

COMP 9783 Front-end Development

Lab-3-4 - React Props Lab. (4% 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:

On **VSCode**, open the **terminal** and type the following commands:

1. **create-react-app react-props-app** and **press enter**. This will create the files and folders required by React.
2. On the **src folder**, **delete** the following files:
 - a. App.css
 - b. App.test.js
 - c. index.css
 - d. logo.svg

- e. `reportWebVitals.js`
 - f. `setupTests.js`
3. **Modify `./src/index.js` and remove the following code and save the changes:**
- a. `import './index.css';`
 - b. `import reportWebVitals from './reportWebVitals';`
 - c. `// If you want to start measuring performance in your app, pass a function`
 - d. `// to log results (for example: reportWebVitals(console.log))`
 - e. `// or send to an analytics endpoint. Learn more: https://bit.ly/CRA-vitals`
 - f. `reportWebVitals();`
4. **Modify `./public/index.html` and update the title html code and save the changes:**
- a. `<title>react-props-app</title>`
5. Inside the **src** folder create a folder named: **css** and copy the css file: **styles.css** from the extracted lab.
6. Overwrite **App.js** 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.",

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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;
```

7. Inside the **src** folder create a folder named: **components**.
8. Inside the **components folder**, create a file named: **Footer.js** 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;
```

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

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

export default Header;
```

10. Inside the **components folder**, create a file named: **MainContent.js** 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>  
  );  
}
```

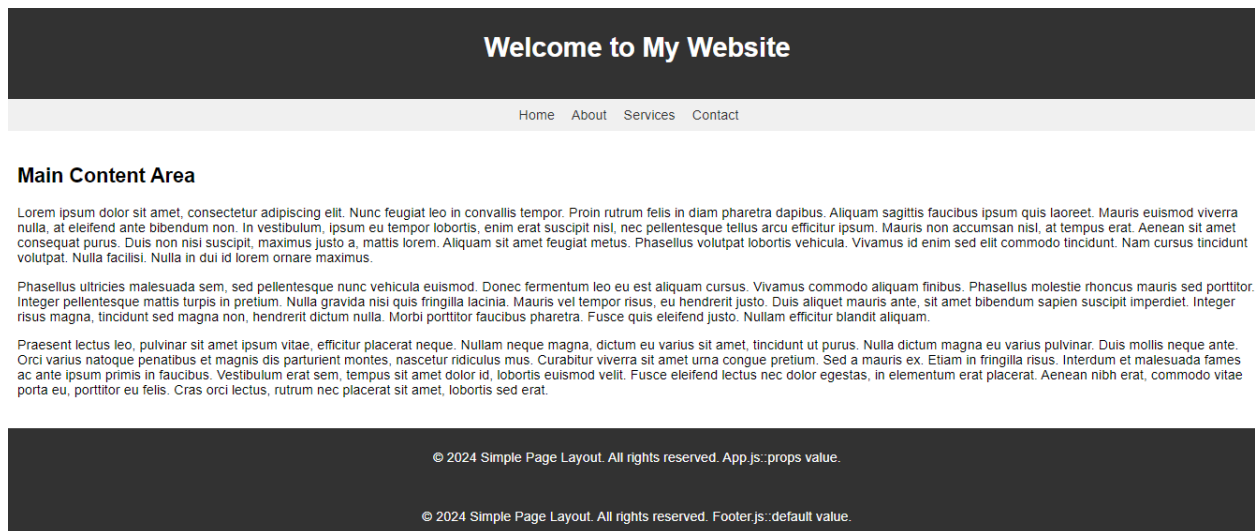
```
export default MainContent;
```

11. Inside the **components** folder, create a file named: **Nav.js** 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;
```

12. Open the **terminal**, ensure that you are on the **root folder of the app**, type **npm run start** and **press enter**. This should open a browser session and display the web app (**see below**). Make sure that your app is working before proceeding to the next step. Leave the app running.



13. **Make changes** to the **html codes / props** of the following files: Footer.js, Header.js, MainContent.js and Nav.js. Save the changes when finished.
14. Navigate to <http://localhost:3000> 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**.