

Esri Developer Summit

March 8–11, 2016 | Palm Springs, CA



Native Apps in JavaScript with React Native: Lessons From a Prototype

Gregory L'Azou - glazou@esri.com - github.com/glazou

Steven Kitterman - skitterman@esri.com - github.com/skitterman

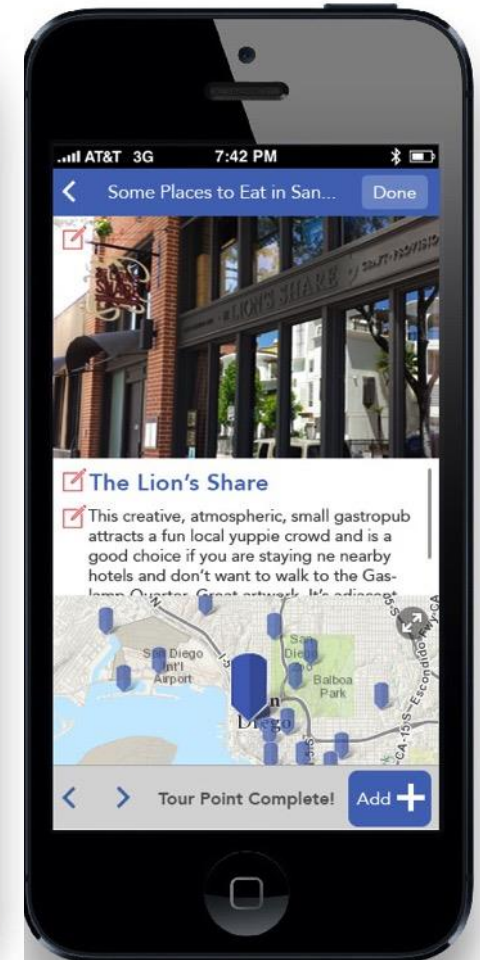
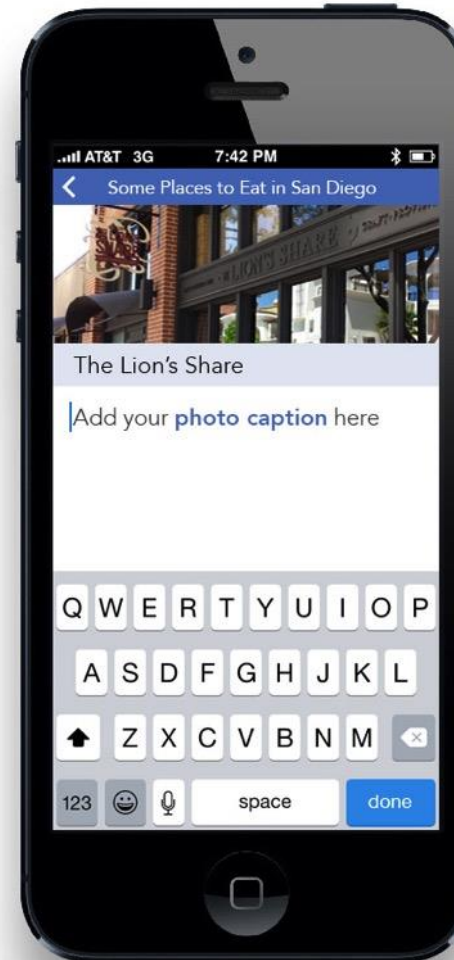
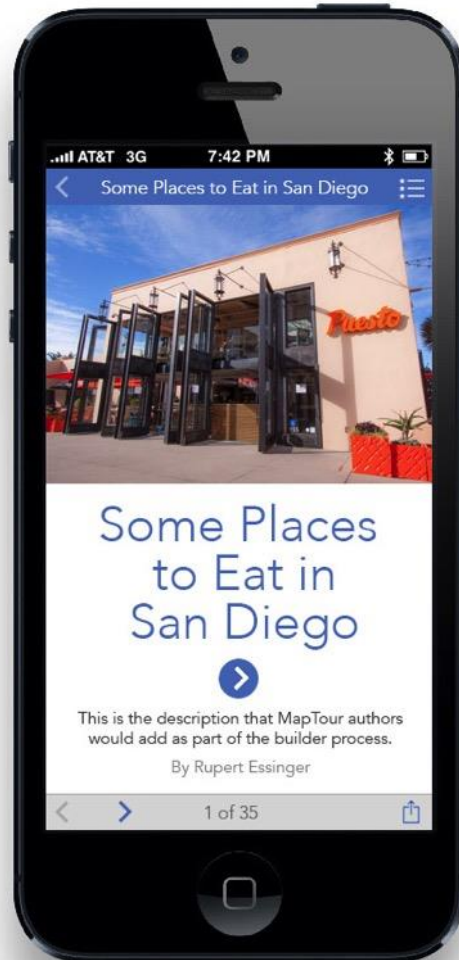
Agenda

- **Context of our prototype**
- **React Native introduction**
- **Demos**
- **Hands-on UI**
- **Hands-on Maps**
- **Conclusion**
- **Questions and Discussion**

Context of our prototype

Context of our prototype

What technology to implement for a cross-platform Map Tour app?



Criteria and technologies

- **Look and feel**
- **Performance**
- **Development/ maintenance cost**
- **Integration with native capabilities**
- **Maturity, “future”**
- **Fit for the team of web dev**



React Native

AppStudio For ArcGIS



Adobe PhoneGap



Xamarin

Technologies overview

Technology	Description	App logic	Native PF access	View
PhoneGap	Bundle a JavaScript web app in a native app	JavaScript	Yes	HTML
AppStudio	Write JavaScript & QML, output a native app that uses Qt Quick Framework			Qt Quick
React Native	Write JavaScript that uses native UI components and get a native app			Native UI framework

React Native introduction

React Native introduction

- **Build native apps for iOS and Android in JavaScript**
- **OpenSource, started by Facebook**
- **Released in March 2015 with iOS support, added Android in September**
- **Active development, release every 2-3 weeks**
- **Native implementation of React web framework**
 - Released in 2013, one of the three most popular (with Angular and Ember)
 - Very opinionated at UI, great concept that get adopted in other frameworks

React Native announcement <https://code.facebook.com/videos/786462671439502/react-js-conf-2015-keynote-introducing-react-native/>

React native concepts <https://code.facebook.com/posts/1014532261909640/react-native-bringing-modern-web-techniques-to-mobile/>

React announcement <https://www.youtube.com/watch?v=x7cQ3mrcKaY>

Growing steadily

<https://facebook.github.io/react-native/showcase.html>











Apps using React Native

The following is a list of some of the public apps using **React Native** and are published on the Apple App Store or the Google Play Store. Not all are implemented 100% in React Native -- many are hybrid native/React Native. Can you tell which parts are which? :)

Want to add your app? Found an app that no longer works or no longer uses React Native? Please submit a pull request on [GitHub](#) to update this page!

Featured Apps

These are some of the most well-crafted React Native apps that we have come across. Be sure to check them out to get a feel for what React Native is capable of!

 Facebook Groups By Facebook	 Facebook Ads Manager iOS - Android By Facebook Blog posts: 1 2 3	 AIGA Design Conference 2015 By W&Co	 Discord By Hammer & Chisel	 Discovery VR By Discovery Communications
 Exponent By Exponent	 Lrn By Lrn Labs, Inc	 Movie Trailers by MovieLaLa	 Myntra By Myntra Designs	 React Native Playground

<https://github.com/facebook/react-native>

facebook / react-native

Watch 1,988 Unstar 28,100 Fork 5,225

Code Issues 968 Pull requests 219 Wiki Pulse Graphs

A framework for building native apps with React. <http://facebook.github.io/react-native/>

5,413 commits 21 branches 56 releases 592 contributors

<https://js.coach/react-native>

JS.COACH SEARCH

Everything Pinned React **React Native** Backpack Browserify Babel PostCSS

Sort by Updated New Popular

rn-router updated today by jogertig
React native routing system based on react router.
17 stars 513 installs/mo

react-native-google-signin updated today by apptailor
Google Signin for your react native applications.
85 stars 1.3K installs/mo iOS Android

react-native-signalr updated today by olofd
Connect to a SignalR server from react-native.
13 stars 64 installs/mo

react-native-webview-crosswalk updated today by jordansexton
Crosswalk's WebView for React Native on Android.
2 stars 181 installs/mo Android

Why it's attractive to the StoryMaps team

- **Develop in JavaScript**
- **Cross-platform web, Android and iOS**
- **Beautiful UI and responsive app**
- **Simple UI layout (Flexbox and CSS)**

- **Productive environment: live reload, debug**
- **Full native capabilities, can integrate existing native UI components**
- **Flexible deployment (the JS bundle can be downloaded by the app from your server)**

- **Well-known UI framework (React.js)**

Philosophy

Write once → run anywhere

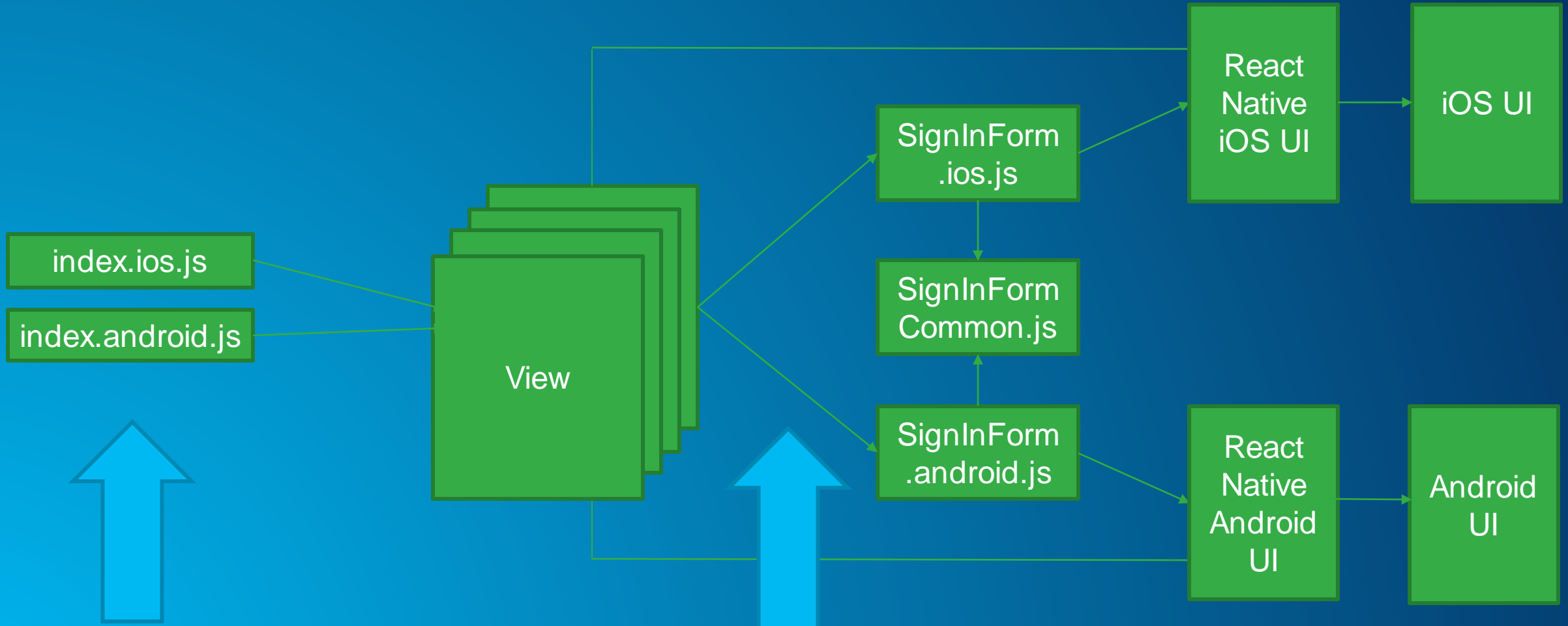
AppStudio
Phonegap



Learn once → write anywhere

React Native
Xamarin

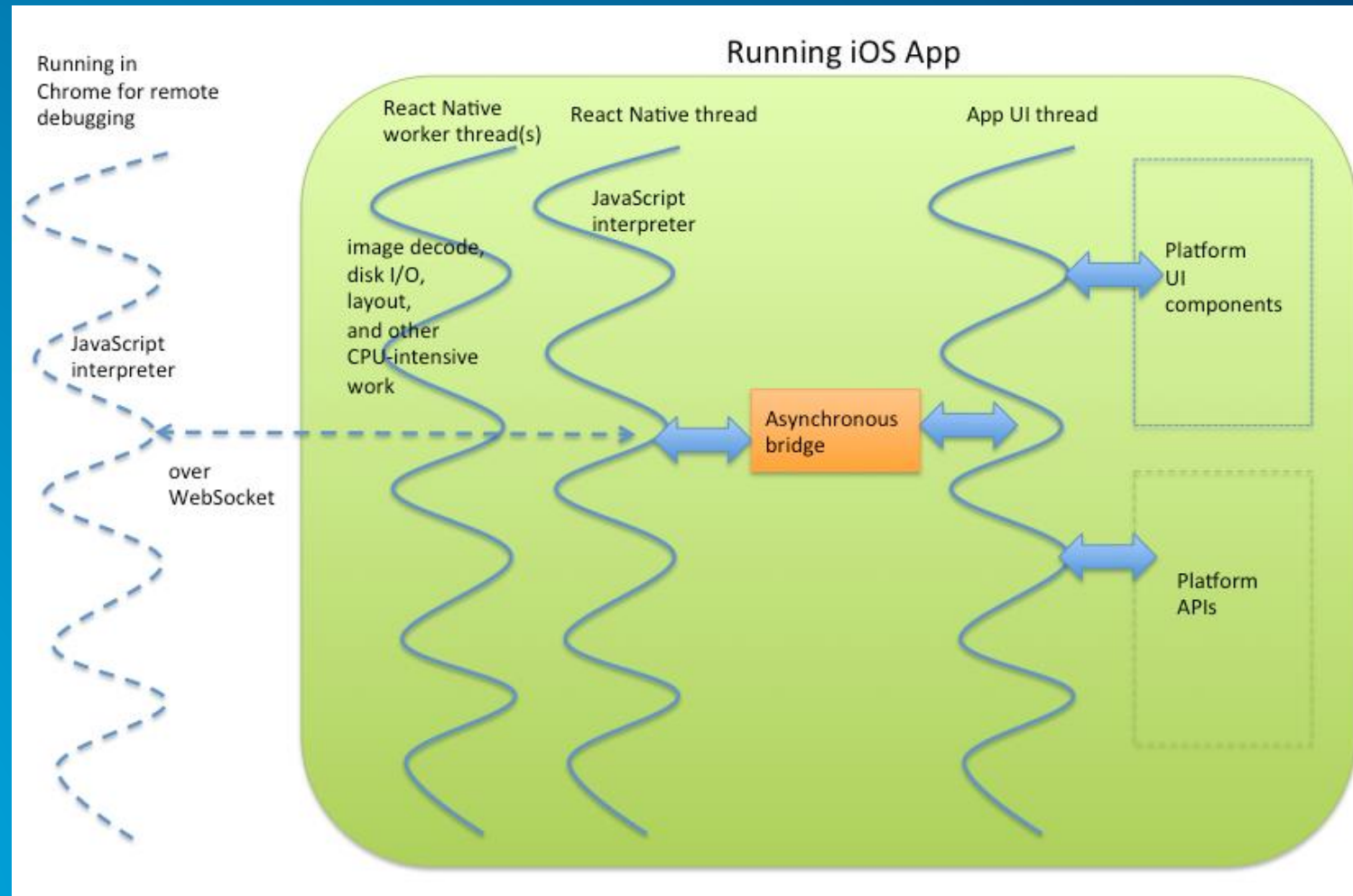
App design



React Native exposes one implementation to the device

React Native exposes one of the Forms to the view

At runtime



Demos



Demos

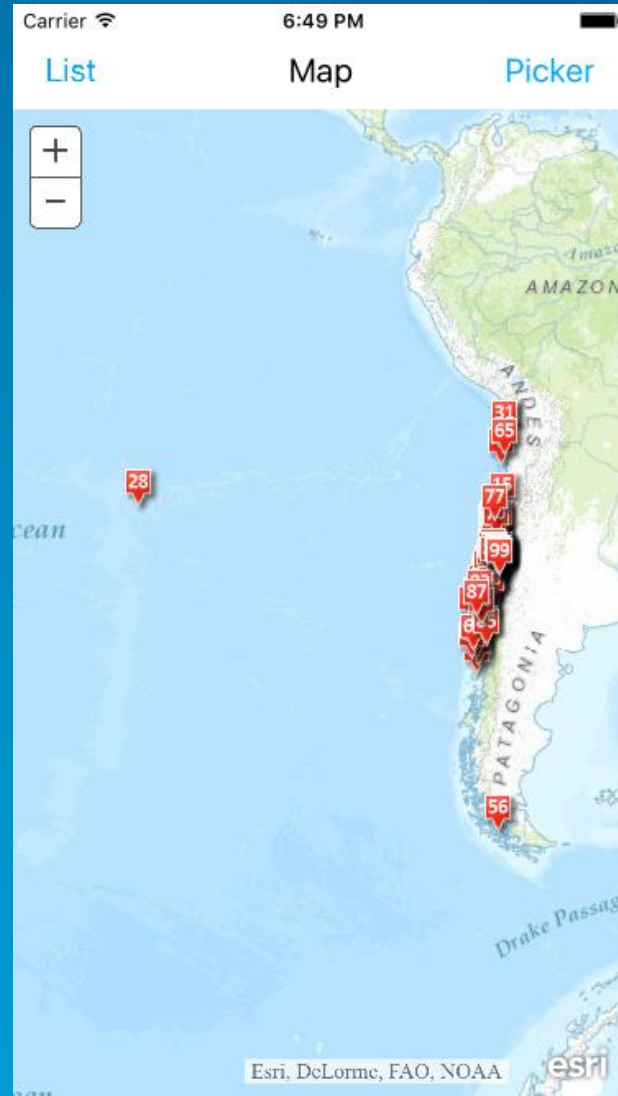
- **Map Tour React Native prototype iOS**
- **Example React Native app:**
 - Facebook Ads and Hacker News Reader on Android
 - Discovery VR on iOS
- **React Native UI explorer on iOS www.reactnative.com/uiexplorer/**
- **React Native playground rnplay.org**

- **Map Tour Phonegap prototype**

Hands-on UI



Hands-on UI



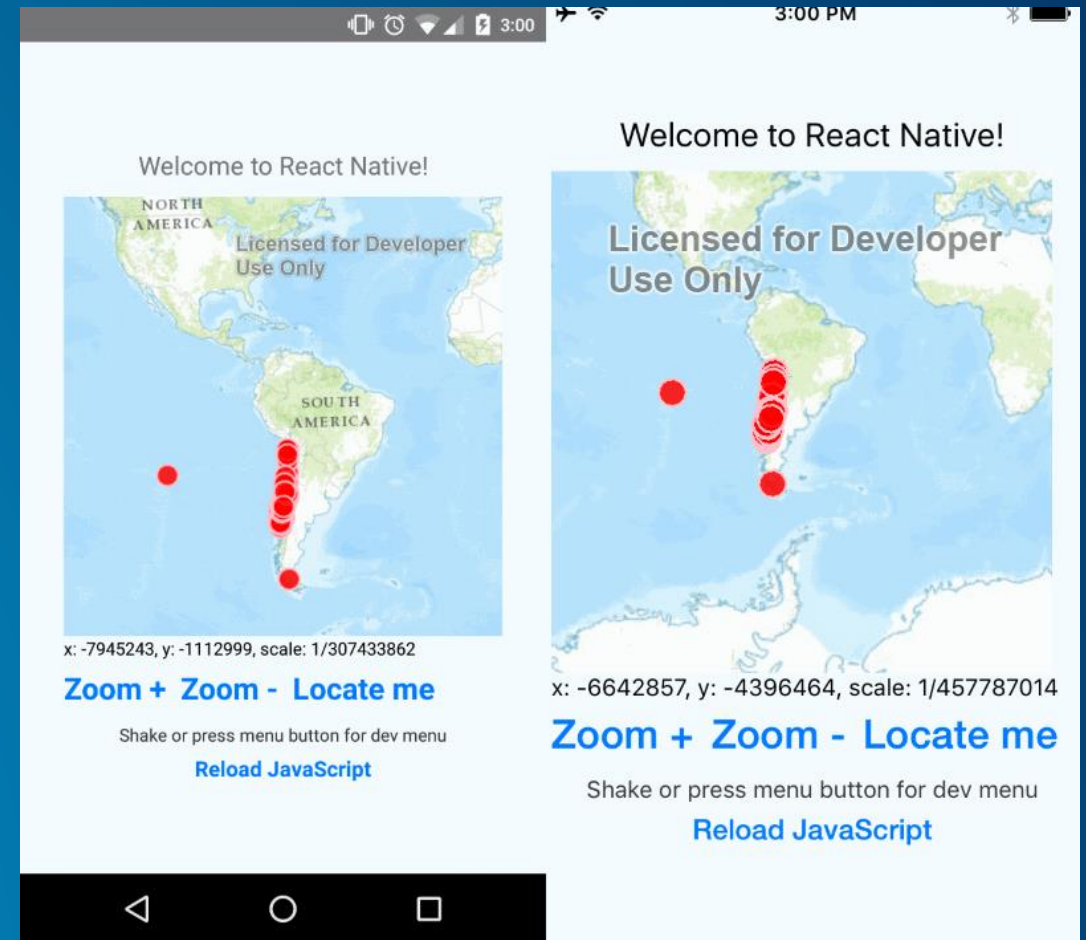
github.com/skitterterm/react-native-demo

Hands-on Maps



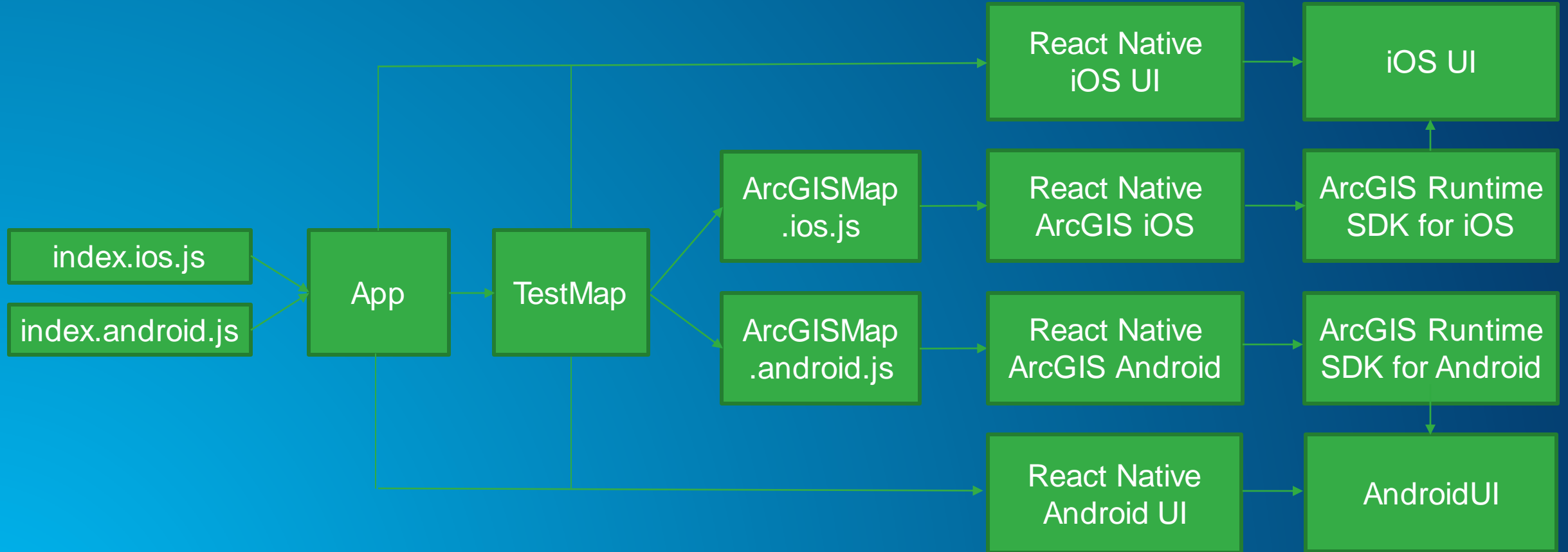
Hands-on Maps

- Use ArcGIS Runtime SDK for iOS and Android in React native
- While there is no plan for a ArcGIS SDK for React Native, this proof of concept may work for you if you need limited API in JavaScript or can develop in native
- Other options to get a Map:
 - Use JavaScript API through a web view (can't send command or receive events)
 - Use JavaScript API through a Web Bridge (we prototyped with earlier version, it can allow to send command and receive events)



github.com/glazou/react-native-arcgis-sdk-demo

Hands-on Maps design



Conclusion



Conclusion

- Seems great for apps where look&feel and performance matter
- Many challenges but it maybe ready for production for your needs
- Resources about React Native: github.com/jondot/awesome-react-native
- Let us know if you are interested

Development Strategies for Building Mobile Apps - the Great Debate

Thursday, March 10

10:30 AM – 11:30 AM

Primrose A

Palm Springs Convention Center

Developing Cross-Platform Native Apps with AppStudio for ArcGIS (Advanced)

Thursday, March 10

2:30 PM – 3:30 PM

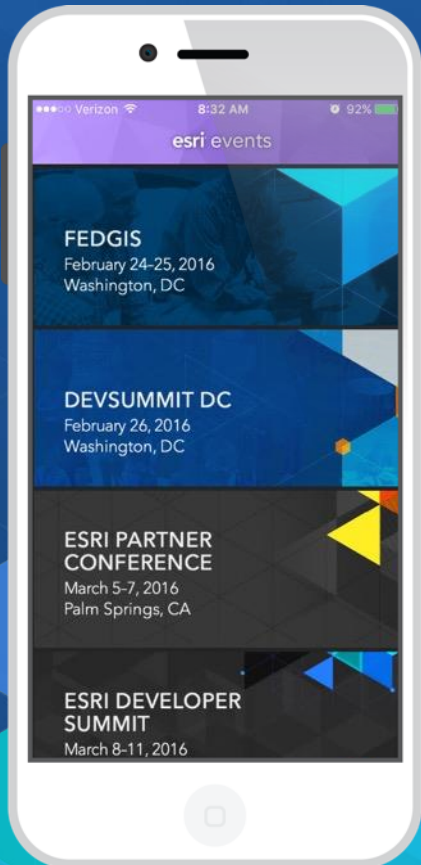
Catalina/Madera

Renaissance Hotel

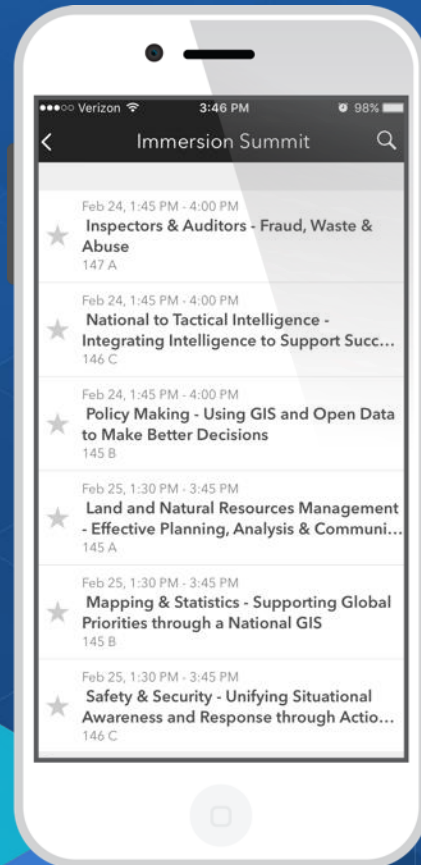
Questions and Discussion

Please Take Our Survey!

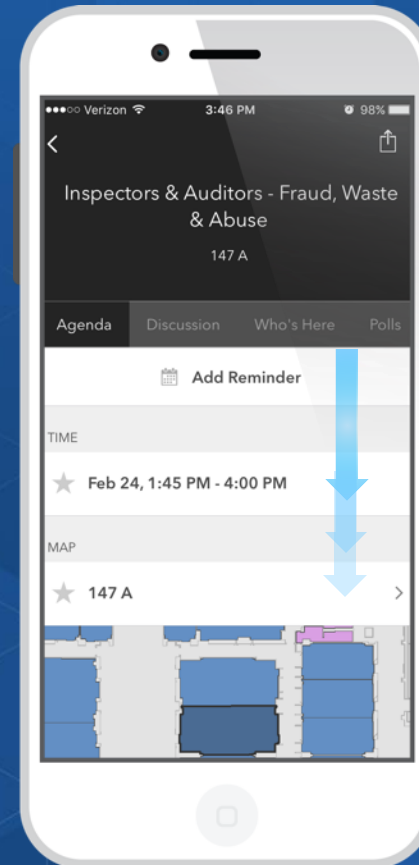
Download the Esri Events app and find your event



Select the session you attended



Scroll down to find the survey



Complete Answers and Select "Submit"

