

Frontend Development with React.js

Project Documentation format

1. Introduction

- o **Project Title:** CookBook – Virtual Kitchen Assistant
- o **Team Members:**
- o Kruthi.S-code execution
- o Divya.S-documentation
- o Divya dharshini-demo video
- o Hemalatha-demo video

2. Project Overview

- o **Purpose:**
- o CookBook is a web application that helps users discover, organize, and cook recipes easily. It acts as a virtual kitchen assistant by providing personalized recommendations, step-by-step instructions, and ingredient management.
- o **Features:**
- o Search and filter recipes by ingredients, cuisine, or dietary preferences.
- o Step-by-step cooking instructions with timers.
- o Save favorite recipes and create custom collections.
- o Suggest meals based on ingredients you already have.
- o Responsive design optimized for desktop, tablet, and mobile.

3. Architecture

- o **Component Structure:**
- o Header – App logo, search bar, navigation links.
- o RecipeList – Displays recipe cards fetched from the API.
- o RecipeDetails – Shows ingredients, steps, and nutrition info.
- o PantryManager – Manage available ingredients.
- o Favorites – User's saved recipes.
- o Timer – Integrated cooking timer component.
- o Footer – Links and copyright.
- o **State Management:**
- o Used Context API with useReducer for global state.
- o Maintains authentication status, favorites, pantry items, and theme mode.
- o **Routing:**
- o Implemented with React Router v6.
- o Routes: / (Home), /recipe/:id, /favorites, /pantry, /about.

4. Setup Instructions

- o **Prerequisites:**
- o Node.js ≥ 18
- o npm or yarn
- o Git
- o **Installation:**
- o git clone <https://github.com/yourusername/cookbook.git>
- o cd cookbook



- o npm install
 - o npm start
 - o Create a .env file with API keys (e.g., for a recipe API).
 - o Configure REACT_APP_API_KEY and REACT_APP_API_URL.
- 5. Folder Structure**
- o Client:
 - o /src
 - o /assets → Images, icons
 - o /components → Reusable UI components (Button, Timer, Card)
 - o /pages → Home, RecipeDetails, Favorites, Pantry
 - o /context → Global state providers
 - o /utils → API helpers, custom hooks
 - o index.js
 - o App.js
 - o Utilities:
 - o useFetch.js – Custom hook for API calls.
 - o formatTime.js – Helper to format timers.
- 6. Running the Application**
- Frontend:
 - npm start
 - Runs the app locally on http://localhost:3000.
- 7. Component Documentation**
- o Key Components:
 - o RecipeCard: Displays recipe image, title, and cooking time.
 - o Reusable Components:
 - o Button, Modal, Spinner, Timer.
- 8. State Management**
- o Global State:
 - o Managed with Context API for favorites, pantry, and user settings.
 - o Reducers handle actions like ADD_FAVORITE, REMOVE_FAVORITE, ADD_PANTRY_ITEM.
 - o Local State:
 - o Components use useState for form inputs, search queries, and timers.
- 9. User Interface**
- o Screens:
 - o Home page with recipe feed.
 - o Recipe detail page with instructions and nutrition.
 - o Pantry manager.
 - o Favorites gallery.
 - o Interaction: Real-time search, click to save recipes, timers with sound.
- 10. Styling**
- CSS Frameworks/Libraries:
 - Tailwind CSS for utility-first styling.
 - Styled-Components for theme-based styling.
 - Theming:
 - Supports light/dark mode with theme context.
- 11. Testing**



- **Testing Strategy:**
- Unit tests for components using React Testing Library and Jest.
- Integration tests for routing and state flow.
- End-to-end tests with Cypress for recipe search and saving.
- **Code Coverage:**
- Jest coverage reports ensure $\geq 80\%$ test coverage.

12. Screenshots or Demo

- Include images or GIFs of:
- Home screen with recipe cards.
- Recipe detail view with timer.
- Pantry management page.
- Link: Demo Deployment URL

13. Known Issues

- Slow loading for very large recipe images on low-end devices.
- Timer notification sound may not play on Safari due to autoplay restrictions.

14. Future Enhancements

- Add voice guidance for hands-free cooking.
- Allow users to upload their own recipes.
- Integration with smart kitchen devices.
- Offline mode for saved recipes.

