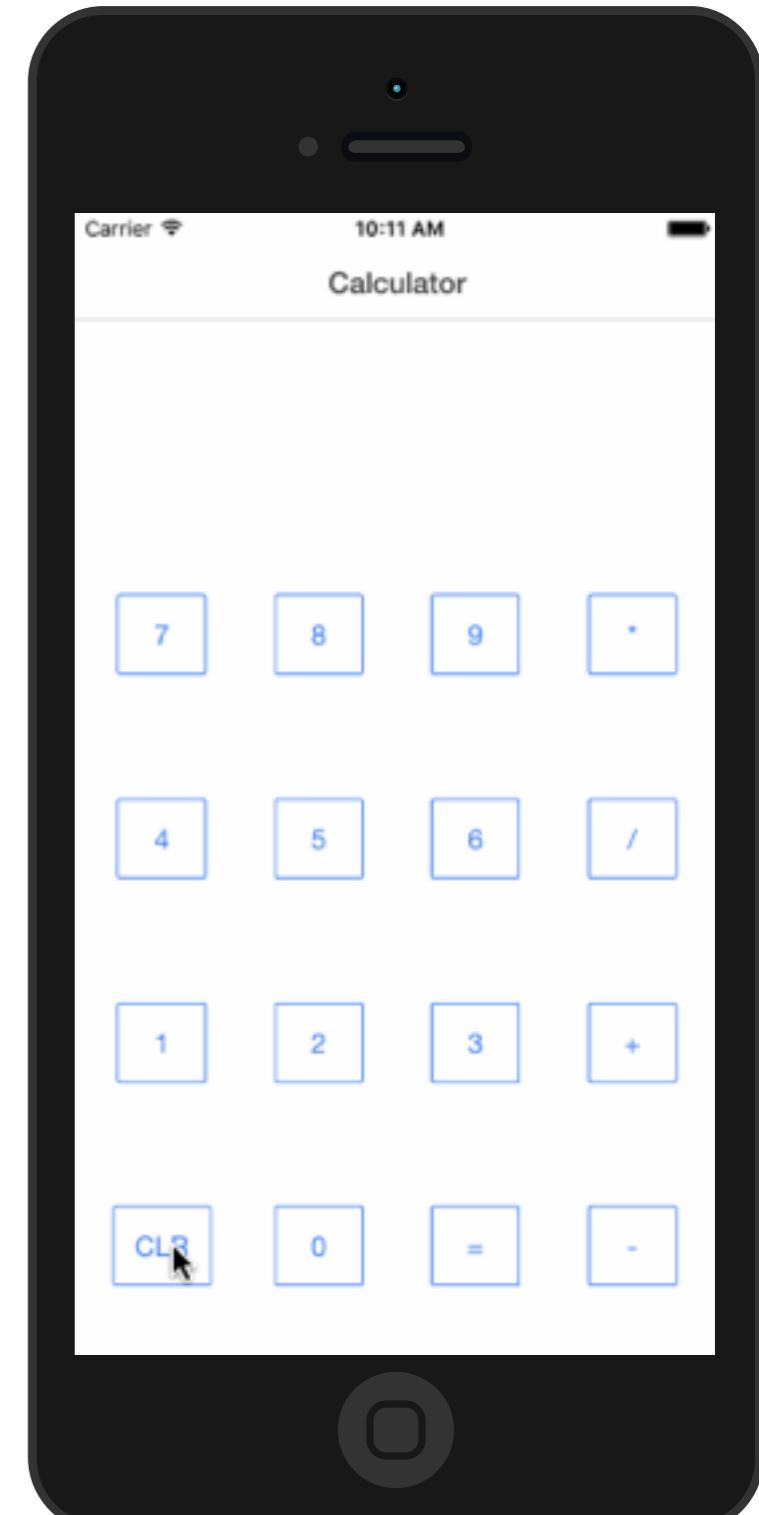
Make “clear()” empty the display

This will **empty** the currently displayed value.

6

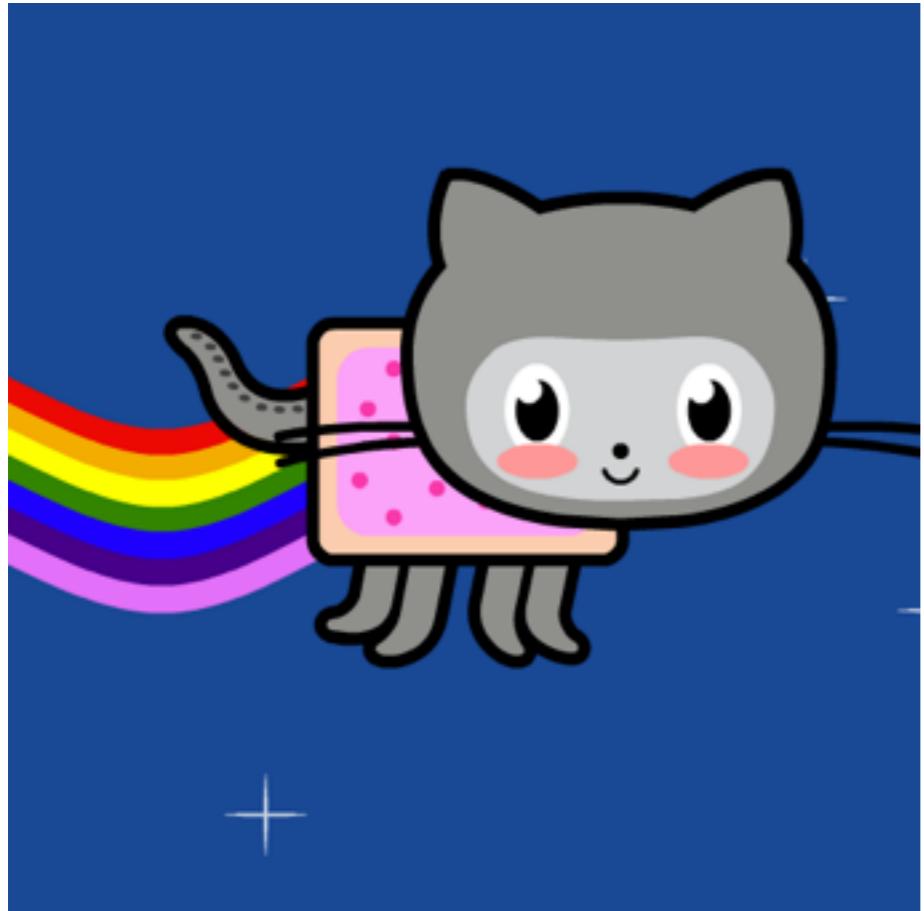
Make “appendToDisplay(character)” update the display

This will **append** the selected character to the display.



If you finish early, please offer to help your neighbors.





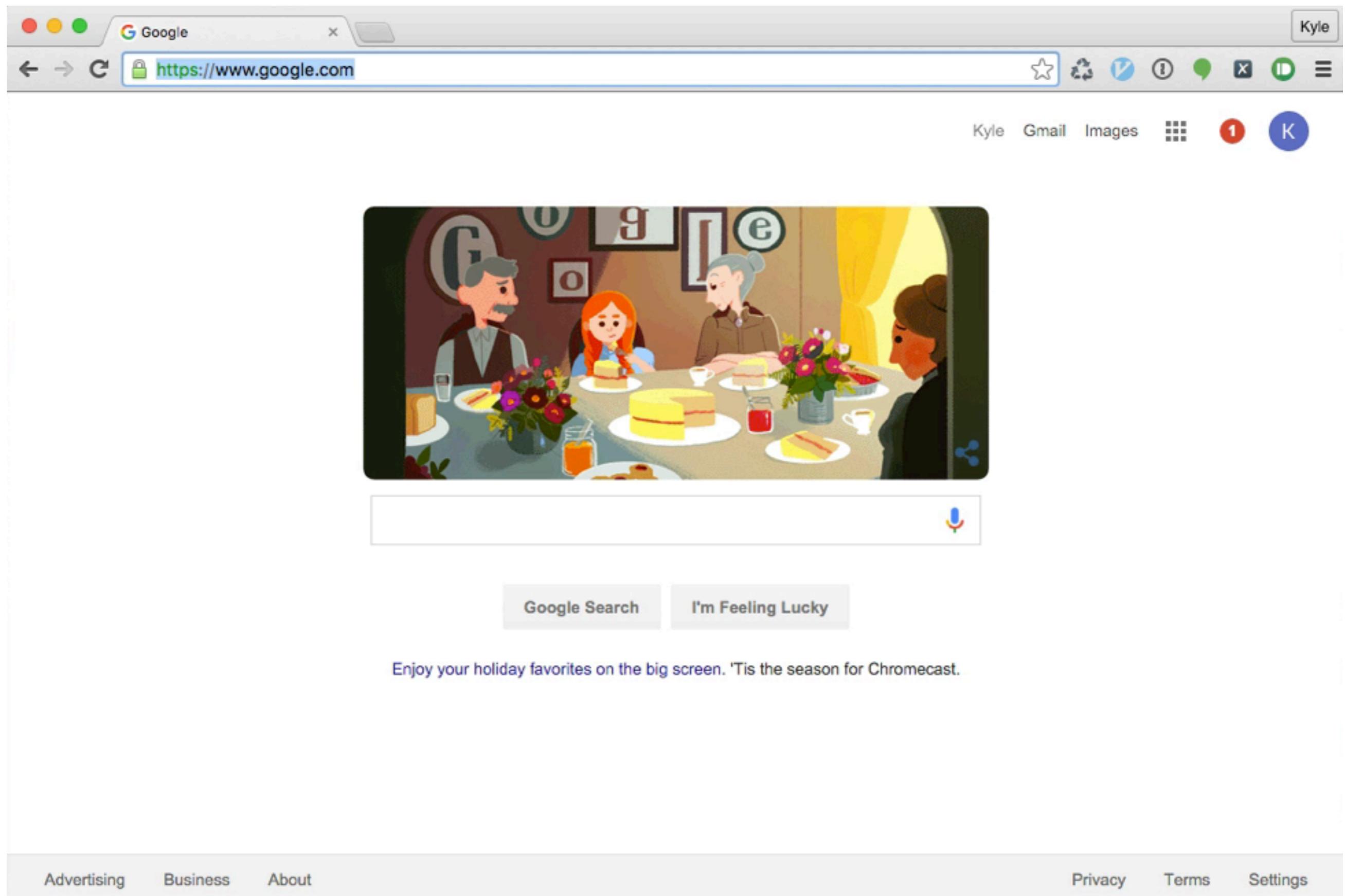
03_controller_basics

Parsing the Equation



...well, maybe not

Finding Libraries with Bower



A screenshot of a Google search results page. The search bar at the top contains the query "find bower library". Below the search bar, there are several search results, each consisting of a snippet of text, a URL link, and a snippet of code. The snippets appear to be from GitHub repositories related to Bower libraries. The overall layout is typical of a Google search results page with its characteristic blue links and snippet previews.

Install EpsilonJS

1

bower install epsilonjs

This **downloads the dependency** and puts it in your lib directory.

2

Add the minified EpsilonJS script to your Index.html

Hint: Bower is configured to install to your **lib** directory.

3

Serve it

ionic serve

4

Use browser's dev tools to confirm EpsilonJS is defined.

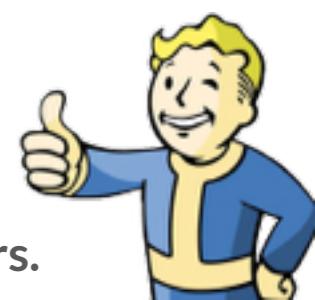
If it's **undefined**, check steps 1 and 2.

5

Use Epsilon to make equals() actually work!

Github documentation is your friend.

If you finish early, please
offer to help your neighbors.



Updated Equals

www/js/controller.js

```
1 angular.module('starter')
2   .controller('CalculatorController', function($scope) {
3     // ...
4     $scope.equals = function () {
5       var equation = $scope.display;
6       var parser = new Epsilon.ExpressionParser(equation);
7       var result = parser.evaluate();
8       $scope.display = result;
9     };
10   });

```



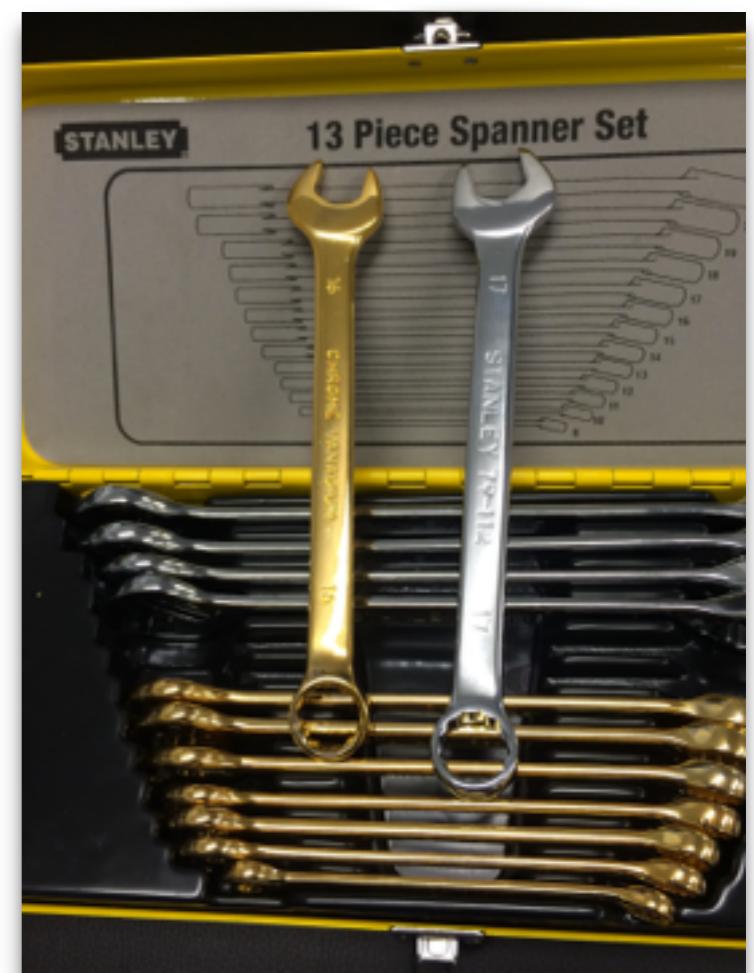
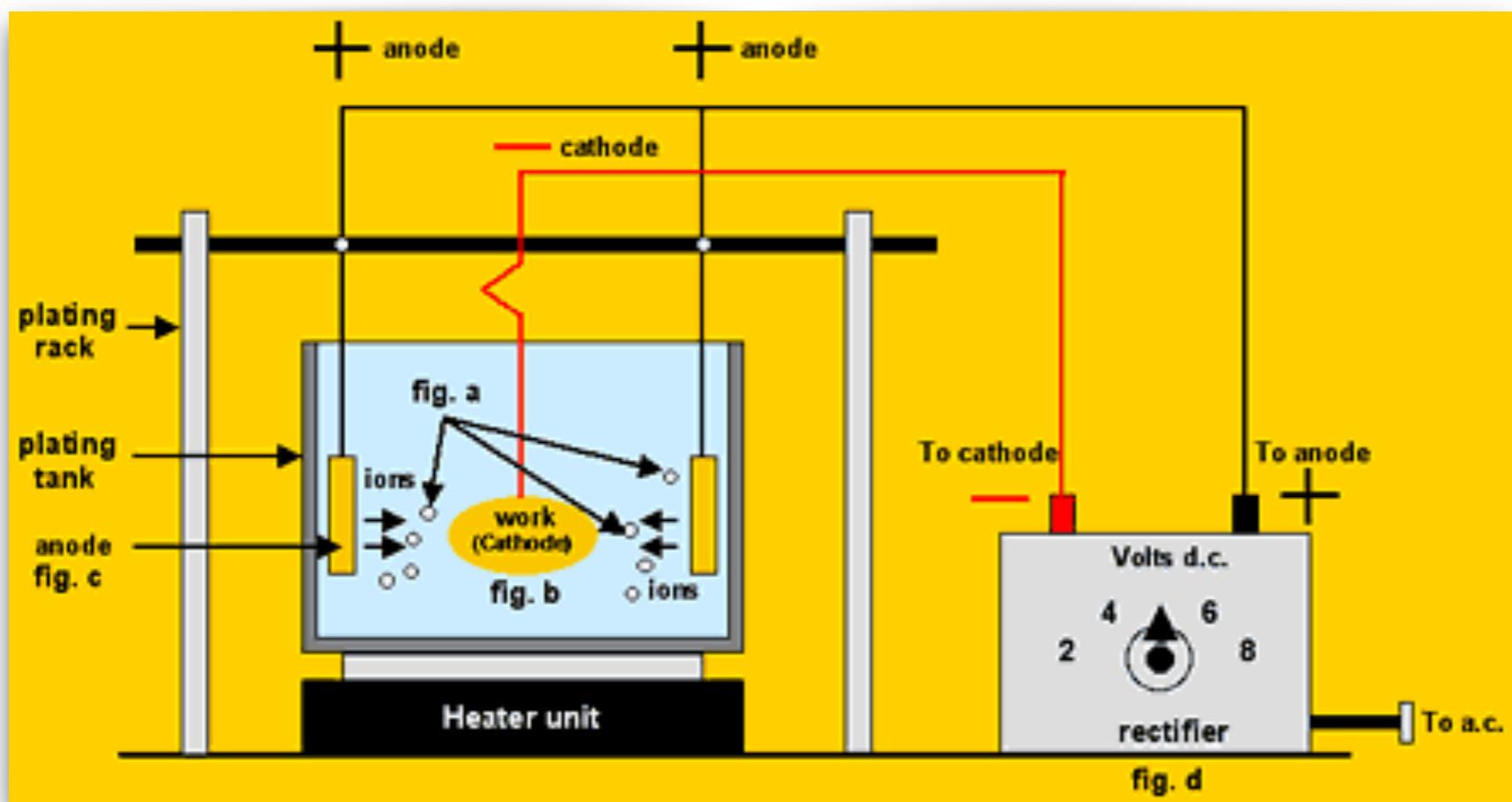
IT WORKS!!!!



04_it_works



GOLD PLATING



Adding Plugins

<https://cordova.apache.org/plugins>

cordova-plugin-vibration v2.0.0 by **stevegill**

Cordova Vibration Plugin

Apache
7,672 downloads last month
Last updated 25 days ago

cordova-plugin-velda-devicefeedback v0.0.2 by **vvelda**

Plugin provides a way for haptic and acoustic feedback (native alike) to the user.

Simplified
193 downloads last month
Last updated 103 days ago

cordova-plugin-vibrate-intense v1.0.1 by **timwindsor**

BlackBerry 10 Community Contributed API to use the Vibration control

Apache
20 downloads last month
Last updated 158 days ago

apache / cordova-plugin-vibration

mirrored from <git://git.apache.org/cordova-plugin-vibration.git>

Watch ▾ 4

Star 49

Fork 64

Code

Pull requests 3

Pulse

Graphs

Mirror of Apache Cordova Plugin vibration

231 commits

10 branches

33 releases

32 contributors

Branch: master ▾

New pull request

New file

Find file

HTTPS ▾

<https://github.com/apache/cordova-plugin-vibration>



Download ZIP



daserge CB-9365 Add support for 'vibrateWithPattern' to Windows Phone 8.1 / W...

Latest commit c5e7221 4 days ago



CB-9128 cordova-plugin-vibration documentation translation: cordova-p...

6 months ago



CB-9365 Add support for 'vibrateWithPattern' to Windows Phone 8.1 / W...

4 days ago

Make the device vibrate when you hit equals

1

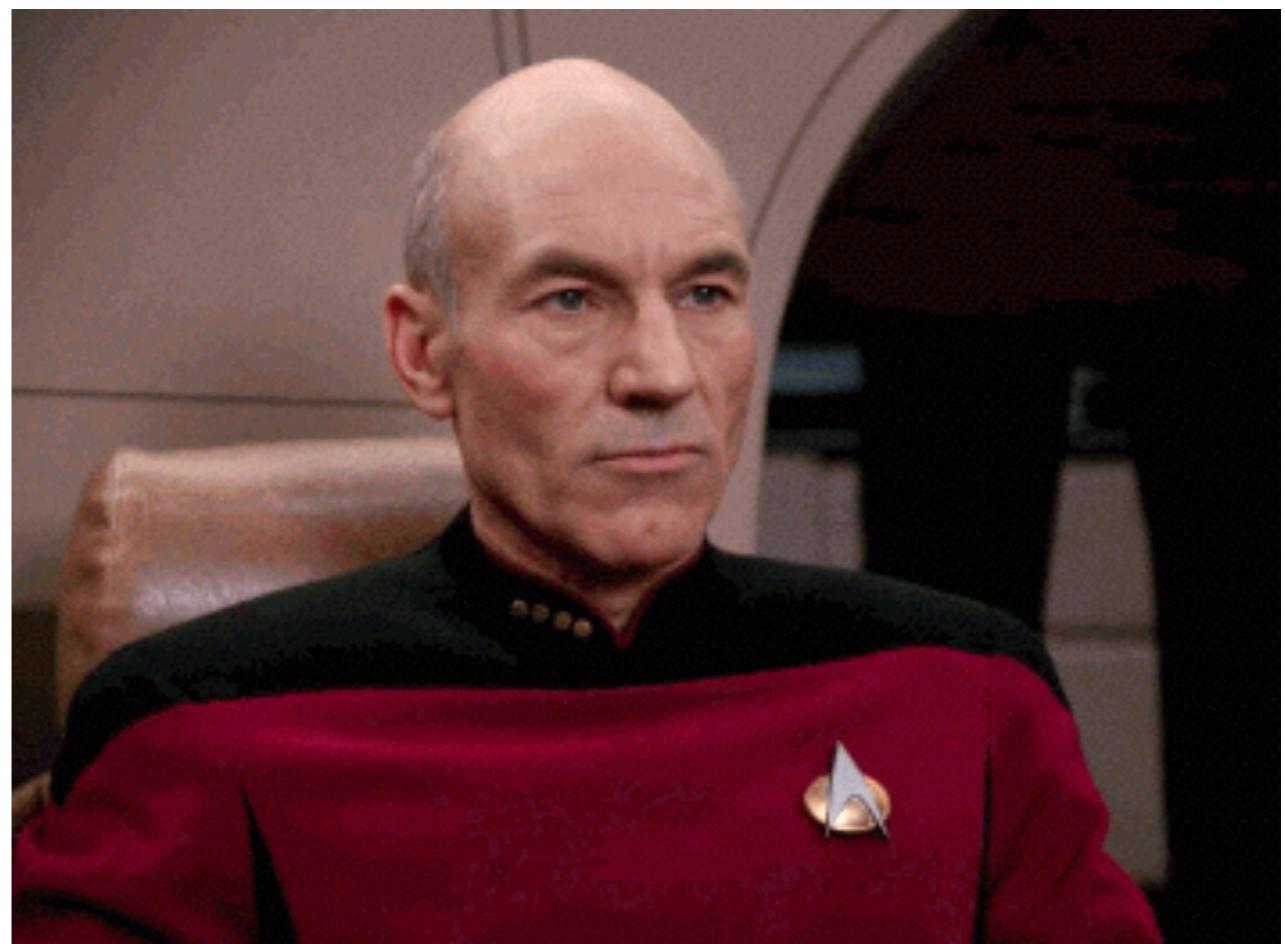
Add the plugin

Hint: ionic -h

2

Call it from equals()

Hint: [Github readme](#) explains how to use it



```
2. kyle@Kyles-MBP: ~/Code/calculator (zsh)
→ calculator git:(master) ✘ ionic plugin add cordova-plugin-vibration
```

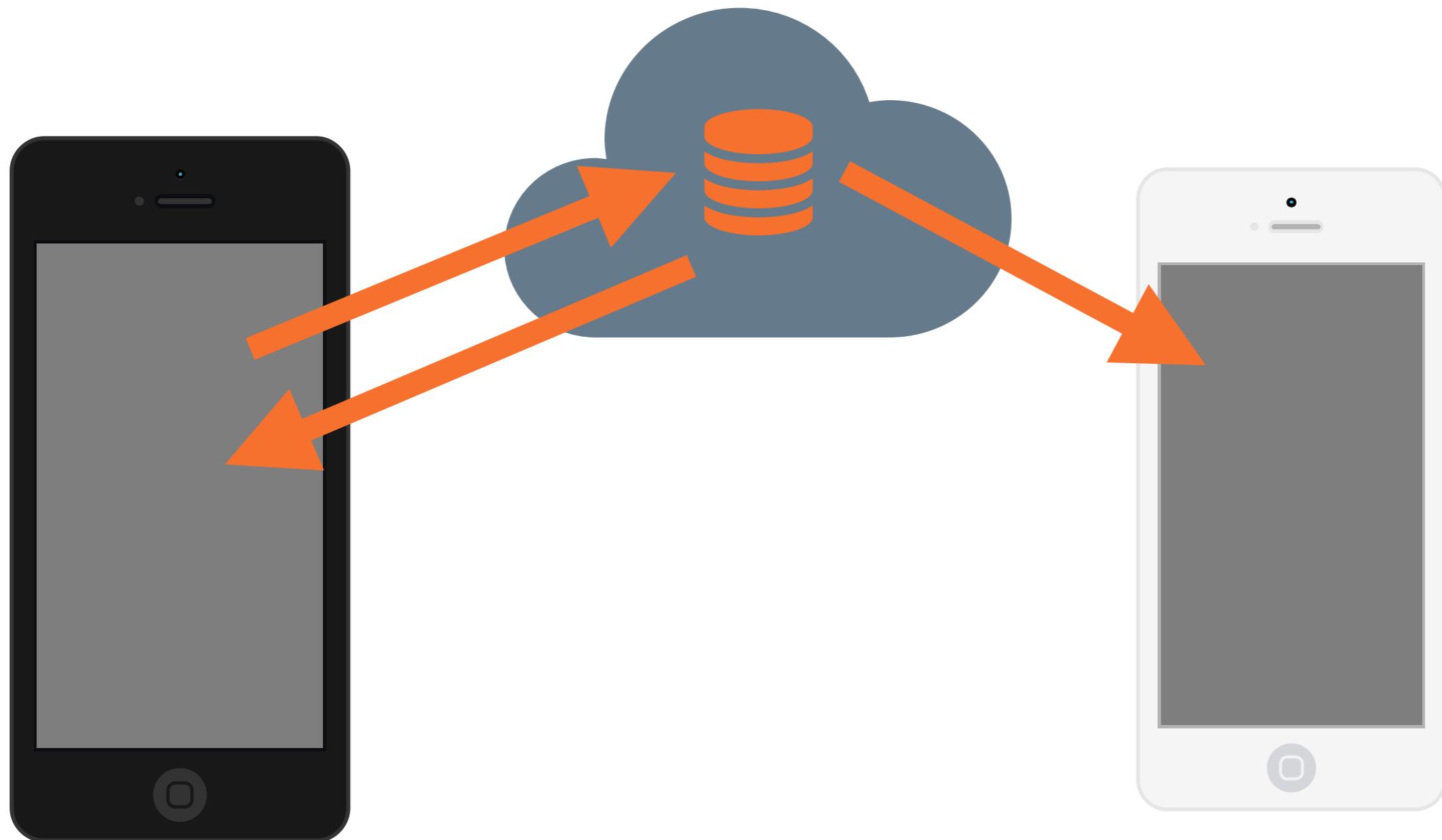
```
1 $scope.equals = function () {
2   // ...
3   navigator.vibrate(500);
4 }
```

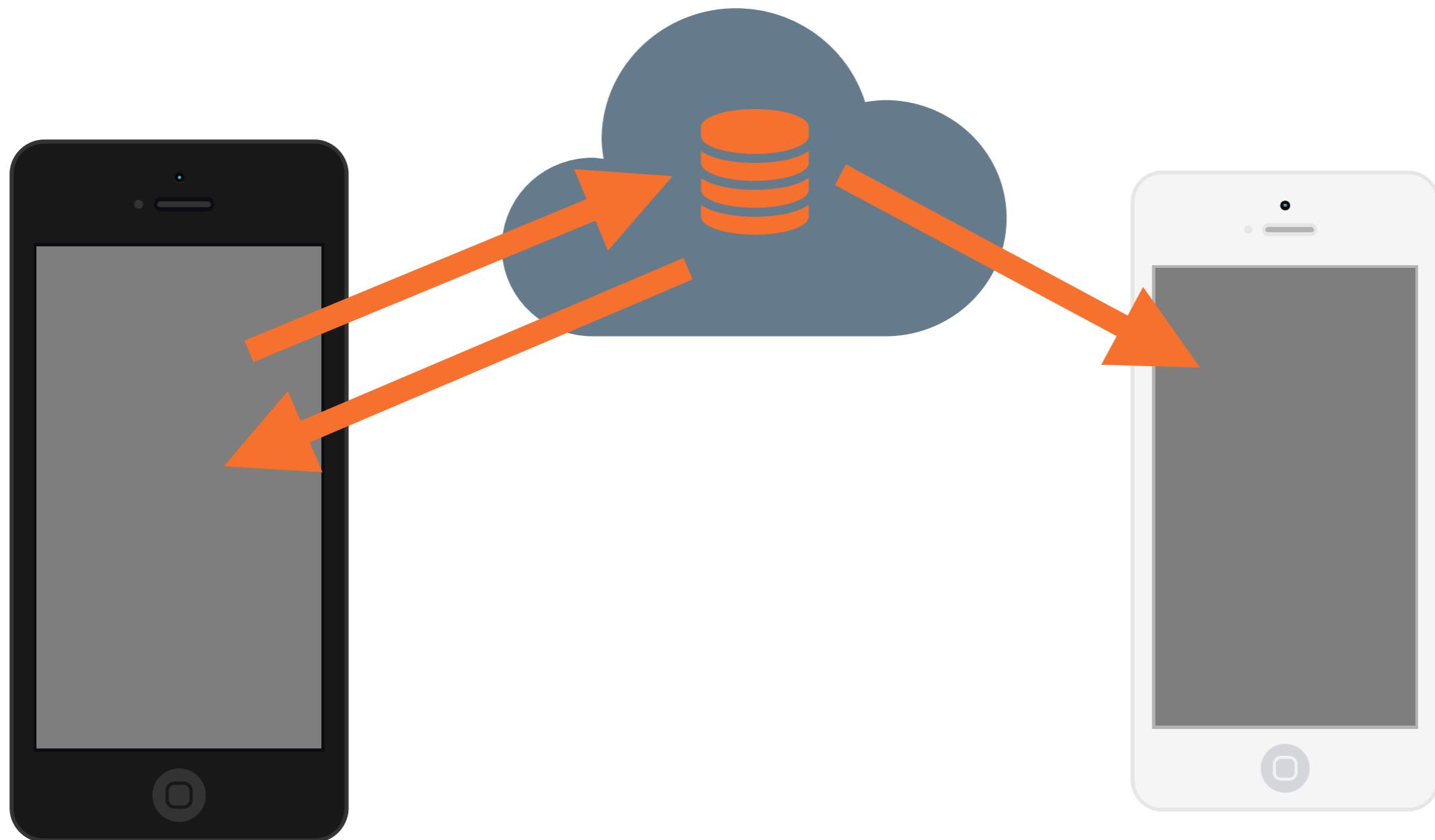
```
2. kyle@Kyles-MBP: ~/Code/calculator (zsh)
→ calculator git:(master) ✘ ionic run ios --device
```



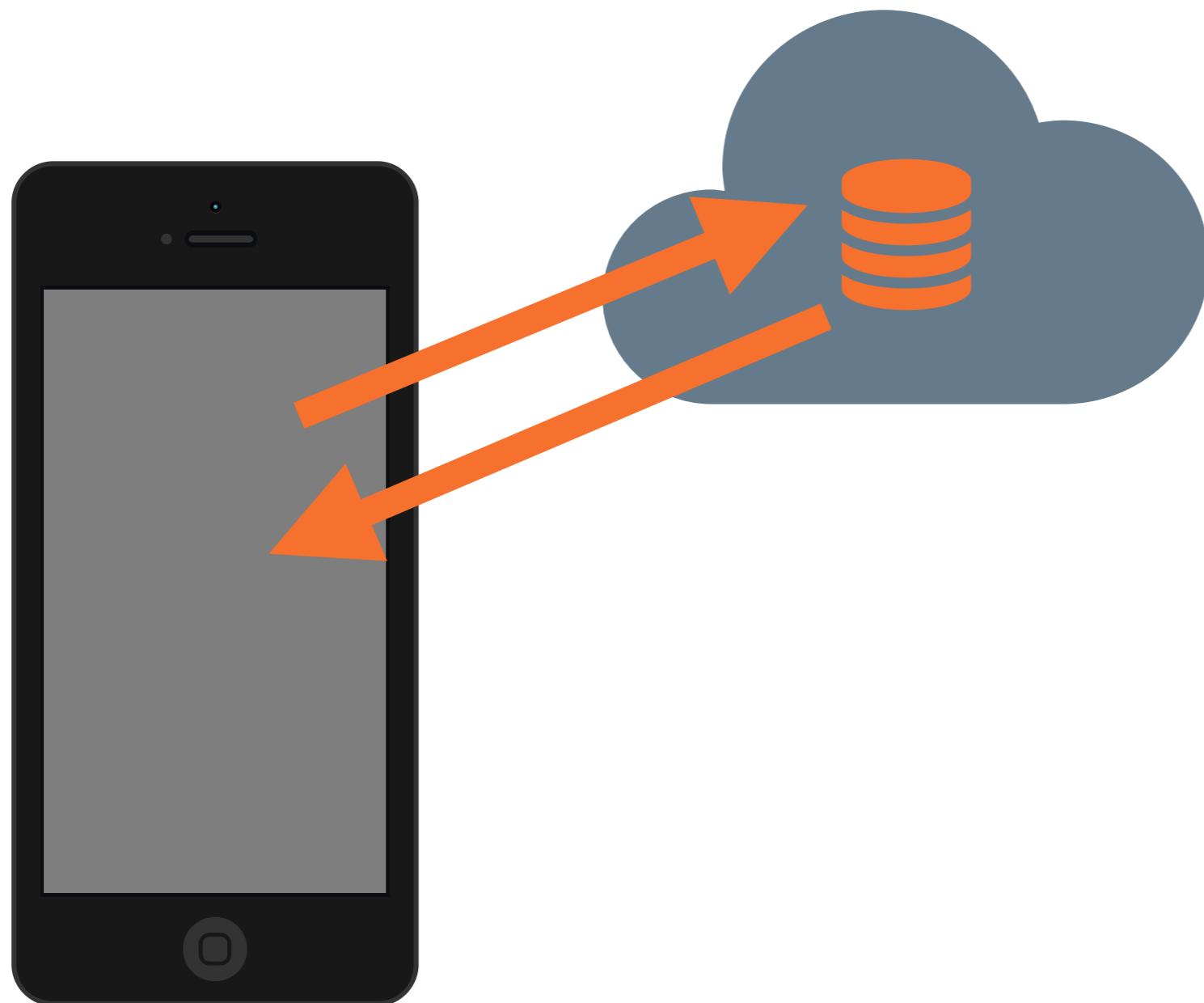
05_it_shakes

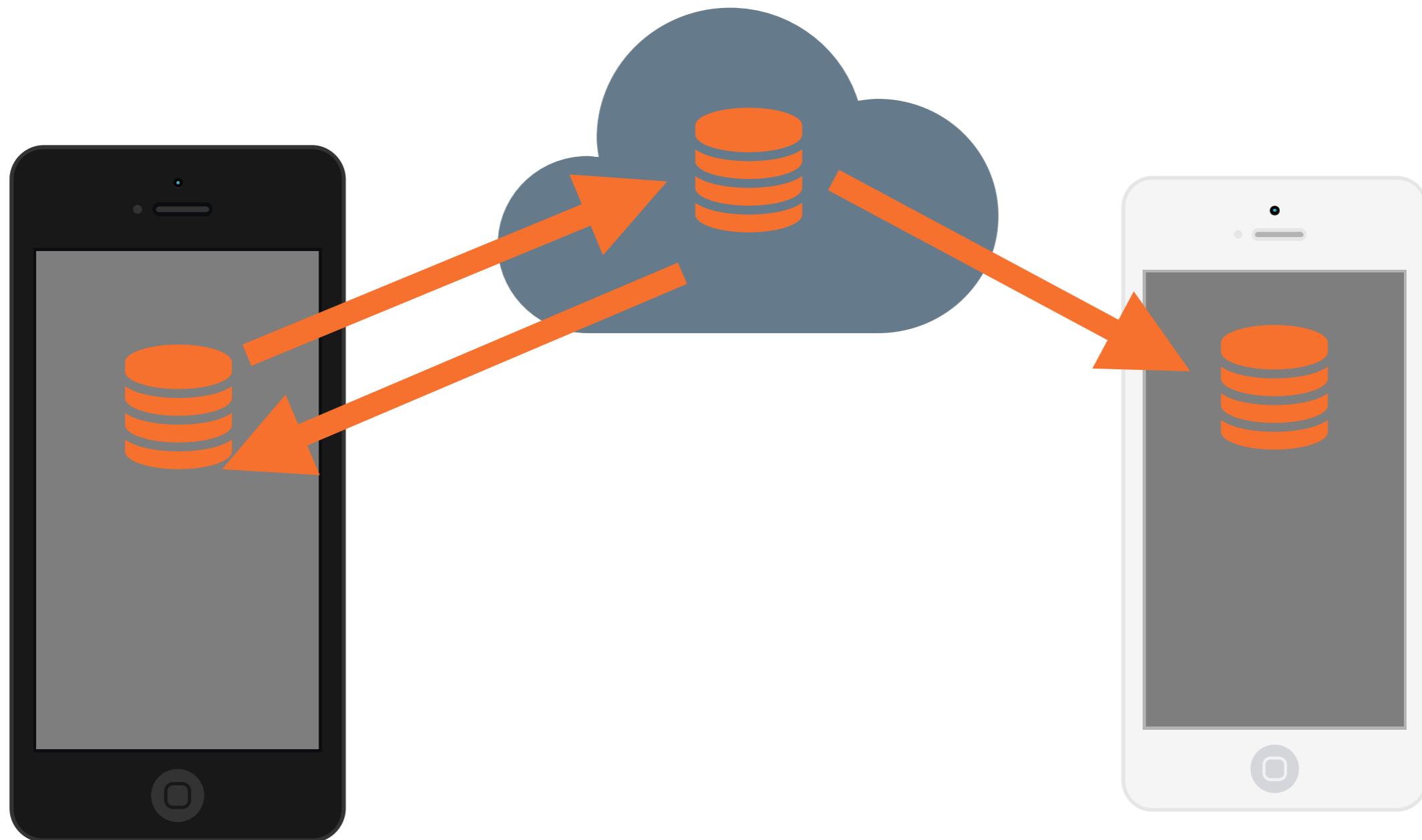
What about data?













pouchdb

```
var db = new PouchDB('dbname');

db.put({
  _id: 'dave@gmail.com',
  name: 'David',
  age: 68
});

db.changes().on('change', function() {
  console.log('Ch-Ch-Changes');
});

db.replicate.to('http://example.com/mydb');
```

Saving Calculations (locally)

1

Create a new 'equationRepository' factory & add it as a dependency of controller.

For now, make it `console.log` something on creation to make sure it's loading.

2

Bower install —save angular-pouchdb

The —save arg makes this a dependency, rather than a 1 time install

3

Add the angular-pouchdb.js AND pouchdb.js to your index.html file

Also, check out the [README](#) on Github.

4

Add 'pouchdb' dependency to your app

This is in `app.js`. Currently your only dependency is `ionic`.

5

Inject pouchDB into your equationRepository

`console.log` your pouchDB argument; it should be a constructor function.

6

Call repository.save() from equals() function

Be sure to pass along the display value

7

Use pouchDB to save the equation

`POST` it in the database

If you finish early, please offer to help your neighbors.



Creating the equationRepository

```
1 angular.module('starter')
2 .factory('equationRepository', function() {
3   console.log('loaded equation repo');
4   return {};
5 });
6 
```

NORMAL > ./master > www/js/equationRepository.js[+]

```
1 angular.module('starter')
2 .controller('CalculatorController', function($scope, equationRepository) { ←
3   // ...
4 });
```

VISUAL > ./master > www/js/controller.js[+]

```
2 <html>
3   <head>
4     <!-- ... -->
5     <!-- your app's js -->
6     <script src="js/app.js"></script>
7     <script src="js/controller.js"></script>
8     <script src="js/equationRepository.js"></script> ←
9   </head> <body ng-app="starter" ng-controller="CalculatorController">
```

V-LINE > ./master > www/index.html[+]

Install angular-pouchdb

2

```
→ calculator git:(master) ✘ bower install --save angular-pouchdb
```

3

```
20
21      <!-- Third party libraries -->
22      <script src="lib/epsilonjs/build/epsilon.min.js"></script>
23      <script src="lib/pouchdb/dist/pouchdb.js"></script>
24      <script src="lib/angular-pouchdb/angular-pouchdb.js"></script>
25
NORMAL > ./master > www/index.html          html < utf-8
```

4

```
1 // Ionic Starter App
2
3 // angular.module is a global place for creating, registering and retrieving
4 // 'starter' is the name of this angular module example (also in app.json)
5 // the 2nd parameter is an array of 'requires'
6 angular.module('starter', ['ionic', 'pouchdb'])
7
NORMAL > ./master > www/js/app.js
```

5

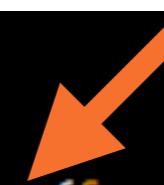
```
1 angular.module('starter')
2 .factory('equationRepository', function(pouchDB) {
3     console.log('pouchDB: ', pouchDB);
4     return {};
5 });
6
NORMAL > ./master > www/js/equationRepository.js[+]
```

Save Calculations

6

```
7 $scope.equals = function () {
8     var equation = $scope.display;
9     // Note how save returns a Promise!
10    equationRepository.save(equation).then(function() {
11        var parser = new Epsilon.ExpressionParser(equation);
12        var result = parser.evaluate();
13        $scope.display = result;
14        navigator.vibrate(500);
15    }).catch(function(err) {
16        console.log('error!', err);
17    });
18};
```

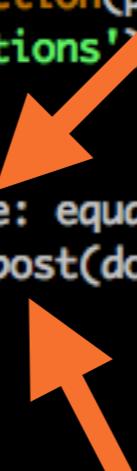
NORMAL > ../../master > www/js/controller.js



7

```
1 angular.module('starter')
2 .factory('equationRepository', function(pouchDB) {
3     var database = pouchDB('myEquations');
4     return {
5         save: function(equation) {
6             var doc = { value: equation, author: 'Kyle' };
7             return database.post(doc);
8         }
9     };
10 });
11
```

NORMAL > ../../master > www/js/equationRepository.js[+]



Did it save??

The screenshot shows a browser window with two main panels. The top panel is the 'Extensions' page in Chrome, listing installed extensions: Postman (3.2.8), PouchDB Inspector (0.1.2), and DispatchList (0.1.0). The 'Postman' extension is enabled. The bottom panel is the 'PouchDB Inspector' tool, which is a developer extension for Chrome. It has a sidebar with options like 'Databases', 'Replication', 'Documentation', and 'Verify'. The main area shows 'Query Options' for a database query, including 'By Key(s)', 'Between Keys', 'Limit: None', '# of rows to skip: 0', 'Order: Ascending', and 'Docs: Include'. Below this is a 'Query' button. At the bottom, there is a results table showing a single document:

{	"value": "9*9",	"_id": "78073F48-1E2A-14CB-9FD8-BEA2A3CC261C",	"_rev": "1-1295feaf7a8b8458af031ce2c972d2ca"
---	-----------------	--	--

Annotations with orange arrows point to the following elements:

- An arrow points to the 'PouchDB' tab in the PouchDB Inspector toolbar.
- An arrow points to the 'Docs: Include' dropdown in the Query Options panel.
- An arrow points to the JSON document displayed in the results table.

To the Cloud!

```
var localDB = new PouchDB('mylocaldb')

var remoteDB = new PouchDB('http://localhost:5984/myremotedb')

localDB.replicate.to(remoteDB).on('complete', function () {
  // yay, we're done!
}).on('error', function (err) {
  // boo, something went wrong!
});

localDB.replicate.to(remoteDB);
localDB.replicate.from(remoteDB);
```

Live Replication

```
localDB.sync(remoteDB, {  
  live: true,  
  retry: true  
})
```

Live Sync!

1

Enable live syncing in your equationRepository

Probably not the best place to do it long term, but good enough for right now.

2

Attach debugger and monitor network traffic

Safari can attach to IOS devices; Chrome can attach to Android.

3

Check for your documents in the Couch DB

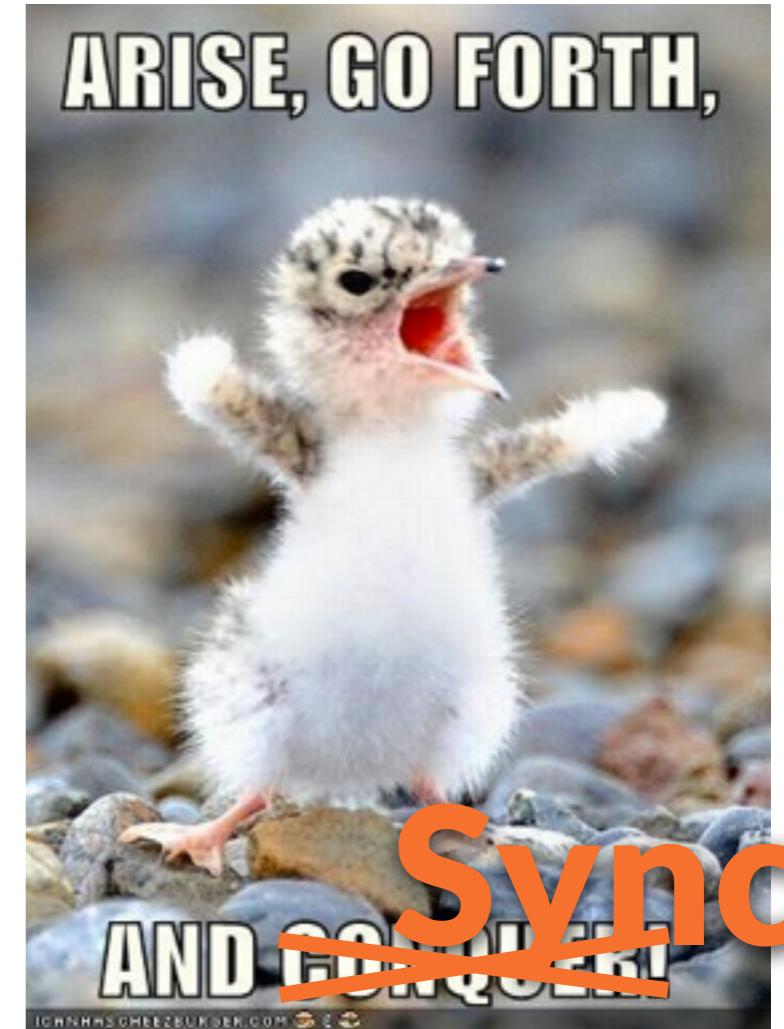
Append _utils/index.html to a Couch instance url to browse docs.

Admin tools:

https://couchdb-396c4f.smileupps.com/_utils/index.html

Sync Url:

<https://couchdb-396c4f.smileupps.com/codemash>



If you finish early, please offer to help your neighbors.

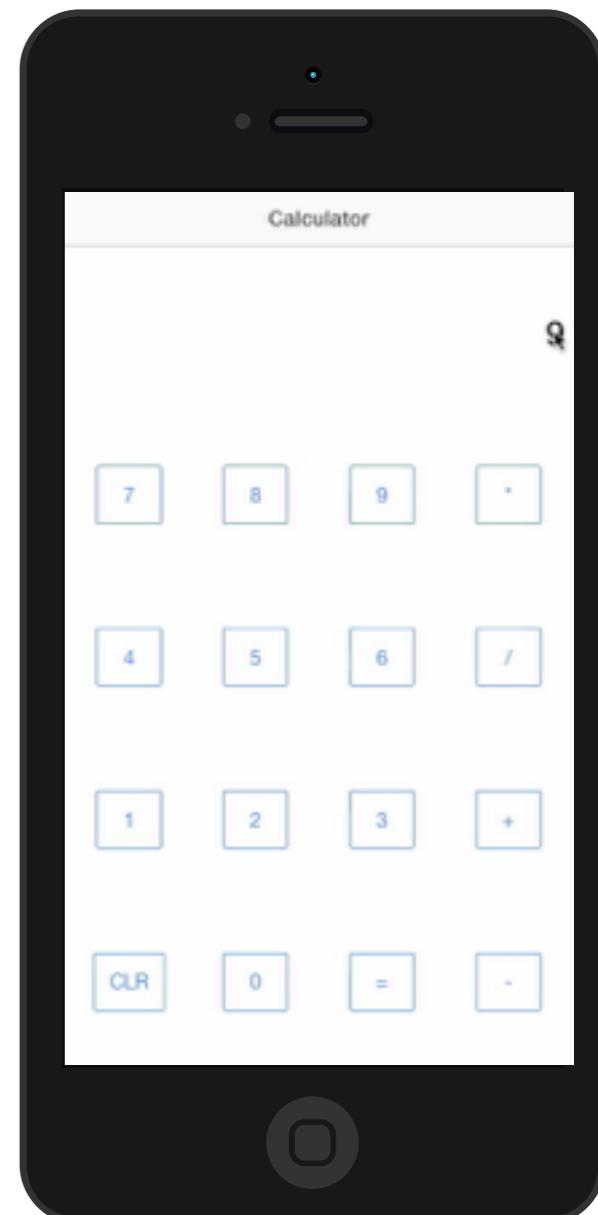
```
1 angular.module('starter')
2 .factory('equationRepository', function(pouchDB) {
3     var database = pouchDB('myEquations');
4     database.sync('https://couchdb-396c4f.smileupps.com/codemash/', {live: true});
5     return {
6         save: function(equation) {
7             var doc = { equation: equation, author: "Kyle" };
8             return database.post(doc);
9         }
10    };
11 });
12 
```



06_it_syncs

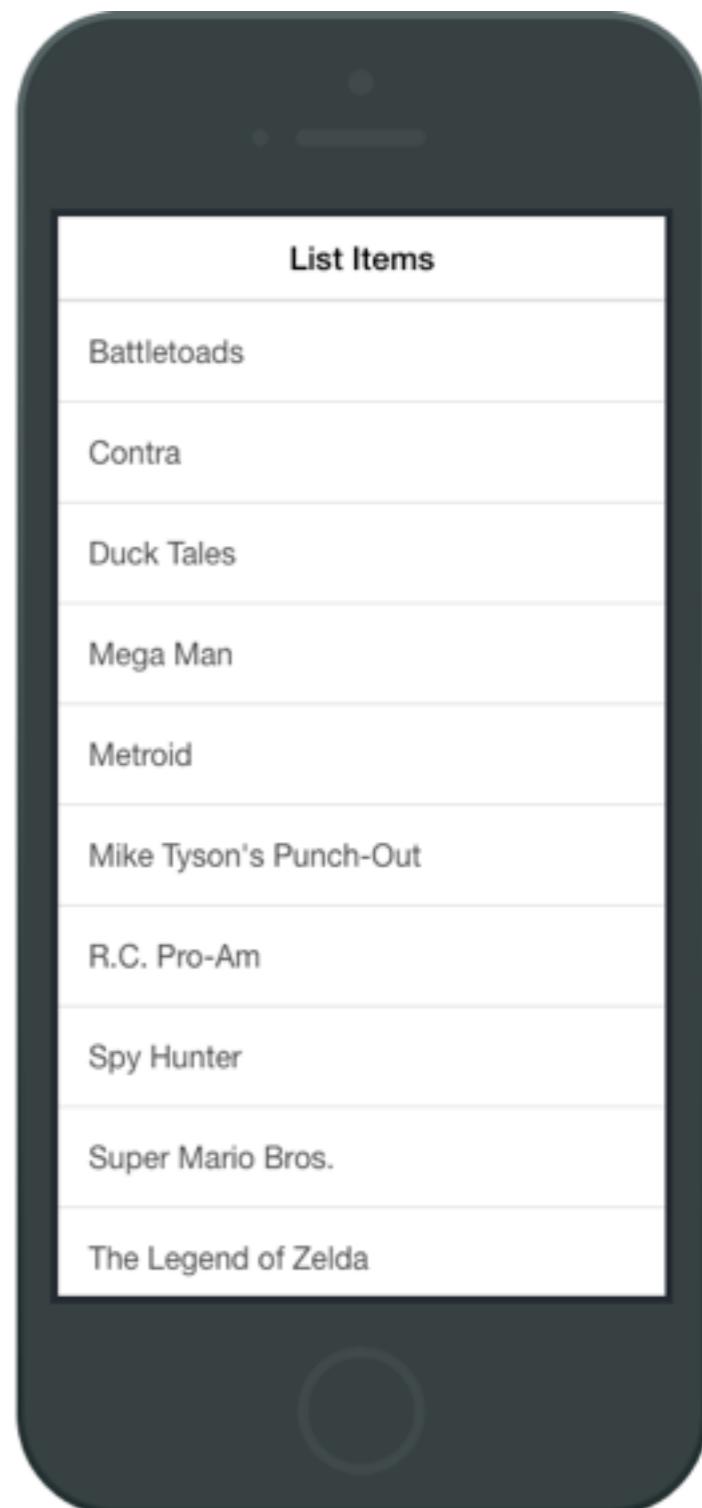
Ionic Modals

```
<script id="my-modal.html" type="text/ng-template">
<ion-modal-view>
  <ion-header-bar>
    <h1 class="title">My Modal title</h1>
  </ion-header-bar>
  <ion-content>
    Hello!
  </ion-content>
</ion-modal-view>
</script>
angular.module('testApp', ['ionic'])
.controller('MyController', function($scope, $ionicModal) {
  $ionicModal.fromTemplateUrl('my-modal.html', {
    scope: $scope,
    animation: 'slide-in-up'
  }).then(function(modal) {
    $scope.modal = modal;
  });
  $scope.openModal = function() {
    $scope.modal.show();
  };
  $scope.closeModal = function() {
    $scope.modal.hide();
  };
  //Cleanup the modal when we're done with it!
  $scope.$on('$destroy', function() {
    $scope.modal.remove();
  });
})
```



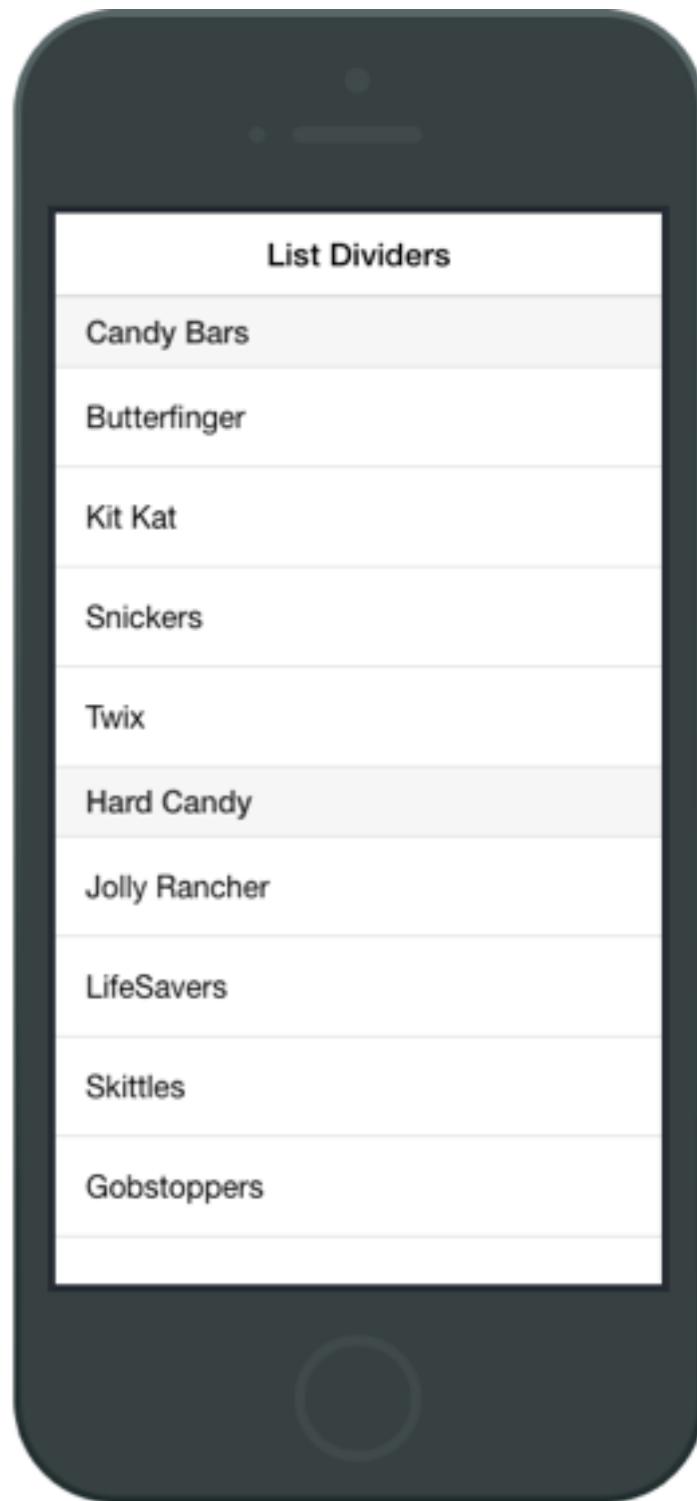
Styling Lists

```
<ul class="list">
  <li class="item">
    ...
  </li>
</ul>
```



Styling Lists

```
<div class="list">  
  
  <div class="item item-divider">  
    Candy Bars  
  </div>  
  
  <a class="item" href="#">  
    Butterfinger  
  </a>  
  
  ...  
  
</div>
```



Styling Lists

```
<div class="list">

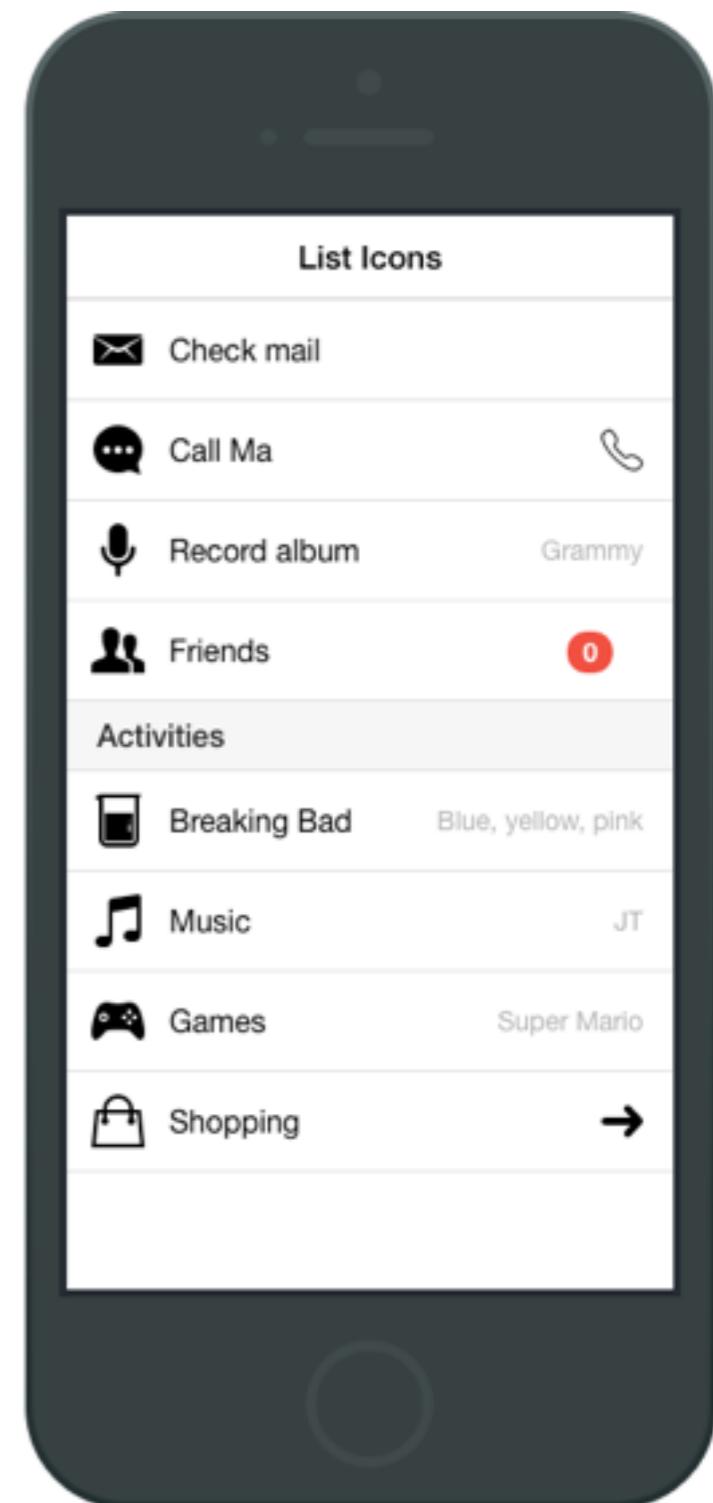
  <a class="item item-icon-left" href="#">
    <i class="icon ion-email"></i>
    Check mail
  </a>

  <a class="item item-icon-left item-icon-right" href="#">
    <i class="icon ion-chatbubble-working"></i>
    Call Ma
    <i class="icon ion-ios-telephone-outline"></i>
  </a>

  <a class="item item-icon-left" href="#">
    <i class="icon ion-mic-a"></i>
    Record album
    <span class="item-note">
      Grammy
    </span>
  </a>

  <a class="item item-icon-left" href="#">
    <i class="icon ion-person-stalker"></i>
    Friends
    <span class="badge badge-assertive">0</span>
  </a>

</div>
```



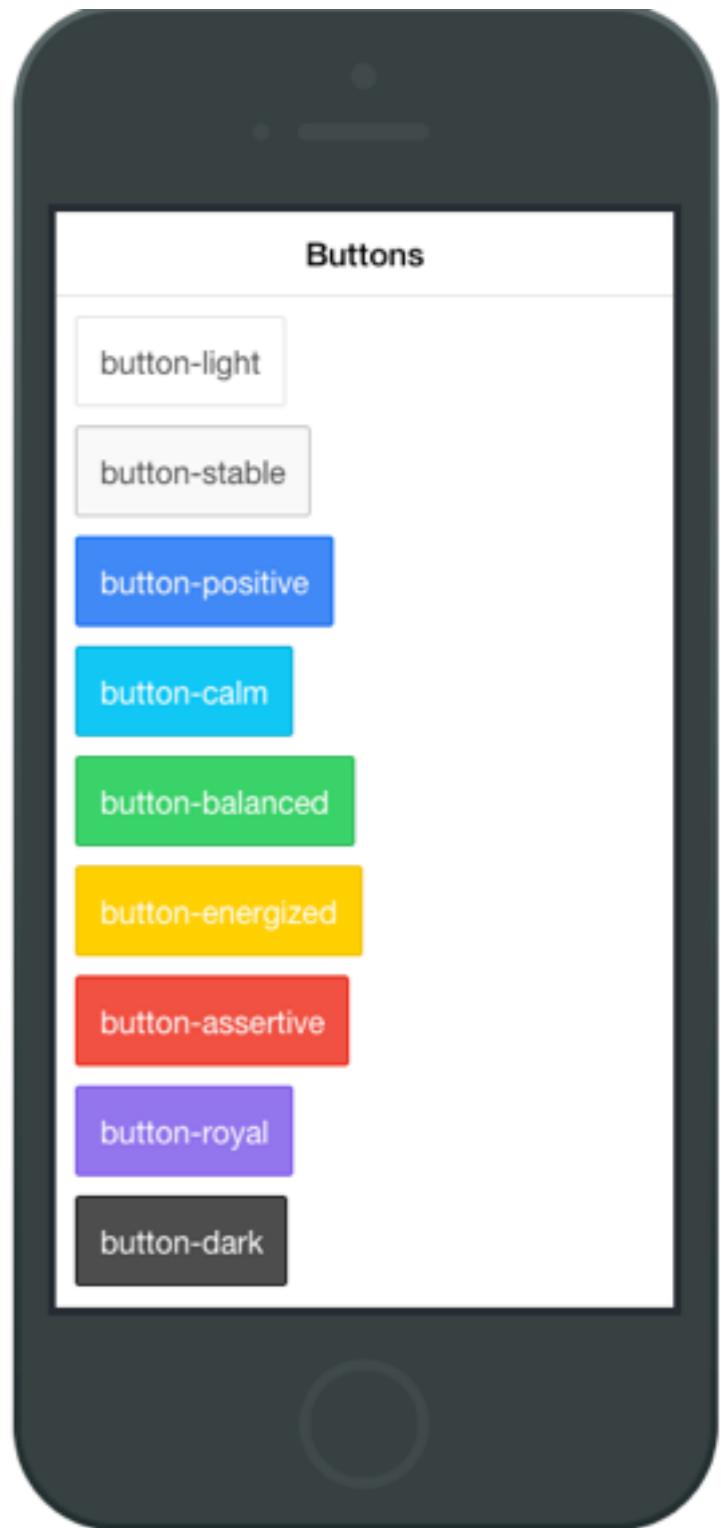
Styling Lists

```
<div class="list">  
  
  <div class="item item-button-right">  
    Call Ma  
    <button class="button button-positive">  
      <i class="icon ion-ios-telephone"></i>  
    </button>  
  </div>  
  
  ...  
  
</div>
```



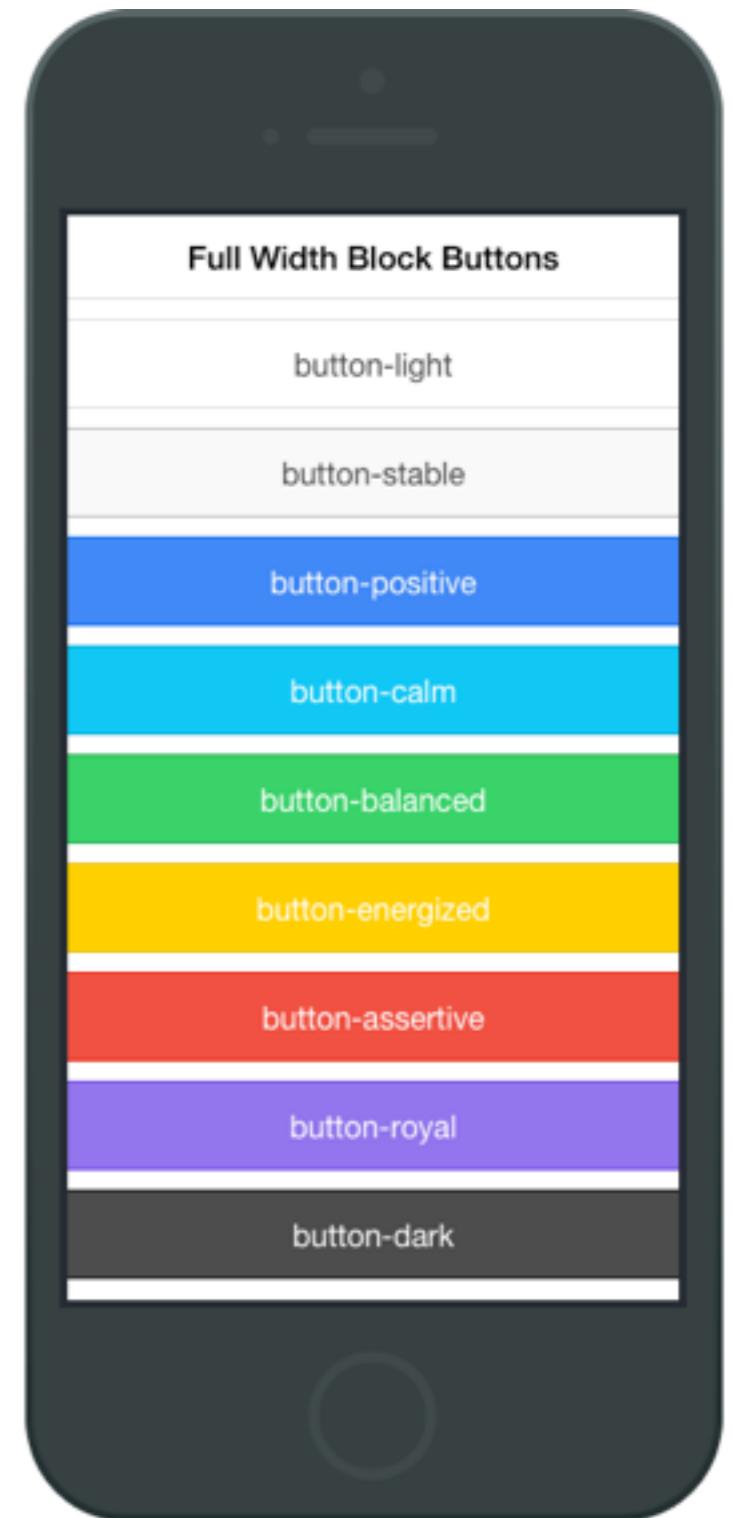
Buttons!

```
<button class="button">  
  Default  
</button>  
  
<button class="button button-light">  
  button-light  
</button>  
  
<button class="button button-stable">  
  button-stable  
</button>  
  
<button class="button button-positive">  
  button-positive  
</button>  
  
<button class="button button-calm">  
  button-calm  
</button>  
  
<button class="button button-balanced">  
  button-balanced  
</button>  
  
<button class="button button-energized">  
  button-energized  
</button>  
  
<button class="button button-assertive">  
  button-assertive  
</button>  
  
<button class="button button-royal">  
  button-royal  
</button>  
  
<button class="button button-dark">  
  button-dark  
</button>
```



Buttons!

```
<button class="button button-full button-positive">  
  Full Width Block Button  
</button>
```



Actually Using the Data!

1

Create a property on scope called “equations”, that contains an array of equation docs

Hard code it for now: `$scope.equations = [{equation: "5*5", author: "Kyle"}, etc]`

2

Create an \$ionicModal that binds to the equations (in controller scope)

The **ionic documentation** will be helpful!

3

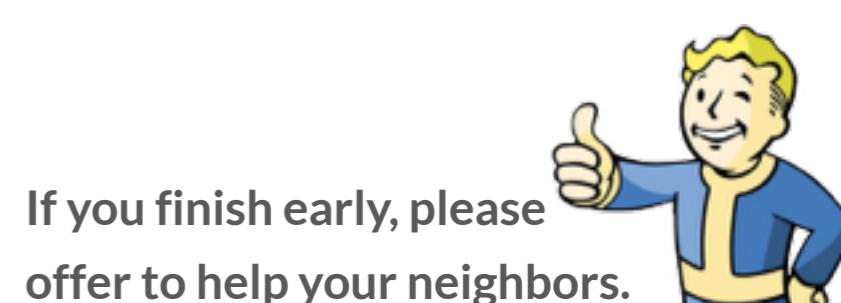
Create a Cancel button that hides the dialog

Just stick it **after your list** for now

4

Create Select buttons for each item that hides the dialog & updates \$scope.display

We'll add additional behavior in the next step.



If you finish early, please
offer to help your neighbors.

1

```
1 angular.module('starter')
2 .controller('CalculatorController', function($scope, $ionicModal) {
3   $scope.display = "";
4   $scope.equations = [
5     { equation: "5*5", author: "Kyle" },
6     { equation: "2*3", author: "Nate" }
7   ];
8 })
```

2

```
1 <ion-modal-view>
2   <ion-header-bar>
3     <h1 class="title">Recent Equations</h1>
4   </ion-header-bar>
5   <ion-content>
6     <ul class="list">
7       <li class="item item-button-right" ng-repeat="equation in equations">
8         <h2>{{equation.equation}}</h2>
9         <p>By: {{equation.author}}</p>
10        </li>
11      </ul>
12    </ion-content>
13  </ion-modal-view>
14
```

2

```
1 angular.module('starter')
2 .controller('CalculatorController', function($scope, equationRepository, $ionicModal)
3   $scope.display = "";
4   $scope.equations = [
5     { equation: "5*5", author: "Kyle" },
6     { equation: "2*3", author: "Nate" }
7   ];
8
9   $ionicModal.fromTemplateUrl('equation-history.html', {
10     scope: $scope,
11     animation: 'slide-in-up'
12   }).then(function(modal) {
13     $scope.modal = modal;
14   });
15   $scope.$on('$destroy', function() {
16     $scope.modal.remove();
17   });
18   $scope.openEquationHistory = function() {
19     $scope.modal.show();
20   };
21   $scope.closeEquationHistory = function() {
22     $scope.modal.hide();
23 }
```

NORMAL > ./master > <er.js javascript < utf-8[unix] < 47% : 23: 1 ! trailing[19]

2

```
36 <ion-content scroll="false" class="fill-height">
37   <div class="row row-center" ng-click="openEquationHistory()">
38     <div class="col display">{{display}}</div>
39   </div>
```

NORMAL > ./master > </index.html html < utf-8[unix] < 24% : 36: 1 ! trailir

3

```
5 |   <ion-content>
6 |     <ul class="list">
7 |       <li class="item item-button-right" ng-repeat="equation in equations">
8 |         <h2>{{equation.equation}}</h2>
9 |         <p>By: {{equation.author}}</p>
10 |        </li>
11 |      </ul>
12 |      <button class="button button-block button-assertive" ng-click="closeEquationHistory()">
13 |        Cancel
14 |      </button>
15 |    </ion-content>
```

NORMAL > master > www/equation-history.html[+]

3

```
20 |   },
21 |   $scope.closeEquationHistory = function() {
22 |     $scope.modal.hide();
23 | }
```

4

```
24     $scope.selectEquation = function(equation) {  
25         $scope.display = equation;  
26         $scope.closeEquationHistory();  
27     }  
28 
```

NORMAL > ./master > www/js/controller.js[+]

4

```
6     <ul class="list">  
7         <li class="item item-button-right"  
8             ng-repeat="equation in equations">  
9                 <h2>{{equation.equation}}</h2>  
10                <p>By: {{equation.author}}</p>  
11                <button class="button button-large button-positive"  
12                    ng-click="selectEquation(equation.equation)">  
13                        Select  
14                    </button>  
15                </li>  
16            </ul>
```

NORMAL > ./master > www/equation-history.html



07_modals_with_fake_data

Getting the real data in there!

Callbacks

Promises

```
db.allDocs({  
  include_docs: true,  
  attachments: true  
}).then(function (result) {  
  // handle result  
}).catch(function (err) {  
  console.log(err);  
});
```

```
{  
  "offset": 0,  
  "total_rows": 1,  
  "rows": [  
    {"  
      "doc": {  
        "_id": "0B3358C1-BA4B-4186-8795-9024203EB7DD",  
        "_rev": "1-5782E71F1E4BF698FA3793D9D5A96393",  
        "title": "Sound and Vision",  
        "_attachments": {  
          "attachment/its-id": {  
            "content_type": "image/jpg",  
            "data": "R0lGODlhAQABIAAAAP7//wAAACH5BAAAAAAALAAAAAABA  
AEAAAICRAEA0w==",  
            "digest": "md5-57e396baedfe1a034590339082b9abce"  
          }  
        }  
      },  
      "id": "0B3358C1-BA4B-4186-8795-9024203EB7DD",  
      "key": "0B3358C1-BA4B-4186-8795-9024203EB7DD",  
      "value": {  
        "rev": "1-5782E71F1E4BF698FA3793D9D5A96393"  
      }  
    }]  
}
```

Getting the real data in there!

1

Create an “all” function on the equationRepository that returns a promise for the docs.

Remember that **Pouch gives you promises** for things, not the things themselves.

2

Call the “all” function in the controller & set the equations, before showing the modal

You’ll need a **Then** to do this!

3

Add lodash to the project, and use it to clean up your equation repository!

You’re probably using a **forEach** and accumulating the docs. Yuck! Check out the **_pluck** function.

Getting the real data in there!

```
1 angular.module('starter')
2 .factory('equationRepository', function(pouchDB) {
3     var database = pouchDB('myEquations');
4     database.sync('https://couchdb-396c4f.smileupps.com/codemash/', {live: true});
5     return {
6         save: function(equation) {
7             var doc = { equation: equation, author: "Kyle" };
8             return database.post(doc);
9         },
10        all: function() {
11            return database.allDocs({include_docs: true}).then(function(allDocs){
12                var docs = [];
13                allDocs.rows.forEach(function(row) {
14                    docs.push(row.doc);
15                });
16                return docs;
17            });
18        }
19    };
20 });
21
```

1



NORMAL > ./master > <equationRepository.js

javascript < utf-8[unix] < 100% : 21: 1

```
$scope.openEquationHistory = function () {
    equationRepository.all().then(function(allEquations) {
        $scope.equations = allEquations;
        $scope.modal.show();
    });
};
```

2



Lodash to the rescue!!

3

bower install --save lodash

3

```
21      <!-- Third party libraries -->
22      <script src="lib/epsilonjs/build/epsilon.min.js"></script>
23      <script src="lib/pouchdb/dist/pouchdb.js"></script>
24      <script src="lib/angular-pouchdb/angular-pouchdb.js"></script>
25      <script src="lib/lodash/lodash.min.js"></script>
26
```

NORMAL > ./master > </index.html html < utf-8[unix] < 11% : 17: 1

3

```
all: function() {
  return database.allDocs({include_docs: true}).then(function(allDocs){
    return _.pluck(allDocs.rows, 'doc');
  });
}
```



08_real_history

// TODO:

