**React JS**

Module-16) React -Advance React- Styling , Routing

**Routing in React (React Router)**

THEORY EXERCISE

**Question 1: What is React Router? How does it handle routing in single-page applications (SPAs)?**

**React Router** is a standard **routing library** for React applications. It allows navigation between different components **without reloading the page**, making it ideal for **single-page applications (SPAs)**.

**How it works:**

* In an SPA, there's only **one HTML file**, and different "pages" are rendered dynamically using **JavaScript**.
* React Router manages the **URL** and matches it to a **component**.
* It updates the **view** without refreshing the entire page.

**Example:**

<BrowserRouter>

<Routes>

<Route path="/" element={<Home />} />

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

</Routes>

</BrowserRouter>

**Question 2: Explain the difference between BrowserRouter, Route, Link, and Switch components in React Router.**

| **Component** | **Description** |
| --- | --- |
| **BrowserRouter** | Wraps your entire app and enables **HTML5 history API** for clean URLs (e.g., /about). |
| **Route** | Maps a **URL path** to a **React component**. Renders a component when the path matches the URL. |
| **Link** | Used to **navigate** between routes without page refresh. Replaces anchor tags (<a>). |
| **Switch** *(v5)* | Renders **only the first matching <Route>**. In React Router v6, this is replaced by <Routes>. |

**Example using all:**

import { BrowserRouter, Routes, Route, Link } from 'react-router-dom';

function App() {

return (

<BrowserRouter>

<nav>

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

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

</nav>

<Routes>

<Route path="/" element={<Home />} />

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

</Routes>

</BrowserRouter>

);

}

LAB EXERCISE

• Task 1:

• Set up a basic React Router with two routes: one for a Home page and one for

An About page. Display the appropriate content based on the URL.

• Task 2:

• Create a navigation bar using React Router’s Link component that allows users to

switch between the Home, About, and Contact pages.