

# Requirements Specification Document for Ratatouille

## 1 Introduction

**Purpose:** This document outlines the requirements for the development of the Ratatouille application.

**Scope:** Ratatouille is aimed at helping dorm students to cook healthier meals by generating recipes based on the ingredients they have on hand.

## 2 Functional Requirements

### 2.1 User Registration and Authentication:

Users should be able to register for an account and log in securely.

### 2.2 Ingredient Input:

Users should be able to input the ingredients available in their kitchen.

### 2.3 Recipe Generation:

The application should generate recipes based on the input ingredients.

### 2.4 Filtering Options:

Users should be able to filter recipes based on dietary preferences (e.g., vegetarian, gluten-free) and cuisine type.

### 2.5 Recipe Details:

Each recipe should display detailed instructions, ingredients, and nutritional information.

### 2.6 Save and Favorite Recipes:

Users should be able to save and favorite recipes for future reference.

### 2.7 Search Functionality:

Users should be able to search for specific recipes or ingredients.

### 3 Non-functional Requirements

#### 3.1 Performance:

The application should be responsive and capable of handling concurrent user requests.

#### 3.2 Usability:

The user interface should be intuitive and user-friendly.

#### 3.3 Security:

User data should be securely stored and transmitted.

#### 3.4 Scalability:

The application should be designed to accommodate a growing user base.

#### 3.5 Compatibility:

The application should be compatible with various devices and screen sizes.

### 4 Constraints and Assumptions

**Constraints:** Limited development timeline due to semester deadlines.

**Assumptions:** Users will have access to internet connectivity for using the application.

### 5 Acceptance Criteria

#### User Acceptance:

- ◊ Users can successfully register, log in, and input ingredients.
- ◊ Users receive recipe suggestions based on input ingredients.
- ◊ Users can filter and view detailed recipe information.
- ◊ Users can save and favorite recipes.

#### Functional Acceptance:

- ◊ The application meets specified performance benchmarks.
- ◊ The application's user interface is intuitive and easy to navigate.
- ◊ User data remains secure throughout the application's usage.

### 6 Dependencies

**APIs and Libraries:** Dependency on external APIs for recipe generation and nutritional information.

**Development Tools:** Dependency on specific programming languages and frameworks.

## **7 Conclusion**

Ratatouille aims to address the challenges faced by dorm students in making healthy cooking choices. By providing a user-friendly platform for generating recipes, the application seeks to promote balanced living and self-sufficiency among dorm communities.

# **Ratatouille Application Design Specification**

## **1. Introduction**

### **1.1 Problem Identification**

Dorm students face challenges in preparing healthy meals due to limited time and cooking experience, leading to unhealthy eating habits and unbalanced diets.

### **1.2 Background**

Dorm students often struggle to decide what to cook with the ingredients on hand, given time constraints and limited cooking experience.

### **1.3 Stakeholders**

The primary stakeholders are individuals living alone, especially dorm students.

### **1.4 Current Impact**

The current impact involves significant spending on unhealthy restaurant food, time wasted searching for recipes, and the adverse effects of unbalanced diets.

### **1.5 Existing Attempts**

While solutions like "SuperCook - Recipe Generator" exist, they lack advanced features and fail to fully address the problem.

## **2. Define the Solution**

### **2.1 Brainstormed Solution**

Introducing "Ratatouille," an application allowing users to input available ingredients, generating recipes with filtering options based on preferences.

## **2.2 Feasibility Criteria**

Selection criteria include impact, innovation, and technical feasibility. The application must be user-friendly, efficient, and capable of generating diverse recipes.

## **2.3 Demo Plan**

A demo of "Ratatouille" will be presented by the end of the semester, featuring a working prototype, user feedback, and future development plans.

# **3. System Architecture**

## **3.1 Components**

- User Interface: Responsive and intuitive interface for seamless user interaction.
- Recipe Database: A comprehensive database with diverse recipes and nutritional information.
- Algorithm: Advanced algorithm for recipe generation based on user-input ingredients and preferences.
- User Profile: Secure user profiles for personalized experiences and saved preferences.

## **3.2 Technologies**

- Frontend: React.js for a dynamic and responsive UI.
- Backend: Node.js for server-side development.
- Database: Database Source for storing recipes and user data.
- Algorithm: Machine learning algorithms for recipe recommendations.

# **4. Features**

## **4.1 Ingredient Input**

Users can input available ingredients through text or image recognition.

## **4.2 Recipe Generation**

The application generates diverse recipes based on input ingredients, considering user preferences.

## **4.3 Filtering Options**

Users can filter recipes based on dietary restrictions, cuisine preferences, or cooking time.

## **4.4 Nutritional Information**

Each recipe displays nutritional information to help users make informed choices.

## **4.5 User Profiles**

Secure user profiles to save preferences, favorite recipes, and track cooking journey.

# **5. Development Plan**

## **5.1 Milestones**

- Milestone 1: Frontend development and basic backend setup.
- Milestone 2: Recipe database integration and algorithm implementation.
- Milestone 3: User profile functionality and additional features.
- Milestone 4: Beta testing and bug fixing.
- Milestone 5: Final demo and launch.

## **5.2 Team Roles**

- Project Manager
- Frontend Developer
- Backend Developer
- Database Administrator
- Algorithm Specialist

# **6. Conclusion**

"Ratatouille" aims to enhance dorm students' well-being by promoting healthy cooking choices. The application strives to address time and experience limitations, fostering a culture of self-sufficiency and balanced living within dorm communities.