Lab Task: Create a responsive navigation bar using React and Bootstrap with a theme switcher button that toggles between Light and Dark themes. The navbar should change its background and text colors dynamically based on the selected theme. Additionally, the page background and text should also adapt to the selected theme. 1. Navbar Design:  Use Bootstrap to design a responsive navigation bar.  Include the following items in the navbar:  A brand/logo on the left.  Links for "Home" and "About".  A "Switch Theme" button on the right side.  Add icons to the "Switch Theme" button to represent the Light and Dark themes (e.g., a sun for light and a moon for dark). 2. Page Content:  Create a simple homepage with the following sections:  Header: A large header with a welcome message styled using Bootstrap classes  Content Section: Add a responsive Bootstrap grid with three columns to display some text or cards.  Footer: A footer section styled with Bootstrap, which also changes theme dynamically. 3. Theme Functionality:  Use useState in React to manage the theme (Light or Dark).  Apply Bootstrap classes dynamically to toggle the following:  Navbar  Page background and text 4. Responsive Design:  Ensure the navbar collapses into a toggle menu on smaller screens. Expected Output:  A responsive navbar with links.  A "Switch Theme" button that toggles the app’s theme between Light and Dark.  The theme change should dynamically affect the navbar and the entire page.

**App.js:**

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| // src/App.js  import React, { useState } from 'react';  import 'bootstrap/dist/css/bootstrap.min.css';  import 'bootstrap-icons/font/bootstrap-icons.css';  import './App.css'; // Optional for custom styles  function App() {  const [theme, setTheme] = useState('light');  const toggleTheme = () => {  setTheme(theme === 'light' ? 'dark' : 'light');  };  const navbarClass = `navbar navbar-expand-lg ${theme === 'light' ? 'navbar-light bg-light' : 'navbar-dark bg-dark'}`;  const bodyClass = theme === 'light' ? 'bg-light text-dark' : 'bg-dark text-light';  const cardClass = theme === 'light' ? 'bg-white text-dark' : 'bg-secondary text-light';  const footerClass = `text-center py-3 ${theme === 'light' ? 'bg-light text-dark' : 'bg-dark text-light'}`;  return (  <div className={bodyClass} style={{ minHeight: '100vh' }}>  {/\* Navbar \*/}  <nav className={navbarClass}>  <div className="container-fluid">  <a className="navbar-brand" href="#">MyApp</a>  <button  className="navbar-toggler"  type="button"  data-bs-toggle="collapse"  data-bs-target="#navbarNav"  aria-controls="navbarNav"  aria-expanded="false"  aria-label="Toggle navigation"  >  <span className="navbar-toggler-icon"></span>  </button>  <div className="collapse navbar-collapse" id="navbarNav">  <ul className="navbar-nav me-auto">  <li className="nav-item">  <a className="nav-link active" aria-current="page" href="#">Home</a>  </li>  <li className="nav-item">  <a className="nav-link" href="#">About</a>  </li>  </ul>  <button className="btn btn-outline-primary" onClick={toggleTheme}>  <i className={theme === 'light' ? 'bi bi-moon' : 'bi bi-sun'}></i>  {' '}  {theme === 'light' ? 'Dark' : 'Light'} Theme  </button>  </div>  </div>  </nav>    {/\* Header \*/}  <header className="text-center py-5">  <h1 className="display-4">Welcome to MyApp</h1>  <p className="lead">A responsive React app with theme switching</p>  </header>    {/\* Content Section \*/}  <div className="container my-5">  <div className="row">  {['Feature 1', 'Feature 2', 'Feature 3'].map((title, index) => (  <div className="col-md-4 mb-4" key={index}>  <div className={`card h-100 ${cardClass}`}>  <div className="card-body">  <h5 className="card-title">{title}</h5>  <p className="card-text">  This a sample card demonstrating responsive design and theme switching.  </p>  </div>  </div>  </div>  ))}  </div>  </div>  {/\* Footer \*/}  <footer className={footerClass}>  <div className="container">  <p>© 2025 MyApp. All rights reserved.</p>  </div>  </footer>  </div>  );  }  export default App; |

**Index.js:**

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| // src/index.js  import React from 'react';  import ReactDOM from 'react-dom/client';  import './index.css';  import App from './App';  import 'bootstrap/dist/js/bootstrap.bundle.min.js'; // Import Bootstrap JS  const root = ReactDOM.createRoot(document.getElementById('root'));  root.render(  <React.StrictMode>  <App />  </React.StrictMode>  ); |

**App.css:**

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| body {  margin: 0;  font-family: -apple-system, BlinkMacSystemFont, 'Segoe UI', Roboto, Oxygen, Ubuntu, Cantarell, sans-serif;  } |

**Output:**

