CookBook: A React-Based Recipe Management Application

1. Introduction

- **Project Title**: **CookBook**
- **Team Members**:

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2. Project Overview

Purpose:

- CookBook is designed to simplify recipe discovery, organization, and creation for cooking enthusiasts.
- It provides an intuitive platform for users to explore diverse recipes, save favorites, and manage their own collections.
- The application enhances the culinary experience with a visually appealing interface and seamless user experience.

Features:

- Vast Recipe Collection – Access a wide range of recipes sourced from the MealsDB API.
- Search & Categorization – Easily find recipes based on categories, ingredients, or popularity.
- User-Friendly Interface – Modern, responsive design for smooth navigation and interaction.
- Step-by-Step Cooking Guidance – Detailed instructions, ingredients list, and tutorial videos.
- Newsletter Subscription – Stay updated with trending recipes via email notifications.

3. Architecture

- **Component Structure**:

The application is built using React.js with a component-based architecture. Major components include:

- Navbar: Contains the navigation bar and links to different sections.
- Hero: Displays an introduction banner with featured recipes.
- CategoriesHome: Showcases recipe categories for easy browsing.
- NewsLetter: Allows users to subscribe for recipe updates via email.
- Footer: Displays application information and useful links.

State Management:

The application uses React's useState and useContext for managing state across components. API calls are handled using Axios, and state updates ensure seamless user interaction with recipe data.

Routing:

The application uses React Router for navigation. Routes include:

- / – Home page displaying featured recipes and trending dishes.
- /category/:name – Displays recipes under a specific category.
- /recipe/:id – Shows detailed information about a selected recipe, including ingredients, instructions, and a tutorial video.

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4. Setup Instructions

- **Prerequisites**:
  - Node.js (v16 or higher)
  - npm (v8 or higher)
  - Git
- **Installation**:
  1. Clone the repository: git clone https://github.com/dharmalakshmi-s/cookbook.git
  2. Navigate to the client directory: cd cookbook
  3. Install dependencies: npm install
  4. Configure environment variables: Create a .env file in the client directory and add the necessary variables (e.g., API keys).
  5. Start the development server: npm start

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5. Folder Structure

- **Client**:
  - src/components – Reusable components (Navbar, Hero, Footer, CategoriesHome, NewsLetter).
  - src/pages – Page components (Home, Category, Recipe).
  - src/images – Static assets such as hero images and icons.
  - src/styles – CSS files for styling individual components and pages.
  - src/App.js – Main application component.
  - src/index.js – Entry point of the React application.

- **Utilities**:
  - src/utils/api.js – Handles API requests to fetch recipe data from external sources.
  - src/utils/helpers.js – Utility functions for formatting data, handling errors, and processing recipe information.
  - src/hooks/useFetch.js – Custom hook for fetching data and managing API requests efficiently.

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6. Running the Application

Frontend:

To start the frontend server, follow these steps in the project directory:

- Install dependencies by running the command:
  - npm install
- Start the development server using:
  - npm start

Once the server is running, access the application at http://localhost:3000

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7. Component Documentation

- **Key Components**:

  - **Navbar:** Displays the navigation bar with links to different sections.
  - **Hero:** Showcases the app's introduction with a featured recipe banner.
    - **Props:** title (string for heading), image (URL for background image)

  - **CategoriesHome:** Displays recipe categories for easy browsing.
    - **Props:** categories (array of category objects)

- **RecipeCard:** Displays individual recipes with an image, title, and short description.
  - **Props:** recipe (object containing recipe details), onClick (function to handle recipe selection)
- N**ewsLetter:** Allows users to subscribe to recipe updates via email.
  - P**rops:** onSubscribe (function to handle email subscription)

Reusable Components:

- **Button:** A customizable button component.
  - Props: text (button label), onClick (function), disabled (boolean)
- **Input:** A reusable input field for forms and search.
  - **Props:** type (input type), placeholder (text placeholder), value (current input value), onChange (function to handle input changes)

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8. State Management

- **Global State**:

  The application manages global state using React Context API or useState with lifting state up, handling the following states:

  - **recipes:** Stores fetched recipe data from the API.
  - **categories:** Manages different recipe categories for filtering.
  - **selectedRecipe:** Keeps track of the currently selected recipe for detailed viewing.
  - **searchResults:** Stores results from the search functionality.
- **Local State**:

  Local state is managed using React’s useState hook within components. For example:

  - The NewsLetter component tracks the email input before submission.
  - The SearchBar component manages the user’s search input locally.

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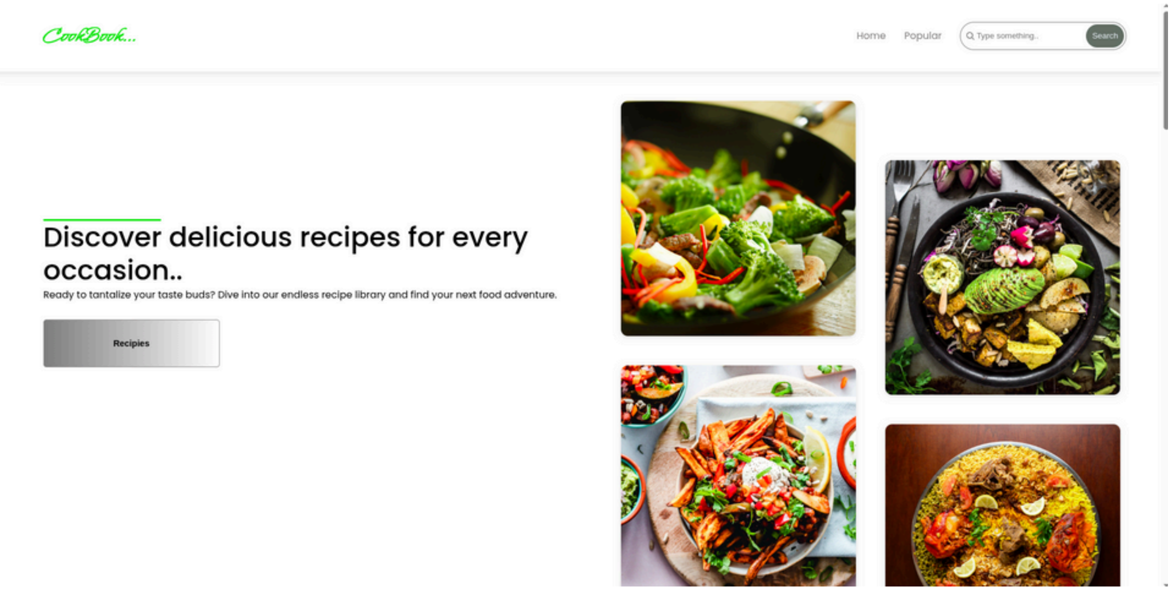
9. User Interface

- **Screenshots**

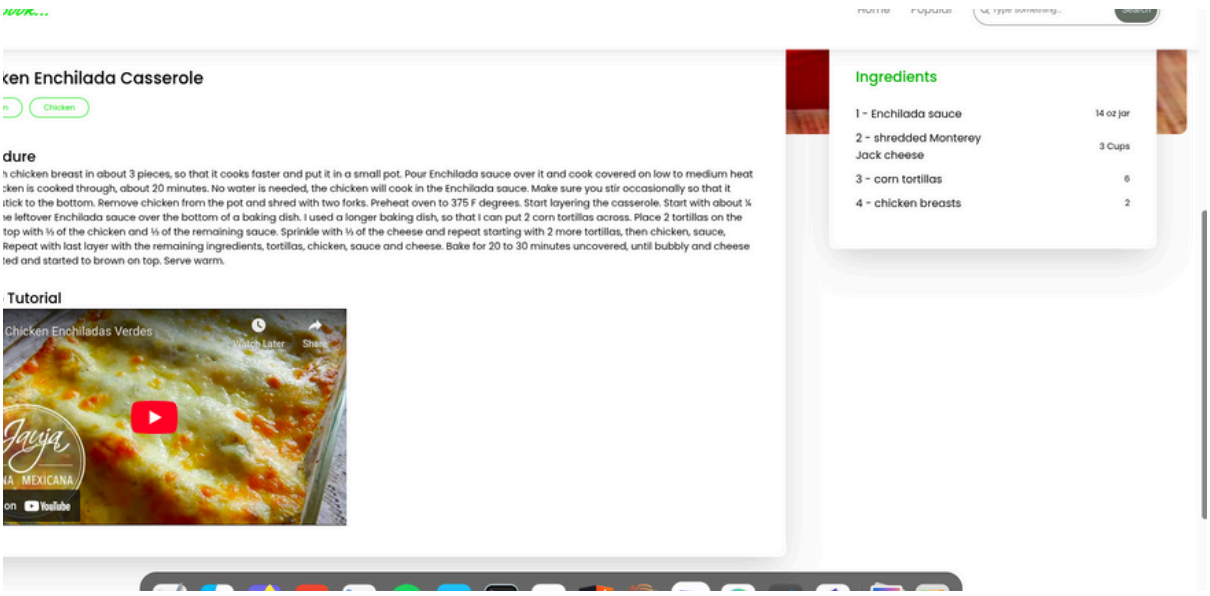
  o **Home Page:** Display Feature recepie and search box



Discover delicious recipes for every occasion..

Ready to tantalize your taste buds? Dive into our endless recipe library and find your next food adventure.

- **Search Page:** Allows users to search for Dishes



ken Enchilada Casserole

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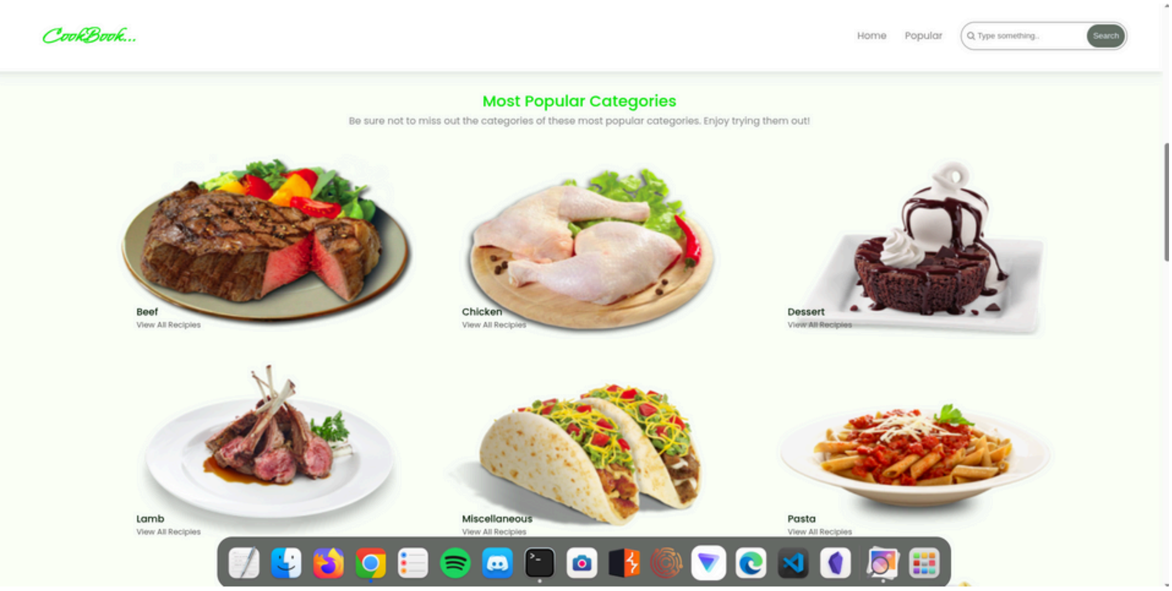
h chicken breast in about 3 pieces, so that it cooks faster and put it in a small pot. Pour Enchilada sauce over it and cook covered on low to medium heat cken is cooked through, about 20 minutes. No water is needed, the chicken will cook in the Enchilada sauce. Make sure you stir occasionally so that it stick to the bottom. Remove chicken from the pot and shred with two forks. Preheat oven to 375 F degrees. Start layering the casserole. Start with about ¼ ne leftover Enchilada sauce over the bottom of a baking dish. I used a longer baking dish, so that I can put 2 corn tortillas across. Place 2 tortillas on the top with ⅓ of the chicken and ⅓ of the remaining sauce. Sprinkle with ⅓ of the cheese and repeat starting with 2 more tortillas, then chicken, sauce, Repeat with last layer with the remaining ingredients, tortillas, chicken, sauce and cheese. Bake for 20 to 30 minutes uncovered, until bubbly and cheese ted and started to brown on top. Serve warm.

Tutorial

Ingredients

1 - Enchilada sauce	14 oz jar
2 - shredded Monterey Jack cheese	3 Cups
3 - corn tortillas	6
4 - chicken breasts	2

- **Popular Page:** List of Popular Food



Most Popular Categories

Be sure not to miss out the categories of these most popular categories. Enjoy trying them out!

Beef
View All Recipies

Chicken
View All Recipies

Dessert
View All Recipies

Lamb
View All Recipies

Miscellaneous
View All Recipies

Pasta
View All Recipies

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10. Styling

- **CSS Frameworks/Libraries**:
  The application uses **Styled-Components** for styling. This allows for modular and scoped CSS within components.

- **Theming**:
  A custom theme is implemented using Styled-Components, with support for light and dark modes.

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11. Testing

- **Testing Strategy**:
  - **Unit Testing:** Using **Jest** and **React Testing Library**.
  - **Integration Testing**: Is performed to ensure that components work together as expected.
  - **End-to-End Testing: Cypress** is used for end-to-end testing of user flows.

- **Code Coverage**:
  - Code coverage is monitored using Jest's built in coverage tool. The current coverage is 85%.

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12. Screenshots or Demo

- **Demo Link:**

https://drive.google.com/file/d/1Aux36_lbMJf-TeJFBD3pwzFKZgI6EVet/view?usp=drive_link

- **Screenshots: See section 9 for UI screenshots.**

13. Known Issues

- **Issue 1**: Search functionality may be slow when handling a large number of recipes.
- **Issue 2**: Category images sometimes fail to load if the API doesn't return valid URLs.

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14. Future Enhancements

- **Future Features**:
  - User Profiles – Allow users to save favorite recipes and create personal recipe collections.
  - Social Sharing – Enable users to share recipes directly on social media platforms.
  - AI-Powered Recommendations – Implement a recommendation engine to suggest recipes based on user preferences.

This documentation provides a comprehensive overview of the **Receipe CookBook** project, including its architecture, setup instructions, and future plans.