COMP 9783 Front-end Development

Lab-3-4 - React Props Lab. (1% of the course mark)

Name:

Student Number:

The React Props Lab is designed to provide an in-depth, hands-on learning experience focused on the concept of props (short for properties) in React. Props are essential for passing data and functionality between components, enabling dynamic and reusable UI components. This lab will cover the basics of props, how to pass and access them, and best practices for managing data flow in a React application.

Lab objectives:

1. Learn what props are and their role in React components.
2. Understand the difference between props and state.
3. Explore how to pass data as props to child components.
4. Access and use props within functional-based components.
5. Implement default props to handle missing prop values.

Create a react app:

1. On **VSCode**, open the **terminal** and type **npm create vite@latest react-props-app --** **--template react** and **press enter**. This should create a basic react app.
2. **Build** and **start the app** by typing:
    a. **cd react-props-app**
    b. npm install
    c. npm run dev
3. On the **src folder**, **delete** the following files: **App.css** and **index.css**.
4. On src/**main.jsx** delete this: **import './index.css'** and **save the changes**.

5. **Modify ./public/index.html** and **update** the **title** html code and **save the changes**:

```
<title>react-props-app</title>
```

6. Inside the **src folder create** a **folder** named: **css** and **copy** the css file: **styles.css** from the extracted lab.
7. Overwrite **App.jsx** with the following code and **save the changes**:

```
import "./css/styles.css";
import Header from "./components/Header";
import Nav from "./components/Nav";
import MainContent from "./components/MainContent";
import Footer from "./components/Footer";

function App() {
  const headerData = "Welcome to My Website";
  const navData = ["Home", "About", "Services", "Contact"];
  const mainContentData = {
    title: "Main Content Area",
    p1: "Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nunc feugiat leo in convallis tempor. Proin rutrum felis in diam pharetra dapibus. Aliquam sagittis faucibus ipsum quis laoreet. Mauris euismod viverra nulla, at eleifend ante bibendum non. In vestibulum, ipsum eu tempor lobortis, enim erat suscipit nisl, nec pellentesque tellus arcu efficitur ipsum. Mauris non accumsan nisl, at tempus erat. Aenean sit amet consequat purus. Duis non nisi suscipit, maximus justo a, mattis lorem. Aliquam sit amet feugiat metus. Phasellus volutpat lobortis vehicula. Vivamus id enim sed elit commodo tincidunt. Nam cursus tincidunt volutpat. Nulla facilisi. Nulla in dui id lorem ornare maximus.",
    p2: "Phasellus ultricies malesuada sem, sed pellentesque nunc vehicula euismod. Donec fermentum leo eu est aliquam cursus. Vivamus commodo aliquam finibus. Phasellus molestie rhoncus mauris sed porttitor. Integer pellentesque mattis turpis in pretium. Nulla gravida nisi quis fringilla lacinia. Mauris vel tempor risus, eu hendrerit justo. Duis aliquet mauris ante, sit amet bibendum sapien suscipit imperdiet. Integer risus magna, tincidunt sed magna non, hendrerit dictum nulla. Morbi porttitor faucibus pharetra. Fusce quis eleifend justo. Nullam efficitur blandit aliquam.",
```

```
    p3: "Praesent lectus leo, pulvinar sit amet ipsum vitae, efficitur placerat
neque. Nullam neque magna, dictum eu varius sit amet, tincidunt ut purus. Nulla
dictum magna eu varius pulvinar. Duis mollis neque ante. Orci varius natoque
penatibus et magnis dis parturient montes, nascetur ridiculus mus. Curabitur
viverra sit amet urna congue pretium. Sed a mauris ex. Etiam in fringilla risus.
Interdum et malesuada fames ac ante ipsum primis in faucibus. Vestibulum erat
sem, tempus sit amet dolor id, lobortis euismod velit. Fusce eleifend lectus nec
dolor egestas, in elementum erat placerat. Aenean nibh erat, commodo vitae porta
eu, porttitor eu felis. Cras orci lectus, rutrum nec placerat sit amet, lobortis
sed erat.",
  };
  const footerData = `© 2024 Simple Page Layout. All rights reserved.
App.js::props value.`;

  return (
    <>
      <Header headerData={headerData} />
      <Nav navData={navData} />
      <MainContent mainContentData={mainContentData} />
      <Footer footerData={footerData} />
      {/* This should also work because there is a default value */}
      <Footer />
    </>
  );
}

export default App;
```

8. Inside the **src** folder create a folder named: **components**.
9. Inside the **components folder**, create a file named: **Footer.jsx** and add the following code below:

```
// Using default values
function Footer({
  footerData = `© 2024 Simple Page Layout. All rights reserved.
Footer.js::default value.`,
}) {
```

```
  return (
    <footer>
      <p>{footerData}</p>
    </footer>
  );
}

export default Footer;
```

10. Inside the **components folder**, create a file named: **Header.jsx** and add the following code below:

```
function Header(props) {
  return (
    <header>
      <h1>{props.headerData}</h1>
    </header>
  );
}

export default Header;
```

11. Inside the **components folder**, create a file named: **MainContent.jsx** and add the following code below:

```
function MainContent(props) {
  return (
    <div class="mainContent">
      <h2>{props.mainContentData.title}</h2>
      <p>{props.mainContentData.p1}</p>
      <p>{props.mainContentData.p2}</p>
      <p>{props.mainContentData.p3}</p>
    </div>
  );
}
```

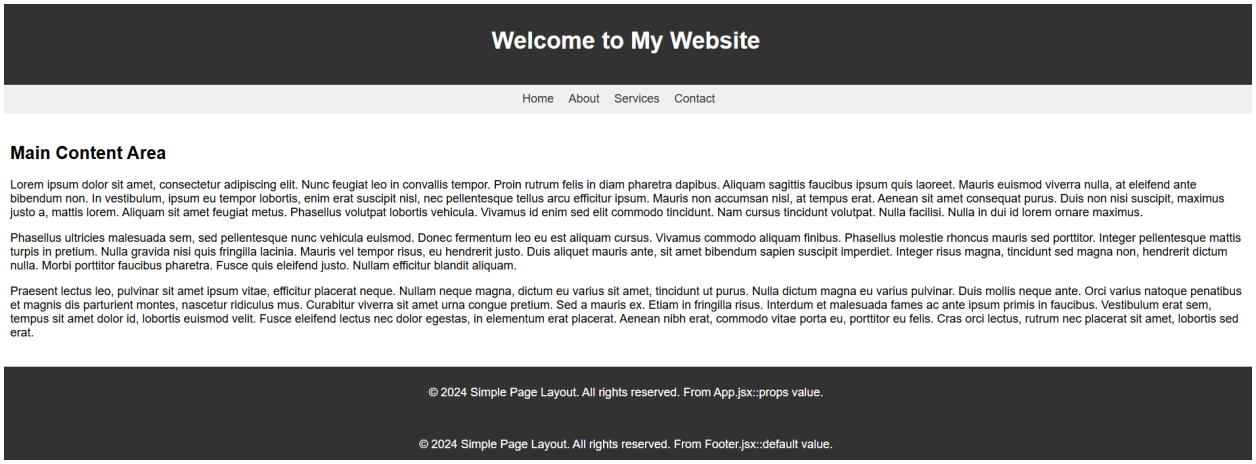
```
export default MainContent;
```

12. Inside the **components folder**, create a file named: **Nav.jsx** and add the following code below:

```
function Nav(props) {
  // Showing how to access prop values with an index
  // Better option is to use a map
  return (
    <nav>
      <ul>
        <li>
          <a href={`#${props.navData[0]}`}>{props.navData[0]}</a>
        </li>
        <li>
          <a href={`#${props.navData[1]}`}>{props.navData[1]}</a>
        </li>
        <li>
          <a href={`#${props.navData[2]}`}>{props.navData[2]}</a>
        </li>
        <li>
          <a href={`#${props.navData[3]}`}>{props.navData[3]}</a>
        </li>
      </ul>
    </nav>
  );
}

export default Nav;
```

1. **Open** your **browser** and **navigate** to: http://localhost:5173/ this should display a web app (**see below**). Make sure that your app is working before proceeding to the next step.



13. **Make changes** to the **html codes / props** of the following files: **Footer.jsx**, **Header.jsx**, **MainContent.jsx** and **Nav.jsx**. Save the changes when finished.
14. **Navigate** to: http://localhost:5173/ and take a screenshot of the changes made.

Submission:

1. Use the html template: **index.html** and **write HTML codes for each screenshot**:
    a. Write a title and short description.
    b. Display the screenshot.

Note: Feel free to use any component from a CSS framework of your choice.

2. Create a new folder named **html** and copy all the **HTML**, **CSS** and **PNG** files used in the previous step.
3. Create a **zip file** of the **html folder**.
4. Submit the **zip file** to **GBC - D2L**.