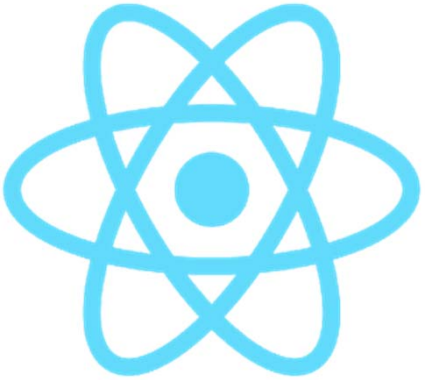

React Fundamentals
Module – styling components

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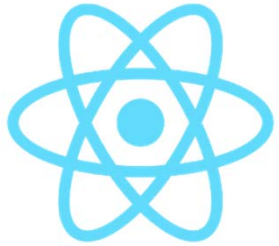
Styling components

Creating local or global styles for your application

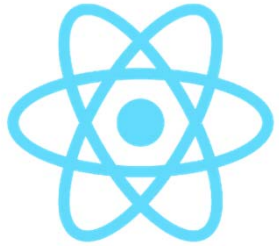
CSS styling in React apps



- Components can receive styles in different ways:

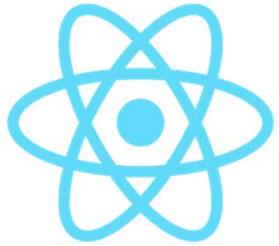
1. From global imported styles
    - Like Bootstrap, Materialize, Foundation, etc.
    - Like we have done in the previous projects
2. From inline styles
    - Use CSS-in-JavaScript technique
3. From CSS modules
    - Create `.module.css` files for your styles

1. Global styles



- Libraries: Just import the CSS in `../src/index.js`, like we have done before
  - Bootstrap, Foundation, Framework7, etc.
- Custom global CSS
  - Place in `index.css`, import also
  - Can also be done in `App.js/App.css`
- Pro: styles are automatically available, everywhere
- Con: possible naming conflicts, too many styles in global scope

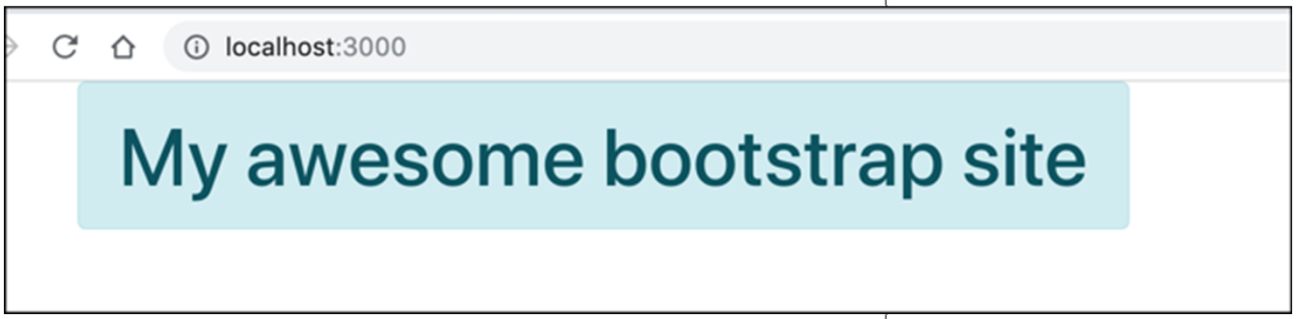
Example global styles



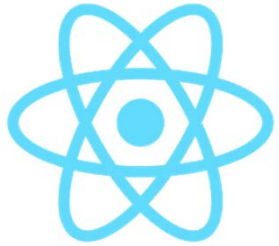
```
// index.js - import global styling
import 'bootstrap/dist/css/bootstrap.min.css'
import './index.css';
```

```
// App.js
function App() {
  return (
    <div className="container">
      <div className="row">
        <col-6>
          <h1 className="alert alert-info">
              My awesome bootstrap site
          </h1>
        </col-6>
      </div>
    </div>
  );
}
```

Global styles available in all components



Composing class names



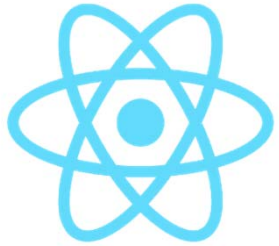
It is common for the `className` property to depend on the component `props` or `state`:

```
render() {
  let className = 'menu';
  if (this.props.isActive) {
    className += ' menu-active';
  }
  return <span className={className}>Menu</span>
}
```

This way you compose the exact styles of (global) class names that the component requires.

It responds automatically to changes in `props` or `state`.

2. Inline styles



"In React, inline styles are not specified as a string. Instead they are specified with an object whose key is the camelCased version of the style name, and whose value is the style's CSS value"

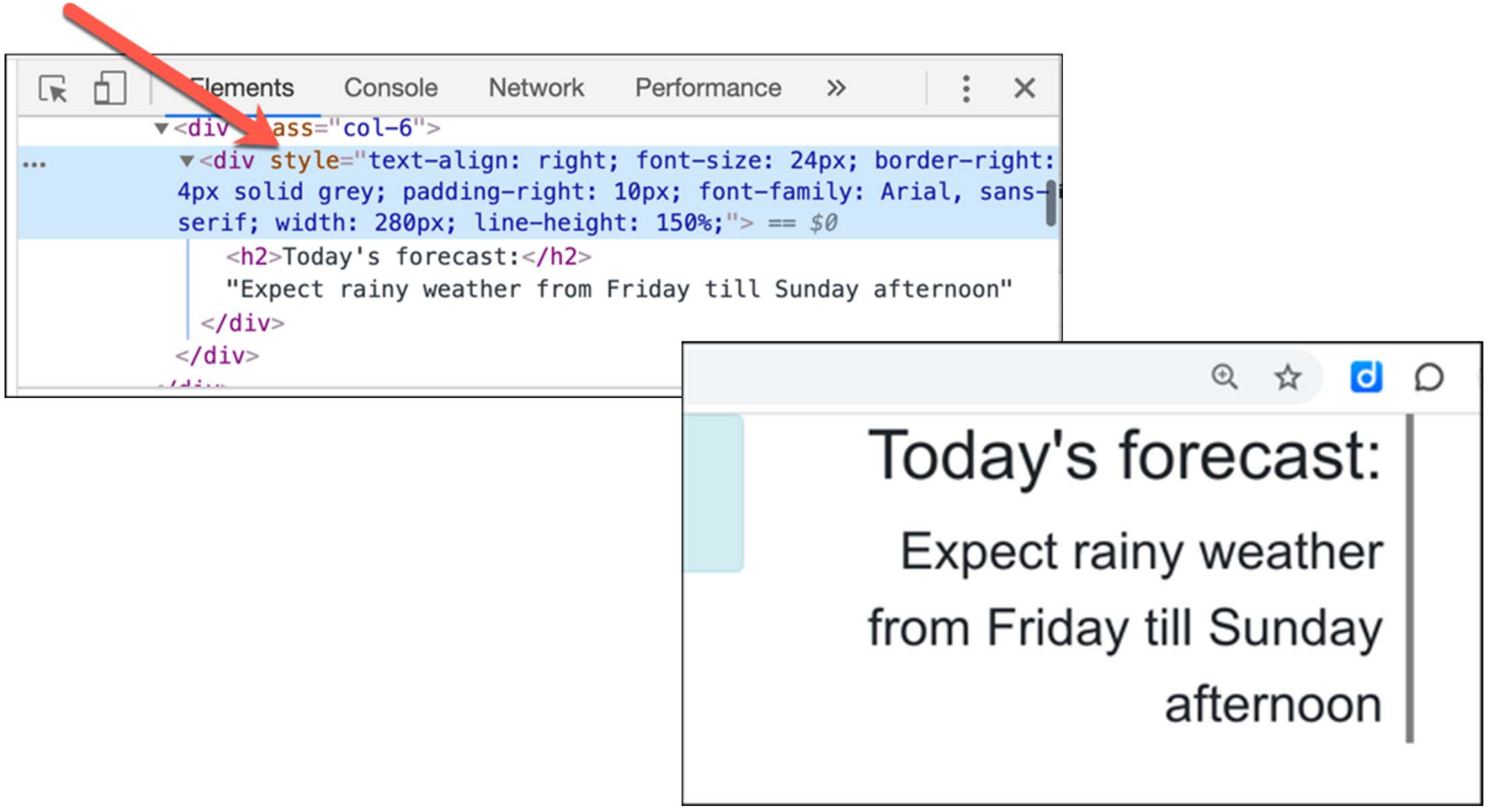
https://zhenyong.github.io/react/tips/inline-styles.html

Inline styles example

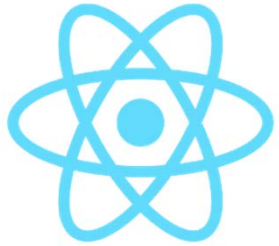
```
const headline = {
   textAlign: 'right',
   fontSize: '24px',
   borderRight: '4px solid grey',
   paddingRight:'10px',
   fontFamily: 'Arial, sans-serif',
   width: '280px',
   lineHeight: '150%'
};
```

```
<div style={headline}>
   <h2>Today's forecast:</h2>
   Expect rainy weather from Friday till Sunday afternoon
</div>
```

Transformed in the DOM



Defining inline, inline styles



The value of the `style` attribute has to be an object,

so double curly braces:

```
<div style={headline}>
   <h2>Today's forecast:</h2>
   Expect <span style={{fontStyle: 'italic'}}>rainy weather</span>
   from Friday till Sunday afternoon
</div>
```

Verdict: try to avoid this. It's ugly.

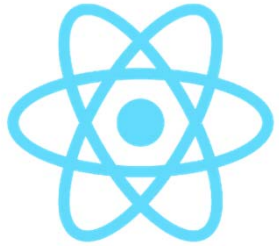
No <style> block in components

```
<div style={headline}>
   <h2>Today's forecast:</h2>
   …
   <style>
      .boldText{
        font-variant: 'bold’, // invalid
        fontVariant: 'bold’   // also invalid
      }
   </style>
</div>
```

Invalid!

Will not compile

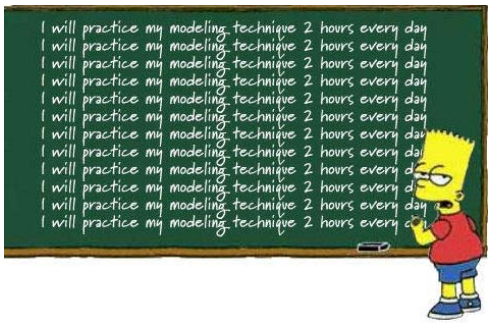
Verdict Inline Styles



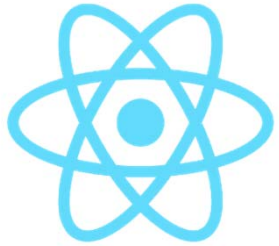
- Pro
  - enclosed/scoped styles
  - No chance of naming conflicts
- Con
  - You might find yourself repeating styles in different components
  - Quickly leads to bloated code and less SoC
  - Less convenient `camelCasing` for style properties
  - May harm performance of rendering the DOM

Workshop

- Create a new component.
- Define some constants as inline styles in this component, for instance
  - `.warning, .info and .rejected`.
  - Give them some properties
- Use the classes in the component
- Example `../300-styling-components`
  - `../components/InlineStyles.js`



3. CSS Modules



- If you want to achieve the same goal as *scoped styles* in Vue or Angular, use CSS Modules
- The styles are only available in components that import them
- The compiler adds random hashes to the style names
- Styles are in separate `.css` files
- Styles have the `.module.css` extension

CSS Modules – structure

1. Separate `.module.css` file

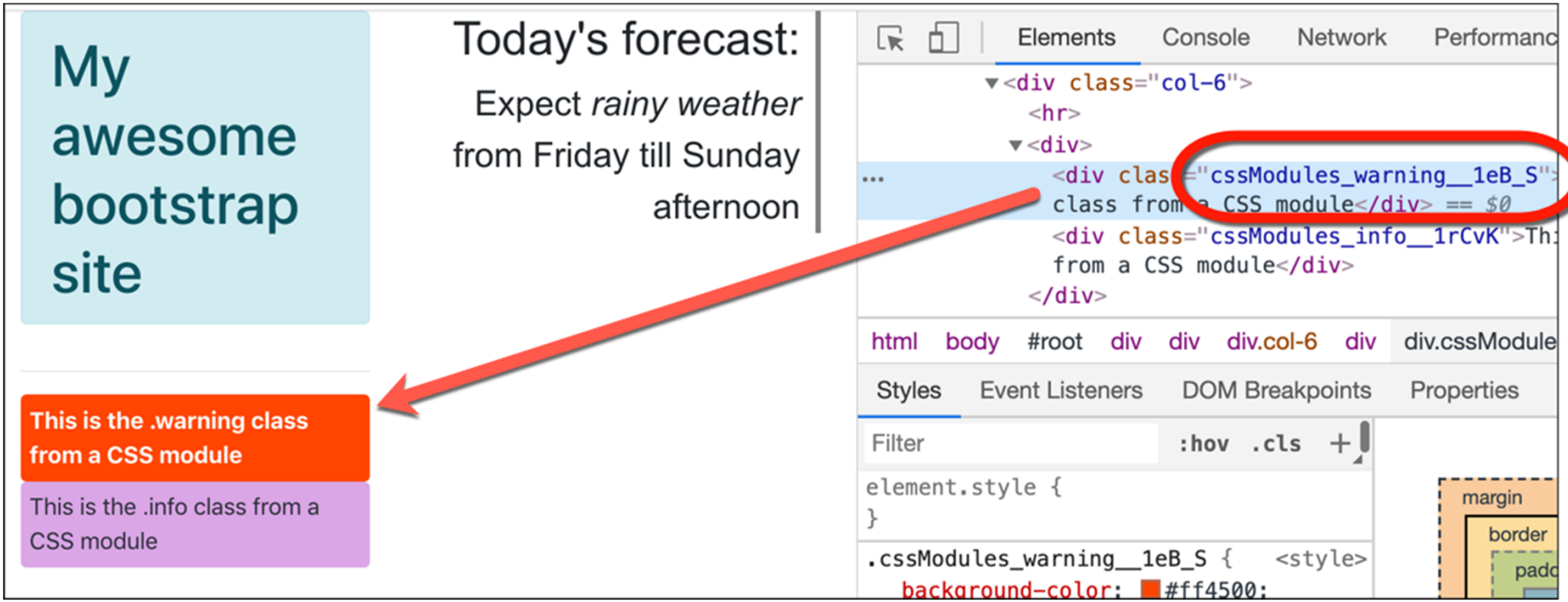
```
/* cssModules.module.css */
.warning {
    background-color: orangered;
    color: white;
    font-weight: bold;
    border-radius: 4px;
    padding: 6px;
}
…
```

2. Import in component

3 Use in component

```
import React, {Component} from 'react';
import styles from './cssModules.module.css'

class CssModules extends Component {
   render() {
      return (
         <div>
            <div className={styles.warning}>
               This is the .warning class from a CSS module
            </div>

            …
         </div>
      );
   }
}

export default CssModules;
```

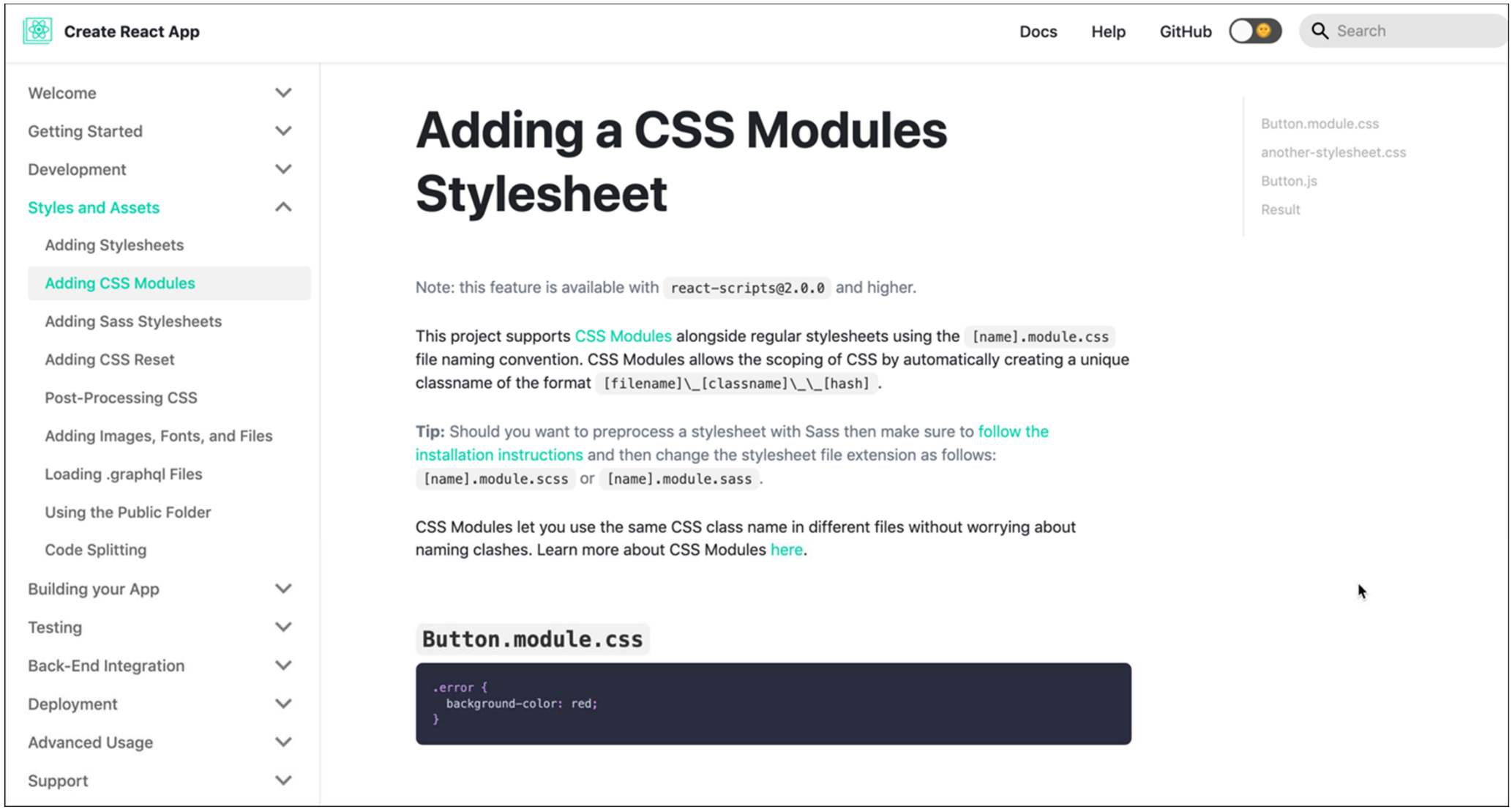
CSS Modules in the UI / DOM



A random hash is added to the style name,

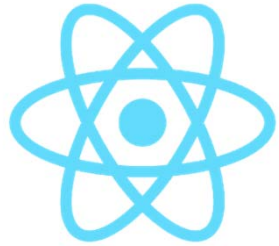
so no naming conflicts with other components

More info on CSS Modules

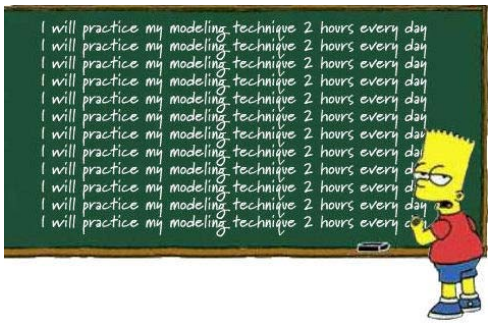


https://create-react-app.dev/docs/adding-a-css-modules-stylesheet/

Workshop



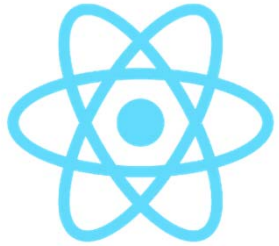
- Create a new component.
- Create a new CSS module, again creating some classes in it
  - `.warning, .info and .rejected`.
- Import the module and use the classes in the component.
- Can you also import them in another component? If yes, how would you (re)structure your app?
- Example `../300-styling-components`
  - `../components/cssModules.js`



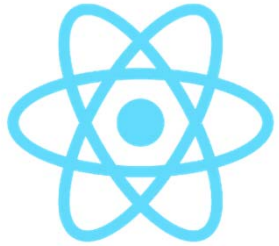
Using SASS

Creating `.sass` files and compiling/using them

Team React:



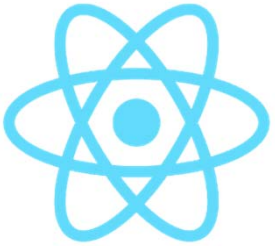
“Generally, we recommend that you don’t reuse the same CSS classes across different components. For example, instead of using a `.Button` CSS class in `<AcceptButton>` and `<RejectButton>` components, we recommend creating a `<Button>` component with its own `.Button` styles, that both `<AcceptButton>` and `<RejectButton>` can render”



"Following this rule often makes CSS preprocessors less useful, as features like mixins and nesting are replaced by component composition."

https://create-react-app.dev/docs/adding-a-sass-stylesheet

However, if you want/need to use Sass:



- Default available in CRA 2.0.0+
  - no more need to `eject` and configure `webpack-sass-loader` yourself
- First, install node-sass in your project:
  - `npm install node-sass –save`
- Rename your `.css` file to `.scss`.
- Use Sass variables, mixins, nesting, as usual
  - You can also `@import` other `.scss` files

Adding .scss files

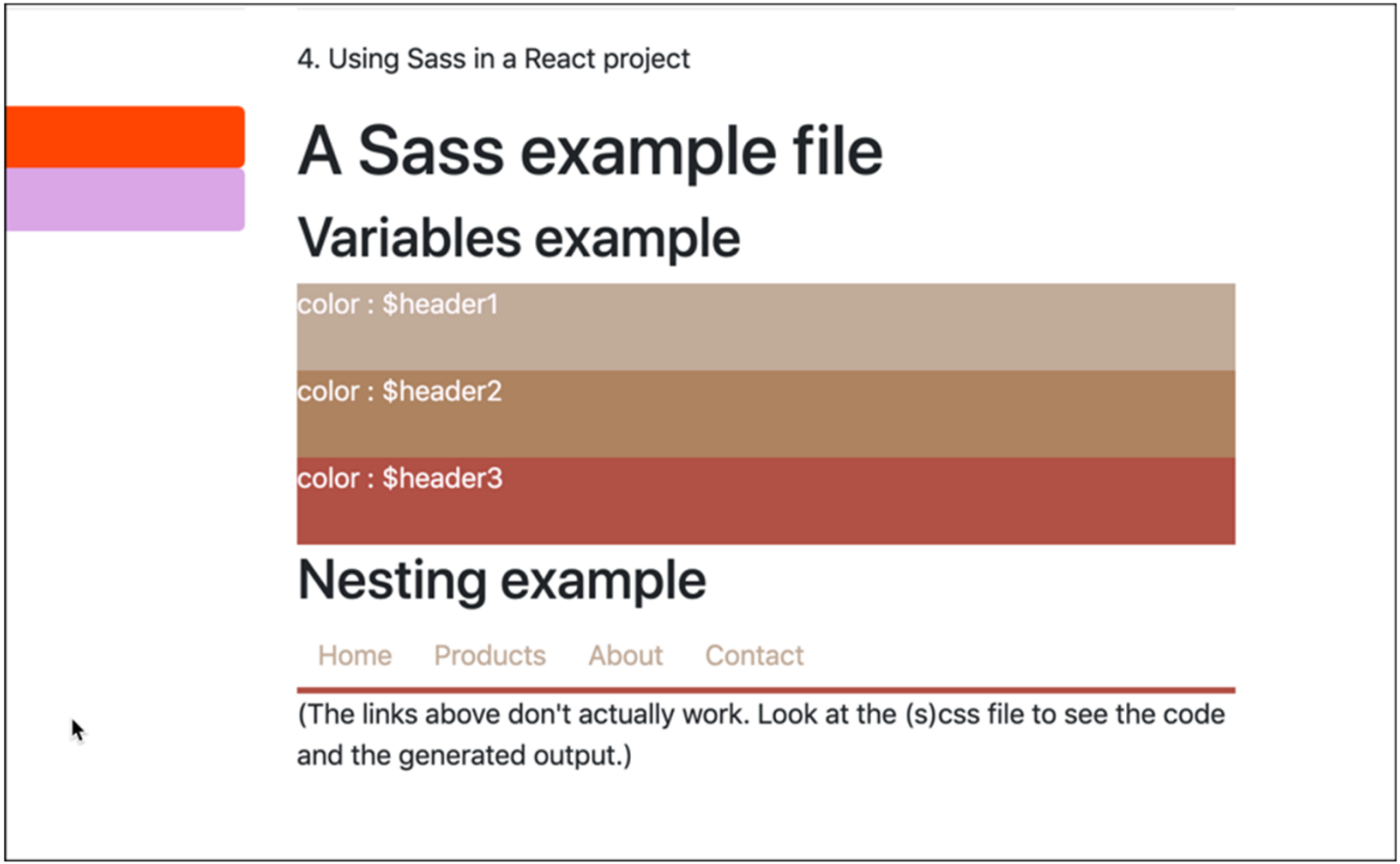
```
/* SassComponent.scss - a Sass file … */

// 1. Variables for the different header colors
$header1: #c1ab99;
$header2: #ae8360;
$header3: #b15145;
$forecolor: #fff9ff;

// Default styles
.header {
  width: 100%;
  height: 50px;
}
//Use the variables
.header1 {
  background-color: $he
  color: $forecolor
}
…
```

Import .scss file

```
import './SassComponent.scss'

class SassComponent extends Component {
   render() {
      return (
         <div>
            <p>4. Using Sass in a React pr
            <h1>A Sass example file</h1>
            {/*1. Header/variables example*/}
            <h2>Variables example</h2>
            <div className="header header1">color : $header1</div>
            <div className="header header2">color : $header2</div>
            <div className="header header3">color : $header3</div>
          )
…
```

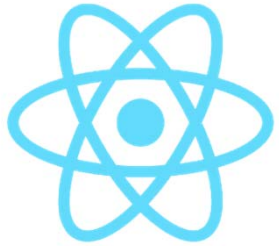
Use className as usual

Result



<SassComponent />

Sass CSS Modules

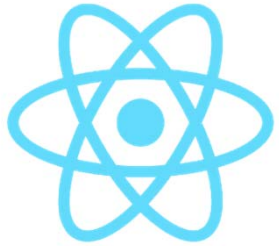


- You can also use Sass CSS modules (i.e. combine CSS modules with Sass).
- Naming convention: `myComponent.module.scss`
- Combine the two techniques as usual.
- Don’t forget to import the module and assign it to a (`styles`) variable:
  - `<h1 className={styles.heading}…</h1>`

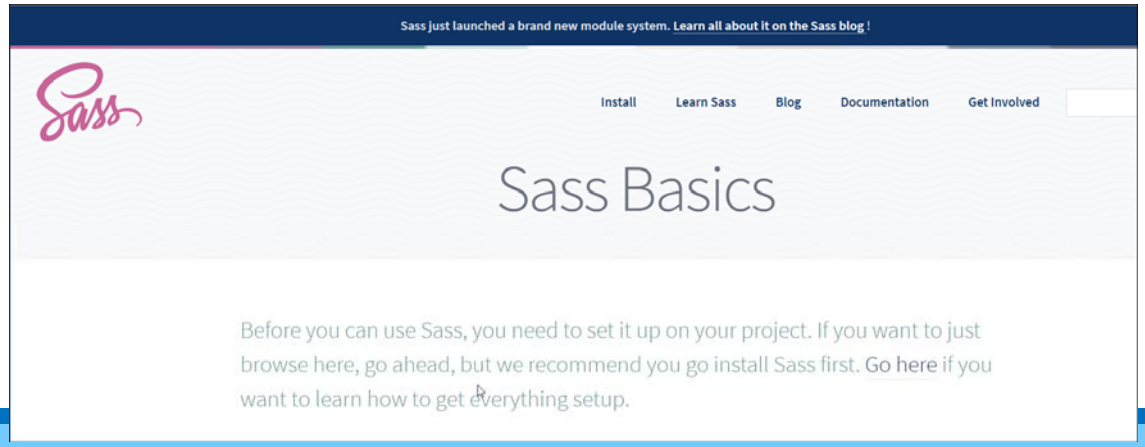
More info on Sass / Modules

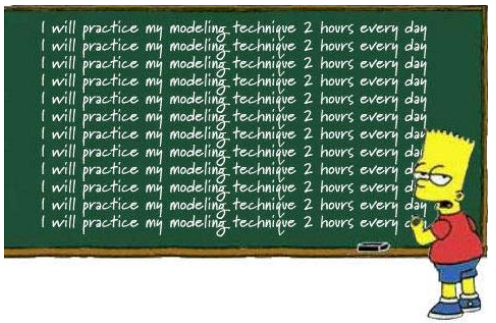
https://blog.bitsrc.io/how-to-use-sass-and-css-modules-with-create-react-app-83fa8b805e5e

Workshop



- Create a new project (or use your own project) and install Sass to it. When working with the example project: add a component
- Create an `.scss` file with some variables and possibly nesting or mixins
- Examples: https://sass-lang.com/guide
- Example `../300-styling-components`
  - `../components/SassComponent`

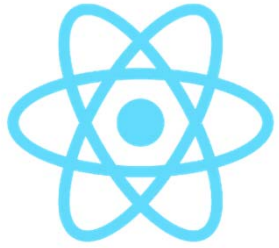




React UI libraries

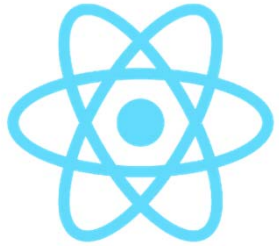
Using React-optimized User Interface libraries

Don’t reinvent the wheel



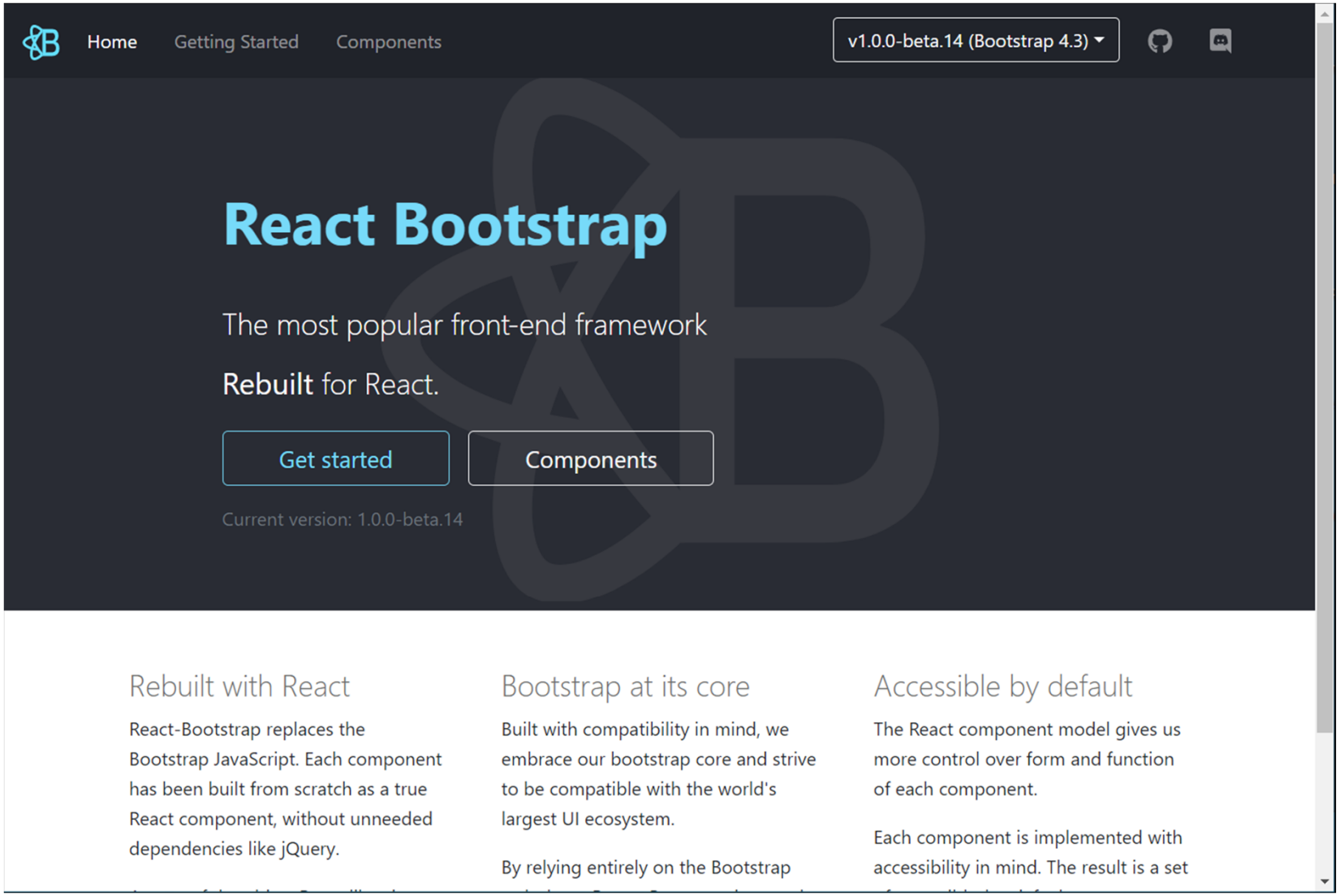
- There are *a ton* of React UI frameworks available
- The all give you buttons, alerts, datepickers, modal dialogs, and so on
  - Most of them Open Source, free of charge
- Some examples
  - React Bootstrap
  - Material Kit React
  - Material UI
  - Blueprint
  - And many, many more

Basic usage



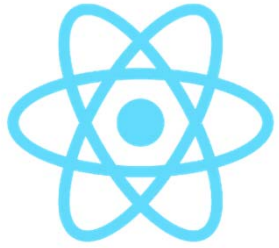
- The basic usage of all libraries is the same.
- `npm install` the lib to add it to project.
- *Read the docs* for info on
  - importing styles,
  - Adding fonts,
  - Adding icons,
  - Available components,
  - and so on

Example – React Bootstrap



https://react-bootstrap.github.io/

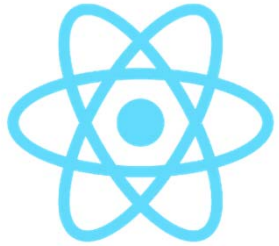
React Bootstrap



- Popular Bootstrap classes implemented as React Components
- No dependencies on third party libraries (i.e. `jQuery` and `popper.js`)
- The basic bootstrap stylesheet is still required!
- So install both packages

```
npm install react-bootstrap bootstrap --save
```

Update App.js or index.js



```
// index.js - import global styling. Still required by react-bootstrap
// for some basic styling.
import 'bootstrap/dist/css/bootstrap.min.css'
```

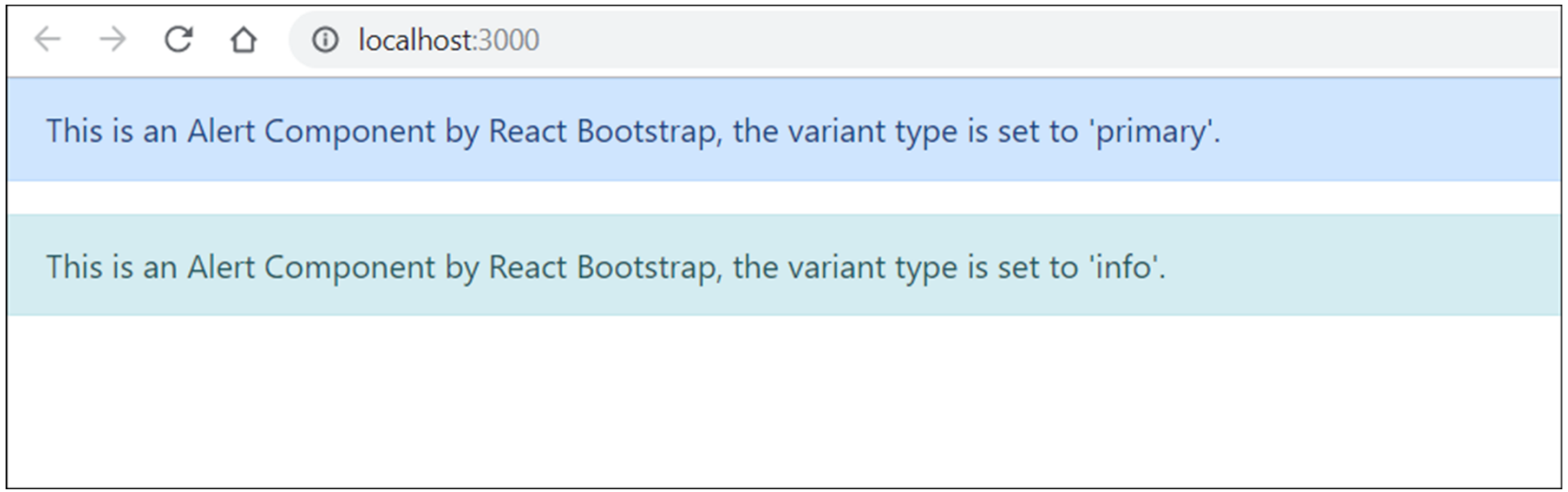
Import just the components you want to use in your UI.

You don’t import the complete library

```
import {Alert} from "react-bootstrap";
```

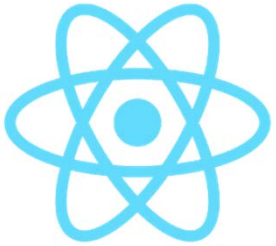
```
<Alert variant={'primary'}>
    This is an Alert Component by React Bootstrap,
    the variant type is set to 'primary'.
</Alert>
```

Result



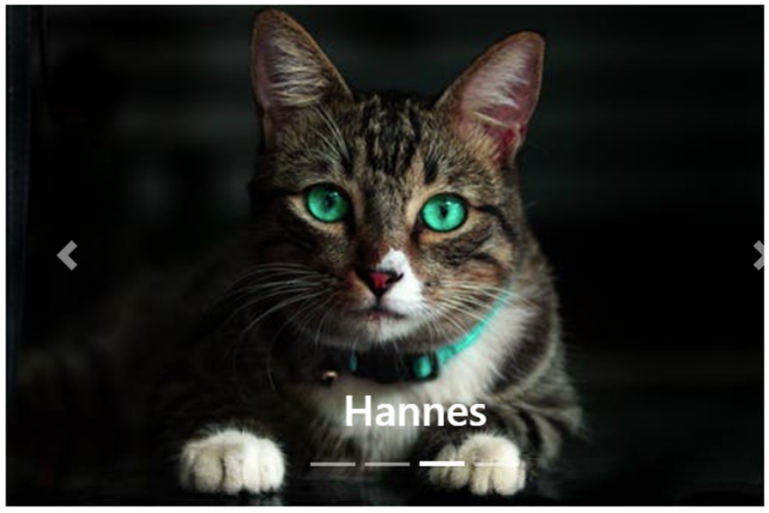
See …/Components/AlertComponent.js

Dynamic Components



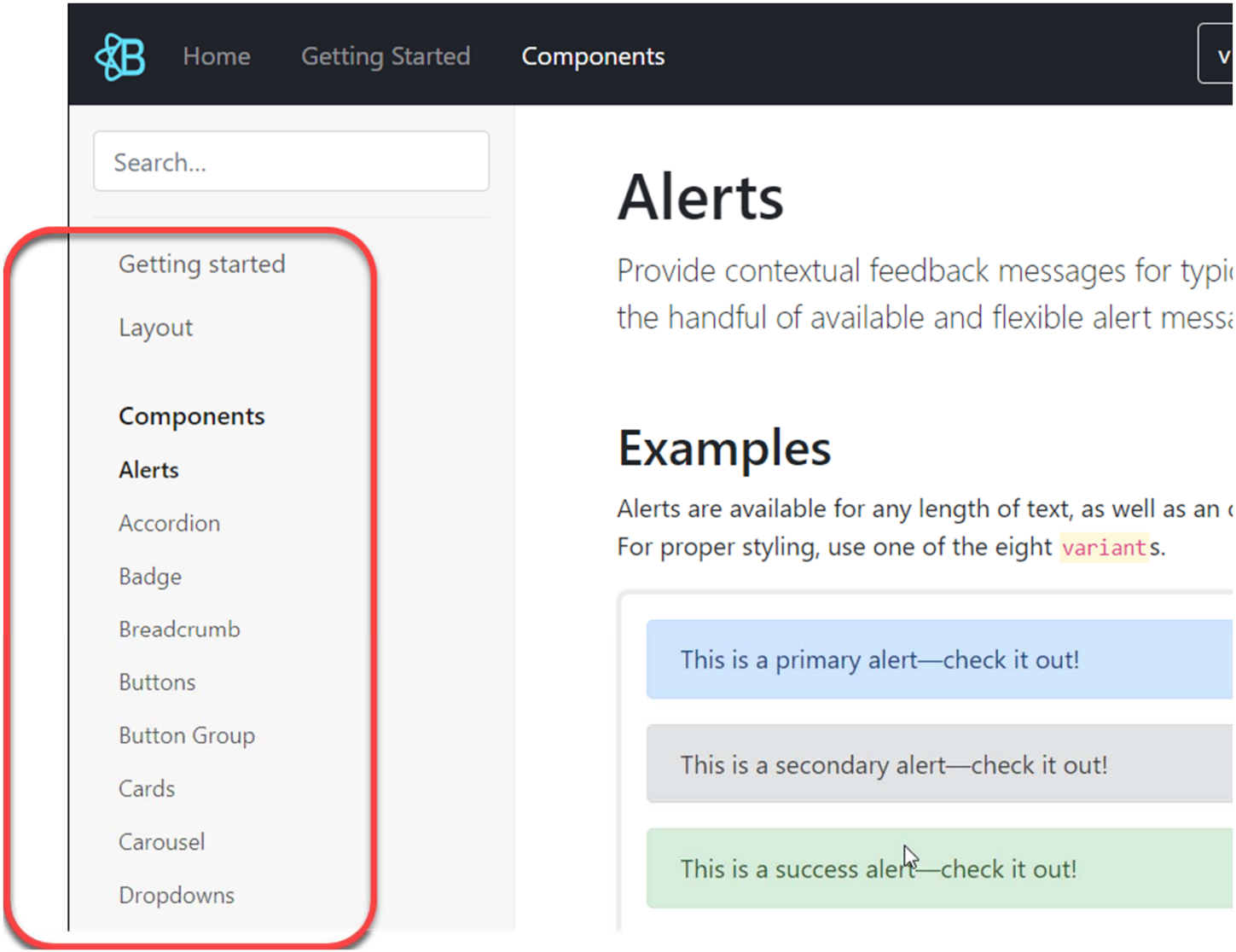
- Don’t require additional libraries
- *May* require additional script
  - For instance if you want to control a carousel via script
  - RTFM!

CarouselComponent



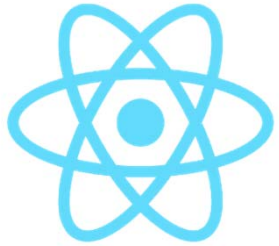

```
function ControlledCarousel() {
  const [index, setIndex] = useState(0);
  const [direction, setDirection] = useState(null);

  const handleSelect = (selectedIndex, e) => {
    setIndex(selectedIndex);
    setDirection(e.direction);
  };

  return (
    <Carousel activeIndex={index} direction={direction} onSelect={handleSelect}>
      <Carousel.Item>
```

More info

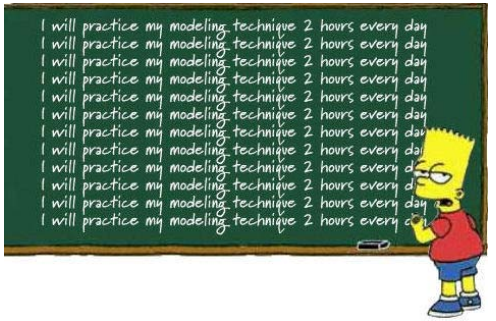


https://react-bootstrap.github.io/components/alerts/

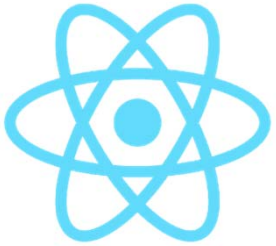
Workshop



- Create a new project
- Add a React UI library of your choice to the project
- Create one or two components, using Components from the library. Examples:
  - Modal dialog
  - Accordeon
  - Datepicker
  - ...
- Ready made example `../310-react-bootstrap`

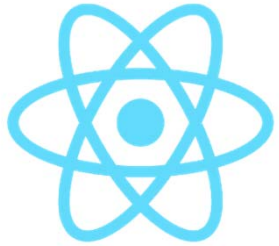


More info



- https://www.codeinwp.com/blog/react-ui-component-libraries-frameworks/
- https://devias.io/blog/top-5-react-ui-component-libraries-frameworks

Checkpoint



- You know about different types of styles you can use in components
  - Global styles – for your global UI components
  - Inline styles – try to avoid
  - CSS Modules – preferred!
  - Sass – if necessary
- You are familiar with React UI frameworks
- You know where to find them and add to your project