STRV

REACT & REACT NATIVE

Daniel Kijkov, Vladimir Vanek, Josef Zavisek

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Overview

- introducing React & React Native

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- preparation of environment

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- introducing React & React Native
- preparation of environment
- simple chat app from scratch

What is REACT NATIVE?

- library for building native mobile apps on Android and iOS

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- library for building native mobile apps on Android and iOS

“Write once, run anywhere”

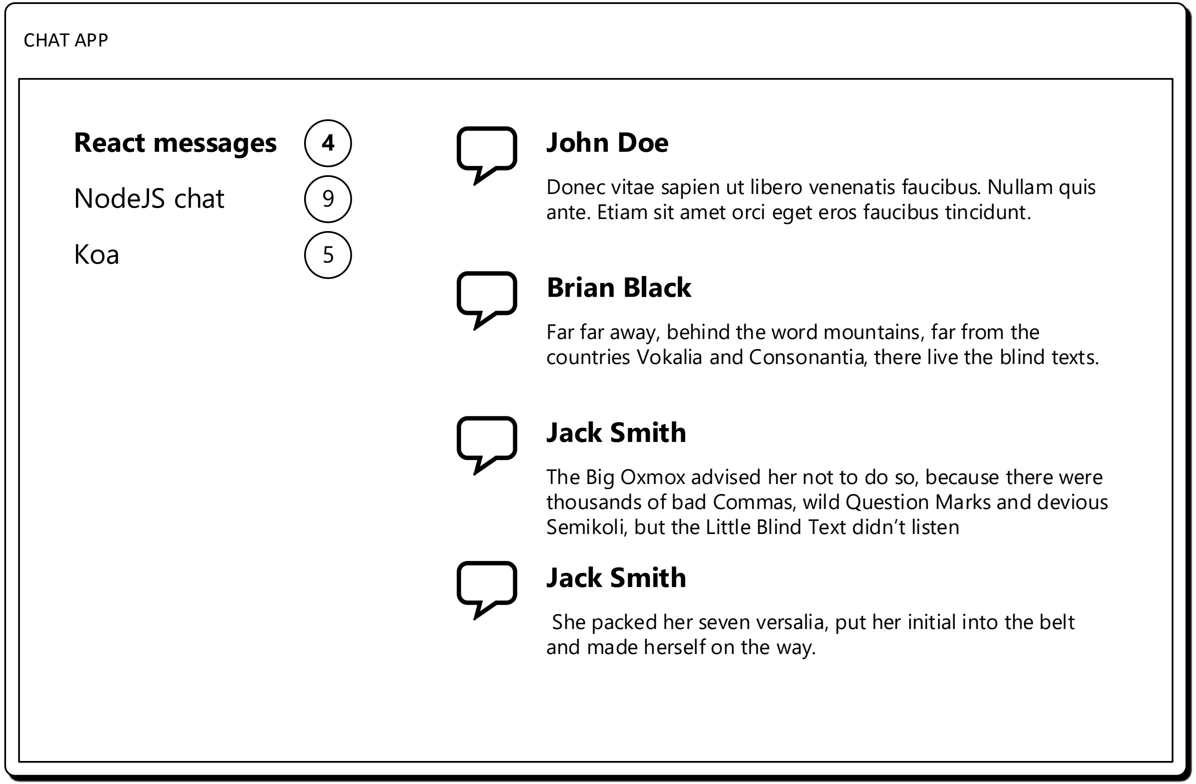
↓

“Learn once, write anywhere”

What is REACT?

- library for building user web user interfaces
- released 2013
- goes against some practices that we were used to

Components in apps



CHAT APP

React messages	**4**
NodeJS chat	9
Koa	5

John Doe

Donec vitae sapien ut libero venenatis faucibus. Nullam quis ante. Etiam sit amet orci eget eros faucibus tincidunt.

Brian Black

Far far away, behind the word mountains, far from the countries Vokalia and Consonantia, there live the blind texts.

Jack Smith

The Big Oxmox advised her not to do so, because there were thousands of bad Commas, wild Question Marks and devious Semikoli, but the Little Blind Text didn’t listen

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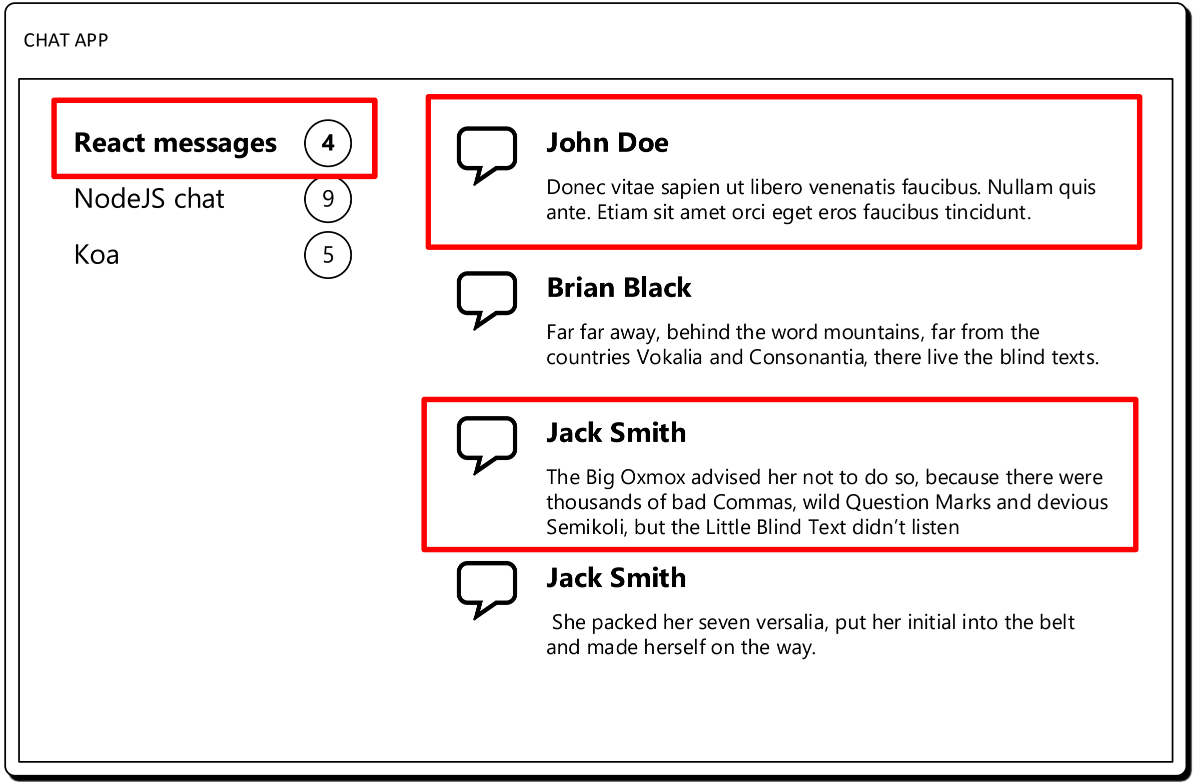
She packed her seven versalia, put her initial into the belt and made herself on the way.

Components in apps



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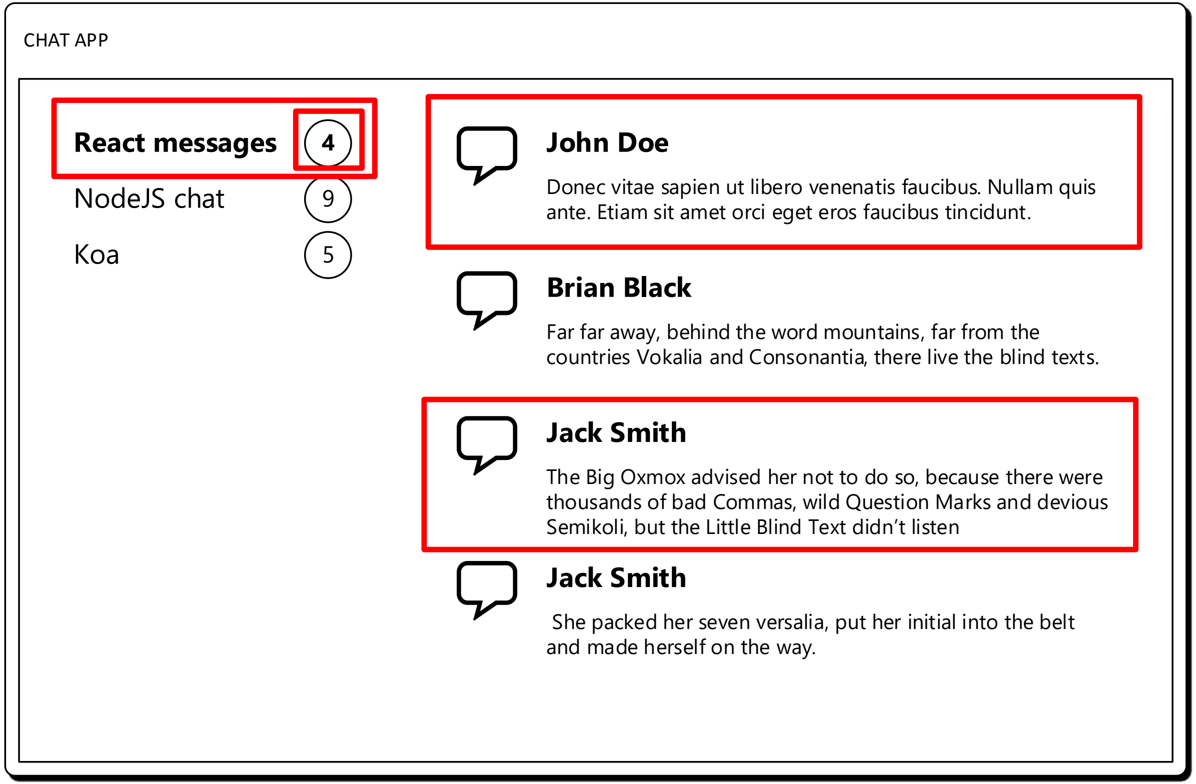

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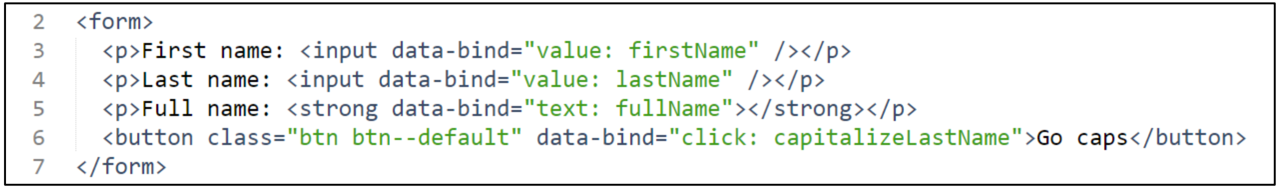
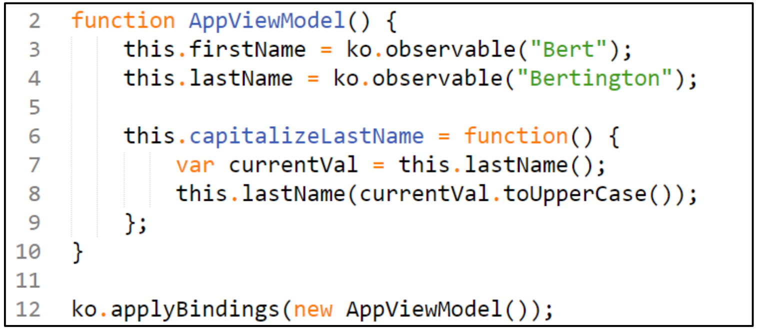
Common way in MVC frameworks

HTML template



```html
<form>
  <p>First name: <input data-bind="value: firstName" /></p>
  <p>Last name: <input data-bind="value: lastName" /></p>
  <p>Full name: <strong data-bind="text: fullName"></strong></p>
  <button class="btn btn--default" data-bind="click: capitalizeLastName">Go caps</button>
</form>
```

Javascript

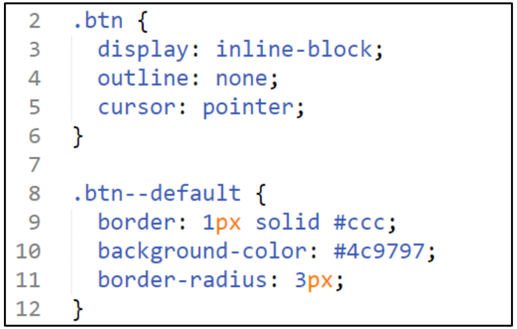


```javascript
function AppViewModel() {
    this.firstName = ko.observable("Bert");
    this.lastName = ko.observable("Bertington");

    this.capitalizeLastName = function() {
        var currentVal = this.lastName();
        this.lastName(currentVal.toUpperCase());
    };
}

ko.applyBindings(new AppViewModel());
```

CSS



```css
.btn {
  display: inline-block;
  outline: none;
  cursor: pointer;
}

.btn--default {
  border: 1px solid #ccc;
  background-color: #4c9797;
  border-radius: 3px;
}
```

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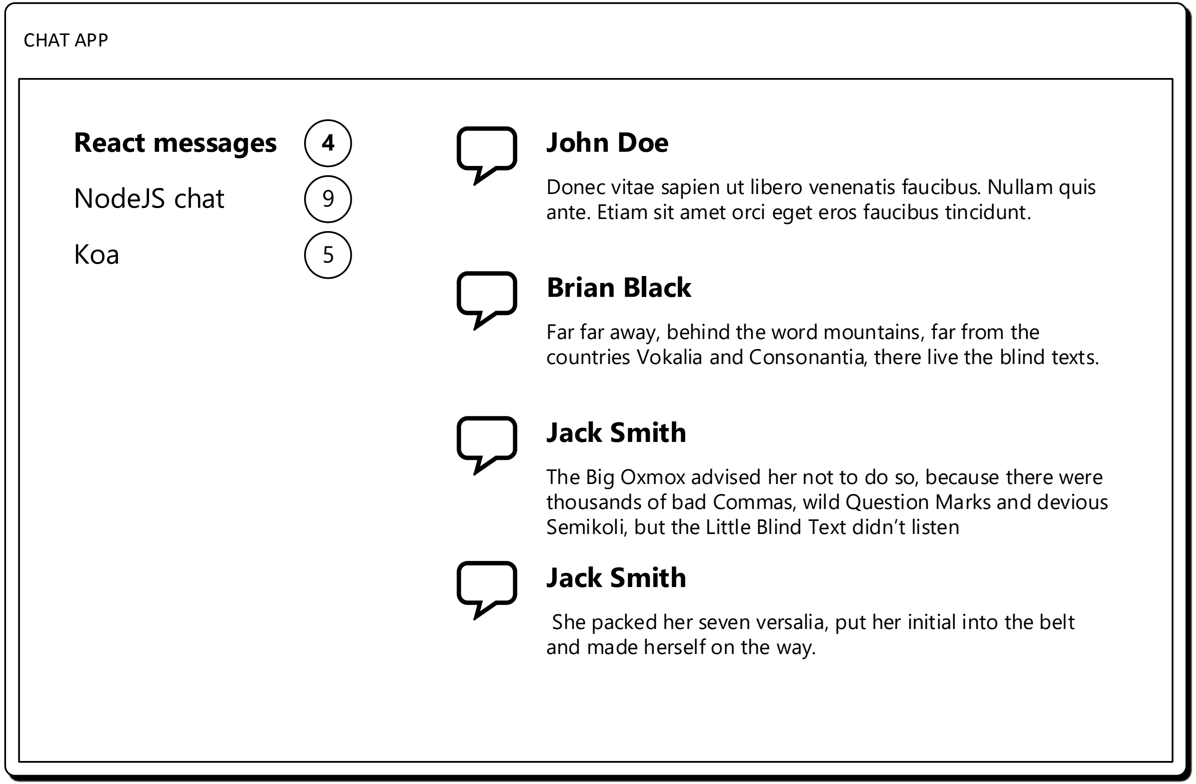
When trying to change unpredictable code

Issues with MVC libraries



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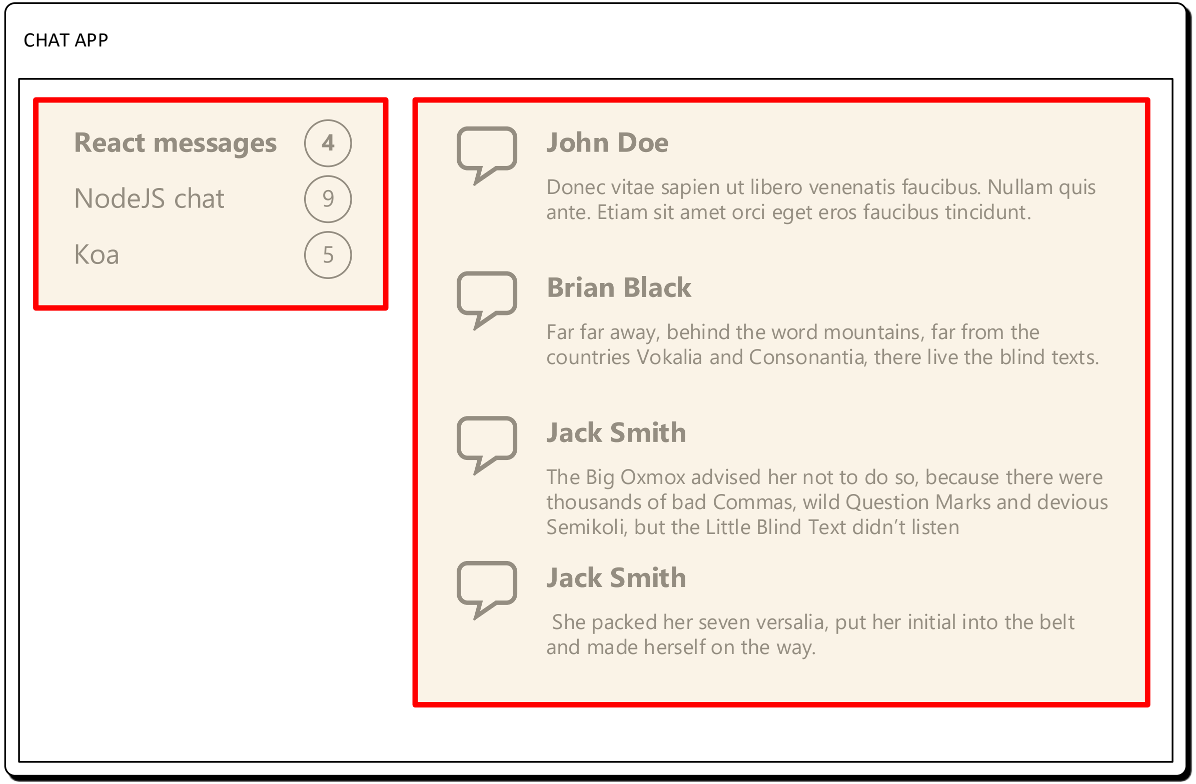

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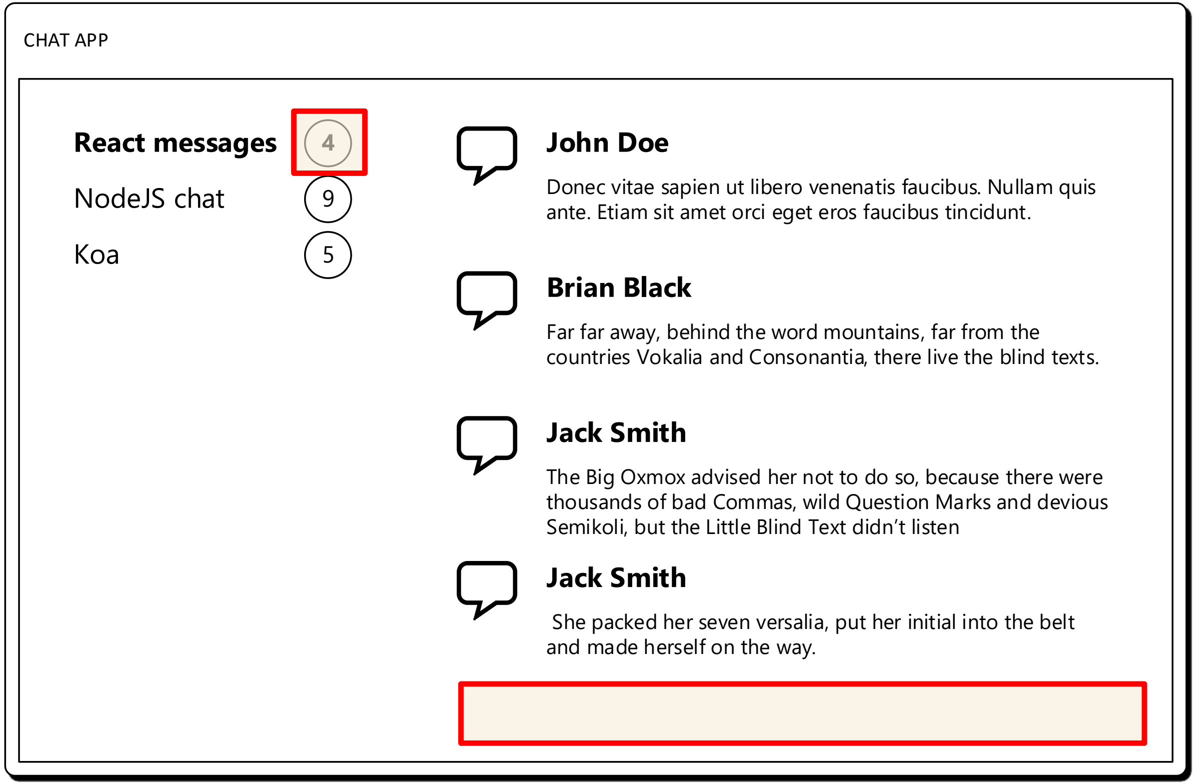

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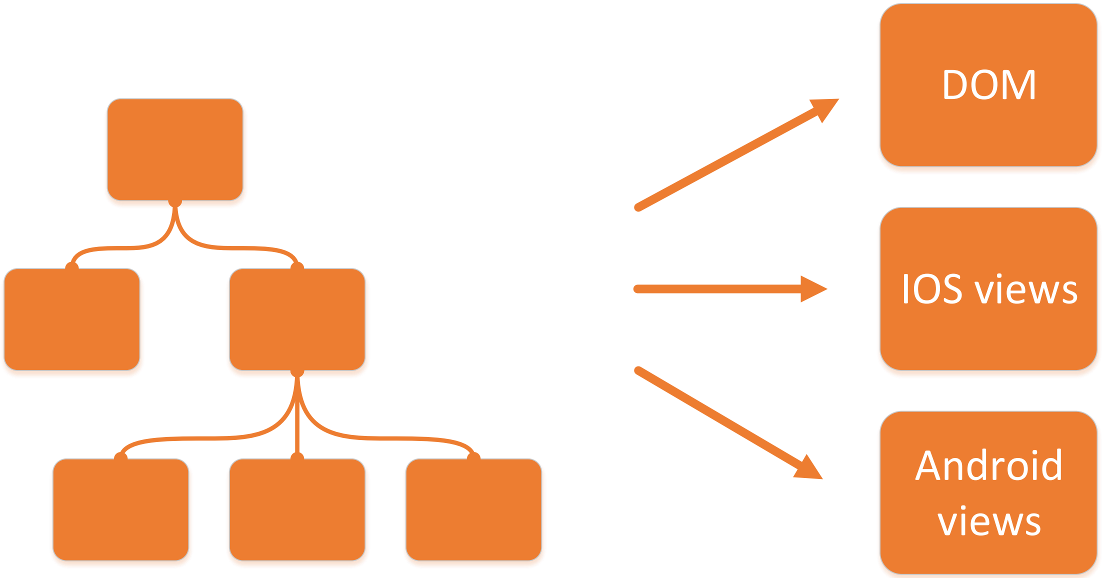
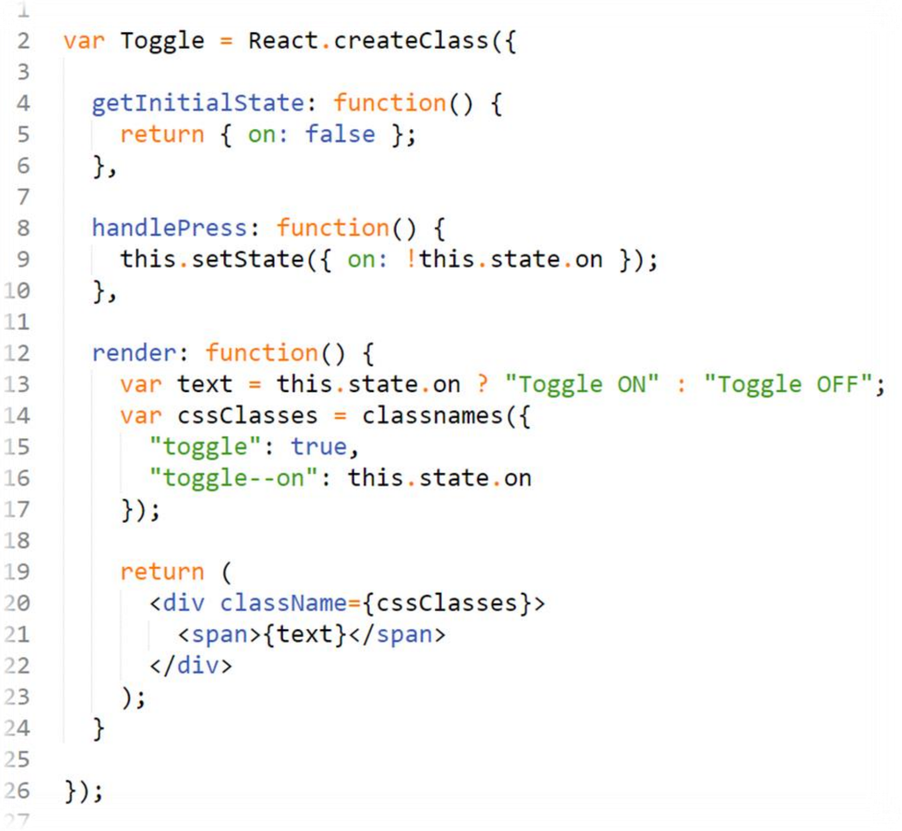
React components

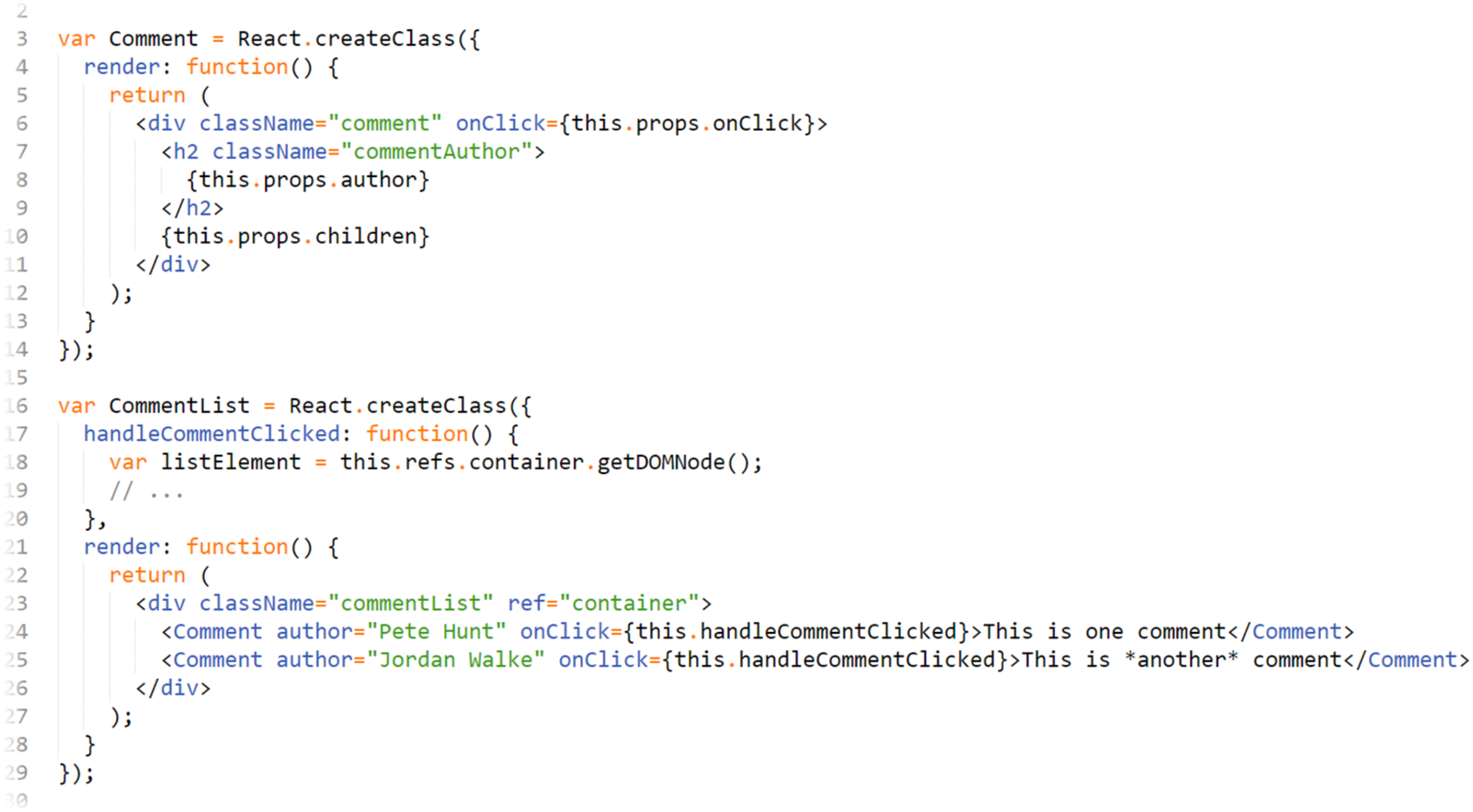


What does the component look in REACT?



```
var Toggle = React.createClass({

  getInitialState: function() {
    return { on: false };
  },

  handlePress: function() {
    this.setState({ on: !this.state.on });
  },

  render: function() {
    var text = this.state.on ? "Toggle ON" : "Toggle OFF";
    var cssClasses = classnames({
      "toggle": true,
      "toggle--on": this.state.on
    });

    return (
      <div className={cssClasses}>
        <span>{text}</span>
      </div>
    );
  }

});
```

Component parts and composition



```
var Comment = React.createClass({
  render: function() {
    return (
      <div className="comment" onClick={this.props.onClick}>
        <h2 className="commentAuthor">
          {this.props.author}
        </h2>
        {this.props.children}
      </div>
    );
  }
});

var CommentList = React.createClass({
  handleCommentClicked: function() {
    var listElement = this.refs.container.getDOMNode();
    // ...
  },
  render: function() {
    return (
      <div className="commentList" ref="container">
        <Comment author="Pete Hunt" onClick={this.handleCommentClicked}>This is one comment</Comment>
        <Comment author="Jordan Walke" onClick={this.handleCommentClicked}>This is *another* comment</Comment>
      </div>
    );
  }
});
```

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REACT NATIVE

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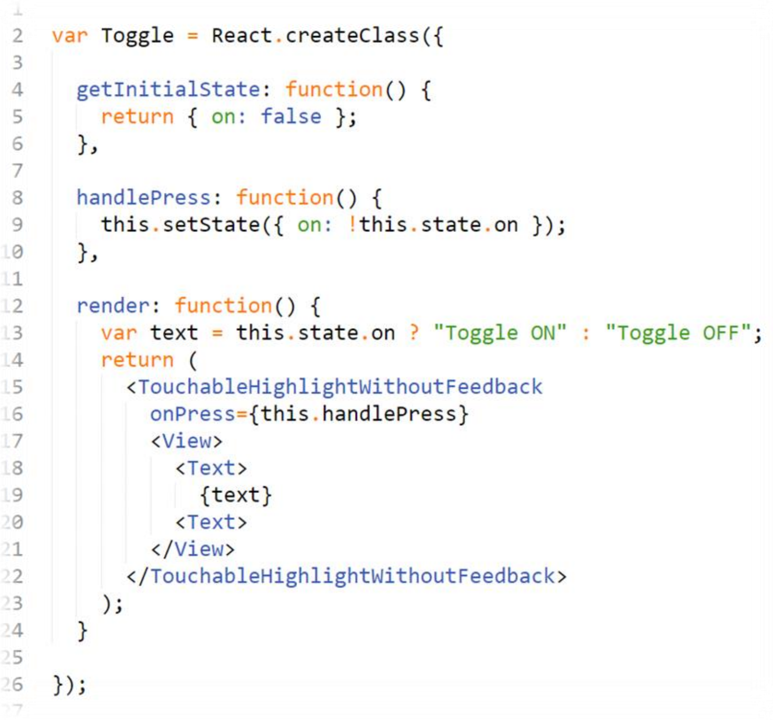
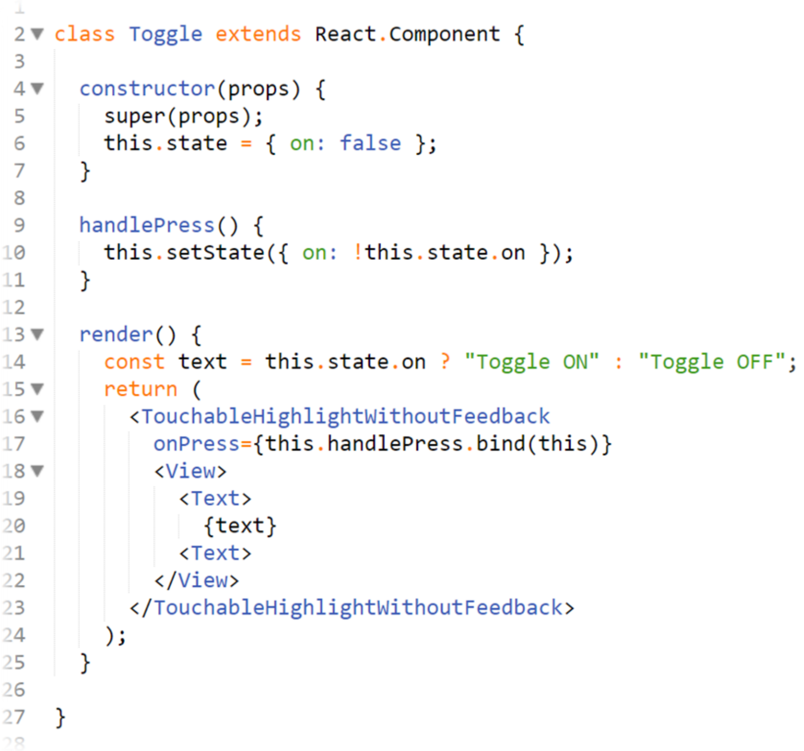
What does the component look in REACT NATIVE?

Older syntax



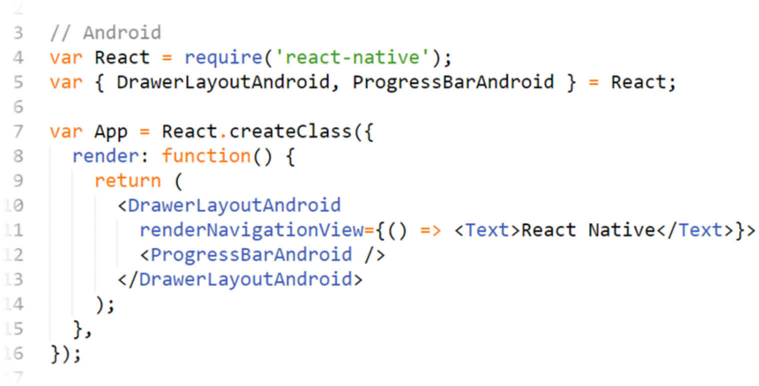
```
var Toggle = React.createClass({

  getInitialState: function() {
    return { on: false };
  },

  handlePress: function() {
    this.setState({ on: !this.state.on });
  },

  render: function() {
    var text = this.state.on ? "Toggle ON" : "Toggle OFF";
    return (
      <TouchableHighlightWithoutFeedback
        onPress={this.handlePress}
        <View>
          <Text>
            {text}
          <Text>
        </View>
      </TouchableHighlightWithoutFeedback>
    );
  }

});
```

EcmaScript 2015 syntax

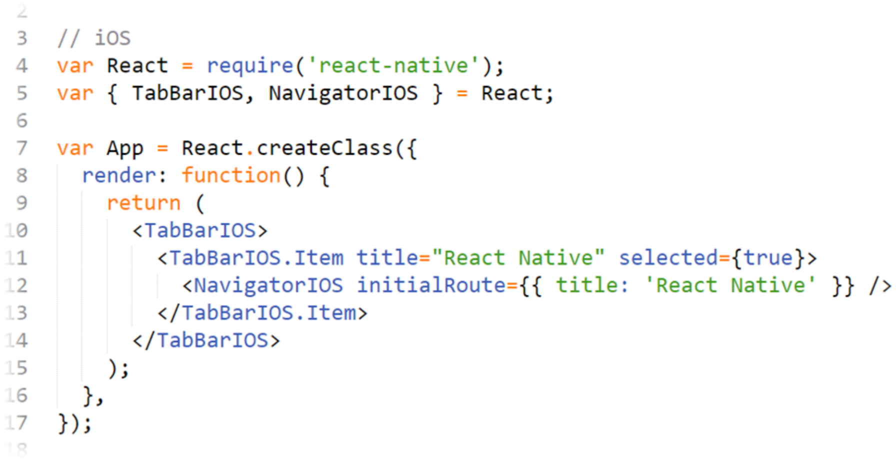


```
class Toggle extends React.Component {

  constructor(props) {
    super(props);
    this.state = { on: false };
  }

  handlePress() {
    this.setState({ on: !this.state.on });
  }

  render() {
    const text = this.state.on ? "Toggle ON" : "Toggle OFF";
    return (
      <TouchableHighlightWithoutFeedback
        onPress={this.handlePress.bind(this)}
        <View>
          <Text>
            {text}
          <Text>
        </View>
      </TouchableHighlightWithoutFeedback>
    );
  }

}
```

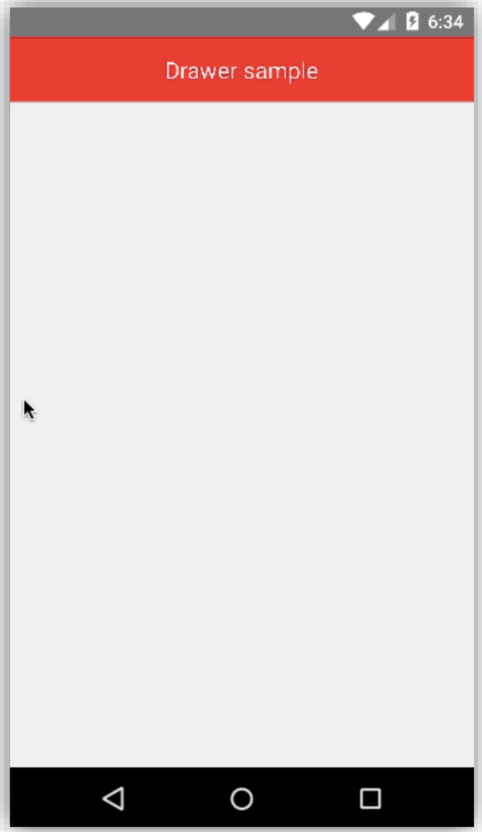
Native components



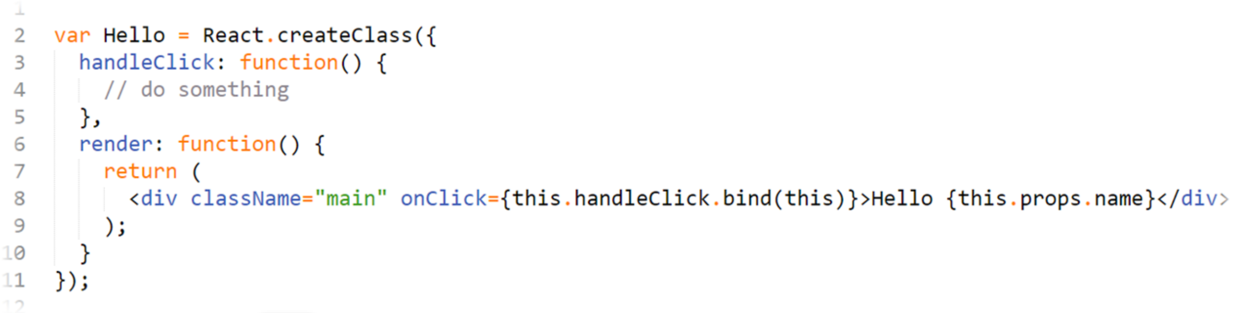
```
// Android
var React = require('react-native');
var { DrawerLayoutAndroid, ProgressBarAndroid } = React;

var App = React.createClass({
  render: function() {
    return (
      <DrawerLayoutAndroid
        renderNavigationView={() => <Text>React Native</Text>}>
        <ProgressBarAndroid />
      </DrawerLayoutAndroid>
    );
  },
});
```



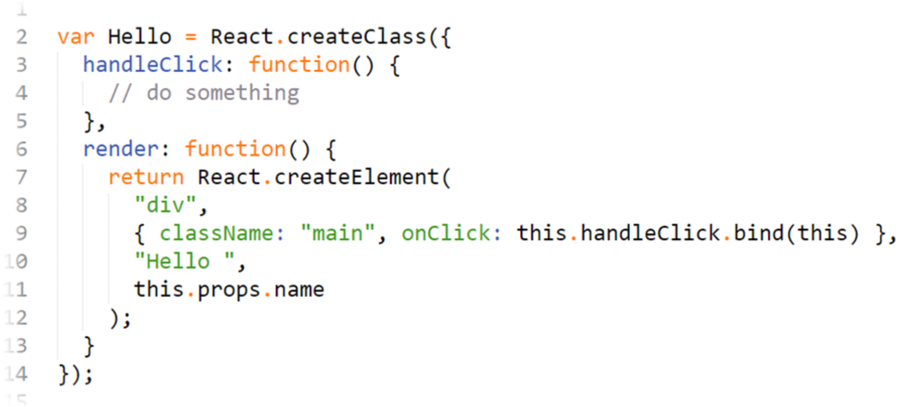
```
// iOS
var React = require('react-native');
var { TabBarIOS, NavigatorIOS } = React;

var App = React.createClass({
  render: function() {
    return (
      <TabBarIOS>
        <TabBarIOS.Item title="React Native" selected={true}>
          <NavigatorIOS initialRoute={{ title: 'React Native' }} />
        </TabBarIOS.Item>
      </TabBarIOS>
    );
  },
});
```



JSX transformation to JavaScript



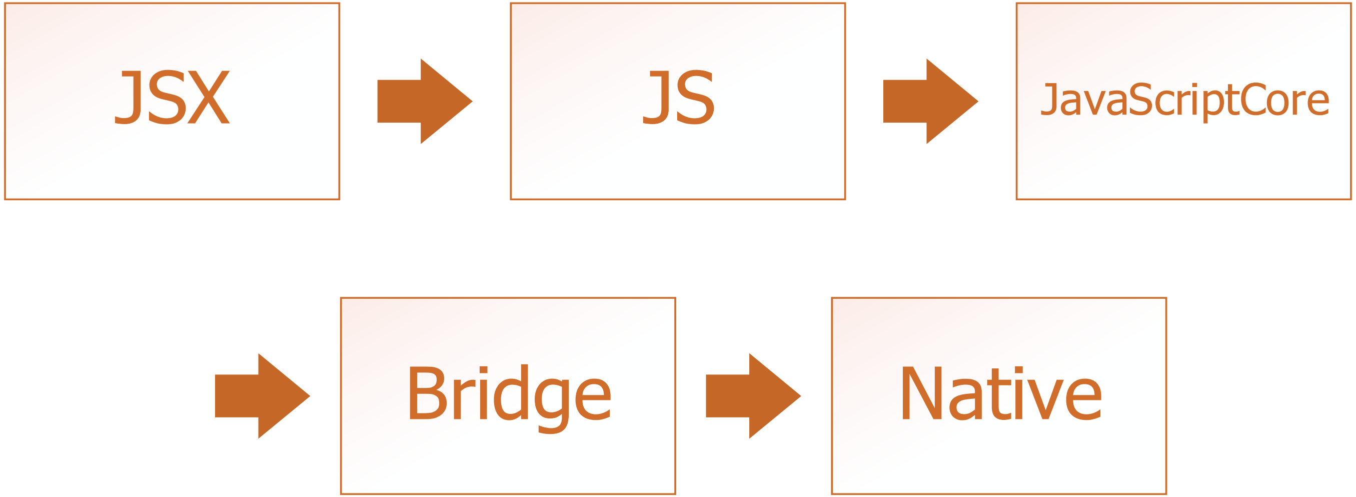
```
var Hello = React.createClass({
  handleClick: function() {
    // do something
  },
  render: function() {
    return (
      <div className="main" onClick={this.handleClick.bind(this)}>Hello {this.props.name}</div>
    );
  }
});
```



```
var Hello = React.createClass({
  handleClick: function() {
    // do something
  },
  render: function() {
    return React.createElement(
      "div",
      { className: "main", onClick: this.handleClick.bind(this) },
      "Hello ",
      this.props.name
    );
  }
});
```

How it works internally

- small JavaScript code that controls native components



JSX

JS

JavaScriptCore

Bridge

Native

What do you get?

- you don’t have to wait for compile times

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- declarative way of defining components

Imperative – focuses on how the program operates

Declarative – focuses on what the program should accomplish

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- code sharing between platforms

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- you don’t have to wait for compile times
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- predictable – UI reflects the state

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- you don’t have to wait for compile times
- declarative way of defining components

    Imperative – focuses on how the program operates

    Declarative – focuses on what the program should accomplish

- code sharing between platforms
- predictable – UI reflects the state
- simplicity of JavaScript with high performant UI

What do you get?

- easy to write tests
- reuse components and their composition
- reuse developers ☺
- can be combined with other frameworks
- easy debugging (Chrome/Safari dev tools, Chrome extension)
- created by Facebook, strong community around
- instant updates - CodePush, AppHub
- app with native feel

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Let’s create an app

Environment setup

REACT REQUIREMENTS:

- https://facebook.github.io/react-native/docs/getting-started.html#content

EDITOR:

- Sublime - http://www.sublimetext.com/
- Atom - https://atom.io/

FILES:

- https://github.com/strvcom/React-Meetup.git

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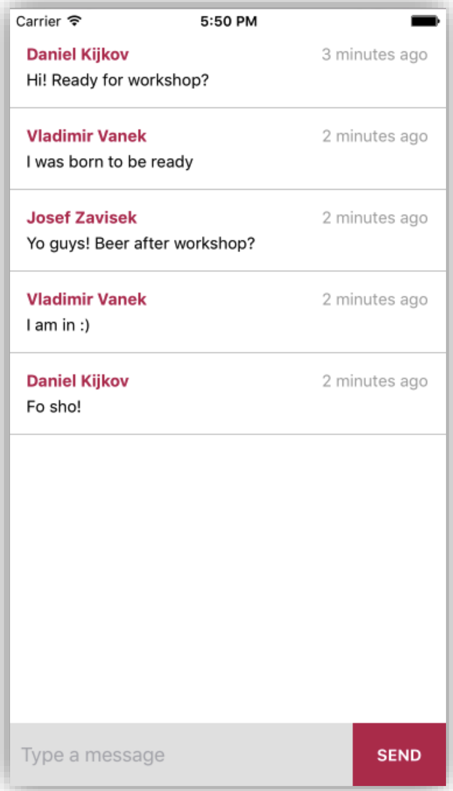
Chat app



Daniel Kijkov 3 minutes ago
Hi! Ready for workshop?

Vladimir Vanek 2 minutes ago
I was born to be ready

Josef Zavisek 2 minutes ago
Yo guys! Beer after workshop?

Vladimir Vanek 2 minutes ago
I am in :)

Daniel Kijkov 2 minutes ago
Fo sho!

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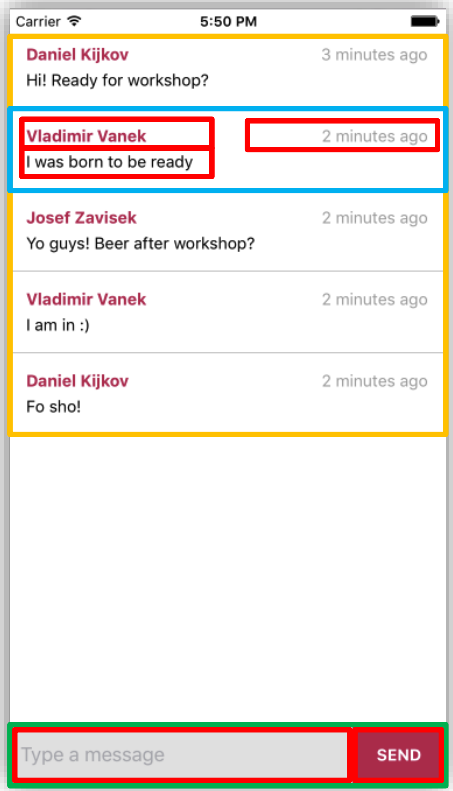

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