ENHANCING HOME COOKING: THE TASTESHARE APPROACH TO RECIPE QUALITY

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Abstract

Projek ini memperkenalkan TasteShare, sebuah platform perkongsian resipi inovatif yang bertujuan untuk meningkatkan pengalaman memasak di rumah dengan menawarkan resipi berkualiti tinggi yang disahkan. Dengan semakin popularnya memasak di rumah, terutamanya selepas kesan COVID-19, banyak platform perkongsian resipi menghadapi cabaran dalam kualiti kandungan dan penglibatan pengguna. TasteShare menangani isu-isu ini dengan melaksanakan sistem semakan kandungan profesional, di mana chef atau tukang masak berpengalaman mengesahkan semua resipi yang dimuat naik oleh pengguna. Platform ini merangkumi ciri interaktif seperti muat naik gambar dan video, suka, komen, dan sistem cadangan yang diperibadikan. Ia menawarkan fungsi carian yang berkuasa, membolehkan pengguna menapis resipi berdasarkan bahan, masa memasak, kesukaran, dan pilihan lain. Backend dibangunkan menggunakan Java, frontend menggunakan Vue.js, dan MySQL untuk pengurusan pangkalan data, memastikan kebolehskalaan dan prestasi. TasteShare mensasarkan tukang masak di rumah, chef profesional, dan peminat masakan yang ingin menemui dan berkongsi resipi yang boleh dipercayai dalam persekitaran sosial. Platform ini memupuk komuniti memasak yang meriah sambil memastikan pengguna boleh mempercayai kandungannya, meningkatkan kemahiran memasak mereka dan menawarkan pengalaman memasak yang interaktif dan menyeronokkan.

Kata kunci : Perkongsian resipi, fungsi interaktif, Java/Vue.js/MySQL

Abstract

This project introduces TasteShare, a new recipe-sharing web application aiming to improve

home cooking through offering high-quality, verified recipes. With home cooking becoming increasingly popular, especially following the impact of COVID-19, the majority of recipe-sharing websites face issues with content quality and user engagement. TasteShare breaks through these constraints by implementing a professional content reviewing mechanism, through which all user-submitted recipes are validated by chefs or experienced cooks. The website offers interactive features such as image and video uploading, commenting, likes, and personalized recommendation system. It has good search functionality with filtering of recipes

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based on ingredients, cooking time, difficulty, and other preferences. The backend uses Java, the frontend uses Vue.js, and MySQL for database to make it scalable and high performing. TasteShare is directed at professional chefs, home cooks, and foodies interested in discovering and sharing trusted recipes within a social environment. The website builds an active cooking community while giving users the assurance that they can trust the content, which develops their cooking skills and offers an enjoyable, interactive cooking experience.

Keywords： *Recipe sharing, interactive functions, Java/Vue.js/MySQL*

1.0 INTRODUCTION

With the development of the Internet, cooking, as an important life skill, has become a widely discussed topic online. A growing number of users learn cooking, obtain recipes, and share cooking experiences through online platforms. This trend has become particularly prominent after the COVID-19 pandemic — the popularity of home cooking has significantly increased people's demand for high-quality recipes, detailed cooking steps, and user interaction (Husain et al. 2020). Godara's research also points out that cooking-related content on visual and social media is growing rapidly, and users not only need to obtain information but also hope to communicate with other cooking enthusiasts (Godara et al. 2021).

However, traditional recipe platforms have many limitations. Existing platforms mostly focus on recipe display, lacking in-depth social interaction and intelligent recommendation mechanisms (Thakur & Chandna 2022); at the same time, users are increasingly inclined to intuitively understand the cooking process through videos rather than relying solely on text and pictures. In addition, problems such as uneven content quality, single search function (only supporting keyword search and unable to filter by ingredients, cooking time, etc.), and insufficient interactivity (only having likes and favorites, lacking social functions such as comments) seriously affect the user experience.

To solve these problems, this project has developed the TasteShare platform. The platform ensures content quality through a professional content review mechanism (recipes are verified by experienced chefs), provides interactive functions such as picture/video upload, likes, and comments, and supports a search system with multi-dimensional filtering based on ingredients, difficulty, etc. Technically, it adopts Java for the backend, Vue.js for the frontend, and MySQL for the database to ensure the scalability and performance of the system (Tulsyan et al. 2024; Šušter et al. 2023). TasteShare aims to build a high-quality and highly interactive cooking community to meet the needs of home cooks, professional chefs, and food enthusiasts.

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2.0 LITERATURE REVIE

Existing recipe-sharing platforms have different focuses in terms of functions and user experience, but they generally suffer from insufficient content quality control, lack of personalized recommendations, and limited interactivity. Blackburn's research explores users' behavior in choosing recipe platforms and finds that content reliability and search convenience are key factors (Blackburn et al. 2020). As a well-known platform, Yummly is equipped with an intelligent recommendation algorithm that can recommend recipes based on users' browsing history (Geshel 2008). However, its user interactivity is weak, and the review mechanism for user-generated content is loose, resulting in uneven content quality (Rajamma et al. 2020).

AllRecipes, one of the world's largest recipe platforms, has a huge user base and rich recipe content, supporting users to upload, rate, and comment on recipes (Shepherd 1997). Nevertheless, its content review is not strict, and some recipes have missing steps or inaccurate information, which affects the user experience (Li et al. 2024). Tasty displays cooking steps in the form of short videos, attracting a large number of young users (Buzzfeed 2024), but its search and filtering functions are weak, and most of its video tutorials are simplified versions, which are not suitable for teaching complex dishes. Cookpad, a Japanese recipe community, has strong interactivity and supports users to create cooking diaries (Sano 1997). However, its internationalization level is low, some content is only available in Japanese, and it lacks strict content review.

The core flaw of traditional platforms lies in the lack of in-depth social interaction and precise recommendation mechanisms (Thakur & Chandna 2022). Misclassification of user-generated content can significantly affect platform credibility (Rajamma et al. 2020). These studies provide directions for the design of TasteShare — ensuring content quality through a professional review mechanism, enhancing multi-dimensional search and personalized recommendations, and enriching social interaction functions to make up for the shortcomings of existing platforms.

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Table 1 System comparison

Platform	Problem Solution	Advantage	Disadvantage
Yummly	It is currently applying smart recommendation algorithms to provide personalized recipes based on users' browsing history and dietary preferences.	Provide personalized recommendation algorithm according to the users' preference.	Uers interact less with the site. The audit mechanism of user-generated content is loose and of variable quality.
AllRecipes	AllRecipes allows users to search for recipes through uploading, rating, and commenting; finding recipes by category, such as by cuisine, holiday themes, and dietary restriction, makes the platform more diverse.	1. An active users' community where users can rate, comment, and share experiences regarding (Mirzaei, Esmaeilzadeh, & Management, 2021). 2. Rich in content and covers a wide variety of cuisines and dietary preferences.	1. The contents are not strictly reviewed, and hence, some recipes lack proper steps and information which impacts the user experience (Li, Wang, Carrington, & Kane, 2024).
Tasty	The short videos show the cooking steps and help users to quickly master the cooking skills.	1. The cooking steps in the form of short video clips are more appropriate for rapid learning and visual teaching. 2. The information is more colorful and interesting; therefore, it attracted many young users.	1. The site does not have detailed searching and filtering features to assist users in filtering out the ingredients and time. 2. Most video tutorials are simplified, making them unsuitable for teaching complex dishes
Cookpad	Users are welcome to upload and share their homemade recipes and join the active user community in which users can learn from each other and exchange cooking experiences.	1. allows users to upload and publish personal recipes. 2. the variety of recipes is rich and diverse.	1. Low degree of internationalization. Some content is limited to Japanese. 2. There is no strict auditing mechanism to ensure the reliability of the recipes.
TasteShare	Adopting professional review mechanism to ensure accurate recipe content, it also provides intelligent search, personalized recommendation and social interaction functions to improve user experience.	Recipes are of high quality, search is more accurate, recommendations are smarter, and users can comment, like, and favorite for greater interactivity.	Currently only available in English, language support is not comprehensive enough.

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3.0 METHODOLOGY

This project adopts an agile development model for system construction, advancing system This project adopts the agile development methodology, which ensures that user needs are met through iterative development and continuous feedback optimization of the system (Smits & Van Turnhout 2023). The development process is divided into five closely connected stages: requirement analysis, design, implementation, testing, and maintenance, facilitating rapid response to changes in requirements. In terms of data collection, online questionnaires are used to survey users with different cooking levels (beginners, intermediate, and professional). The content covers cooking habits, experience with existing platforms, and expected functions, providing a basis for function design.

In terms of the system's technical architecture, the backend uses Java language and Spring Boot framework to develop API interfaces, the frontend builds a responsive interface based on Vue.js, and the database uses MySQL to store user information, recipe data, and interaction records (Tulsyan et al. 2024; Šušter et al. 2023). This technology stack not only ensures the stability and efficiency of the system but also supports cross-platform use, complying with the development standards of modern Web applications. User requirements are clearly defined, including recipe upload (supporting detailed information such as ingredients, steps, pictures/videos, etc.), interactive functions (likes, favorites, comments), multi-dimensional search and filtering (by ingredients, cooking time, difficulty, etc.), and recipe classification (by meals, cuisines, etc.).

The system design follows the modular principle and is divided into user management, recipe management, recommendation system, and database modules (Okamoto et al. 2020). The interface design focuses on user experience, adopting a concise and intuitive layout to ensure that users can easily complete operations such as uploading, browsing, and interacting (Linglin & Li 2018). In the testing phase, the black-box testing method is used to verify whether each functional module meets user requirements, including core functions such as registration and login, recipe upload, and search and filtering, to ensure the stable operation of the system.Users authenticate themselves by entering their username and password through the login interface. After successful login, they enter the main interface and can choose to browse the recommended recipes, search for recipes or upload new recipes. Users can perform interactive operations such as liking and favoriting on the recipe details page. Users can fill in the title, ingredients, steps and pictures of the recipe on the upload page and submit it and then store it after system verification. Users can log out or cancel their accounts at any time.

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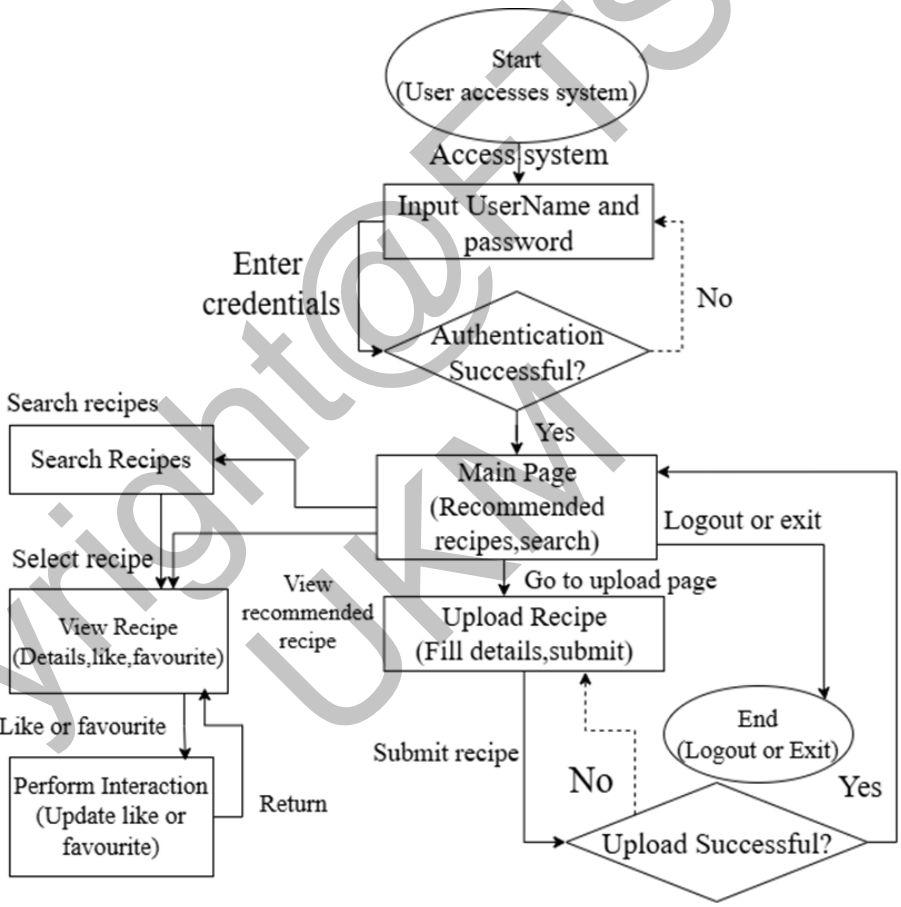

FIigure 1 Flow Chart

This is the Use Case Diagram for this project, which shows the functions and interactions of a user and administrator in a system. Users can perform actions such as "View Recipe", and "Upload Recipe", which are mainly related to content. The administrators are responsible for system management functions including "user account management", "recipe management" and "data management", which are coordinated through the " System Management" function.

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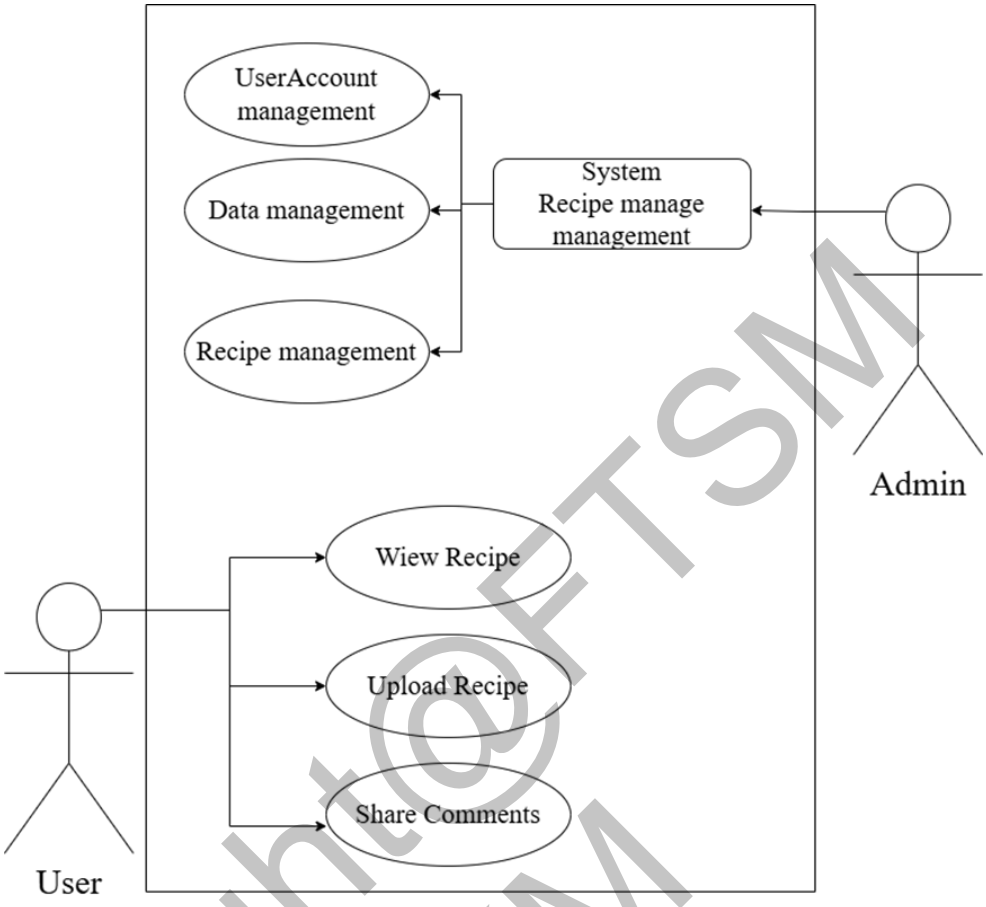

FIigure 2 Use Case Diagram

4.0 RESULTS

During the requirements analysis phase, the main needs of the platform were identified through user surveys. Users paid special attention to functions such as recipe uploading, search and filtering, personalized recommendations, and social interaction. During the system development process, these functions were successfully implemented. Through multiple rounds of user testing, feedback was collected for optimization.

The homepage features "Daily Recommended" recipes as card components that show the cover image, title, author, and "Favourite" button. A click on a card takes users to the detail page. The design supports content discoverability and user interaction in the form of exploration and bookmarking.

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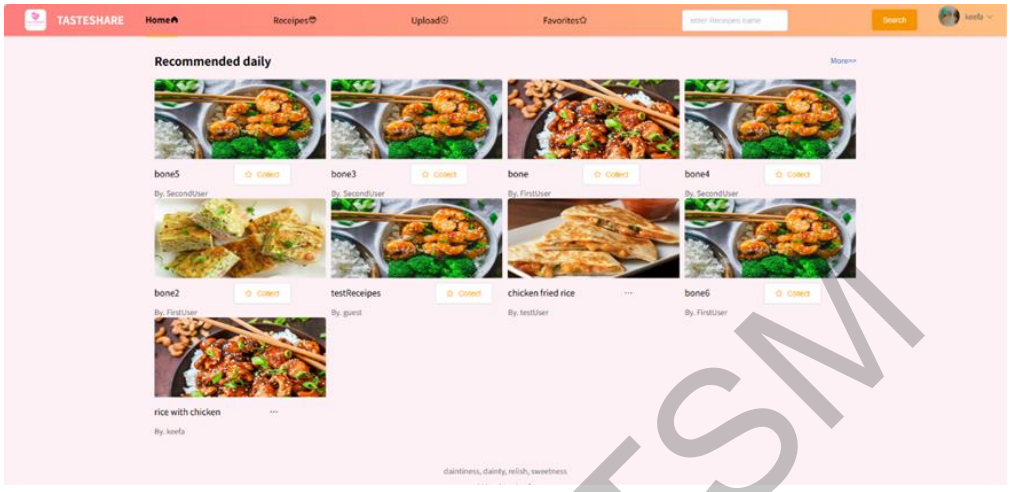
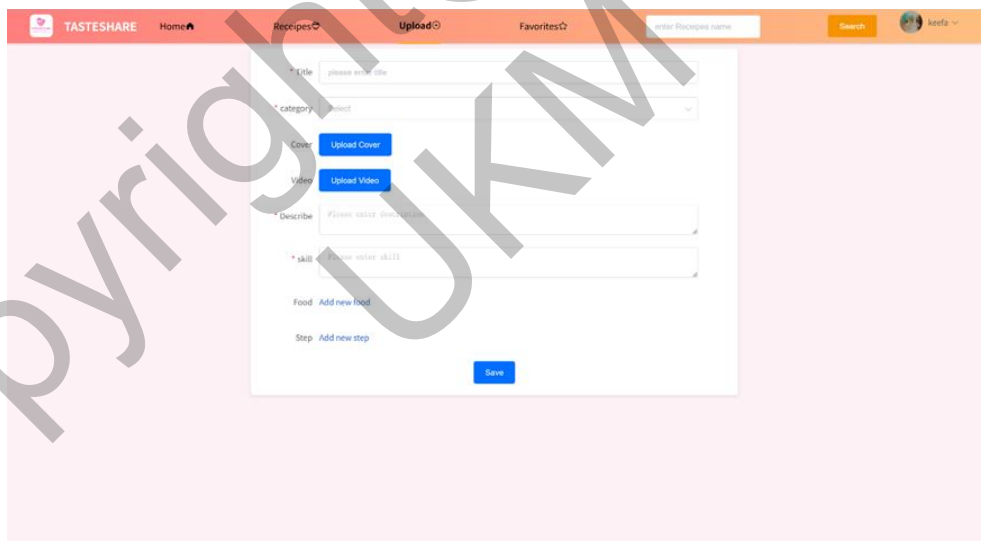


FIigure 3 Homepage

Users are allowed to add new recipes through filling in several fields such as title, category, cover image, description, skill points, ingredients, and procedural steps. The area for steps supports input in both text and image formats. The input interface is made modular, structured, and responsive to foster better content management.



FIigure 4 Upload Page

When a user selects a recipe, the user is redirected to a full view that consists of a highlight cover photo, title, publisher's avatar and name, publication date, and view and favourite counts. This part prioritizes key information, thus improving the user experience as a whole.

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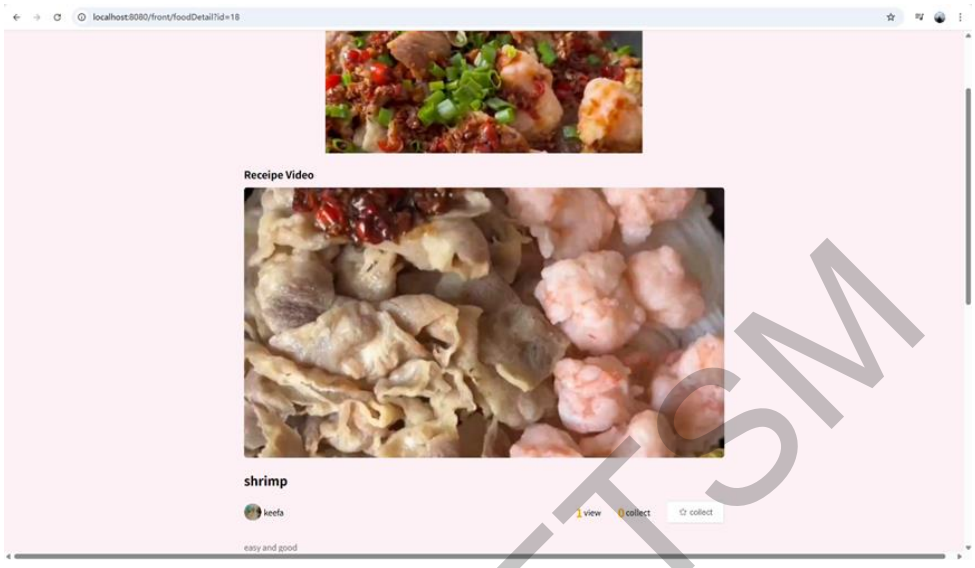
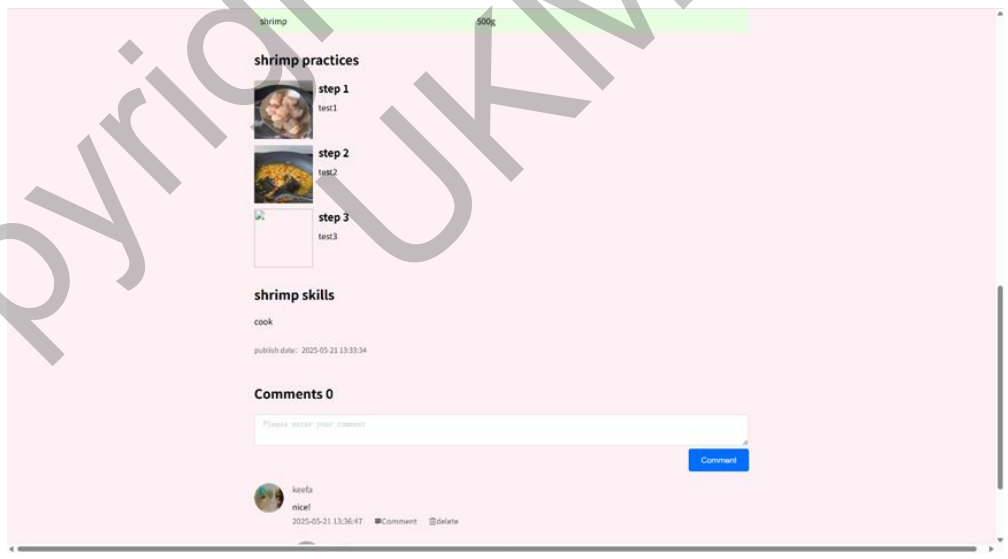


FIigure 5 Recipe Detail – Upper Section

The following section describes the individual elements and operational procedures, each separate step being accompanied by appropriate example images. The convenience of comments allows people to give their views, engage with like minds, and edit their entries—thereby encouraging social interaction and triggering activity on the website.



FIigure 6 Recipe Detail – Lower Section

The project was well developed with central modules delivered and tested as per plan. The system shows complete functionality, logical structure, and optimized data format, with performance that is stable even with expanding data volume. With a RESTful, decoupled architecture, development time and maintainability were improved. Future improvements will

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include user behavior analytics and recommendation algorithms for greater intelligence and user interaction.

5.0 CONCLUSION

This project develops a recipe sharing website called TasteShare, aiming to offer professional review for the superior quality of recipe content. Users are allowed to upload, share and search for recipes on the site, and images and videos are allowed to be uploaded to facilitate user interactivity. The system offers personalized suggestions and multiple filtering options, enabling users to search for recipes by ingredients, level of difficulty, and time to cook and other criteria. The back-end of the platform is built using Java, front-end using Vue.js, and database using MySQL to make the system stable and interactive.

The merits of the system include good content review, user-friendly interface, personalized recommendation mechanism and powerful social interaction capacity. Under different filtering states, it is easy for users to discover relevant recipes. Meanwhile, the site supports a function of uploading pictures and videos, and thus recipe content is more vivid. As for the demerits, there is only English version supported at the moment. With the growth of platform users and content, the system could suffer from scalability and performance optimisation issues.

The system performance and user experience of the platform could be improved in the future by adding multi-language capability, continuing to improve the search and filter functionality, adding AI algorithms to enhance the recommendation feature, optimizing the server infrastructure to handle high concurrency, and developing mobile applications. The improvements will allow the user base of the platform to grow, increase efficiency in resource usage, and make the system more stable and scalable.

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