

UI Engineering Studio. Day 11

Bootcamp: React

React

is a declarative, efficient, and flexible JavaScript library for building user interfaces. It lets you compose complex UIs from small and isolated pieces of code called “components”

- <https://reactjs.org>

Why React?

Components

Virtual DOM

JSX

Create React App

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Why React?

- Simple
- It doesn't use templates
- You can build large applications with a lot of data that changes over the time
- It is just JS
- Learning curve

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Components

- Return a React element to be rendered to the page.
- A collection of HTML, CSS, JS and some specific internal data.
- Inheritance
- Components can be defined using pure Javascript or React's JSX

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Components

https://codepen.io/sebas_alarcon/pen/KeegLa

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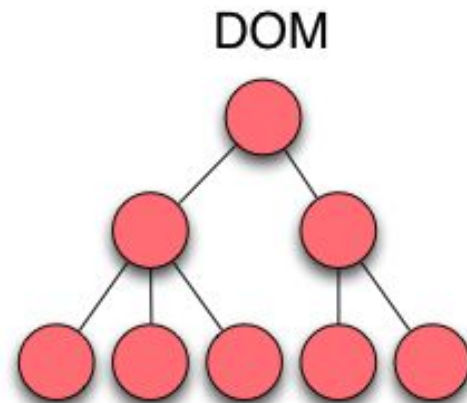
Virtual DOM

- Create lightweight description of UI components
- Representation of a UI is kept in memory and synced with the “real” DOM
- Diff between states
- Compute minimal set of changes to apply to the DOM
- Different to Shadow DOM!

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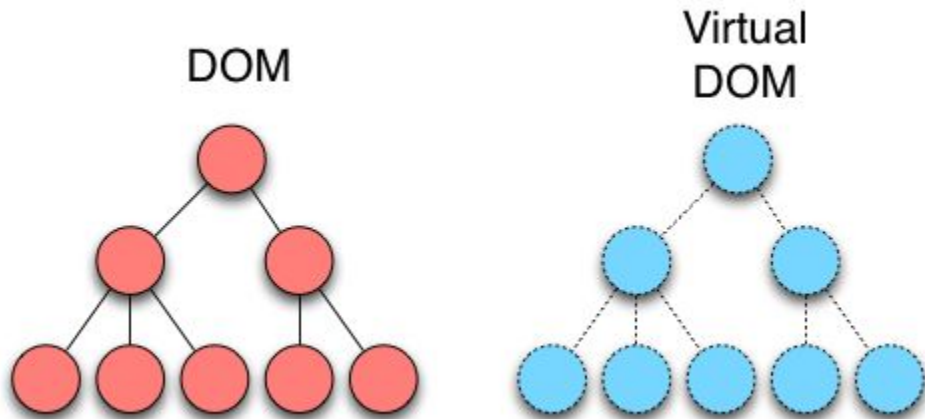
Virtual DOM

Student Name	Sub1	Sub2	Sub3	Sub4	Sub5	%
Active	80	90	70	80	75	79
Success	100	90	68	75	89	84.4
Default	100	90	68	75	89	84.4
Primary	100	90	68	75	89	84.4
Warning	55	43	57	76	45	55.2
Info	55	43	57	76	45	55.2
Danger	84	76	89	76	90	83
Secondary	84	76	89	76	90	83
Light	84	76	89	76	90	83
Dark	84	76	89	76	90	83



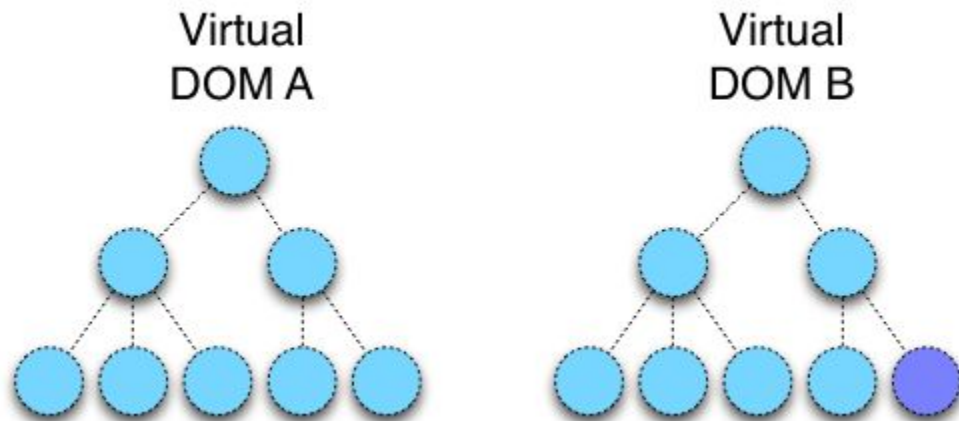
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Virtual DOM



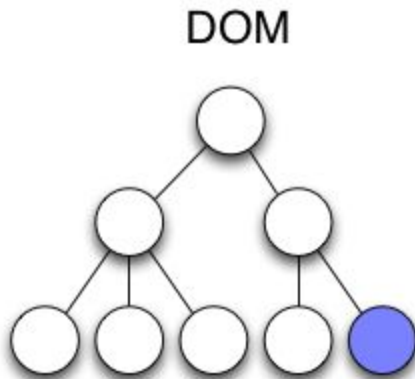
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Virtual DOM



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Virtual DOM



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Virtual DOM: Summary

- The entire virtual DOM gets updated.
- The virtual DOM gets compared to what it looked like before you updated it. React figures out which objects have changed.
- The changed objects, and the changed objects only, get updated on the real DOM.

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JSX: JAVASCRIPT XML SINTAXIS TRANSFORM

- Optional **HTML markup**
- Declarative description of the UI inline in JS Code
- Combine ease-of-use of **templates** with power of Javascript
- Processor translates to plain Javascript

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JSX: JAVASCRIPT XML SINTAXIS TRANSFORM

```
var HelloMessage = React.createClass({  
  render: function() {  
    return <div>Hello {this.props.name}</div>;  
  }  
});  
  
ReactDOM.render(<HelloMessage name="John" />, mountNode);
```

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JSX: JAVASCRIPT XML SINTAXIS TRANSFORM

```
"use strict";

var HelloMessage = React.createClass({
  displayName: "HelloMessage",

  render: function render() {
    return React.createElement(
      "div",
      null,
      "Hello ",
      this.props.name
    );
  }
});

ReactDOM.render(React.createElement(HelloMessage, { name: "John" }),
mountNode);
```

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Create React App

Is a tool built by developers at Facebook to help you build React applications. It saves you from time-consuming setup and configuration. You simply run one command and create react app sets up the tools you need to start your React project.

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Create React App

You must have:

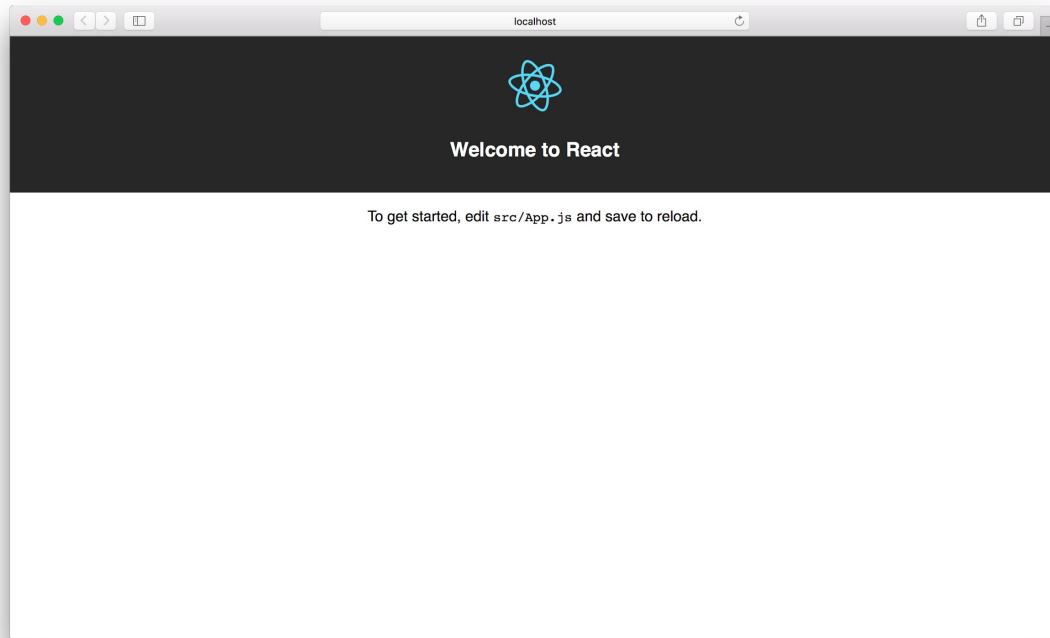
npm +5

And then run:

```
npx create-react-app my-app
```

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Create React App



UI Boot Camp: React Homework!

We're going to start a TODO list.

- Think about which components you will need
- Code all your stateless components



