**Handling Events**

Handling events with React elements is very similar to handling events on DOM elements. There are some syntactic differences:

* React events are named using camelCase, rather than lowercase.
* With JSX you pass a function as the event handler, rather than a string.

For example, the HTML:

<button onclick="activateLasers()">

Activate Lasers

</button>

is slightly different in React:

<button onClick={activateLasers}>

Activate Lasers

</button>

Another difference is that you cannot return false to prevent default behavior in React. You must call preventDefault explicitly. For example, with plain HTML, to prevent the default link behavior of opening a new page, you can write:

<a href="#" onclick="console.log('The link was clicked.'); return false">

Click me

</a>

In React, this could instead be:

function ActionLink() {

function handleClick(e) {

e.preventDefault();

console.log('The link was clicked.');

}

return (

<a href="#" onClick={handleClick}>

Click me

</a>

);

}

Here, e is a synthetic event. React defines these synthetic events according to the [W3C spec](https://www.w3.org/TR/DOM-Level-3-Events/), so you don’t need to worry about cross-browser compatibility. See the [SyntheticEvent](https://reactjs.org/docs/events.html)reference guide to learn more.

When using React you should generally not need to call addEventListener to add listeners to a DOM element after it is created. Instead, just provide a listener when the element is initially rendered.

When you define a component using an [ES6 class](https://developer.mozilla.org/en/docs/Web/JavaScript/Reference/Classes), a common pattern is for an event handler to be a method on the class. For example, this Toggle component renders a button that lets the user toggle between “ON” and “OFF” states:

class Toggle extends React.Component {

constructor(props) {

super(props);

this.state = {isToggleOn: true};

// This binding is necessary to make `this` work in the callback

this.handleClick = this.handleClick.bind(this);

}

handleClick() {

this.setState(state => ({

isToggleOn: !state.isToggleOn

}));

}

render() {

return (

<button onClick={this.handleClick}>

{this.state.isToggleOn ? 'ON' : 'OFF'}

</button>

);

}

}

ReactDOM.render(

<Toggle />,

document.getElementById('root')

);

[**Try it on CodePen**](https://codepen.io/gaearon/pen/xEmzGg?editors=0010)

You have to be careful about the meaning of this in JSX callbacks. In JavaScript, class methods are not [bound](https://developer.mozilla.org/en/docs/Web/JavaScript/Reference/Global_objects/Function/bind) by default. If you forget to bind this.handleClick and pass it to onClick, this will be undefined when the function is actually called.

This is not React-specific behavior; it is a part of [how functions work in JavaScript](https://www.smashingmagazine.com/2014/01/understanding-javascript-function-prototype-bind/). Generally, if you refer to a method without () after it, such as onClick={this.handleClick}, you should bind that method.

If calling bind annoys you, there are two ways you can get around this. If you are using the experimental [public class fields syntax](https://babeljs.io/docs/plugins/transform-class-properties/), you can use class fields to correctly bind callbacks:

class LoggingButton extends React.Component {

// This syntax ensures `this` is bound within handleClick.

// Warning: this is \*experimental\* syntax.

handleClick = () => {

console.log('this is:', this);

}

render() {

return (

<button onClick={this.handleClick}>

Click me

</button>

);

}

}

This syntax is enabled by default in [Create React App](https://github.com/facebookincubator/create-react-app).

If you aren’t using class fields syntax, you can use an [arrow function](https://developer.mozilla.org/en/docs/Web/JavaScript/Reference/Functions/Arrow_functions) in the callback:

class LoggingButton extends React.Component {

handleClick() {

console.log('this is:', this);

}

render() {

// This syntax ensures `this` is bound within handleClick

return (

<button onClick={(e) => this.handleClick(e)}>

Click me

</button>

);

}

}

The problem with this syntax is that a different callback is created each time the LoggingButton renders. In most cases, this is fine. However, if this callback is passed as a prop to lower components, those components might do an extra re-rendering. We generally recommend binding in the constructor or using the class fields syntax, to avoid this sort of performance problem.

**Passing Arguments to Event Handlers**

Inside a loop it is common to want to pass an extra parameter to an event handler. For example, if id is the row ID, either of the following would work:

<button onClick={(e) => this.deleteRow(id, e)}>Delete Row</button>

<button onClick={this.deleteRow.bind(this, id)}>Delete Row</button>

The above two lines are equivalent, and use [arrow functions](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Functions/Arrow_functions) and [Function.prototype.bind](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_objects/Function/bind)respectively.

In both cases, the e argument representing the React event will be passed as a second argument after the ID. With an arrow function, we have to pass it explicitly, but with bind any further arguments are automatically forwarded.