

# WEB APP DEVELOPMENT WITH REACTJS (INT252)

## Lecture 13: Routing in React (React Router)

### Unit IV – Routing & Advanced Concepts

#### Syllabus Mapping:

- Single Page Application routing
- React Router
- Navigation without page reload

**Target Learner:** Beginner (HTML, CSS, JavaScript knowledge)

# Why Routing Is Needed

In normal websites:

- Each page = new HTML file
- Browser reloads page

In React (SPA):

- Only ONE HTML file
- UI changes dynamically

So... how do we create multiple pages?

# What is Routing?

Routing means:

- Showing different components
- Based on the URL
- WITHOUT reloading the page

## SPA Routing Concept (Visual)

URL Change



React Router



Correct Component Renders

# React Router Library

React does NOT include routing by default.

We use:

```
react-router-dom
```

## Installing React Router

```
npm install react-router-dom
```

# Core Components of React Router

- BrowserRouter
- Routes
- Route
- Link

## Basic Router Setup

```
import { BrowserRouter } from 'react-router-dom';

function App() {
  return (
    <BrowserRouter>
      <h1>My App</h1>
    </BrowserRouter>
  );
}
```



## Routes & Route

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

## Defining Routes

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

## Full Example

```
function App() {  
  return (  
    <BrowserRouter>  
      <Routes>  
        <Route path="/" element={<Home />} />  
        <Route path="/about" element={<About />} />  
      </Routes>  
    </BrowserRouter>  
  );  
}
```

# Creating Page Components

```
function Home() {  
  return <h2>Home Page</h2>;  
}  
  
function About() {  
  return <h2>About Page</h2>;  
}
```

## Navigation Using Link

✗ Using `<a>` causes page reload

✓ Use `<Link>` instead

## Link Example

```
import { Link } from 'react-router-dom';  
  
<Link to="/about">About</Link>
```

## Navigation Bar Example

```
<nav>  
  <Link to="/">Home</Link>  
  <Link to="/about">About</Link>  
</nav>
```

# How React Router Works Internally

```
graph TD; A[Link Click] --> B[URL changes]; B --> C[Route matches]; C --> D[Component renders];
```

Link Click  
↓  
URL changes  
↓  
Route matches  
↓  
Component renders



## Common Beginner Mistakes

- ✗ Forgetting BrowserRouter
- ✗ Using instead of Link
- ✗ Wrong path names