

Attendance



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Software Saturdays

Spring 2023 - Lesson 3

JSX and Intro to ReactJS

Review of the Beginner Track

- » 5 Lessons
 - ◇ HTML/CSS
 - ◇ JavaScript
 - ◇ JSX and Intro to ReactJS
 - ◇ More ReactJS
 - ◇ APIs and ReactJS
- » 2 Project Days



Review of the Intermediate Track

- » 5 Lessons
 - ◇ JSX and Intro to ReactJS
 - ◇ More ReactJS
 - ◇ APIs and ReactJS
 - ◇ Functional Components and Async Code
 - ◇ NoSQL Databases
- » 2 Project Days



Help Available

- » Recordings
 - ◇ Every Sunday
- » Weekly Office Hours
 - ◇ T/TH 4:30 - 5:30, W 2:00 - 3:00
- » Slack Channels
 - ◇ Every Day



Before We Begin

All attendees will be registered on Brightspace

Join the Software Saturdays Slack!

<https://softwaresaturdays.slack.com>

1. #announcements
2. #general-discussion
3. #spring-2023-reactjs



Before We Begin

- » Please have a text editor to open and edit code files
 - ◇ If you do not have one, Visual Studio Code is a good choice
 - ◇ <https://code.visualstudio.com/download>
- » Demo files and examples are on GitHub
 - ◇ <https://github.com/SoftwareSaturndays/2022-Spring-ReactJS>



Before We Begin

- » We need to install NodeJS and NPM
 - ◇ <https://nodejs.org/en/download/>
- » NodeJS is a very customizable JavaScript toolbox
- » NPM is a JavaScript package installer



Pulling the demos

» From Github Desktop

- ◇ Click Add Repository -> Clone Repository -> URL

- ◇ Paste this link:

<https://github.com/SoftwareSaturndays/2023-Spring-ReactJS.git>

- ◇ Switch to the “lesson3-template” branch

- ◇ Repository -> Open with Visual Studio Code

» From the command line:

```
git clone https://github.com/SoftwareSaturndays/2023-Spring-ReactJS.git
```

```
git checkout lesson3-template
```



Part 1: JSX



What is JSX?

- » JSX is HTML that can be placed in JavaScript
- » JSX is fundamental to ReactJS
- » JSX allows us to create custom HTML tags



JSX Syntax

- » To write JSX, just write some HTML and store it in a JavaScript variable
 - ◇ Use a `const` to avoid bugs
- » The line must still end in a semicolon

```
const someJSX = <p>Hello World!</p>;
```



JSX Syntax

- » We use `const` because the HTML tags shouldn't change
- » If the tags in the JSX variable might change, use `let`



JSX Syntax

- » You can nest multiple HTML tags together

```
const someJSX = <div><h1>Hello!</h1><p>hi</p></div>;
```



Part 2: NodeJS



What is NodeJS and NPM

- » NodeJS is a toolbox of programs and utilities for web app development
- » NPM allows us to install and run JavaScript libraries and programs
- » We will always give you the necessary files and commands



Setting Up Your Computer

- » Make sure you have installed NodeJS on your computer
 - ◇ If the commands `node -v` and `npm -v` print out text, you are good to go
- » Here's a short walkthrough
 - ◇ [Steps to install nodejs / npm](#)



Demo #1



Demo #2



Combining JavaScript and HTML in JSX

- » You can have part of the HTML change with JavaScript
- » The JavaScript expression must be in curly braces

```
let name = "John Smith";  
const jsExample = <p>Hello {name}!</p>;
```



Combining JavaScript and HTML in JSX

- » Any valid JavaScript can be between the curly braces, including complex if-else statements
- » This allows pages to be created dynamically



JSX and HTML Attributes

- » You can use most HTML attributes in JSX, but they are written differently
- » This includes things like class and id names

```
const classExample = <p className="name">Hmm</p>;  
const idExample    = <p id="idName">HMMMM</p>;
```



JSX and CSS Styling

- » JSX tags can be styled like HTML, but the format is a little different
- » You can use a CSS file or inline styling
 - ◇ We will be using a CSS file for similarity to previous lessons



JSX and CSS Styling

- » To add a CSS file to your JSX, just put the CSS file in the 'src' folder and add a line to your javascript file

- ◇ `import './<filename>.css'`



Demo Program #3



Checkpoint #1

Set up a React project and create some JSX elements



Checkpoint 1

- » In your terminal/command prompt, follow along
 - a. `cd checkpoint 1`
 - b. Type `npx create-react-app .`
 - c. Type `npm start`
- » After doing steps A & B once, you don't need to do it again
- » Use step C to run your code from here on out



Part 3: Custom JSX



Making Custom JSX

- » If we have a group of tags we want to use over and over, we can make a custom HTML tag with JSX
- » This allows us to reuse JSX and HTML tags



Using Custom JSX

- » Just use the custom tag like any normal HTML tag in your JSX variable
- » Example:
 - ◇ `<App />`



How to Make Custom JSX

- » Each custom HTML tag must be in a separate file
- » We will give you the basic template!



Demo Program #4



Checkpoint #2

Create, add, and test some custom HTML JSX tags



Thanks for coming!

Please give us some feedback!

» Any Questions?

- ◇ Office Hours T/TH 4:30 - 5:30, W 2:00 - 3:00
- ◇ Ask a mentor during the meeting or on Slack



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