

# PROJECT DOCUMENTATION

TITLE: COOKBOOK- YOUR VIRTUAL KITCHEN ASSISTANT

## 1.INTRODUCTION :

- **PROJECT TITLE: YOUR VIRTUAL KITCHEN ASSISTANT**
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## 2.PROJECT OVERVIEW:

### PURPOSE:

- ❖ The purpose of “THE COOKBOOK:YOUR VIRTUAL KITCHEN ASSISTANT” project is to provide uses with an interactive platform to explore , organize and prepare recipes easily .
- ❖ It helps uses discover new dishes , learn step-y-step cooking instructions, manage ingredients and get personalized suggestions.
- ❖ By acting as a virtual kitchen assistant , the project aims to simplify the cooking process , reduce food waste through smart ingredient usage and make cooking Enjoyable for beginners as well as experienced chef’s

### FEATURES:



- ***Recipe Collection & Search*** – Users can browse and search recipes by cuisine, category, or ingredients.
- ***Step-by-Step Cooking Guidance*** – Interactive instructions with text, images, or voice support for easy cooking.
- ***Virtual Kitchen Assistant*** – Provides cooking tips, ingredient substitutes, and guides users while preparing dishes.
- ***Personalized Recommendations*** – Suggests recipes based on user preferences, dietary needs, or available ingredients.
- ***Shopping List Generator*** – Creates a grocery list automatically from selected recipes.
- ***Favorites & Bookmarking*** – Allows users to save and organize their favorite recipes.

### 3.ARCHITECTURE:

#### ***Component Structure:***

- *Recipe Component* – Displays recipes with ingredients and steps.
- *Search Component* – Filters recipes by keywords or ingredients.
- *Meal Planner Component* – Allows weekly meal planning.
- *Shopping List Component* – Generates grocery lists from recipes.
- *Assistant Component* – Provides interactive guidance and suggestions.

#### ***State Management:***

-  Global state managed using Context API/Redux for user data, saved recipes, and preferences.
-  Local state for form handling and UI components.

### 4.SETUP INSTRUCTIONS:

- ***Prerequisites:***

- Node.js
- React.js
- npm

- ***Installation:***

1. Clone the repository.
2. Run npm install to install dependencies.
3. Set up environment variables .
4. Start the development server using npm start.

### 5.FOLDER STRUCTURE:

#### **Virtual-Kitchen-Assistant/**

```
|-- client/           # React frontend
|   |
|   |__ components/
|   |__ pages/
|-- server/           # Node.js backend
```

```
| |____ routes/
| |____ models/
| |____ controllers/
|-- database /      #Mongodb connection
```

## 6.RUNNING THE APPLICATION:

### *Frontend*

- cd client
- npm start

### *Backend*

- cd server
- npm start
- Access: Visit [https:// localhost:3000](https://localhost:3000)

## 7.API DOCUMENTATION:

### **User:**

- POST /api/user/register
- POST /api/user/login

### **Recipes:**

- GET /api/recipes/suggest
- *GET /api/recipes/:id*

### **Pantry Management:**

- POST /api/pantry/add
- GET /api/pantry/list

### **Cooking Assistance:**

- POST /api/cooking/guide
- GET /api/cooking/tips

## **8.AUTHENTICATION:**

- When a user logs in, the server gives a token, this is used to access private pages .
- Middleware checks the token and only allows valid users(pantry , saved recipes)

## **9.USER INTERFACE:**

- Landing Page (app introduction with the recipes)
- Freelancer Dashboard (showing the different category meals.
- Admin Panel for recipe , contents and manage it .

## **10.TESTING:**

- Manual Testing is done at different stages of the recipes
- Tools used: Postman , Chrome Dev Tools , Jest for unit testing

## **11. SCREENSHOTS OR DEMO:**

- ✓ Screenshots or a short demo video can be provide a visual representation of the application's functionality.

## **12.KNOWN ISSUES:**

- ✓ A section detailing known issues or bugs would be helpful.

## **13.FUTURE ENHANCEMENTS:**

- ❖ AI-based meal planning with health goals.
- ❖ Smart kitchen appliance integration.
- ❖ Augmented Reality (AR) guided cooking
- ❖ Community recipe sharing platform.
- ❖ Learning more recipes in easy way.

