Routing in React (React Router)

Q:1 : What is React Router? How does it handle routing in single-page applications?

A:- React Router: React Router is a popular JavaScript library used for handling routing in React applications. it enables developers to create and manage navigation within a single-page application, where the entire application is served on a single HTML page.

- How Does React Router Handle Routing in SPAs:-

React Router uses the Browser History API to manage navigation and dynamically update the UI.

1. Declarative Route Definitions:

- Routes are declared using the <Route> component inside a <Routes> component. Each <Route> specifies the path (URL) and the component to render for that path.

2. Dynamic Component Loading:

- When the user navigates to a specific URL, React Router matches the URL to a <Route> and renders the corresponding component. This is done without reloading the page.

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

A:- <u>BrowserRouter:</u>

Defination: Top-level component that manages routing context for the app.

Purpose: Enables routing by synchronizing the URL with the app state.

Route:

Defination: Defines a specific URL path and the component to render for that path.

Purpose: Displays the appropriate component when the current URL matches the path.

Link:

Defination: A component for navigation between routes without full page reloads.

Purpose: Provides clickable links to navigate between different routes in the app.

Switch:

Defination: Ensures only one Route is rendered for matching paths.

Purpose: Prevents multiple matching routes from rendering; replaced by Routes in React Router v6.