## **1. What is React Router? How does it handle routing in Single-Page Applications?**

**Answer:**  
React Router is a library in React used to manage navigation and routing in single-page applications (SPAs). Unlike traditional websites where clicking a link reloads the whole page, React Router allows components to render dynamically without refreshing the page, keeping the user experience smooth.

React Router monitors the browser’s URL and displays the component that corresponds to the current path. It uses the HTML5 History API to update the URL and handle navigation internally.

## 2. Difference between BrowserRouter, Route, Link, and Switch components

| Component | Purpose |
| --- | --- |
| **BrowserRouter** | The main wrapper that enables routing in React. Uses the HTML5 History API. All <Route> components are placed inside it. |
| **Route** | Defines which component should render for a given URL path. Example: <Route path="/about" element={<About />} /> |
| **Link** | Used instead of the <a> tag. Changes the URL without refreshing the page. Example: <Link to="/about">About</Link> |
| **Switch** (React Router v5) / **Routes** (v6) | Wraps multiple <Route> components and renders only the first matching route, preventing multiple components from rendering simultaneously. |