



# IONIC

## The Missing SDK For Hybrid Apps

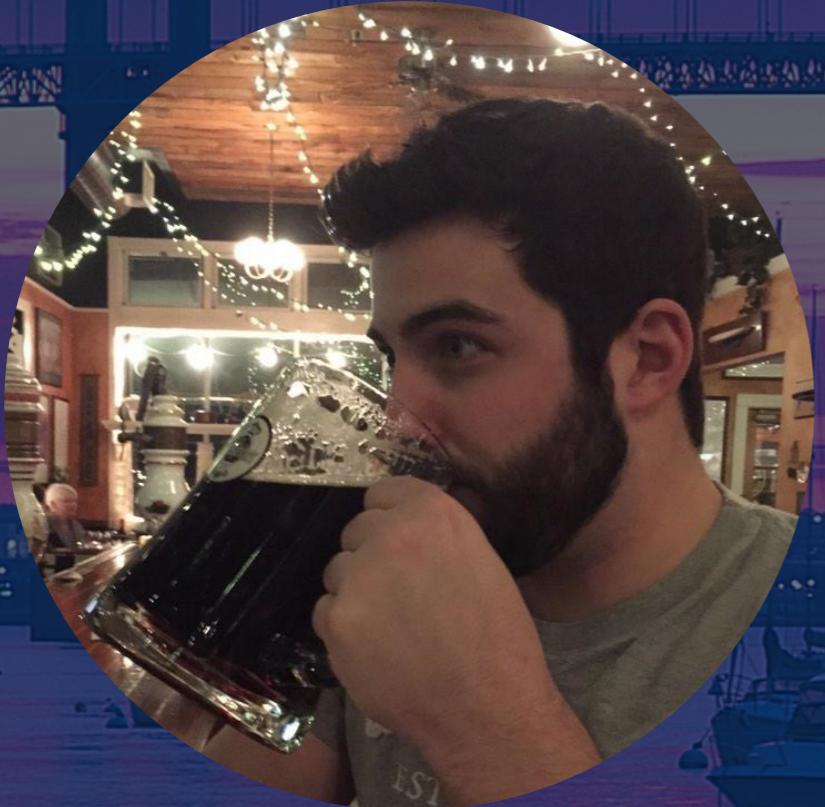
Mike Hartington | @mhartington

# Mike Hartington

Developer Advocate for Ionic

[mhartington on twitter & GH](#)

Rhode Island



***“Say, Johnny, I got this great  
idea for an app.”***

***—EVERY DEVELOPER IN THE HISTORY OF DEVELOPMENT***

# CHALLENGES OF NATIVE DEVELOPMENT

Proficiency in each platform required

Entirely separate code bases

Timely & expensive development

Diminishing returns

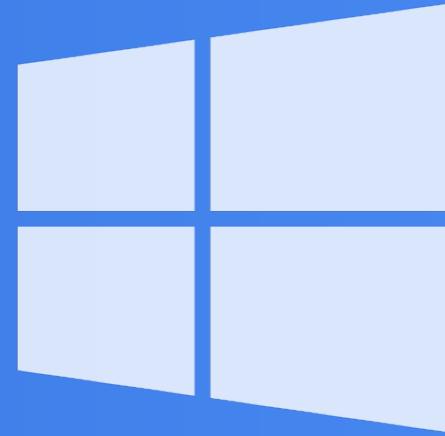
# MORE PLATFORMS, MORE CHALLENGES.



*Obj-C/Swift*



*Java*



*C#/.NET*

# ANY ALTERNATIVES?



**Hybrid Apps: HTML5 that acts like native**

**Direct access to native APIs**

**Develop a single code base (web platform)**

**Write once, Run anywhere**



**ONE DOES NOT SIMPLY**

**WRITE ONCE, RUN ANYWHERE**

*Turns Out, Yes You Can*

***WHAT THEY DON'T  
TELL YOU***

**No UI - Bring your own UI**

**No JS Framework**

**Old Android is not a nice place to work**

**No transitions, gesture support,  
navigation stack**

**MORE ON CORDOVA LATER....**  
**LET'S LOOK AT THIS ANGULAR**  
**THING**

# ANGULAR



MVC Architecture

Reusable components through Directives

Two Way Data Binding

# MODEL

## Factory

```
.factory('Speakers', function($http) {  
  return {  
    getSpeakers: function() {  
      return $http({  
        url: 'https://data.com/speakers.json',  
        method: 'GET'  
      })  
    }  
  }  
})
```

## Controller

```
.controller('MainCtrl', function($scope, Speakers) {  
  $scope.speakers = [];  
  
  Speakers.getSpeakers().success(function(data) {  
    $scope.speakers = data;  
  });  
});
```

# VIEW

A single html page that gets populated by a controller

No application logic, just visuals here

ng-controller? ng-repeat?

What are these curly braces?

```
<div ng-controller="MainCtrl">  
  
  <div ng-repeat="speaker in speakers">  
  
    <div>  
      {{speaker.firstName}}  
      {{speaker.lastName}}  
    </div>  
  
    <div>  
      {{speaker.bio}}  
    </div>  
  
  </div>  
  
</div>
```

*Hello World in Angular*

# STATES

Manage application states/views and provides templates, controllers, urls

```
.config(function($stateProvider, $urlRouterProvider) {  
  
    $stateProvider  
        .state('signin', {  
            url: '/sign-in',  
            templateUrl: 'templates/sign-in.html',  
            controller: 'SignInCtrl'  
        })  
        .state('forgotpassword', {  
            url: '/forgot-password',  
            templateUrl: 'templates/forgot-password.html'  
        })  
  
    $urlRouterProvider.otherwise('/sign-in');  
})
```

# DIRECTIVES

```
.directive('blink', function() {
  return {
    restrict: 'E',
    link: function($scope, $element, $attribute) {

      function showElement() {
        $element.css("visibility", "visible");
        setTimeout(hideElement, 1000);
      }

      function hideElement() {
        $element.css("visibility", "hidden");
        setTimeout(showElement, 1000);
      }
      showElement();
    }
  };
})
```

```
<blink>Hello World</blink>
```

***WHAT THEY DON'T  
TELL YOU***

No UI - Bring your own UI

Ng-Repeat is a Double-edged Sword

Bit of a learning curve

***THE BEST OF  
BOTH WORLDS***

# Cordova

Create cross platform  
mobile apps

No JS framework

Started around 2009

# Angular JS

Create scalable  
web apps

Structured JS framework

Started around 2009

Animations

Modals

ActionSheets

Gestures

Lists

Buttons

Tabs

Navigation

Scrolling

**NATIVE APP**

**Native SDK**

**THERE IS NO  
WEB  
SDK!**

WebView

**NATIVE APP**

Cordova/PhoneGap

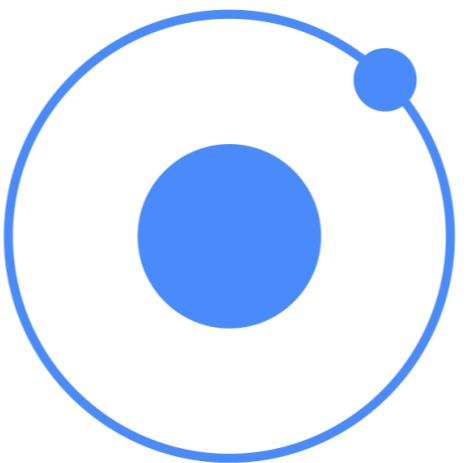
# WHAT DO WE NEED NOW

A bridge between web and native

Rich, native-style UI components

Gestures, Transitions, Navigation Stacks

UI APIs, not just jQuery widgets



ionic

*Howdy*

*“Focus on building your app.  
Not on how your app should work”*

# WEB TECHNOLOGIES YOU ALREADY KNOW AND LOVE

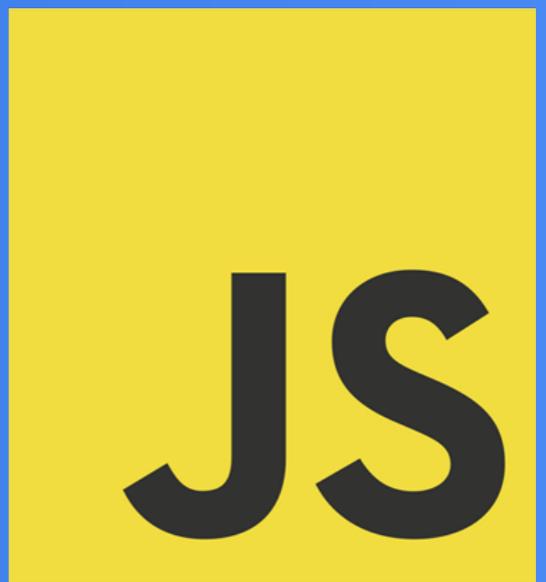
HTML



CSS



JS



# **STANDING ON THE SHOULDERS OF ANGULAR**

**Proven for large-scale web app development**

**Extends the HTML vocabulary**

**UI Components using Directives and Services**



**CSS generated from the Sass preprocessor**

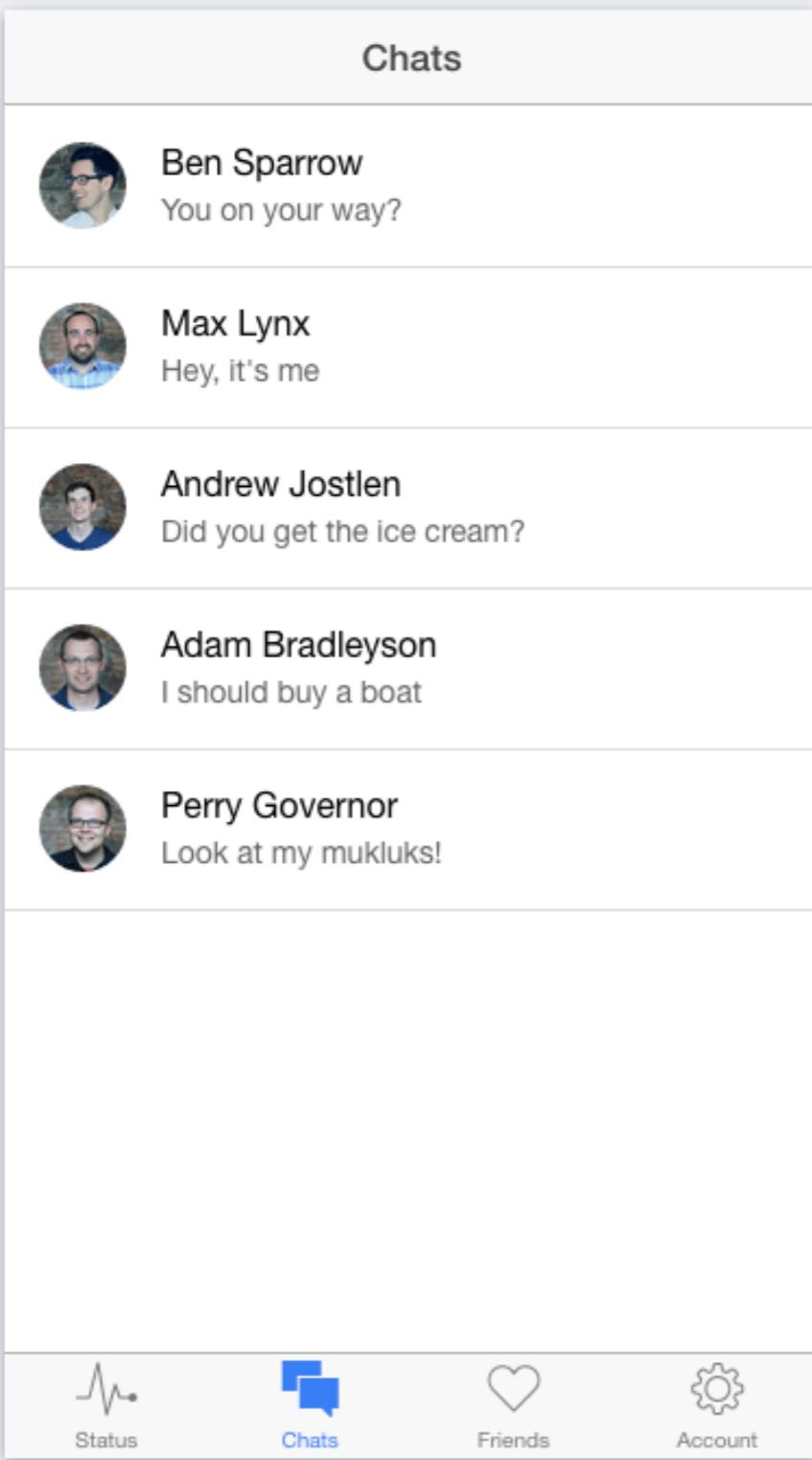
**Quickly give your app its own look and feel**

**CSS designed to be easily overridden**

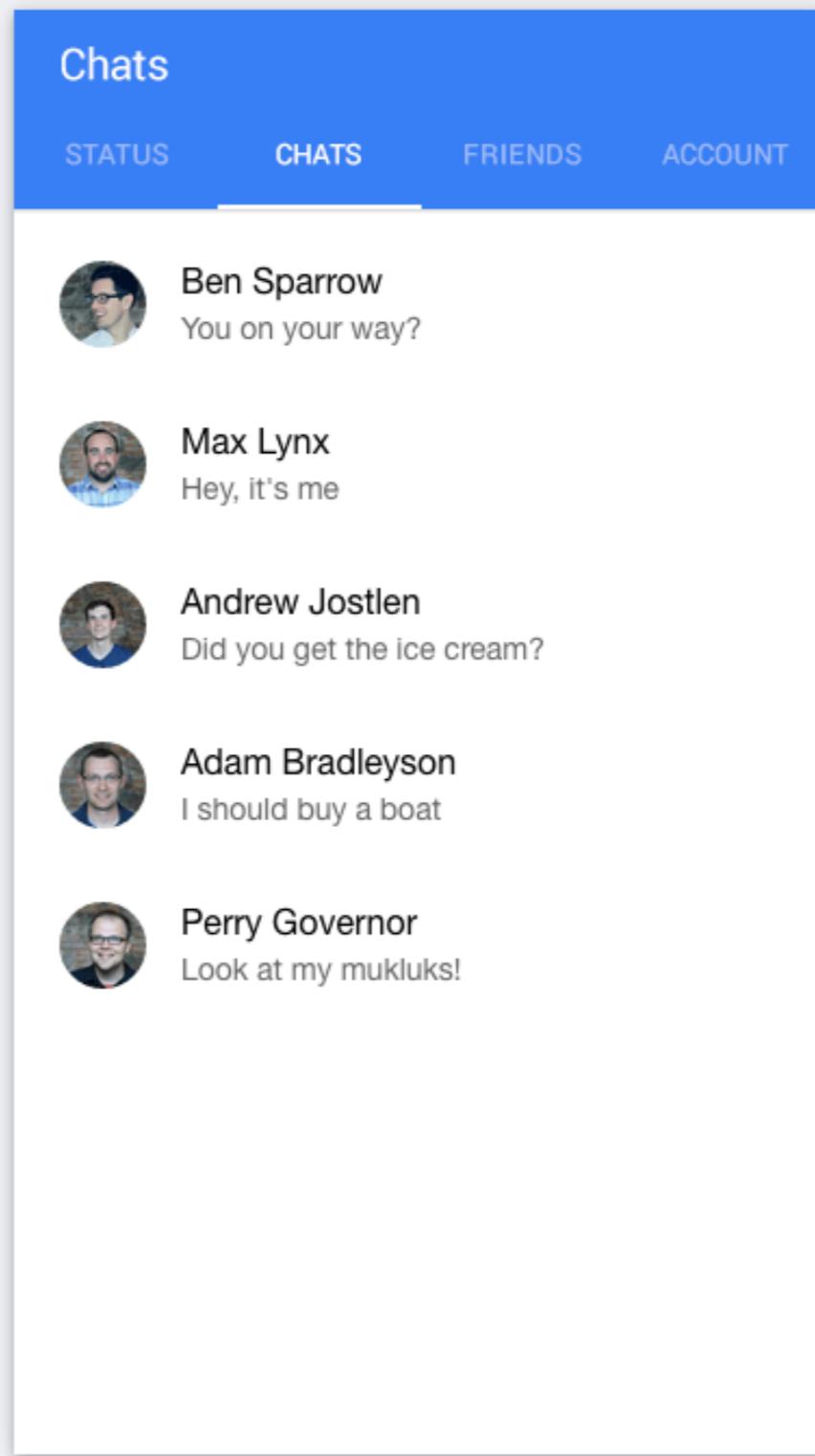
**Variables based with default settings**

# PLATFORM CONTINUITY

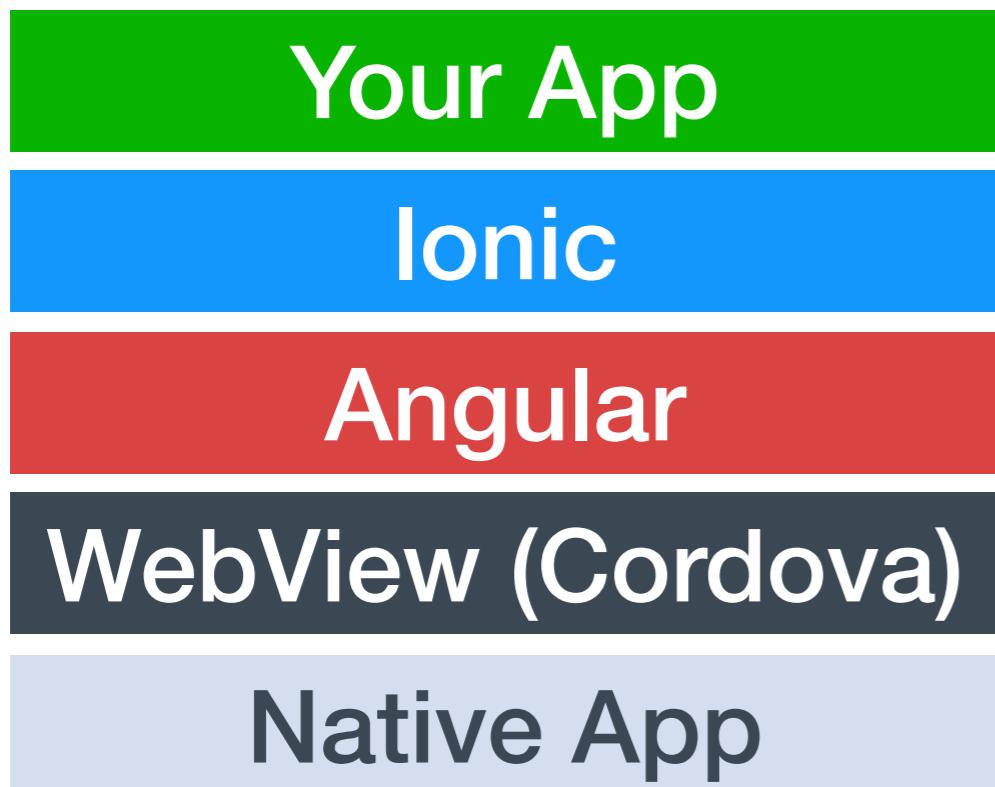
iOS



Android



# How It All Comes Together



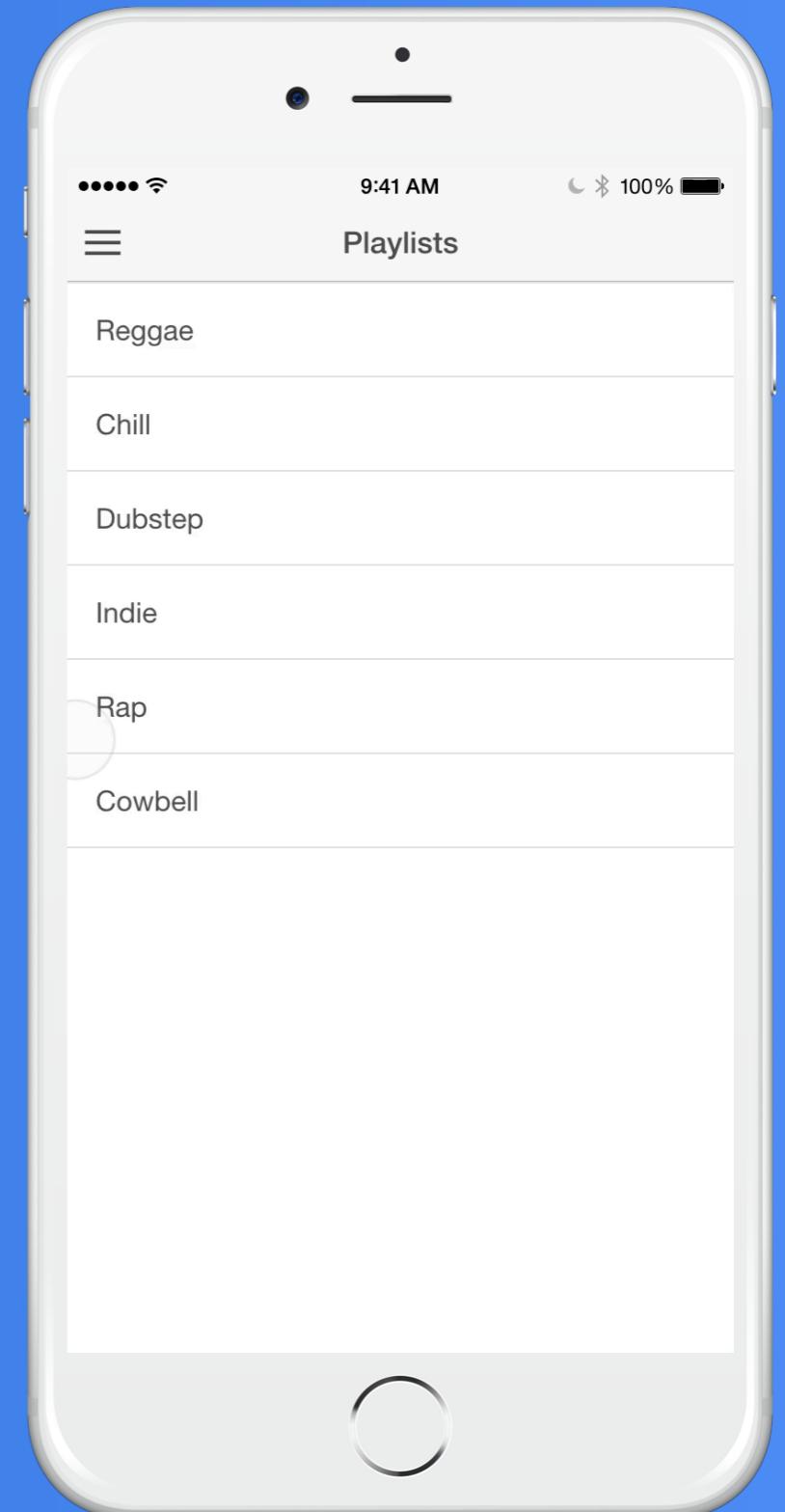
# SIDE MENUS

```
<ion-side-menus>
```

```
  <!-- Left menu -->
  <ion-side-menu side="left">
    </ion-side-menu>

  <!-- Center content -->
  <ion-side-menu-content>
    <ion-nav-view></ion-nav-view>
  </ion-side-menu-content>
```

```
  <!-- Right menu -->
  <ion-side-menu side="right">
    </ion-side-menu>
</ion-side-menus>
```



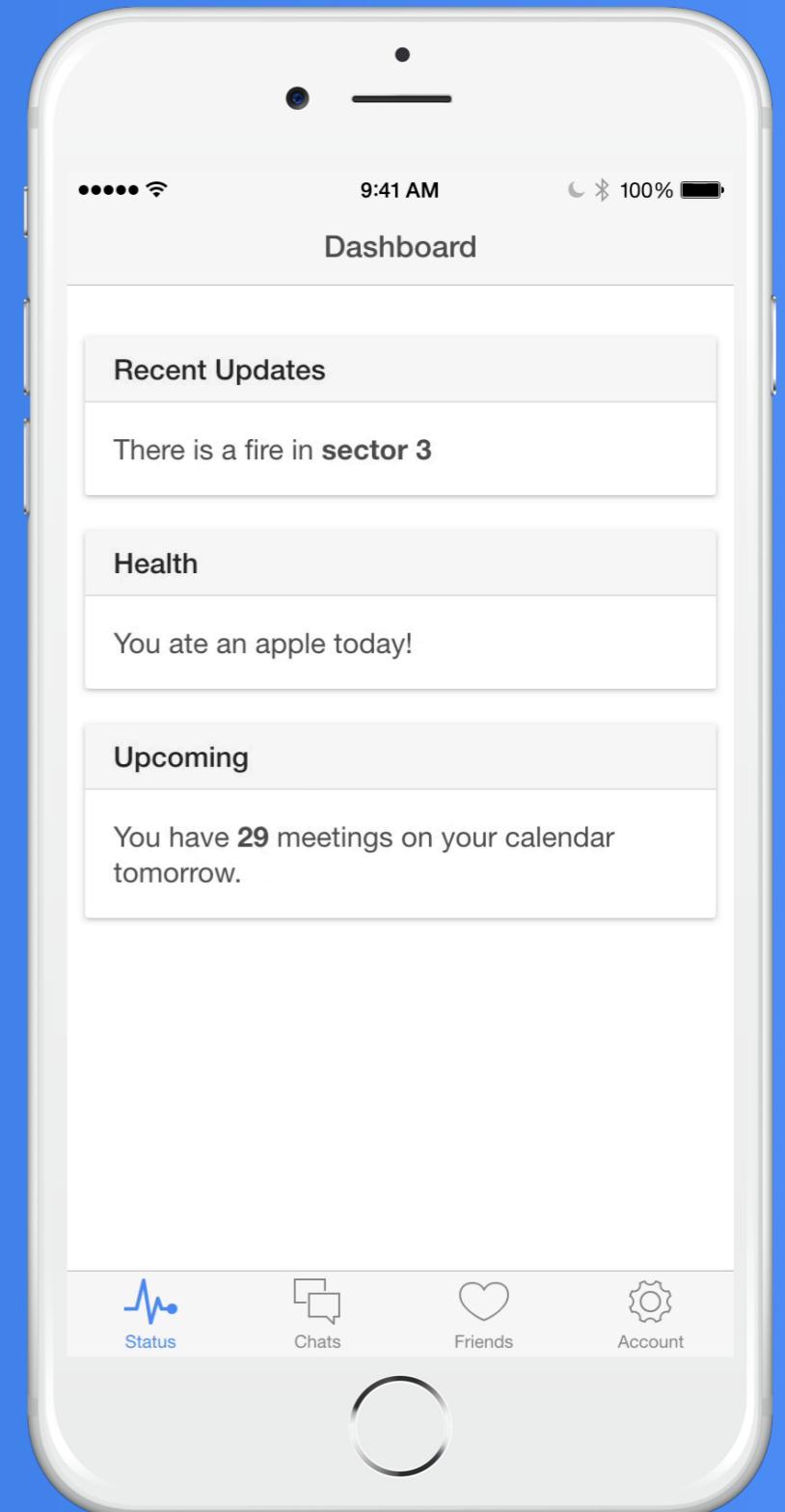
# TABS

Nested views

Each tab has its own nav history

Abstract states in AngularUI Router

```
<ion-tabs class="tabs-icon-top">  
  <ion-tab icon="ion-home">  
    <ion-nav-view name="home-tab">  
    </ion-nav-view>  
  </ion-tab>  
</ion-tabs>
```



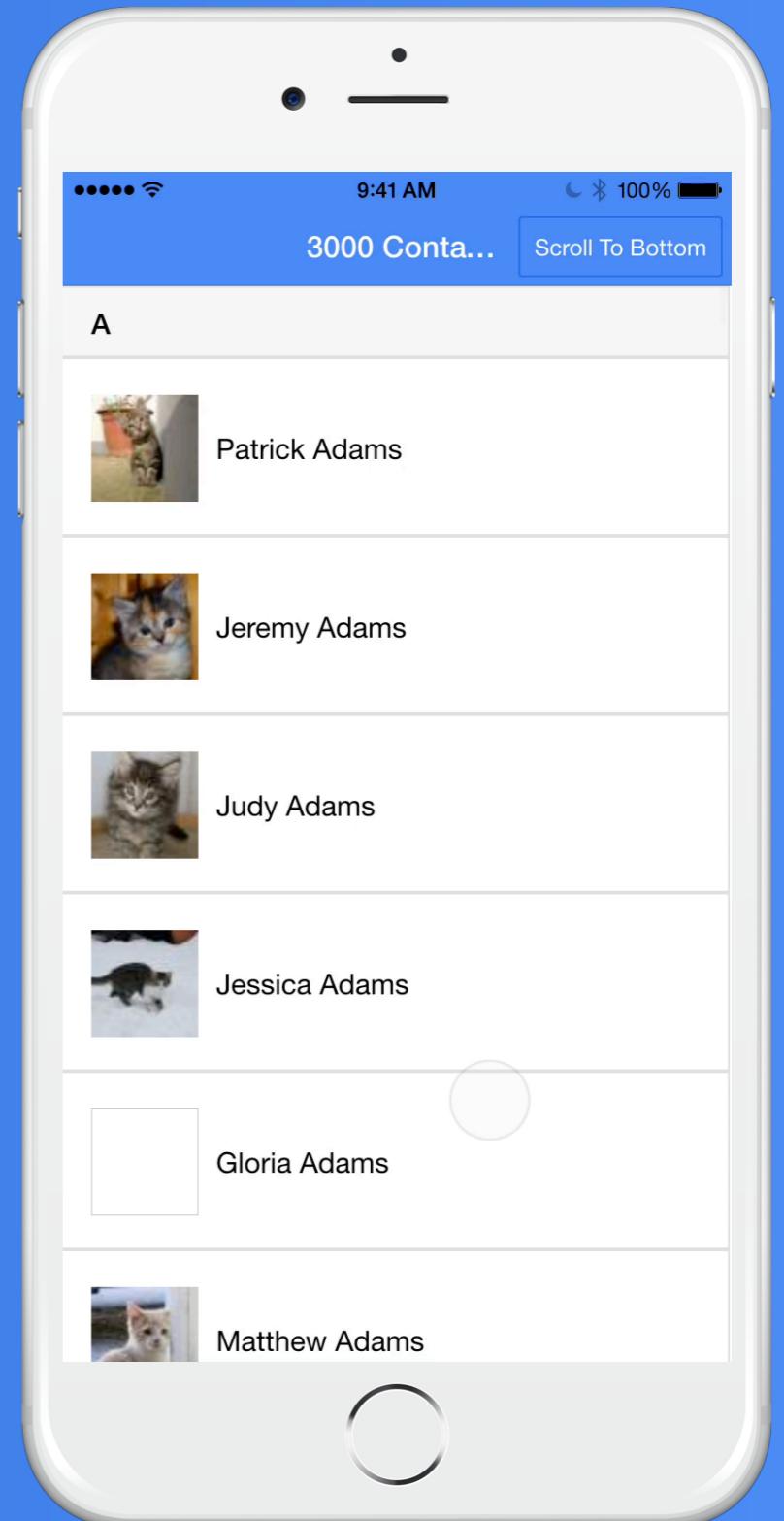
# COLLECTION REPEAT

Replacement for ng-repeat

Inspired by iOS's UICollectionView

Only renders the viewable items

```
<ion-content>
  <div class="list">
    <a class="item"
      collection-repeat="item in items">
      {{item.name}}
    </a>
  </div>
</ion-content>
```



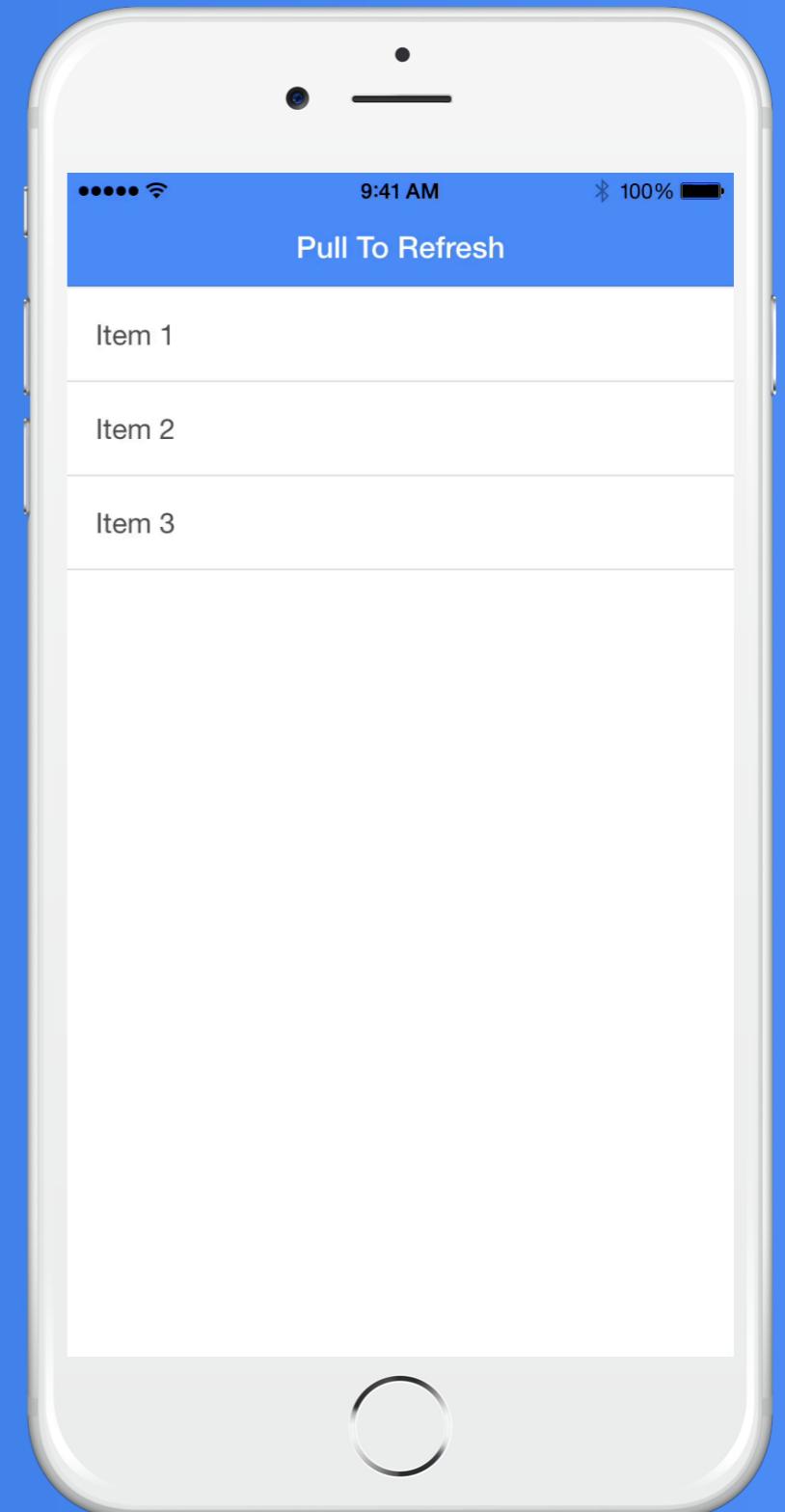
# PULL TO REFRESH

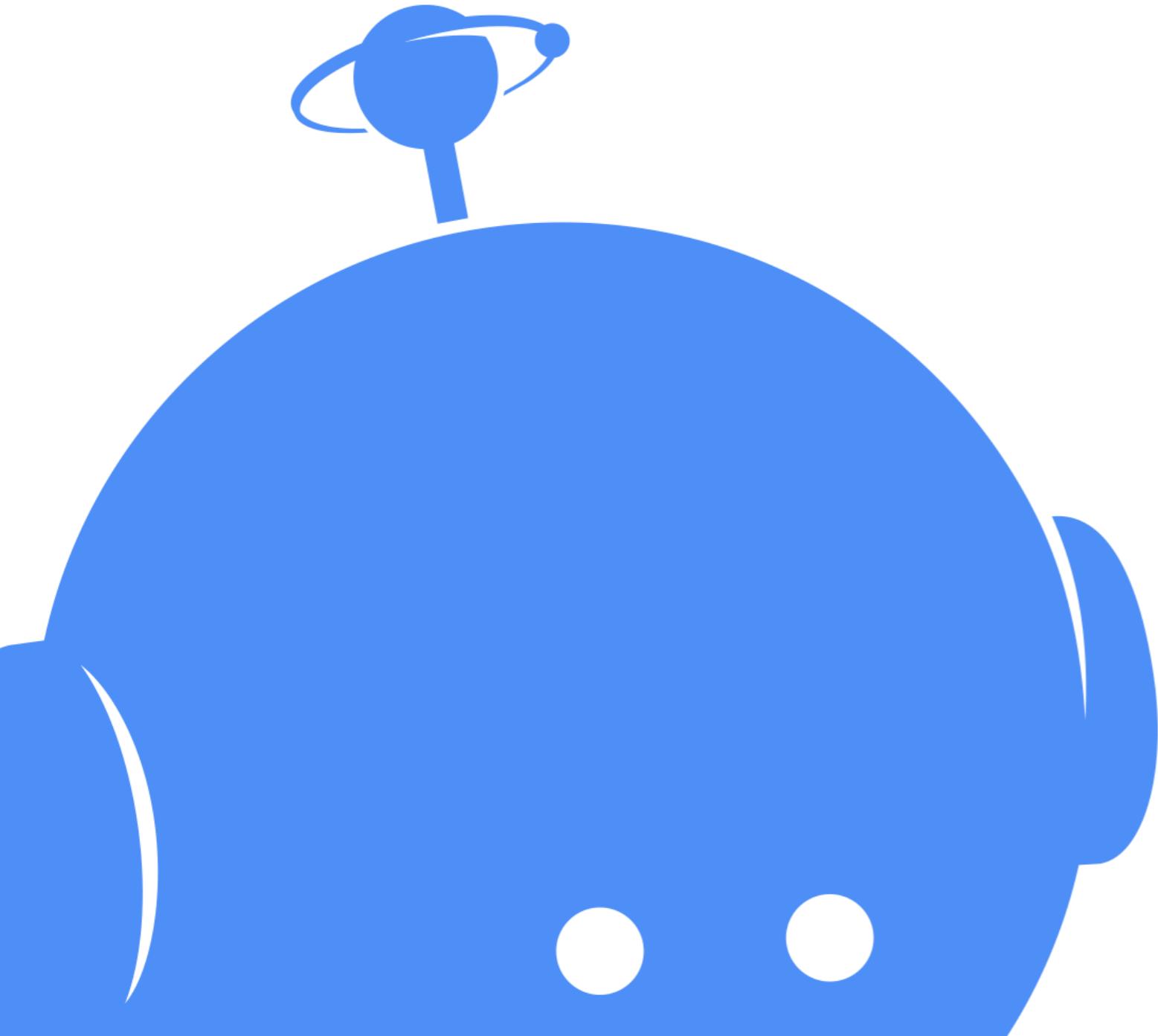
Common design pattern to fetch data

Takes a simple function

Customize loading text and icon

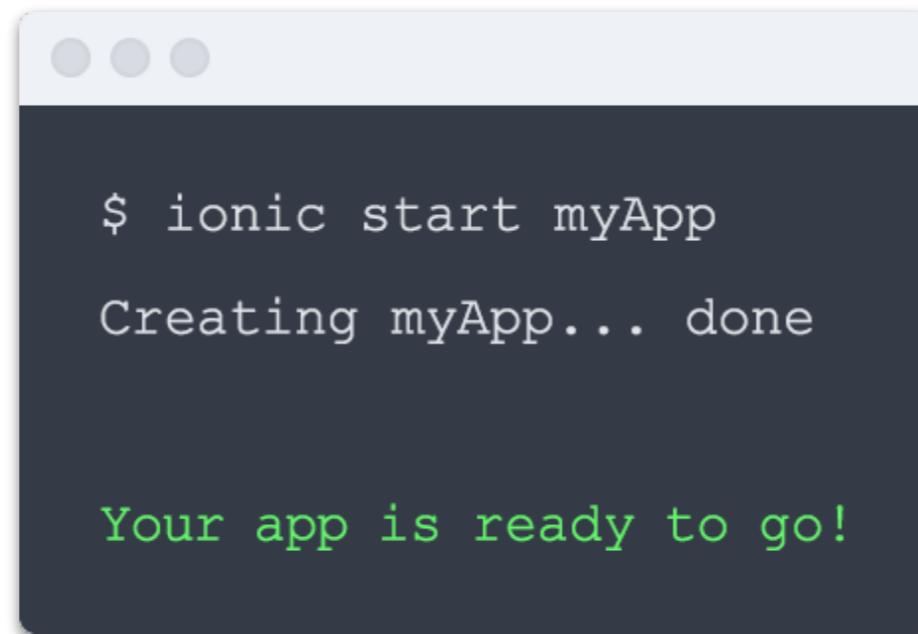
```
<ion-content>
  <ion-refresher on-refresh="fetchMore()">
    </ion-refresher>
    <ion-list>
      <ion-item></ion-item>
    </ion-list>
</ion-content>
```





*...but there's more to Ionic*

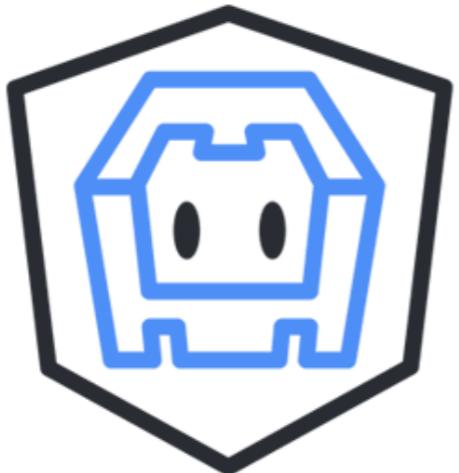
**npm install -g ionic cordova**



**Starter projects ready for customization**

**LiveReload both local and native builds**

**Build and run native apps**



# ngCordova

**60+ AngularJS** extensions on top of the **Cordova API**



**TOUCH ID**



**OAUTH**



**CAMERA**



IONICIO

ionicpush

ionicanalytics

ionicupdate

ionictest

ionicpackage





# ionicview

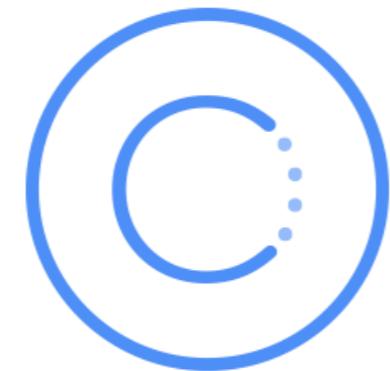
The image shows two smartphones side-by-side, both displaying the Ionicview application. The left phone is white and shows a list of apps under 'MY APPS'. The right phone is black and shows a list of apps under 'My apps'.

**Left Phone (Ionicview interface):**

- Carrier:** Carrier **Time:** 3:14 PM
- MY APPS**
  - Barkpark**  
ID: J3383634  
SIZE: 32MB  
MODIFIED: FEB 11 2014
  - Weather tracker**  
ID: J3383634  
SIZE: 32MB  
MODIFIED: FEB 11 2014
  - Grumblr**  
ID: D37DD3A5

**Right Phone (Ionicview interface):**

- Time:** 4:28
- My apps**
  - Barkpark**  
ID: J3383634  
SIZE: 32MB  
MODIFIED: FEB 11 2014
  - Weather tracker**  
ID: J3383634  
SIZE: 32MB  
MODIFIED: FEB 11 2014
  - Grumblr**  
ID: D37DD3A5



# ioniccreator

Untitled Project

EDIT TEST

PAGES

- Home
- H1 Heading text
- Button**
- Footer
- Text block
- Image

COMPONENTS

- Header
- Footer
- Button
- List
- Card
- Input

Helvetica 12 B I U ↗

Hubstruck

Fall in love with others on Github

Email

Password

Log in

Don't have an account? [Sign Up](#)

Carrier 13:57 42%

TEXT

log in

LINK

Home

ICON

ion-social-github

Align

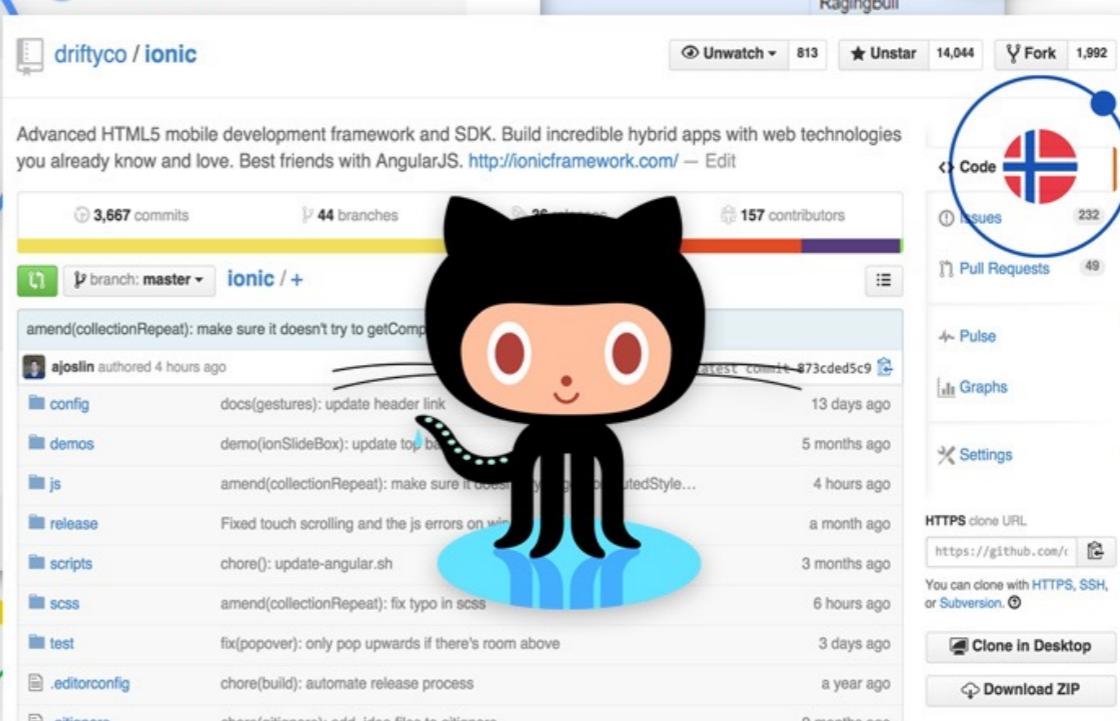
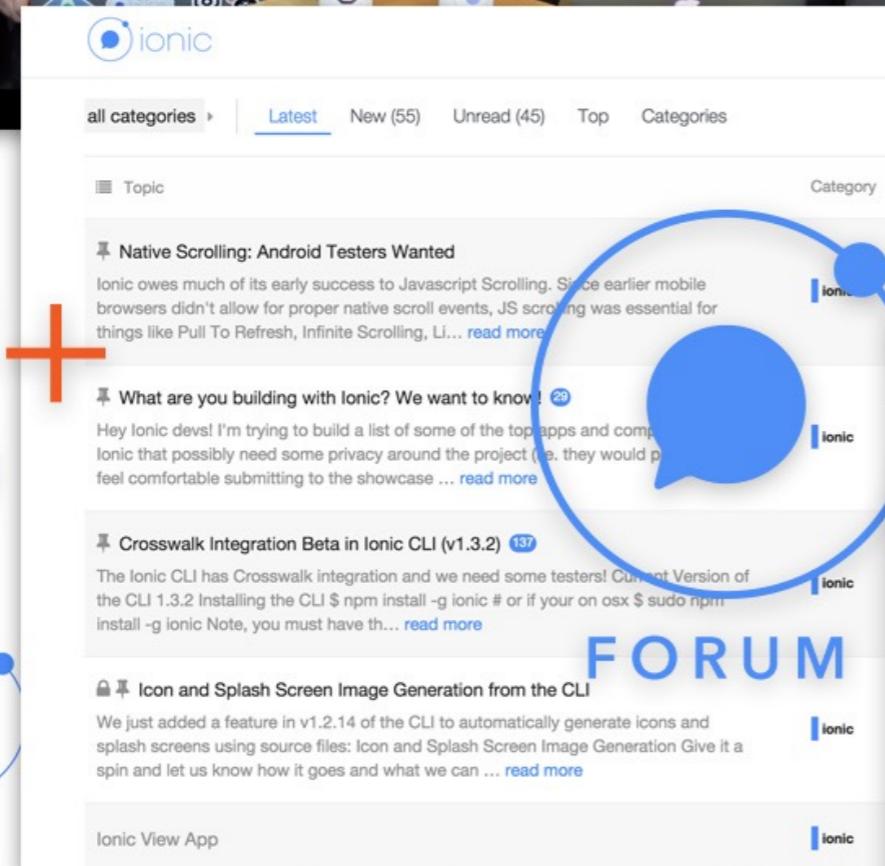
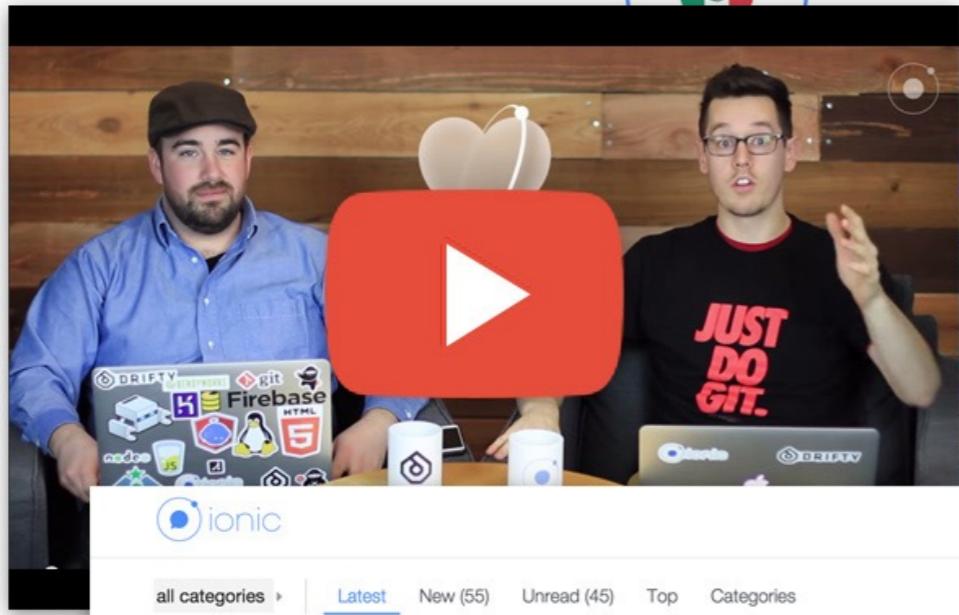
TYPE

Block

STYLE

Positive

The screenshot shows the Ionic Creator interface. On the left, there's a sidebar with 'PAGES' and 'COMPONENTS' sections. Under 'PAGES', 'Home' is selected, showing an H1 'Heading text' component and a 'Button' component which is currently selected and highlighted in blue. Under 'COMPONENTS', there are components for 'Header', 'Footer', 'Button', 'List', 'Card', and 'Input'. The main workspace displays a mobile application screen titled 'Hubstruck' with the tagline 'Fall in love with others on Github'. It features an 'Email' input field, a 'Password' input field, and a large blue 'Log in' button with a GitHub icon. Below the button are links for 'Don't have an account?' and 'Sign Up'. At the top of the workspace, there are font and size settings ('Helvetica 12'), and a toolbar with various icons. To the right of the workspace is a 'PROPERTIES' panel containing sections for 'TEXT', 'LINK', 'ICON', 'TYPE', and 'STYLE'. The 'ICON' section shows 'ion-social-github' with alignment options. The 'TYPE' section shows 'Block'. The 'STYLE' section shows 'Positive'.



# DID I MENTION ICONS?

Ionicons

Over 700 MIT licensed font-icons included

~ ionic start ||

DEMO TIME!

MAY THE DEMO GODS BE WITH US

# GETTING STARTED

Christophe Coenraets Cordova tutorial

Dan Wahlin's Angular in 60-ish minutes

Ionic in Action Book

Ionic Forum

# ANGULAR 2?

NG-Conf 2015 | Angular 2 & TypeScript

New syntax and much more power

Incredible Fast

New Router



O V2

A V2



</HTML>

@MHARTINGTON

<https://github.com/mhartington/PhillyETE>