

Intro to React Native

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Agenda

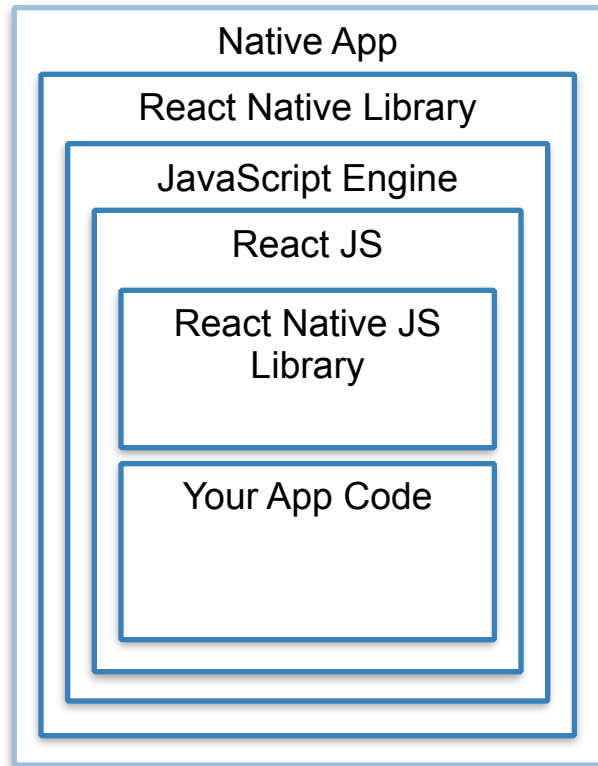
- Introduction
- What is React Native
 - Problems it solves
 - What technologies does it comprise of?
- Getting started
- Example of extending React Native
- Overall thoughts

- Q&A



What is react Native?

- A Library
 - Binds JSX to
 - iOS Cocoa Touch
 - (soon) Android UI
 - Custom Layout system
- Comprises a suite of technologies
- Applications run at *near full speed**
- Architecture is scalable
- Library is extensible
- BSD Licensed

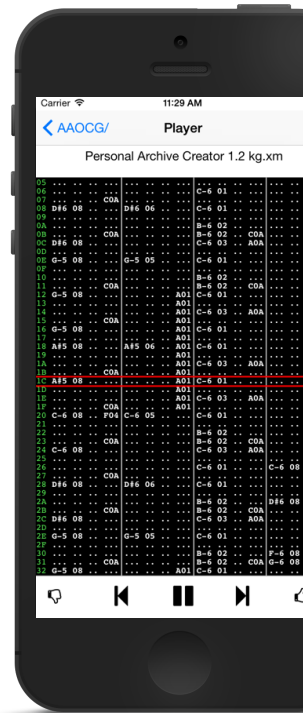


*Business logic in JavaScript is fast, but still interpreted



Problems React Native Solves

- Leverage existing skill sets to write apps with native feel
- Gets you out of the “HTML5 Sandbox”
- Writing cross-platform high performance apps using single business logic codebase



Many UI components to choose from

- React Native wraps Existing native UI controls
- Implementation of UI via JSX

```
return (  
  <View style={[styles.button, styles[props.btnStyle], btnPressedStyle]}>  
    <TouchableWithoutFeedback  
      onPress={this.onButtonPress}  
      onPressIn={this.onButtonPressIn}  
      onPressOut={this.onButtonPressOut}>  
      <Text style={[fontStyle, txtPressedStyle]}>  
        {this.buttonChars[btnChar]}  
      </Text>  
    </TouchableWithoutFeedback>  
  </View>  
)
```



UI Component Library

Activity Indicator	Picker	Touchable	ActionSheet
Date Picker	ScrollView	TouchableOpacity	Alert
Image	Slider	Touchable Highlight	Border
ListView	TabBar	Touchable WithoutFeedback	StatusBarIOS
MapView	Text	View	StatusBarIOS
Navigator	TextInput	WebView	CameraRoll



Device APIs & PolyFills

AppState

Vibration

AsyncStorage

LinkingIOS

Interaction
Manager

NetInfo

Flexbox

Network

GeoLocation

Timers



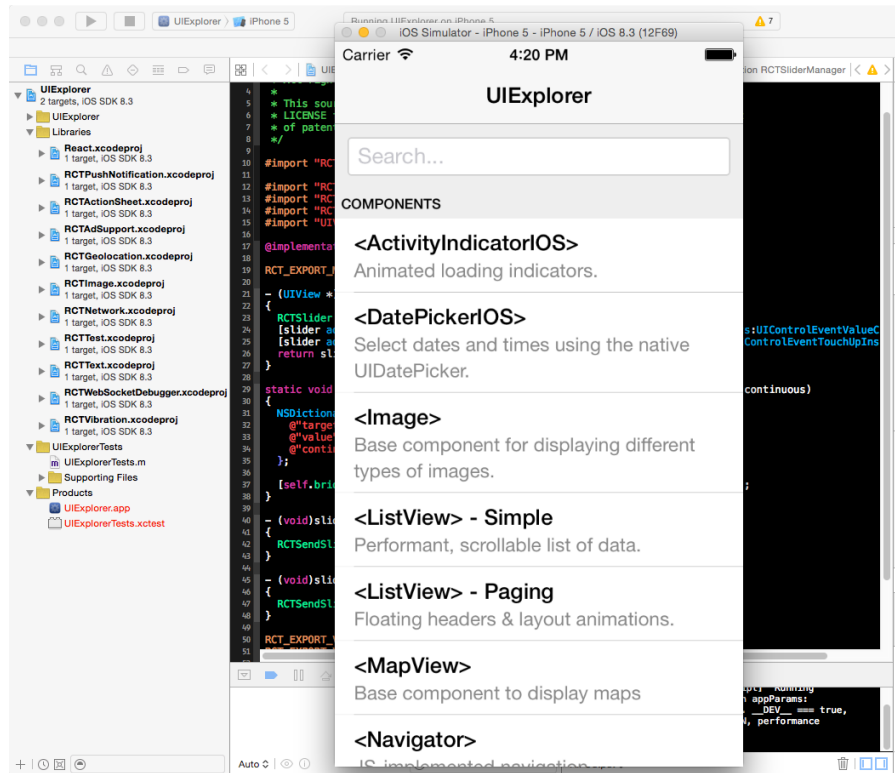
Check it out for yourself

- Clone the React Native Repo
 - * <https://github.com/facebook/react-native.git>
- In terminal:

```
cd react-native
npm_install
cd Examples/UIExplorer/
open UIExplorer.xcodeproj
```
- Requirements:
 - Xcode
 - NodeJS
 - NPM

***Github project is Experimental!**

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React Native is Extensible

- *Creating custom modules is not difficult
- Example patterns already exists in the library
- Patterns are **well documented!**

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

```
9  #import "MCMODPlayer.h"
10 #import "RCTBridgeModule.h"
11 #import "RCTBridge.h"
12 #import "RCTEventDispatcher.h"
13
14 @interface MCMODPlayerInterface : NSObject <RCTBridgeModule>
15
16 @property NSDictionary *modInfo;
17
18 @property int currentRow;
19 @property int currentPattern;
20 @property int currentOrder;
21
22 - (void) audioRouteChanged:(NSNotification *)notification;
23
24
25 @end
```

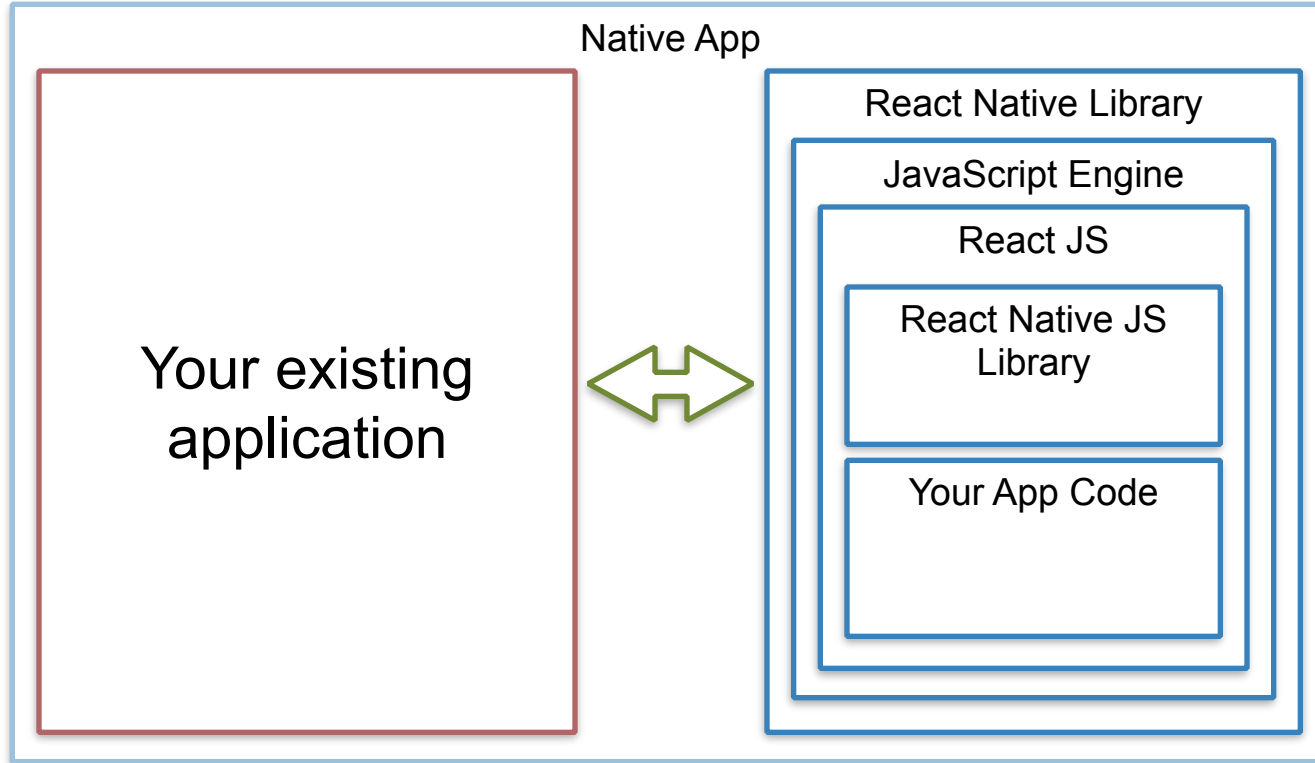
*Objective C or Swift experience may be required

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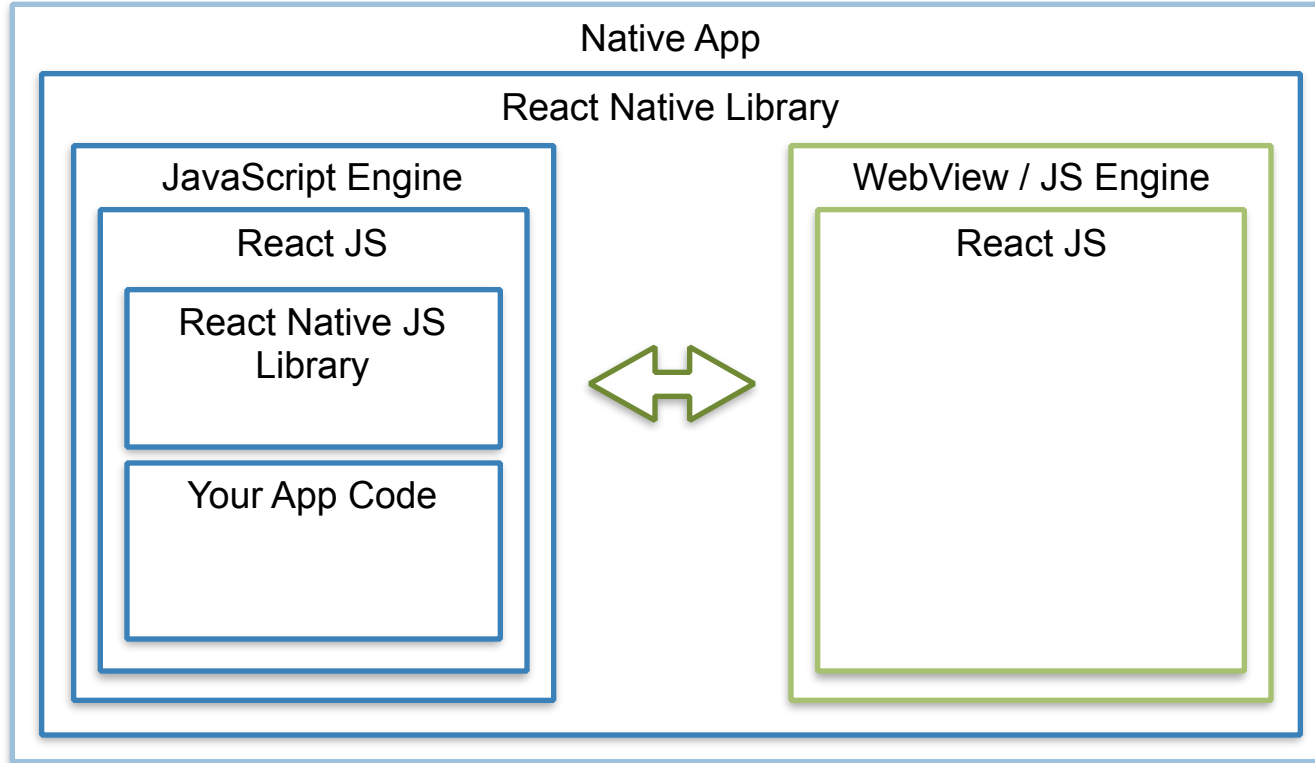


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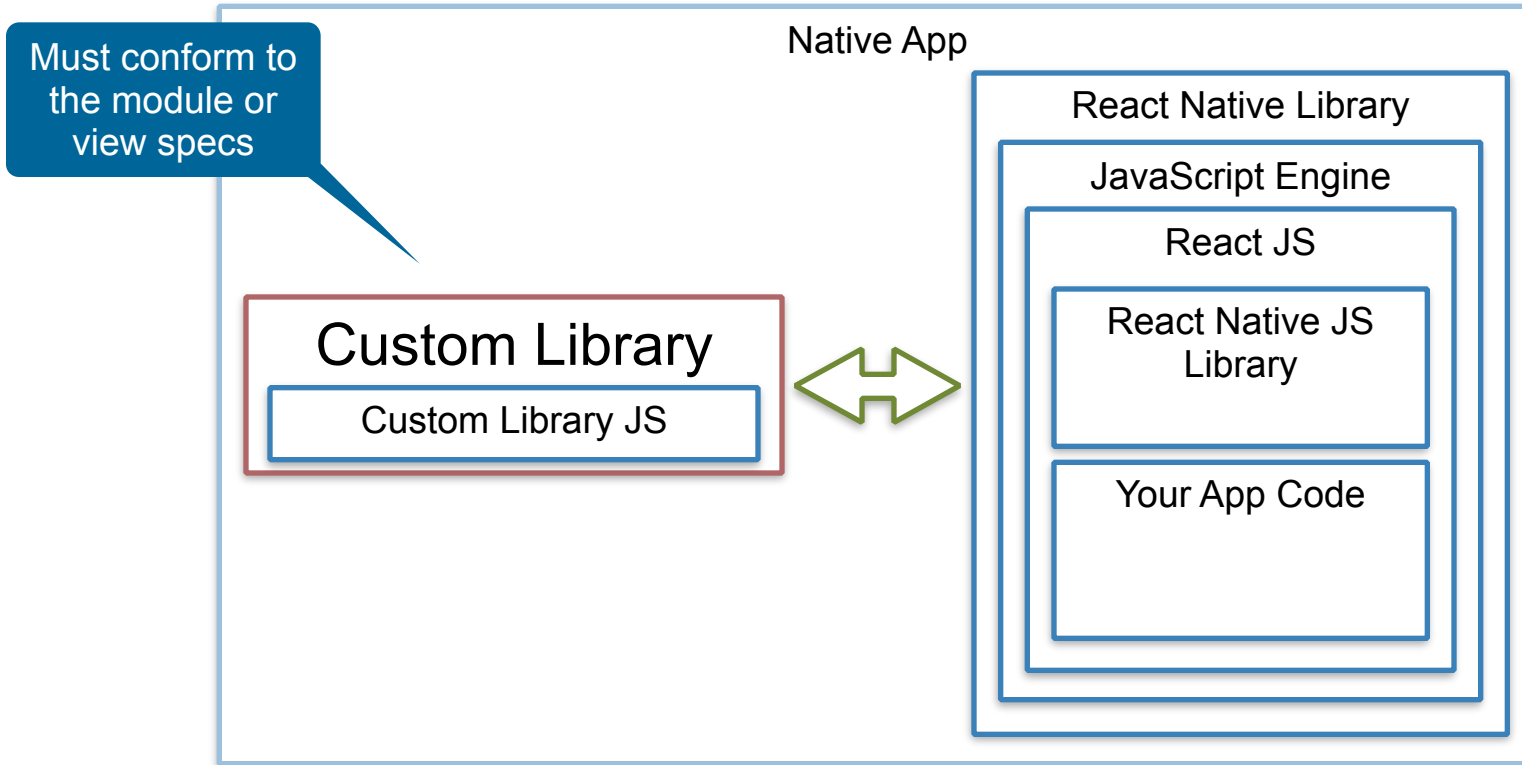
React Native can work with existing apps



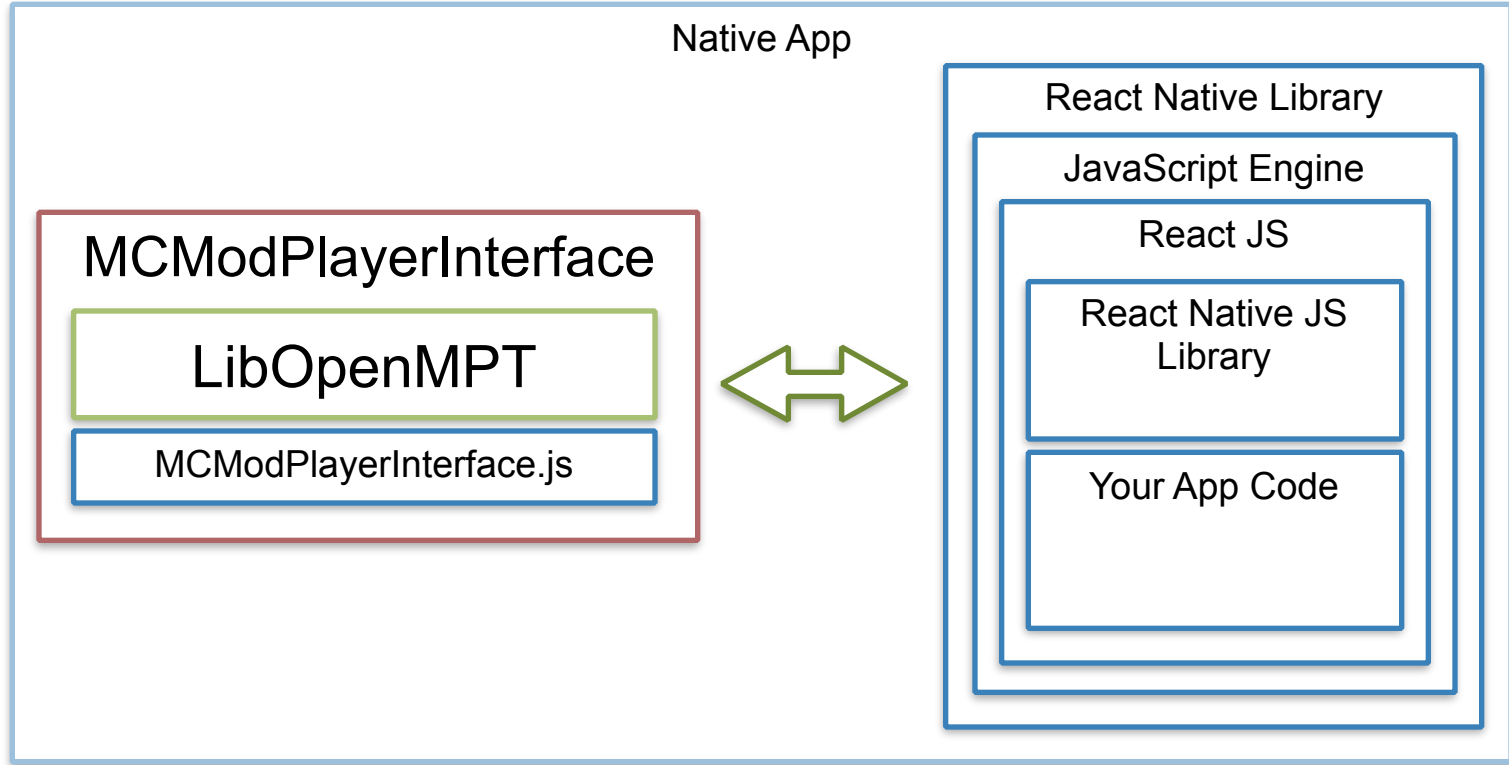
React Native can work with existing apps



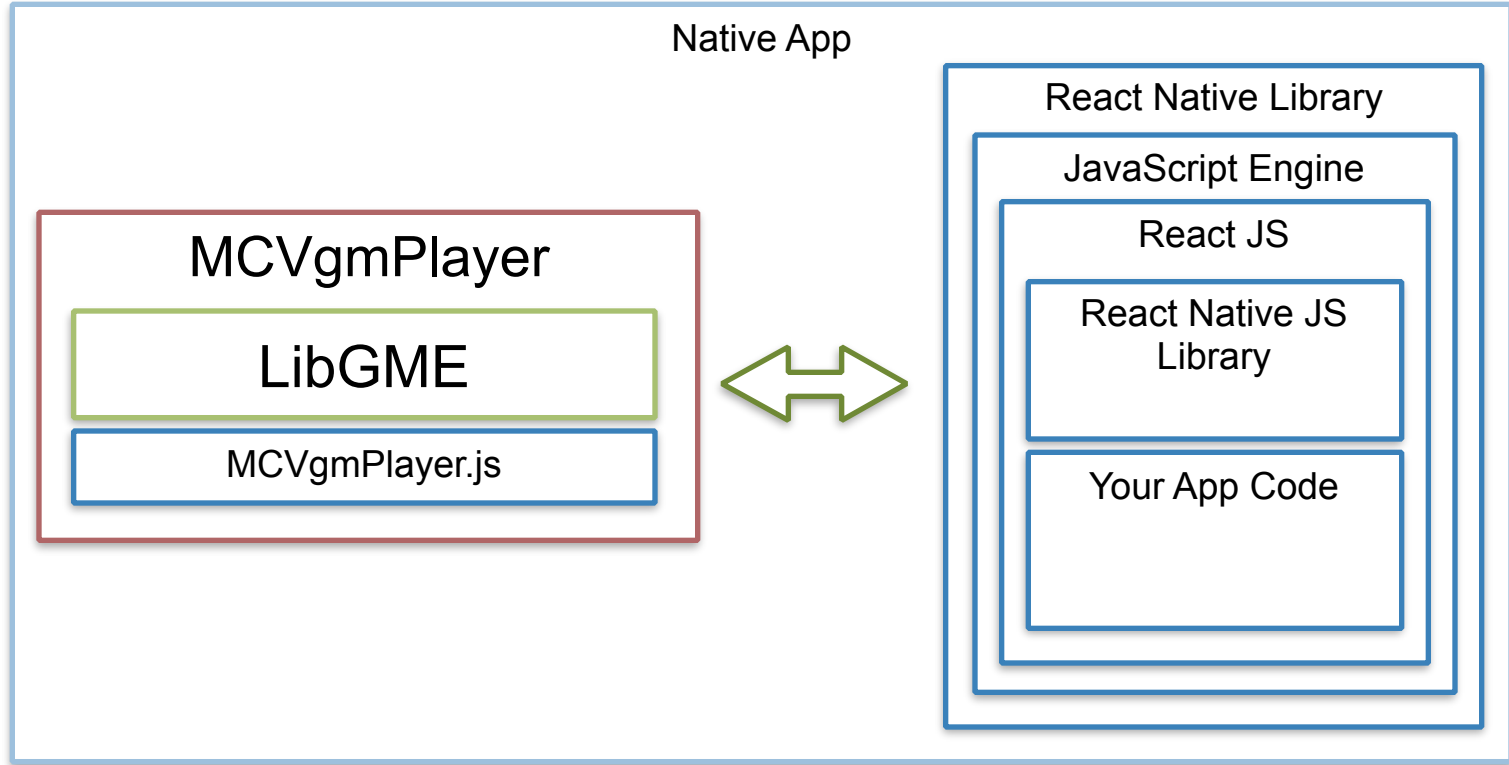
React Native can work with other libraries



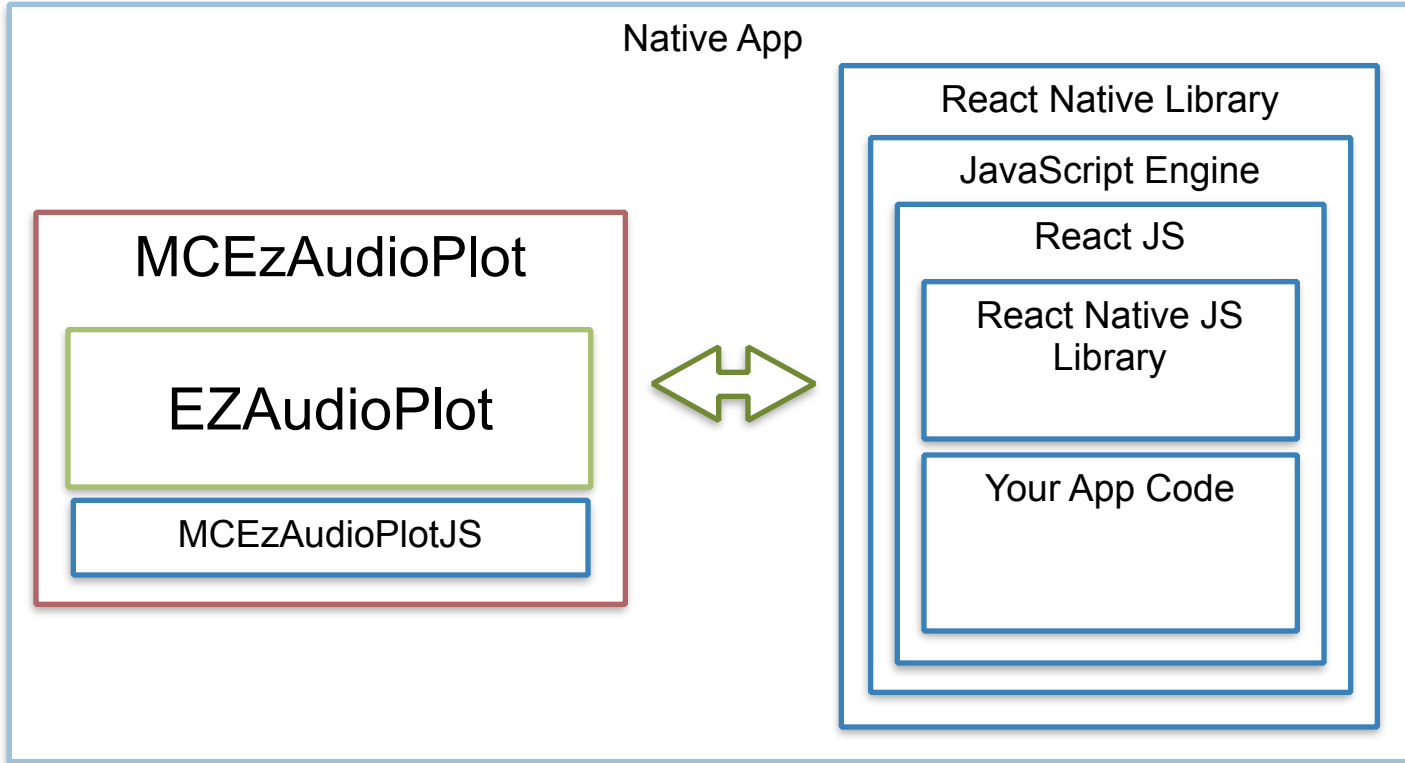
React Native can work with other libraries



React Native can work with other libraries



React Native can work with other libraries



Technologies to get familiar with

- JSX <https://facebook.github.io/react/docs/jsx-in-depth.html>
- Flow <http://flowtype.org/>
- Node JS
- NPM
- Chrome Debugger
- XCode

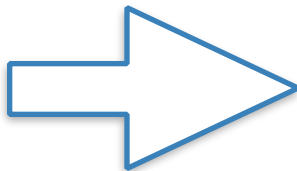
- React JS <https://facebook.github.io/react/index.html>
- React Native <https://facebook.github.io/react-native/index.html>



JSX

- Merger of ES and HTML
- Enhances JavaScript semantics
- Forward-leaning ES6 syntax
- Requires a “Transpiler” (comes packaged with React Native projects)
- **Really easy to learn**

```
<Text>Please choose a make for your car:</Text>
<PickerIOS
  selectedValue={this.state.carMake}
  onValueChange={({carMake}) => this.setState({carMake, modelIndex: 0})}>
  {Object.keys(CAR_MAKES_AND_MODELS).map((carMake) => (
    <PickerItemIOS
      key={carMake}
      value={carMake}
      label={CAR_MAKES_AND_MODELS[carMake].name}
    />
  ))}
</PickerIOS>
```



<PickerIOS>

Please choose a make for your car:

Austin

Borgward

Buick

Cadillac

Chevrolet



Flow

- Static type checker for JavaScript
- Extremely easy to use
- Is optional for your apps
- Comes for free with React Native

```
1  /* @flow */  
2  function foo(x: string, y: number): string {  
3    return x.length * y;  
4  }  
5  foo('Hello', 42);
```

<http://flowtype.org/>



React JS

- Implements JSX
- Leverages the Web Component paradigm
- Syntax easy to learn
- Some design patterns can take getting used to
- Required to use React Native

```
var MyApp = React.createClass({
  componentWillMount : function() {
    console.log('MyApp will mount!');
  },
  render: function() {
    return (
      <View style={styles.container}>
        <Text style={styles.welcome}>
          Welcome to React Native!
        </Text>
        <Text style={styles.instructions}>
          To get started, edit index.ios.js
        </Text>
        <Text style={styles.instructions}>
          Press Cmd+R to reload,{'\n'}
          Cmd+Control+Z for dev menu
        </Text>
      </View>
    );
  }
});
```

<http://facebook.github.io/react/docs/getting-started.html>



React Native CSS

- Custom CSS implementation
 - Very lightweight and easy to learn
- Takes some getting used to coming from the browser CSS
- Only two types of layouts
 - Flexbox
 - Absolute

<https://facebook.github.io/react-native/docs/style.html#content>



```
var styles = StyleSheet.create({
  row : {
    flexDirection : 'row',
    justifyContent : 'center',
    padding : 10,
    backgroundColor : '#F6F6F6',
  },

  separator : {
    height : 1,
    backgroundColor : '#CCCCCC',
  },

  thumb : {
    width : 64,
    height : 64,
  },

  rowText : {
    flex : 1,
    fontSize : 18
  },

  rowPrefix : {
    fontFamily : 'fontello',
    fontSize : 15,
    marginRight : 5,
    marginTop : 2
  },

  rowPrefixHidden : {
    fontFamily : 'fontello',
    fontSize : 15,
    marginRight : 5,
    marginTop : 2,
    color : '#F6F6F6'
  },
});
```

Getting started with React Native

- In terminal:

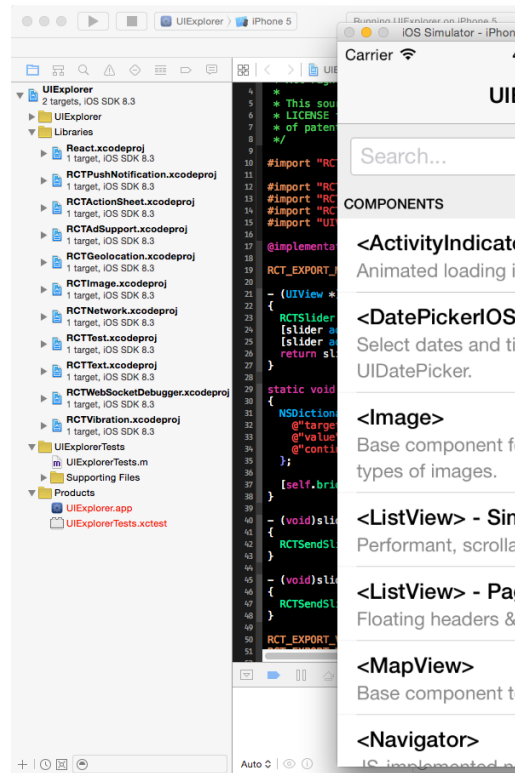
```
npm install -g react-native-cli  
react-native init MyProject  
cd MyProject  
open iOS/MyProject.xcodeproj
```

- Requirements:

- Xcode
- NodeJS
- NPM

***Github project is Experimental!**

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Quick Tour



Thoughts on developing with React Native

- Community is *vibrant*
- JSX is really easy to master
- Getting outside of the HTML5 sandbox is liberating
- The Facebook developers are *very responsive*
 - Some exchanges have occurred nights & weekends
- Technology is still new
 - Has some evolving to do
- More UI goodness to come from the FB React Native Team



Thank you!

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