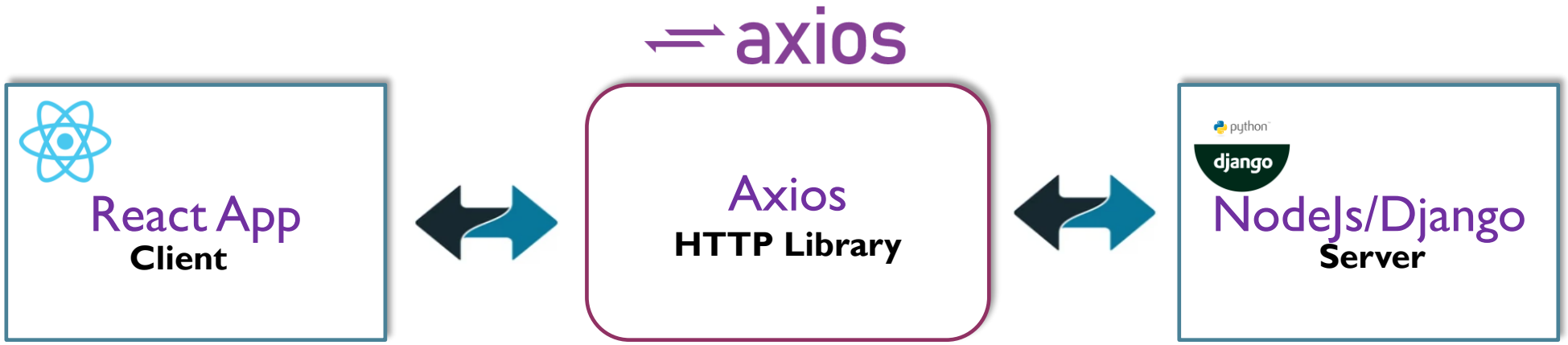
React Hooks - useEffect

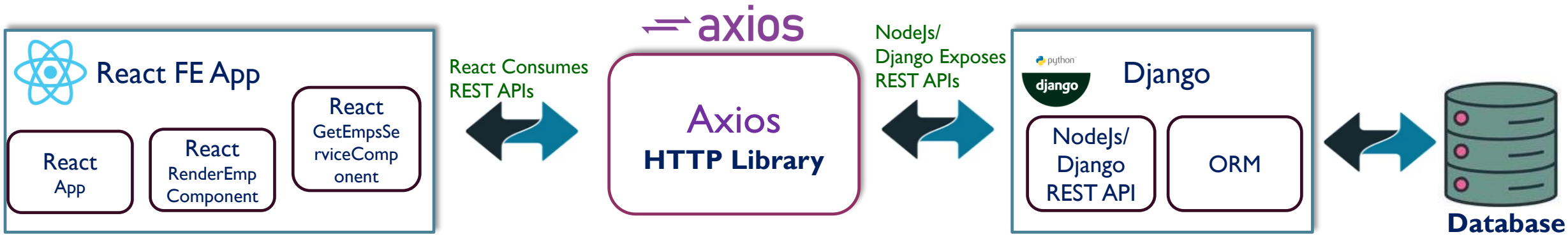
Full Stack Application architecture



NOTE:

Axios Library is used to make the REST API Calls

Full Stack Application architecture

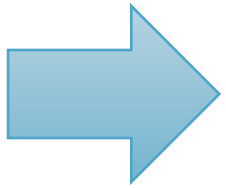


React Hooks - useEffect

- useEffect hook allows us to perform side effects(Action) in function components.
- Effect hooks are equals to componentDidMount(), componentDidUpdate, componentWillUnmount() lifecycle methods.

```
useEffect(() => {
  effect
  return () => {
    cleanup
  };
}, [input])
```

Used to define the dependencies



```
useEffect(() => {

}, [])
```

EmployeeService.js Implementation

EmployeeService.js

icress-app > src > services > EmployeeService.js > default

```
1   import axios from 'axios'
2   const EMPLOYEE_REST_API_URL = "http://localhost:8000/empapi/employee/";
3
4   class EmployeeService {
5
6       getAllEmployees() {
7           return axios.get(EMPLOYEE_REST_API_URL);
8       }
9   }
10
11  export default new EmployeeService();
```

React Hooks - useState

ListEmployeeComponent.js

icress-app > src > components > ListEmployeeComponent.js > ListEmployeeComponent

```
1  import React, {useState} from 'react'
2
3  const ListEmployeeComponent = () => {
4
5    const [employees, setEmployees] = useState([])
6
7    return (
8      <div>
9
10     </div>
11   )
12 }
13
14 export default ListEmployeeComponent
```

ListEmployeeComponent.js Implementation

ListEmployeeComponent.js

icress-app > src > components > ListEmployeeComponent.js > ListEmployeeComponent

```
1   import React, {useState, useEffect} from 'react'
2   import EmployeeService from '../services/EmployeeService'
3
4   const ListEmployeeComponent = () => {
5     const [employees, setEmployees] = useState([])
6
7     useEffect(() => {
8       EmployeeService.getAllEmployees().then((response) => {
9           setEmployees(response.data);
10          console.log(response.data)
11      }).catch(error => {
12          console.log(error);
13      })
14    }, [])
15
```

```
16    return (
17      <div className="container">
18        <h2 className="text-center">List Employees</h2>
19        <table className="table table-bordered table-striped">
20          <thead>
21              <th>Id</th>
22              <th>Employee Id</th>
23              <th>Name</th>
24              <th>Age</th>
25              <th>Salary</th>
26              <th>Address</th>
27          </thead>
28          <tbody>
29              {
30                  employees.map(employee =>
31                      <tr key = {employee.id}>
32                          <td>{employee.id}</td>
33                          <td>{employee.empid}</td>
34                          <td>{employee.name}</td>
35                          <td>{employee.age}</td>
36                          <td>{employee.salary}</td>
37                          <td>{employee.address}</td>
38                      </tr>
39                  )
40              }
41          </tbody>
42        </table>
43      </div>
44    )
45  }
46  export default ListEmployeeComponent
```

Changes in App.js

App.js

icress-app > src > App.js > default

```
1   import ListEmployeeComponent from "./components/ListEmployeeComponent";
2
3   function App() {
4     return (
5       <div>
6         <ListEmployeeComponent />
7       </div>
8     );
9   }
10
11  export default App;
```

Adding Routing

What is Routing

- In non-single page applications, when we click on a link in the browser, a request is sent to the server before the HTML page gets rendered.

- In React, the page contents are created from our components. So what React Router does is intercept the request being sent to the server and then injects the contents dynamically from the components we have created.

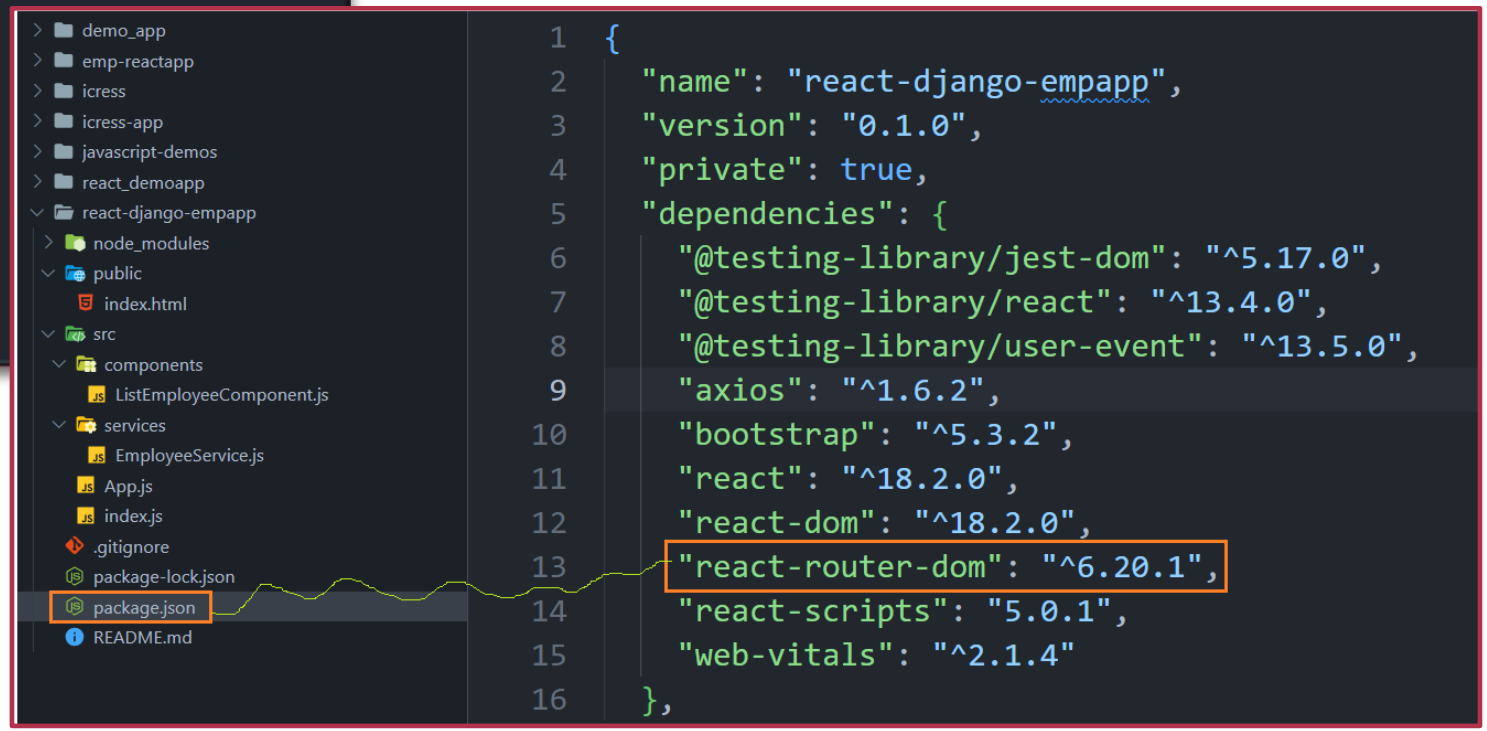
- When we create a new project, we'll always see index.html file in the public folder. All the code we write in our App component which acts as the root component gets rendered to this HTML file. This means that there is only one HTML file where our code will be rendered to.

- What happens when we have a different component we would prefer to render as a different page? Do you create a new HTML file? The answer is no. React Router helps us route to/navigate to and render our new component in the index.html file.

Installing React Router

npm install react-router-dom --save

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS D:\react_workspace_8am\react-django-empapp> npm install react-router-dom --save

added 3 packages, and audited 1540 packages in 6s

248 packages are looking for funding
  run `npm fund` for details

8 vulnerabilities (2 moderate, 6 high)

To address all issues (including breaking changes), run:
  npm audit fix --force

Run `npm audit` for details.
PS D:\react_workspace_8am\react-django-empapp>
```



Configuring Routers in App.js

- ✓ Go to App.js
- ✓ import {BrowserRouter as Router, Route, Routes from 'react-router-dom'
- ✓ Configure Routing

```
<Router>
    <Routes>
        <Route path="" exact element={our_component} />
    </Routes>
</Router>
```

```
import {BrowserRouter as Router, Route, Routes} from 'react-router-dom'
function App() {
  return (
    <div>
      <Router>
        <div className="container">
          <Routes>
            <Route path="" element={ } />
            <Route path="" element={ } />
            <Route path="" element={ } />
          </Routes>
        </div>
      </Router>
    </div>
  );
}
export default App;
```

How to Route to Other Components

- ✓ Step 1 - Create multiple components
- ✓ Step 2 - Define routes
- ✓ Step 3 - Use Link to navigate to routes

Step 1 - Create multiple components

```jsx
function Home() {
  return (
    <div>
      <h1>This is the home page</h1>
    </div>
  );
}

export default Home;
```

```jsx
import React from 'react'

function About() {
    return (
        <div>
            <h1>This is the about page</h1>
        </div>
    )
}

export default About
```

```jsx
import React from 'react'

function Contact() {
    return (
        <div>
            <h1>This is the contact page</h1>
        </div>
    )
}

export default Contact
```

```jsx
import { Routes, Route } from "react-router-dom"
import Home from "./Home"
import About from "./About"
import Contact from "./Contact"

function App() {
  return (
    <div className="App">
      <Routes>
        <Route path="/" element={ <Home/> } />
        <Route path="about" element={ <About/> } />
        <Route path="contact" element={ <Contact/> } />
      </Routes>
    </div>
  )
}

export default App
```

Step 2 - Define routes

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

function Home() {
  return (
    <div>
      <h1>This is the home page</h1>
      <Link to="about">Click to view our about page</Link>
      <Link to="contact">Click to view our contact page</Link>
    </div>
  );
}

export default Home;
```

Step 3 - Use Link to navigate to routes

❖ Configured Route in a such a way that if user enters below Paths it will route the request To ListEmployeeComponent

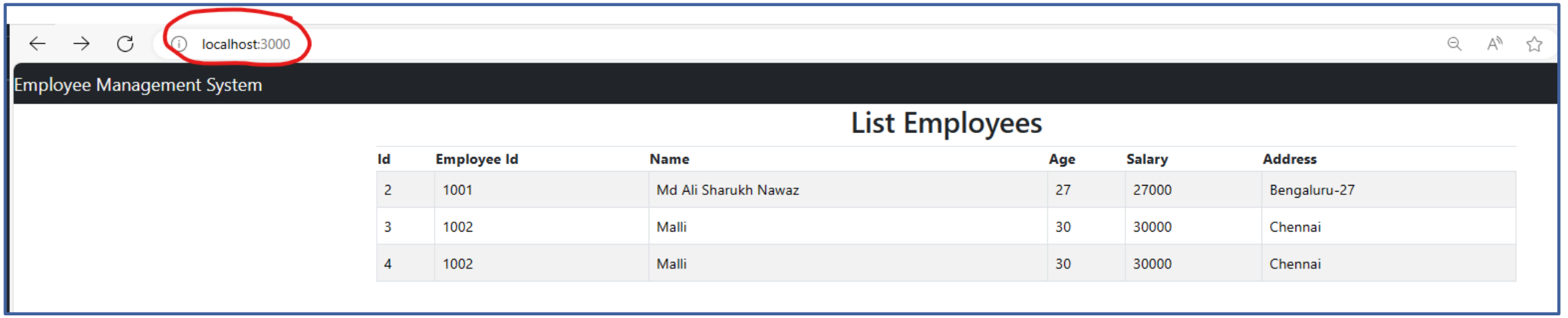
“/”

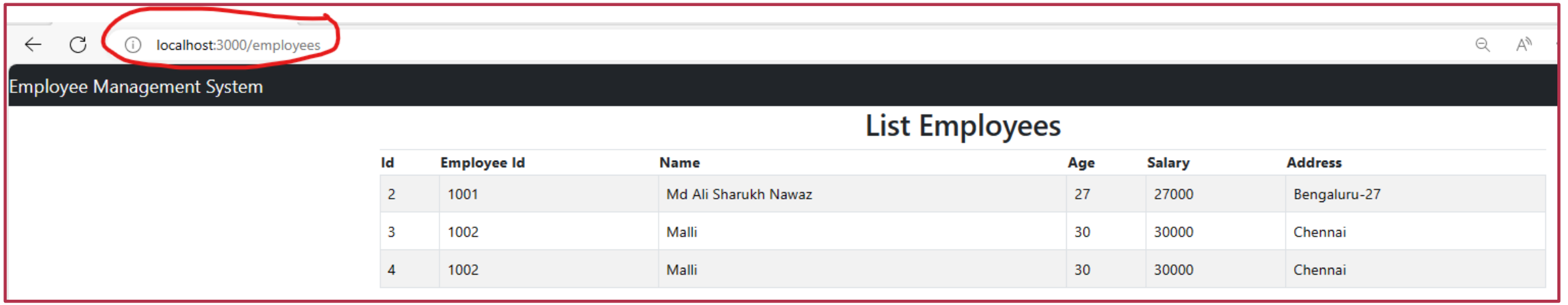
“/employees”

App.js

icress-app > src > App.js > default

```
1  import FooterComponent from "./components/FooterComponent";
2  import HeaderComponent from "./components/HeaderComponent";
3  import ListEmployeeComponent from "./components/ListEmployeeComponent";
4  import './App.css';
5  import {BrowserRouter as Router, Route, Routes} from 'react-router-dom'
6  function App() {
7    return (
8     <div>
9      <Router>
10       <HeaderComponent />
11       <div className="container">
12         <Routes>
13           <Route exact path="/" element={<ListEmployeeComponent />} />
14           <Route path="/employees" element={<ListEmployeeComponent />} />
15         </Routes>
16       </div>
17       <FooterComponent />
18     </Router>
19    </div>
20   );
21 }
22 export default App;
```


localhost:3000
Employee Management System
List Employees
Id Employee Id Name Age Salary Address
2 1001 Md Ali Sharukh Nawaz 27 27000 Bengaluru-27
3 1002 Malli 30 30000 Chennai
4 1002 Malli 30 30000 Chennai


localhost:3000/employees
Employee Management System
List Employees
Id Employee Id Name Age Salary Address
2 1001 Md Ali Sharukh Nawaz 27 27000 Bengaluru-27
3 1002 Malli 30 30000 Chennai
4 1002 Malli 30 30000 Chennai