



IONIC

The Missing SDK For Hybrid Apps

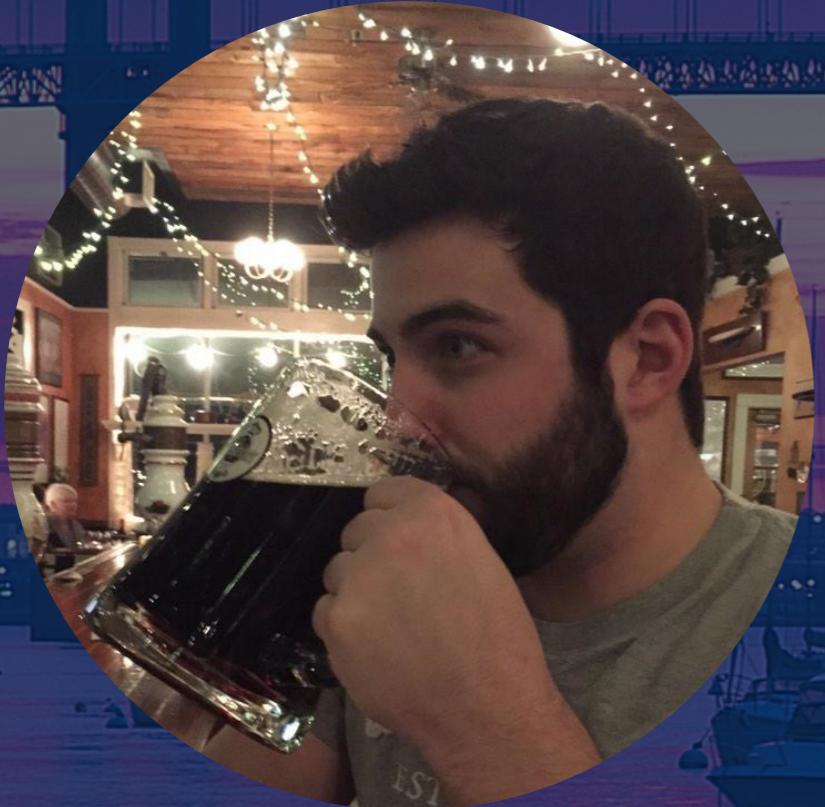
Mike Hartington | @mhartington

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

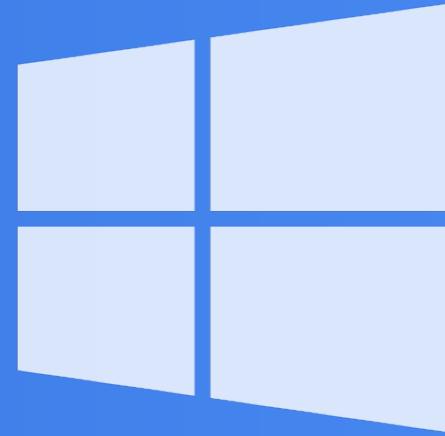
MORE PLATFORMS, MORE CHALLENGES.



Obj-C/Swift



Java



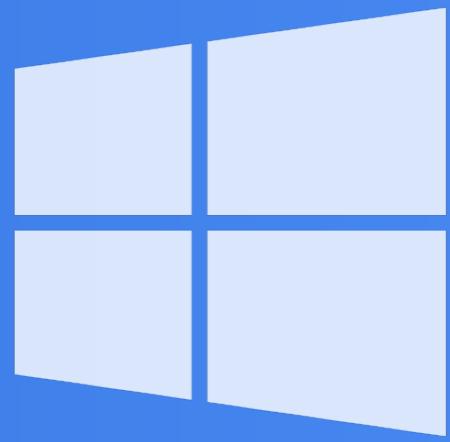
C#/.NET



Obj-C/Swift



Java



C#/.NET



Obj-C/Swift



Java



Obj-C/Swift

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

A photograph from the movie "The Lord of the Rings: The Return of the King". It shows Aragorn (portrayed by Viggo Mortensen) with long brown hair and a beard, looking intensely at the camera. He is wearing a dark, ornate leather vest over a red tunic. The background is a dimly lit stone structure, possibly a castle or temple. The lighting is dramatic, with strong shadows and highlights on his face.

ONE DOES NOT SIMPLY

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

Hello World in Angular

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>
```

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

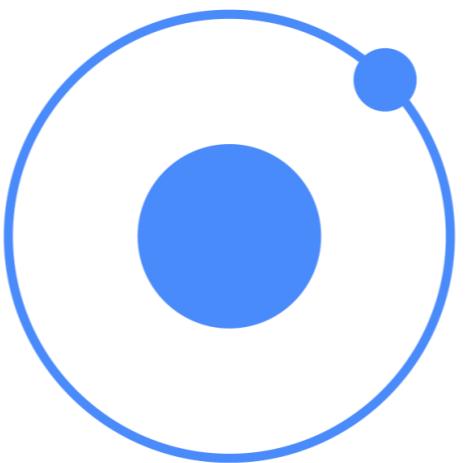
WHAT DO WE NEED NOW

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

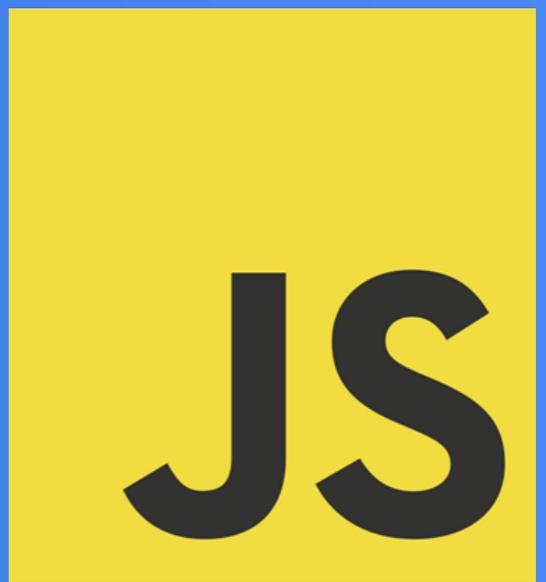
HTML



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

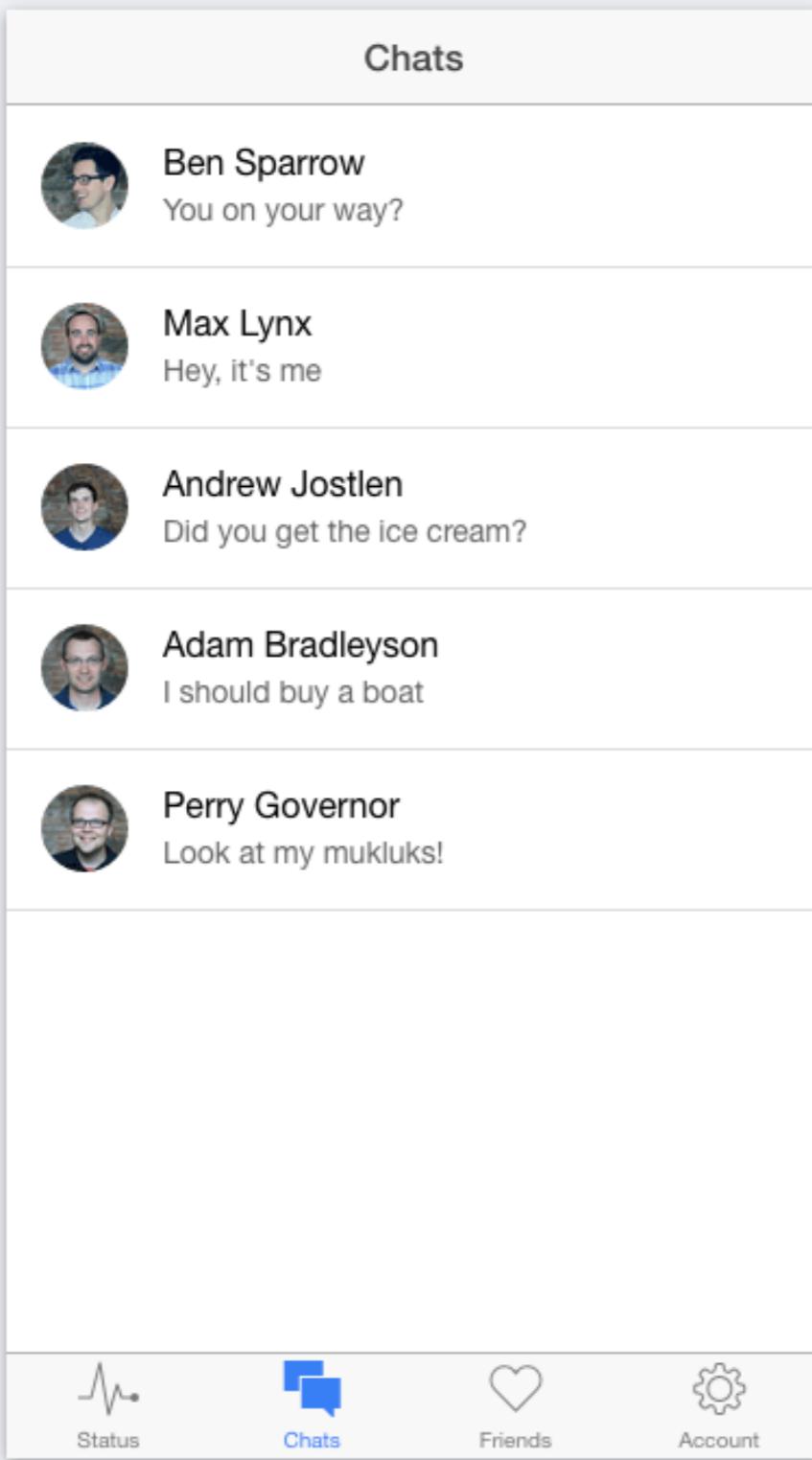
Quickly give your app its own look and feel

CSS designed to be easily overridden

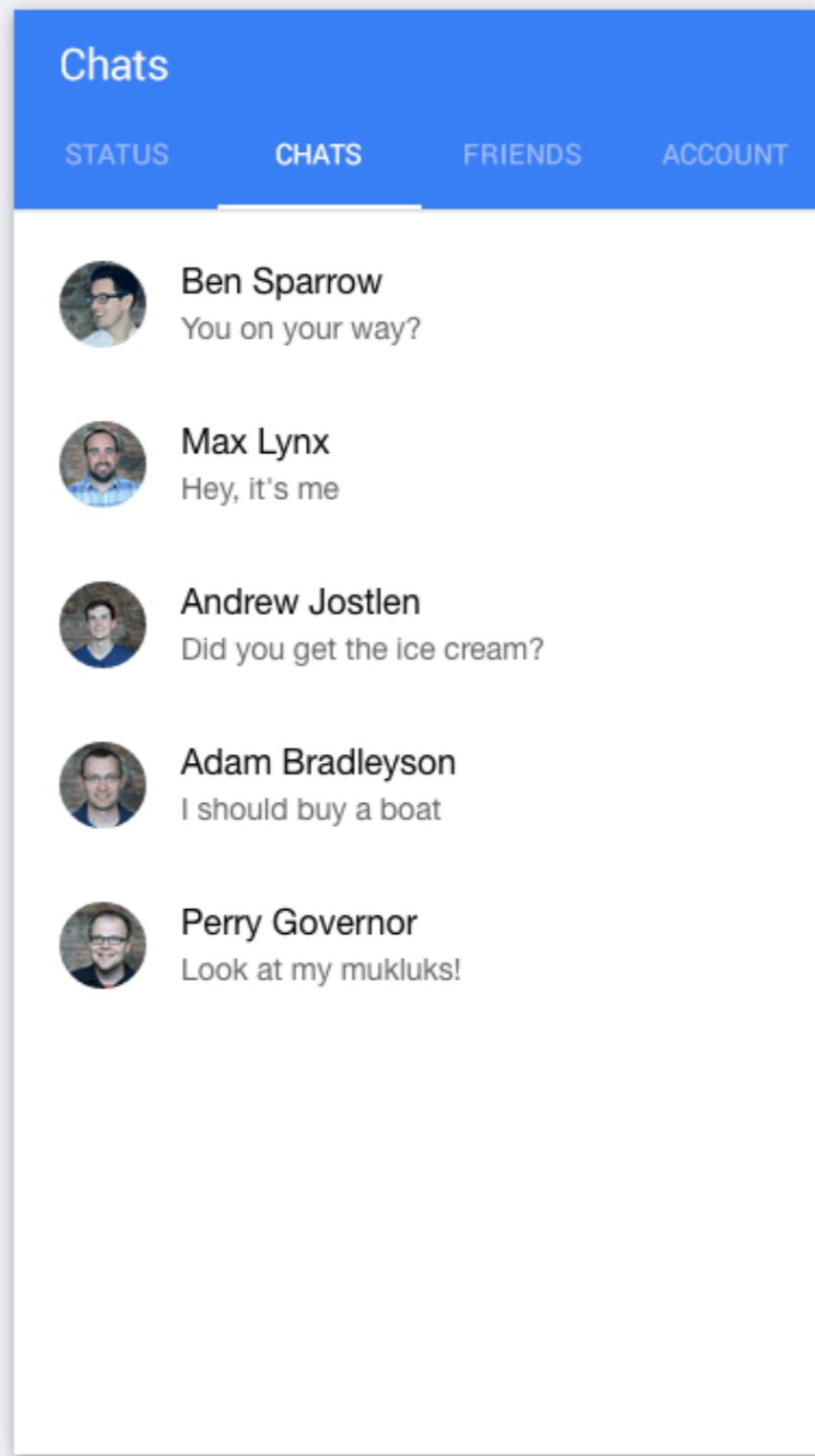
Variables based with default settings

PLATFORM CONTINUITY

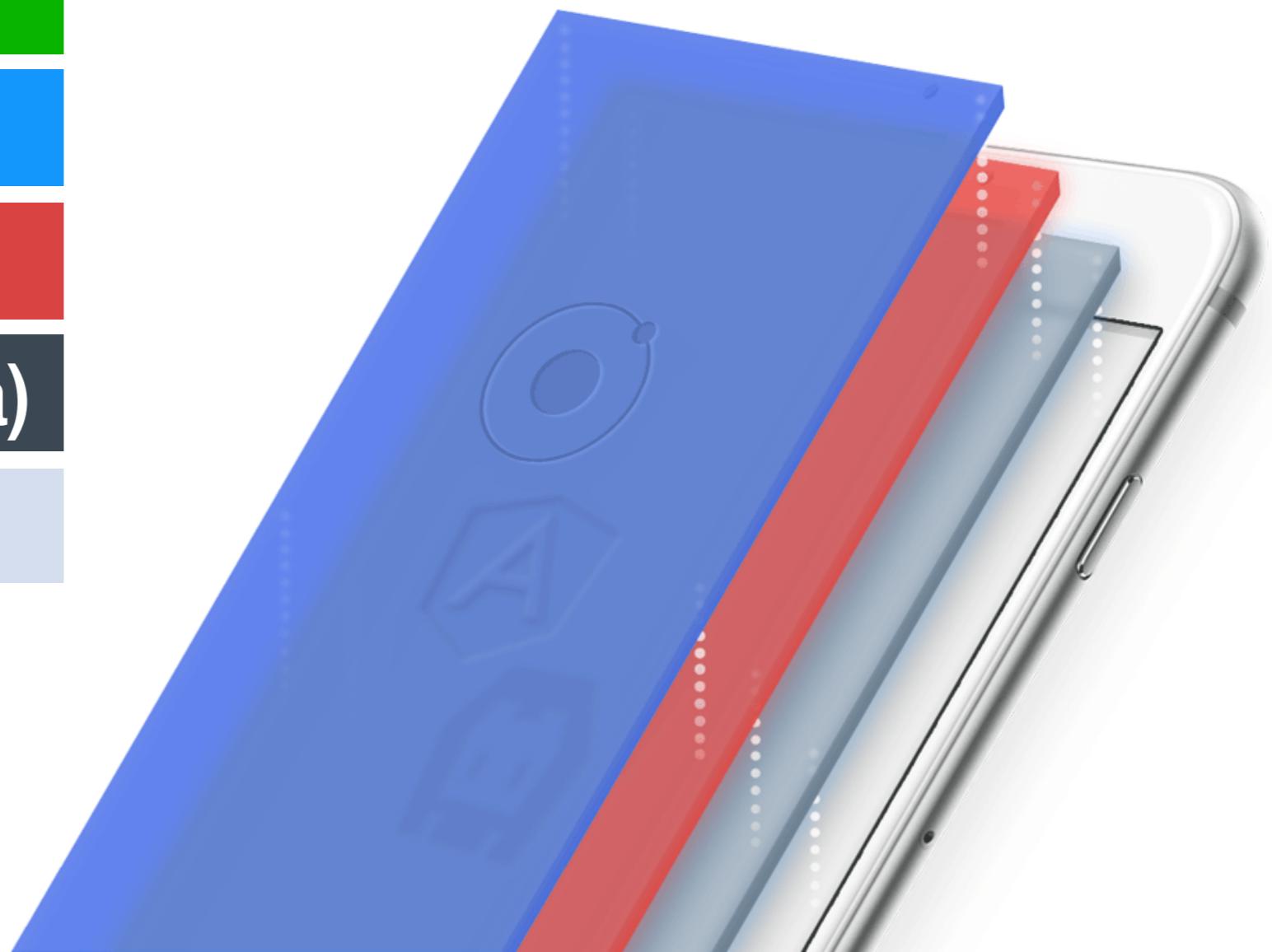
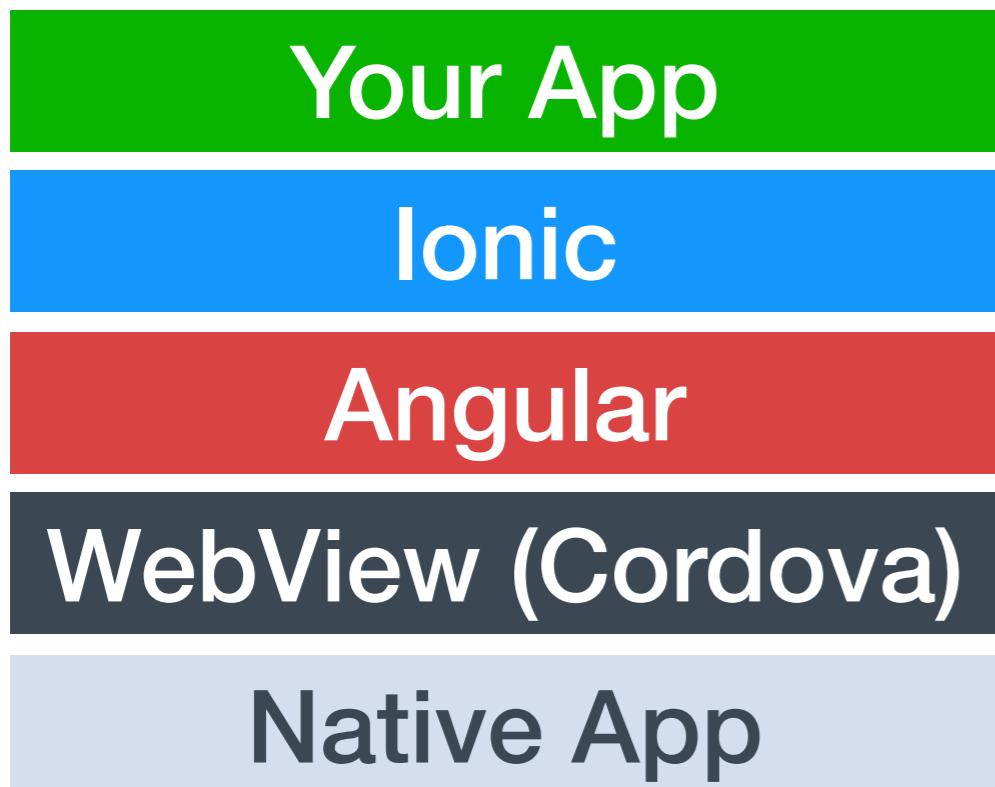
iOS



Android



How It All Comes Together



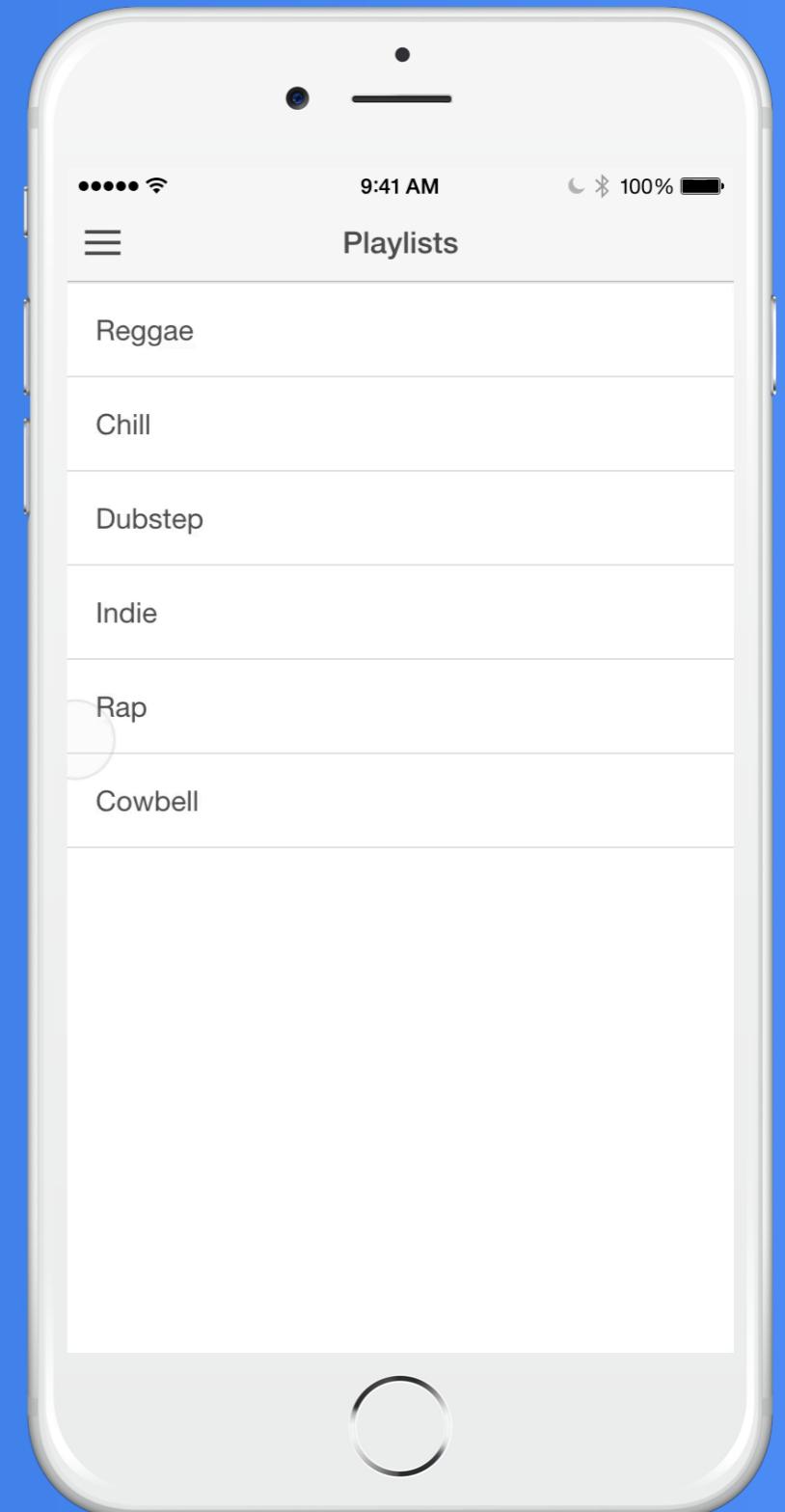
SIDE MENUS

```
<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>
```



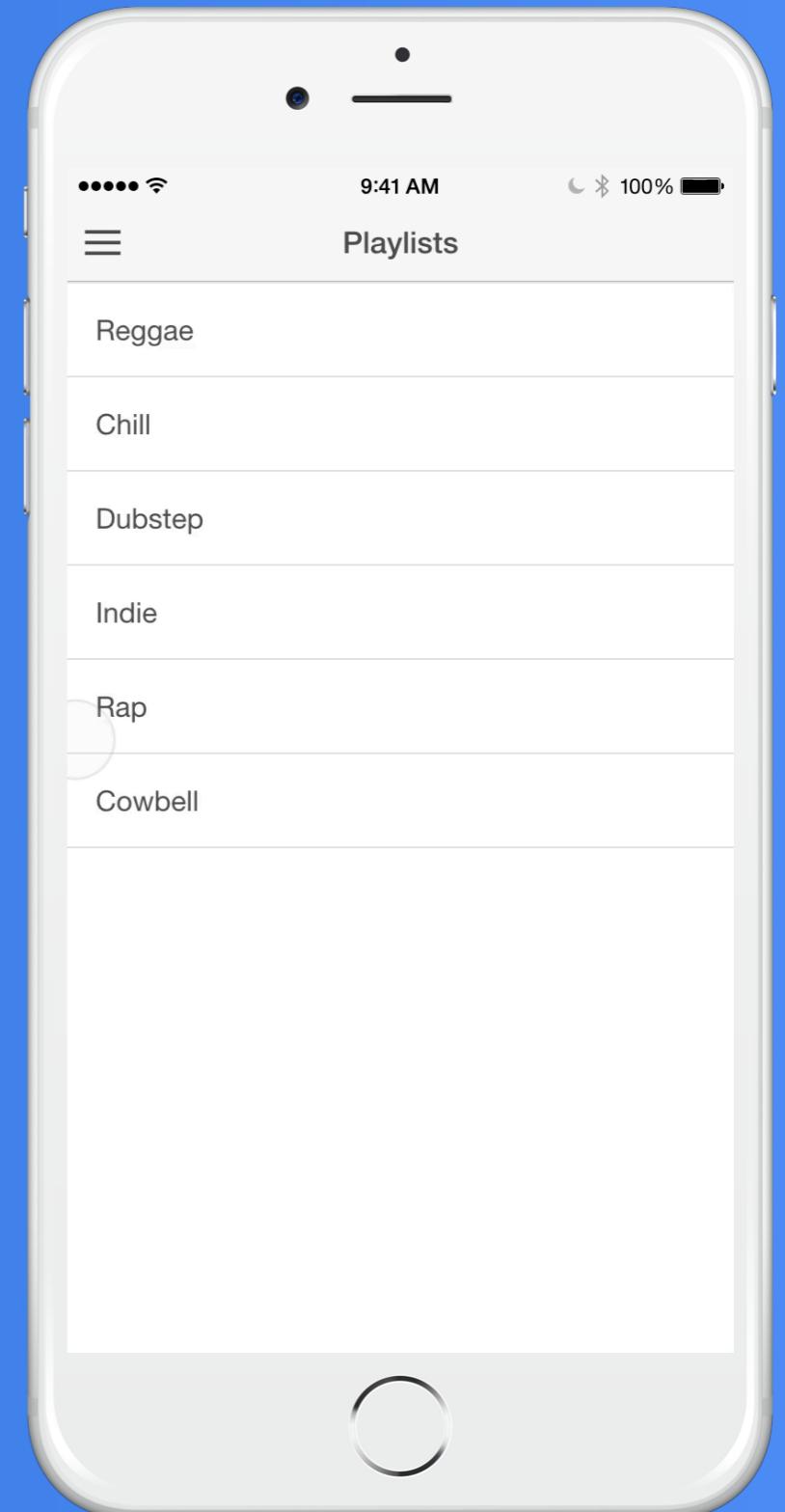
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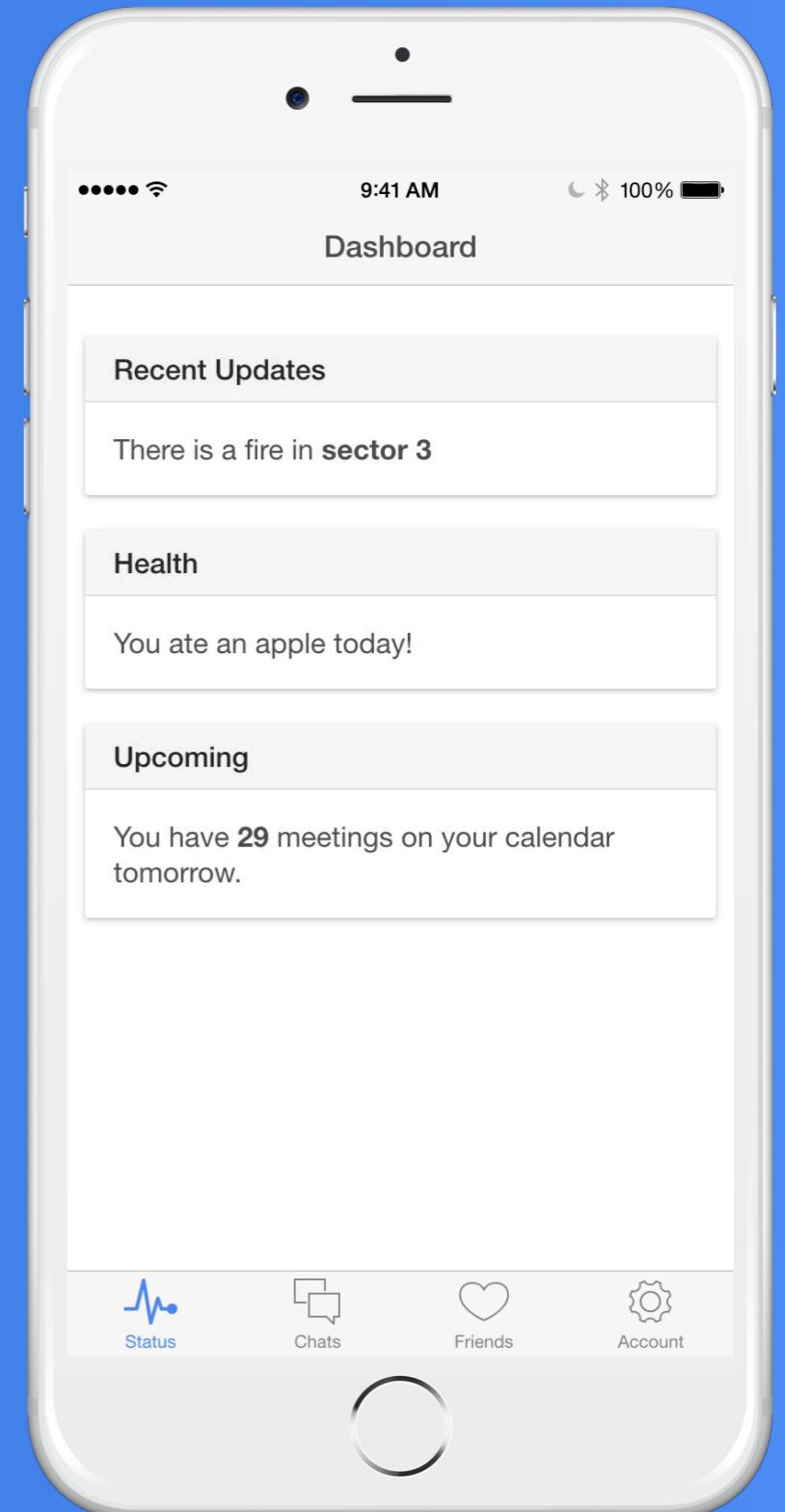
TABS

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>
```



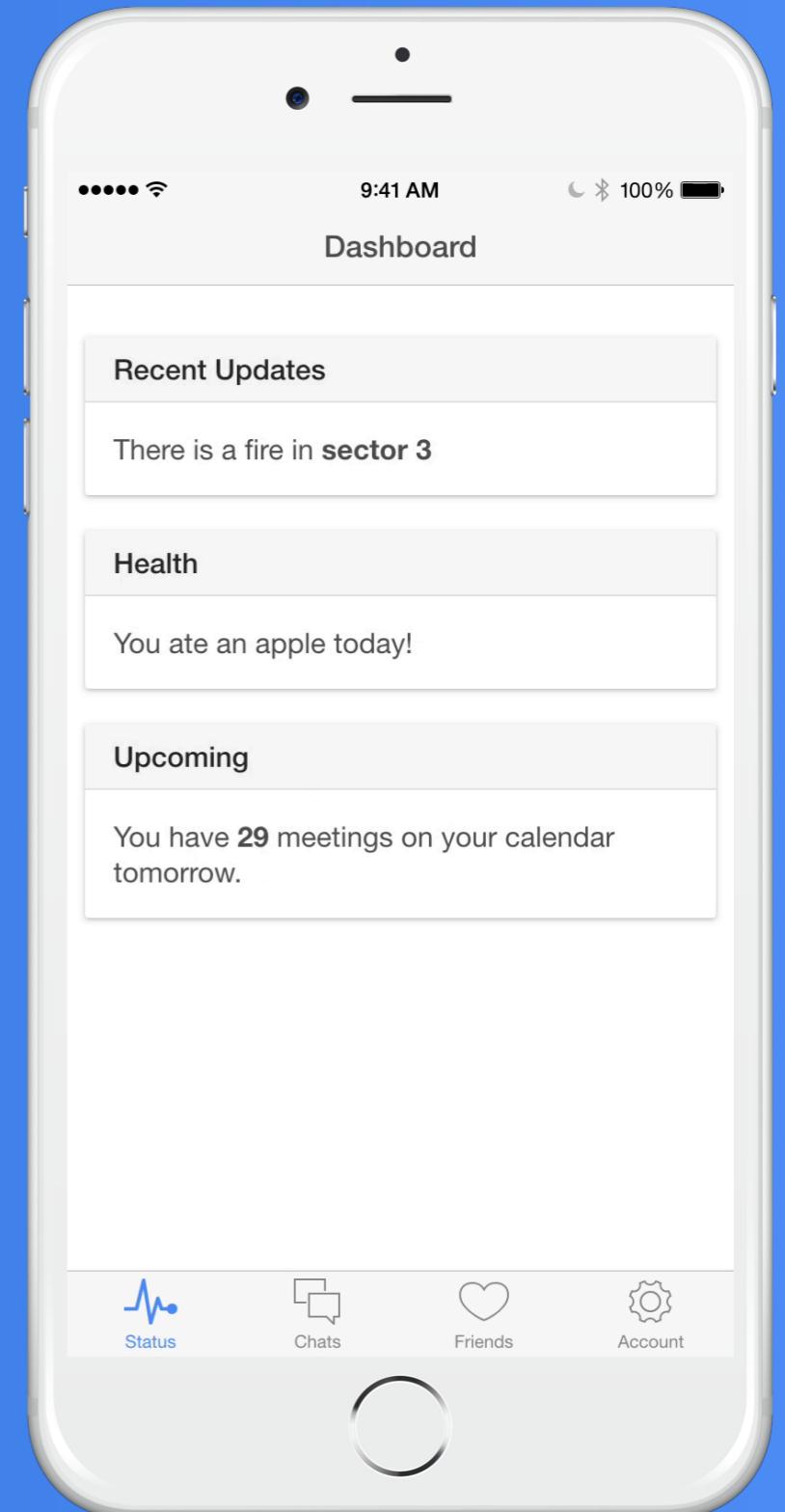
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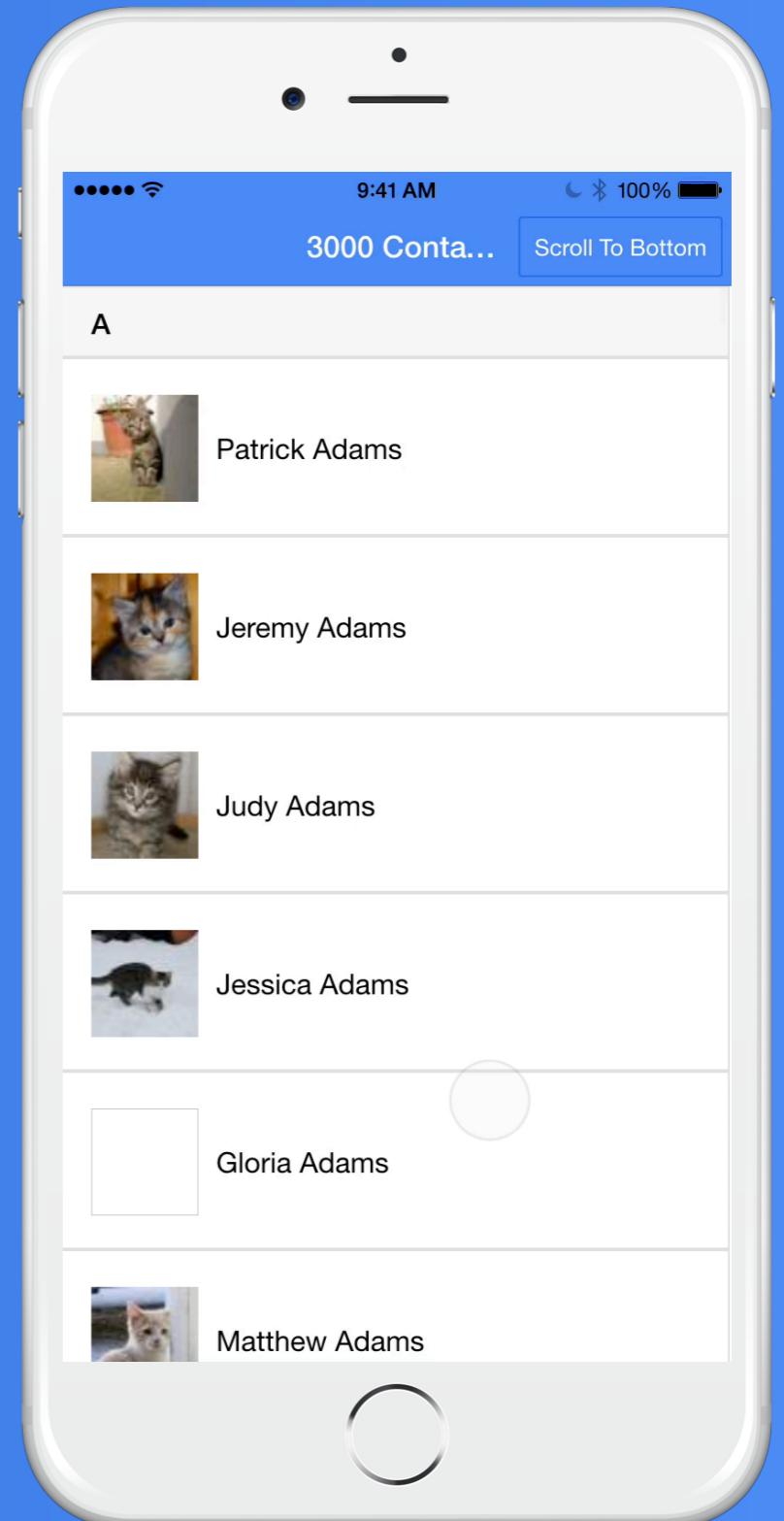
COLLECTION REPEAT

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>
```



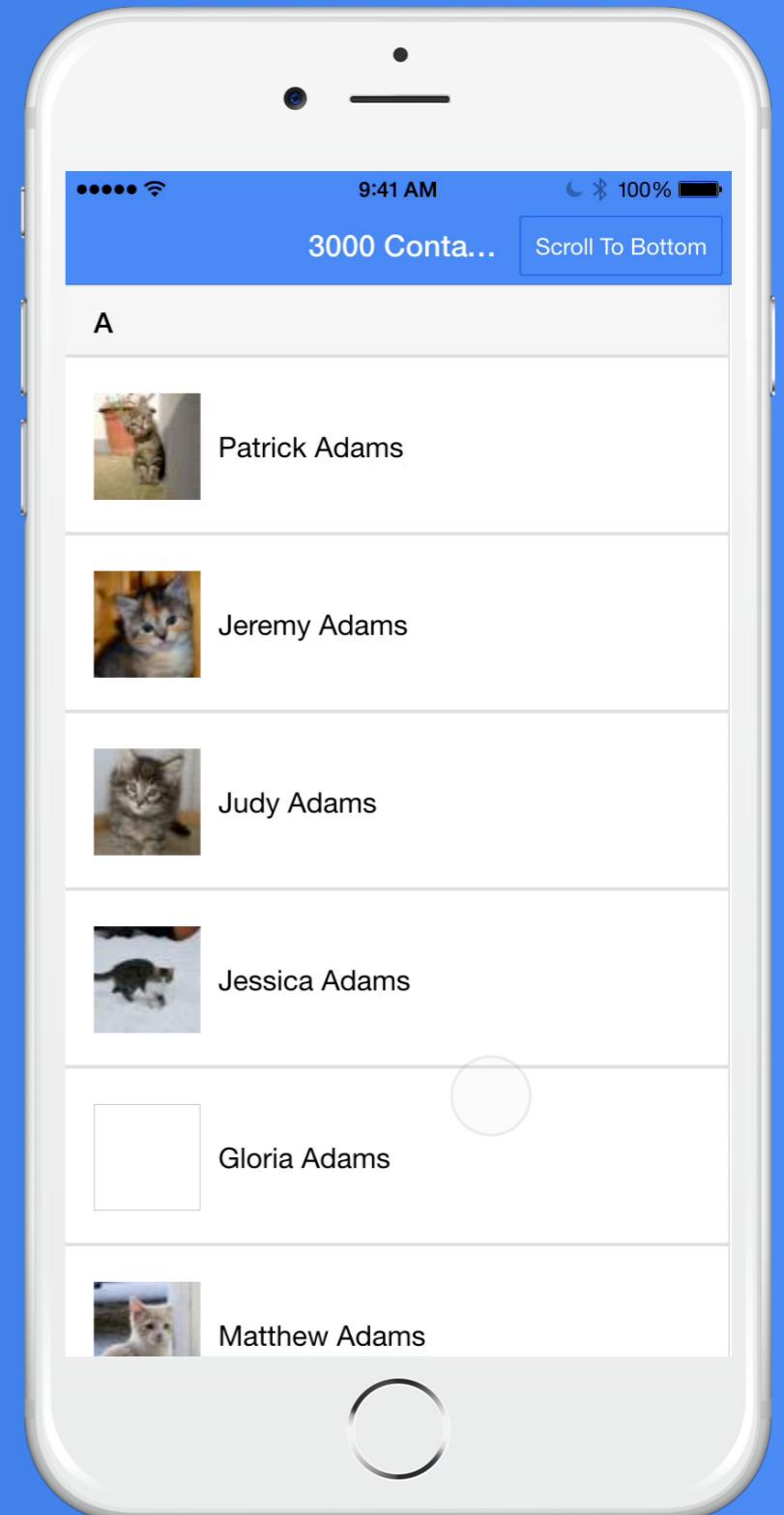
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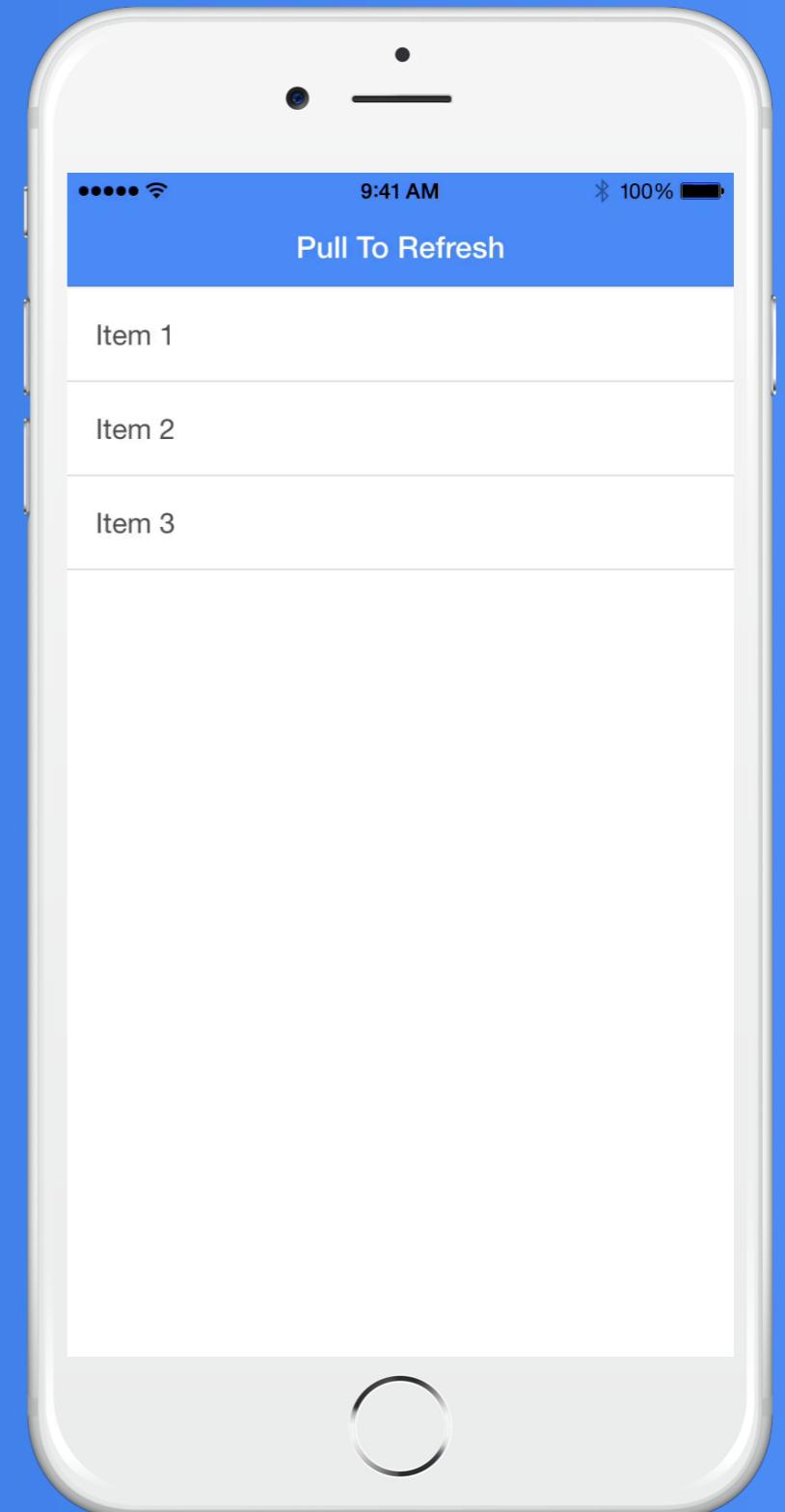
PULL TO REFRESH

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>
```



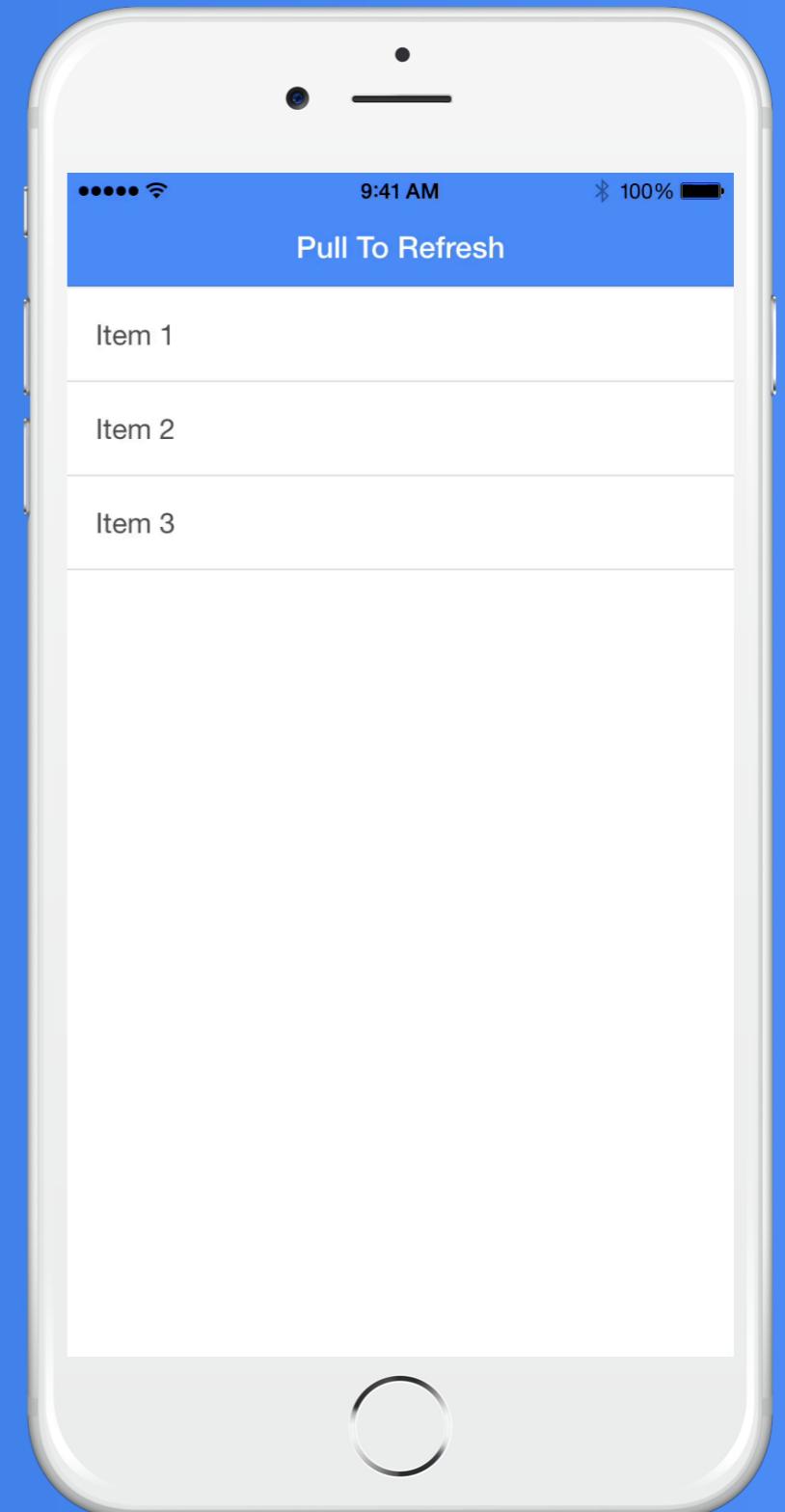
PULL TO REFRESH

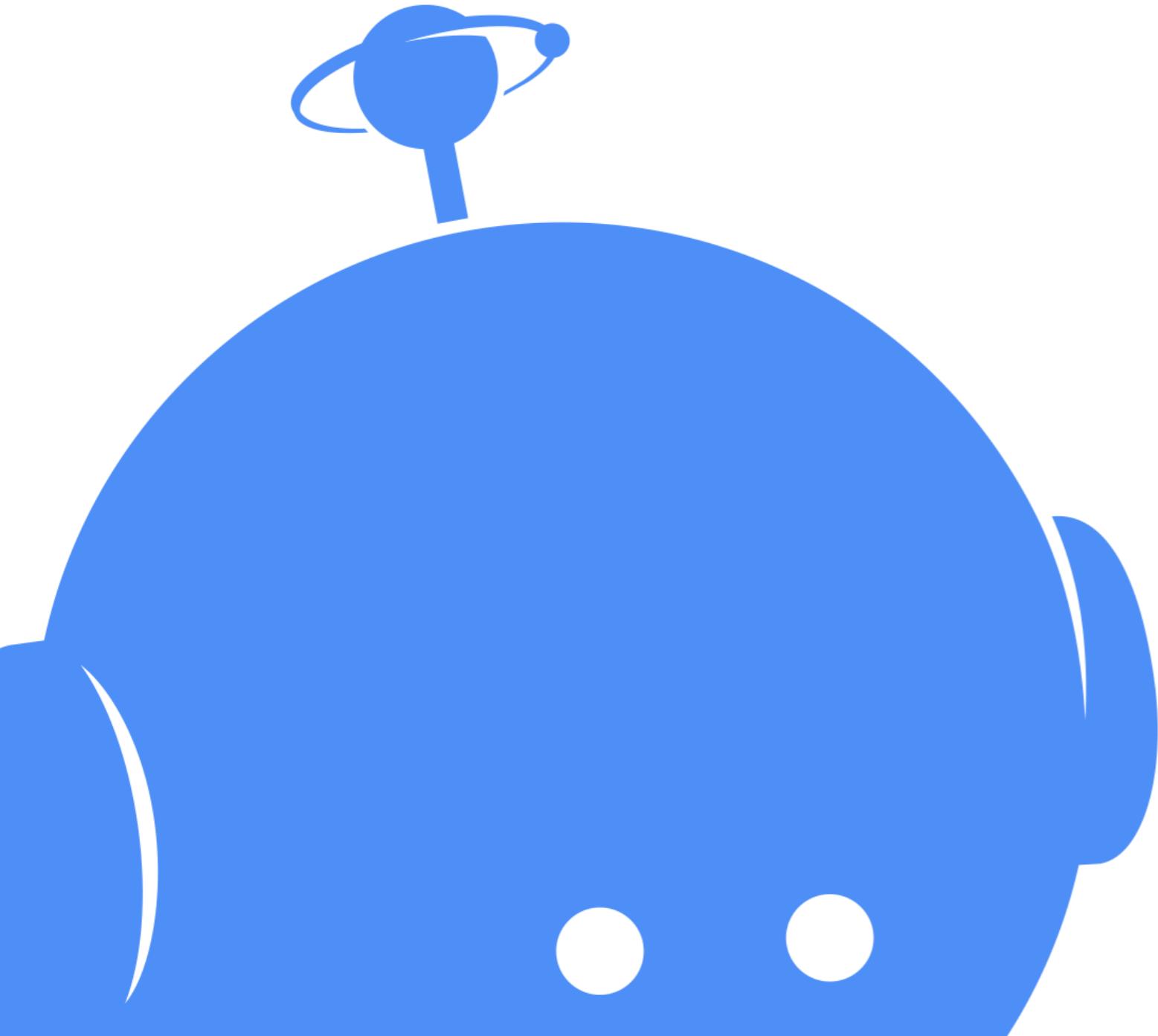
Common design pattern to fetch data

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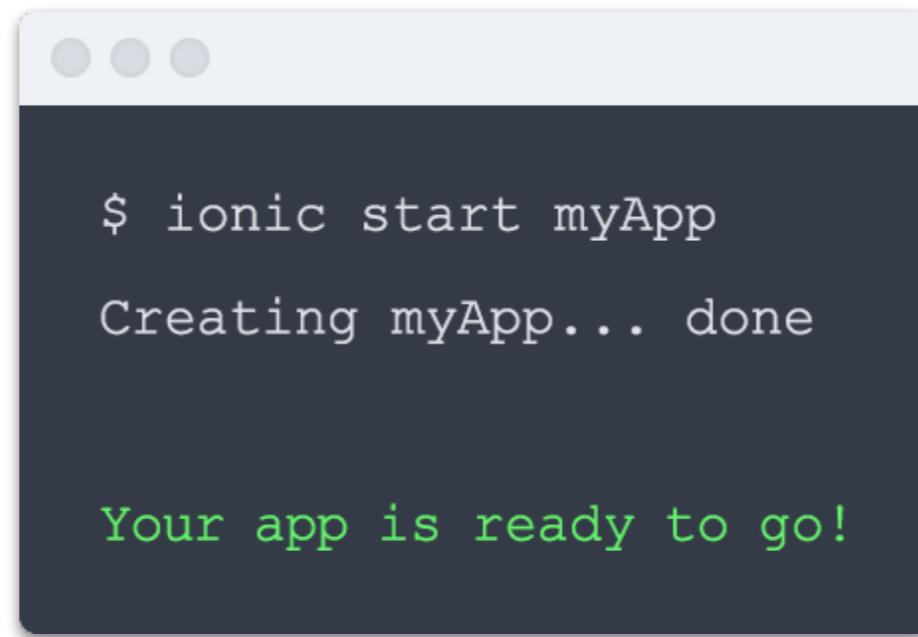
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```





...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

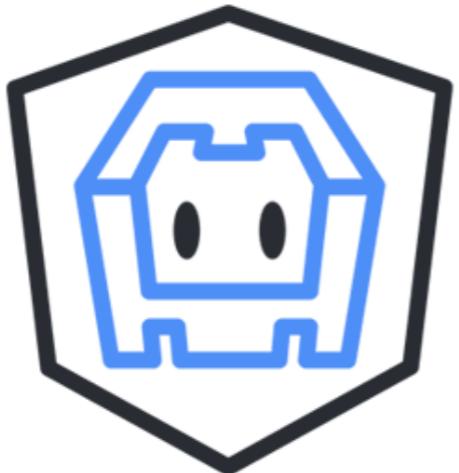
MODERN CHROMIUM!

Chromium for Android WebViews

Upgrade Android 4.0+ and above

Same hardware, modern software

Amazing performance improvements



ngCordova

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



TOUCH ID



OAUTH



CAMERA



IONICIO

ionicpush

ionicanalytics

ionicupdate

ionictest

ionicpackage





ionicview

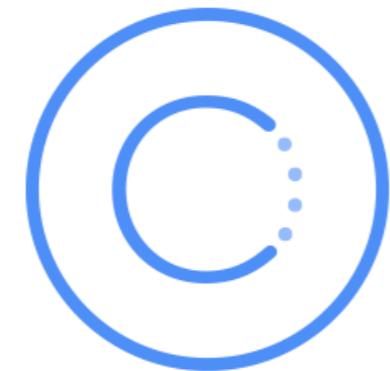
The image shows two smartphones side-by-side, both displaying the Ionicview application. The left phone is white and shows a list of apps under 'MY APPS'. The right phone is black and shows a list of apps under 'My apps'.

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

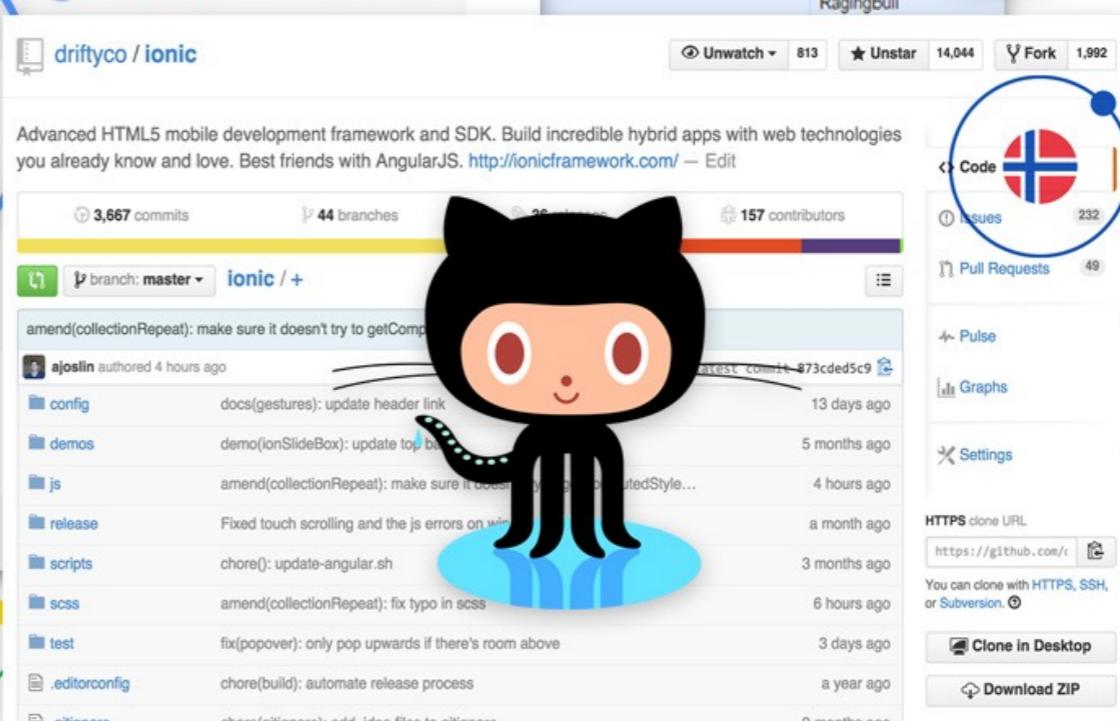
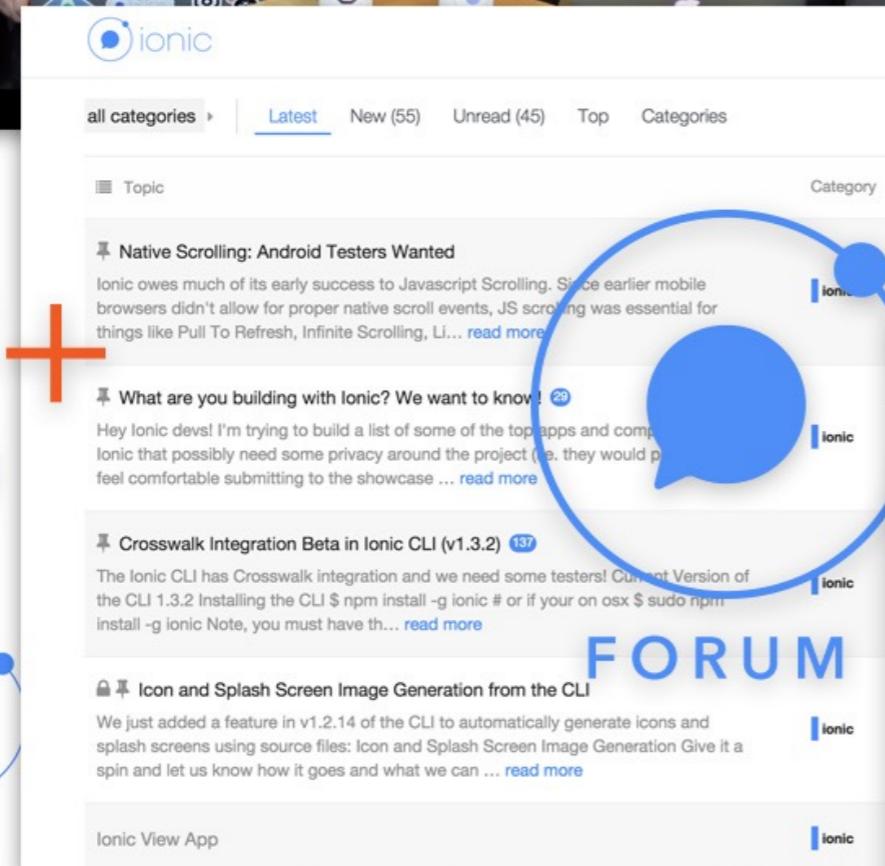
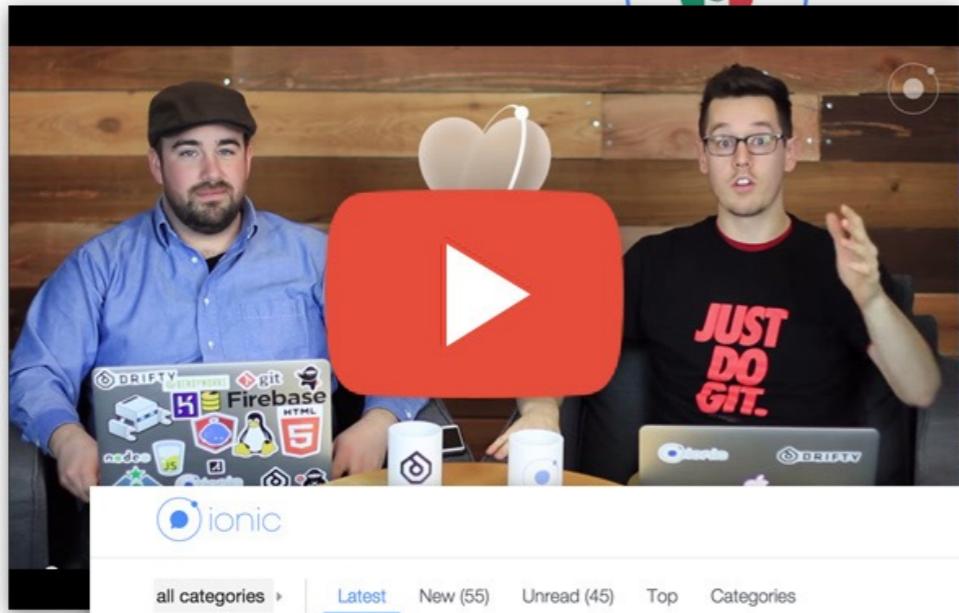
TYPE

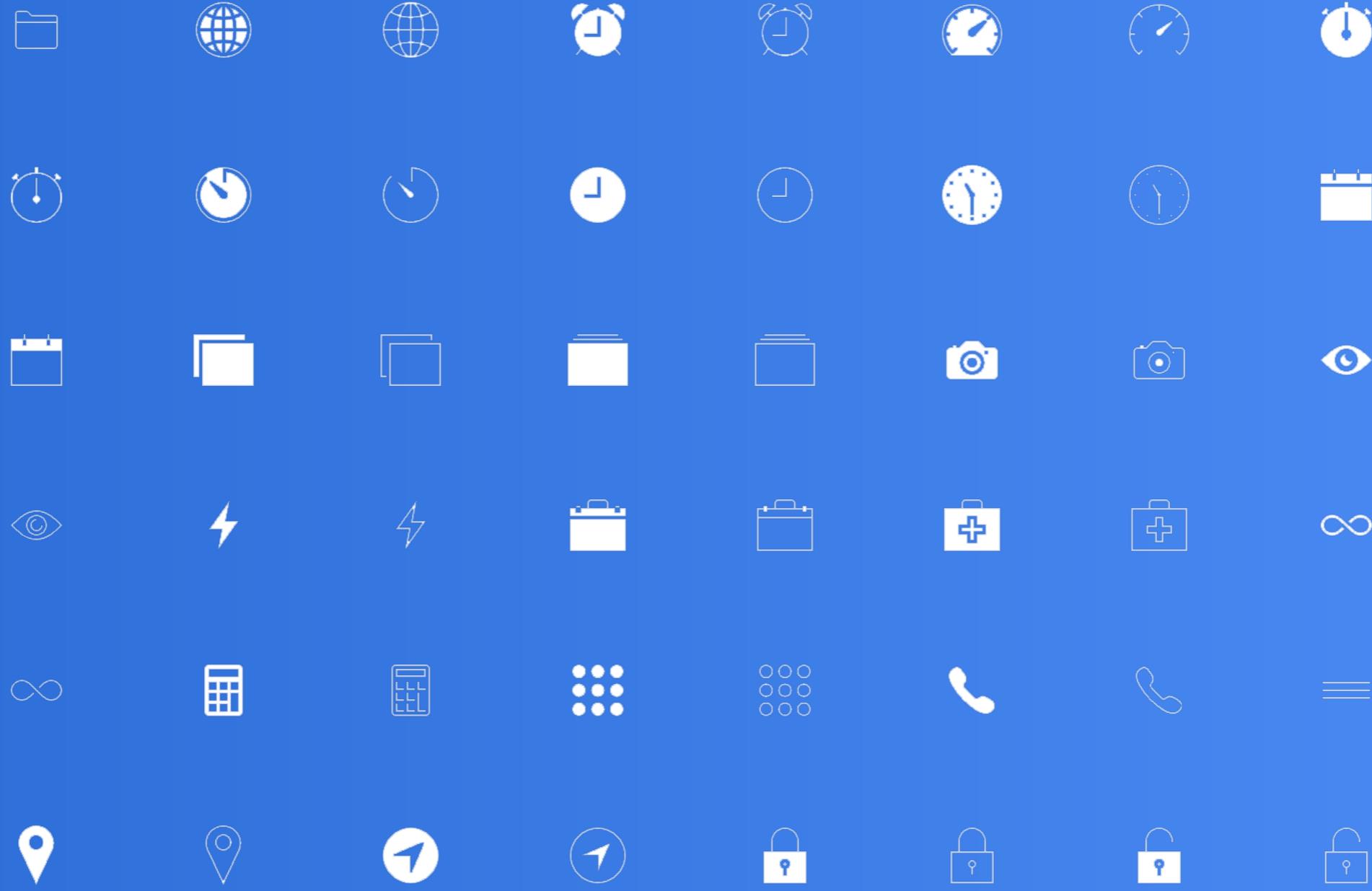
Block

STYLE

Positive

This screenshot displays the Ionic Creator interface, a drag-and-drop UI builder for Ionic projects. The main workspace shows a login screen for 'Hubstruck' with fields for Email and Password, a 'Log in' button, and links for account creation. The left sidebar lists project pages and components. The right sidebar provides detailed settings for the selected 'Button' component, including text, link, icon, type, and style options.





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>