**Project Documentation**

**1. Introduction**

**Project Title**: CookBook – Your Virtual Kitchen Assistant  
**Team Members**: Team Leader – Bhuvanesh S , Team Members – Kalai selvan, Dinesh, Vigneshwaran

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**2. Project Overview**

**Purpose**:  
CookBook is a virtual kitchen assistant designed to help users manage recipes, create meal plans, and generate grocery lists. It provides an intuitive user experience with a wide range of features like recipe recommendations, dietary filters, and cooking instructions.

**Features**:

* **Recipe Discovery**: Browse and search for thousands of recipes based on ingredients, cuisine, and dietary preferences.
* **Meal Planning**: Plan weekly meals and generate shopping lists automatically.
* **Ingredient Management**: Track ingredients you have at home and get recipe suggestions accordingly.
* **Cooking Mode**: Step-by-step guided cooking instructions with timers.
* **Personalized Suggestions**: AI-based recommendations based on user preferences.

**3. Architecture**

**Component Structure**

* **Navbar Component**: Includes navigation options (Home, Recipes, Meal Planner, Grocery List, Settings).
* **Recipe Card Component**: Displays a recipe summary with an image, title, and quick details.
* **Recipe Details Page**: Shows full recipe details, including ingredients and cooking steps.
* **Meal Planner Component**: Users can add meals to their weekly plan.
* **Grocery List Component**: Auto-generates a shopping list based on planned meals.

**State Management**

* **Global State**: Managed using **Redux Toolkit** for user preferences and saved recipes.
* **Local State**: Managed within components using React's **useState and useEffect**.

**Routing**

Implemented with **React Router**:

* /home – Main page with trending recipes.
* /recipes/:id – Detailed view of a selected recipe.
* /planner – Meal planner feature.
* /grocery-list – Auto-generated shopping list.

**4. Setup Instructions**

**Prerequisites**

* **Node.js** (latest stable version)
* **npm** or **yarn**
* Code editor (e.g., **VS Code**)

**Installation Steps**

1. **Clone the repository**

sh

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git clone https://github.com/your-repo/cookbook.git

cd cookbook

1. **Install dependencies**

sh

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npm install

1. **Start the application**

sh

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npm start

**5. Folder Structure**

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/cookbook

├── /src

│ ├── /components # Reusable components

│ ├── /pages # Different views (Home, Recipe Detail, etc.)

│ ├── /store # Redux state management

│ ├── /assets # Images, icons, etc.

│ ├── /utils # Helper functions

│ ├── App.js # Main app component

│ ├── index.js # Entry point

├── package.json

├── README.md

**6. Running the Application**

To start the frontend server:

sh

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npm start

The application will be available at **http://localhost:3000/**.

**7. Component Documentation**

**Key Components**

* **RecipeCard.js**: Displays recipe summary.
* **RecipeDetail.js**: Shows detailed view of a recipe.
* **MealPlanner.js**: Allows users to add recipes to their meal plan.
* **GroceryList.js**: Displays auto-generated shopping list.

**Reusable Components**

* **Button.js**: Customizable button component.
* **SearchBar.js**: Input field for searching recipes.
* **Modal.js**: Popup modal for adding notes or extra details.

**8. User Interface**

**Screenshots**

(Add UI images showcasing different pages like home, recipe detail, meal planner, and grocery list.)

**9. Styling**

* **CSS Frameworks Used**: Tailwind CSS / Styled Components
* **Theming**: Customizable dark and light modes.

**10. Testing**

**Testing Strategy**

* **Unit Testing**: Jest & React Testing Library for component testing.
* **Integration Testing**: Cypress for end-to-end testing.

**Code Coverage**

To check test coverage:

sh

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npm test -- --coverage

**11. Known Issues**

* (List any known bugs or areas for improvement)

**12. Future Enhancements**

* **Voice Assistant Integration** for hands-free cooking.
* **More Dietary Preferences** support (e.g., Keto, Vegan, Paleo).
* **Social Features** (Recipe sharing & community discussions).

**13. Conclusion**

CookBook is a modern, interactive kitchen assistant that simplifies cooking and meal planning. Future enhancements will further improve usability and personalization.