



Maydm

Web Development

Day 12: Introduction to React

React Dev Tools, Virtual DOM, and Apps

Warm up!

Today's Schedule

Morning:

- ES6 Recap
- Install React Dev Tools
- Intro to React
- Virtual DOM
- React Tutorials
- Project: React Todo List

Afternoon:

- Project: Recipes App

JavaScript So Far

- Functional Programming
- OOP
- Properties
- Classes
- Methods
- Scope
- ES6
 - const
 - let
 - Arrow functions
- Reading documentation

Install React Developer Tools

The React Developer Tools is a Chrome and Firefox extension that helps developers debug their React apps, walk through the render tree and research how components affect one another.

Find the tool by Googling "Install React Developer Tools"

OR use this link:

<https://github.com/facebook/react-devtools>

Follow the link for your browser and add the tool

A Proper Introduction to React

Now that we have the dev tool, let's talk about React.

React is a JavaScript Library that is used to build user interfaces by connecting any number of UI components.

React requires Babel, the JS Transpiler and Node.js to operate properly. It also makes heavy use of ES6.

The React Docs offers a simple Hello World example on CodePen. Let's find that and play with it a little. The playground can be found at reactjs.org/docs/ -> Online Playgrounds -> CodePen link

React's Hello World

```
ReactDOM.render(  
  <h1>Hello, world!</h1>,  
  document.getElementById('root')  
)
```

You'll notice in CodePen that almost all of the code is created in JavaScript using Babel and JSX. The only thing in HTML is a single line of `<div id="root"></div>`

Simply, JSX is XML (very similar to HTML with minor changes) in JavaScript.

React's Hello World Playground

Let's change "Hello, world!" to "Hello, [your name]!"

Then add a horizontal rule `<hr>` and write a paragraph body containing some of your favorite things to do in your free time

To accomplish this, all of the tags must be inside of a `<div>` tag and the horizontal rule will be created using the XML version of `<hr></hr>`

```
ReactDOM.render(  
  <div><h1>Hello, name!</h1><hr></hr><p>...</p>,  
  document.getElementById('root')  
) ;
```

Breaking Down React's Hello World

```
ReactDOM.render(  
  <h1>Hello, name!</h1>,  
  document.getElementById( 'root' )  
);
```

Let's look at this example a little closer

ReactDOM.render() is how React draws HTML on the view (The web page)

The function takes two elements, separated by a comma

- 1) HTML code -->Content inside of an HTML tag
- 2) HTML element -->statement tells React to display HTML in "root" element

Saving HTML in JS variables

```
const myStory = (  
  <h1>JavaScripting</h1>  
  <p>Once upon a time in a program far away I found myself  
  in an infinite loop. I tried to find the end, but it just  
  kept going in circles.</p>  
)  
;  
  
ReactDOM.render(myStory, document.getElementById('root'));
```

We see how in this example, with JSX, we can save our HTML inside a const and then call it in the ReactDOM.render function.

Let's create our first React App Together

For this section of the program, we will work together through React's Tutorial titled: "Tutorial: Intro to React" where we will build a tic-tac-toe game together in CodePen.

Find the tutorial in today's repository with the same label.

<https://reactjs.org/tutorial/tutorial.html>

Work through the Recipe Book Tutorial

Follow the gitconnected tutorial to build your own React Recipe App. In this project you will clone starter code from GitHub, download dependencies through the terminal or git bash and edit the codebase in the code editor.

Find the URL in today's repository.

<https://levelup.gitconnected.com/building-a-recipe-book-in-react-part-1-c05b3e53cbb1>

Reflection

Write in your journal about how you feel or what you learned today.

Prompts:

- How is React different than writing Vanilla JS? What are some pros and cons?
- Why would developers want to use JS libraries or frameworks?
- Describe your experience working through the tutorials. If you wrote a tutorial what would you do differently?