

# Build a Mobile App in an Evening

Kevin Bluer





# Welcome to DIY Week

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**GENERAL ASSEMBLY**





# Tonight's Goal

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“For you to come away with an appreciate of the aspects that go into a mobile application using the Ionic Framework”





# Agenda

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- About Me (and You)
- A Brief History of Hybrid Mobile App Development
- Cordova & PhoneGap
- Introducing Ionic Framework
- Live Examples x3
- Learnings & Best Practices
- Summary / Q&A



# About Me

- London + New York + HK
- BSc (UK) and MSc (US)
- Consultant & Instructor
  - Microsoft, The Economist Group, MTV Networks, JP Morgan, Google, General Assembly
- Specialize in web and mobile app development
- <https://github.com/kevinbluer>





# About You

- ◎ Show of hands...
  - ◎ Developer, Designer, Other?
  - ◎ Used a hybrid framework before?
  - ◎ Heard of Ionic Framework? Used?





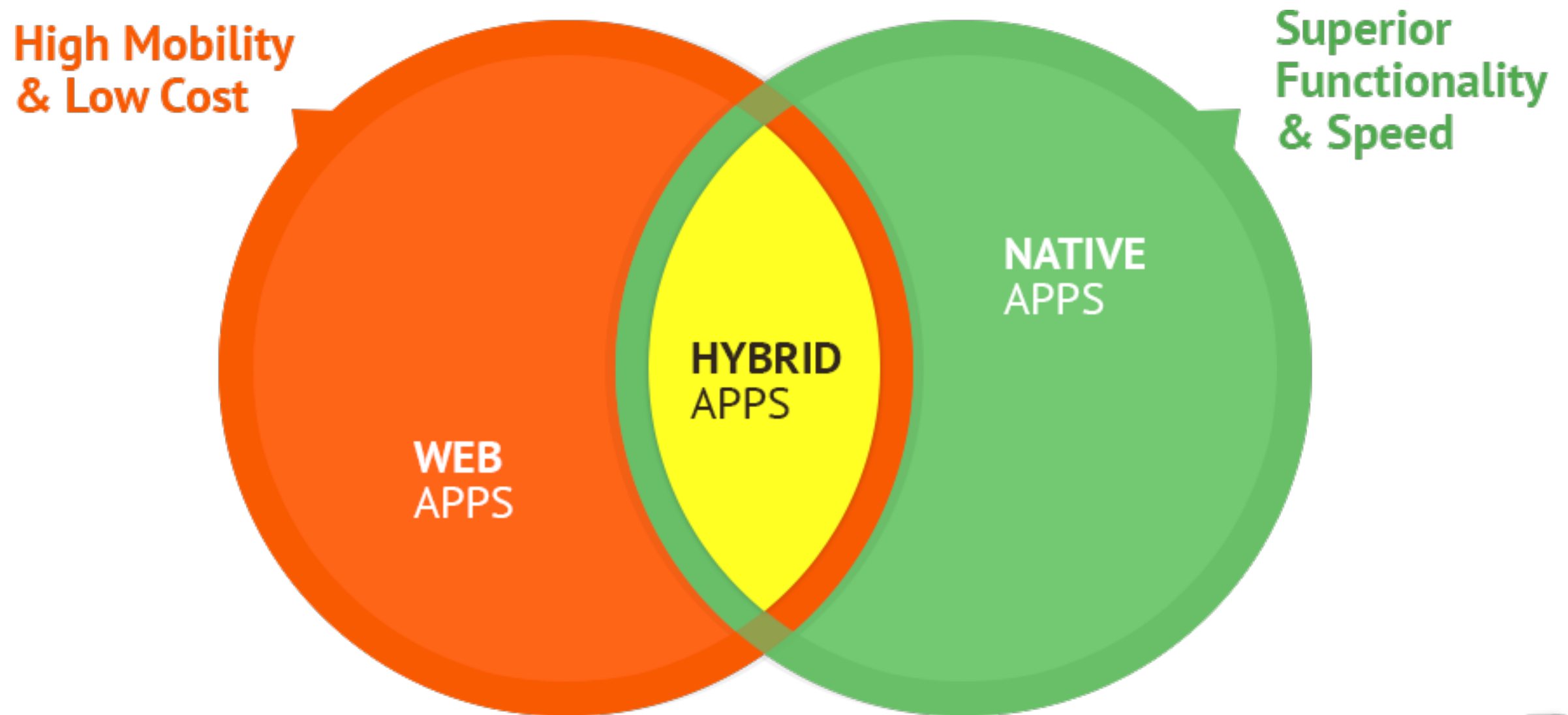
# A Brief History of Hybrid Mobile App Development

# What is Hybrid?

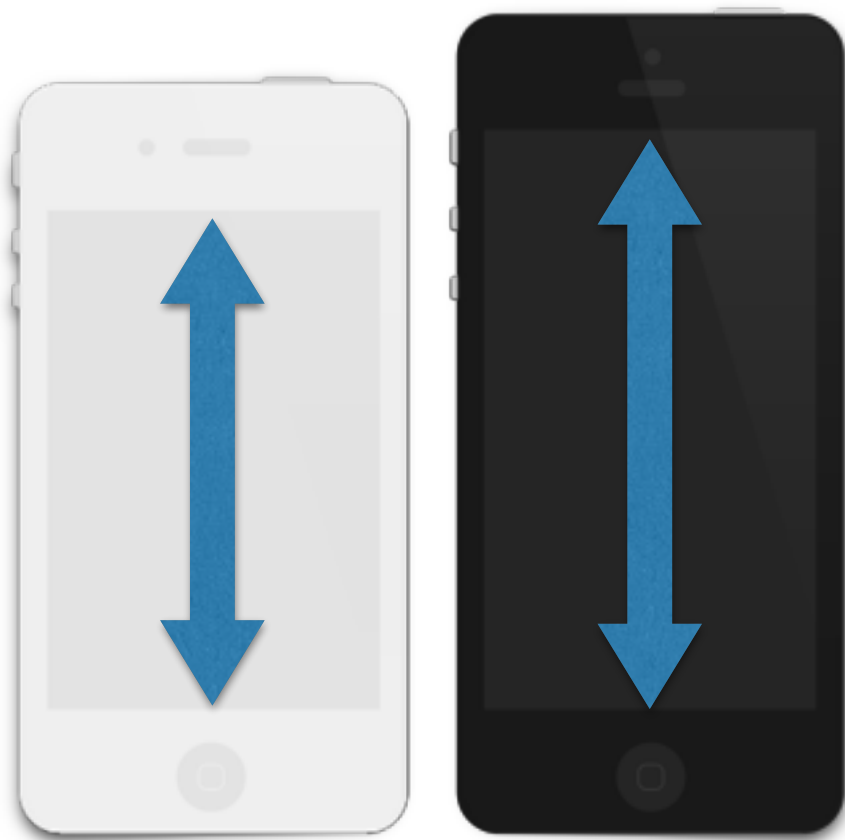
- Process of building Mobile Applications using HTML, CSS, and JavaScript
- **Fully fledged** mobile applications
  - Access (the majority of) the devices sensors
  - Can be deployed to the stores
- “Build once, run anywhere”
  - With some caveats...



# Web vs Hybrid vs Native



# Technically Speaking...



- Web View Control (UIWebView on iOS, WebView on Android)
- HTML / CSS / JS Presented Full Screen
- Abstraction Layer That Exposes Device API's (e.g. Camera, GPS, Storage, etc)



# Pros + Cons

## ● Pros

- Very fast to get started (great starting off point)
- Cheaper / skills readily available
- Particularly useful in if you have an existing web interface to your product / service

## ● Cons

- Performance (although it's less of an issue these days and also depends on the type of app)
- Lag in terms of latest native API support



# Lots of Hybrid Flavors

- **PhoneGap / Cordova (underling tech in Ionic)**
- Appcelerator / Titanium
- Xamarin
- Sencha
- React Native
- Mobile Web Frameworks (Ratchet, Fries, etc)
- Etc, etc





# Cordova and PhoneGap



# History (and odd relationship)

- Framework for building native apps using web-based languages
- Formally Nitobi (company behind PhoneGap) and acquired by Adobe in 2011
- Upon acquisition, open sourced under Apache Foundation (with the Cordova moniker)
- Now at version 5.1.1 (so pretty mature)



# More specifically...

- Generator + container (“www”)
- CLI (Command Line Interface)
- Build Service ([build.phonegap.com](http://build.phonegap.com))
- Plugin Ecosystem (since 3.0)

create <path>	create a phonegap project
serve	serve a phonegap project
build <platform>	build a specific platform
install <platform>	install a specific platform
run <platform>	build and install a specific platform
local [command]	development on local system
remote [command]	development in cloud with phonegap/build
platform [command]	update a platform version
plugin [command]	add, remove, and list plugins
help [command]	output usage information
version	output version number



# Plugin Ecosystem

- “A plugin is a bit of add-on code that provides an interface to native components” (and more)
- Since 3.0
- Available at <http://plugins.cordova.io>
- Installed / Managed via the CLI
  - “cordova plugin add org.apache.cordova.device”



# Code Sample (it's JavaScript)

```
navigator.camera.getPicture (  
    onCameraSuccess,  
    onCameraError,  
    {  
        quality: 50,  
        destinationType: Camera.DestinationType.DATA_URL  
    }  
);
```

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





# Introducing Ionic

# Introducing Ionic

- “Free and open source, Ionic offers a library of mobile-optimized HTML, CSS and JS components, gestures, and tools for building highly interactive apps.”
- Also...
  - “Performance obsessed”
  - “Native focused”
  - “Beautifully designed”
  - “A powerful CLI”



# Technically Speaking...

- Builds on top of Cordova (extends its CLI)
- Reasonably “opinionated” structure to building and organizing your apps
- AngularJS based
  - Large array of Angular directives, delegates
    - ion-nav-view, ionList, etc
- Provides a suit of back-end services via [ionic.io](http://ionic.io)
- Additional innovations



# Additional Innovations

- Ionic Creator
- Ionic View
- Ionic Lab
- Ionicons (<http://ionicons.com>)







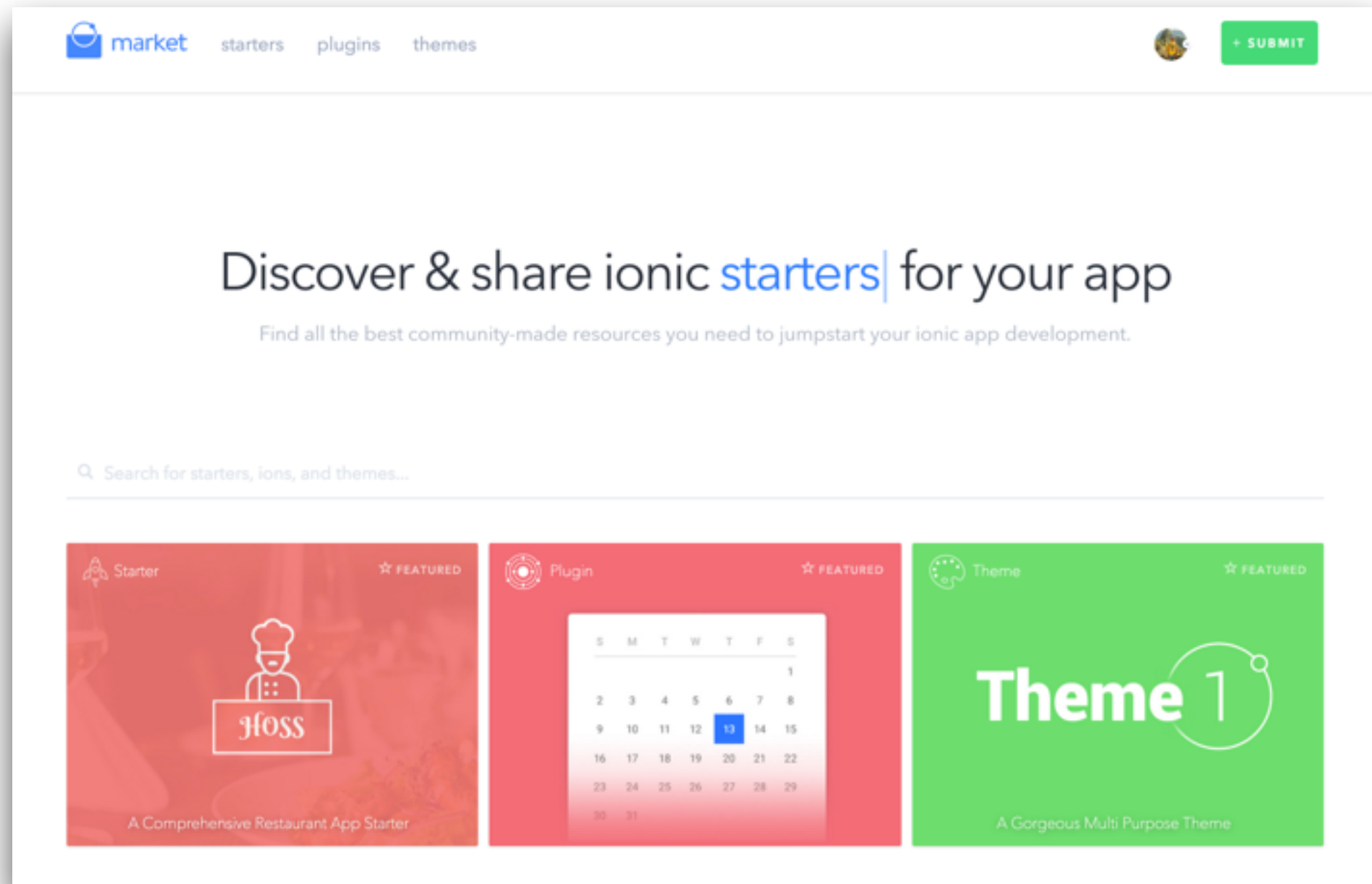
# Ionic in the Wild

# Ionic Showcase

- “A showcase of the most beautiful apps built with Ionic”
  - <http://showcase.ionicframework.com>
- Keychain Logistics...great example of fit



# Ionic Market



# Codepen Gallery

- Large and well maintained gallery of controls and samples on Codepen ([codepen.io/ionic](http://codepen.io/ionic))
  - E.g. <http://codepen.io/ionic/pen/AjgEB>
- Great way to learn too!





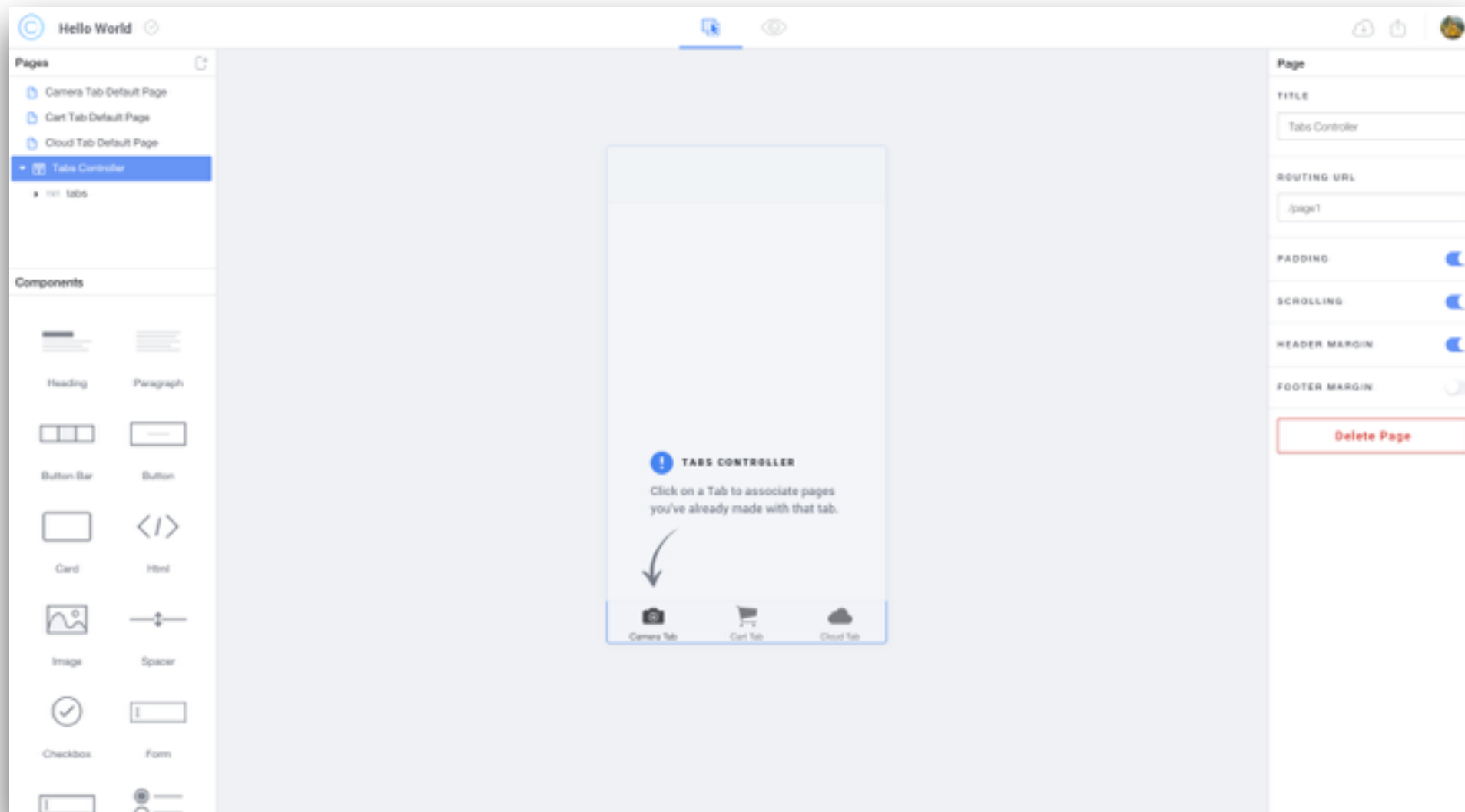
# Quick Break?



# Demo 1.0

## Using Ionic Creator

# Ionic Creator





# Demo 2.0

## “Hello World”



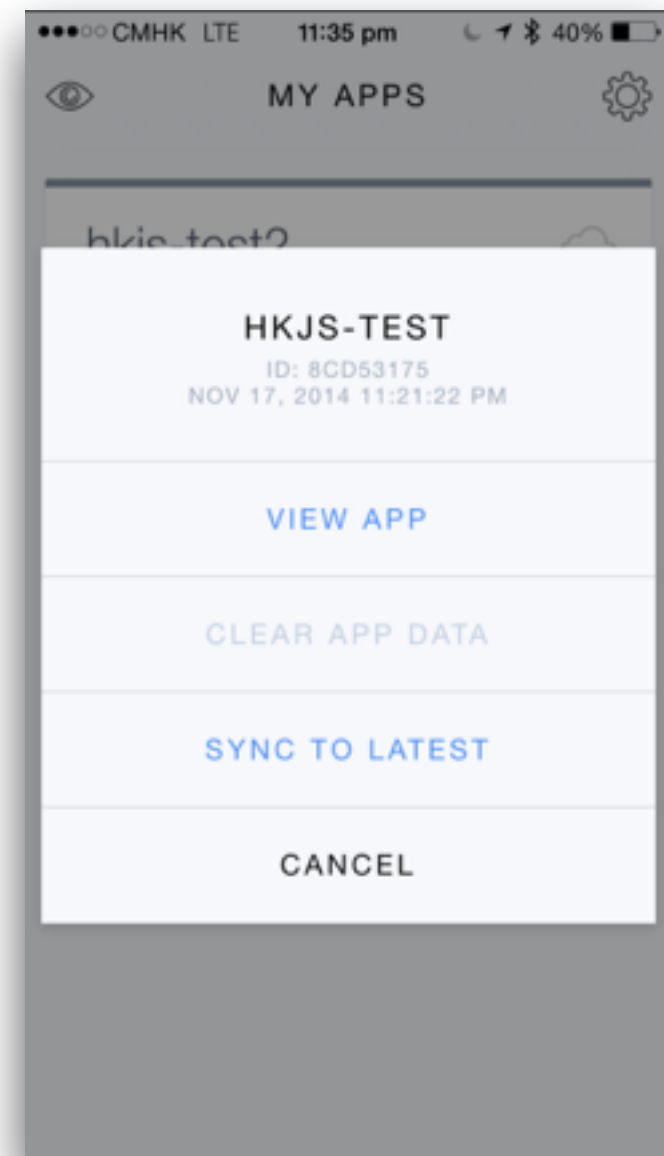
# Ionic “Hello World”

- Installation: *sudo npm install -g cordova ionic*
- Get an app up and running in 4 commands...
  - ***ionic start myApp tabs*** (and *cd*)
  - ***ionic platform add ios*** (or *Android*)
  - ***ionic build ios***
  - ***ionic emulate ios*** (requires *ios-sim*)
- Add / Edit some “stuff”
- Push to mobile local device
  - ***ionic emulate ios --device*** (or *via IDE*)



# Ionic Upload / View

- Ability to push builds “to the cloud” and open on the Ionic View app (available in the store)
- *ionic upload*







# Bonus :)

# Export from Creator

© ionic start ionic-diy-example creator:109a03eb5ebd

## Export Project

 IONIC CLI

 ZIP FILE

Export with the Ionic CLI Tool.

Start (and export) an Ionic app with the [Ionic CLI](#) following these directions:

```
$ npm install -g cordova ionic  
$ ionic start [appName] creator:109a03eb5ebd
```

Check out our CLI's [Documentation](#) page for more information.

If you already have the Ionic CLI installed, please make sure you run the `npm install -g ionic` command to update your CLI version before trying to start a Creator project.



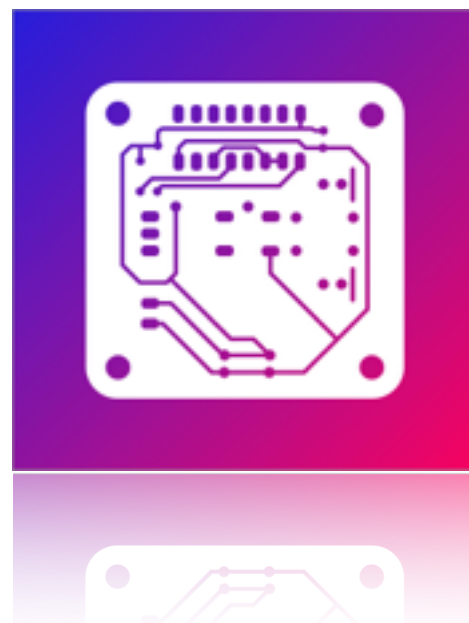


# Demo 3.0

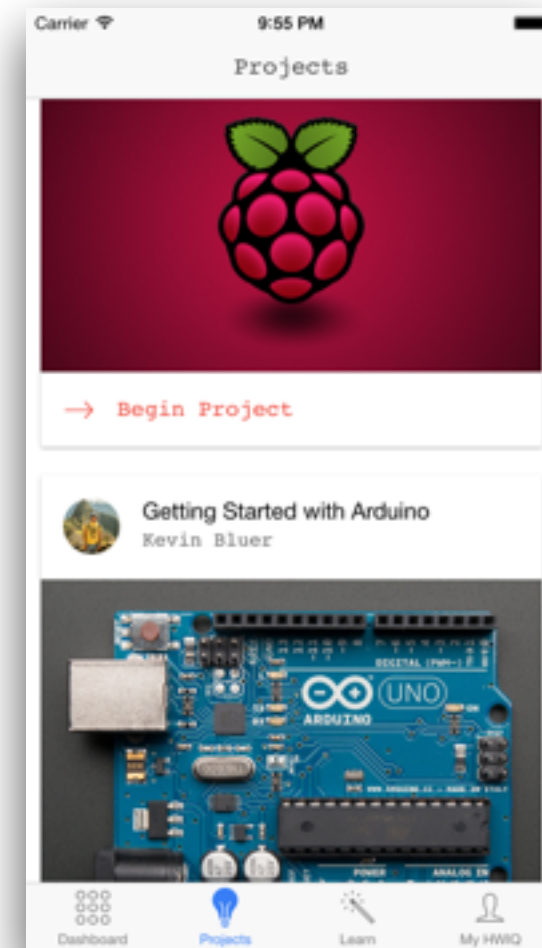
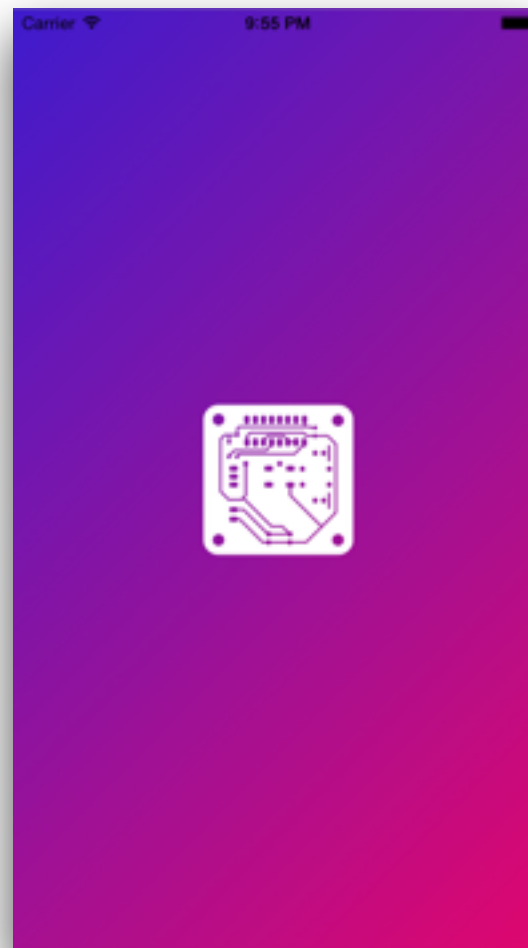
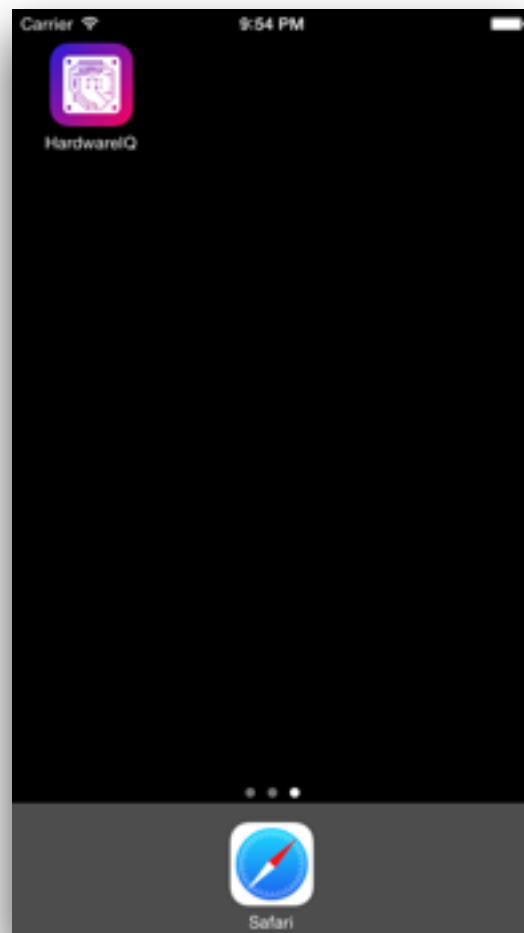
## “Real-ish World”

# Introducing HardwareIQ

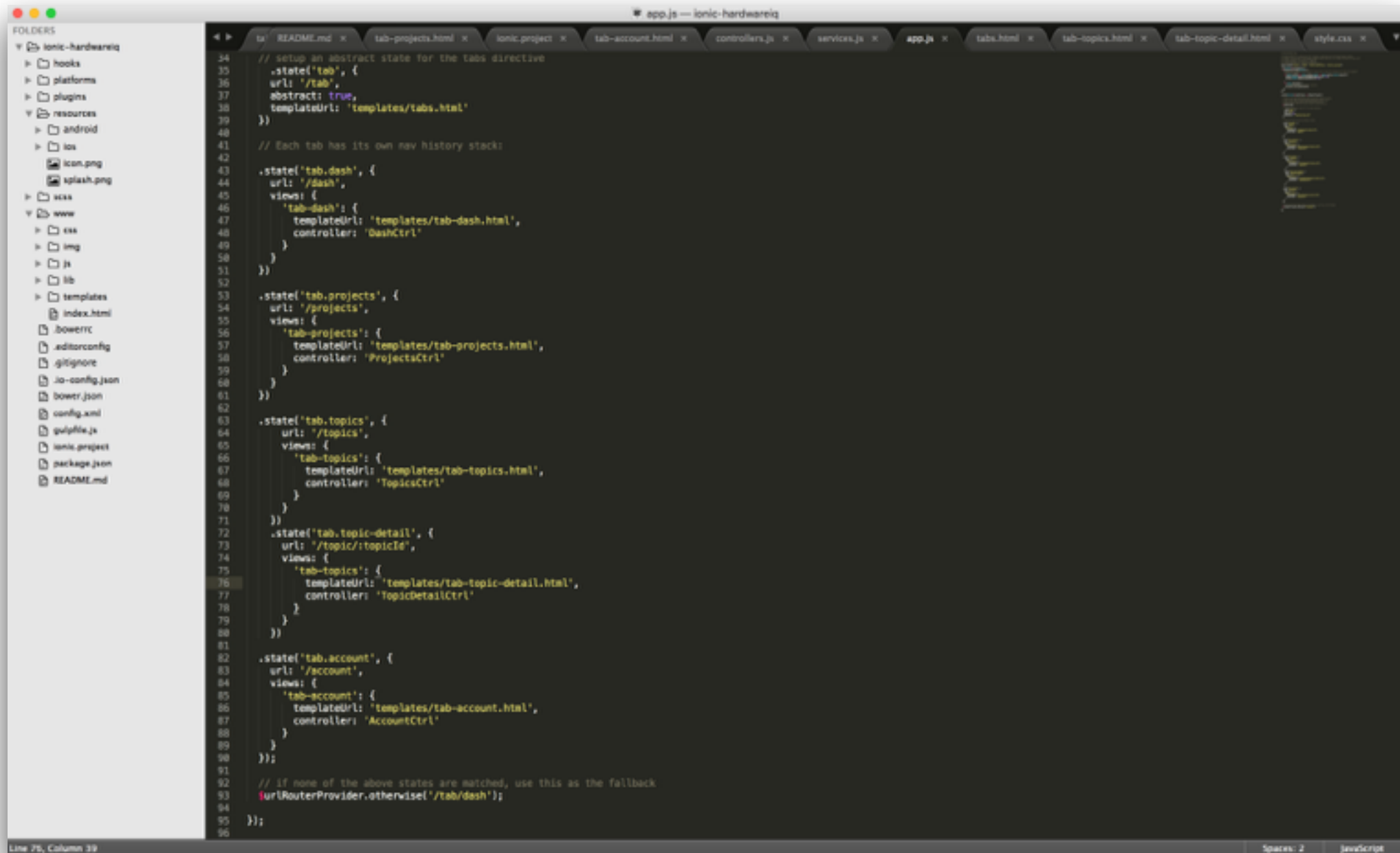
- “Increase your hardware intellect”
- Appropriate for DIY Hong Kong :)
- Feel free to review the code at the following:
  - <https://github.com/kevinbluer/hardwareiq>



# Introducing HardwareIQ



# Let's Review The Code



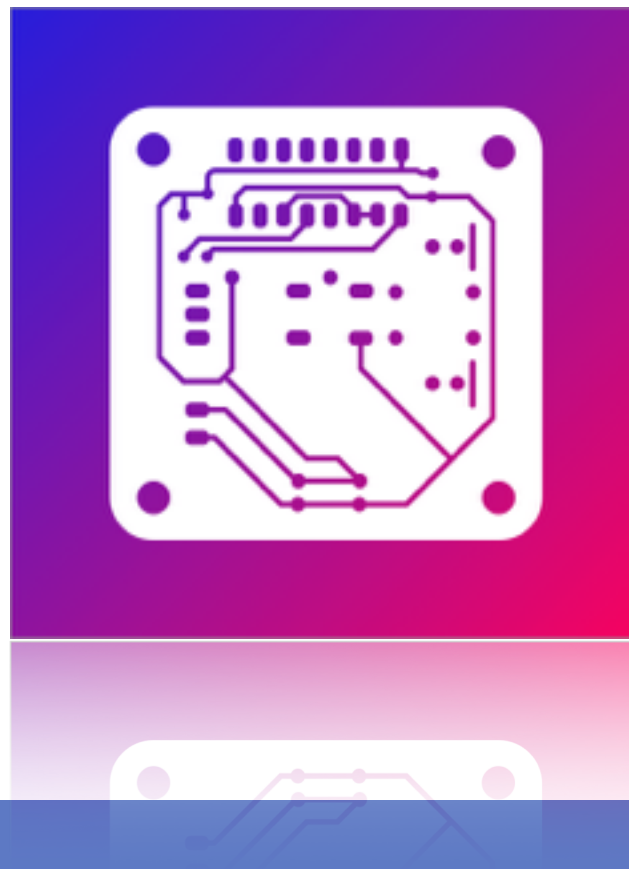
```
34 // setup an abstract state for the tabs directive
35 .state('tab', {
36   url: '/tab',
37   abstract: true,
38   templateUrl: 'templates/tabs.html'
39 })
40
41 // Each tab has its own nav history stack:
42
43 .state('tab.dash', {
44   url: '/dash',
45   views: {
46     'tab-dash': {
47       templateUrl: 'templates/tab-dash.html',
48       controller: 'DashCtrl'
49     }
50   }
51 })
52
53 .state('tab.projects', {
54   url: '/projects',
55   views: {
56     'tab-projects': {
57       templateUrl: 'templates/tab-projects.html',
58       controller: 'ProjectsCtrl'
59     }
60   }
61 })
62
63 .state('tab.topics', {
64   url: '/topics',
65   views: {
66     'tab-topics': {
67       templateUrl: 'templates/tab-topics.html',
68       controller: 'TopicsCtrl'
69     }
70   }
71 })
72 .state('tab.topic-detail', {
73   url: '/topic/:topicId',
74   views: {
75     'tab-topics': {
76       templateUrl: 'templates/tab-topic-detail.html',
77       controller: 'TopicDetailCtrl'
78     }
79   }
80 })
81
82 .state('tab.account', {
83   url: '/account',
84   views: {
85     'tab-account': {
86       templateUrl: 'templates/tab-account.html',
87       controller: 'AccountCtrl'
88     }
89   }
90 })
91
92 // if none of the above states are matched, use this as the fallback
93 $urlRouterProvider.otherwise('/tab/dash');
94
95 });
96
```



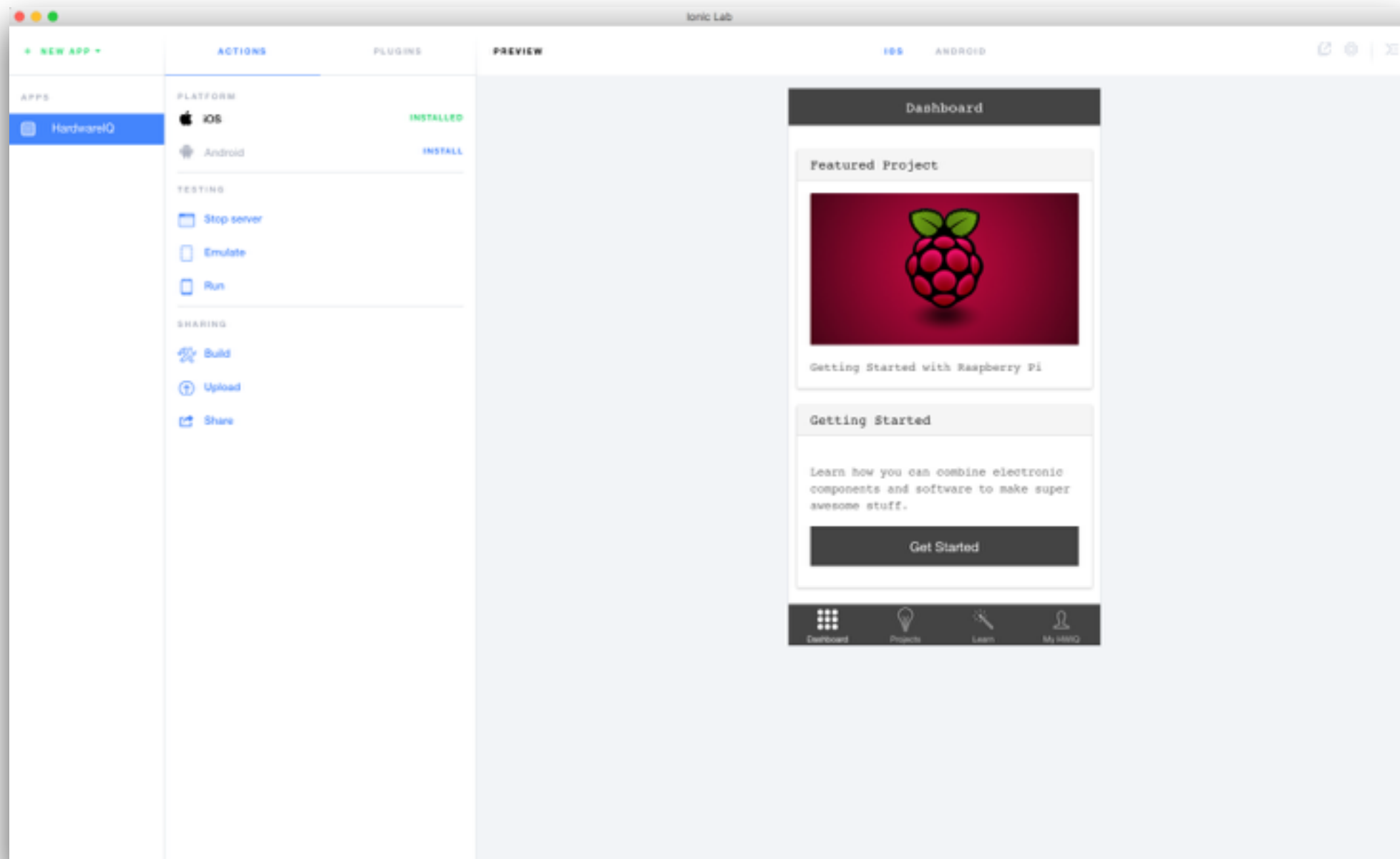


# Let's Review The Code

- Adding / Updating Tabs
- Icons (via Ionicons)
- Generating Assets (via “ionic resources”)



# Ionic Lab





# Backends

# Backends

- Given it's all JS / Angular it can easily be plugged into existing RESTful API's and services
- Examples include [parse.com](http://parse.com), [firebase.com](http://firebase.com), custom, etc
- Also Ionic has it's own services at [ionic.io](http://ionic.io)





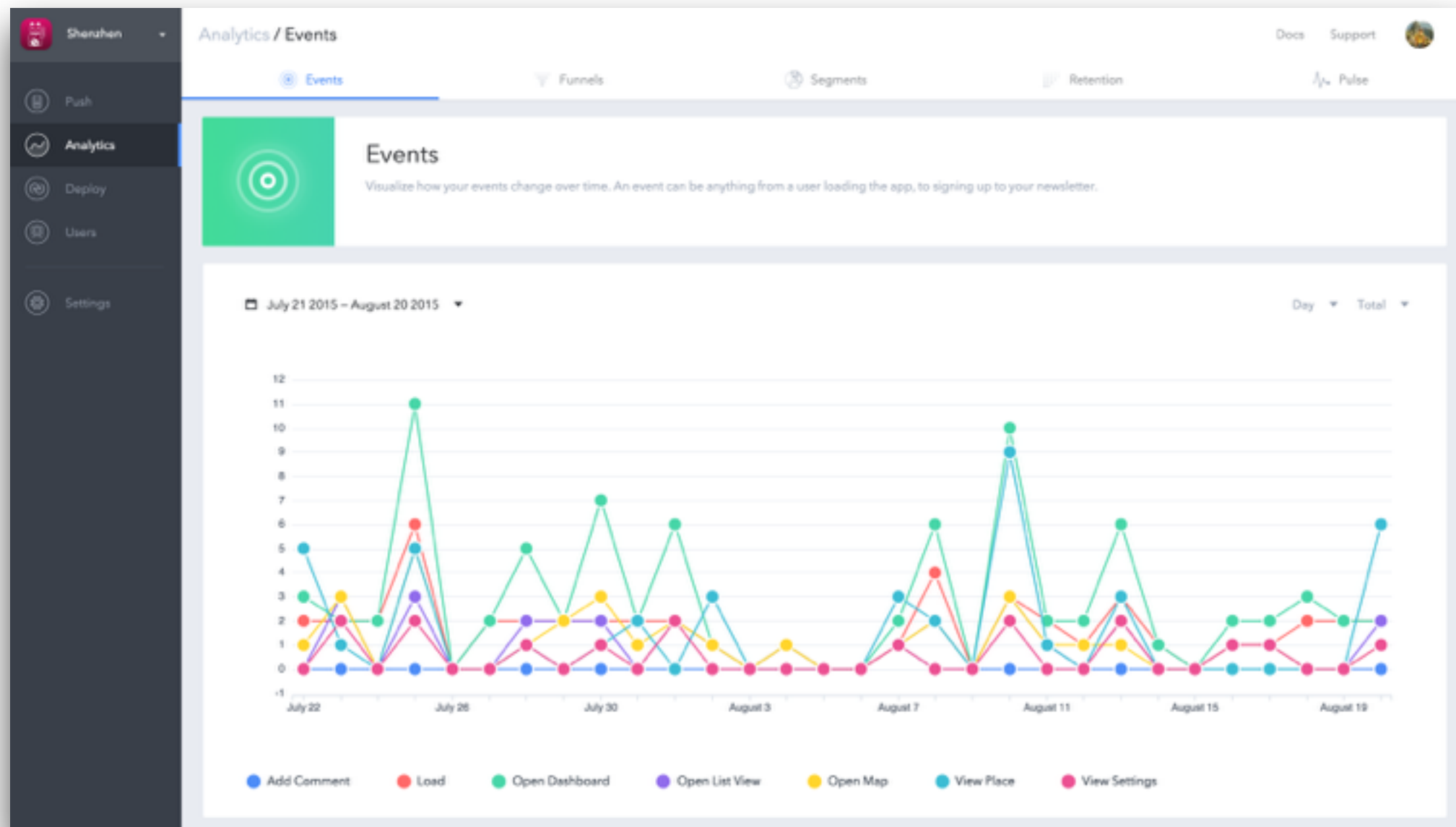
# ionic.io

# ionic.io

- Push - Cross-platform push notifications
- Analytics - Events, Funnel, Segments, Retention, Pulse, Heatmaps
- Deploy - “Update your app without resubmitting to the app store”



# Ionic Analytics





# Ionic Summary



# Ionic Summary

- Solid framework / mature “enough”
- Adds **significant** value on top of Cordova
- Not for *every* scenario but strong in the ones in which it fits (social, news, ecommerce, etc)
- Innovative (with Creator / Ionicons / etc)
- Increasingly strong community (Stack Overflow, Codepen, etc)
- Quick!





# Ionic Next Steps

# Ionic Next Steps

- Install: *sudo npm install -g cordova ionic*
- Review the getting started guide ([ionicframework.com/getting-started/](http://ionicframework.com/getting-started/))
- Check out the Showcase ([showcase.ionicframework.com](http://showcase.ionicframework.com))
- Register for Ionic Creator ([creator.ionic.io](http://creator.ionic.io))
- Use Ionicons ([ionicons.com](http://ionicons.com))
- Checkout Codepen (<http://codepen.io/ionic>)





# And Finally...

# And Finally...

- ◎ 1-day workshop this upcoming Saturday
- ◎ Join the HKJS Meetup: [meetup.com/hongkongjs](https://meetup.com/hongkongjs)
- ◎ Email me anytime: [kevin@bluer.com](mailto:kevin@bluer.com)





# Thank You :) & Q&A