Module 5 — Overview

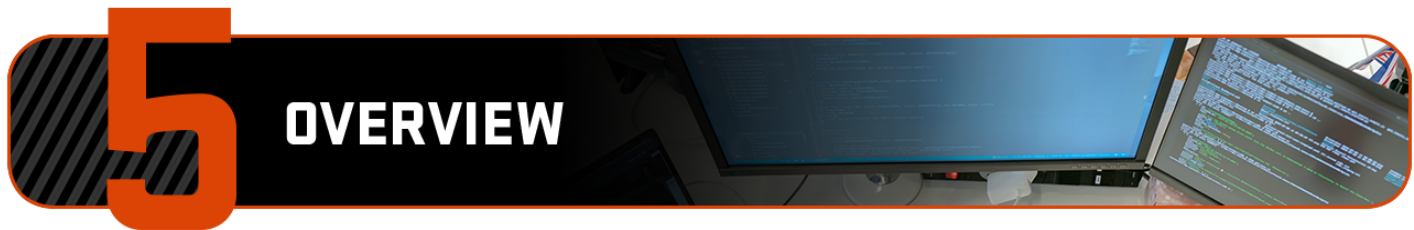**OVERVIEW**

Introduction

We have learned how to write web apps that use JavaScript in the browser to manipulate the DOM. In this module, we will study React, which is a higher level framework that allows writing web applications in a more declarative fashion.

Module Learning Outcomes

After successful completion of this module, you should be able to do the following (in addition to answering the questions listed below):

1. What is the React framework? (CLO 1, CLO 2)
   - At a high-level, what are the important concepts related to the React framework?
   - How can we create a boiler-plate React application?
2. What are destructuring expressions in JavaScript and how do we use them? (CLO 2)
   - What is object destructuring and what is the syntax to use it?
   - What is array destructuring and what is the syntax to use it?
3. What is JSX and how do we define components using JSX? (CLO 2)
   - What is JSX?
   - How can we use HTML tags in JSX?
   - How can we mix HTML tags with JavaScript using JSX?
   - What are React components?
   - How can we write new components using JSX?
   - What are React fragments and what is their use case?
   - How do we typically process lists in JSX?
   - How can we create more complex components by using simpler components?
4. What is the State Hook and what are its uses? (CLO 1, CLO 2)
   - How do we define state variables in React?
   - How must we change the value of state variables?
   - How do we tie events to state variables?
   - How can we conditionally render React components?

5. How can we write Single Page Applications (SPAs) using React Router? (CLO 1, CLO 2, CLO 3)
   - What are SPAs and how do they differ from traditional web apps?
   - How can use the React Router in our apps?
   - What functionality is provided by the `BrowserRouter` and `Route` components?
   - Why do we need to use the `Link` component to build an SPA, rather than using the HTML `a` element?

6. How can we define and use forms in React apps? (CLO 2)
   - How can we use HTML elements related to forms in a React component?
   - How do we use React state variables to manage the values of HTML form elements?

Explorations

Use the pages within this module to explore the following concepts:

- Exploration — Introduction to React
- Exploration — React Components & JSX
- Exploration — State & React Hooks
- Exploration — Routing & Forms

Required Reading

Read the following sections from the textbook.

- Chapter 1. Read section 1.16, and in section 17.1, read subsection 1.17.2. You can skip subsections 1.17.1 and 1.17.3.

Task List

Please make sure to complete the following assignments and other tasks:

- Complete the exercises provided in the Explorations.
- Take the Module quiz.
- Complete Assignment 4.
- Complete the Module Feedback Survey.

Return to Modules (https://canvas.oregonstate.edu/courses/1879154/modules)