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MERN – ES6 + React

Module 14: React Advanced

Outline

Module 14

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- React hooks
- useState
- useEffect
- useContext
- React Forms
- React Router
- React Bootstrap

React Hooks

React Advanced

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- What is a Hook?
  - Hooks allow us to "hook" into React features such as **state** and other **React features** without writing a class
- Hook Rules
  - Hooks can only be called inside React function components.
  - Hooks can only be called at the top level of a component.
  - Hooks cannot be conditional
  - Hooks will not work in React class components.

React useState Hook

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- What is useState hook?
  - The React useState Hook allows us to track **state** in a function component.
  - State generally refers to **data** or **properties** that need to be tracked in an application.
- Initialize useState
  - We initialize our state by calling useState in our function component.
  - useState accepts an **initial state** and returns **two values**:
    1) The current state.
    2) A function that updates the state

```
import { useState } from "react";

function FavoriteColor() {
  const [color, setColor] = useState("");
}
```

- What Can State Hold
  - The useState Hook can be used to keep track of **strings**, **numbers**, **booleans**, **arrays**, **objects**, and any combination of these!
  - We can create **multiple state Hooks** to track individual values

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React useEffect Hooks

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- What is useEffect hook?
  - The useEffect Hook allows you to perform **side effects** in your components.
  - Some examples of side effects are: **fetching data**, directly **updating the DOM**, and **timers**.
  - useEffect runs on every render
  - useEffect accepts two arguments. The second argument is optional.

```
useEffect(<function>, <dependency>)
```

- 1. No dependency passed:

```
useEffect(() => { //Runs on every render });
```

- 2. An empty array:

```
useEffect(() => { //Runs only on the first render }, []);
```

- 3. Props or state values:

```
useEffect(() => { //Runs on the first render //And any
time any dependency value changes }, [prop, state]);
```

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React useContext Hook

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- What is React Context hook?
  - React Context is a way to **manage state globally**.
  - It can be used together with the useState Hook to share state between deeply nested components more easily than with useState alone.

- Create Context
  - To create context, you must Import createContext and initialize it:

- Context Provider
  - Wrap child components in the Context Provider and supply the state value.

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- Use the useContext Hook
  - In order to use the Context in a child component, we need to access it using the useContext Hook.

React Forms

React Advanced

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- Adding Forms in React
  - Just like in HTML, React uses forms to allow users to interact with the web page.

Example:

Add a form that allows users to enter their name:

```
function MyForm() {
  return (
    <form>
      <label>Enter your name:
        <input type="text" />
      </label>
    </form>
  )
}
const root = ReactDOM.createRoot(document.getElementById('root'));
root.render(<MyForm />);
```

React Forms

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- Handling Forms
  - Handling forms is about how you handle the data when it **changes** the value or gets **submitted**.
  - In **HTML**, form data is usually handled by the DOM.
  - In **React**, form data is usually handled by the components.
  - When the data is handled by the components, all the data is stored in the **component state**.
  - We can use the useState Hook to keep track of **each inputs value** and provide a "single source of truth" for the entire application.

Tryit Editor useStae

Tryit Editor Multiple inputs

React Router

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- Folder Structure
  - Within the src folder, we'll create a folder named pages with several files:
  - src\pages\:
  - Layout.js
  - Home.js
  - Blogs.js
  - Contact.js
  - NoPage.js

index.js :

```
import ReactDOM from "react-dom/client";
import { BrowserRouter, Routes, Route } from "react-router-dom";
import Layout from "./pages/Layout";
import Home from "./pages/Home";
import Blogs from "./pages/Blogs";
import Contact from "./pages/Contact";
import NoPage from "./pages/NoPage";

export default function App() {
  return (
    <BrowserRouter>
      <Routes>
        <Route path="/" element={<Layout />}>
          <Route index element={<Home />} />
          <Route path="blogs" element={<Blogs />} />
          <Route path="contact" element={<Contact />} />
          <Route path="*" element={<NoPage />} />
        </Route>
      </Routes>
    </BrowserRouter>
  );
}

const root = ReactDOM.createRoot(document.getElementById('root'));
root.render(<App />);
```

React Router

Pages / Components

Home.js :

```
const Home = () => {
  return <h1>Home</h1>;
};

export default Home;
```

Blogs.js :

```
const Blogs = () => {
  return <h1>Blog Articles</h1>;
};

export default Blogs;
```

NoPage.js :

```
const NoPage = () => {
  return <h1>404</h1>;
};

export default NoPage;
```

Contact.js :

```
const Contact = () => {
  return <h1>Contact Me</h1>;
};

export default Contact;
```

Layout.js :

```
import { Outlet, Link } from "react-router-dom";

const Layout = () => {
  return (
    <>
      <nav>
        <ul>
          <li>
            <Link to="/">Home</Link>
          </li>
          <li>
            <Link to="/blogs">Blogs</Link>
          </li>
          <li>
            <Link to="/contact">Contact</Link>
          </li>
        </ul>
      </nav>

      <Outlet />
    </>
  )
};

export default Layout;
```

React Bootstrap

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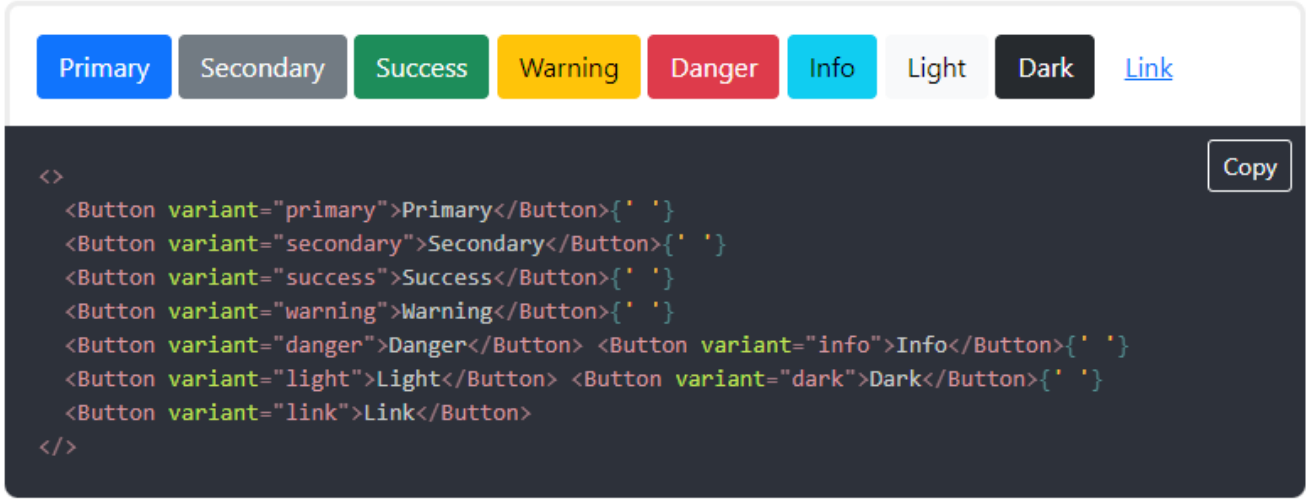
Examples

Use any of the available button style types to quickly create a styled button. Just modify the `variant` prop.



React-Bootstrap · React-Bootstrap Documentation

Summary

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