

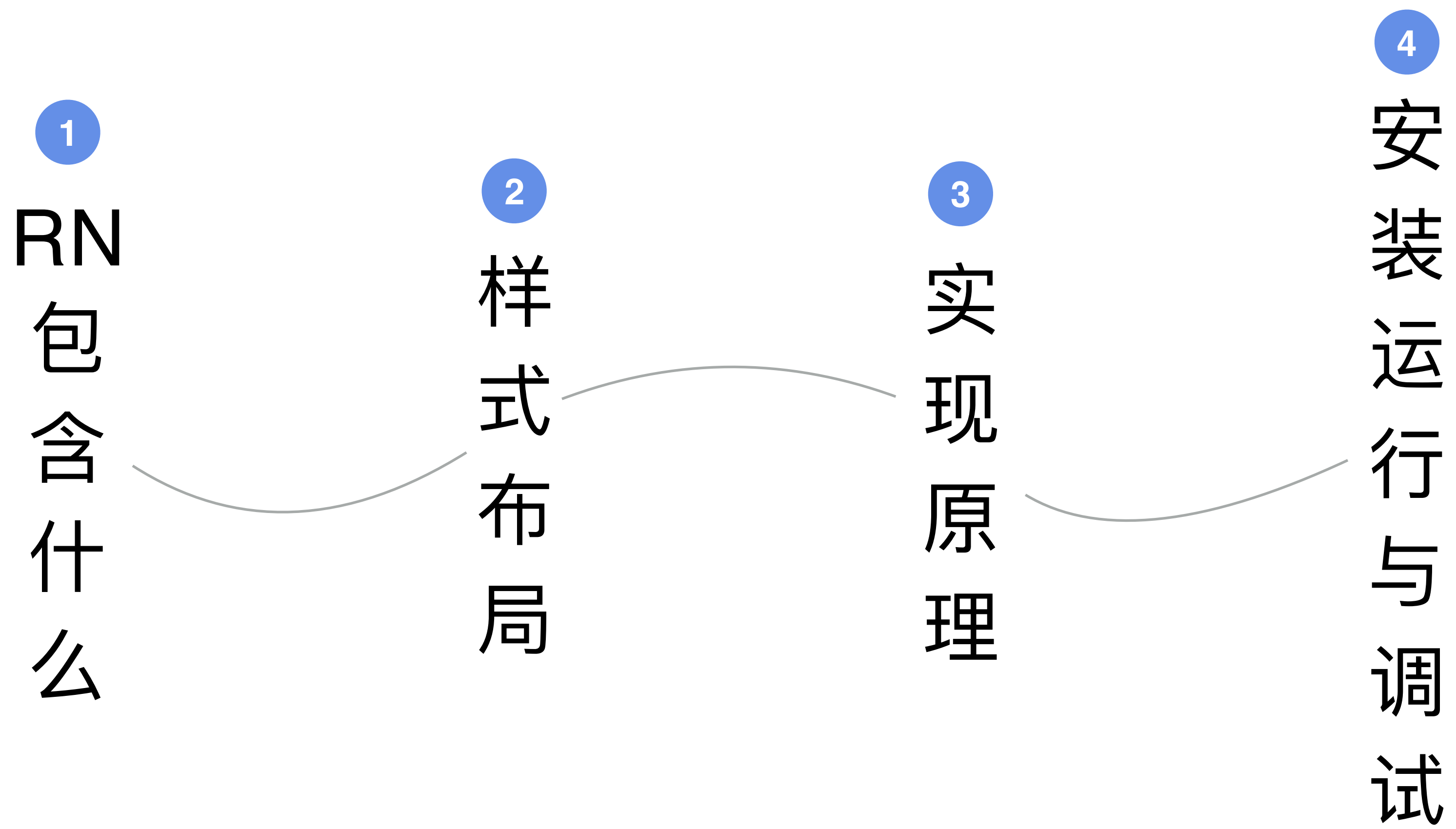
02

OPEN ORIENTED

凹凸实验室

React Native 介绍

阮嘉伟

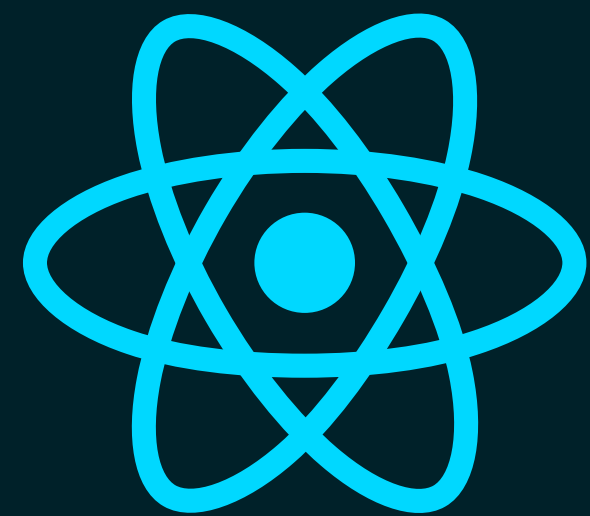


0

RN
是
什
么



Facebook
Open Source



基于 React 框架

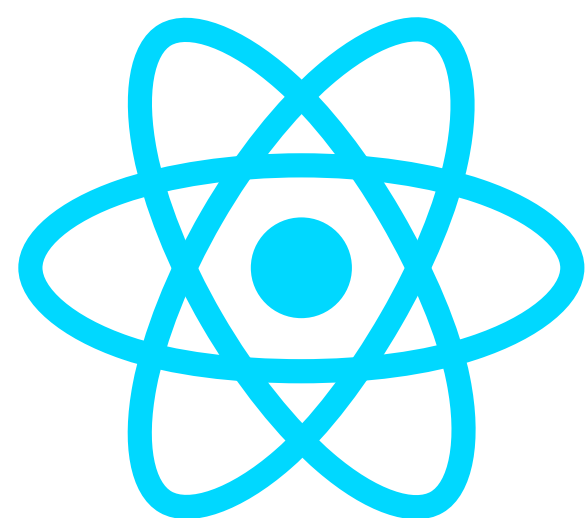


Android



iOS

跨平台 APP 开发



最新版本 0.42.x



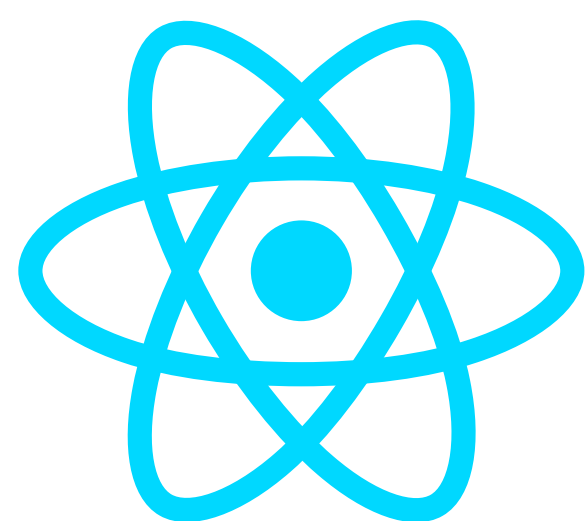
API 16+

即 Android 4.1 以上

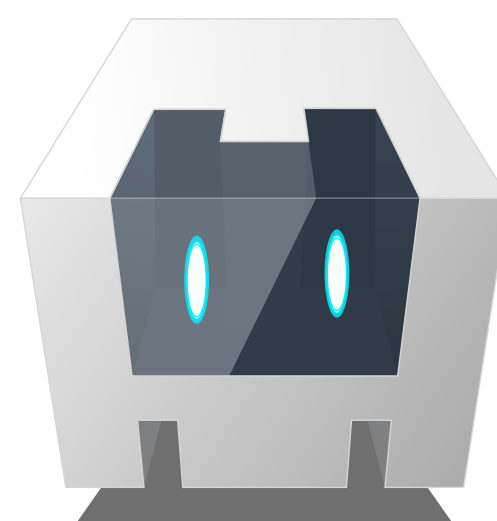


iOS 8.0+

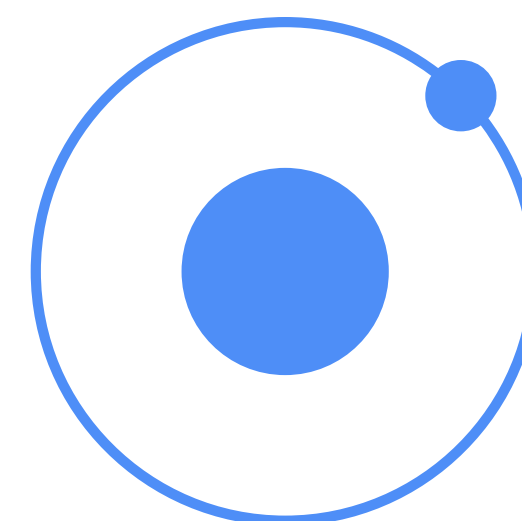
0.37 以前支持 7.0+



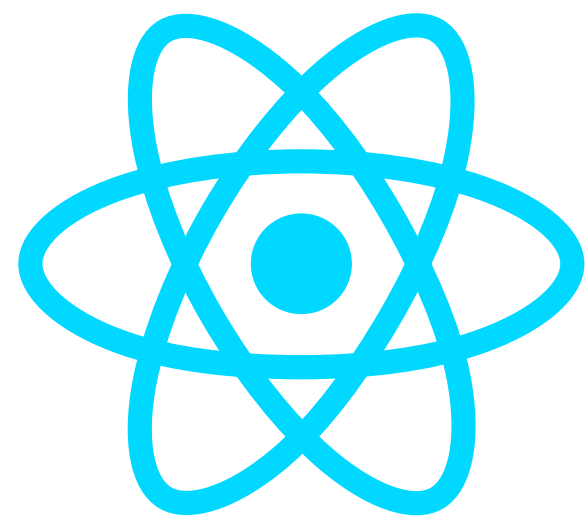
React Native



Cordova

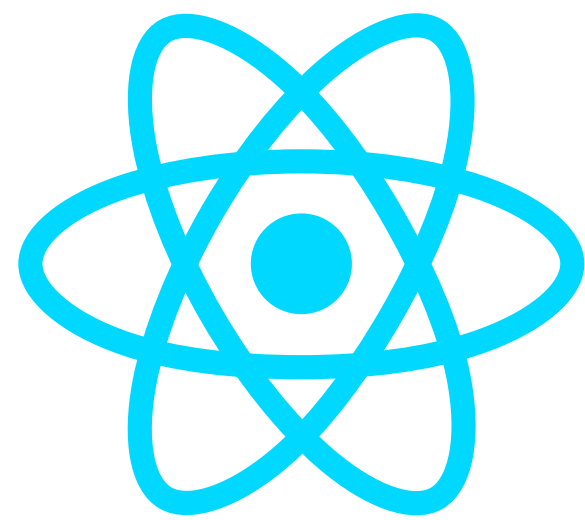


Ionic



React Native

- No WebView
- No HTML
- No CSS



React Native

- 贴近原生，更好的用户体验
- 更少的开发资源消耗
- 更少的硬件资源损耗，加载更快
- 与现有Native代码快速集成

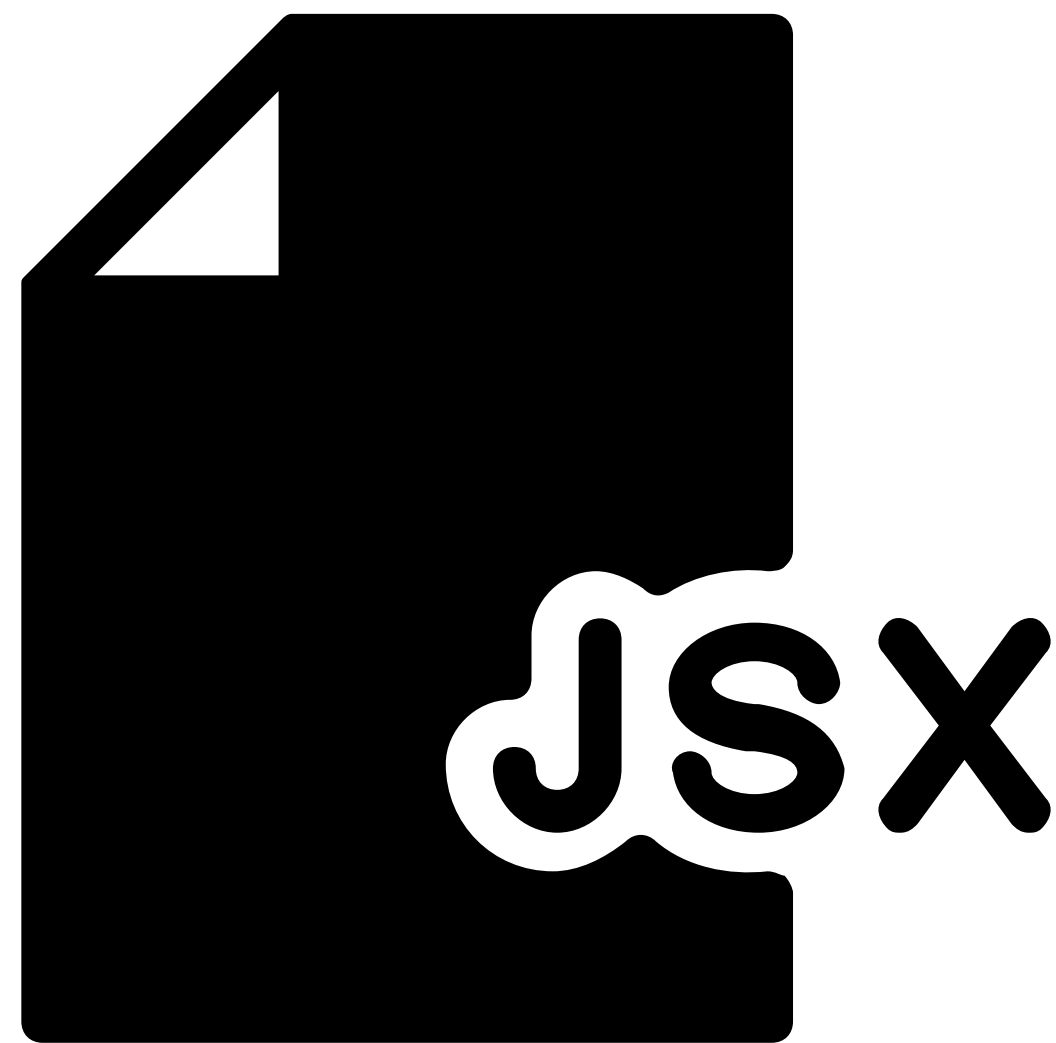
1

RN
包含什么

React Native 包含什么

02

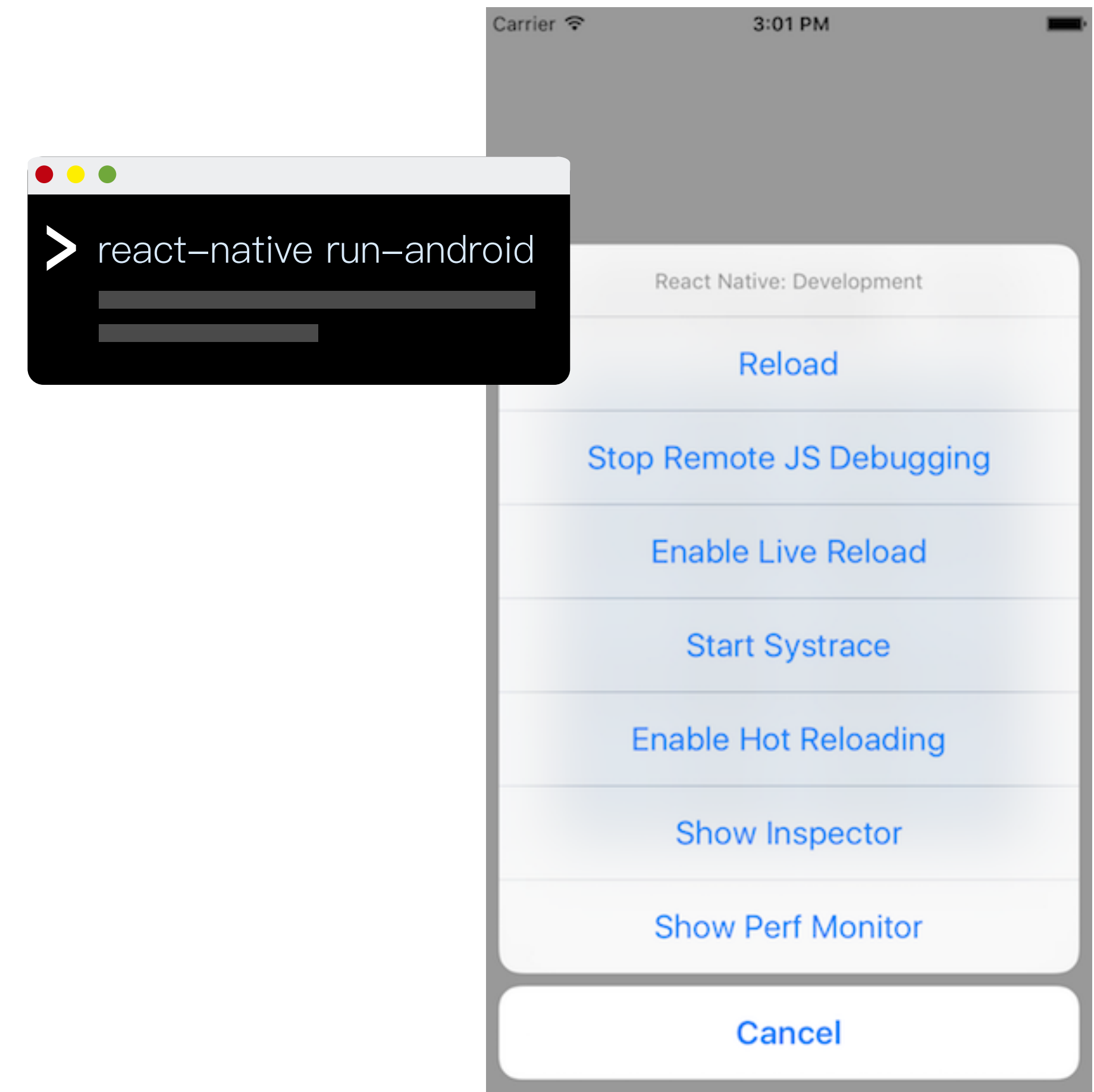
React 系统



原生组件 / API



命令行 / 调试工具

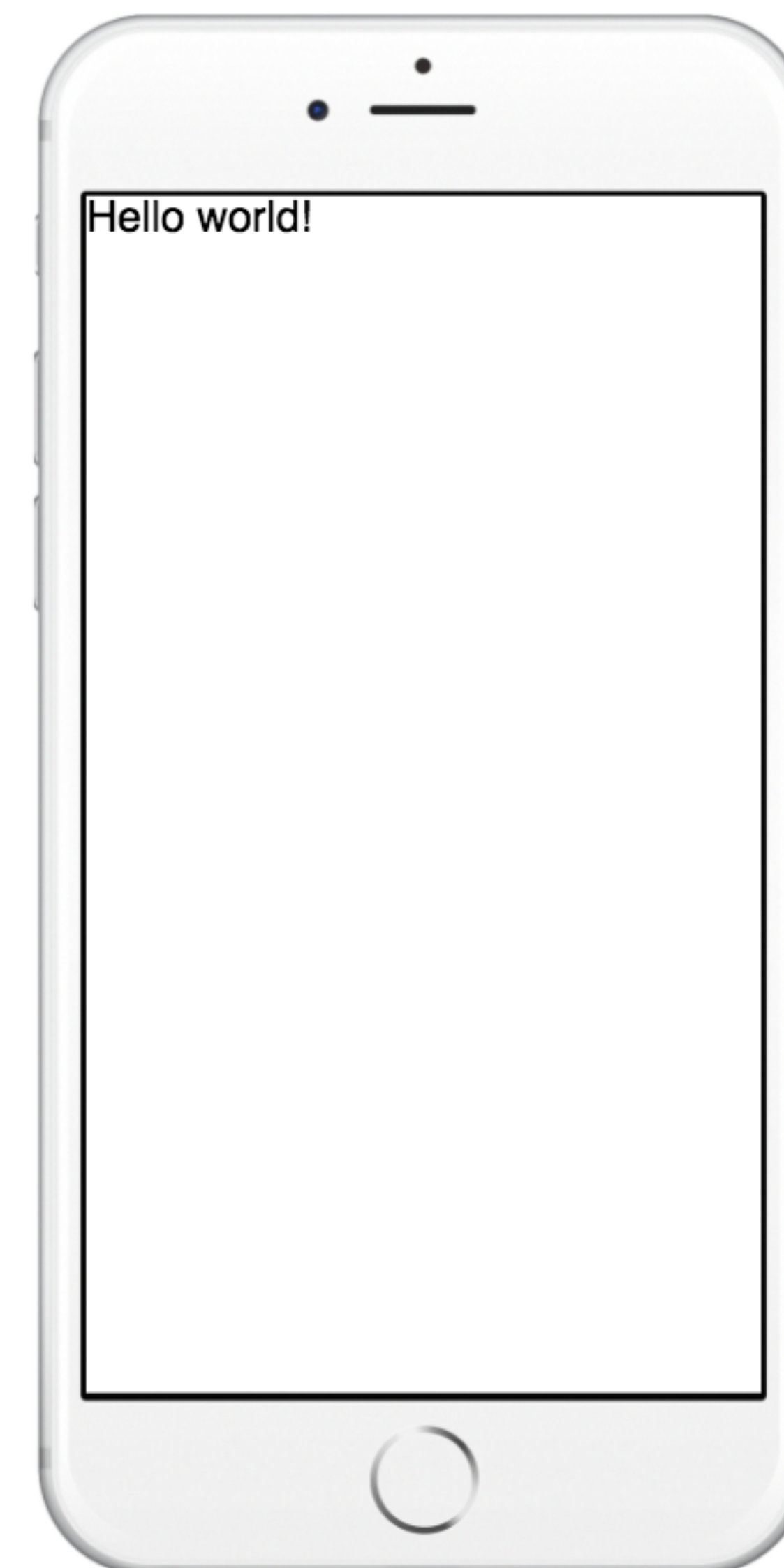


React 系统

02

- JSX
- Component
- 单向数据流(props / state)

```
1 import React, { Component } from 'react';
2 import { AppRegistry, Text } from 'react-native';
3
4 class HelloWorldApp extends Component {
5   render() {
6     return (
7       <Text>Hello world!</Text>
8     );
9   }
10 }
11
12 AppRegistry.registerComponent('HelloWorldApp', () => HelloWorldApp);
```



Web	React Native
<div>	<View>
	<Text>
	<Image>
<button>	<Button> <TouchableOpacity> <TouchableHighlight> <TouchableWithoutFeedback>
<select>	<Picker>
<input type="text">	<TextInput>
<input type="radio">	<Switch>
<input type="range">	<Slider>
<iframe>	<WebView>

React Native 原生相关组件	作用
<ActivityIndicator>	加载小菊花
<Navigator>	多页面路由
<ScrollView>	可滚动的 View
<ListView>	基于 ScrollView 的列表视图
<MapView>	地图组件
<Modal>	浮层组件
<ProgressViewIOS><ProgressBarAndroid>	进度条组件
<TabBarIOS>	iOS TabBar
<ToolbarAndroid>	Android 导航工具栏

Web	React Native
<style>	<StyleSheet>
window.alert	<Alert>
DOM Gesture Events	<PanResponder>
window.localStorage	<AsyncStorage>
navigator.getUserMedia()	<CameraRoll>
window.getSelection()	<Clipboard>

React Native 原生相关 API	作用
<ActionSheetIOS>	iOS 弹出式菜单
<Animated>	动画组件
<AppState>	获取应用运行状态的组件
<BackAndroid>	Android 返回键监听器
<ImageEditor>	图片编辑器
<Linking>	应用拉起组件
<Keyboard>	监听键盘事件
<Share>	原生分享组件

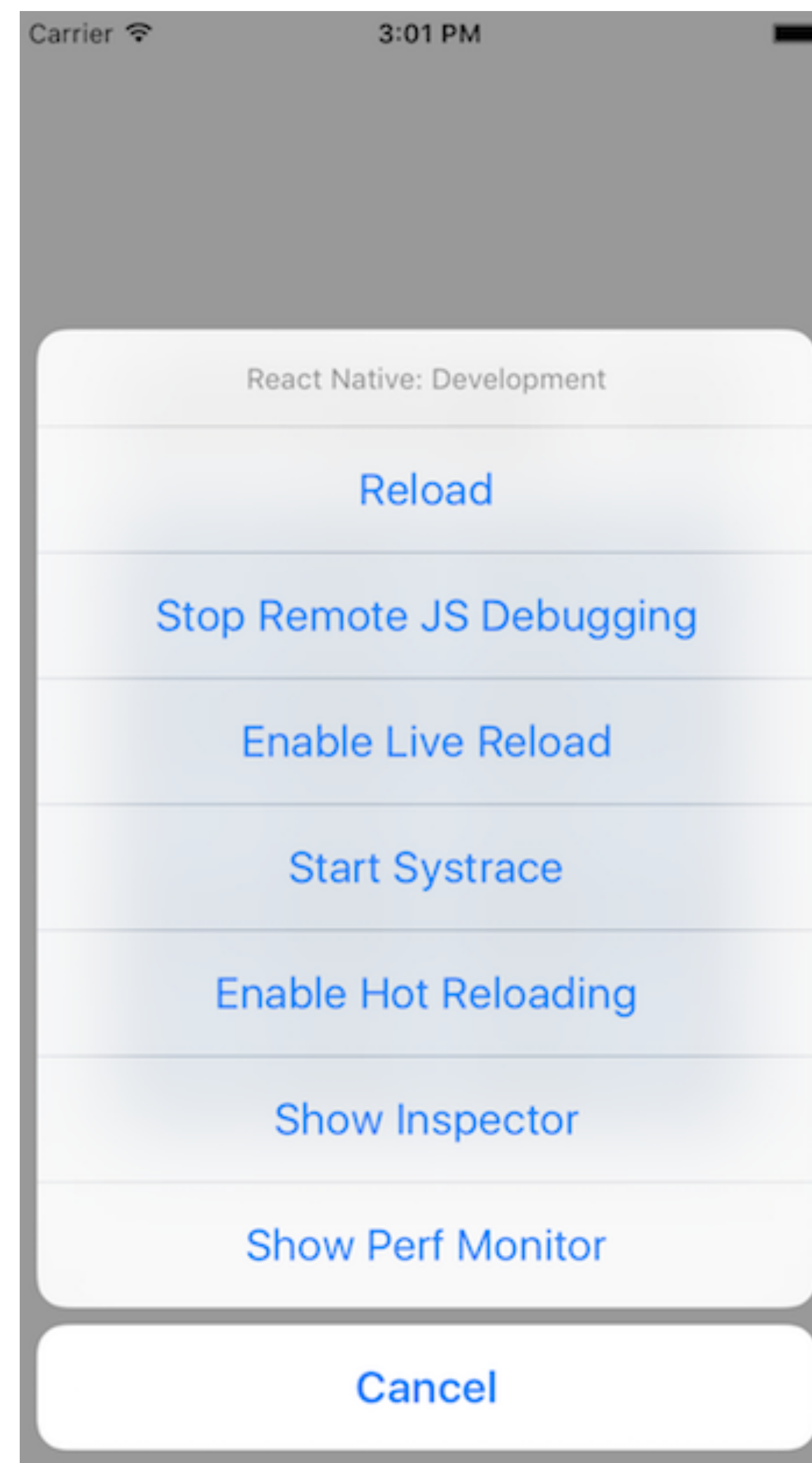
- `react-native init` 创建新项目并安装依赖
- `react-native start` 启动 JS 服务器
- `react-native run-android` 启动 Android 虚拟机/真机
- `react-native run-ios` 启动 iOS 模拟器/真机
- `react-native bundle` 打包 JS 代码



调试工具

- 远程调试 (Chrome Devtools)
- 实时更新
- 热更新 (局部刷新)
- Inspector 元素检查
- 性能监控
- Systrace 性能分析

tips: 摇一摇即可出现



2

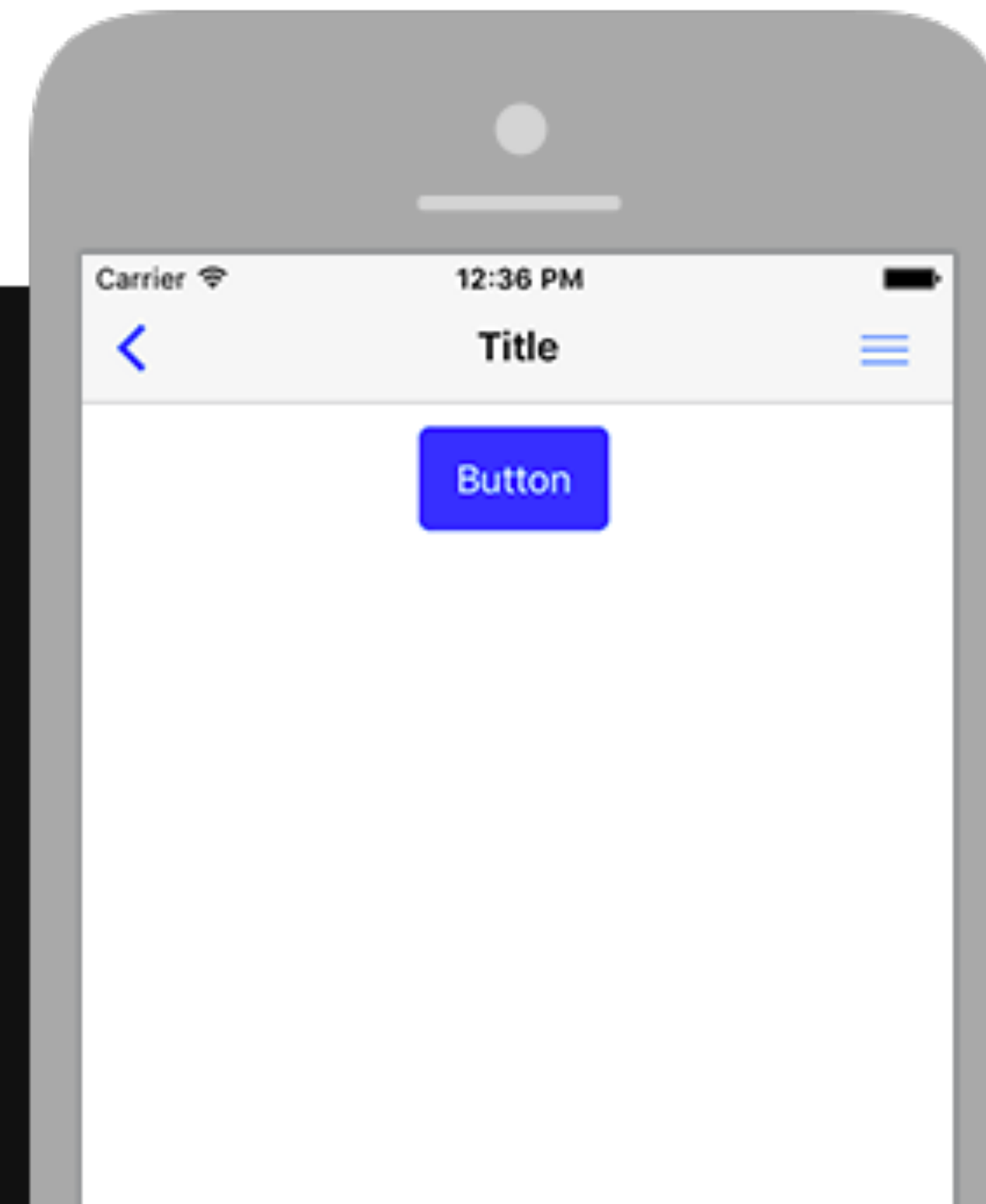
样式布局

- CSS Layout
- 驼峰式
- 无需单位
- 有限支持

Without NativeBase

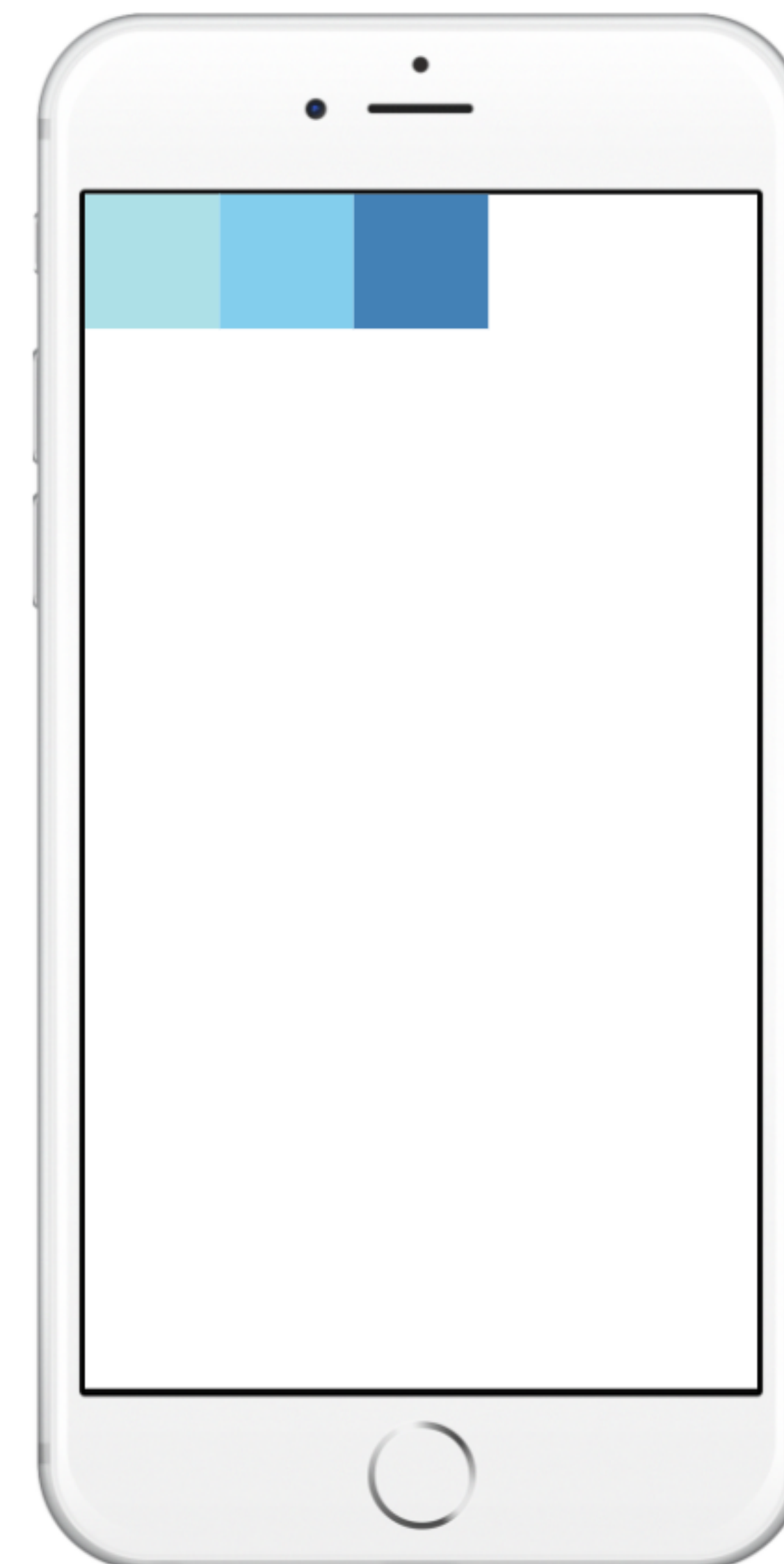
```
var style = StyleSheet.create({
  button: {
    backgroundColor: '#99AAFF',
    borderRadius: 5,
    borderWidth: 1,
    borderColor: '#000033'
  }
});

<TouchableOpacity style={style.button}>
  <Text style={{color: 'white'}}>Click me!</Text>
</TouchableOpacity>
```



- FlexBox 布局
- 相对定位/绝对定位
- margin / padding

```
1 import React, { Component } from 'react';
2 import { AppRegistry, View } from 'react-native';
3
4 class FlexDirectionBasics extends Component {
5   render() {
6     return (
7       // Try setting `flexDirection` to `column`.
8       <View style={{flex: 1, flexDirection: 'row'}}>
9         <View style={{width: 50, height: 50, backgroundColor: 'powderblue'}} />
10        <View style={{width: 50, height: 50, backgroundColor: 'skyblue'}} />
11        <View style={{width: 50, height: 50, backgroundColor: 'steelblue'}} />
12      </View>
13    );
14  }
15 };
16
17 AppRegistry.registerComponent('AwesomeProject', () => FlexDirectionBasics);
```

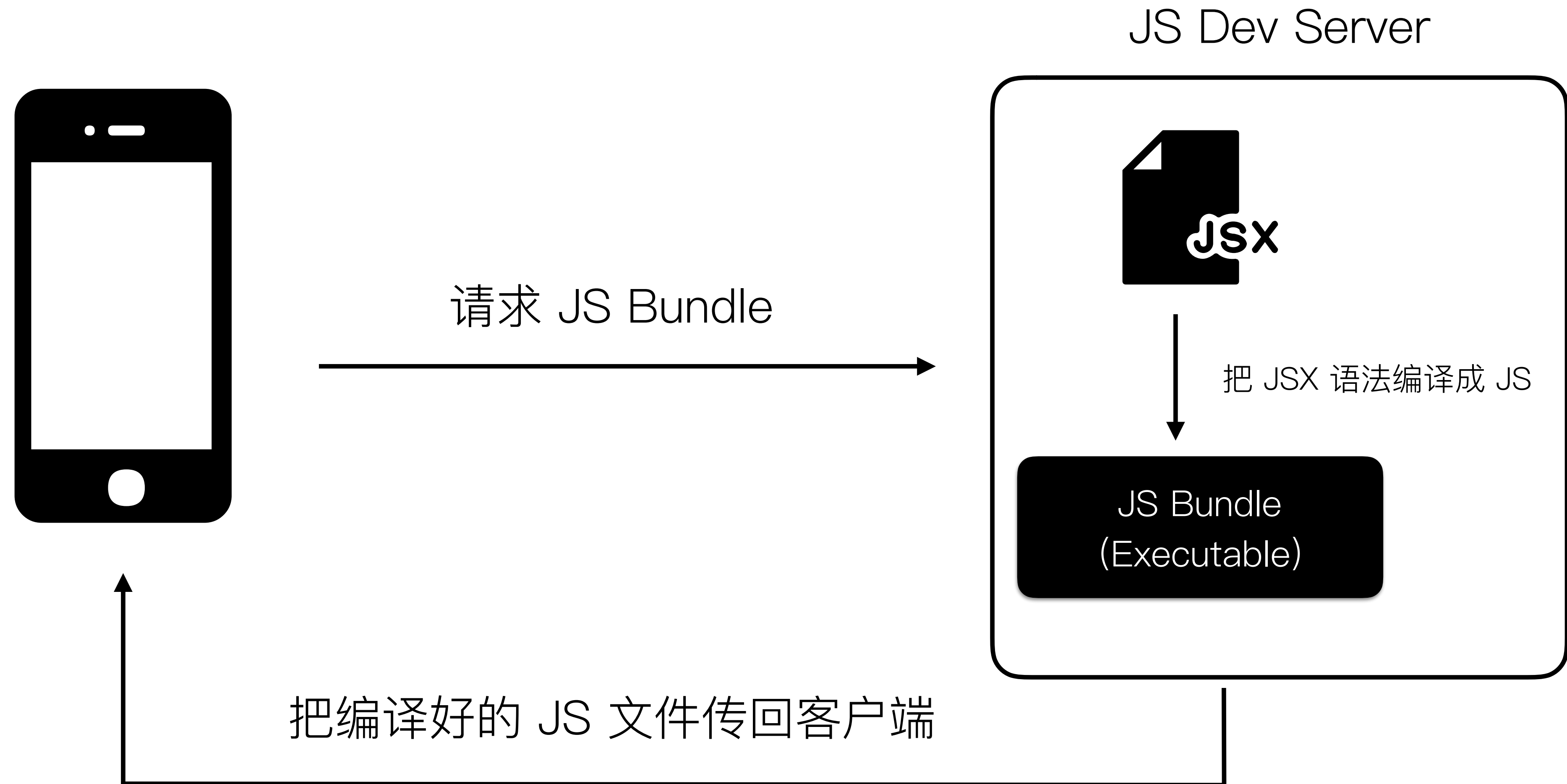


- FlexBox 布局
- 相对定位/绝对定位
- margin / padding

- position: "relative"/"absolute"
- margin: 0
- padding: 0
- marginVertical: 0
- marginHorizontal: 0
- paddingVertical: 0
- paddingHorizontal: 0

3

实现原理



开发环境

02



GET /index.bundle?platform=android



GET /index.bundle?platform=ios

根据手机平台请求不同的
JS Bundle 文件

```
ruanjiawei — React Packager — node • launchPackager.command — 80x24
~/workspace/MyReactNativeDemo/node_modules/react-native/packager ~
Scanning 550 folders for symlinks in /Users/ruanjiawei/workspace/MyReactNativeDemo/node_modules (10ms)

Running packager on port 8081.

Keep this packager running while developing on any JS projects. Feel free to close this tab and run your own packager instance if you prefer.

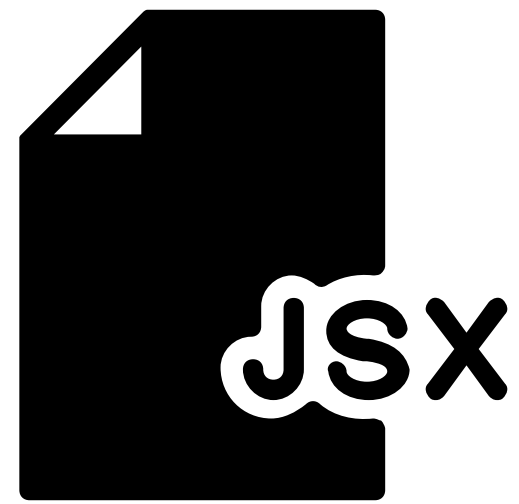
https://github.com/facebook/react-native

Looking for JS files in
/Users/ruanjiawei/workspace/MyReactNativeDemo

Loading dependency graph...
React packager ready.

Loading dependency graph, done.
Bundling `index.android.js`
Transforming modules 100.0% (394/394), done.
```

View Managers



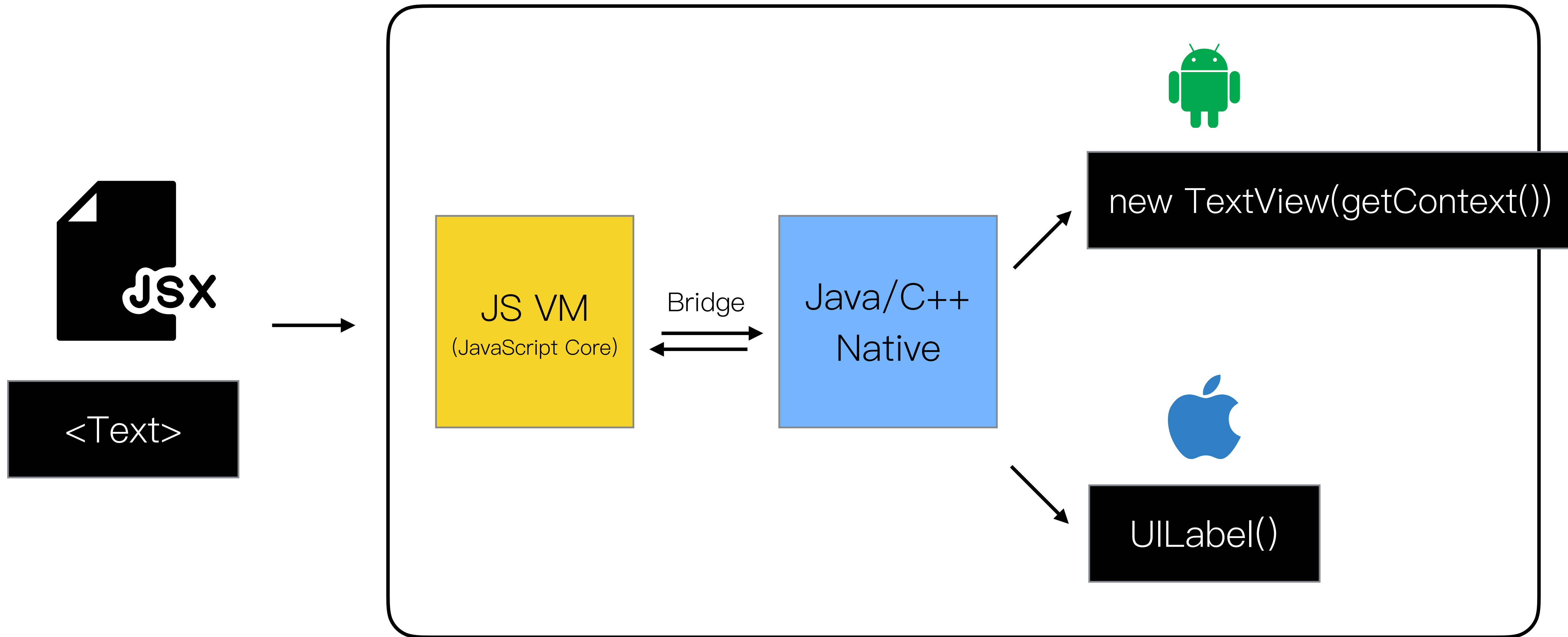
`<Text>`

`new TextView(getContext())`

`UILabel()`

View Managers

Native



4

安装运行与调试



- 安装配置 Android SDK
- 配置 Android 虚拟机
- 安装 React Native JS



- 安装 Xcode
- 安装 React Native JS

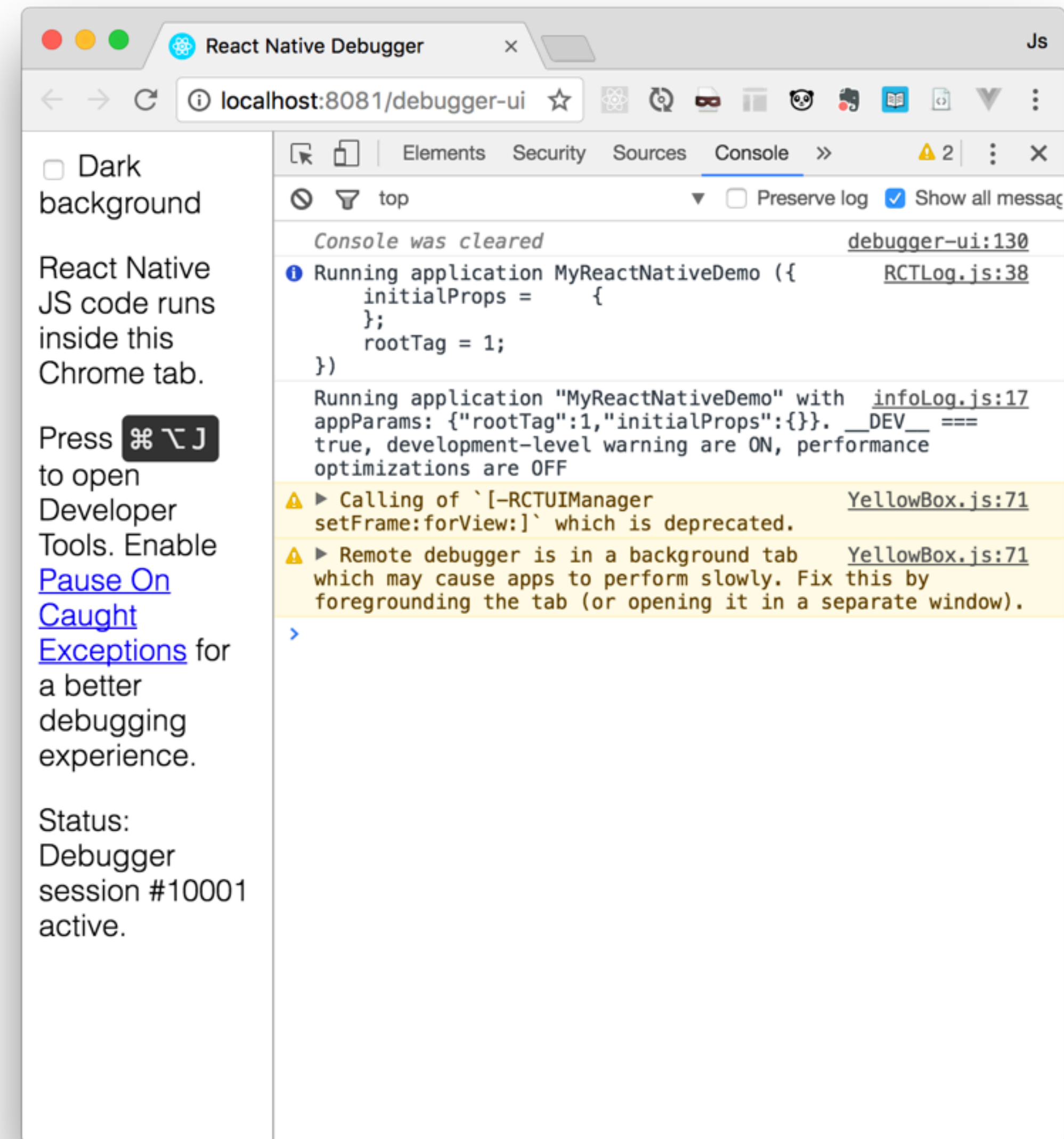
安装操作指南: <https://shimo.im/doc/e085s5ZXyLwAQ4q8/>


```
react-native run-android  
react-native run-ios
```

调试 React Native

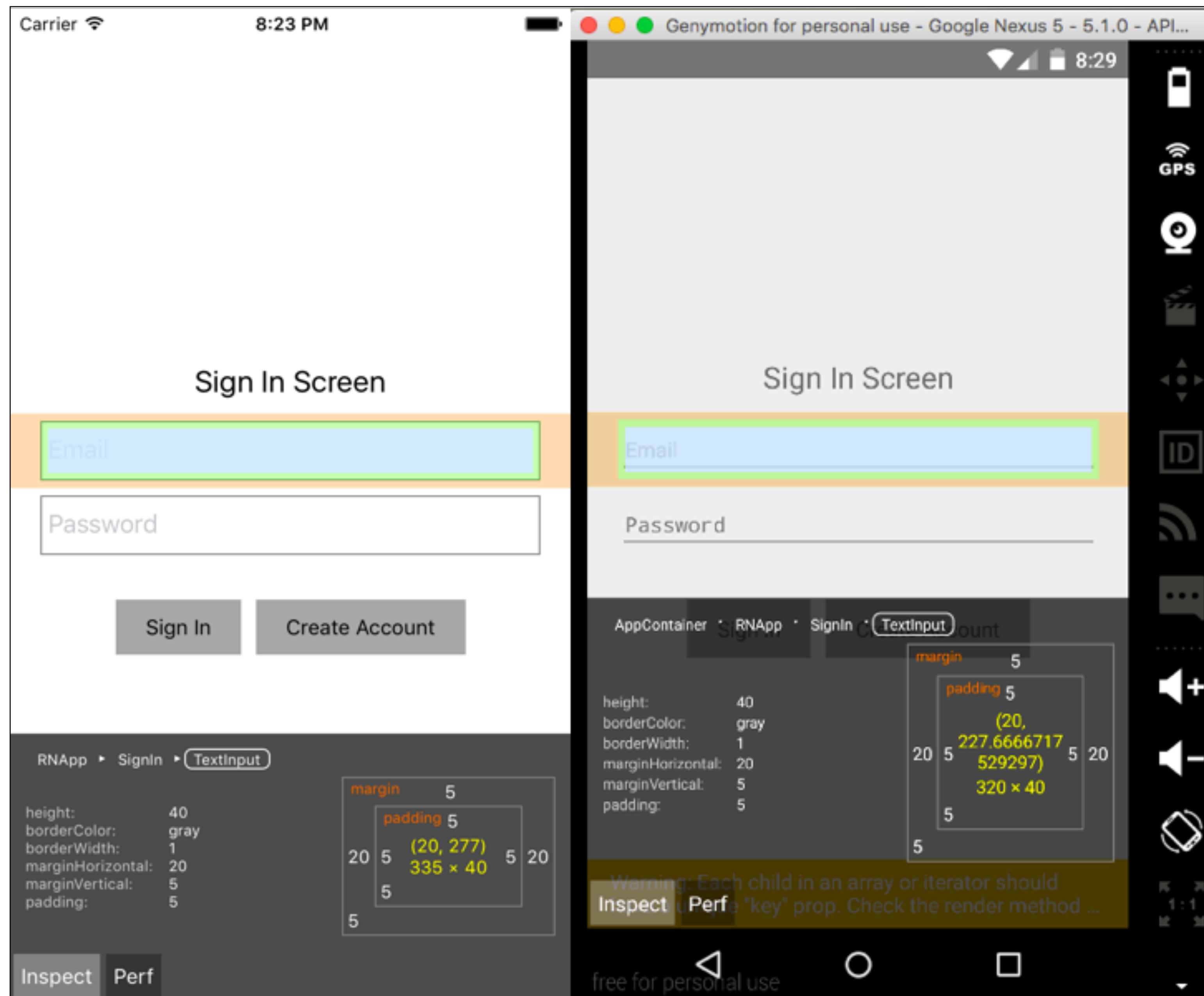
02

- 远程调试 (Chrome Devtools)



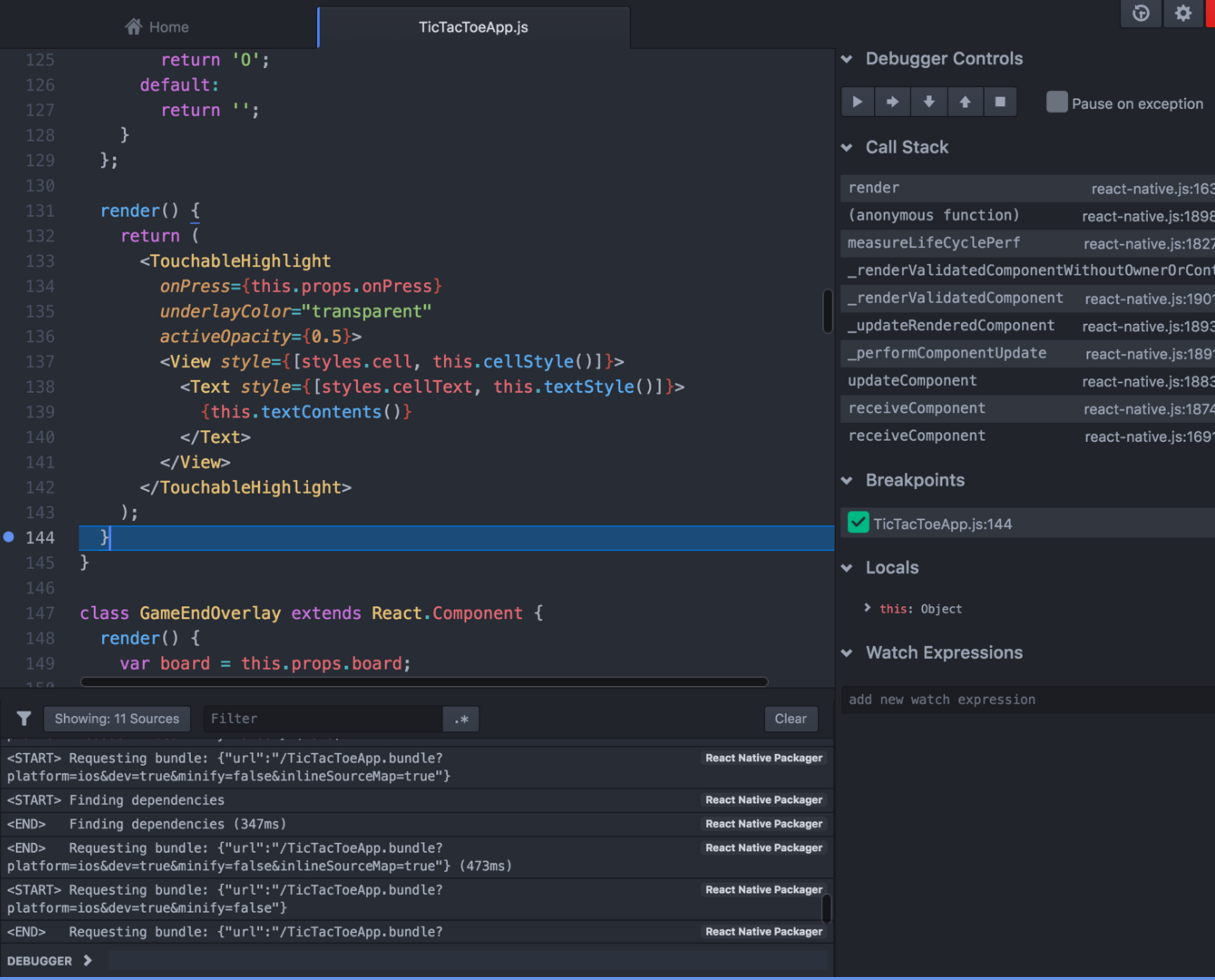
调试 React Native

- Inspector 元素检查



调试 React Native

- Nuclide
仅支持 Atom 编辑器



Hello World

```
react-native init hello-world  
react-native run-android
```

Hello World 代码



```
1  import React, { Component } from 'react'
2  import { AppRegistry, Text } from 'react-native'
3
4  class HelloWorldApp extends Component {
5    render() {
6      return <Text>Hello world!</Text>
7    }
8  }
9
10 AppRegistry.registerComponent('HelloWorldApp', () => HelloWorldApp)
11
```


运行效果

JS Dev Server

```
ruanjiawei — React Packager — node • launchPackager.command — 80x24
~/workspace/MyReactNativeDemo/node_modules/react-native/packager ~
Scanning 550 folders for symlinks in /Users/ruanjiawei/workspace/MyReactNativeDemo/node_modules (10ms)

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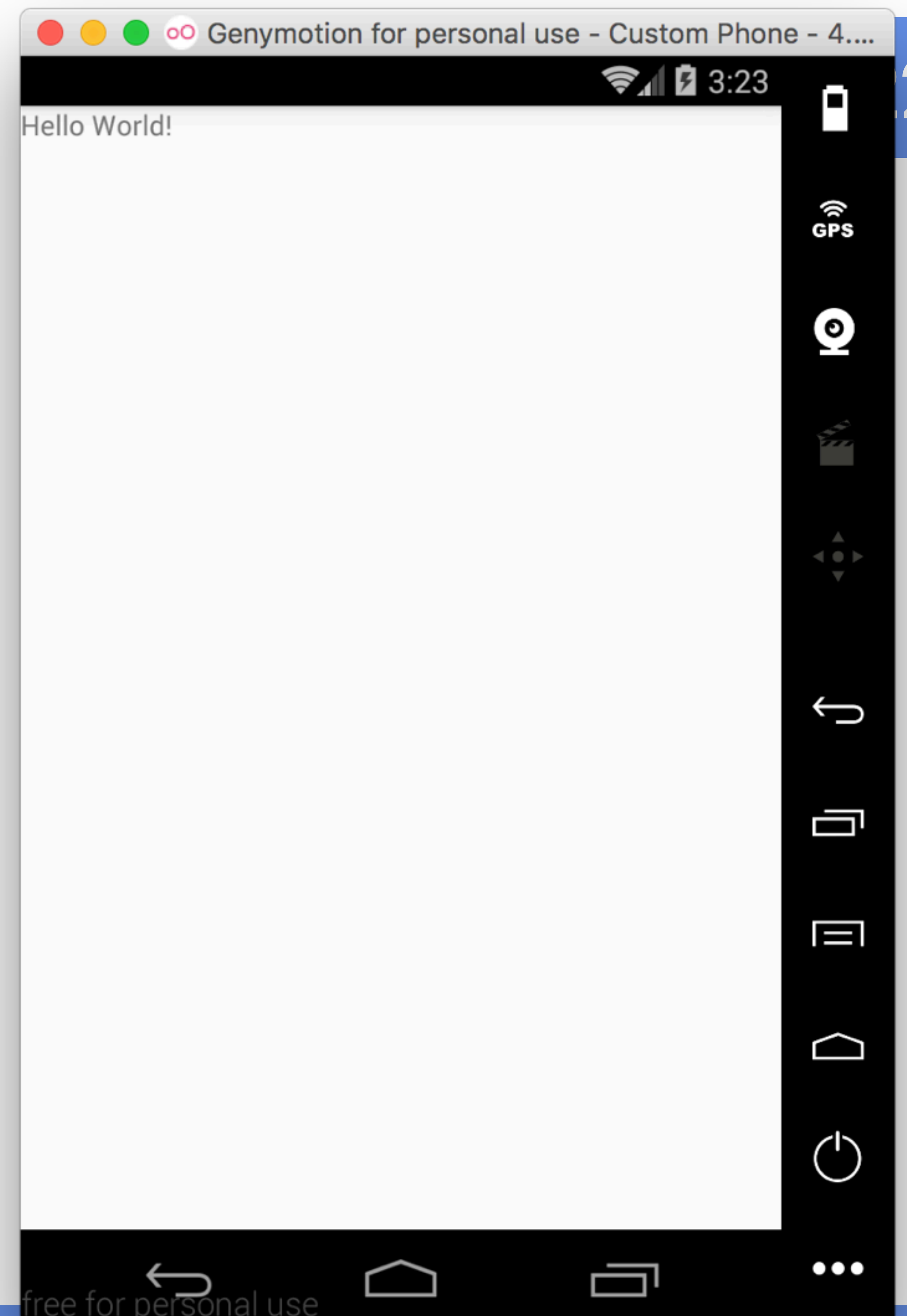
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https://github.com/facebook/react-native

Looking for JS files in
/Users/ruanjiawei/workspace/MyReactNativeDemo

Loading dependency graph...
React packager ready.

Loading dependency graph, done.
Bundling `index.android.js`
Transforming modules 100.0% (394/394), done.
```



关于 RN

- CSS Layout 布局，对前端更友好
- 遵循 commonJS 规范，与 Web 一致的开发体验
- 通过某种处理，可以输出一套三端通用的代码
- 大平台 Facebook 维护，更好的发展前景
- 静默更新

- 很多平台专有的组件或属性，导致不能达到 100% 的通用
- 严重依赖原生组件暴露出来的组件和方法，局限性强，如原生 ScrollView 中有很多事件并没有实现，做不到组件联动的效果
- 对 React 新手，需要时间上手，比起学习Hybrid App成本偏高
- 性能不如原生，尤其是动画。受限于 JS 能力，ListView 的并不支持 recycle，导致不大适用于展示 dataset 很大的场景
- 动画糟糕
- 前方有坑.....

课后练习

- 把 React Native Hello World 跑起来



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凹凸实验室