Build WhatsApp in a day with

React Native

vnovick.com

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vnovick.com

React Native build mobile apps with JavaScript

Your go-to guide to creating native iOS and Android mobile applications using React and JavaScript

https://goo.gl/mYiVmF

Agenda

- Brief overview of React Native
- ES6/7 highlights
- Basics of React
- Create your first React Native app
- Developer tools and debugging
- React Native core components
- Styling React Native components
- Introduction to FlexBox
- Images and SVG Icons in React Nat
- Building navigation workflow
- Animations in React Native
- Connecting our app to API
- Storing our data in AsyncStorage

Brief Overview of React Native

Assumptions

- You are familiar with JavaScript and Web development
- You've at least heard about ReactJS library
- You are interested to learn React Native

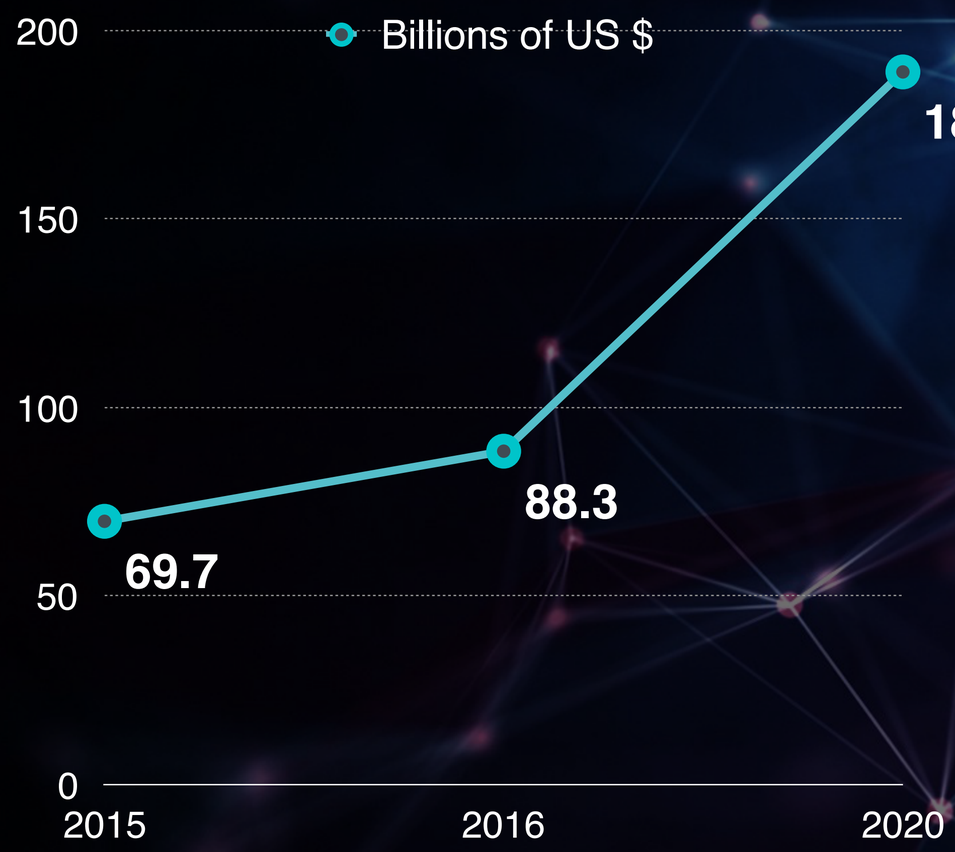
Developer Experience

Experience developer is going through while developing

DX in modern Web

- Hot reload / live reload
- Flexbox layout styling
- Crome dev tools
- Instant visual feedback
- Remote code updates
- Inspecting app structure
- Inspecting network traffic

World of mobile apps



Worldwide mobile apps revenues

- $188 billion US $ by 2020

A little bit of history

How React Native was born

What is ReactJS

A JavaScript library for building user interfaces

React can run anywhere

- Browser
- Server
- Mobile (React Native)
- Physical devices (react-iot)
- Desktop
- VR (React VR)
- Other

JSX

https://babeljs.io/repl

Virtual DOM

The ecosystem

- Npm (Node package manager) community packages
- Webpack (bundling, hot module reload, transpilation)
- Modern JavaScript (ES6/7/next)
- Flux architecture (Redux/MobX/MST)

The idea of React Native

“React Native lets you build mobile apps using only JavaScript. It uses the same design as React, letting you compose a rich mobile UI from declarative components.”

Motivation

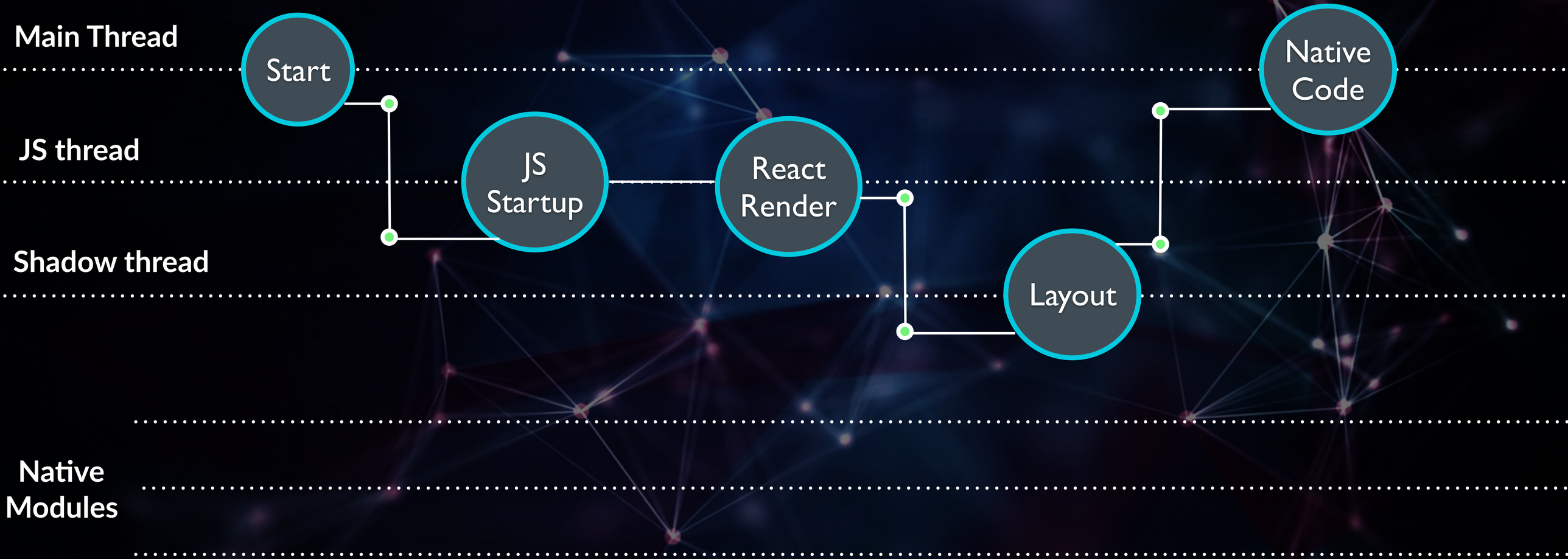
- Code reuse between various platforms Android/iOS/Web
- Smaller dev team is able to handle both Android and iOS
- Sticking to the same ecosystem as on web
- Declarative and more functional programming style
- Styling using modern CSS techniques in mobile world

Architecture

Threading model

- Main Thread - layout, measuring, drawing
- JS thread - event loop executing js code and sending batched updates before next frame renders (60fps)
- Shadow thread - calculates layout changes
- Native modules - platform apis

Execution flow



Getting started

Getting started

CRNA

Good for a start, no need for iOS, Android dependencies

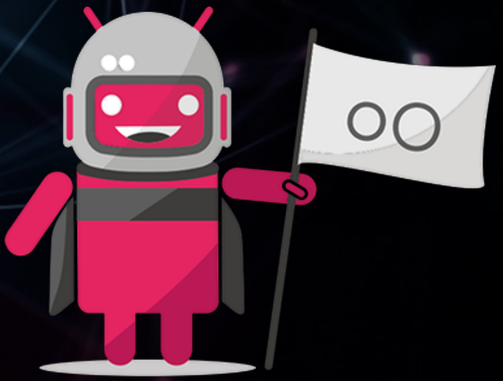
RN CLI

When you want to integrate with existing app, want to write Native code

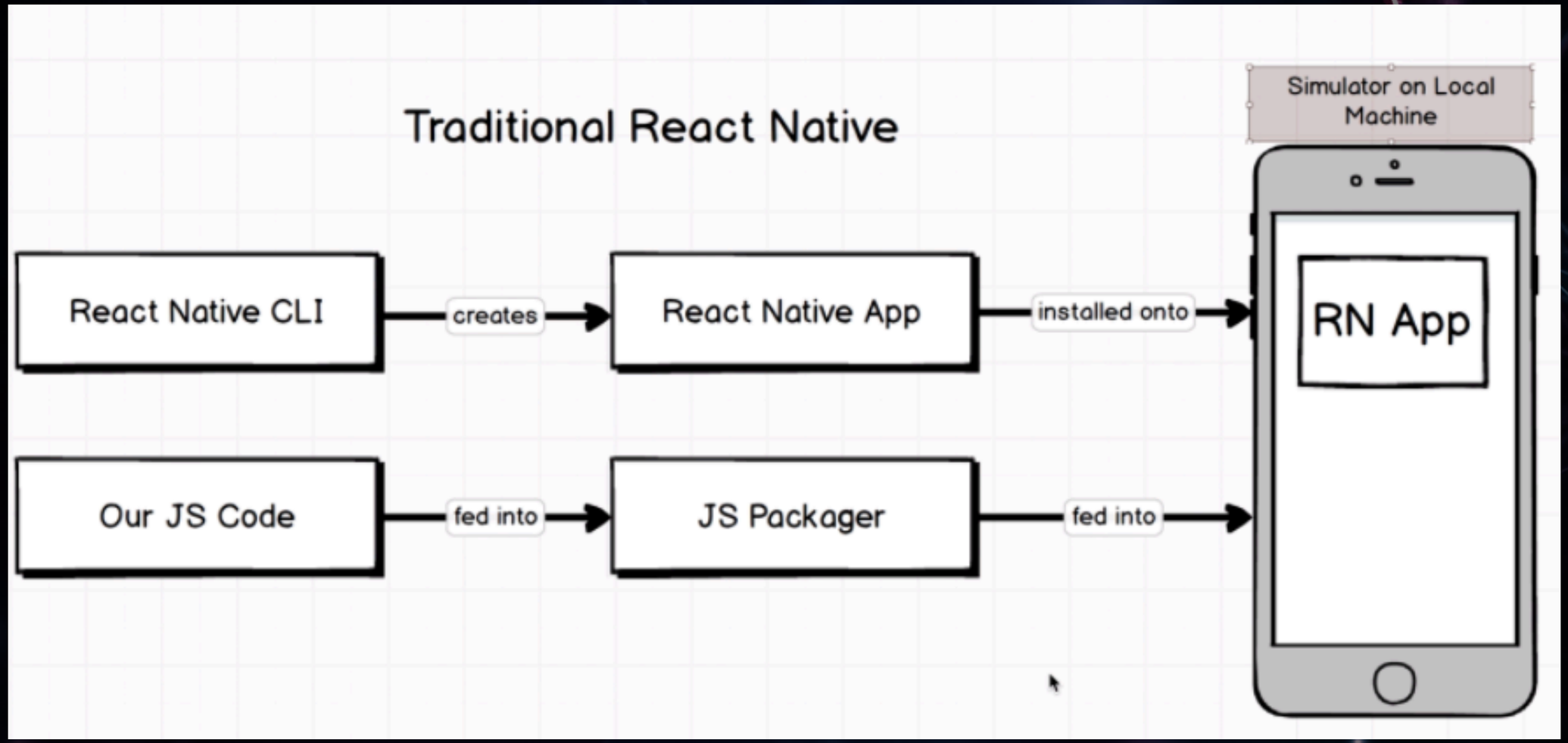
RN CLI

```
» npm install -g react-native-cli
```

Java™



Project lifecycle



CRNA

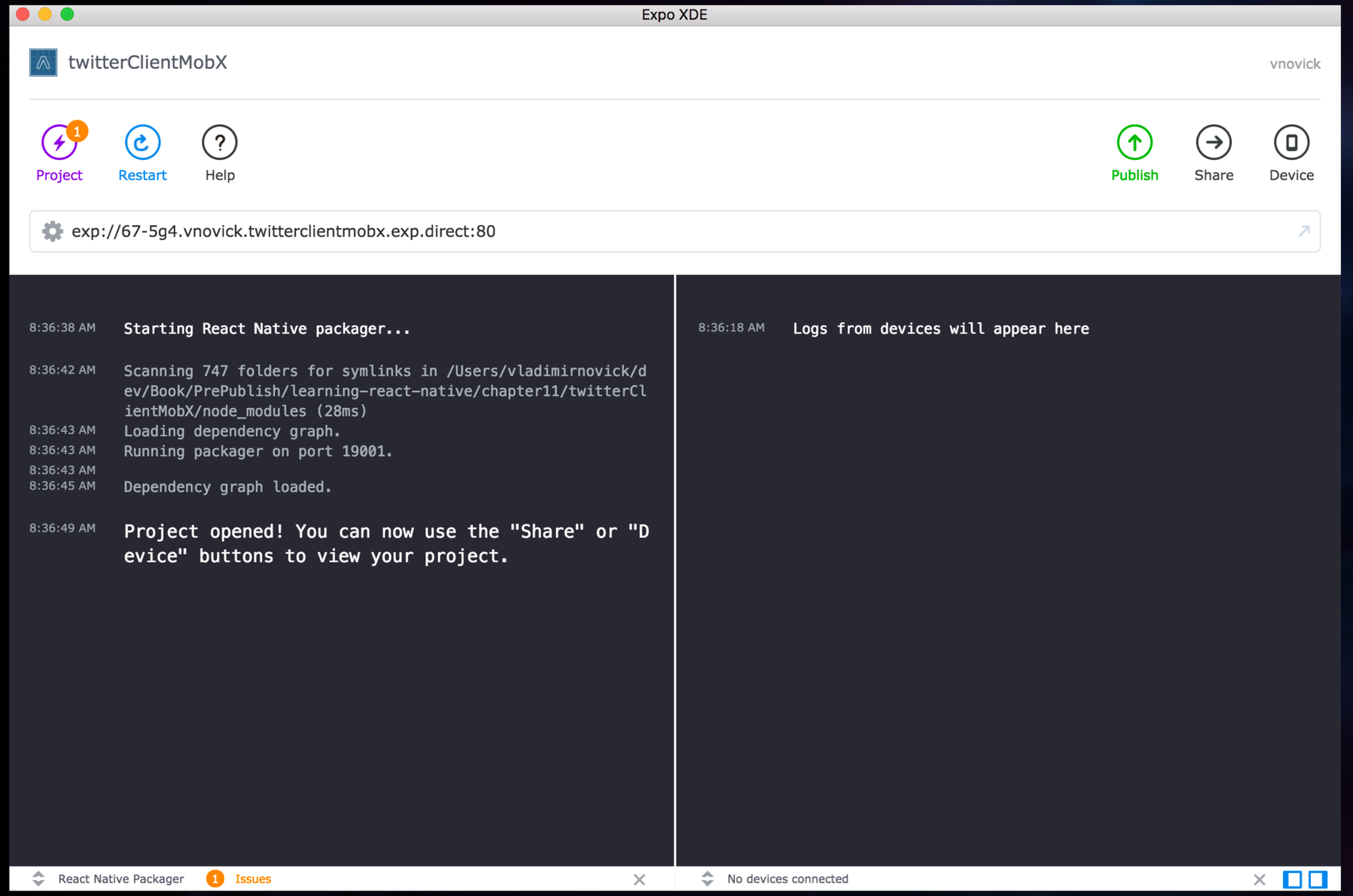
Built with Exponent

```
» npm install -g create-react-native-app
```

```
» create-react-native-app testproject
```

Exponent

- Built on top of React Native
- Desktop XDE
- Additional Native APIs
- Mobile Client
- Expo Snack playground https://snack.expo.io/



XDE

expo.io/tools

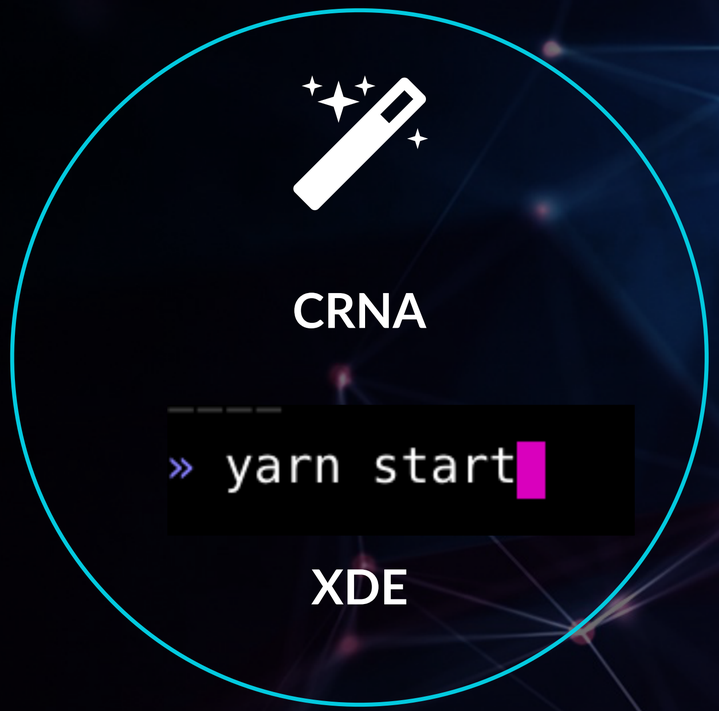
- Share your project in Expo Client app
- Develop on device without additional setup
- Manages react native packager processes
- Additional logging
- Publishing

CRNA vs Expo

Can be ejected to vanilla React Native

Can be ejected to React Native + Expokit

Running your app



CRNA

```
» yarn start
```

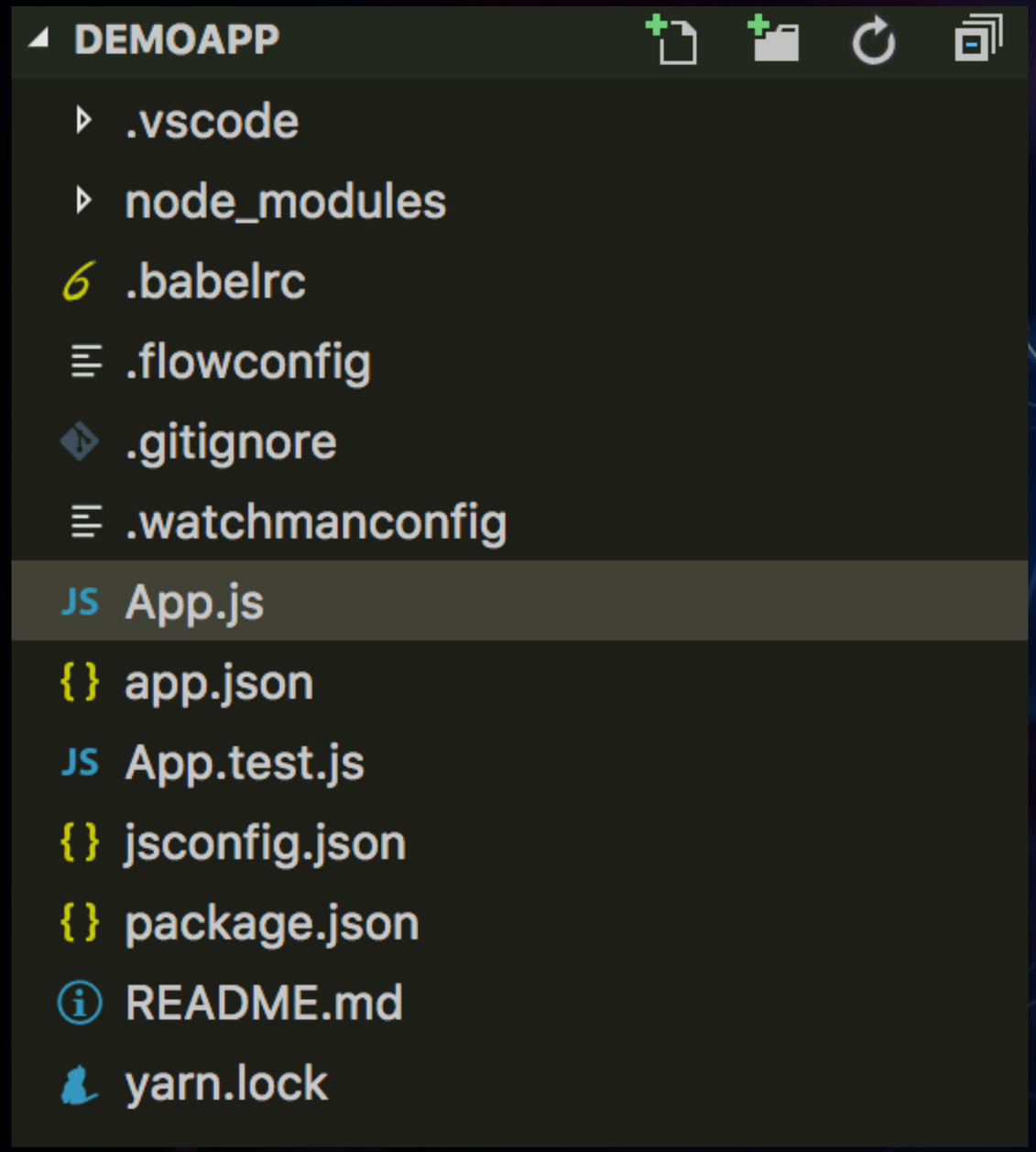
XDE

RN CLI

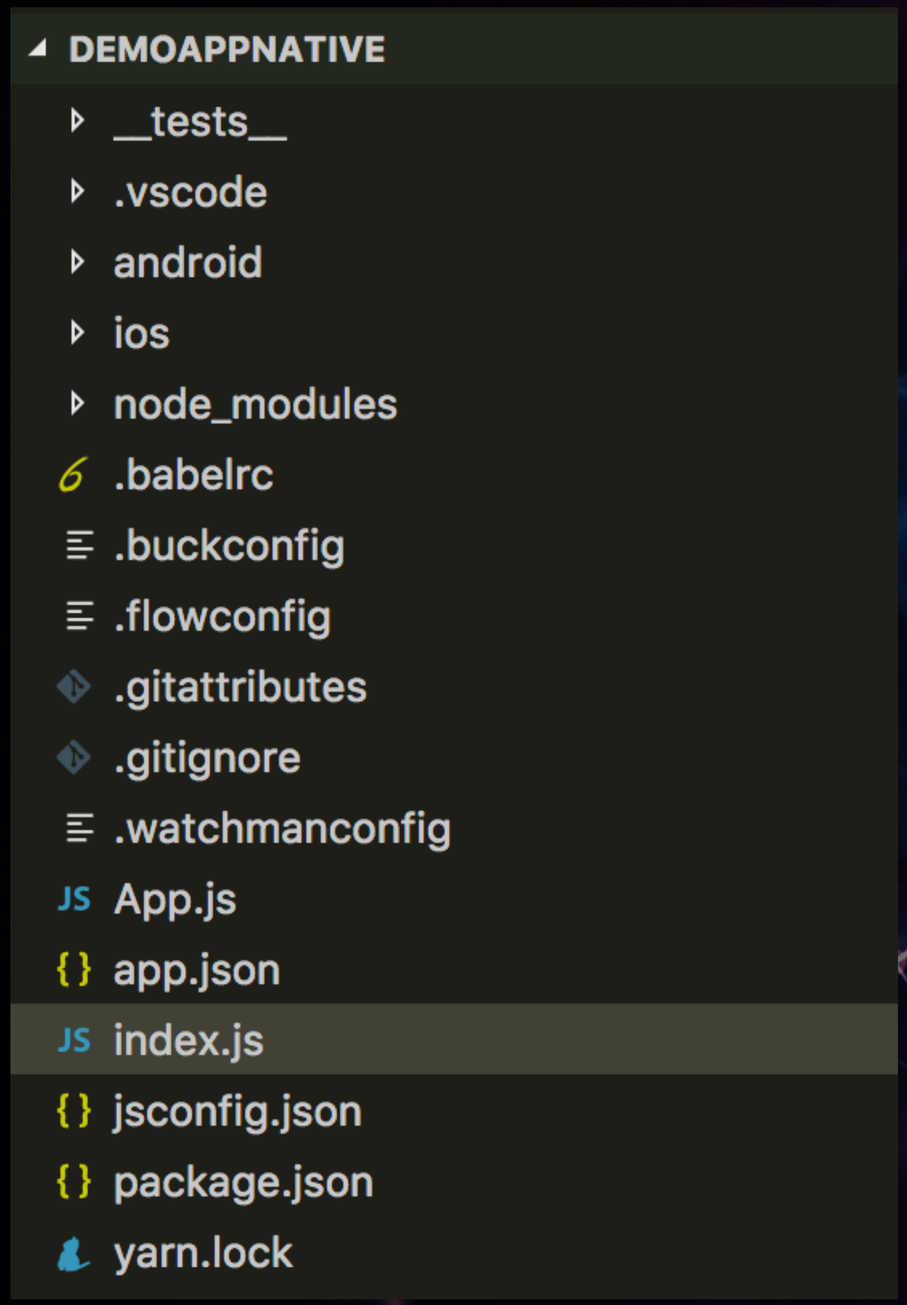
```
» react-native run-android
```

```
» react-native run-ios
```

Folder structure


DEMOAPP
.vscode
node_modules
.babelrc
.flowconfig
.gitignore
.watchmanconfig
App.js
app.json
App.test.js
jsconfig.json
package.json
README.md
yarn.lock

CRNA



react-native-cli

Code overview

index.js

```
import {
  AppRegistry
} from 'react-native';
import App from './App';

AppRegistry.registerComponent(
  'demoAppNative', () => App
);
```

App.js

```
const instructions = Platform.select({
  ios: 'Press Cmd+R to reload,\n' +
    'Cmd+D or shake for dev menu',
  android: 'Double tap R on your keyboard to reload,\n' +
    'Shake or press menu button for dev menu',
});

export default class App extends Component<{}> {
  render() {
    return (
      <View style={styles.container}>
        <Text style={styles.welcome}>
          Welcome to React Native!
        </Text>
        <Text style={styles.instructions}>
          To get started, edit App.js
        </Text>
        <Text style={styles.instructions}>
          {instructions}
        </Text>
      </View>
    );
  }
}
```


React Native DX
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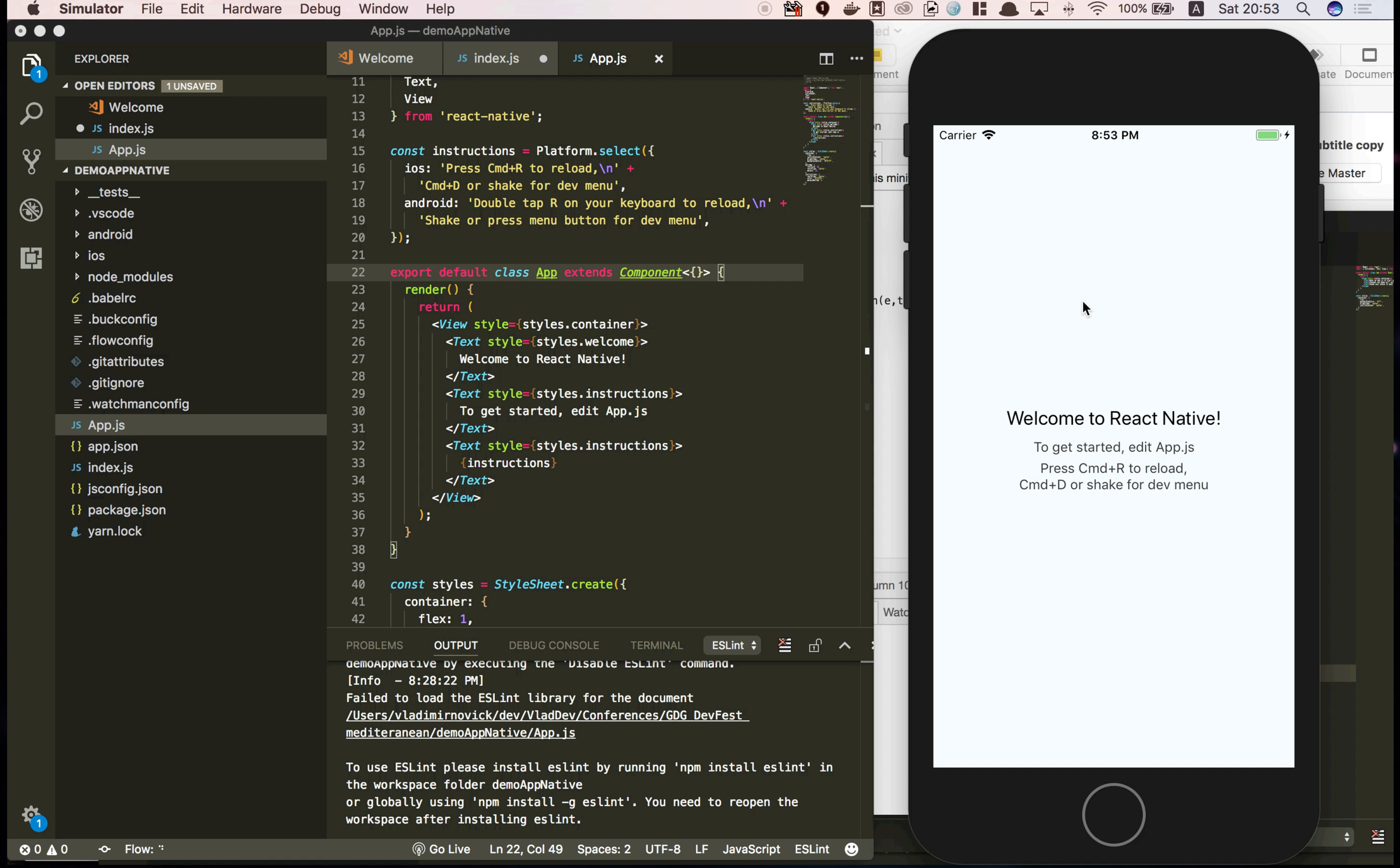
Simulator File Edit Hardware Debug Window Help
Sat 20:53
App.js — demoAppNative
EXPLORER
OPEN EDITORS 1 UNSAVED
Welcome
index.js
App.js
DEMOAPPNATIVE
__tests__
.vscode
android
ios
node_modules
.babelrc
.buckconfig
.flowconfig
.gitattributes
.gitignore
.watchmanconfig
App.js
app.json
index.js
jsconfig.json
package.json
yarn.lock
Welcome
index.js
App.js
Text,
View
} from 'react-native';
const instructions = Platform.select({
ios: 'Press Cmd+R to reload,\n' +
'Cmd+D or shake for dev menu',
android: 'Double tap R on your keyboard to reload,\n' +
'Shake or press menu button for dev menu',
});
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render() {
return (
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</Text>
<Text style={styles.instructions}>
To get started, edit App.js
</Text>
<Text style={styles.instructions}>
{instructions}
</Text>
</View>
);
}
}
const styles = StyleSheet.create({
container: {
flex: 1,
PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
ESLint
demoAppNative by executing the 'Disable ESLint' command.
[Info - 8:28:22 PM]
Failed to load the ESLint library for the document
/Users/vladimirnovick/dev/VladDev/Conferences/GDG DevFest mediteranean/demoAppNative/App.js
To use ESLint please install eslint by running 'npm install eslint' in the workspace folder demoAppNative
or globally using 'npm install -g eslint'. You need to reopen the workspace after installing eslint.
0 0
Flow:
Go Live
Ln 22, Col 49
Spaces: 2
UTF-8
LF
JavaScript
ESLint
Carrier
8:53 PM
Welcome to React Native!
To get started, edit App.js
Press Cmd+R to reload,
Cmd+D or shake for dev menu

Yoga

Yoga is a cross-platform layout engine enabling maximum collaboration within your team by implementing an API familiar to many designers and opening it up to developers across different platforms.

- Do you know Flexbox? Then you know Yoga
- Supports Java, C#, Objective-C, C
- Styling your app looks like CSS

```
const styles = StyleSheet.creaete({
  message: {
    width: '70%',
    margin: 10,
    padding: 10,
    backgroundColor: 'white',
    borderColor: '#979797',
    borderStyle: 'solid',
    borderWidth: 1,
    borderRadius: 10
  },
  incomingMessage: {
    alignSelf: 'flex-end',
    backgroundColor: '#E1FFC7'
  }
})

const Message = ({ item }) => (
  <View style={[
      styles.message, item.incoming &&
      styles.incomingMessage
    ]}>
    <Text>{item.message}</Text>
  </View>
)
```

Navigation

- reactnavigation.org - If you start from scratch. Considered as standard and is advised in React Native docs
- airbnb.io/native-navigation - If you integrate React Native in existing app

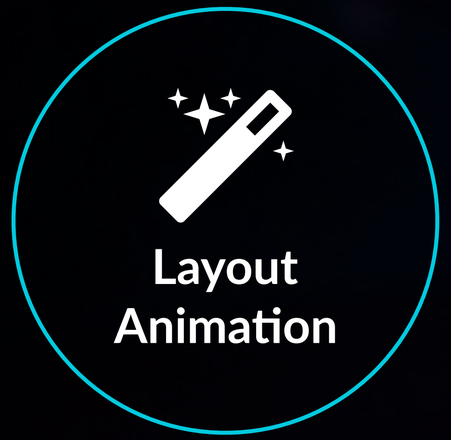
react-navigation

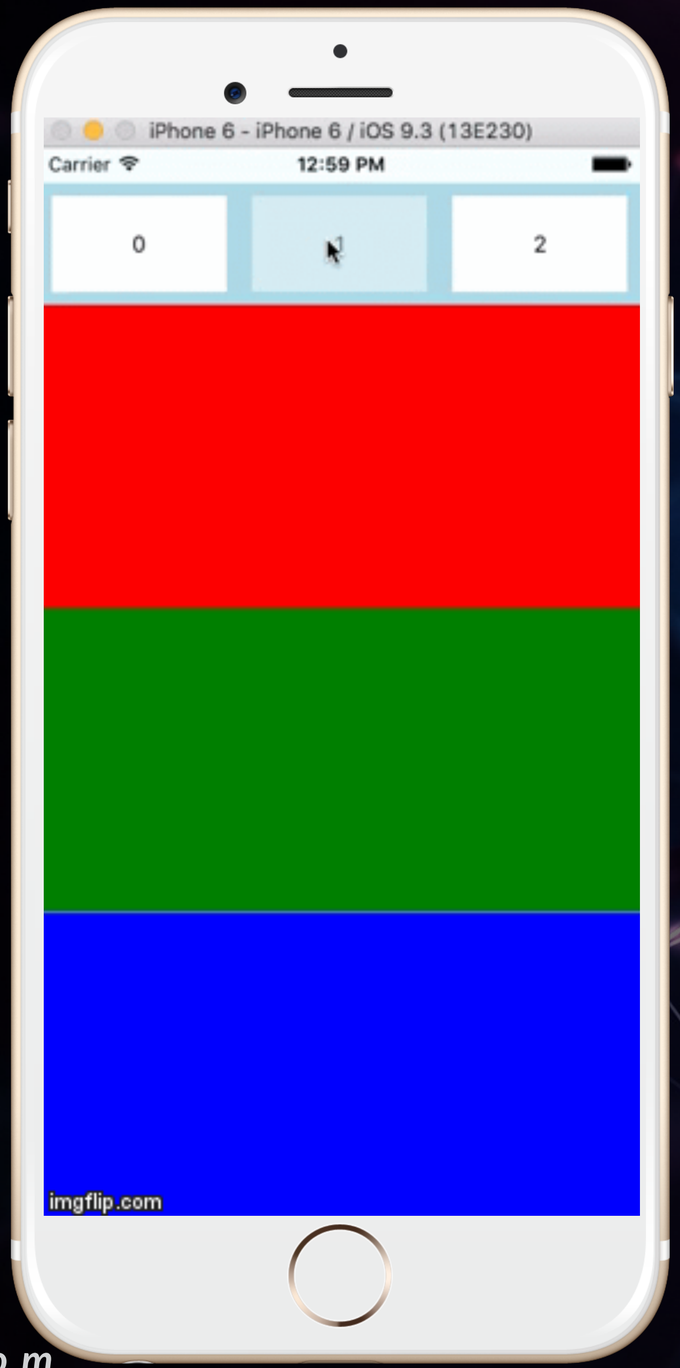
```
import React from 'react';
import { StackNavigator } from 'react-navigation';

const App = StackNavigator({
  home: { screen: Home },
  chat: { screen: ChatScreen }
});
```

```
//...
export default class Home extends React.Component {
  static navigationOptions = {title: 'Home Screen'}
}
```

```
// ...
  render(){
    return (
      <View style={styles.container}>
        <Button title="Navigate to ChatScreen"
          onPress={() => this.props.navigation.navigate
          ('chat', { name: 'John' })}/>
      </View>
    )
  }
```

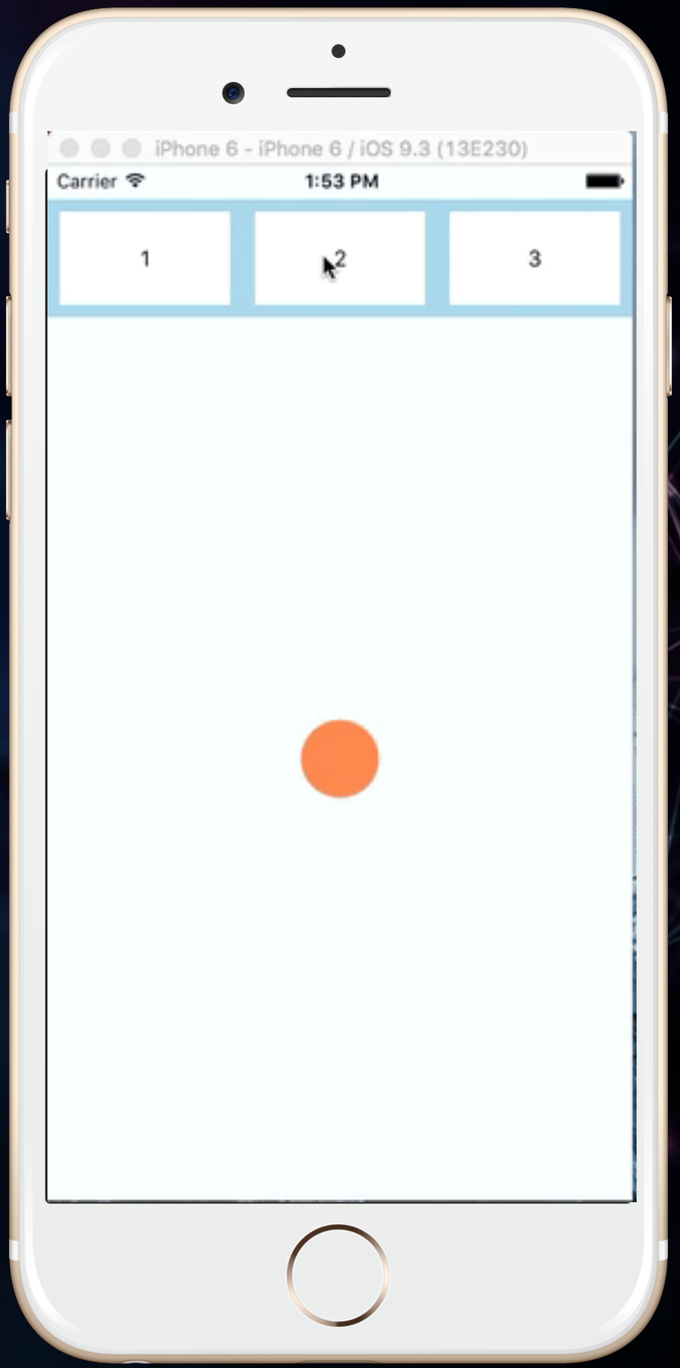

Animations

	Pros	Cons
 **Layout Animation**	✔ Applied to all style properties of component ✔ No need for specific values (heights/ widths)	✔ Less configurable ✔ Animates everything on next render
 **Animated**	✔ Extremely configurable ✔ Can target specific components	✔ Uses requestAnimationFrame by default ✔ For complex computation animations can stutter



Layout
Animatio

Animated



Networking

Fetch API

XmlHttpRequest

Web Sockets

Platform APIs

AccessibilityInfo, ActionSheetIOS, AdSupportIOS, Alert, AlertIOS, Animated, AppRegistry, AppState, AsyncStorage, BackAndroid, BackHandler, CameraRoll, Clipboard, DatePickerAndroid, Dimensions, Easing, Geolocation, ImageEditor, ImagePickerIOS, ImageStore, InteractionManager, Keyboard, LayoutAnimation, Linking, NativeMethodsMixin, NetInfo, PanResponder, PermissionsAndroid, PixelRatio, PushNotificationIOS, Settings, Share, StatusBarIOS, StyleSheet, Systrace, TimePickerAndroid, ToastAndroid, Vibration, VibrationIOS, Layout Props, Shadow Props

Expo SDK APIs

Accelerometer, Amplitude, AppLoading, Art, Asset, Audio, AV, BarCodeScanner, BlurView, Branch, Constants, Contacts, DocumentPicker, ErrorRecovery, Facebook, FacebookAds, Font, GLView, Google, Gyroscope, ImagePicker, KeepAwake, LinearGradient, Location, MapView, Notifications, Pedometer, Permissions, Segment, SQLite, Svg, takeSnapshotAsync, Util, Video, WebBrowser

Dealing with native modules

linking packages with native modules

```
» react-native link
```

Writing your own native modules

Objective-C

```objc
// MyNativeModule.h
#import <React/RCTBridgeModule.h>

@interface MyNativeModule : NSObject <RCTBridgeModule>
@end
```

```objc
// MyNativeModule.m
#import "MyNativeModule.h"
#import <React/RCTLog.h>
@implementation MyNativeModule

// To export a module named ExsportedModuleName
RCT_EXPORT_MODULE(ExsportedModuleName);

RCT_EXPORT_METHOD(logInfo : (NSString *)text) {
  RCTLogInfo(@"Logging from my native module %@", text);
}

@end
```

Java

- Create the module by creating class that extends *ReactContextBaseJavaModule*
- Expose methods to JS using @ReactMethod
- Create class that implements ReactPackage
- Override createNativeModules method

JS side

```
import {NativeModules} from 'react-native';
const logger = NativeModules.ExsportedModuleName;

logger.logInfo('Test message');
```

Deployment

Regular pre deploy pipeline

Screenshots, Icons, certificates - the regular staff. Do it manually or use **FastLane**

Create a bundle

Create a bundle with production settings meaning it won't have and dev tools and will be optimized for prod

Upload to store

By using tools like **CodePush** you will be able to change your JS bundle without uploading again

ES6/7 highlights

let - block scoped variable that can be changed

const - block scoped variable that can be changed

Template strings

```
const info = `${getName()} is ${person.present ? 'present' : 'not present'}`;
```

Arrow functions

Anonymous function

```
const welcome = (name) => {
  console.log('Hi everyone! I am ' + name);
};
```

Implicit return

```
const getFullName = (firstName, lastName) => firstName + ' ' + name
```

readable currying

```
const sayWelcome = (firstName, lastName) =>
  welcome =>
    console.log(welcome + ' ' + getFullName(firstName, lastName))
```

Default arguments

```
function multiply(a, b = 1) {
  return a * b;
}
```

With array

```
function append(value, array = []) {
  array.push(value);
  return array;
}
```

With function

```
function getName(name = myName()) {
  return name;
 }

function myName() {
  return 'Vladimir';
}
```

Spread and rest

```
var abc = ['a', 'b', 'c'];
var def = ['d', 'e', 'f'];
var alpha =
[ ...abc, ...def ];
```

Spread is expanding variable

```
function sum( first, ...others ) {
  // others is now an array
}
```

Rest is collapsing remaining arguments into array

```
console.log({
  ...{
    id: 1
    name: "Vladimir"
  },
  lastName: "Novick"
})
```

Object spread is similar as Object.assign

Destructuring

```
var arr = [10, 20, 30, 40,
50];

const [a,b] = arr;

console.log(a); // 10
console.log(b); // 20
```

Array destructuring

```
const person = {
  name: 'Vladimir',
  info: {
    eyeColor: 'gray',
    height: “6'1",
  },
};

const { name } = person;
```

Object destructuring

Fetch

```
fetch('https://www.swapi.co/api/planets/')
  .then(data => data.json())
  .then(json => console.log('json:', json))
  .catch(err => console.log('error:', err));
```

https://developer.mozilla.org/en-US/docs/Web/API/Fetch_API/Using_Fetch

Async await

```
async function fetchData(url) {
  try {
    const blob = await fetch(url)
    const jsonData = await blob.json()
    return jsonData
  } catch (err) {
    throw (err)
  }
}
```

https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Statements/async_function

Modules

```
const person = {
  name: 'Vladimir',
  age: 34,
};

export default person;
```

```
import person from './person';

console.log('age: ', person.age);
```

```
export const IS_LOADING = 'IS_LOADIING';
export const IS_LOADED = 'IS_LOADED';
```

```
import {
  IS_LOADING,
  IS_LOADED,
} from './constants';

console.log('IS_LOADED:', IS_LOADED);
```

Learning material

https://babeljs.io/learn-es2015/

Basics of React

React Native vs HTML

HTML	React Native
`<div>`	`<View`
`<p>`	`<Text>`
`<input>`	`<TextInput>`
`<button>`	`<TouchableOpacity>`

Stateless vs Statefull

```
class MyComponent extends
React.Component {
  render() {
    return (
     <Text>Hello World</Text>
    )
  }
}
```

```
const MyComponent = () => (
  <Text>Hello World</Text>
)
```

```
<MyComponent />
```

Props

```
class MyComponent extends React.Component {
  render() {
    return (
     <Text>{this.props.name}</Text>
    )
  }
}
```

```
const MyComponent = ({name}) => (
  <Text>{name}</Text>
)
```

```
<MyComponent name="Vladimir"/>
```

State

```
import { View, Text } from ‘react-native’

class MyComponent extends React.Component {

    state={
      counter: 0
    }

  render() {
    return (
      <View>
       <Text>{counter}</Text>
       <Button onPress={() => this.setState({ counter: this.state.counter + 1 })}/>
      </View>
    )
  }
}
```

Lifecycle methods

```
import { View, Button, Text } from ‘react-native’

class MyComponent extends React.Component {

    state={
      counter: 0
    }

 componentDidMount(){
 // when component is mounted
 }

  render() {
    return (
      <View>
       <Text>{counter}</Text>
       <Button onPress={() => this.setState({ counter: this.state.counter + 1 })} />
      </View>
    )
  }
}
```

Conditional rendering

```
export default class App extends Component {

  state = {
    isChatsScreen: true
  }

  renderScreen() {
    return this.state.isChatsScreen ? <ChatsScreen /> : <ChatViewScreen />
  }

  render() {
    return (
      <View style={styles.container}>
        { this.renderScreen() }
        <View>
          <Button title="Switch Screen" onPress={() => {
              this.setState({
                isChatsScreen: !this.state.isChatsScreen
              })
            }}
          />
        </View>
      </View>
    );
  }
}
```

Create your first React Native app

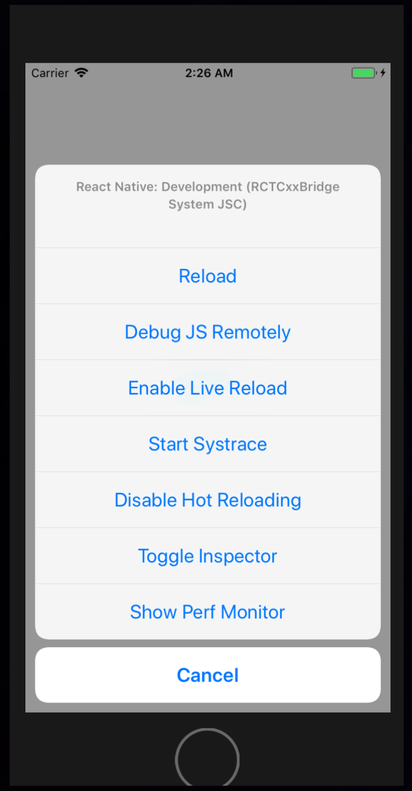
Follow the instructions

https://goo.gl/1SXFb6

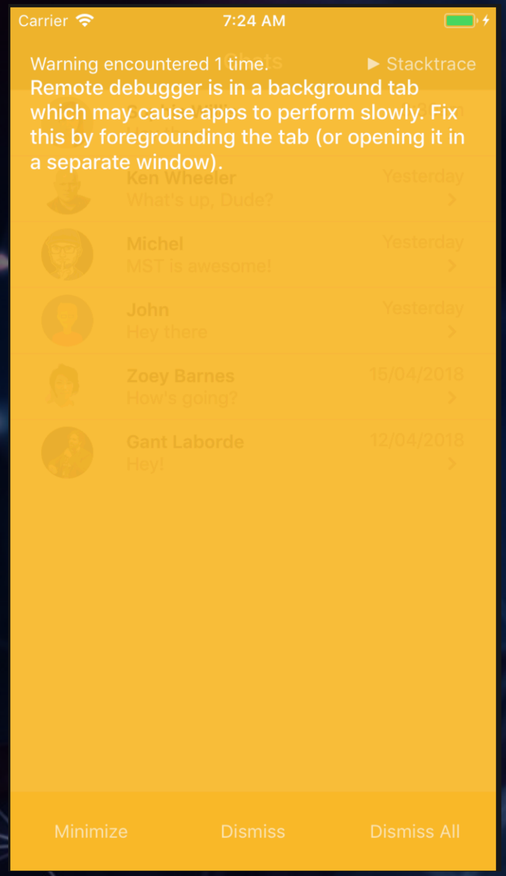
-szkolenie-

Developer tools and debugging

Debug menu



YellowBoxes



Redboxes


```
react-native log-ios
react-native log-android
```

```
eosubscriptionsd) <Notice>: Service only ran for 0 seconds. Pushing respawn out by 10 seconds.
Apr 21 02:24:03 Vladimirs-MacBook-Pro-2 com.apple.CoreSimulator.SimDevice.B67103AA-B6D8-4E86-90E4-944601D21A70[26436] (com.apple.sec
urityuploadd) <Notice>: Service only ran for 6 seconds. Pushing respawn out by 4 seconds.
Apr 21 02:24:10 Vladimirs-MacBook-Pro-2 com.apple.CoreSimulator.SimDevice.B67103AA-B6D8-4E86-90E4-944601D21A70[26436] (com.apple.vid
eosubscriptionsd[96238]) <Warning>: Service exited with abnormal code: 1
Apr 21 02:24:10 Vladimirs-MacBook-Pro-2 com.apple.CoreSimulator.SimDevice.B67103AA-B6D8-4E86-90E4-944601D21A70[26436] (com.apple.vid
eosubscriptionsd) <Notice>: Service only ran for 0 seconds. Pushing respawn out by 10 seconds.
^C
~/dev/VladDev/Conferences/DevExperience/RNWhatsAppClone(step-1*) »                    vladimirnovick@Vladimirs-MacBook-Pro-2
```

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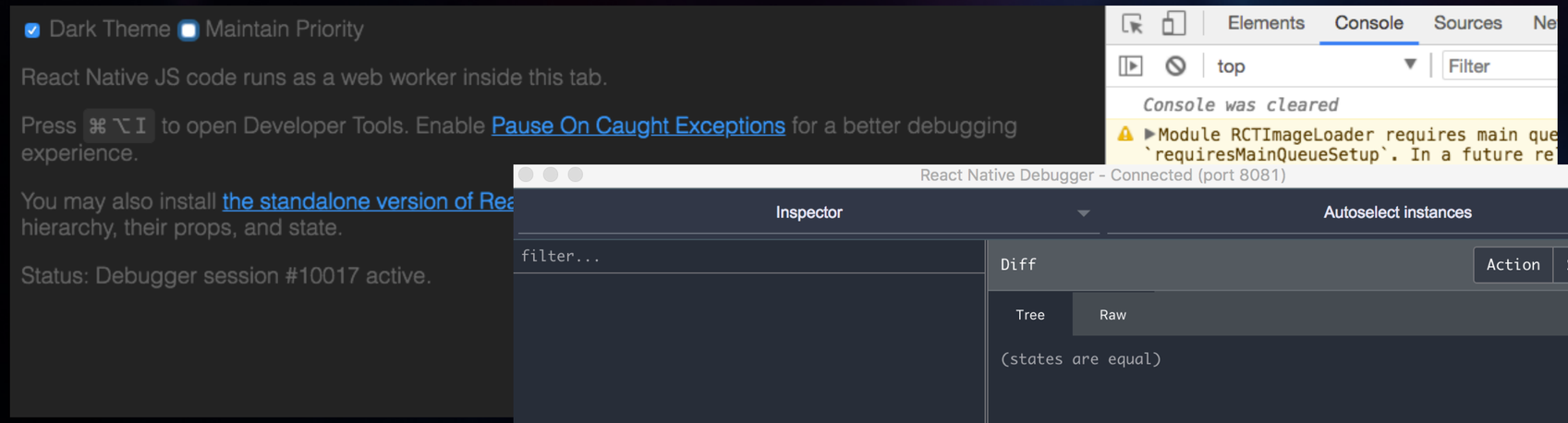
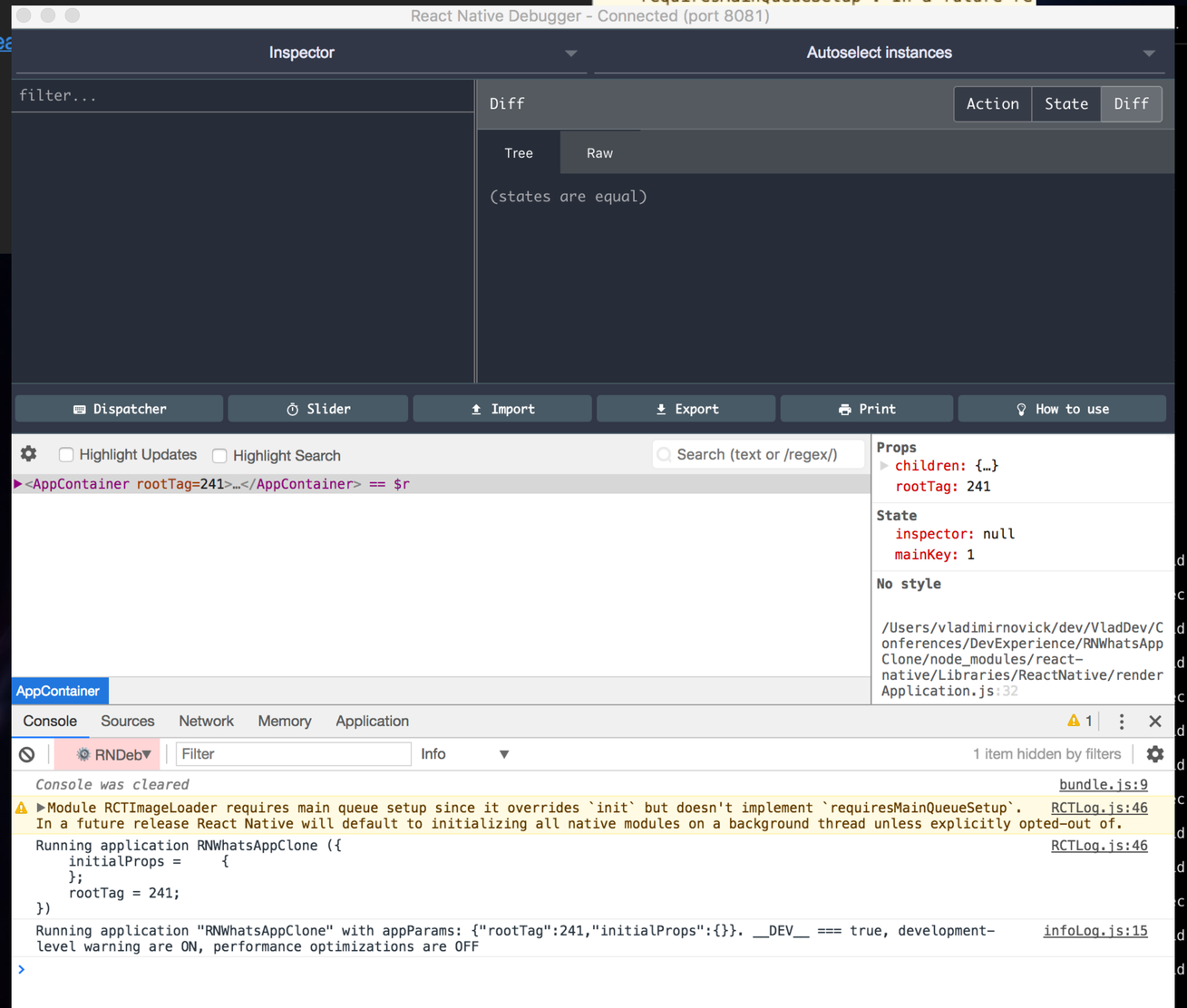
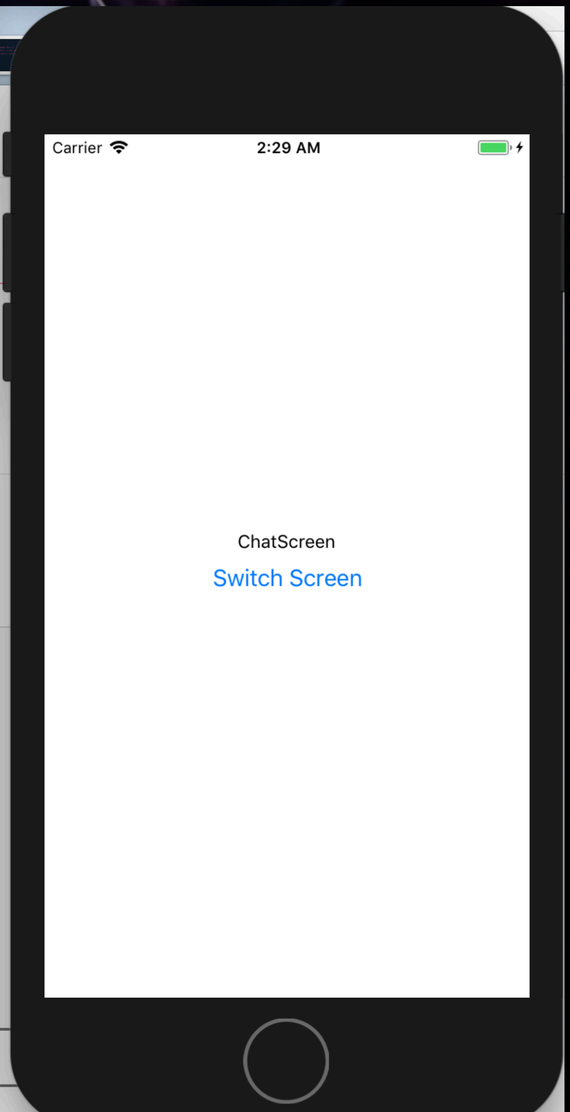
Chrome dev tools



React Native debugger





Styling React Native components

The style names and values usually match how CSS works on the web, except names are written using camel casing, e.g `backgroundColor` rather than `background-color`.

There are no **px/rem/em/vw** units. Only **numeric** values and sometimes **%**

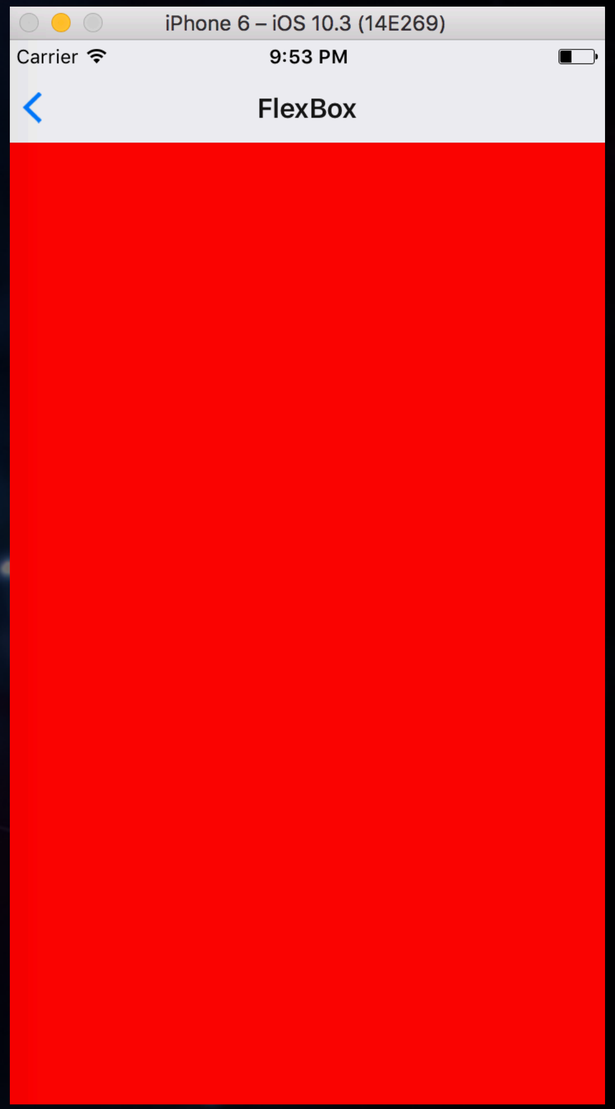
```
const styles = StyleSheet.create({
  container: {
    flex: 1,
    justifyContent: 'center',
    alignItems: 'center'
  },
  welcome: {
    color: 'white',
    fontSize: 20,
    textAlign: 'center',
    margin: 10,
    width: '80%'
  },
  instructions: {
    color: 'white',
    textAlign: 'center',
    marginBottom: 5,
  },
  workshopInstructions: {
    alignItems: 'flex-start'
  }
});
```

```
<View style={styles.container}>
  { this.renderScreen() }
  <View>
    <Button title="Switch Screen" onPress={() => {
        this.setState({
          isChatsScreen: !this.state.isChatsScreen
        })
      }}
    />
  </View>
</View>
```

we can pass conditional statements and functions to style prop too as soon as they return an object

FlexBox

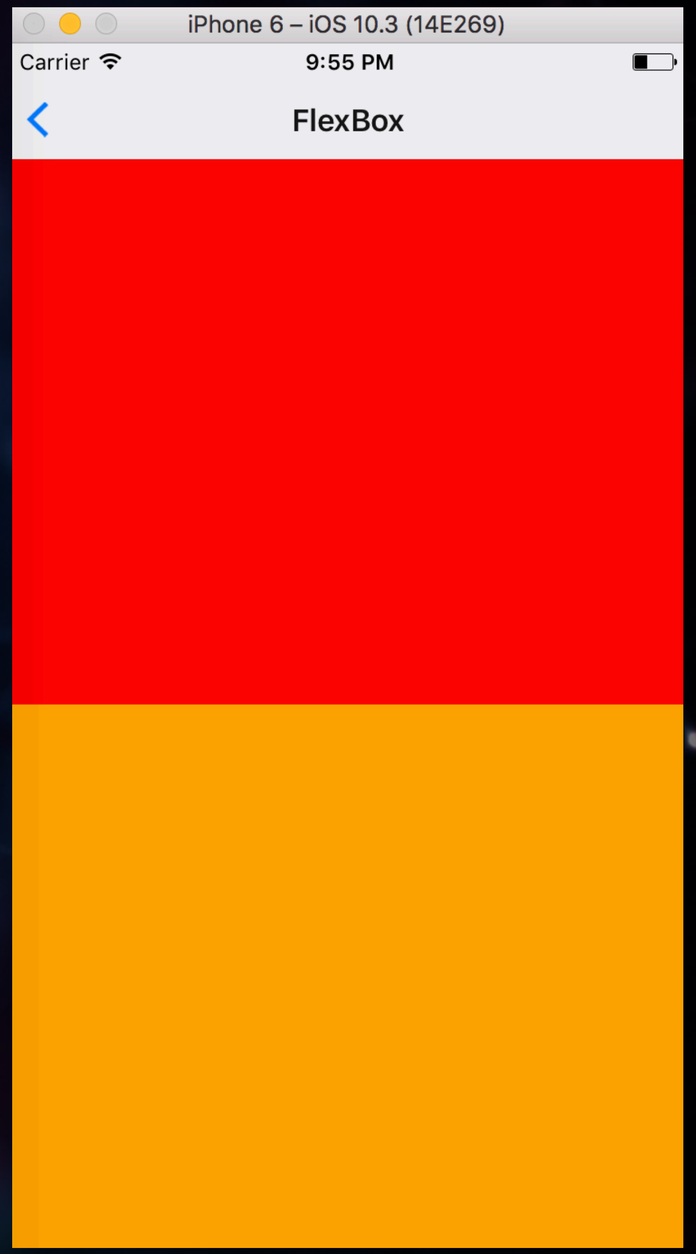
```
container: {
  flex: 1,
},
box1: {
  flex: 1,
  backgroundColor: 'red',
},

<View style={styles.container}>
  <View style={styles.box1} />
</View>
```



https://flexboxfroggy.com/

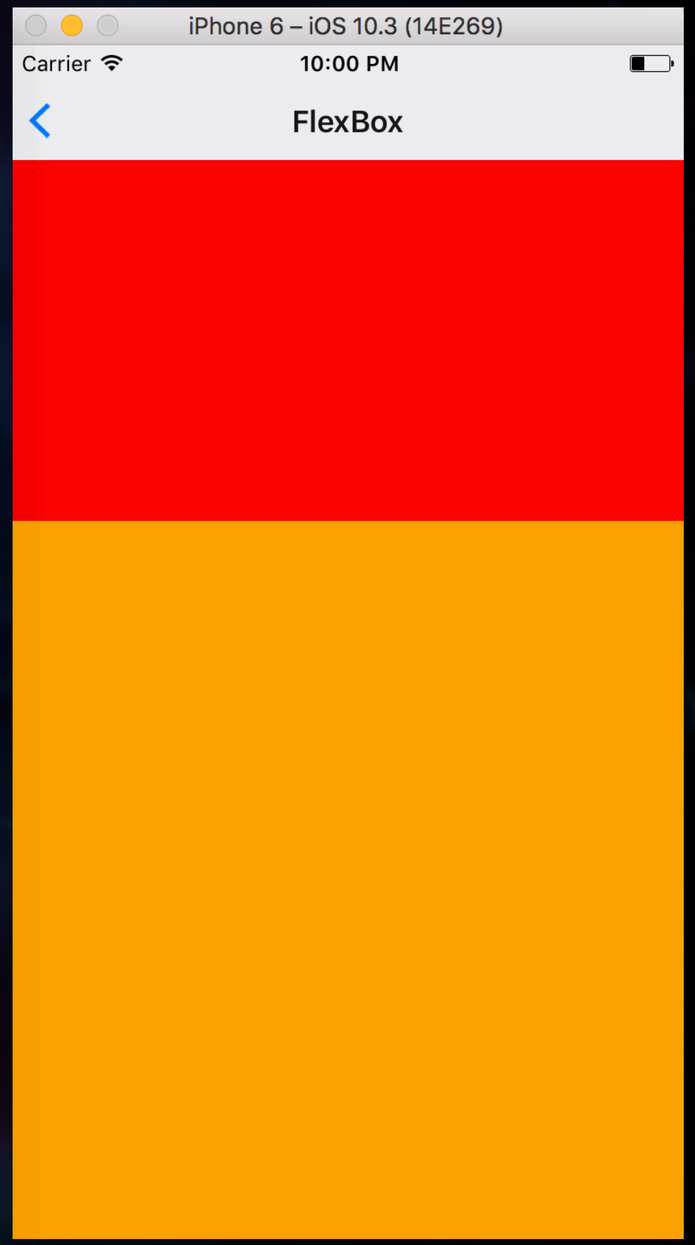
FlexBox

```
container: {
  flex: 1,
},
box1: {
  flex: 1,
  backgroundColor: 'red',
},
box2: {
  flex: 1,
  backgroundColor: 'orange',
},

<View style={styles.container}>
  <View style={styles.box1} />
  <View style={styles.box2} />
</View>
```

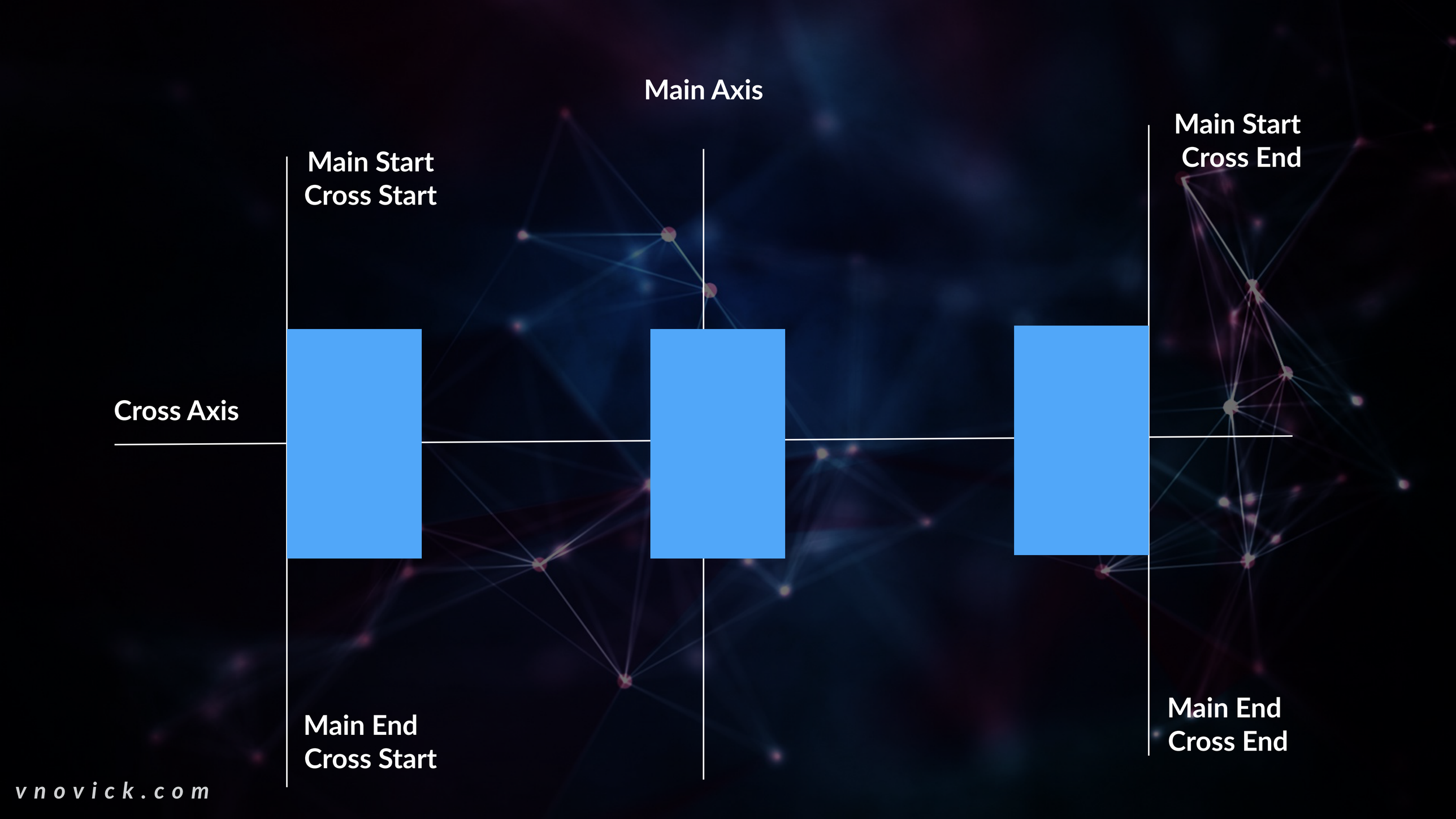


FlexBox

```
container: {
  flex: 1,
},
box1: {
  flex: 1,
  backgroundColor: 'red',
},
box2: {
  flex: 2,
  backgroundColor: 'orange',
},
```



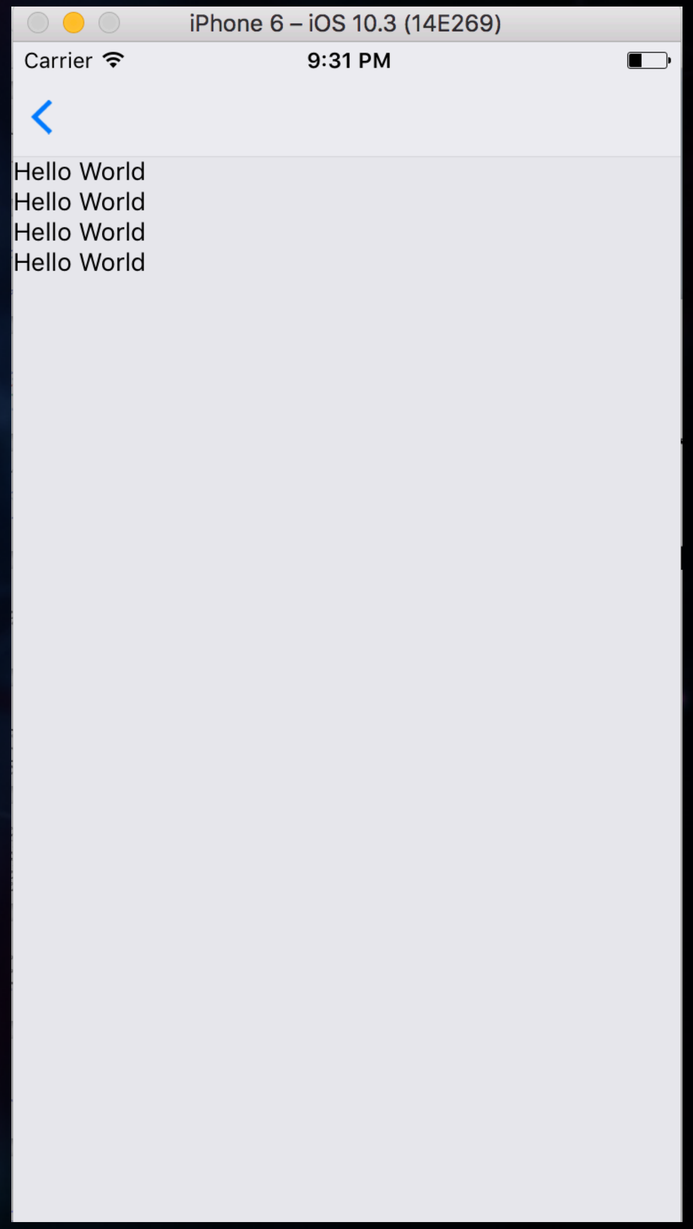

Main Axis
Main Start
Cross Start
Main Start
Cross End
Cross Axis
Main End
Cross Start
Main End
Cross End


Main Axis
Main Start
Cross Start
Main Start
Cross End
Cross Axis
Main End
Cross Start
Main End
Cross End


Main Axis
Main Start
Cross Start
Main Start
Cross End
Cross Axis
Main End
Cross Start
Main End
Cross End

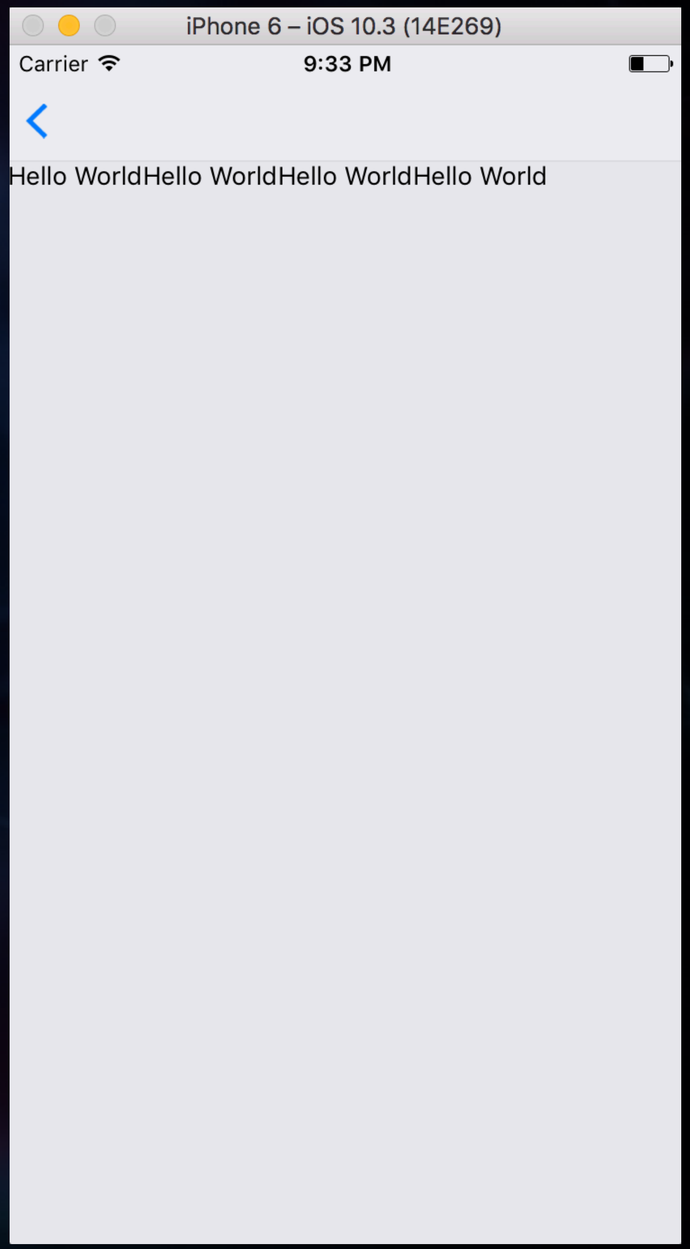
FlexBox

```
container: {
  flex: 1,
}

<View style={styles.container}>
  <Text>Hello World</Text>
  <Text>Hello World</Text>
  <Text>Hello World</Text>
  <Text>Hello World</Text>
</View>
```



FlexBox

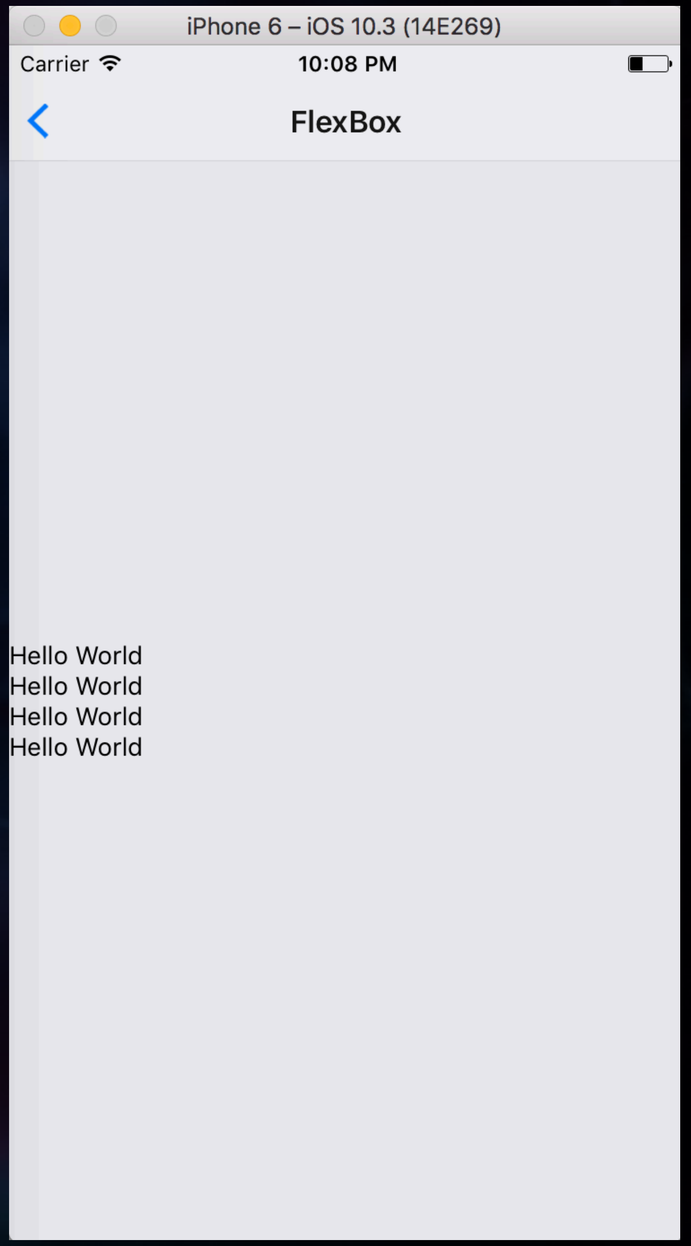
```
container: {
  flex: 1,
  flexDirection: 'row'
},
```



FlexBox

`justifyContent` determines the distribution of children along the main axis.

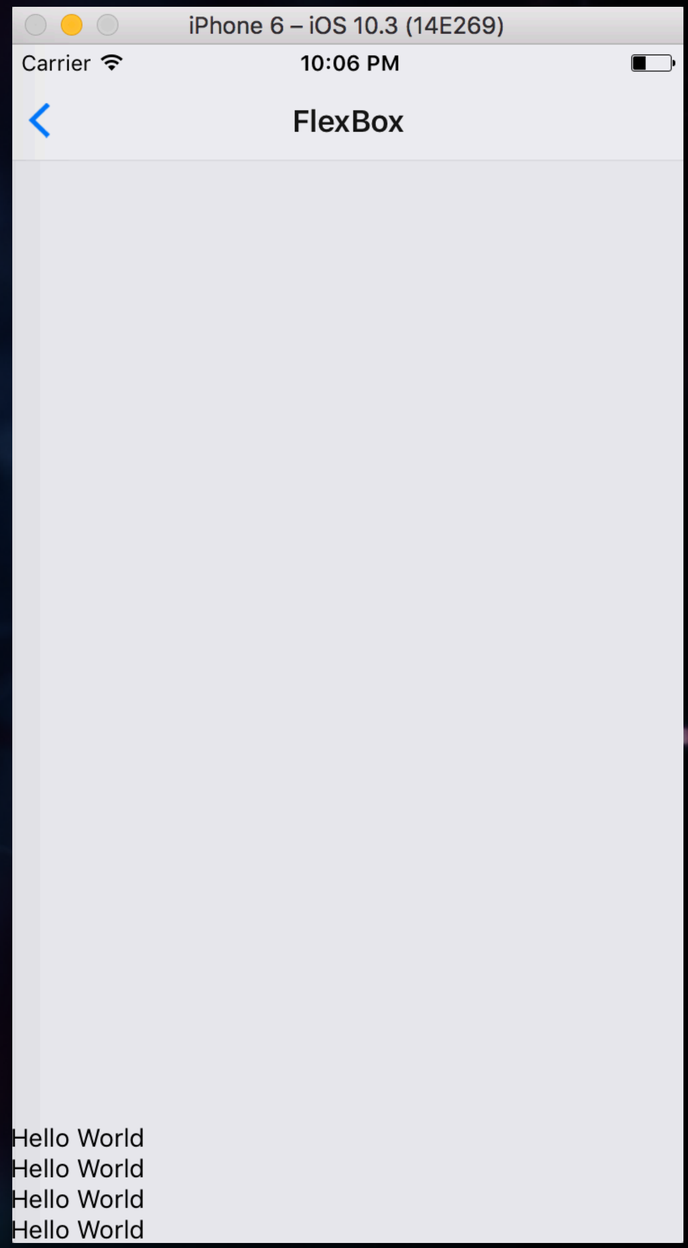
```
container: {
  flex: 1,
  justifyContent: 'center',
},
```



FlexBox

`justifyContent` determines the distribution of children along the main axis.

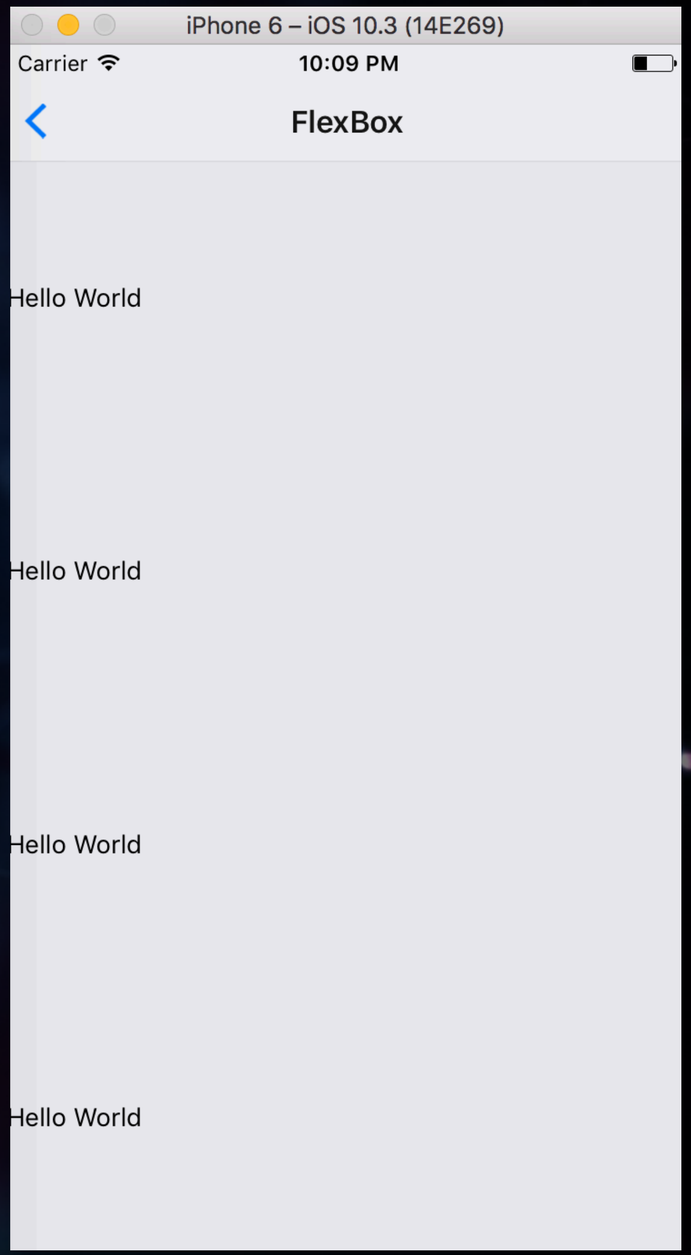
```
container: {
  flex: 1,
  justifyContent: ‘flex-end’,
},
```



FlexBox

`justifyContent` determines the distribution of children along the main axis.

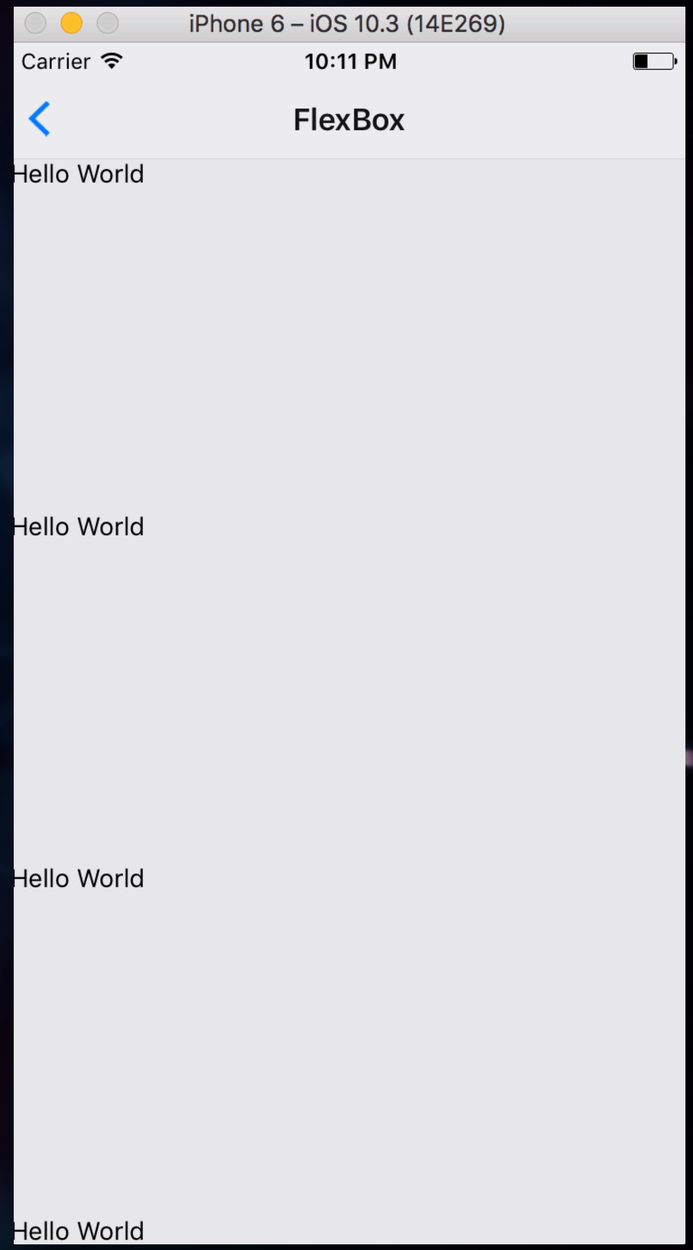
```
container: {
  flex: 1,
  justifyContent: ‘space-around’,
},
```



FlexBox

`justifyContent` determines the distribution of children along the main axis.

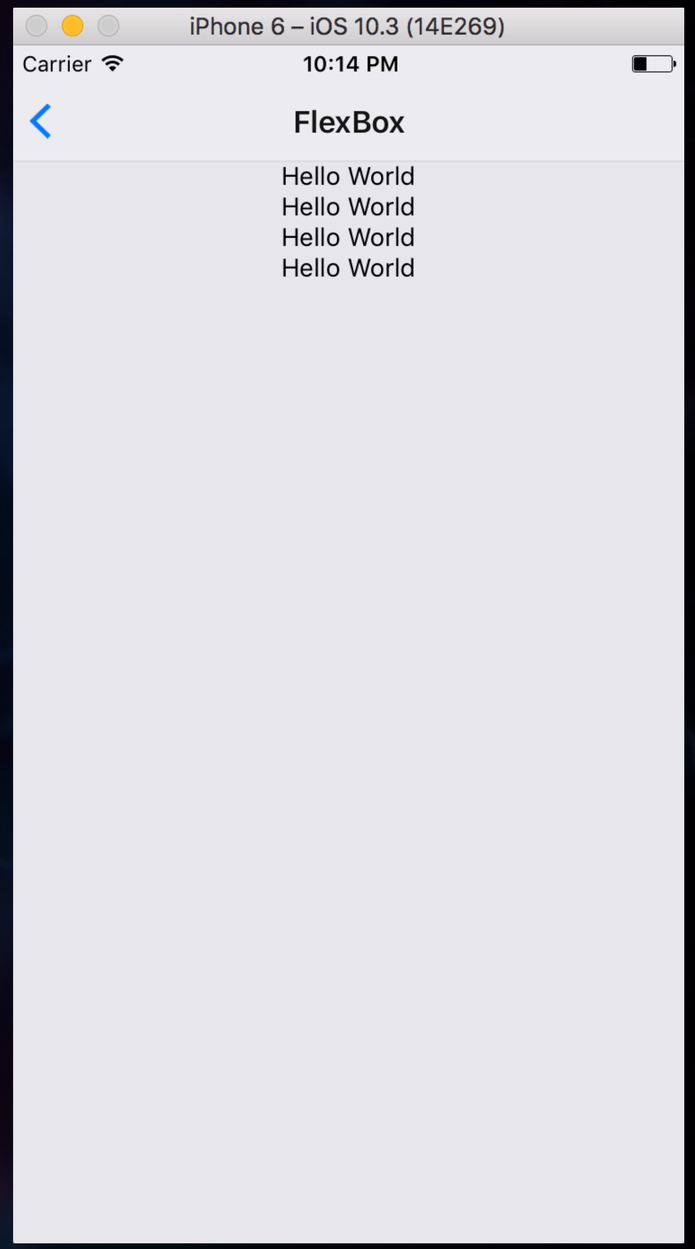
```
container: {
  flex: 1,
  justifyContent: 'space-between',
},
```



FlexBox

`alignItems` determines the distribution of children along the cross axis. Default stretch (`flex-start`, `center`, `flex-end`, and `stretch`)

```
container: {
  flex: 1,
  alignItems: ‘center’,
},
```



Images and SVG Icons in React Native

Images

Static Resources

```
<Image source={require('./my-icon.png')} />
```

iOS

```
<Image source={{uri: 'app_icon'}} style={{width: 40, height: 40}} />
```

Android

```
<Image source={{uri: 'asset:/app_icon.png'}} style={{width: 40, height: 40}} />
```

Network Images

```
<Image source={{uri: 'https://facebook.github.io/react/logo-og.png'}}
   style={{width: 400, height: 400}} />
```

Images

Data Uri

```
<Image
  style={{
    width: 51,
    height: 51,
    resizeMode: Image.resizeMode.contain,
  }}
  source={{
    uri:
      '...',
  }}
/>
```

Background

```
return (
  <ImageBackground source={...}>
    <Text>Inside</Text>
  </ImageBackground>
);
```

Icons

npm install react-native-vector-icons —save

react-native link

```
rnpm-install info Linking react-native-vector-icons ios dependency
rnpm-install info Platform 'ios' module react-native-vector-icons has been successfully linked
rnpm-install info Linking react-native-vector-icons android dependency
rnpm-install info Platform 'android' module react-native-vector-icons has been successfully linked
rnpm-install info Linking assets to ios project
rnpm-install WARN ERRGROUP Group 'Resources' does not exist in your Xcode project. We have created it automatical
rnpm-install info Linking assets to android project
rnpm-install info Assets have been successfully linked to your project
```

Icons

```
import Icon from 'react-native-vector-icons/MaterialIcons';


<Icon
  name="chat"
  color="#fff"
  size={23}
  style={{ padding: 5 }}
/>
```

https://oblador.github.io/react-native-vector-icons/

Lists

```
const people = [
  <Text>Chris</Text>,
  <Text>Amanda</Text>,
  <Text>Jason</Text>,
  <Text>Jennifer</Text>
]

return (
  <View>
    { people }
  </View>
);
```

```
render() {
  const people = ['Chris', 'Amanda', 'Jason', ‘Jennifer'];

  return (
    <ScrollView>
      { people.map(person => <Text>{person}</Text>) }
    </ScrollView>
  );
}
```

Lists

```
renderPerson = (people) => {
  return people.map((person, index) => {
    return (
      <Text key={index}>{person}</Text>
    );
  });
}

render() {
  const people = ['Chris', 'Amanda', 'Jason', 'Jennifer'];
  return (
    <ScrollView>
      { this.renderPerson(people) }
    </ScrollView>
  );
}
```

FlatList

```
state = {
  data: [{ name: 'Chris' }, { name: 'Amanda' }],
}

renderItem = ({ item }) => {
  return <Text>{item.name}</Text>
}

render() {
  return (
    <View>
     <FlatList
          data={this.state.data}
          renderItem={this.renderItem}
          keyExtractor={item => item.name}
          ItemSeparatorComponent={() => <View style={styles.divider} />}
          refreshing={this.state.refreshing}
          onRefresh={this.onRefresh}
        />
    </View>
  );
}
```

Follow the instructions

https://goo.gl/bYt8iS

Building navigation workflow

react-navigation

StackNavigator

TabNavigator

DrawerNavigator

```
import { createStackNavigator, createAppContainer } from "react-navigation";
import { ChatsScreen, ChatViewScreen } from './src/screens'

const AppNavigator = createStackNavigator({
  chatsScreen: {
    screen: ChatsScreen
  },
  chatView: {
    screen: ChatViewScreen
  }
},{
  initialRouteName: 'chatsScreen',
  navigationOptions: {
    headerStyle: {
      backgroundColor: '#006655',
    },
    headerTintColor: '#fff',
    headerTitleStyle: {
      fontWeight: 'bold',
    },
  }
});

const RootNavigator = createAppContainer(AppNavigator);
```

Navigation options

```
static navigationOptions = ({ navigation }) => {
  return {
    title: navigation.state.params.title,
    headerLeft: (
      <Icon name="chevron-left"
        size={40}
        color="#ffffff"
        onPress={() => navigation.goBack() }
      />)
  }
}
render() {
  return (
    <View>
      <Text> ChatViewScreen </Text>
    </View>
  )
}
```

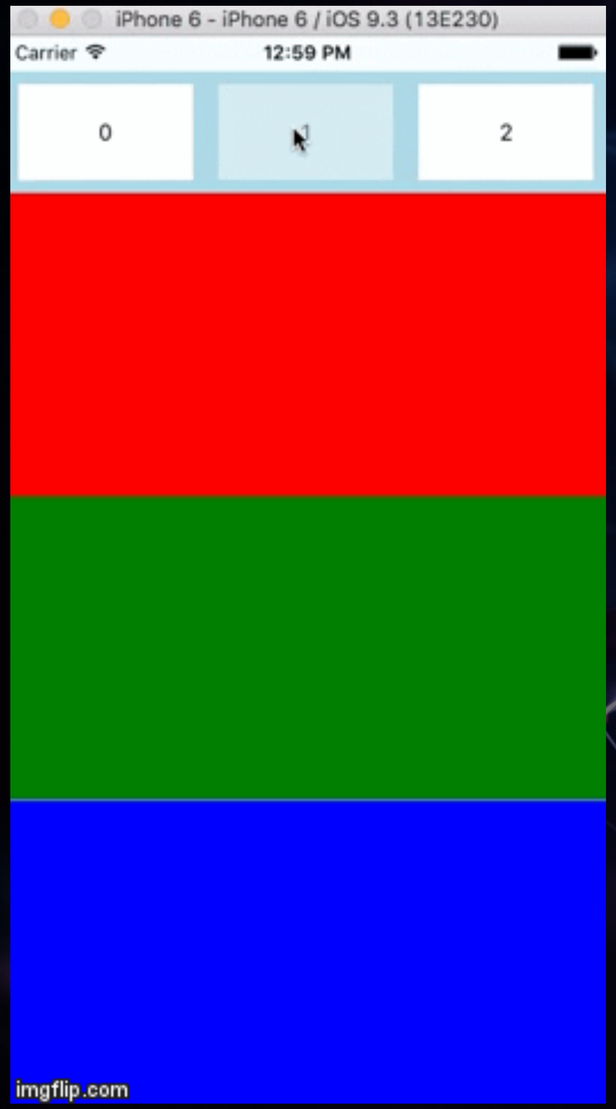
Input and Keyboard

```
<TextInput
  style={styles.composeText}
  value={this.state.text}
  onChangeText={(text) => this.setState({text})}
  onSubmitEditing={this.submit}
  editable = {true}
  maxLength = {40}
/>


keyboardVerticalOffset = Platform.OS === 'ios' ? 60 : 0


<KeyboardAvoidingView
                behavior={Platform.OS === 'ios' ? 'padding' : null}
                keyboardVerticalOffset={this.keyboardVerticalOffset}
                style={styles.container}>
 { /*/ Here goes keyboard aware View with TextInput /*/}
</KeyboardAvoidingView>
```

Follow the instructions

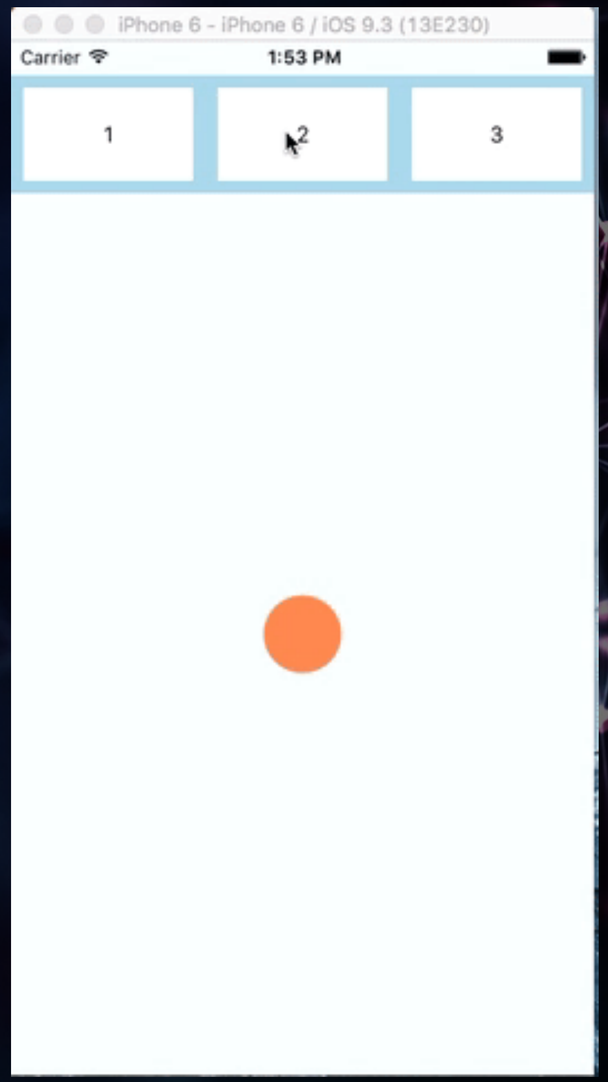
https://goo.gl/2XyqKe

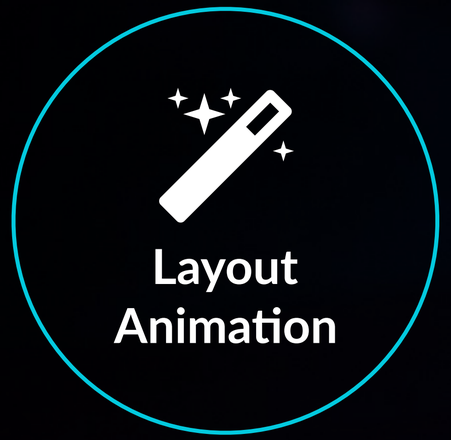
Animations



Layout Animation

Animated



	Pros	Cons
 **Layout Animation**	✔ Applied to all style properties of component ✔ No need for specific values (heights/ widths)	✔ Less configurable ✔ Animates everything on next render
 **Animated**	✔ Extremely configurable ✔ Can target specific components	✔ Uses requestAnimationFrame by default ✔ For complex computation animations can stutter

LayoutAnimation

Triggers animations on next render

```
componentWillUpdate() {
  LayoutAnimation.configureNext(LayoutAnimation.Presets.spring);
}
```


Animated

- Import Animated

```
import { Animated } from 'react-native';
```

- Create animated value within the class

```
animatedMargin = new Animated.Value(0);
```

- Declare Animated component in render or create your own

```
<Animated.View />

const AnimatedOpacityWrapper = createAnimatableComponent(TouchableOpacity)
```

- Add animated value as style

```
<Animated.View style={{ marginTop: this.animatedMargin }} />
```

- Interpolate on value if needed

```
<AnimatedOpacityWrapper
  style={[styles.chatItem, {
    opacity: this.animatedValue,
    transform: [{
      translateX: this.animatedValue.interpolate({
        inputRange: [0, 1],
        outputRange: [-100, 0]
      })
    }]
  }]}
```

- Trigger animation

```
animate = () => {
  Animated.timing(
    this.animatedMargin,
    {
      toValue: 1,
      duration: 1700,
    }
  ).start()
}
```

Follow the instructions

https://goo.gl/BrMwzp

Connecting our app to API

Use any server of your choice

Use fetch with async/await or Promises

Use setState or state management lib

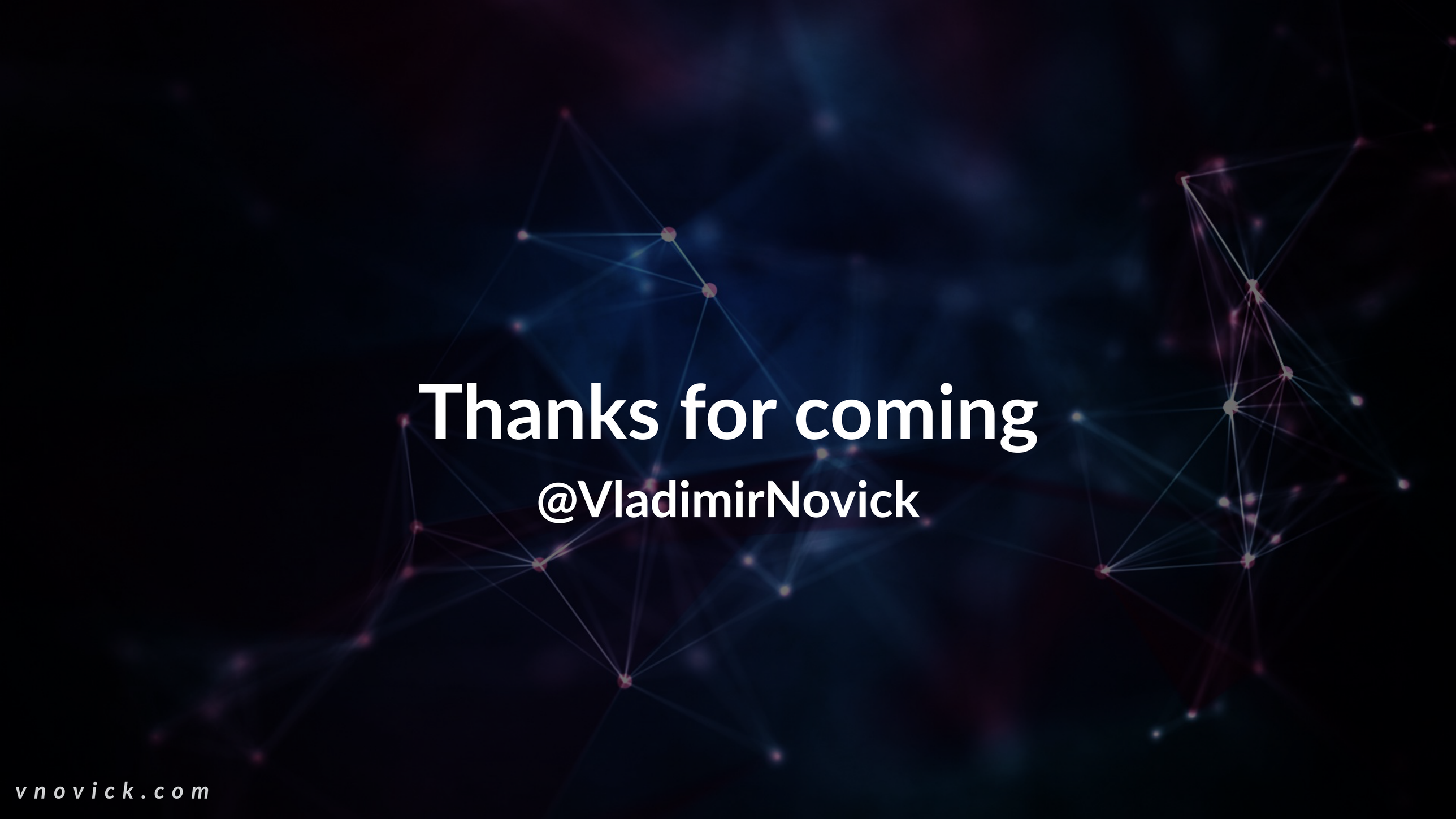
Follow the instructions

https://goo.gl/tGDDV4

Storing data for offline usage

```
AsyncStorage.getItem('userId').then((userId) => {
  alert(`Username id: ${userId}`)
  if (!userId) {
    AsyncStorage.setItem('userId', `id-${new Date().getMilliseconds()}`)
  }
})
```

```
AsyncStorage.getItem('userId').then(userId => {
  this.setState({
    userId
  })
})
```


Thanks for coming
@VladimirNovick