

Requirements Specification

1 Introduction

1.1 Purpose of Writing

The function of the project is to implement the synthesis of dishes that can be produced by importing ingredients. For our team, this is to enhance both front-end and back-end programming capabilities, and then integrate them with software engineering knowledge to lay a solid foundation for future professional learning. It is also to meet the demand for personalized recipes from users.

1.2 Project Background

Software name: Synthetic Kitchen

Project task proposer: Teacher Lin

Project developer: HCY team

2 General description

2.1 Goals

2.1.1 Development Intention

Through the integration of the front-end and back-end, the app enables users to select ingredients by simply clicking a button. The system then provides a list of dishes that can be "synthesized" along with corresponding preparation methods. Additionally, our app incorporates a proprietary "score-recommend-health" algorithm which suggests dishes suitable for each user's health based on their recent eating habits. Furthermore, various community features are included to enhance user engagement and software vitality.

2.1.2 Application goals and scope

Our project is aimed at young people who care about a balanced diet, who are healthy,

who are interested in cooking but who have various challenges - healthy eating has become a major topic of concern for young people, and we use this audience as our main user to develop and improve, and then promote to all kinds of people.

2.1.3 Product prospects

Our products have a great future. Here are the innovations in our products:

1. Don't know what to serve with it? See what ingredients you have: Users can synthesize dishes based on imported ingredients in the ingredients library or manually input ingredients, reducing users' cooking anxiety.

2. Safe and delicious tips: Write the delicious tips and safety matters of each dish (such as which dishes can not be mixed), so that everyone can make safe, healthy and delicious.

3. Eat well and eat healthy: Combining the user's eating habits and health status, recommend dishes suitable for the user's health status.

In addition, here is our analysis of the competitors:

Recipe Book	C V R F
Under the kitchen	C R F
Gourmet Jay	C R F
Beanberry Gourmet	C V F
Online kitchen	V F
Lazy meal	F V

Note: Lack of safety checks:C;

VIP right:V;

Lack of record dietary restrictions:R;

failure to synthesize ingredients:F.

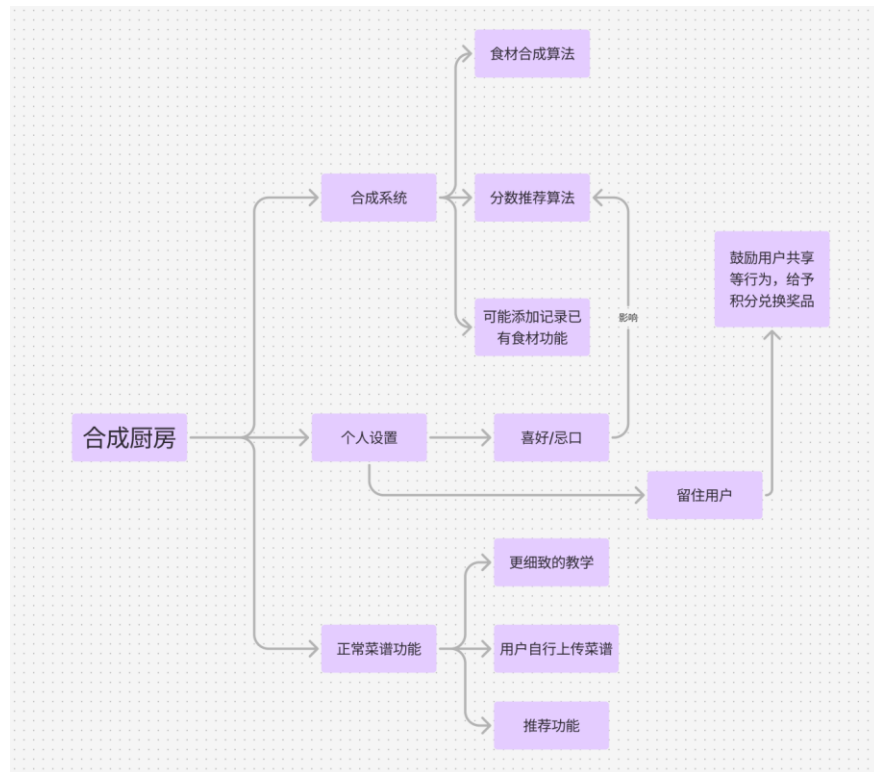
As you can see from the table, we have made up for the pain points of almost all software on the market, and have a unique ingredient synthesis function that no one else has

In a word, our prospects are very promising.

We look forward to enriching the functions of the system after learning more knowledge in the future, and the product prospects are good.

3 Specific requirements

3.1 Class diagram



3.2 Properties

3.2.1 Availability

Our project has clear division of work, well-defined interface documentation, and both the front-end and back-end leads can effectively develop project functionality based on the interface documentation. Moreover, our project follows a layered and decoupled structure, ensuring readability, standardization, and reusability of the code.

At the same time, our interface is concise, visually appealing, providing users with a comfortable and straightforward experience, making it extremely user-friendly. Meet the pursuit of young people's simple, practical, convenient and quick functions.

3.2.2 Innovation

1. Innovative ingredient synthesis, unique in the market
2. Simple and free, all functions without VIP restrictions
3. Meet the healthy living needs of young people
4. Clear code logic and convenient iteration
5. The end is common, and provides a web version to avoid the complexity of multiple applications

4 Interface Prototype



The current web shape will follow the APP appearance in the future.

5 Function Description and Acceptance Verification Standards

5.1 Main Function Description

1. Health system: According to your recent eating habits, recommend dishes suitable for your health.
2. Dish synthesis system: Synthesize dishes that can be prepared according to imported ingredients, and generate a shopping cart to purchase additional ingredients required.
3. Safe and delicious tips: give the "fragrance key" of each dish and provide related videos, and give possible dangerous points in cooking to remind users to pay attention to.
4. Community sharing: Discuss and share dishes with everyone, upload new recipes to the APP and exchange for kitchenware.

5.2 Input and output format

Input: Various types of food

Output: A personalized recipe

5.3 Interface acceptance criteria

1. The main interface will display popular recipes, with two daily recommended sections.
2. The synthesis interface will have multiple UI elements representing ingredients for users to choose from. Users can also select cooking methods. At the bottom, there is a synthesis button that, when clicked, will navigate to a new page displaying the synthesized recipe.
3. The personal page can have multiple UI buttons for selecting preferences and dietary restrictions.

5.4 Functional Acceptance Criteria

Users can synthesize recipes by selecting ingredients on the synthesis page. and can view daily recommended recipes on the main interface and click to view the preparation methods. What's more, can select preferences and dietary restrictions on the personal page. The app should recommend suitable recipes based on preferences and restrictions.