

CMSC335

Web Application Development with JavaScript



React

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React Intro

- React
 - Library for implementing user interfaces
 - Created by Facebook
 - Used to implement single-page applications
 - » Single-page app - page does not need to be completely reloaded when a new state is displayed
 - React follows a component approach to build an interface
 - » The application is composed of building blocks
 - A component is defined using a function that returns the structure of the component
- Sites:
 - <https://create-react-app.dev/docs/getting-started/>
 - <https://react.dev/>
 - <https://create-react-app.dev/docs/deployment/>

Creating React Application

- **Example:** example1.html, example.jsx
- Creating a new React application (called my_app) using **npx** (takes several minutes)
 - `npx create-react-app my_app`
- To run previous app
 - `cd my_app`
 - `npm start`
- Two important files (in src directory)
 - public/index.html
 - src/index.js – starting point of the application responsible for rendering
 - Src/App.js – Root component (entry point to the component tree)

Simplified Application

- **Example:** `simplified_app`
 - We removed several of the files that come by default

CourseTable and Faculty Components

- **Example:** `course_app`
 - We use functions to define components
- The return structure of a component can only have one root element
 - Try removing `<div></div>` from `CourseTable` component
- JSX is a syntax extension for JavaScript that allows you to create components and elements relatively easily
- JSX uses a notation similar to the tags in HTML
 - **The tags in JSX are not HTML elements; they are React elements**
- Within JSX you insert JavaScript expressions using curly brackets
- **Example:** `Faculty.js` component
- **React Components** start with an uppercase
- **React Elements** (e.g., `<h1>`) start with a lowercase
- If you need comments in JSX you need to use `{ }` (e.g., `{ /* comment here * }`

Providing Information to a Components (Props)

- Components can have parameters. These parameters are called props and they are passed to a component as attributes
- **Example:** Student component

Reference

- React, The Comprehensive Guide (https://www.sap-press.com/react_5705/)