## ****React Routing and Styling Assignment****

### ****1. React Routing****

### ****THEORY EXERCISE****

1. **What is React Router?**  
   React Router is a standard library for handling routing in React applications. It allows navigation between different pages (or components) without reloading the page.
2. **Difference Between BrowserRouter, Route, Link, and Switch**:
   * **BrowserRouter**: Enables routing and uses the HTML5 history API for clean URLs.
   * **Route**: Defines the path and corresponding component to render.
   * **Link**: Used to navigate between routes. It replaces <a> tags.
   * **Switch**: Ensures that only the first matched route is rendered.

#### ****Task 1: Routing****

**App.js**

javascript

Copy code

import React from "react";

import { BrowserRouter, Route, Switch } from "react-router-dom";

import Home from "./components/Home";

import About from "./components/About";

function App() {

return (

<BrowserRouter>

<div>

<h1>React Routing Example</h1>

<Switch>

<Route path="/" exact component={Home} />

<Route path="/about" component={About} />

</Switch>

</div>

</BrowserRouter>

); }

export default App;

**Home.js**

import React from "react";

function Home() {

return <h2>Welcome to the Home Page!</h2>;

}

export default Home;

**About.js**

import React from "react";

function About() {

return <h2>Welcome to the About Page!</h2>;

}

export default About;

#### ****Task 2: Add Navigation****

**Objective**: Create a navigation bar with links to Home, About, and Contact pages.

**App.js**

import React from "react";

import { BrowserRouter, Route, Switch, Link } from "react-router-dom";

import Home from "./components/Home";

import About from "./components/About";

import Contact from "./components/Contact";

function App() {

return (

<BrowserRouter>

<div>

<nav>

<ul>

<li><Link to="/">Home</Link></li>

<li><Link to="/about">About</Link></li>

<li><Link to="/contact">Contact</Link></li>

</ul>

</nav>

<Switch>

<Route path="/" exact component={Home} />

<Route path="/about" component={About} />

<Route path="/contact" component={Contact} />

</Switch>

</div>

</BrowserRouter>

);

}

export default App;

**Contact.js**

javascript

Copy code

import React from "react";

function Contact() {

return <h2>Contact Us at contact@example.com</h2>;

}

export default Contact;

### ****2. React Styling****

### ****THEORY EXERCISE****

1. **How do you apply CSS in React?**
   * **Inline Styling**: CSS written directly within the style attribute.
   * **CSS Modules**: A modular and scoped way to write CSS.
   * **Styled Components**: Allows writing CSS-in-JS for better styling.
   * **External Stylesheets**: Linking CSS files.
2. **Advantages of CSS Modules**:
   * Prevents class name conflicts.
   * Makes CSS reusable and scoped to specific components.

**Task 1: Apply Inline Styling**

**Home.js**

import React from "react";

function Home() {

const headingStyle = {

color: "blue",

textAlign: "center",

marginTop: "20px",

};

return <h2 style={headingStyle}>Welcome to the Home Page!</h2>;

}

export default Home;

#### ****Task 2: Use External CSS File****

**Create App.css**:

.navbar {

background-color: #333;

padding: 10px;

}

.navbar ul {

list-style: none;

display: flex;

justify-content: space-around;

}

.navbar a {

text-decoration: none;

color: white;

font-weight: bold;

}

.navbar a:hover {

color: yellow;

}

**Update App.js**

import React from "react";

import { BrowserRouter, Route, Switch, Link } from "react-router-dom";

import "./App.css";

import Home from "./components/Home";

import About from "./components/About";

import Contact from "./components/Contact";

function App() {

return (

<BrowserRouter>

<div>

<nav className="navbar">

<ul>

<li><Link to="/">Home</Link></li>

<li><Link to="/about">About</Link></li>

<li><Link to="/contact">Contact</Link></li>

</ul>

</nav>

<Switch>

<Route path="/" exact component={Home} />

<Route path="/about" component={About} />

<Route path="/contact" component={Contact} />

</Switch>

</div>

</BrowserRouter>

);

}

export default App;

#### ****Task 3: CSS Modules****

**Create Button.module.css**

css

.button {

background-color: #4caf50;

color: white;

padding: 10px 20px;

border: none;

border-radius: 5px;

cursor: pointer;

}

.button:hover {

background-color: #45a049;

}

**Button.js**

javascript

Copy code

import React from "react";

import styles from "./Button.module.css";

function Button() {

return <button className={styles.button}>Click Me</button>;

}

export default Button;

**Import in Home.js**:

import React from "react";

import Button from "./Button";

function Home() {

return (

<div>

<h2>Welcome to the Home Page!</h2>

<Button />

</div>

);

}

export default Home;