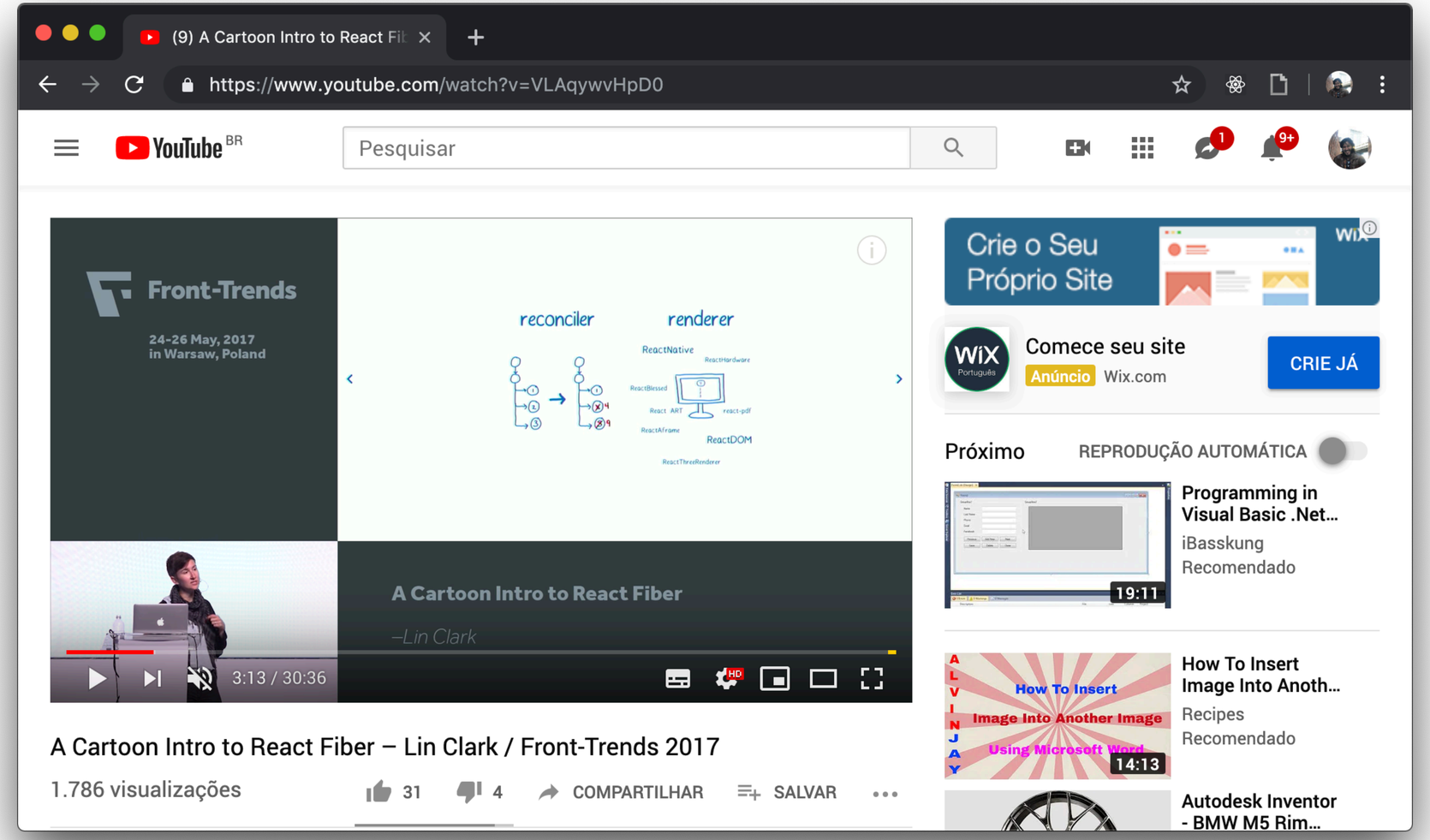
REACT 16.X

WAY BEYOND HOOKS

REVISITED

@YTHECOMBINATOR


(9) A Cartoon Intro to React Fit
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Pesquisar
Front-Trends
24-26 May, 2017
in Warsaw, Poland
reconciler
renderer
ReactNative
ReactHardware
ReactBlessed
React ART
react-pdf
ReactAFrame
ReactDOM
ReactThreeRenderer
A Cartoon Intro to React Fiber
–Lin Clark
3:13 / 30:36
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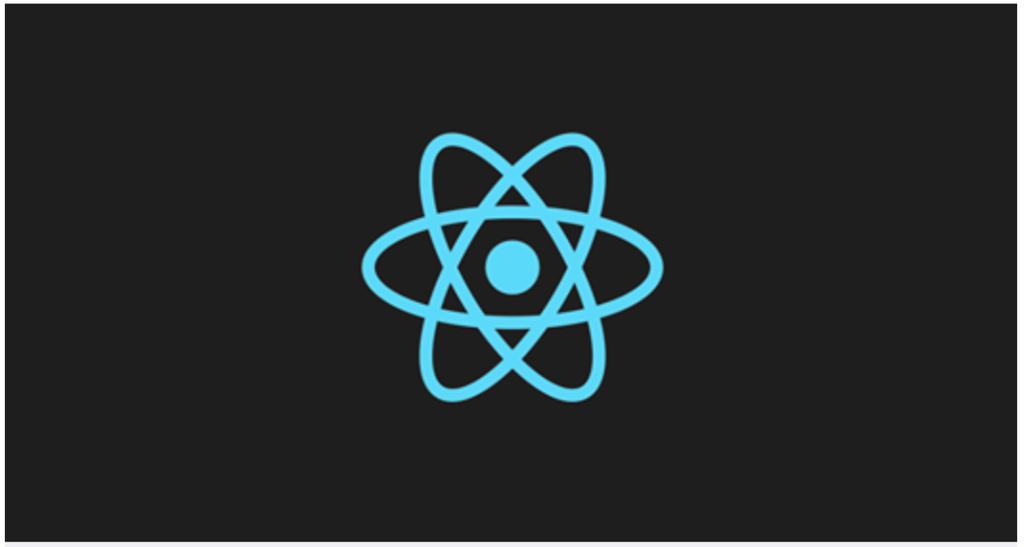
Recomendado
14:13
Autodesk Inventor - BMW M5 Rim...

[redacted]
6 de fevereiro às 10:43 ·

Passando só pra avisar que a melhor versão do React acabou de sair.



REACTJS.ORG

React v16.8: The One With Hooks – React Blog

With React 16.8, React Hooks are available in a stable release! What Are...

[redacted] 4 comentários

Curtir Comentar Compartilhar

contextType createRef() forwardRef()

Lifecycle Changes <Strict Mode/> act()

lazy() react-cache Profiler <Suspense/>

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ReactDOM.createRoot() Migrating Stuff

contextType **createRef()** forwardRef()

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16.3

```
class MyComponent extends React.Component {

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

  toggleInputCase = () => {
    const isUpper = this.state.uppercase;
    const value = this.inputField.value;
    this.inputField.value =
      isUpper ? value.toLowerCase() : value.toUpperCase();
    this.setState({ uppercase: !isUpper });
  }

  render() {
    return (
      <div>
        <input type="text" ref={elem => this.inputField = elem} />
        <button type="button" onClick={this.toggleInputCase}>
          Toggle Case
        </button>
      </div>
    );
  }
}
```

```
class MyComponent extends React.Component {

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

  toggleInputCase = () => {
    const isUpper = this.state.uppercase;
    const value = this.inputField.value;   // Accessing the ref using this.inputField
    this.inputField.value =
      isUpper ? value.toLowerCase() : value.toUpperCase();
    this.setState({ uppercase: !isUpper });
  }

  render() {
    return (
      <div>
        <input type="text" ref={elem => this.inputField = elem} />   // Creating a callback ref and storing
        <button type="button" onClick={this.toggleInputCase}>        it in this.inputField
          Toggle Case
        </button>
      </div>
    );
  }
}
```

```
class MyComponent extends React.Component {

  constructor(props) {
    super(props);
    this.inputField = React.createRef();
    this.state = { uppercase: false };
  }

  toggleInputCase = () => {
    const isUpper = this.state.uppercase;
    const value = this.inputField.current.value;
    this.inputField.current.value =
      isUpper ? value.toLowerCase() : value.toUpperCase();
    this.setState({ uppercase: !isUpper });
  }

  render() {
    return (
      <div>
        <input type="text" ref={this.inputField} />
        <button type="button" onClick={this.toggleInputCase}>
          Toggle Case
        </button>
      </div>
    );
  }
}
```

```
class MyComponent extends React.Component {

  constructor(props) {
    super(props);
    this.inputField = React.createRef();
    this.state = { uppercase: false };
  }

  toggleInputCase = () => {
    const isUpper = this.state.uppercase;
    const value = this.inputField.current.value;   // Accessing the ref using this.inputField.current
    this.inputField.current.value =
      isUpper ? value.toLowerCase() : value.toUpperCase();
    this.setState({ uppercase: !isUpper });
  }

  render() {
    return (
      <div>
        <input type="text" ref={this.inputField} />   // Referencing the ref from this.inputField
        <button type="button" onClick={this.toggleInputCase}>
          Toggle Case
        </button>
      </div>
    );
  }
}
```

How do we create Refs?

1. String Refs (legacy method)

2. Callback Refs

3. React.createRef (from React 16.3)

How do we create Refs?

1. String Refs (legacy method)

2. Callback Refs

3. React.createRef (from React 16.3)

Still valid

contextType createRef() **forwardRef()**

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16.3

```jsx
import React, { createRef } from 'react';

const InputComponent = ({ inputRef }) => {
  return <input ref={inputRef} type="text" />;
};

const Parent = props => {
  let textInput = createRef();

  const inputFocus = () => {
    textInput.current.focus();
  };

  return (
    <div>
      <InputComponent
        inputRef={textInput}
      />
      <input type="button" value="Click to focus" onClick={inputFocus} />
    </div>
  );
};

export default Parent;
```

```jsx
import React, { createRef, forwardRef } from 'react';

const InputComponent = forwardRef((props, ref) => {
  return <input ref={ref} type="text" />;
});

const Parent = props => {
  let textInput = createRef();

  const inputFocus = () => {
    textInput.current.focus();
  };

  return (
    <div>
      <InputComponent ref={textInput} />
      <input type="button" value="Click to focus" onClick={inputFocus} />
    </div>
  );
};

export default Parent;
```

The Differences:

1. Instead of passing the inputRef attribute, we are able to pass ref
2. We use forwardRef to encapsulate the entire component, and we pass it props and then the ref attribute
3. We set the ref attribute on the input element equal to the passed in ref.

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16.3

Deprecated now (will be removed in React 17):

1. componentWillMount
2. componentWillReceiveProps
3. componentWillUpdate

These will work:

1. UNSAFE_componentWillMount
2. UNSAFE_componentWillReceiveProps
3. UNSAFE_componentWillUpdate

Why?

The original lifecycle model was not intended for some of the upcoming features like **async rendering**. With the introduction of async rendering, some of these lifecycle methods will be **unsafe** if used.

e.g.

Why?

The original lifecycle model was not intended for some of the upcoming features like **async rendering**. With the introduction of async rendering, some of these lifecycle methods will be **unsafe** if used.

e.g.

Calls from **componentWillReceiveProps** that change the store, leading to call component's **componentWillReceiveProps** again - leading to an infinite loop and many useless render calls.

Why?

The original lifecycle model was not intended for some of the upcoming features like **async rendering**. With the introduction of async rendering, some of these lifecycle methods will be **unsafe** if used.

e.g.

Similarly calling **setState** in **componentWillUpdate** will trigger **shouldComponentUpdate** and then again **componentWillUpdate**, which also leads to infinite methods calls.

Why?

The original lifecycle model was not intended for some of the upcoming features like **async rendering**. With the introduction of async rendering, some of these lifecycle methods will be **unsafe** if used.

e.g.

Async rendering will cause **componentWillMount** to **trigger multiple rendering of your component tree**. This makes it unsafe.

What now?

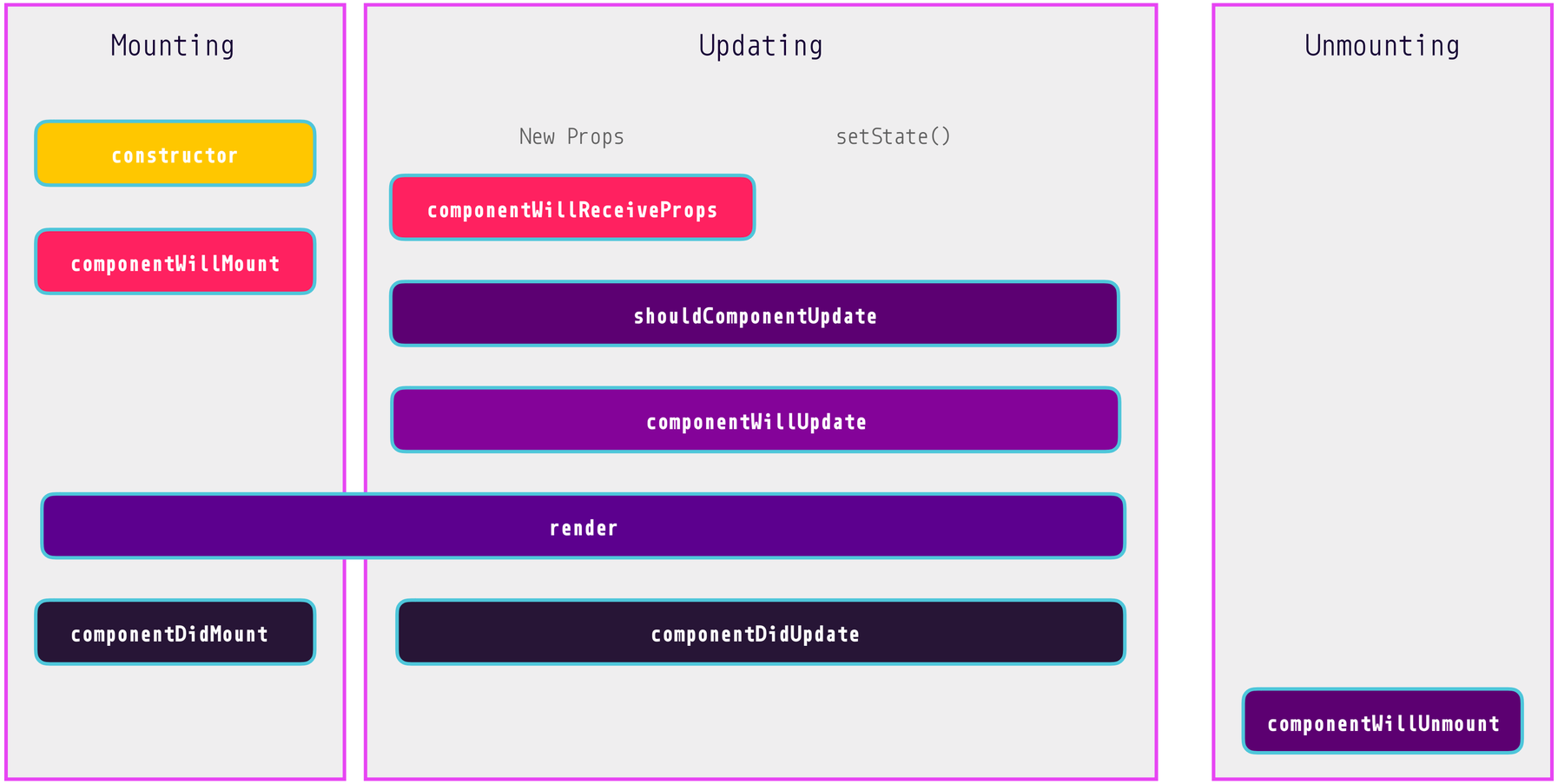
1. getDerivedStateFromProps
2. getSnapshotBeforeUpdate

```
static getDerivedStateFromProps(props, state) {
    if (state.value !== props.value) {
        return {
            derivedValue: deriveValueFromProps(props),
            mirroredProp: props.value
        }
    }
    return null;
}
```

1. Used to keep the state synced with incoming props
2. Is expected to return an object to update the state of the component
3. If null is returned then, nothing is changed in the state.
4. A safer replacement of **componentWillReceiveProps**
5. Is a pure function

```
getSnapshotBeforeUpdate(prevProps, prevState) {
    if (prevProps.list.length < this.props.list.length) {
        return this.listRef.value.scrollHeight;
    }
    return null;
}
```

1. Gets called after the render created the React element and before it is actually updated from virtual DOM to actual DOM
2. Is useful if you want to keep sync in-between state of current DOM with the updated DOM
3. A safer replacement of **componentWillUpdate**
4. The snapshot value is passed on to componentDidUpdate


Mounting
constructor
componentWillMount
componentDidMount
Updating
New Props
setState()
componentWillReceiveProps
shouldComponentUpdate
componentWillUpdate
render
componentDidUpdate
Unmounting
componentWillUnmount


Mounting
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Unmounting
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setState()
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getSnapshotBeforeUpdate
componentDidUpdate
componentWillUnmount

contextType createRef() forwardRef()

Lifecycle Changes **<Strict Mode/>** act()

lazy() react-cache Profiler <Suspense/>

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ReactDOM.createRoot() Migrating Stuff

16.3

```
ReactDOM.render(
  <React.StrictMode>
    <App />
  </React.StrictMode>
document.getElementById('root')
```

1.Does not render any visible UI

2.Identifying components with unsafe lifecycles,

legacy string ref API, unexpected side effects,

findDOMNode occurrences etc.

3.You’ll get these errors from dependencies, too

```
▶Warning: Unsafe lifecycle methods were found within a strict-mode tree:
    in div (created by ExampleApplication)
    in ExampleApplication

componentWillMount: Please update the following components to use componentDidMount instead: ThirdPartyComponent

Learn more about this warning here:
https://fb.me/react-strict-mode-warnings
```

contextType createRef() forwardRef()

Lifecycle Changes <Strict Mode/> act()

lazy() react-cache **Profiler** <Suspense/>

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16.5

Profiler

React has two phases:

Render: React determines what DOM changes need to be made by comparing render results with a previous render

Commit: React applies any changes that need to happen. Add/remove from the DOM and call lifecycle methods like **componentDidMount** and **componentDidUpdate**

Profiler

The profiler collects timing information about components, the time rendered and committed in order to identify when each component actually rendered and at what speed.

When profiling, we'll be looking closely at the **commit phase** to see where performance dips are.


~ Demo time ~

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ReactDOM.createRoot() Migrating Stuff

16.6

```
import { ThemeConsumer } from “./ThemeContext";

class App extends React.Component {
  render() {
    return (
      <ThemeConsumer>
        {theme ⇒ {
          let mainColor = theme.color.blue["400"];
          return <h1 style={{ color: mainColor }}>Hello!</h1>;
        }}
      </ThemeConsumer>
    );
  }
}
```

```
import { ThemeContext } from “./ThemeContext";

class App extends React.Component {
  static contextType = ThemeContext;
  render() {
    const mainColor = this.context.color.blue["400"];
    return <h1 style={{ color: mainColor }}>Hello!</h1>;
  }
}
```

contextType createRef() forwardRef()

Lifecycle Changes <Strict Mode/> act()

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16.6


~ Demo time ~

PureComponent

```
export default class Card extends React.PureComponent
{
  render() {
    return (
      <div>
        <p>{this.props.name}</p>
        <p>{this.props.description}</p>
      </div>
    )
  }
}
```

memo()

```
function Card(props) {
  return (
    <div>
      <p>{props.name}</p>
      <p>{props.description}</p>
    </div>
  )
}
export default React.memo(Card);
```

So...

1. React.memo provides a higher order component which prevents re-rendering from happening unless the props change
2. Much like PureComponent for class components
3. It’s a tool you can use for improving performance

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Lifecycle Changes <Strict Mode/> act()

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16.6*

Suspense

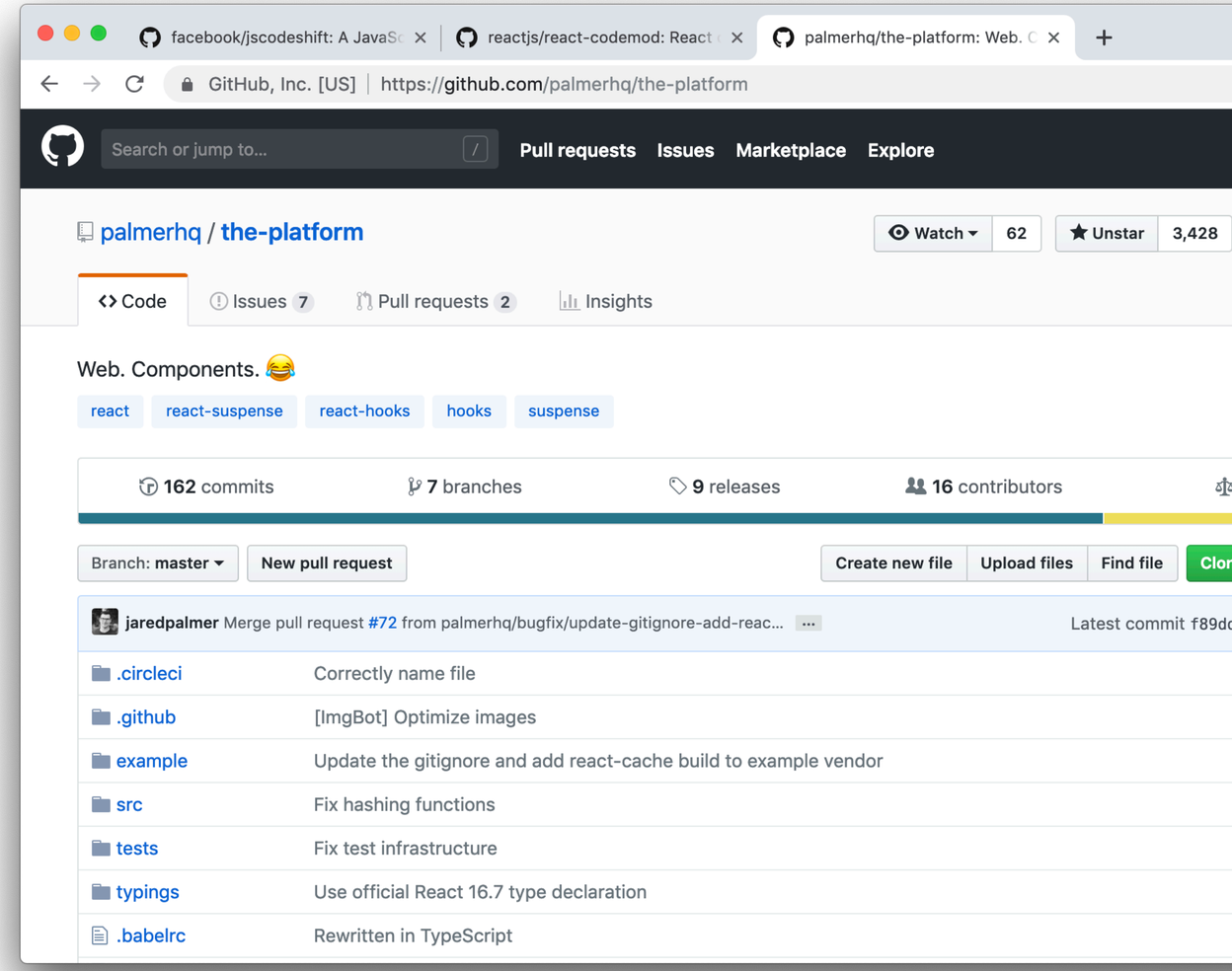
1. Allows you to defer rendering part of your application tree until some condition is met
2. Takes a fallback prop that accepts the React elements you want rendered as placeholder

lazy()

1. Makes it easy to create components that are loaded using dynamic import()
2. Takes a function as its argument that must return a promise by calling import() to load the component


~ Demo time ~

github.com/palmerhq/the-platform



```jsx
import React, { Suspense } from 'react';
import { Router } from '@reach/router';
import Loading from './Loading';

const Home = React.lazy(() => import('./Home'));
const Dashboard = React.lazy(() => import('./Dashboard'));
const Overview = React.lazy(() => import('./Overview'));
const History = React.lazy(() => import('./History'));
const NotFound = React.lazy(() => import('./NotFound'));

function App() {
  return (
    <div>
      <Suspense fallback={<Loading />}>
        <Router>
          <Home path="/" />
          <Dashboard path="dashboard">
            <Overview path="/" />
            <History path="/history" />
          </Dashboard>
          <NotFound default />
        </Router>
      </Suspense>
    </div>
  )
}
```

But…

1. At the moment, React.lazy() does not support using named exports for React components.
2. React.lazy() and Suspense are not yet available for server-side rendering
3. Suspense for Data Fetching is not released yet (estimated time: ~mid 2019)

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Lifecycle Changes <Strict Mode/> **act()**

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ReactDOM.createRoot() Migrating Stuff

16.8

```
function App() {
  let [ctr, setCtr] = useState(0);
  useEffect(() => {
    setCtr(1);
  }, []);
  return ctr;
}

ReactDOM.render(<App />, document.getElementById("app"));
```

```
it("should render 1", () => {
  const el = document.createElement("div");
  ReactDOM.render(<App />, el);
  expect(el.innerHTML).toBe("1"); // this fails!
});
```

```
it("should render 1", () => {
  const el = document.createElement("div");
  ReactDOM.render(<App />, el);
  expect(el.innerHTML).toBe("1");
});
```

```
Expected: "1"
Received: "0"

  18 |     const el = document.createElement("div");
  19 |     ReactDOM.render(<App />, el);
> 20 |     expect(el.innerHTML).toBe("1");
     |                          ^
  21 |   });
  22 |
```

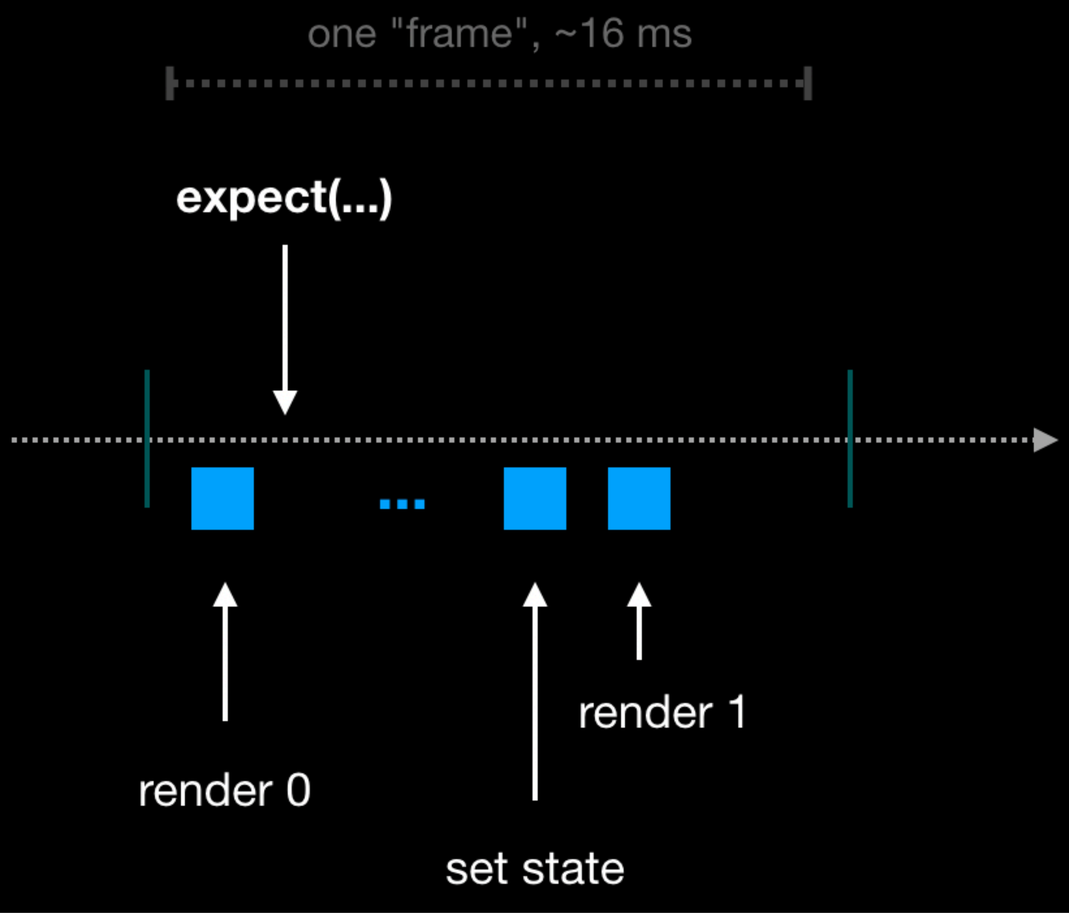
useEffect()

"By using this Hook, you tell React that your component needs to do something **after render**".

useEffect()

- the 'first' render where react **outputs 0**,
- the bit where it runs the effect and **sets state to 1**
- the bit where it rerenders and **outputs 1**

useEffect()



Hacks

- using **useLayoutEffect** instead of **useEffect**
- **waiting for some time**, like 100ms or so

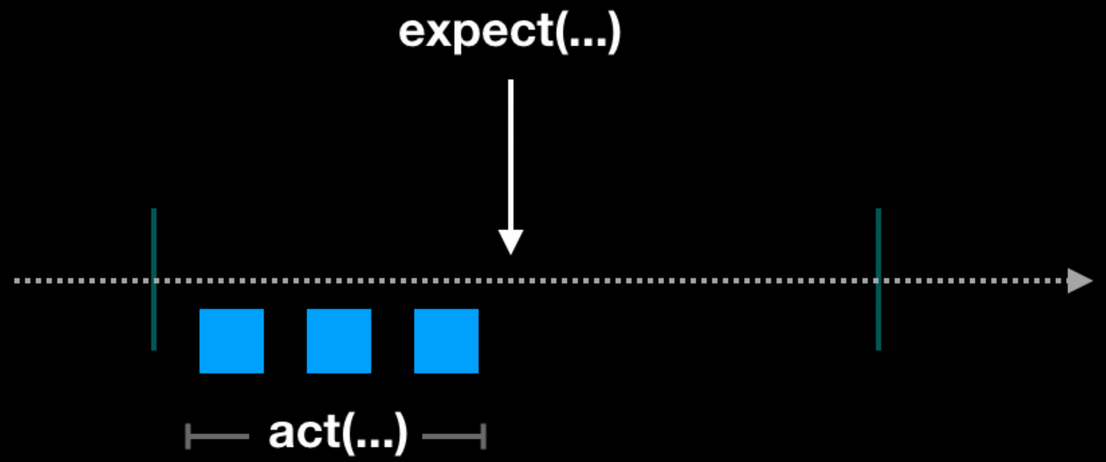
act()

- any state updates will be executed
- any enqueued effects will be executed

```
it("should render 1", () => {
  const el = document.createElement("div");
  act(() => {
    ReactDOM.render(<App />, el);
  });
  expect(el.innerHTML).toBe("1"); // this passes!
});
```

act()

- any state updates will be executed
- any enqueued effects will be executed



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16.x

Time Slicing

1. DOM Updates have high and low priority

2. Concurrent React sets priorities for you by default

```
scheduleCallback(() => {
  this.setState({ update: 'lowPriority' });
});

flushSync(() => {
  this.setState({ update: 'highPriority' });
});
```


~ Demo time ~

INTERMISSION

CONCURRENT REACT

What?

It’s an umbrella name for a new set of APIs resulting from the React Fiber rewrite.

What?

Time Slicing

A generic way to ensure that high-priority updates don’t get blocked by a low-priority update.

Problems it solves: When rendering is **CPU-bound**.

What?

Suspense

A generic way for

components to suspend

rendering while they load

data from a cache.

Problems it solves: When

rendering is **I/O-bound**.

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Cool Things

1. **Detect** and **lint** .ts files
2. **Absolute** imports
3. Latest version of **Jest** (v24)

Other stuff…

1. **browserslist** tools to target specific browsers
2. **PostCSS** Normalize
3. Linting for **Hooks**

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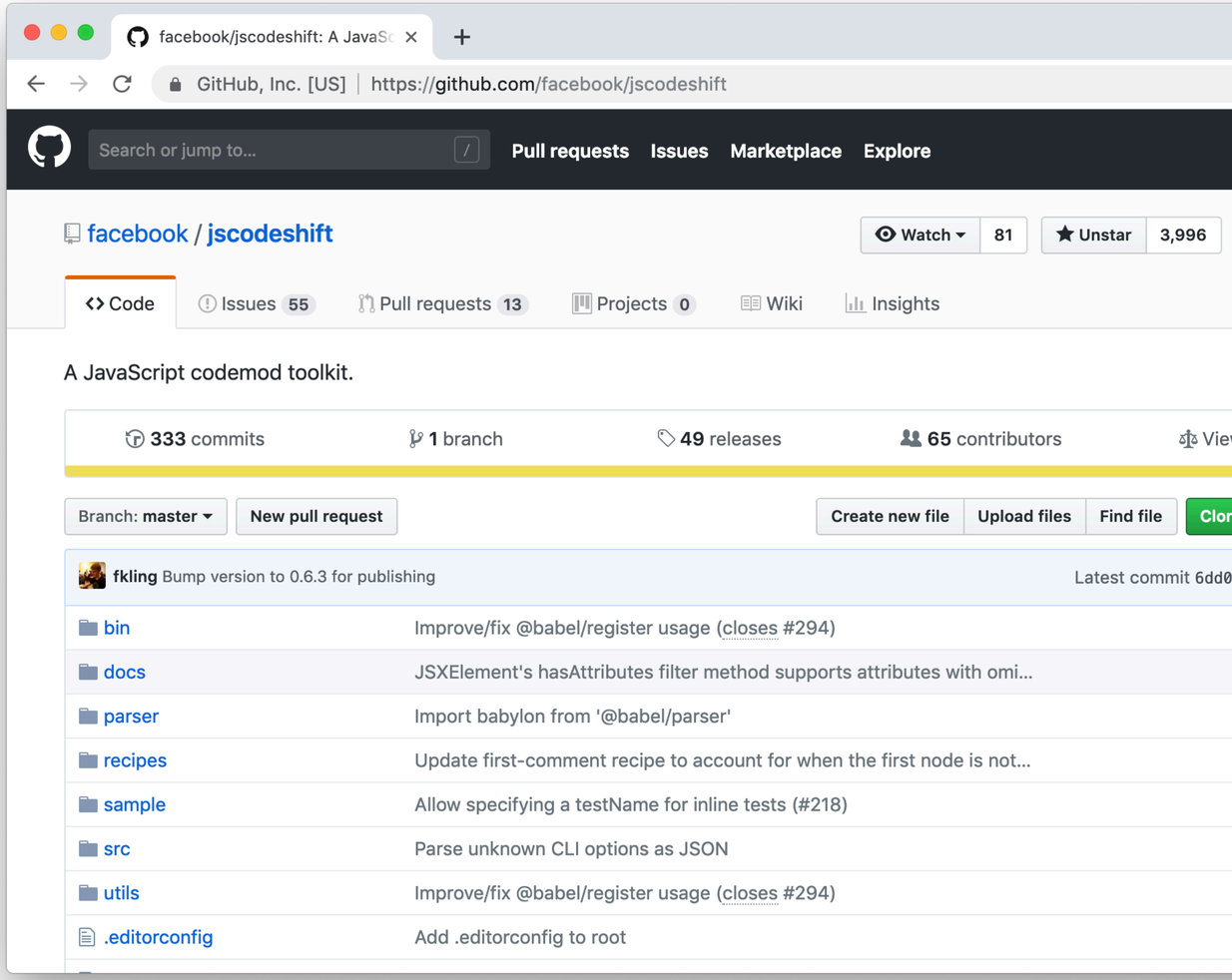
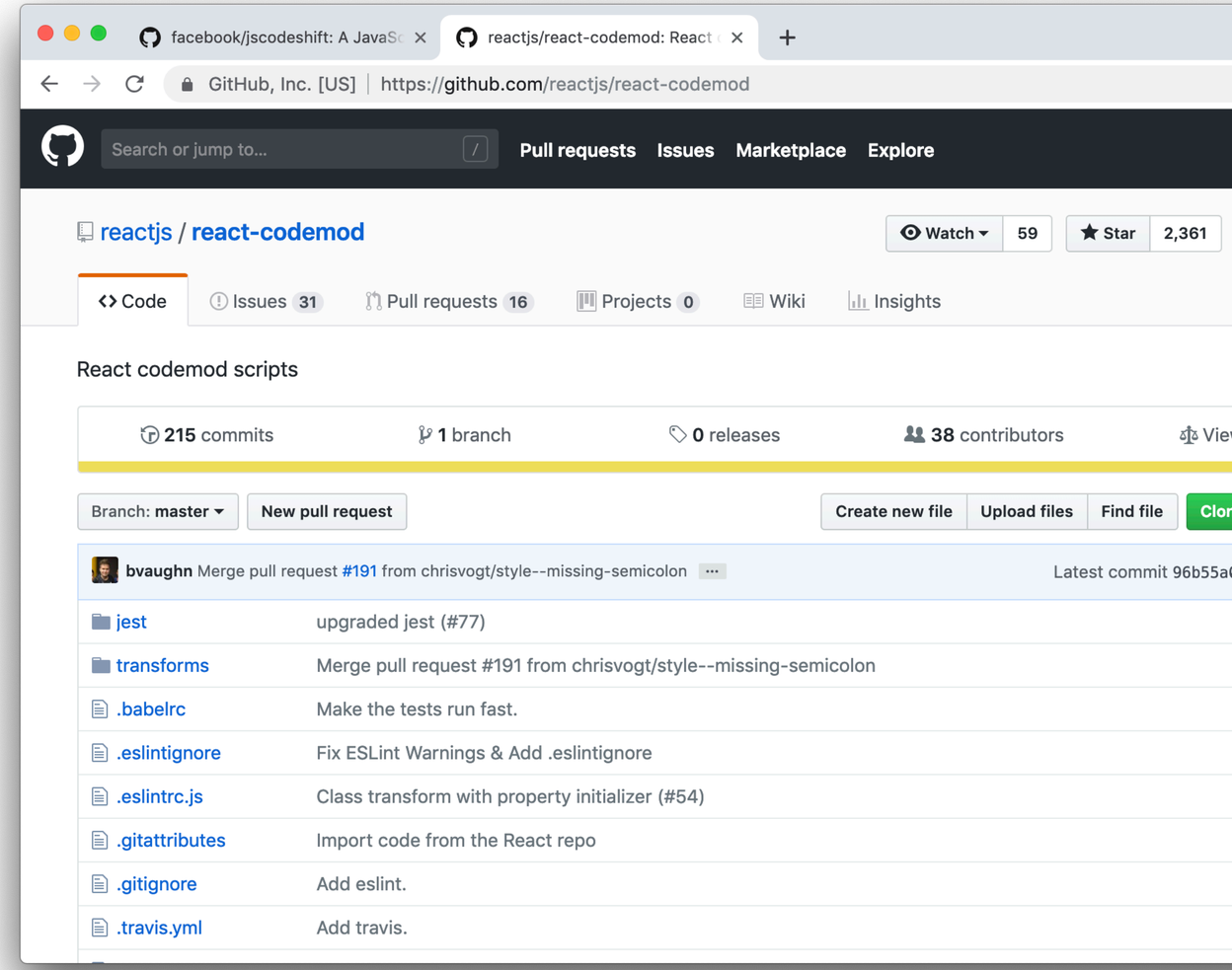
Migrating Stuff

github.com/facebook/jscodeshift



github.com/reactjs/react-codemod



jscodeshift

```
jscodeshift -t react-codemod/transforms/rename-unsafe-lifecycles.js
```

Path to transform file

Files/directories to
be transformed

```
jscodeshift -t react-codemod/transforms/rename-unsafe-lifecycles.js ./src
```

Path to transform file

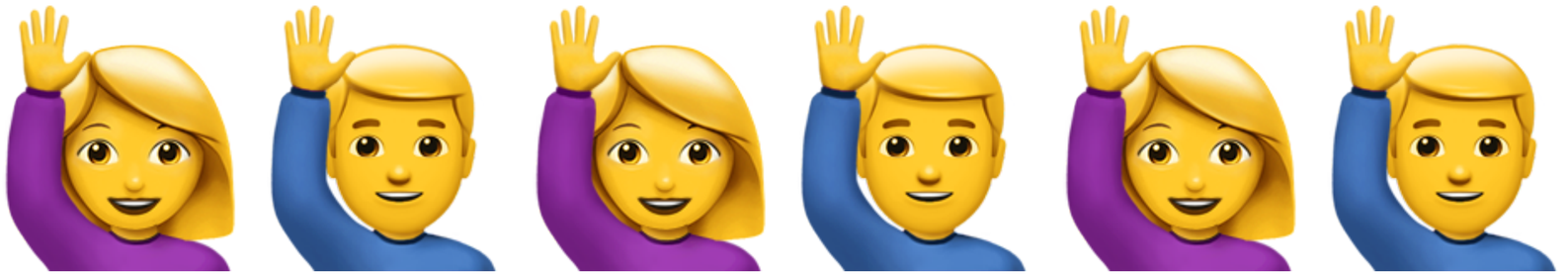
```
jscodeshift -t react-codemod/transforms/rename-unsafe-lifecycles.js ./src
```

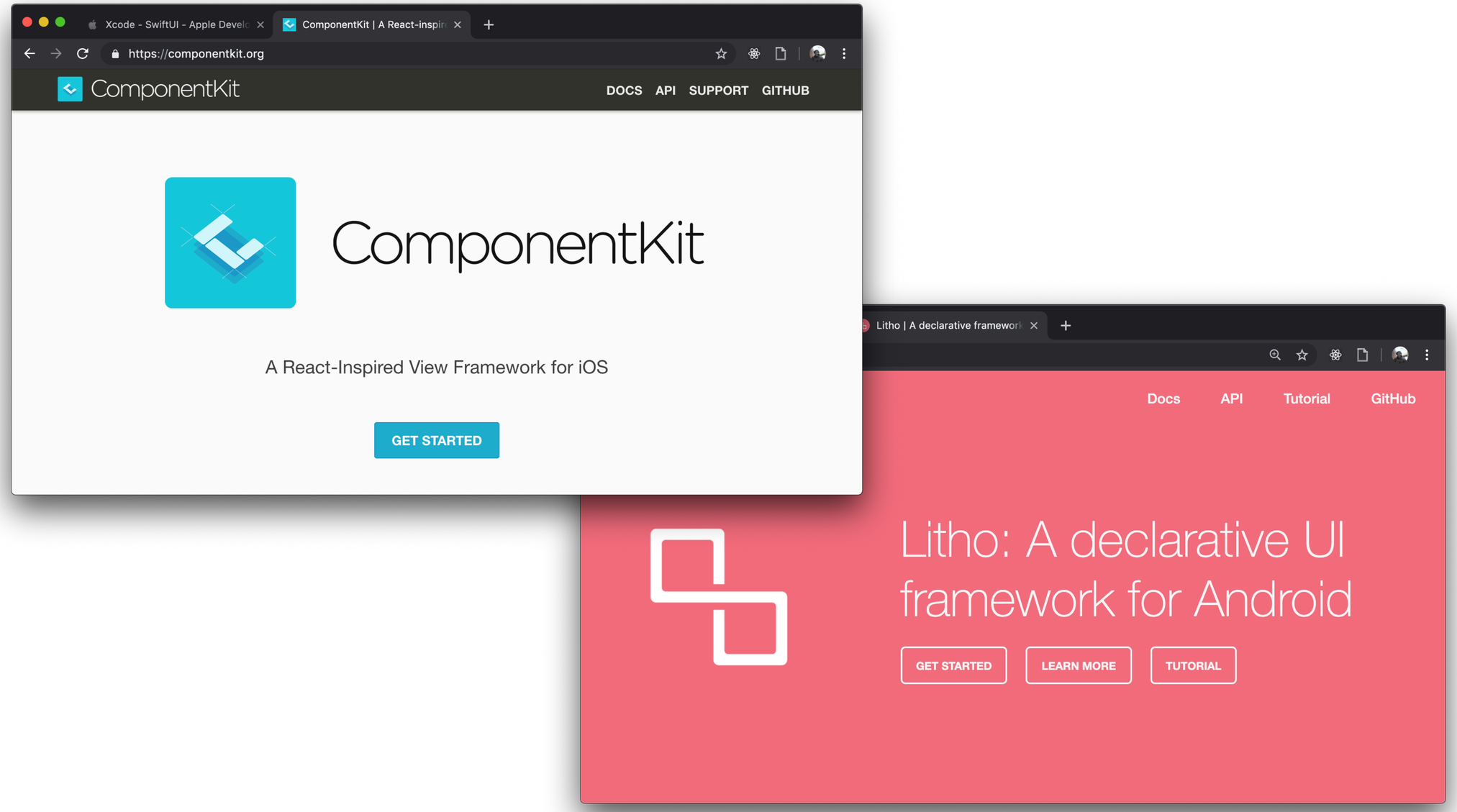
```
            …
            -t react-codemod/transforms/manual-bind-to-arrow.js
            -t react-codemod/transforms/pure-component.js
jscodeshift -t react-codemod/transforms/rename-unsafe-lifecycles.js ./src
            -t react-codemod/transforms/error-boundaries.js
            -t react-codemod/transforms/findDOMNode.js
            …
```

IN THE END...

React is such a good idea that we will spend the rest of the decade continuing to explore its implications and applications.

Guillermo Rauch @rauchg
7:14am - 22 Nov 2016

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A React-Inspired View Framework for iOS
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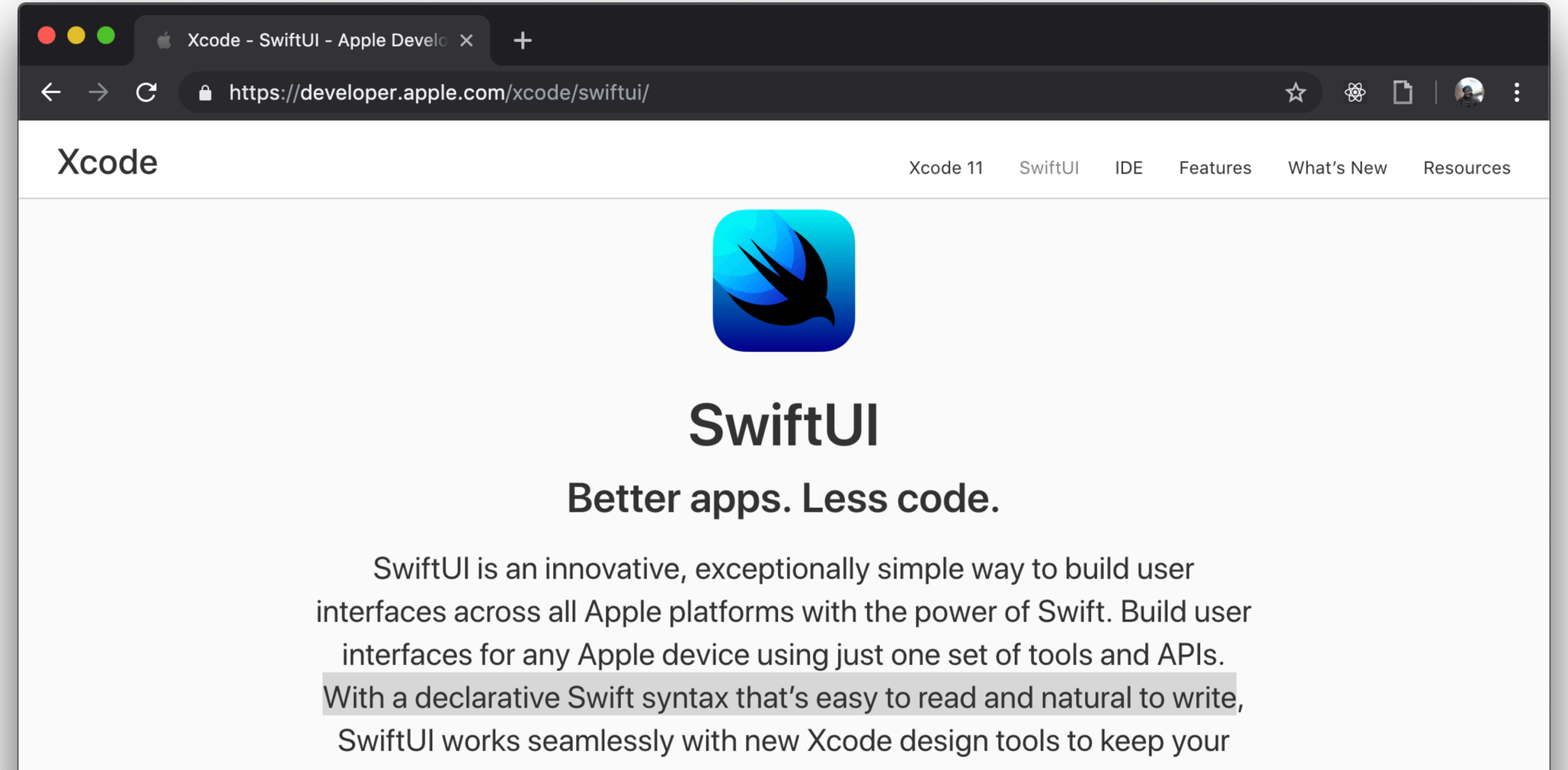
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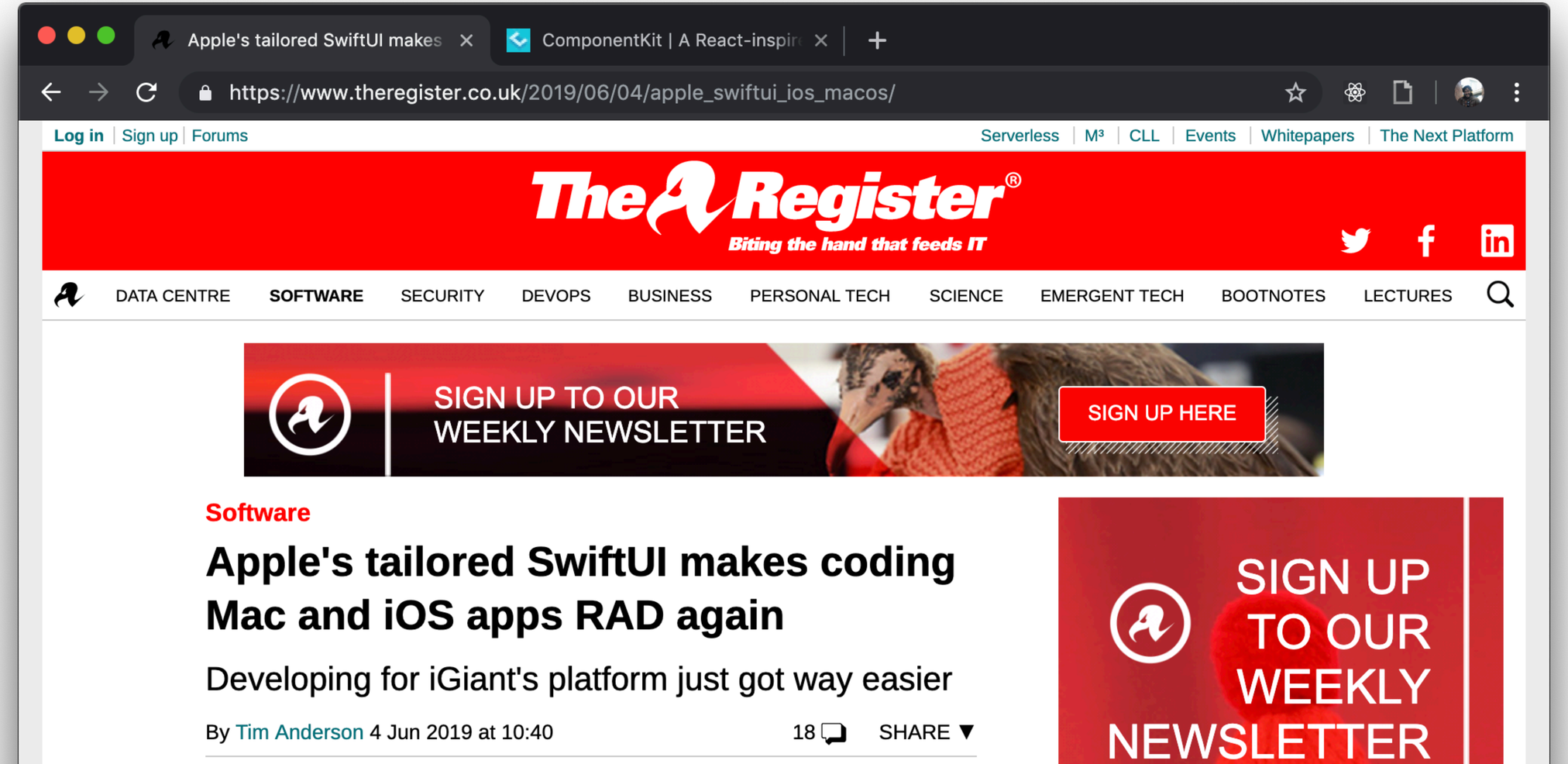
https://developer.apple.com/xcode/swiftui/
Xcode
Xcode 11
SwiftUI
IDE
Features
What's New
Resources
SwiftUI
Better apps. Less code.
SwiftUI is an innovative, exceptionally simple way to build user interfaces across all Apple platforms with the power of Swift. Build user interfaces for any Apple device using just one set of tools and APIs. With a declarative Swift syntax that's easy to read and natural to write, SwiftUI works seamlessly with new Xcode design tools to keep your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ComponentKit | A React-inspir
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By Tim Anderson 4 Jun 2019 at 10:40
18
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contextType createRef() **React Flare**

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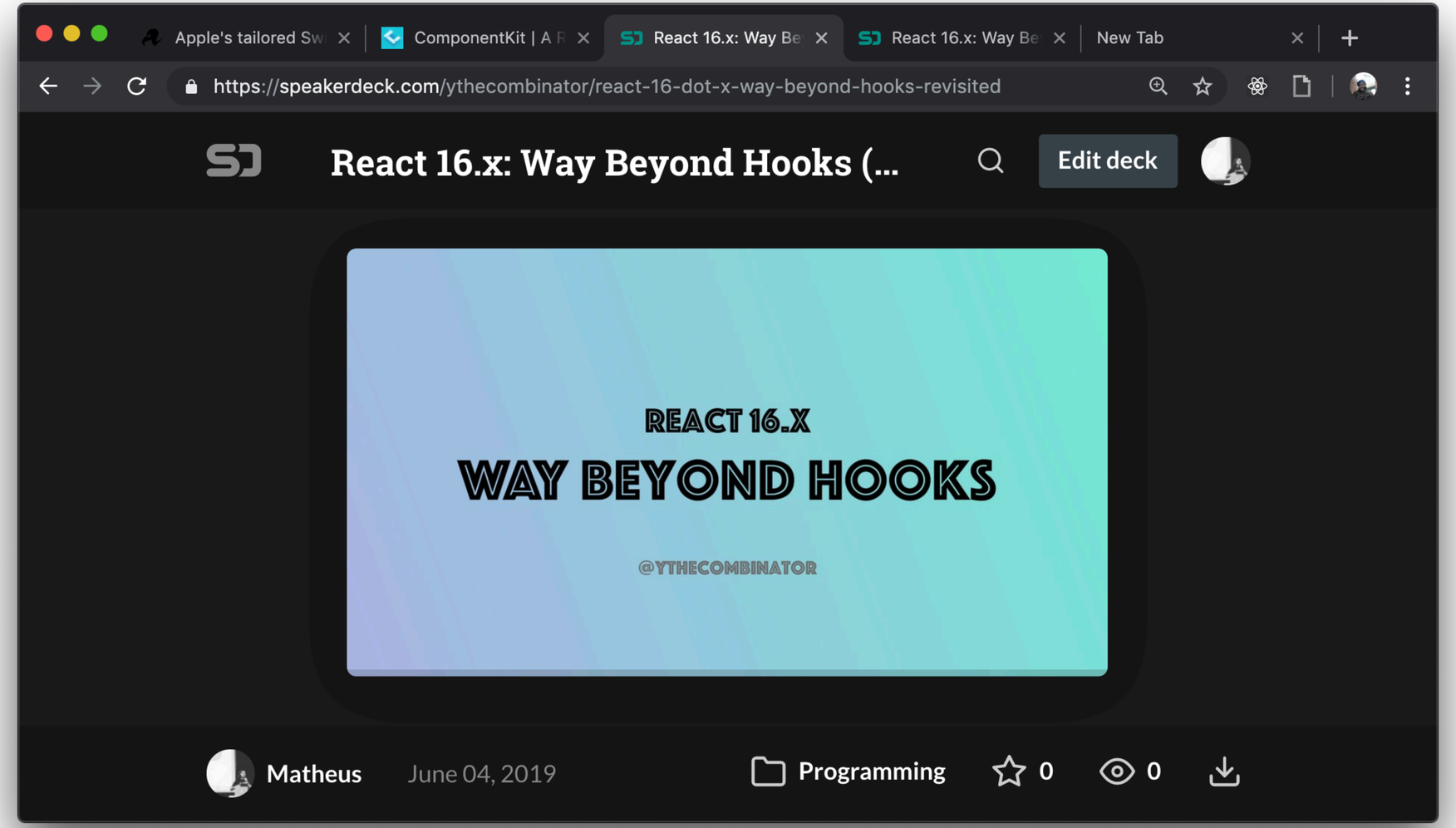
React Native Fabric Migrating Stuff

~ senior software engineer, **Front-End** @beakyn

~ **@ythecombinator** on the webs

~ addicted to emojis, memes and beer



http://bit.ly/way-beyond-hooks-2019

THANK YOU!

@YTHECOMBINATOR