

Frontend Development with React.js

1. Introduction

Project Title : CookBook: Your Virtual Kitchen Assistant.

Team Members :

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2. Project Overview

CookBook is a modern web application designed to transform recipe discovery, organization, and sharing. Built with an intuitive interface and powerful features, it caters to both beginners and professional chefs.

With dynamic search, easy navigation, and personalized recommendations, users can seamlessly explore and manage recipes. CookBook also fosters a collaborative community where cooking enthusiasts connect, share, and inspire one another.

Blending innovation with tradition, CookBook redefines culinary exploration—turning every recipe into an exciting adventure.

CookBook is designed to transform the way people discover, organize, and share recipes. It aims to bridge the gap between home cooks and professional chefs by offering a user-friendly platform that makes cooking inspiration, recipe management, and community interaction seamless and enjoyable.

Purpose :

The primary goal of CookBook is to provide a user-friendly platform that caters to individuals passionate about cooking, baking, and exploring new culinary horizons. Our objectives include:

- **User-Friendly Experience:** Create an interface that is easy to navigate, ensuring users can effortlessly discover, save, and share their favourite recipes.
- **Comprehensive Recipe Management:** Offer robust features for organizing and managing recipes, including advanced search options.
- **Technology Stack:** Leverage modern web development technologies, including React.js, to ensure an efficient, and enjoyable user experience.

3. Setup Instructions

PRE-REQUISITES:

Here are the key prerequisites for developing a frontend application using React.js:

- **Node.js and npm:**

Node.js is a powerful JavaScript runtime environment that allows you to run JavaScript code on the local environment. It provides a scalable and efficient platform for building network applications.

Install Node.js and npm on your development machine, as they are required to run JavaScript on the server-side.

- Download: <https://nodejs.org/en/download/>
- Installation instructions: <https://nodejs.org/en/download/package-manager/>

- **React.js:**

React.js is a popular JavaScript library for building user interfaces. It enables developers to create interactive and reusable UI components, making it easier to build dynamic and responsive web applications.

Install React.js, a JavaScript library for building user interfaces.

- Create a new React app:

```
npx create-react-app my-react-app
```

Replace my-react-app with your preferred project name.

- Navigate to the project directory:

```
cd my-react-app
```

- Running the React App:

With the React app created, you can now start the development server and see your React application in action.

- Start the development server:

```
npm start
```

command launches the development server, and you can access

your React app at <http://localhost:3000> in your web browser.

- **HTML, CSS, and JavaScript:** Basic knowledge of HTML for creating the structure of your app, CSS for styling, and JavaScript for client-side interactivity is essential.

- **Version Control:** Use Git for version control, enabling collaboration and tracking changes throughout the development process. Platforms like GitHub or Bitbucket can host your repository.
 - Git: Download and installation instructions can be found at: <https://git-scm.com/downloads>
- **Development Environment:** Choose a code editor or Integrated Development Environment (IDE) that suits your preferences, such as Visual Studio Code, Sublime Text, or WebStorm.
- Visual Studio Code: Download from <https://code.visualstudio.com/download>
- Sublime Text: Download from <https://www.sublimetext.com/download>
- WebStorm: Download from <https://www.jetbrains.com/webstorm/download>

To get the Application project from drive:

Follow below steps:

Install Dependencies:

- Navigate into the cloned repository directory and install libraries:

```
cd fitness-app-react
npm install
```

- **Start the Development Server:**

- To start the development server, execute the following command:

```
npm start
```

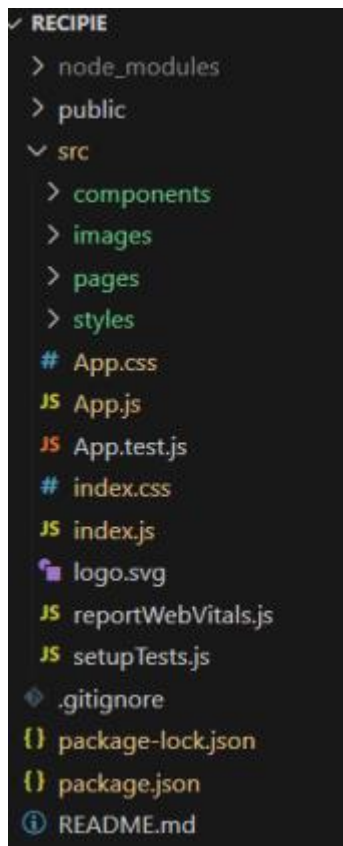
Access the App:

- Open your web browser and navigate to <http://localhost:3000>.
- You should see the application's homepage, indicating that the installation and setup were successful.

You have successfully installed and set up the application on your local machine. You can now proceed with further customization, development, and testing as needed.

4.Folder structure

In this project, we've split the files into 3 major folders, *Components*, *Pages* and *Styles*. In the pages folder, we store the files that acts as pages at different url's in the application. The components folder stores all the files, that returns the small components in the application. All the styling css files will be stored in the styles folder.



Running the Application

- **Start the Development Server:**
- To start the development server, execute the following command:

```
npm start
```

5.Project Development

- ? Setup the Routing paths

Setup the clear routing paths to access various files in the application.

```
<Routes>
  <Route path="/" element={<Home />} />
  <Route path="/category/:id" element={<Category />} />
  <Route path="/recipie/:id" element={<Recipie />} />
</Routes>
```

- ? Develop the Navbar and Hero components
- ? Code the popular categories components and fetch the categories from **themealsdb** Api.
- ? Also, add the trending dishes in the home page.

? Now, develop the category page to display various dishes under the category.

? Finally, code the recipe page, where the ingredients, instructions and a demo video will be integrated to make cooking much easier.

Important Code snips:

? Fetching all the available categories

Here, with the API request to Rapid API, we fetch all the available categories.

```
const [categories, setCategories] = React.useState([])

useEffect(() => {
  fetchCategories()
}, [])

const fetchCategories = async () => {
  await axios.get('https://www.themealdb.com/api/json/v1/1/categories.php')
    .then(response => {
      setCategories(response.data.categories)
      console.log(response.data.categories)
    })
    .catch(error => console.error(error));
}
```

This code snippet demonstrates how to fetch data from an API and manage it within a React component. It leverages two key functionalities: state management and side effects.

State Management with useState Hook:

The code utilizes the useState hook to create a state variable named categories. This variable acts as a container to hold the fetched data, which in this case is a list of meal categories. Initially, the categories state variable is set to an empty array [].

Fetching Data with useEffect Hook:

The useEffect hook is employed to execute a side effect, in this instance, fetching data from an API. The hook takes a callback function (fetchCategories in this case) and an optional dependency array. The callback function is invoked after the component renders and whenever the dependencies in the array change. Here, the dependency array is left empty [], signifying that the data fetching should occur only once after the component mounts.

Fetching Data with fetchCategories Function:

An asynchronous function named fetchCategories is defined to handle the API interaction. This function utilizes the axios.get method to make a GET request to a specified API endpoint (<https://www.themealdb.com/api/json/v1/1/categories.php> in this

example). This particular endpoint presumably returns a JSON response containing a list of meal categories.

Processing API Response:

The `.then` method is chained to the `axios.get` call to handle a successful response from the API. Inside the `.then` block, the code retrieves the categories data from the response and updates the React component's state using the `setCategories` function. This function, associated with the `useState` hook, allows for modification of the categories state variable. By calling `setCategories(response.data.categories)`, the component's state is updated with the fetched list of meal categories.

? Fetching the food items under a particular category

Now, with the API request, we fetch all the available food items under the certain category.

```
const (id) = useParams();
const [items, setItems] = React.useState([])

useEffect(() => {
  fetchItems(id)
}, [window.location.href])

const fetchItems = async (id) => {
  await axios.get(`https://www.themealdb.com/api/json/v1/1/filter.php?c=${id}`)
  .then(response => {
    setItems(response.data.meals)
    console.log(response.data.meals)
  })
  .catch(error => console.error(error));
}
```

This React code snippet manages data fetching from an API.

- It leverages the `useState` hook to establish a state variable named `categories`. This variable acts as a container to hold the fetched data, which is initially set to an empty array `[]`.
- The `useEffect` hook comes into play to execute a side effect, in this instance, fetching data from an API endpoint. The hook takes a callback function (`fetchCategories` in this case) and an optional dependency array. The callback function is invoked after the component renders and whenever the dependencies in the array change. Here, the dependency array is left empty `[]`, signifying that the data fetching should occur only once after the component mounts.
- The `fetchCategories` function is an asynchronous function responsible for handling the API interaction. This function utilizes the `axios.get` method to make a GET request to a predetermined API endpoint (`https://www.themealdb.com/api/json/v1/1/categories.php` in this example). This particular endpoint presumably returns a JSON response containing a list of meal categories.
- The code snippet employs the `.then` method, which is chained to the `axios.get` call, to handle a successful response from the API. Inside the `.then` block, the code retrieves the categories data from the response and updates the React component's state using the `setCategories` function. This function, associated with the `useState` hook, allows for modification of the categories state variable. By

calling `setCategories(response.data.categories)`, the component's state is updated with the fetched list of meal categories.

- An optional error handling mechanism is incorporated using the `.catch` block. This block is designed to manage any errors that might arise during the API request. If an error occurs, the `.catch` block logs the error details to the console using the `console.error` method. This rudimentary error handling mechanism provides a way to identify and address potential issues during the data fetching process.

? Fetching Recipe details

With the recipe id, we fetch the details of a certain recipe.

This React code manages fetching recipe data from an API and storing it within a state variable.

- It leverages the `useState` hook to establish a state variable named `recipe` (which is initially empty). This variable acts as a container to hold the fetched recipe data.
- The `useEffect` hook comes into play to execute a side effect, in this instance, fetching data from an API endpoint. The hook takes a callback function (`fetchRecipe` in this case) and an optional dependency array. The callback function is invoked after the component renders and whenever the dependencies in the array change. Here, the dependency array is left empty `[]`, signifying that the data fetching should occur only once after the component mounts.
- The `fetchRecipe` function is an asynchronous function responsible for handling the API interaction. This function likely utilizes the `axios.get` method to make a GET request to a predetermined API endpoint, the exact URL construction of which depends on a `recipeId` retrieved from somewhere else in the code (not shown in the snippet).
- The code snippet employs the `.then` method, which is chained to the `axios.get` call, to handle a successful response from the API. Inside the `.then` block, the code retrieves the first recipe from the `data.meals` array in the response and updates the React component's state using the `setRecipe` function. This function, associated with the `useState` hook, allows for modification of the `recipe` state variable. By calling `setRecipe(response.data.meals[0])`, the component's state is updated with the fetched recipe data, effectively making it available for use throughout the component.
- An optional error handling mechanism is incorporated using the `.catch` block. This block is designed to manage any errors that might arise during the API request. If an error occurs, the `.catch` block logs the error details to the console using the `console.error` method. This rudimentary error handling mechanism provides a way to identify and address potential issues during the data fetching process.

6.Screenshots or Demo

? Hero components

The hero component of the application provides a brief description about our application and a button to view more recipes.



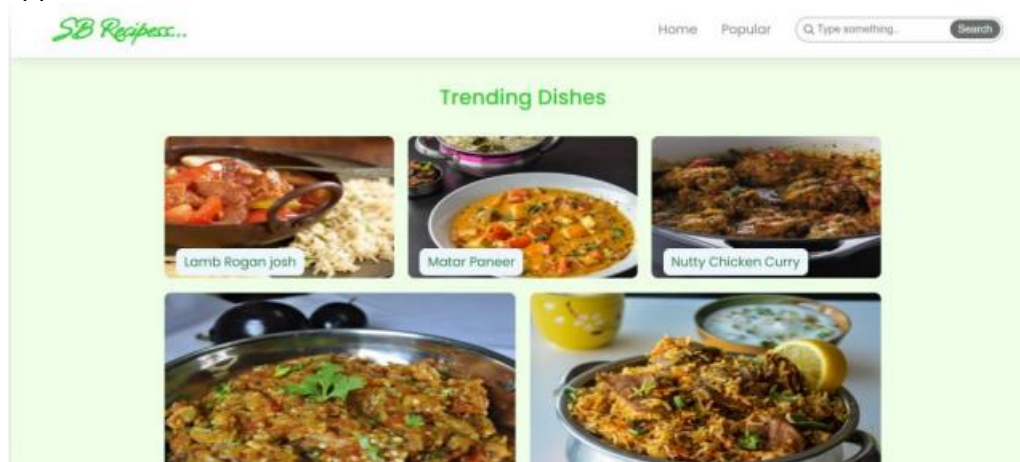
? Popular categories

This component contains all the popular categories of recipes..



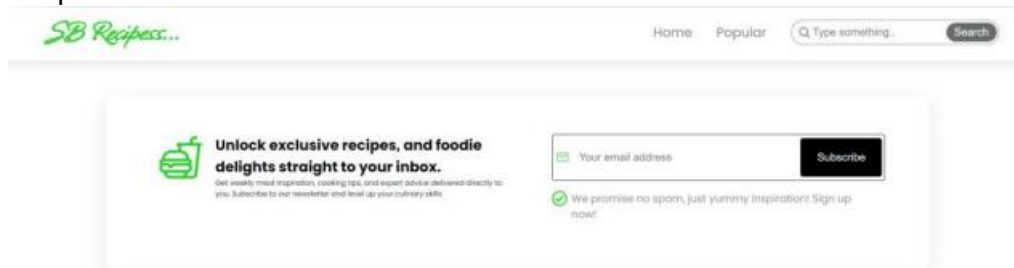
? Trending Dishes

This component contains some of the trending dishes in this application.



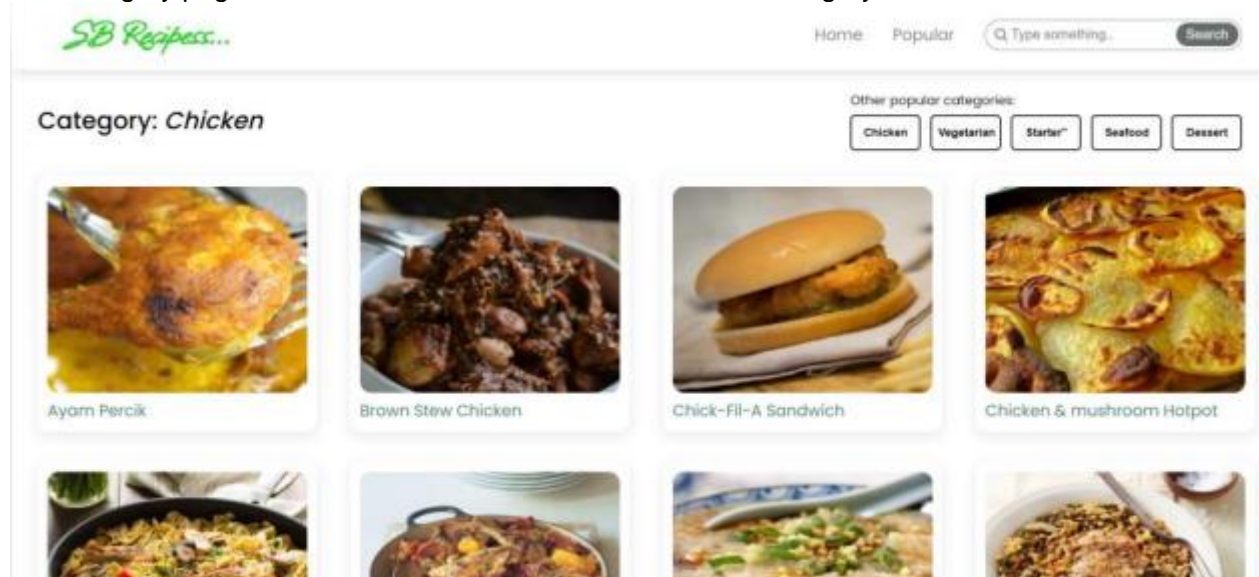
? News Letter

The news letter component provides an email input to subscribe for the recipe newsletters.



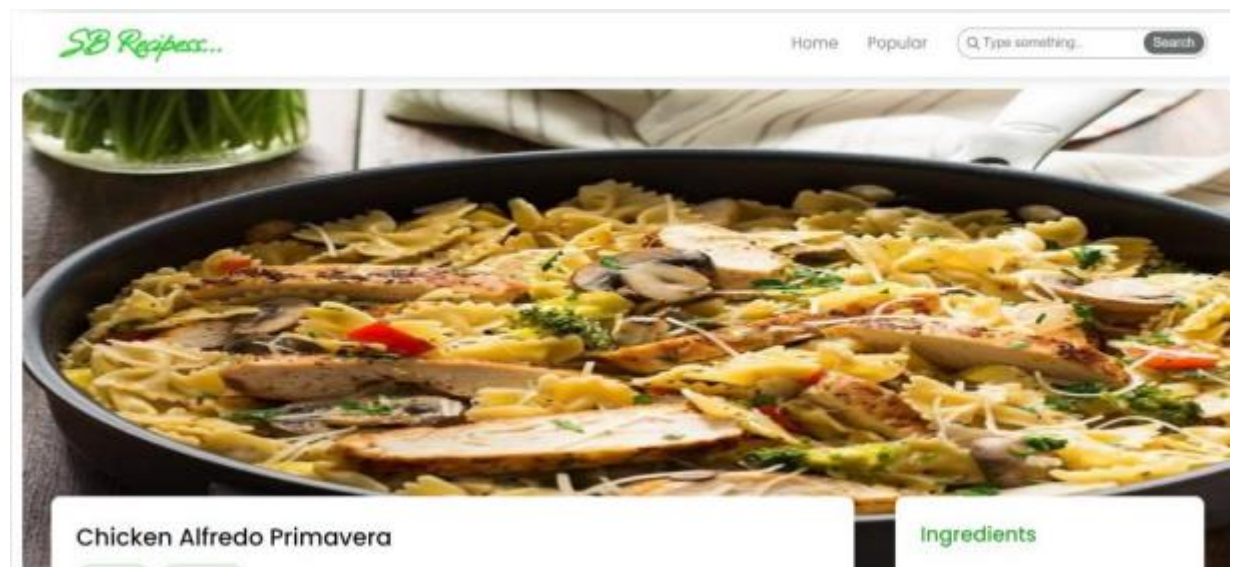
? Category dishes page

The category page contains the list of dishes under a certain category.



? Recipe page

The images provided below shows the recipe page, that includes images, recipe instructions, ingredients and even a tutorial video.



7. Future Enhancements

1. **AI-Powered Recipe Suggestions**
 - Use machine learning to recommend recipes based on user preferences, past cooking history, and dietary needs.
2. **Voice Assistant Integration**
 - Enable voice-guided cooking so users can follow recipes hands-free.
3. **Smart Kitchen Device Connectivity**
 - Connect with IoT-enabled devices (smart ovens, refrigerators, etc.) for automated ingredient tracking and cooking assistance.
4. **Meal Planner & Grocery List Generator**
 - Provide weekly meal planning tools with auto-generated shopping lists.