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.