JSX Cheat Sheet

How to write better JSX

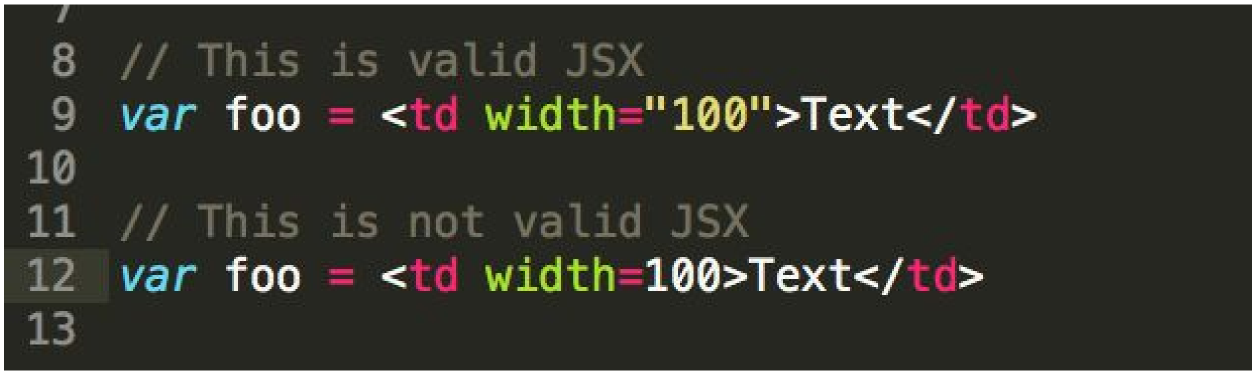
What is JSX?

JSX is an XML-like syntax for writing legible ReactJS component code. It is *not* interpreted by the browser! Instead, Babel will interpret your JSX and convert it into valid Javascript.

First, some gotchas

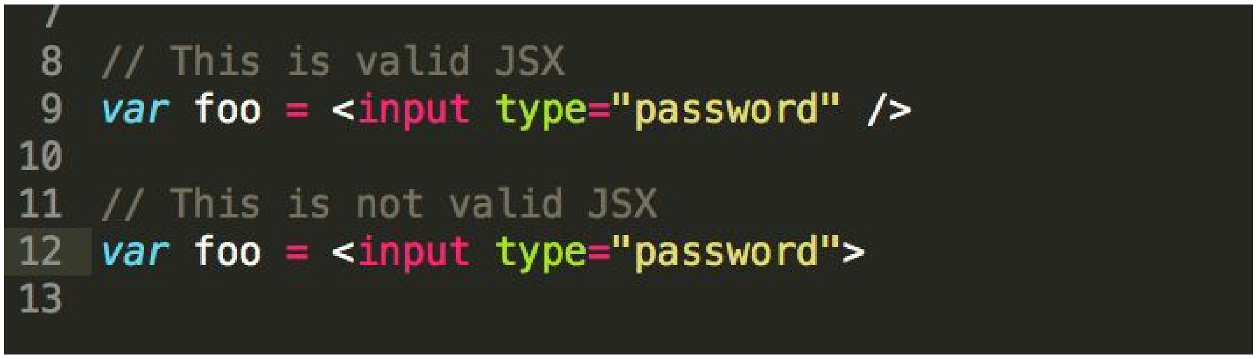
While JSX looks almost identical to HTML, it has some minor differences that are easy to remember:

You must use “” when defining attributes



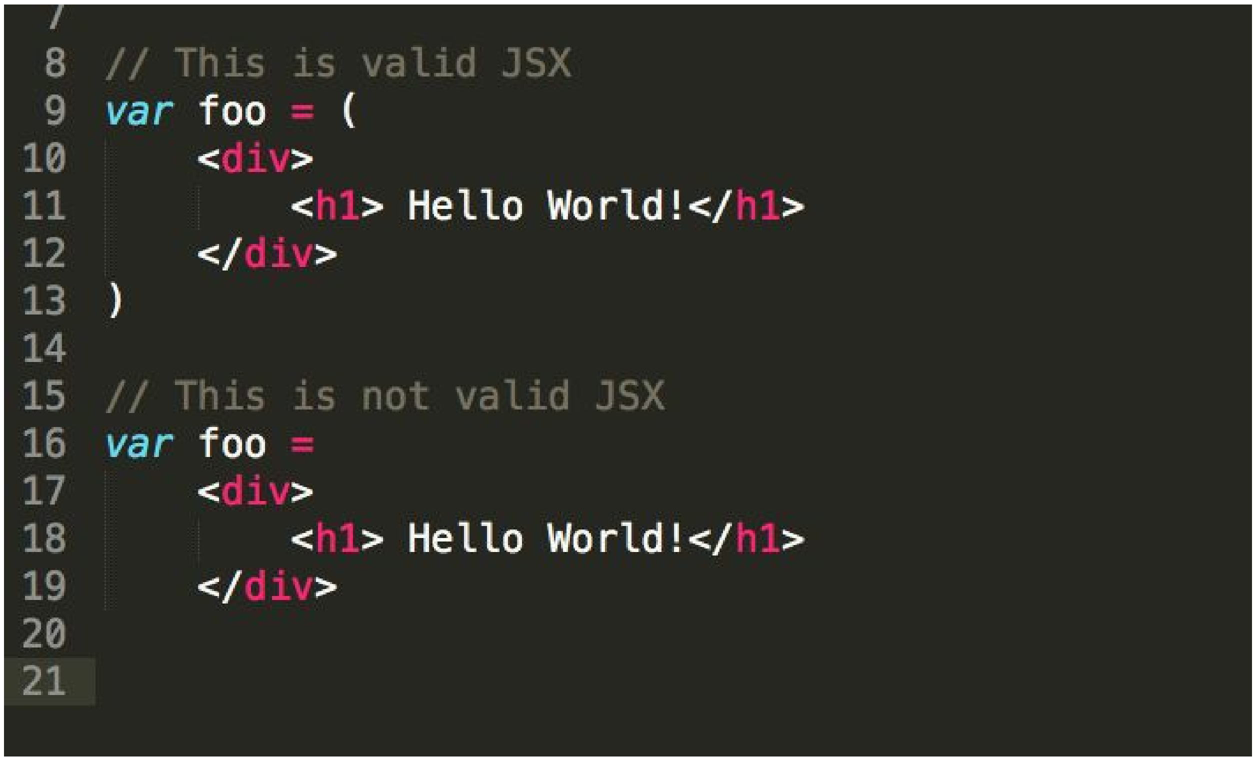
```
// This is valid JSX
var foo = <td width="100">Text</td>

// This is not valid JSX
var foo = <td width=100>Text</td>
```

Self-closing tags must be terminated with /



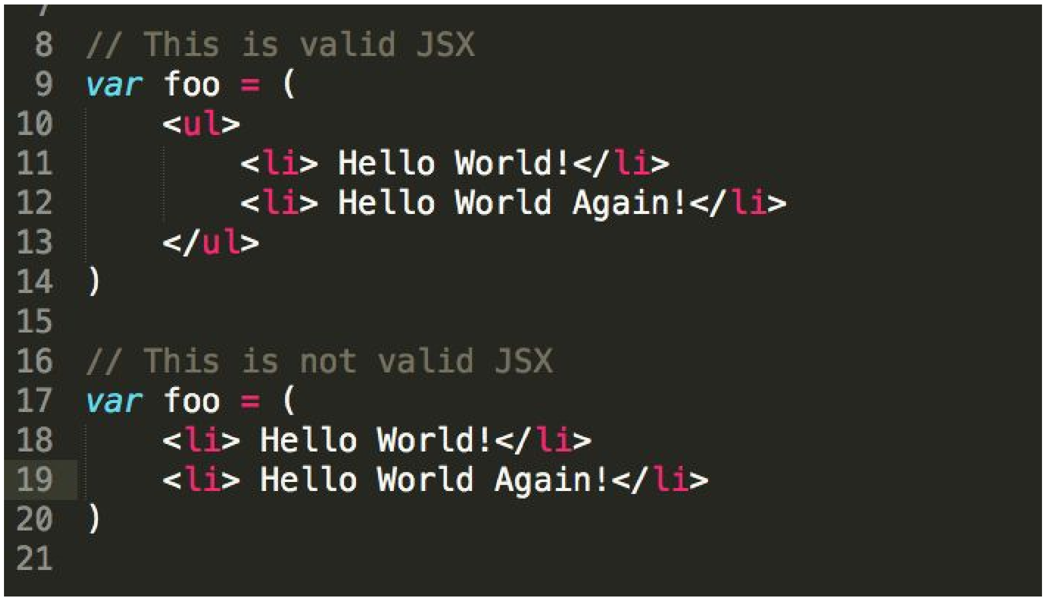
```
// This is valid JSX
var foo = <input type="password" />

// This is not valid JSX
var foo = <input type="password">
```

Multi-line JSX must be wrapped with ( )



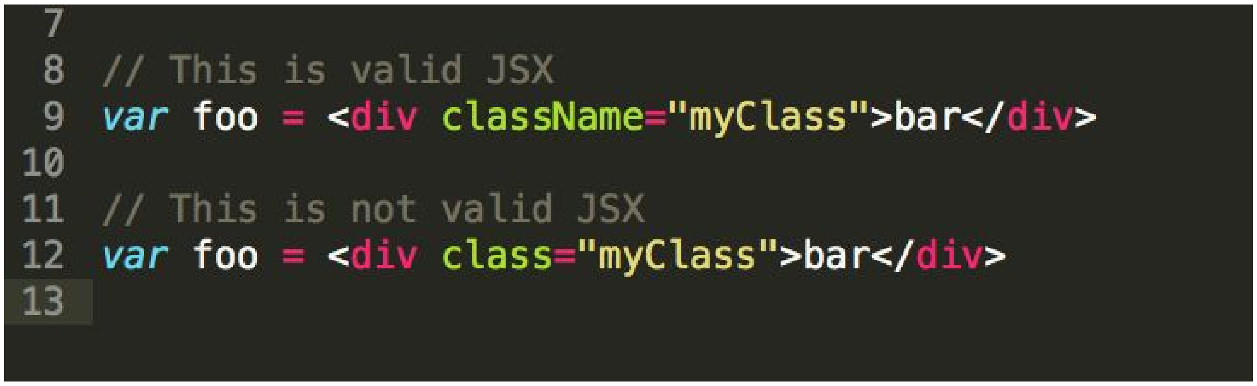
```
// This is valid JSX
var foo = (
    <div>
        <h1> Hello World!</h1>
    </div>
)

// This is not valid JSX
var foo =
    <div>
        <h1> Hello World!</h1>
    </div>

```

A JSX statement must have only one outer element



```
// This is valid JSX
var foo = (
    <ul>
        <li> Hello World!</li>
        <li> Hello World Again!</li>
    </ul>
)

// This is not valid JSX
var foo = (
    <li> Hello World!</li>
    <li> Hello World Again!</li>
)

```

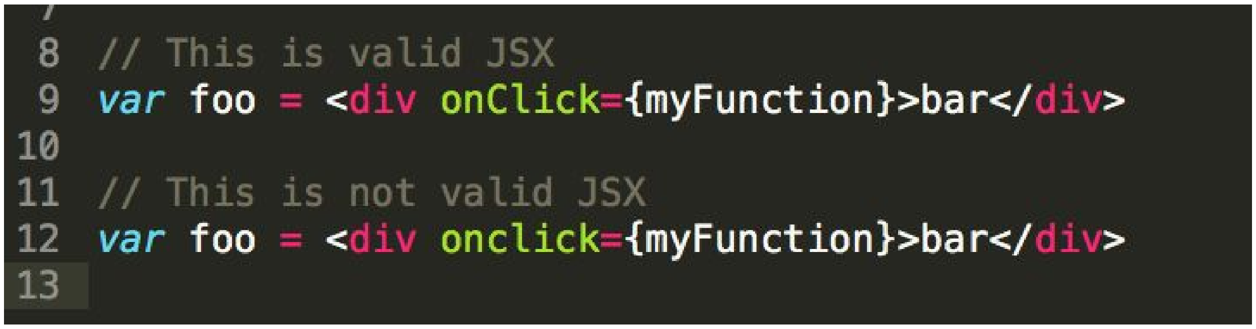
You can’t use any Javascript reserved words



```
// This is valid JSX
var foo = <div className="myClass">bar</div>

// This is not valid JSX
var foo = <div class="myClass">bar</div>
```

Note: To add a CSS class to your elements, use className instead of class. Chances are that this will trip you up a few times while you get used to JSX!

Javascript event listeners should be camel-cased (instead of lowercase)



```
// This is valid JSX
var foo = <div onClick={myFunction}>bar</div>

// This is not valid JSX
var foo = <div onclick={myFunction}>bar</div>
```

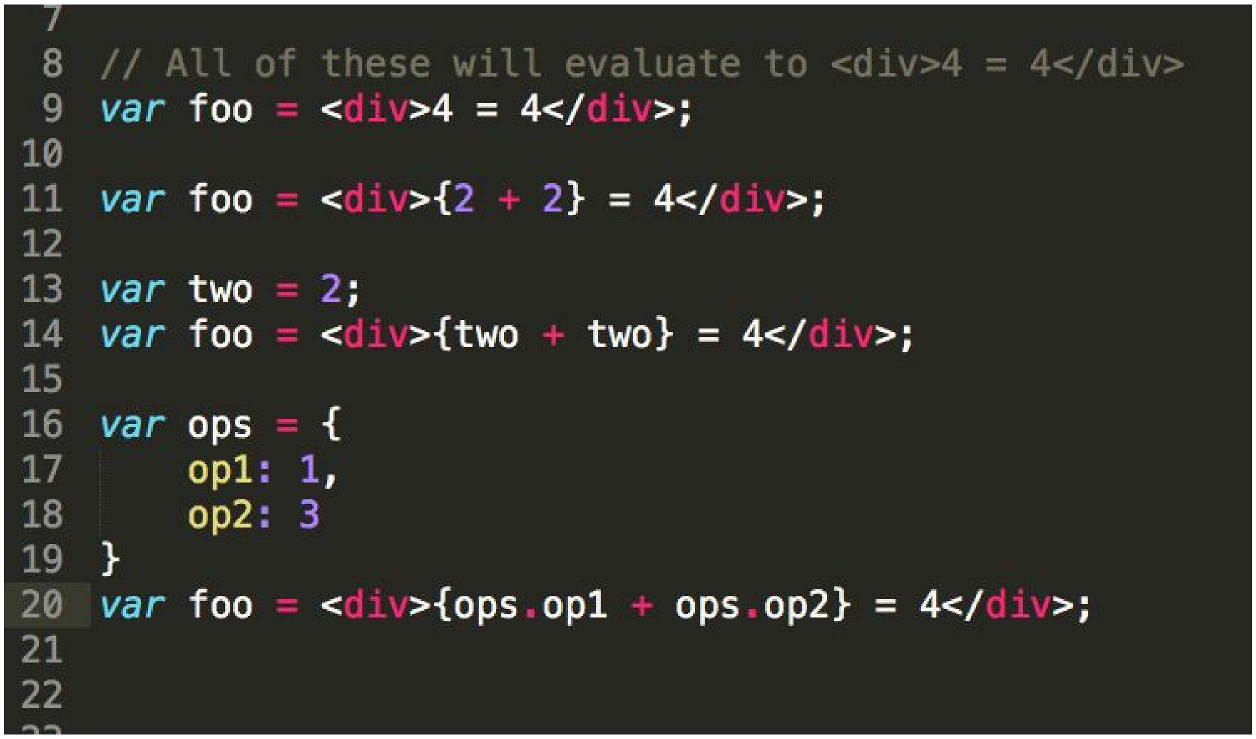
Note: If those curly braces confuse you, don’t worry! They’re explained below.

JS in your JSX

Now that the gotchas are out of the way, we can dive into the cool parts of JSX:

You can type regular Javascript anywhere in your JSX

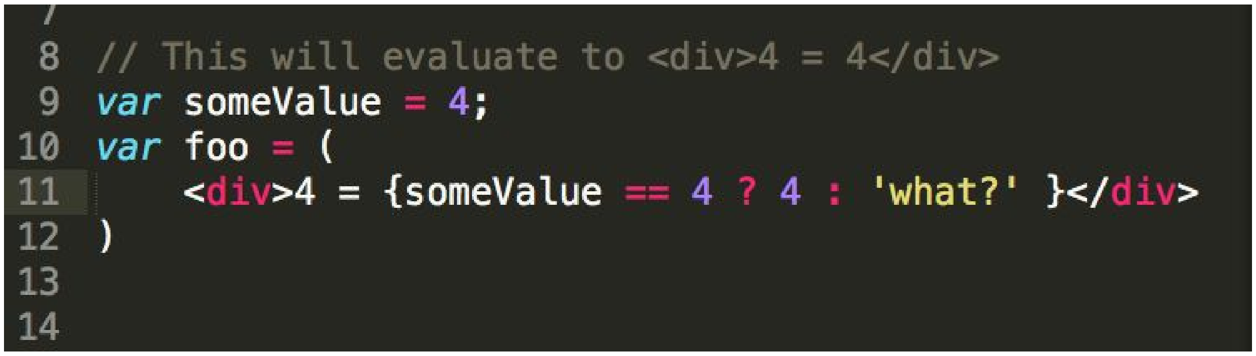
If you need to inject javascript into your JSX, all you need to do is include curly braces. The javascript expression will be evaluated, and the result will be injected into the virtual DOM:



```
// All of these will evaluate to <div>4 = 4</div>
var foo = <div>4 = 4</div>;

var foo = <div>{2 + 2} = 4</div>;

var two = 2;
var foo = <div>{two + two} = 4</div>;

var ops = {
    op1: 1,
    op2: 3
}
var foo = <div>{ops.op1 + ops.op2} = 4</div>;
```

Unfortunately, some Javascript isn't allowed inside your JSX

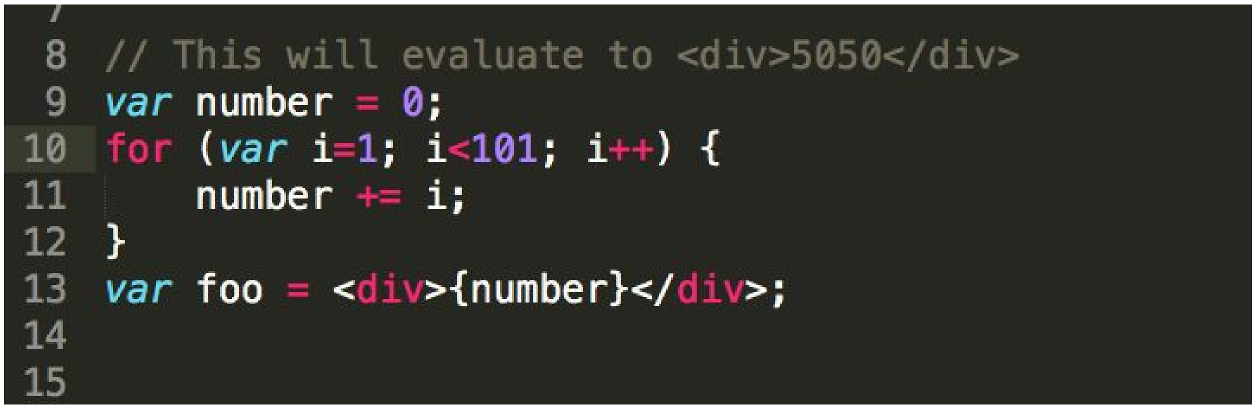
You can't use if-else statements, while loops, or for loops inside your JSX. The closest you can get is by using a ternary operator for if-else statements:



```
// This will evaluate to <div>4 = 4</div>
var someValue = 4;
var foo = (
    <div>4 = {someValue == 4 ? 4 : 'what?' }</div>
)
```

If you need to use a for loop, while loop, or if-else block, do it before your JSX

The best practice for using complex Javascript in your components is to handle it before the JSX. The result of the loop can be saved to a variable, which can later be injected into your JSX:

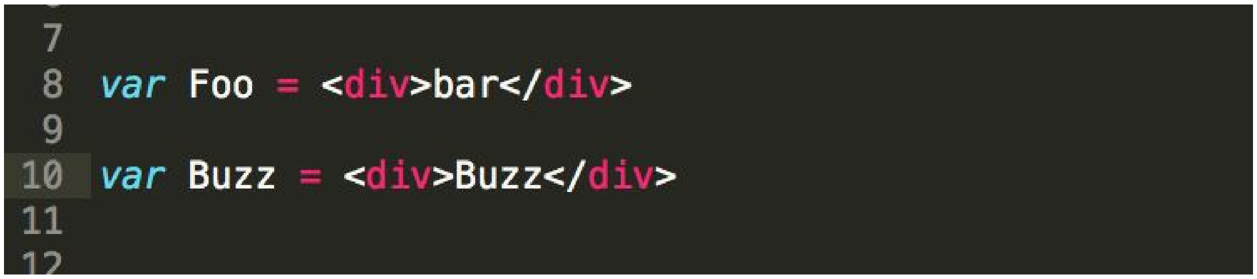


```
// This will evaluate to <div>5050</div>
var number = 0;
for (var i=1; i<101; i++) {
    number += i;
}
var foo = <div>{number}</div>;
```

Nesting Components

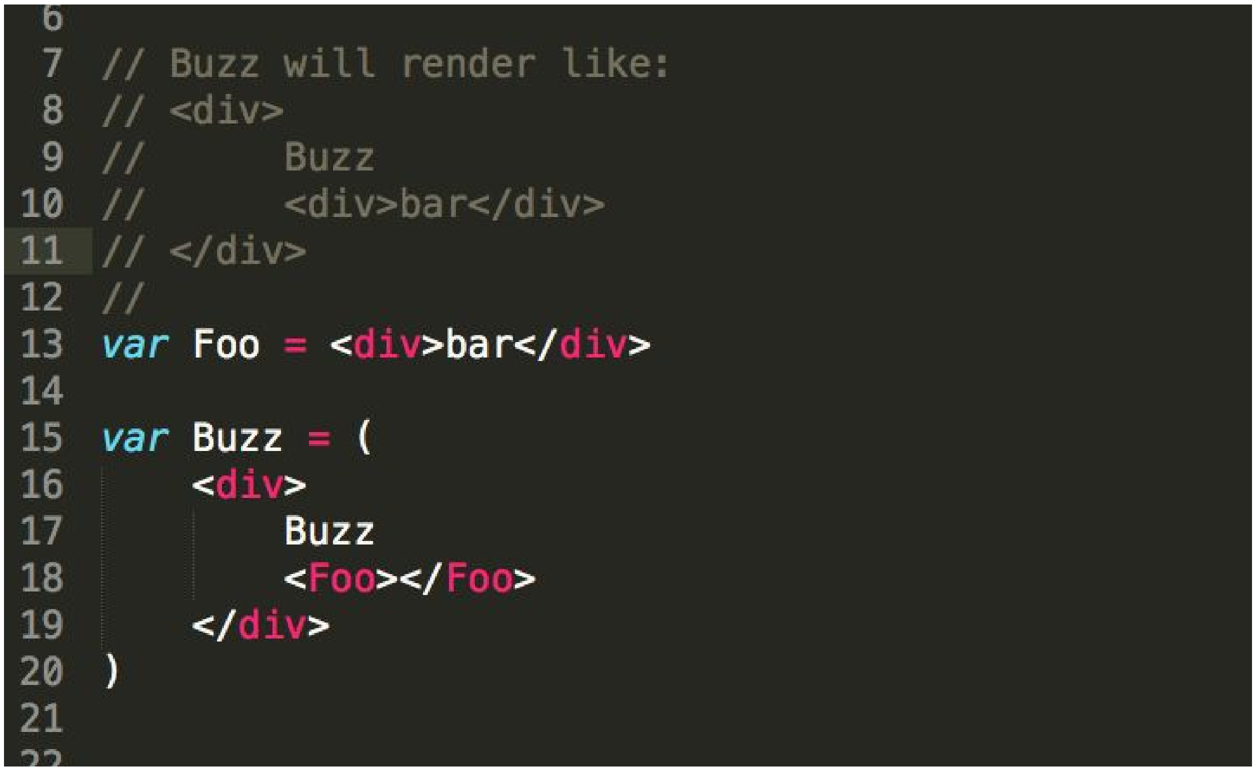
Simple nesting

Let’s say you’ve created a component called Foo and a component called Buzz:



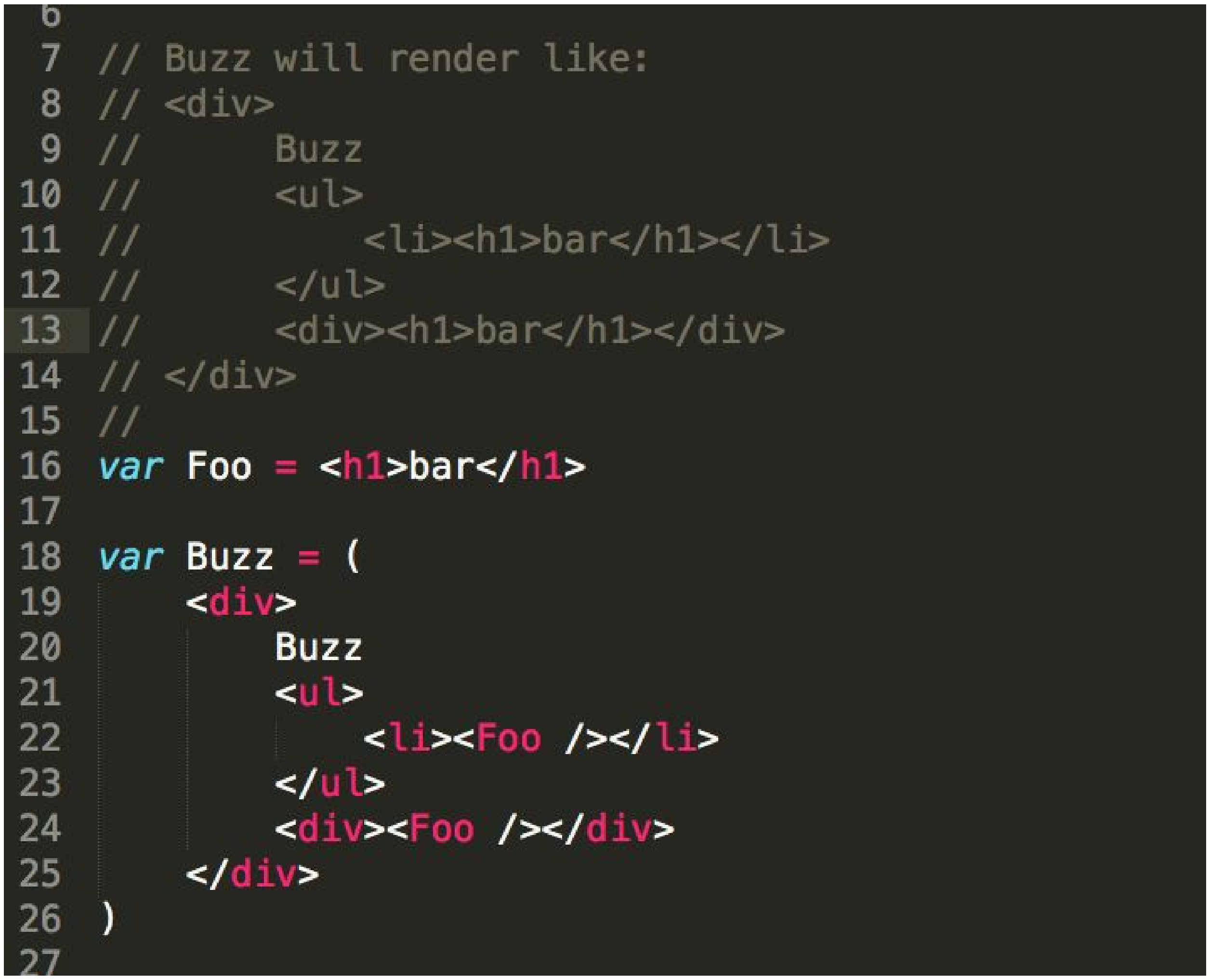
```
var Foo = <div>bar</div>

var Buzz = <div>Buzz</div>
```

If you want Foo to be rendered *inside* of Buzz, you can treat it like it’s a custom HTML tag:



```
// Buzz will render like:
// <div>
//      Buzz
//      <div>bar</div>
// </div>
//
var Foo = <div>bar</div>

var Buzz = (
    <div>
        Buzz
        <Foo></Foo>
    </div>
)
```

In fact, you can use Foo as many times as you want within Buzz:

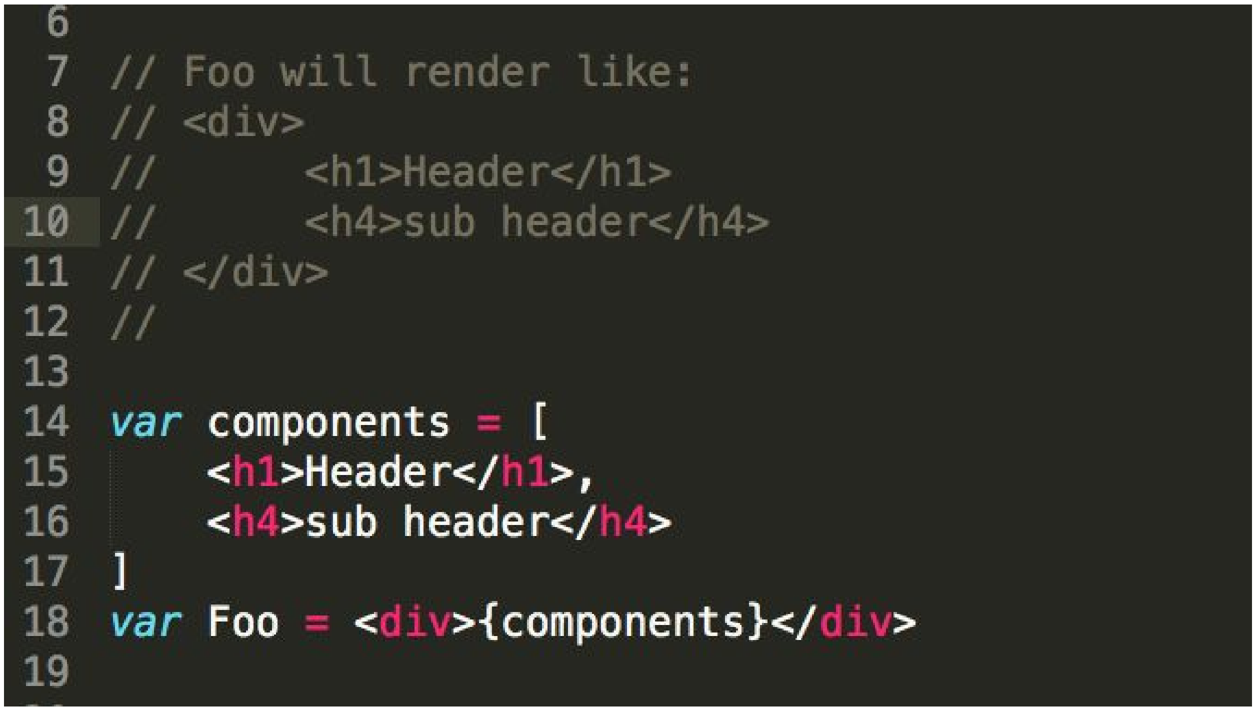


```
// Buzz will render like:
// <div>
//      Buzz
//      <ul>
//          <li><h1>bar</h1></li>
//      </ul>
//      <div><h1>bar</h1></div>
// </div>
//
var Foo = <h1>bar</h1>

var Buzz = (
    <div>
        Buzz
        <ul>
            <li><Foo /></li>
        </ul>
        <div><Foo /></div>
    </div>
)
```

Note: In the above example, I chose to make Foo into a self-closing tag. You’re allowed to do that!

Nesting Components with Arrays

You can use an Array to inject nest multiple components at once:

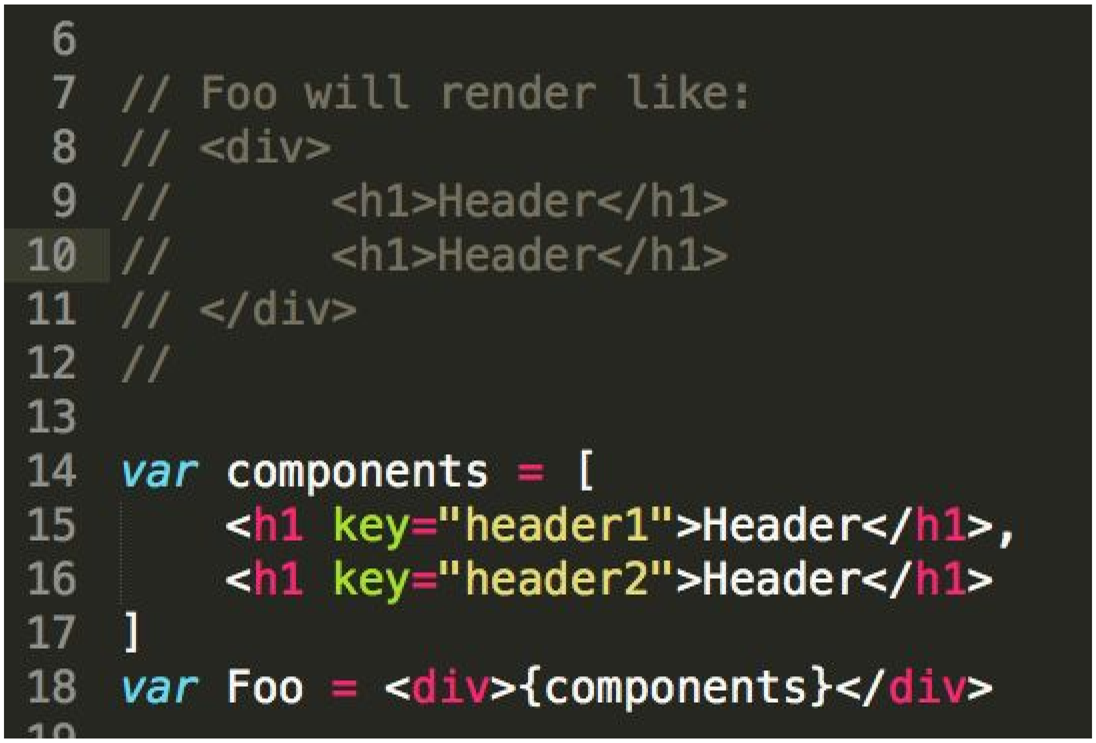


```

// Foo will render like:
// <div>
//      <h1>Header</h1>
//      <h4>sub header</h4>
// </div>
//

var components = [
    <h1>Header</h1>,
    <h4>sub header</h4>
]
var Foo = <div>{components}</div>

```

Siblings with same tags need the "key" attribute!!!

Let's say that the components array in the example above had two h1 tags instead of an h1 and an h4…

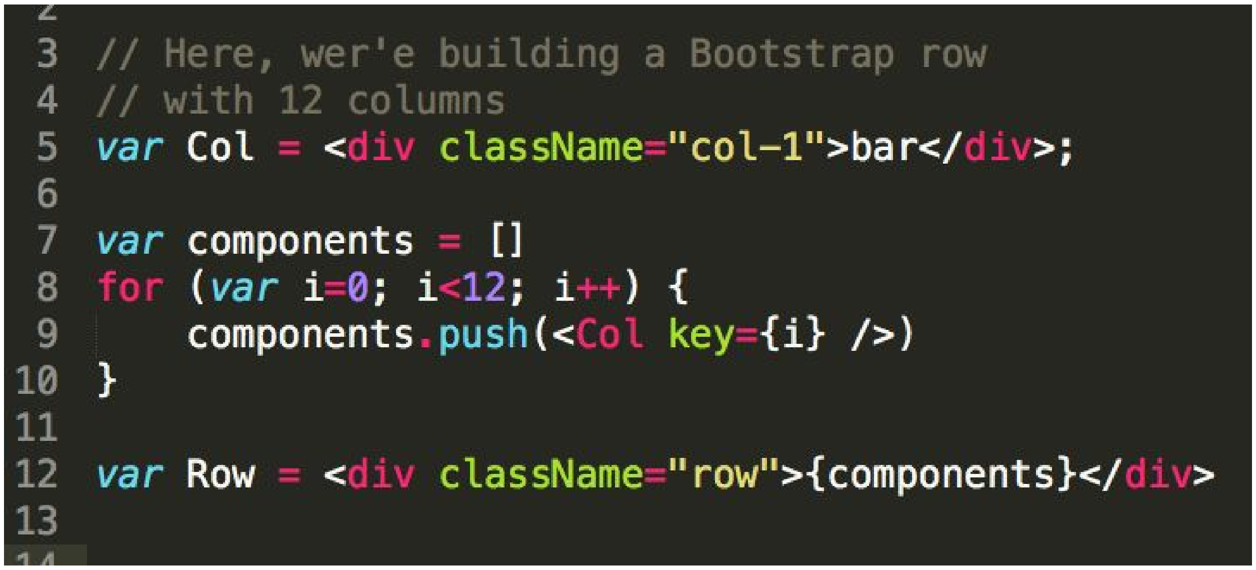
In this case, React-DOM would have a hard time distinguishing the the h1 tags from one another! To make it easier on React-DOM, we should distinguish the two tags with the "key" attribute:



```

// Foo will render like:
// <div>
//      <h1>Header</h1>
//      <h1>Header</h1>
// </div>
//

var components = [
    <h1 key="header1">Header</h1>,
    <h1 key="header2">Header</h1>
]
var Foo = <div>{components}</div>
```

It doesn't matter what values we set the key attribute to, as long as they are different than their siblings. **Including unique keys in identical siblings is the only way React can tell the two apart**. You can leave out the keys if you want, but you'll get a console warning, and you might notice your application slow down a bit.

Most often, you'll use keys when you build an array of similar elements:

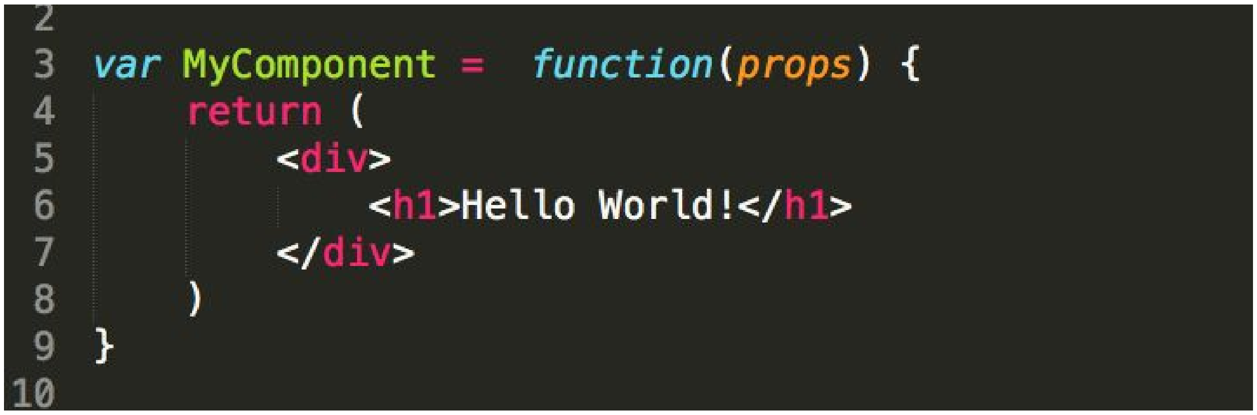


```
// Here, wer'e building a Bootstrap row
// with 12 columns
var Col = <div className="col-1">bar</div>;

var components = []
for (var i=0; i<12; i++) {
    components.push(<Col key={i} />)
}

var Row = <div className="row">{components}</div>
```

Components as variables, functions, and classes

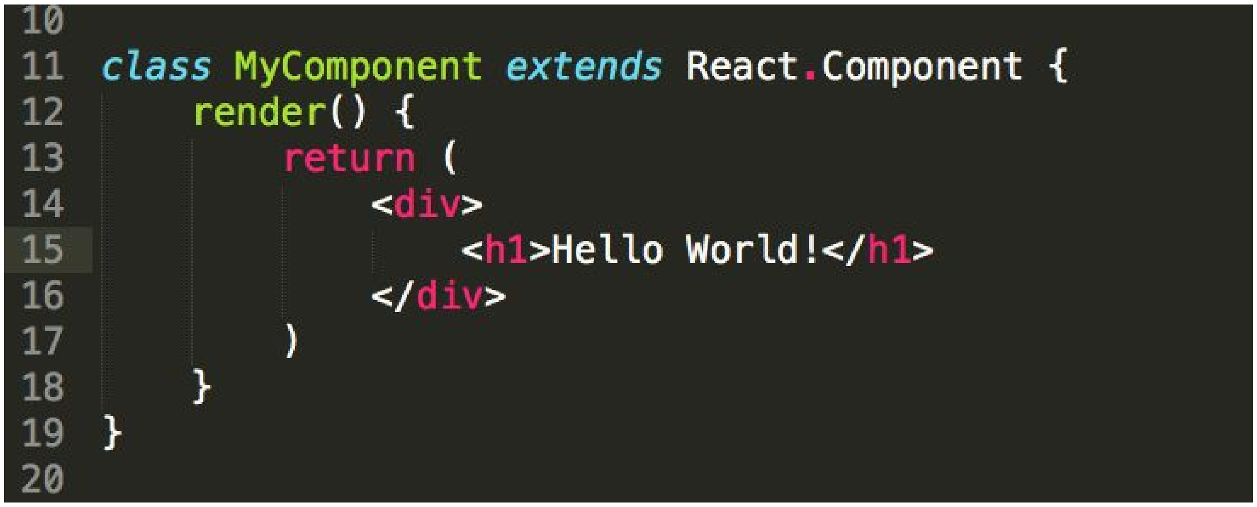
All throughout this document you've seen JSX saved to variables. **These variables are not full components!** Sure, they represent pseudo-html, but for them to actually exist in the virtual DOM, they need to be wrapped with either a function or a class. More often than not, you'll be defining your components as classes so that you can gain access to props, state, and the Component lifecycle methods (These concepts are complicated enough to deserve their own document…)

As a function:



```
var MyComponent =  function(props) {
    return (
        <div>
            <h1>Hello World!</h1>
        </div>
    )
}
```

As a class:



```
class MyComponent extends React.Component {
    render() {
        return (
            <div>
                <h1>Hello World!</h1>
            </div>
        )
    }
}
```