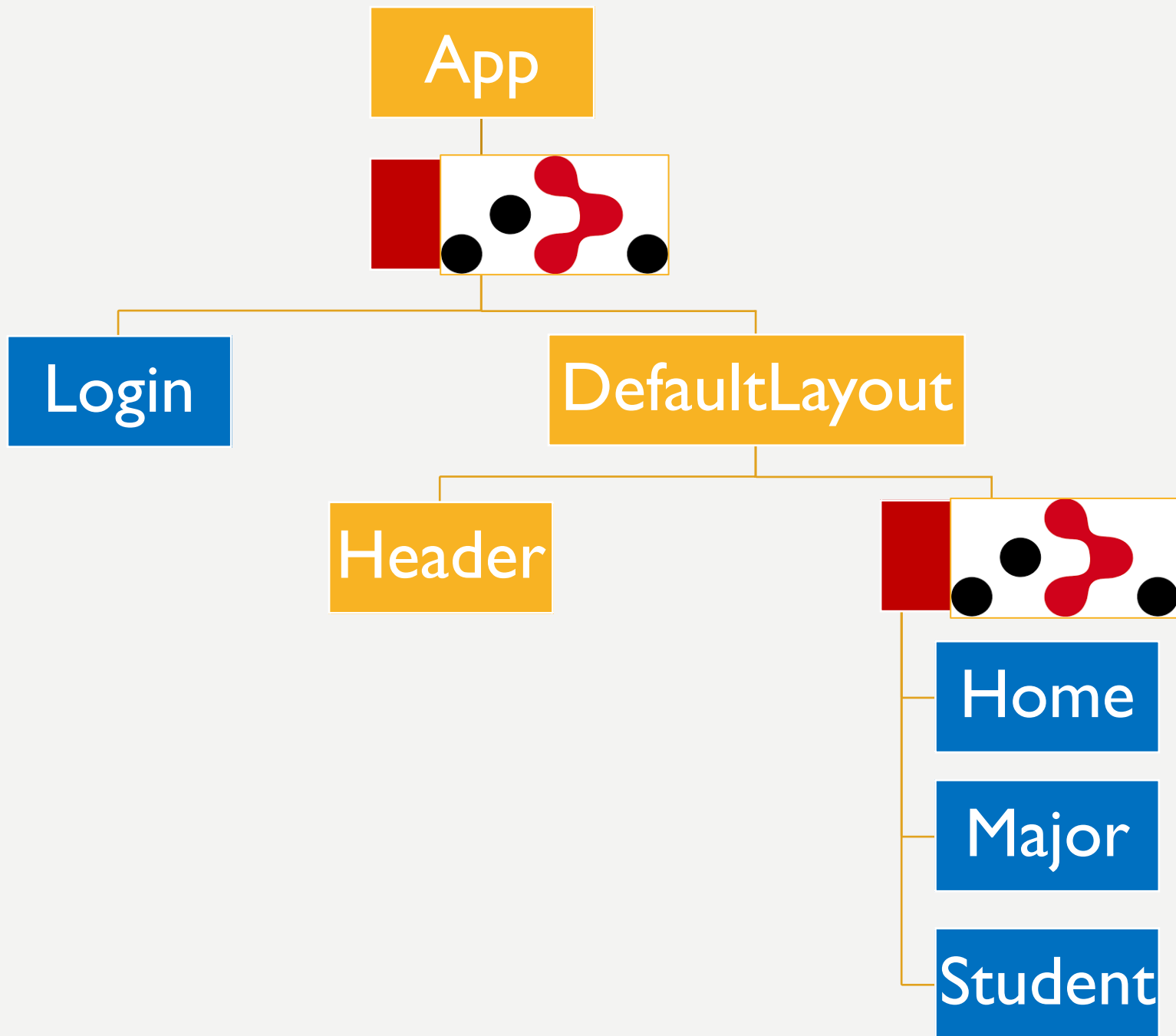


A decorative graphic on the left side of the slide consisting of two parallel, wavy vertical lines. The inner line is yellow and the outer line is white, both set against a dark brown background.

React

Components & Routes



Creating **Header** components

- In “src” folder, create a new folder named “**containers**”.
- Create a new file named “**Header.tsx**” in “containers” folder.

Type **imrse**: to import **React**, **useState** and **useEffect**

```
import * as React from "react";  
import { useState, useEffect } from "react";
```

- Type **sfc**: to create a **stateless functional component**, then type “**Header**”

```
import * as React from "react";
import { useState, useEffect } from "react";

const Header = () => {
  |   return <></>;
};

export default Header;
```

■ Add JSX to render

```
const Header = () => {  
  return (  
    <nav className="navbar navbar-expand-lg navbar-dark bg-primary">  
      <div className="container">  
        <a className="navbar-brand" href="/#">Student Management</a>  
        <button className="navbar-toggler"  
          type="button" data-toggle="collapse" data-target="#navbarText"  
          aria-controls="navbarText" aria-expanded="false"  
          aria-label="Toggle navigation">  
          <span className="navbar-toggler-icon"></span>  
        </button>  
>      <div className="collapse navbar-collapse" id="navbarText"> ...  
        </div>  
      </div>  
    </nav>  
  );  
};  
  
export default Header;
```

Creating **DefaultLayout** component

- Create a new file named “DefaultLayout.tsx” in “containers” folder
- Create “DefaultLayout” component

```
import * as React from "react";
import { useState, useEffect } from "react";
import Header from "../Header";

const DefaultLayout = () => {
  return (
    <Header />
  );
};

export default DefaultLayout;
```

Creating **Home** component

- In “src” folder, Create a new folder named “pages”.
- Create a new file named “Home.tsx” in “pages” folder.
- Create “Home” component

```
import * as React from "react";

const Home = () => {
  return (
    <div className="container">
      <h1 className="text-center text-primary mt-5">
        Welcome to Admin Site!
      </h1>
    </div>
  );
};

export default Home;
```

Updating **DefaultLayout** component

```
import * as React from "react";
import Header from "../Header";
import Home from "../pages/Home";

const DefaultLayout = () => {
  return (
    <>
      <Header />
      <Home />
    </>
  );
};

export default DefaultLayout;
```


Modifying **App** component

```
import React from "react";
import "./App.css";
import DefaultLayout from "../containers/DefaultLayout";

function App() {
  return (
    <DefaultLayout />
  );
}

export default App;
```

Testing



Student Management

Major

Student

welcome to ... 

Welcome to Admin Site!

Integrating React Routing

- Installing react routing package

```
npm i react-router-dom
```

- Modifying “index.tsx” file

```
import App from "./App";  
import reportWebVitals from "./reportWebVitals";  
import { BrowserRouter } from "react-router-dom";
```

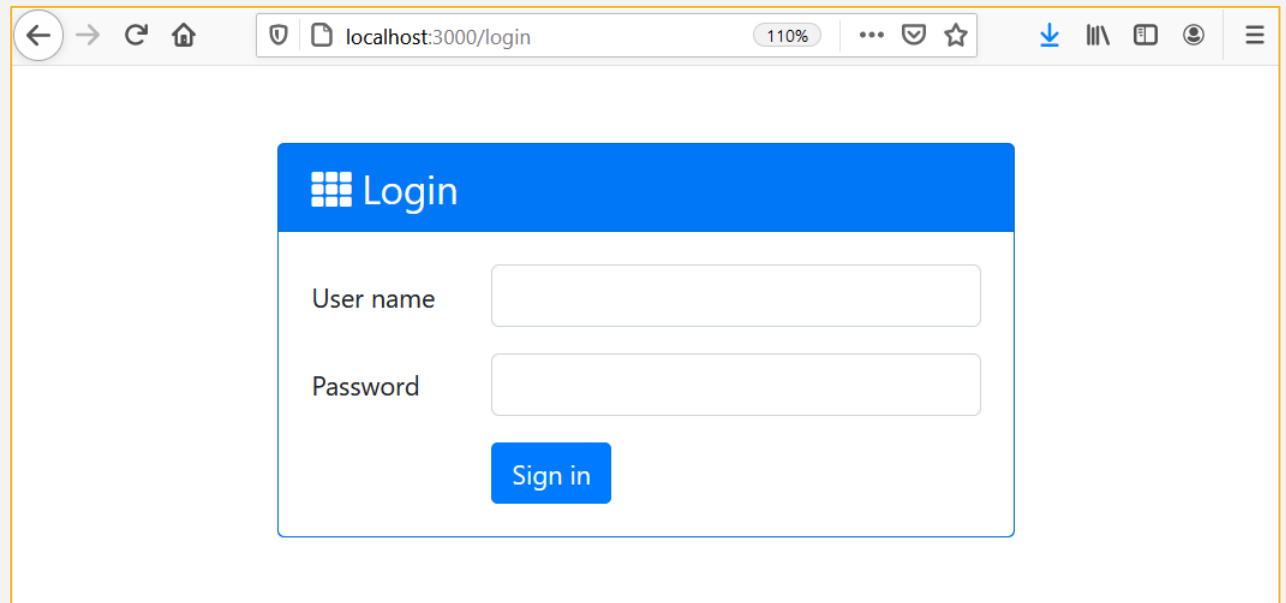
```
root.render(  
  <BrowserRouter>  
    <App />  
  </BrowserRouter>  
);
```

- Modifying “App.tsx” file


```
import React from "react";
import { Routes, Route } from "react-router-dom";
import "./App.css";
import DefaultLayout from "../containers/DefaultLayout";
import Login from "../pages/Login";

function App() {
  return (
    <Routes>
      <Route path="/login" element={<Login />} />
      <Route path="/*" element={<DefaultLayout />} />
    </Routes>
  );
}
```

Test in browser



← → ↻ 🏠 🔒 📄 localhost:3000/login 110% ⋮ 🛡️ ☆ ⬇️ 📄 📄 📄 ☰

 Login

User name

Password

Sign in



Student Management

Major

Student

welcome to ... ➞

Welcome to Admin site!

Creating Major component


■ EXERCISE



Student Management









Major

Student

welcome to ... 

Major list

+ Add

#	Major Name	
1	IT	 
2	Marketing	 
3	Network	 
4	Accounting	 

Modifying DefaultLayout component

```
import React from "react";
import { Route, Routes } from "react-router-dom";
import Home from "../pages/Home";
import Major from "../pages/Major";
import Header from "../Header";

const DefaultLayout = () => {
  return (
    <>
      <Header />
      <Routes>
        <Route path="" element={<Home />} />
        <Route path="home" element={<Home />} />
        <Route path="major" element={<Major />} />
      </Routes>
    </>
  );
};
```

Apply Links with React Route in Header.tsx

```
import React from "react";
import { Link } from "react-router-dom";

const Header = () => {
  return (
    <nav className="navbar navbar-expand-lg navbar-dark bg-primary">
      <div className="container">
        <Link className="navbar-brand" to="/">
          Student Management
        </Link>
        <button ...
        </button>
        <div className="collapse navbar-collapse" id="navbarText"> ...
        </div>
      </div>
    </nav>
  );
};
```



```
<Link className="navbar-brand" to="/">
```

```
  Student Management
```

```
</Link>
```

```
<button ...
```

```
</button>
```

```
<div className="collapse navbar-collapse" id="navbarText">
```

```
  <ul className="navbar-nav me-auto">
```

```
    <li className="nav-item active">
```

```
      <NavLink className="nav-link" to="/major">
```

```
        Major
```

```
      </NavLink>
```

```
    </li>
```

```
    <li className="nav-item">
```

```
      <a className="nav-link" href="/#">
```

```
        Student
```

```
      </a>
```

```
    </li>
```

```
</ul>
```


Test in browser



Student Management









Major

Student

welcome to ... 


Major list


+ Add

#	Major Name	
1	IT	 
2	Marketing	 
3	Network	 
4	Accounting	 

Creating MajorEdit component

■ EXERCISE

 Student Management Major Student

welcome to ... 

Major new

Major name

Back

Save

Modifying DefaultLayout.tsx

```
import Header from "../Header";
import { Routes, Route } from "react-router-dom";
import MajorEdit from "../pages/MajorEdit";
import Home from "../pages/Home";
import Major from "../pages/Majors";
const DefaultLayout = () => {
  return (
    <>
      <Header />
      <Routes>
        <Route path="" element={<Home />} />
        <Route path="/" element={<Home />} />
        <Route path="/major" element={<Major />} />
        <Route path="/major/:id" element={<MajorEdit />} />
      </Routes>
    </>
  );
};
```

Getting URL Parameter value

```
<Route path="/major/:id" element={<MajorEdit />} />
```

```
import { useParams } from "react-router-dom";
```

```
const MajorEdit = () => {
```

```
  const { id } = useParams<{ id: string }>();
```

```
<h3 className="card-title">
```

```
  Major
```

```
  <small className="text-muted">
```

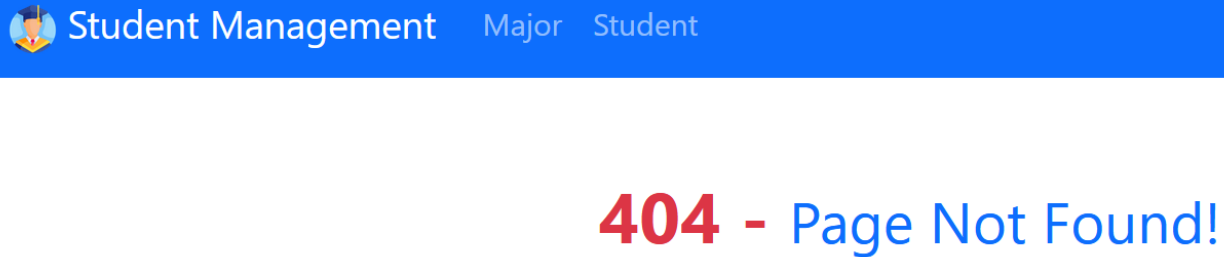
```
    {Number(id) === 0 ? "new" : "edit"}
```

```
  </small>
```

```
</h3>
```

Creating **NotFound** Component

- EXERCISE

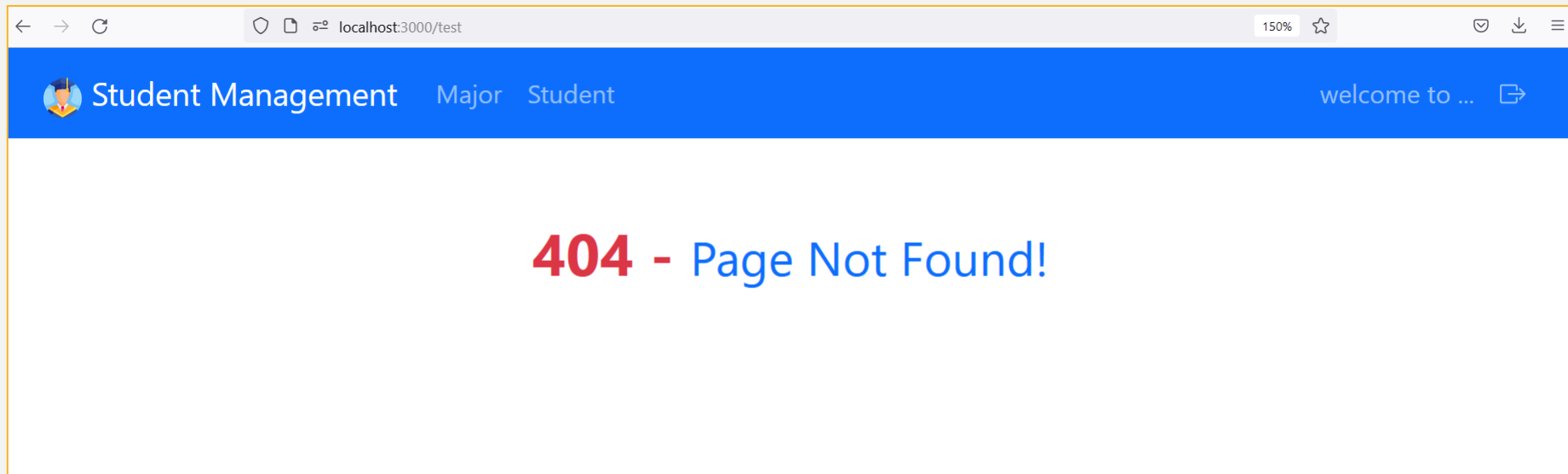


Modifying DefaultLayout.tsx

```
import Home from "../pages/Home";
import Major from "../pages/Majors";
import NotFound from "../pages/NotFound";
const DefaultLayout = () => {
  return (
    <>
      <Header />
      <Routes>
        <Route path="" element={<Home />} />
        <Route path="/" element={<Home />} />
        <Route path="/major" element={<Major />} />
        <Route path="/major/:id" element={<MajorEdit />} />
        <Route path="/not-found" element={<NotFound />} />
        <Route path="/*" element={<NotFound />} />
      </Routes>
    </>
  );
};
```

Test in Browser

- Type wrong path to see 404 page



Validate URL Parameter Value

- Validate Major Id accepts only numeric values

```
import { useParams, useNavigate } from "react-router-dom";

const MajorEdit = () => {
  const { id } = useParams<{ id: string }>();

  const navigate = useNavigate();

  useEffect(() => {
    if (!/\d+/.test(id as string)) {
      navigate("/not-found");
    }
  }, [id, navigate]);
}
```

Creating Student component & route

▪ EXERCISE

Student Management













Major

Student

welcome to ...

Student list

+ Add

#	Student Id	Full name	Gender	Phone	Email	
1	01-03-9384	Trần Minh Tâm		0935875636	tamtm@yahoo.com	 
2	01-03-9344	Nguyễn Thị Thanh		0937938573	thanhnt@yahoo.com	 
3	01-04-9846	Lê Thanh Tuấn		0918373635	tuanlt@yahoo.com	 
4	01-04-8363	Đinh La Si		0917628363	sidl@yahoo.com	 



THE END