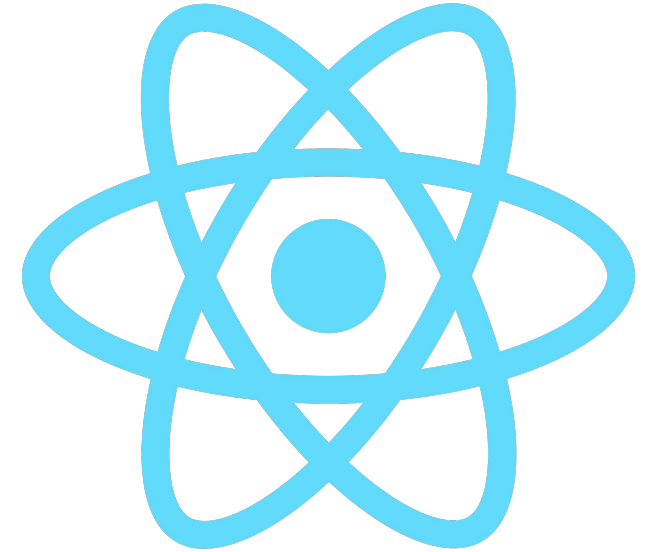


# React Router



Routing in the Frontend

Routing is an essential technique for navigation among pages on a website based on single-page applications to render multiple views.

For applications that will run in the browser

## **react-router-dom**

determine which components render based on the URL

- ☐ Configure routes
- ☐ Handle dynamic routing
- ☐ Access URL parameters

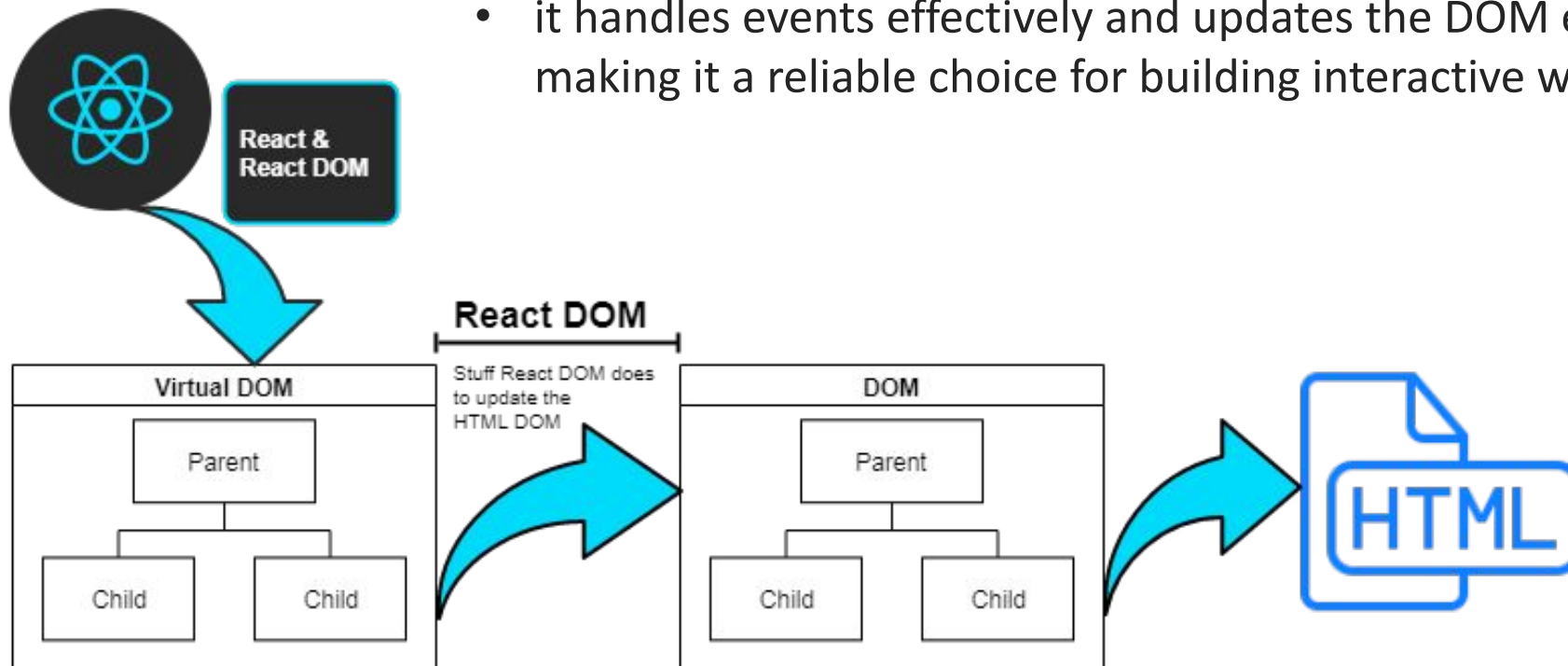
\* URL stands for Uniform Resource Locator.

\* A URL is nothing more than the address of a given unique resource on the Web.

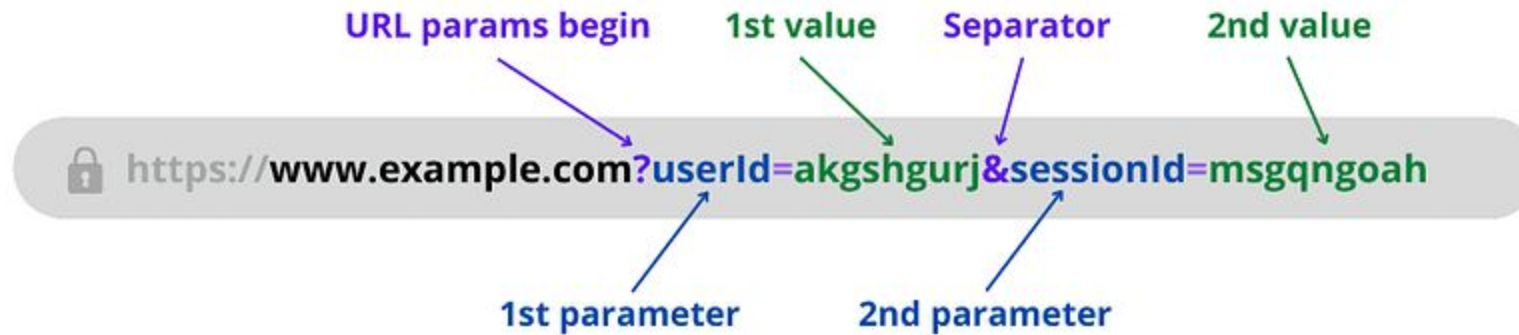
# React Virtual Document Object Model (DOM) :

The reconciliation process in React Virtual DOM ensures that :

- any changes made to the component tree are reflected accurately on the browser
- it handles events effectively and updates the DOM efficiently making it a reliable choice for building interactive web applications.

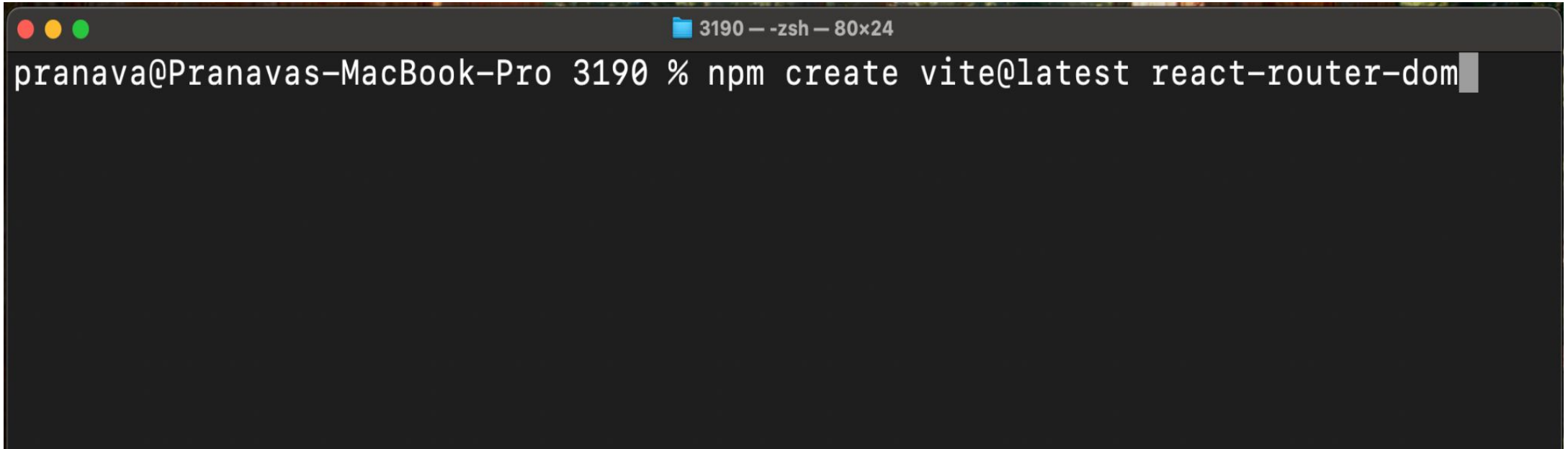


# How react-router-dom manages **URL parameters**:



# Exercise

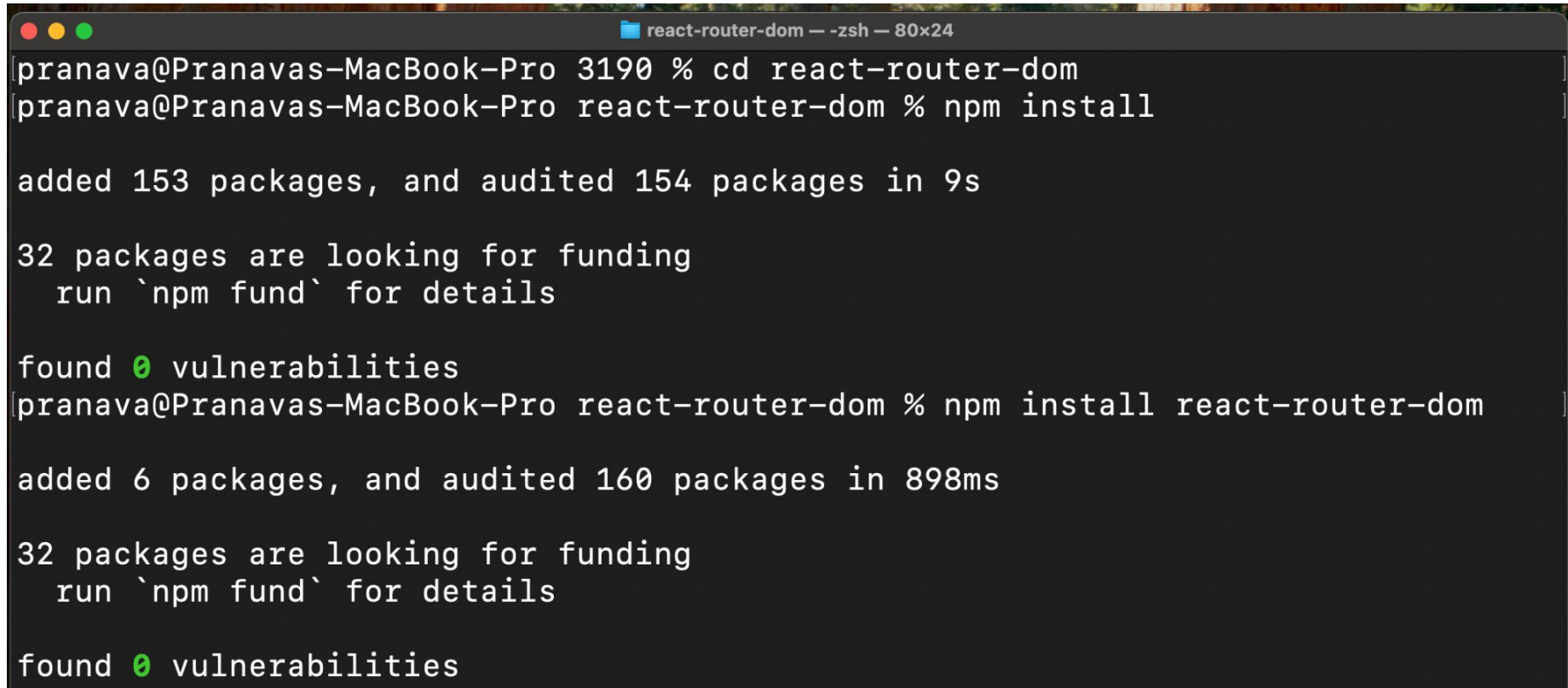
# Create **reactrouterdom** application:

A terminal window with a dark background and light gray text. The window title bar shows three colored dots (red, yellow, green) on the left, followed by a folder icon and the text "3190 - -zsh - 80x24". The terminal content shows the prompt "pranava@Pranavas-MacBook-Pro 3190 % " followed by the command "npm create vite@latest react-router-dom" with a white cursor at the end.

```
pranava@Pranavas-MacBook-Pro 3190 % npm create vite@latest react-router-dom
```

# Install **react-router-dom** :

`npm install react-router-dom`

A screenshot of a macOS terminal window titled 'react-router-dom - zsh - 80x24'. The terminal shows the execution of 'npm install' in a directory named 'react-router-dom'. The output indicates that 153 packages were added and 154 packages were audited in 9 seconds. It also shows that 32 packages are looking for funding and that 0 vulnerabilities were found. The user then runs 'npm install react-router-dom' again, which adds 6 packages and audits 160 packages in 898ms, with 32 packages looking for funding and 0 vulnerabilities found.

```
pranava@Pranavas-MacBook-Pro 3190 % cd react-router-dom
pranava@Pranavas-MacBook-Pro react-router-dom % npm install

added 153 packages, and audited 154 packages in 9s

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

found 0 vulnerabilities
pranava@Pranavas-MacBook-Pro react-router-dom % npm install react-router-dom

added 6 packages, and audited 160 packages in 898ms

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

found 0 vulnerabilities
```



# Review

## package.json:



```
{
  "name": "react-router-dom",
  "private": true,
  "version": "0.0.0",
  "type": "module",
  "scripts": {
    "dev": "vite",
    "build": "vite build",
    "lint": "eslint .",
    "preview": "vite preview"
  },
  "dependencies": {
    "react": "^19.0.0",
    "react-dom": "^19.0.0",
    "react-router-dom": "^7.5.1"
  },
  "devDependencies": {
    "@eslint/js": "^9.22.0",
    "@types/react": "^19.0.10",
    "@types/react-dom": "^19.0.4",
    "@vitejs/plugin-react": "^4.3.4",
    "eslint": "^9.22.0",
    "eslint-plugin-react-hooks": "^5.2.0",
    "eslint-plugin-react-refresh": "^0.4.19",
    "globals": "^16.0.0",
    "vite": "^6.3.1"
  }
}
```

# Create a folder structure with Modules:

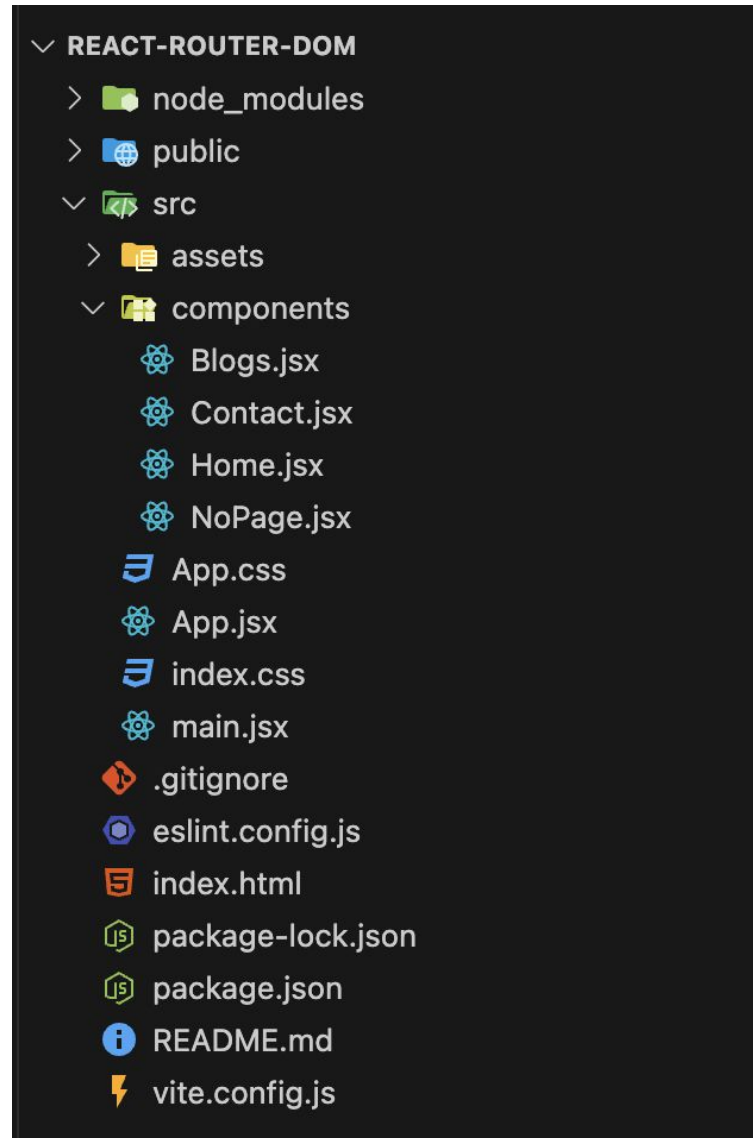
`./src/components`

`Home.jsx`

`Blogs.jsx`

`Contact.jsx`

`NoPage.jsx`



# Add simple Component to each Module :

## Home.jsx

```
const Home = () => {  
    return <div>  
        I am in Home Component  
    </div>  
}  
export default Home;
```

## Blogs.jsx

```
const Blogs = () => {  
    return <div>  
        I am in MyBlog Component  
    </div>  
}  
export default Blog;
```

## Contact.jsx

```
const Contact = () => {  
    return <div>  
        I am in Contact Component  
    </div>  
}  
export default Contact;
```

## NoPage.jsx

```
const NoPage = () => {  
    return <div>  
        I am in NoPage Component  
    </div>  
}  
export default Nopage;
```

# Import **react-router-dom** in **App.jsx**:

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

# Import Components in **index.js**:

```
import Home from "./Home.jsx";  
import Blogs from "./Blogs.jsx";  
import Contact from "./Contact.jsx";  
import NoPage from "./NoPage.jsx";
```

# Add routes to `index.js`:

```
import React from 'react';
import ReactDOM from 'react-dom/client';
import { BrowserRouter, Routes, Route } from "react-router-dom";
import MHome from "./Home.js";
import MyBlogs from "./Blogs.js";
import MyContact from "./Contact.js";
import MyNoPage from "./NoPage.js";

const root = ReactDOM.createRoot(document.getElementById( 'root' ));
root.render(
  <BrowserRouter>
    <Routes>


      <Route index element={<MyHome />} />
      <Route path="blogs" element={<MyBlogs />} />
      <Route path="contact" element={<MyContact />} />
      <Route path="*" element={<MyNoPage />} />

    </Routes>
  </BrowserRouter>
);
```

# The results

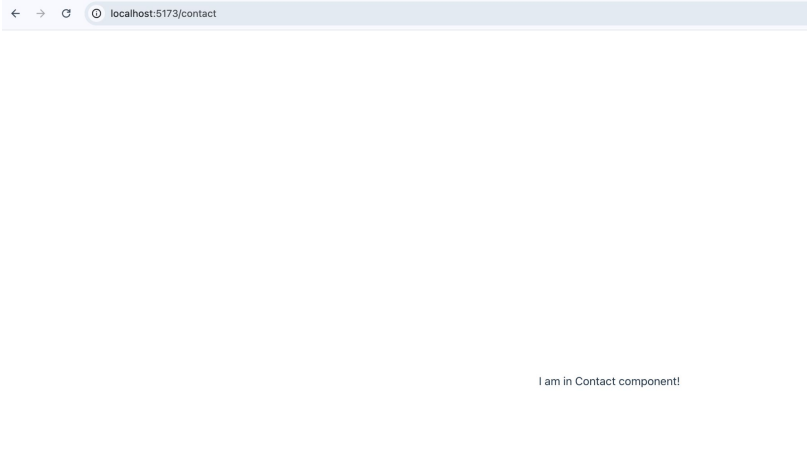
# The different URL will show different view:

<http://localhost:3000/>




I am in Home component!

<http://localhost:3000/contact>



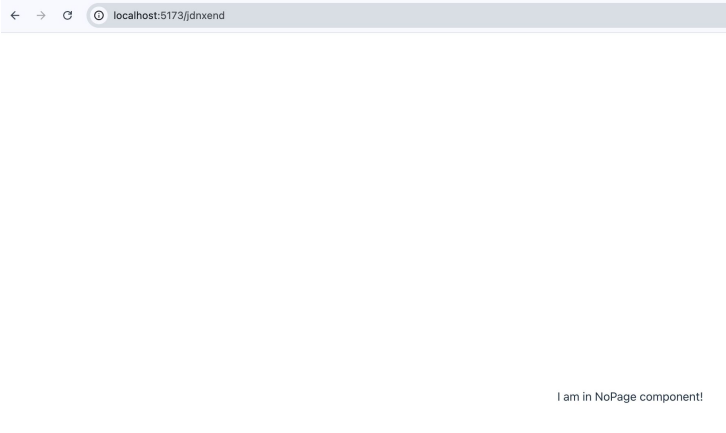
I am in Contact component!

<http://localhost:3000/blogs>



I am in Blogs component!

<http://localhost:3000/abc>



I am in NoPage component!

Abraham N. Aldaco-Gastélum, Ph.D.



# **Challenge :**

Adding all Components in one single  
Module

1.- Create a file `AllRoutes.js` and add all the functional components in it used previously.

**Hint:** use export in every functional component.

2.- Modify `index.js` to import all the functional components.

**Hint:** use { } when import the functional components.

# Adding all Components in one single Module:

AllRoutes.js

```
export const MyHome = () => {  
  return <div>  
    I am in MyHome Component in ALL  
  </div>  
}  
  
export const MyContact = () => {  
  return <div>  
    I am in MyContact Component in ALL  
  </div>  
}  
  
export const MyBlog = () => {  
  return <div>  
    I am in MyBlog Component in ALL  
  </div>  
}  
  
export const MyNoPage = () => {  
  return <div>  
    I am in NoPage Component in ALL  
  </div>  
}
```

Instead of importing every default component from every different Module :

```
import MyHome from "./Home.js";  
import MyBlog from "./Blogs.js";  
import MyContact from "./Contact.js";  
import MyNoPage from "./NoPage.js";
```

We import the Components from the single Module:

```
import {MyHome, MyBlog, MyContact, MyNoPage} from "./AllRoutes.js";
```