
INGRECIPE: YOUR SOURCE FOR RECIPES, NUTRITIONAL GUIDANCE, AND MEAL ORGANIZATION

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ABSTRACT

The Ingrecipe Platform aims to transform how users interact with culinary data by offering a wide range of features to enhance the cooking experience. Users can enjoy personalized recipe searches based on their available ingredients, helping them make the most of their culinary skills while reducing food waste. By simply entering their ingredients, users can access a curated list of recipes that match their preferences and dietary restrictions. Moreover, the Ingrecipe Platform provides a comprehensive nutrition analysis tool that assesses the nutritional value of different dishes, enabling users to make informed dietary decisions. With the integrated meal planning feature, users can efficiently plan their weekly meals, encouraging healthier eating habits and saving time, especially during busy schedules.

One distinctive feature of the platform is the interactive calorie guessing game, which educates users about the calorie content of various foods in an engaging way. This gamification element not only makes learning enjoyable but also enhances awareness of nutritional values.

Keywords: Recipe Search, Nutrition Analysis, Meal Planner, Calories Guessing, Personalized Data, Web Platform.

I. INTRODUCTION

The Ingrecipe Platform is a comprehensive web application that aims to enhance the culinary experience by improving how users search for recipes, analyze dish nutrition, and plan meals based on available ingredients. With the growing interest in health-conscious living and dietary awareness, there is a rising demand for innovative tools that empower users to make informed choices.

Developed using the latest web technologies, the Ingrecipe Platform offers an interactive and engaging experience for users. At its core, the platform enables personalized recipe searches based on the ingredients users have on hand, reducing food waste and fostering creativity in the kitchen. This feature allows users to discover new recipes while maximizing their culinary potential. In addition to its main functions, the Ingrecipe Platform offers unique features to enhance users' culinary experience.

The platform includes a fun calories guessing game that entertains users while educating them about the nutritional content of different foods, helping them make informed dietary choices. Moreover, the Ingrecipe Platform provides personalized data and diet recommendations based on individual preferences and health goals.

By analyzing user interactions and dietary habits, the platform offers customized suggestions to promote healthier eating habits and lifestyle choices.

1.1 Motivation

We propose to design and make a platform on which people can post their work of dishes, share and discover recipes, communicate with each other based on food. User can reduce the Food Waste, Simplifying the Cooking Experience, Personalized and Dietary-Specific Options, Inspiration for Meal Planning[6].

1.2 Basic Concept

A food recipe app is a specialized mobile application designed to share and guide users by providing detailed instructions for preparing various dishes. These apps essentially function as digitally cookbooks, offering comprehensive information on ingredient, measurements, and step-by-step cooking procedures. These apps foster a sense of community by enabling users to contribute their own recipes, tips, and variations, This Interactive feature establishes a vibrant ecosystem where cooking enthusiasts can share their culinary creations, experiences, and insights.

II. LITERATURE SURVEY

According to [1], An online food recipe websites have quickly become a popular source of culinary inspiration and knowledge for those looking to expand their cooking skills or simply try out new recipes. These websites have revolutionized the way people access recipes and cooking advice, making cooking more accessible than even before. This literature review will examine the evolution of these websites, their impact on the food industry, their benefits for users, and key trends within this space.

The Evolution of Online Recipe Websites- Online food recipe websites have come a long way since the early days of the internet. Until about the mid-2000s, recipe websites largely consisted of personal blogs and smaller websites that catered to a niche audience. However, with the growing popularity of food culture and an increasing demand for kitchen know-how, larger recipe websites like Food.com, Epicurious, and Allrecipes.com began to emerge. In recent years, a new crop of recipe websites has emerged, catering to ever more specialized niches. A number of websites focus on specific diets like vegetarian, keto, or gluten-free, while others provide detailed meal planning services tailored to health and fitness goals. In addition, many recipe websites now offer video tutorials and user-generated content, creating a more interactive and engaging experience for users[3].

Impact on the Food Industry-Online recipe websites have had a significant impact on the food industry, particularly in the way that people plan, shop for, and cook their meals. By providing users with easy access to quality recipes, cooking tips, and ingredient recommendations, these websites have made cooking more accessible to a wider audience than ever before. Additionally, the wealth of data that these websites collect from user behavior and preferences has led to new insights and trends in the food industry. For example, many recipe websites provide insight into which ingredients are becoming more popular, which cooking methods are on the rise, and what types of recipes are most in demand. This information is valuable for food and beverage companies looking to stay on top of industry trends and develop new products that resonate with customers[4].

Benefits for Users- The benefits of online recipe websites for users are many. Perhaps the most obvious is the wide array of recipes that users can access from the comfort of their own home.

Because these websites are updated frequently with new recipes, users can find inspiration for their next meal at any time of day. Additionally, many recipe websites offer nutritional information and customizable search options, making it easier for users to find recipes that align with their dietary needs and preferences. Another key benefit of online recipe websites is the community aspect they provide. Many websites have features that allow users to ask questions, leave comments, and share their cooking experiences with others. This fosters an environment in which users can learn from one another and feel more connected to a wider community of food lovers[2].

Key Trends in Online Recipe Websites- As the online recipe space continues to evolve, there are several key trends that are worth noting. Perhaps the most notable of these is the continued rise of video content. Many recipe websites now offer videos as part of their content, providing users with step-by-step instructions and engaging visuals[5]. Another trend is the growing popularity of meal planning services. Many recipe websites now offer meal planning tools that allow users to customize their weekly menus based on dietary preferences and other factors. This saves users time and effort in the planning and preparation of meals. Finally, there is an increasing focus on health and wellness among recipe website users[6]. As more people look to adopt healthier lifestyles through dietary changes, recipe websites are responding by offering more health-conscious recipes and resources.

III. ANALYSIS OF EXISTING

APPLICATION

The existing application for the Ingrecipe platform serves as a recipe-sharing and discovery tool, allowing users to explore various recipes based on ingredients, dietary preferences. It typically includes features like user-generated content, search functionality, ingredient filtering, and sometimes community-driven ratings. However, limitations often arise in personalization, dynamic content recommendations, and advanced search options. An analysis may identify opportunities for improvement in user interface design, recipe categorization, and AI-driven features like automated meal planning or nutritional analysis to enhance user engagement and usability[7].

IV. IMPLEMENTATION

- Step 1: User Registration & Profile Setup.
- Step 2: User can login in his personal account using id and password.
- Step 3: Search recipes according to the ingredients.
- Step 4: You can view the remedy, and save or favourite your recipe.
- Step 5: Make the meal plans.
- Step 6: You can check the calories in nutrition analyzer.
- Step 7: You can play a game and get the correct calorie count for particular ingredients.

V. SYSTEM MODULE

This diagram presents a web application's layered architecture with a focus on modularity and structured data handling. The Frontend Layer features five distinct modules: Authentication, Recipe, Game, Theme, and Profile, each handling specific functionalities. User interactions, such as login and signup, are managed by the Authentication Module, while the Recipe Module leverages the Spoonacular API for advanced recipe search and analysis. Game-related features are housed in the Game Module, and the Theme Module supports dark and light mode toggling. The Backend Layer is responsible for processing API requests through various services like Authentication, Recipe, Game, and User Services[8]. These backend services interact with a MongoDB Database in the Database Layer, ensuring secure data storage and retrieval. The architecture facilitates a clear separation of concerns, allowing for scalable and maintainable development.

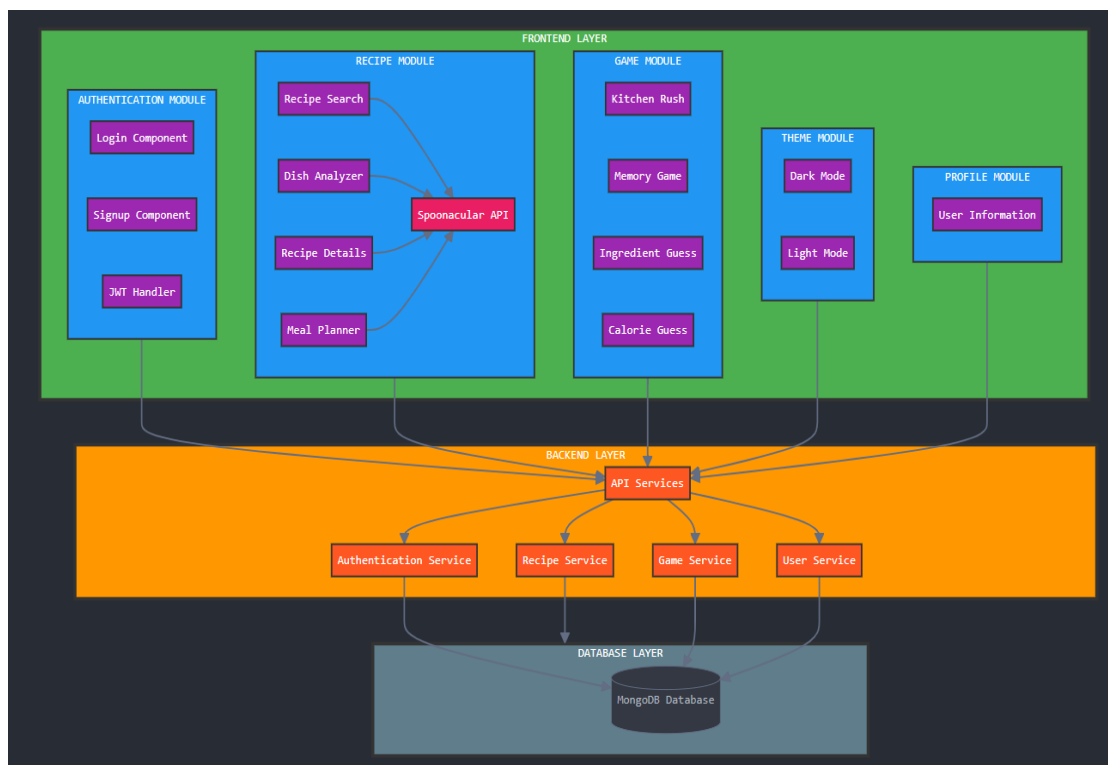


Fig 1: System Module

VI. ARCHITECTURE DIAGRAM

This diagram illustrates a layered architecture for a web application that includes a Frontend Layer, Backend Layer, and a Database Layer. The Frontend Layer, developed using React and Tailwind CSS, supports user interaction with features like authentication, profile management, dark/light theme toggling, gaming functionalities, and recipe-related tools. It connects to the Backend Layer, which uses Node.js and Express to handle core services such as authentication, recipe management, and gaming logic through REST API services[9]. Middleware components, like CORS handling and data parsing, facilitate secure and structured data communication. The backend also integrates with the Spoonacular API for external recipe data, providing an

enriched user experience. The Database Layer relies on MongoDB to manage user data. This architecture clearly separates concerns, promoting scalability and modular development.

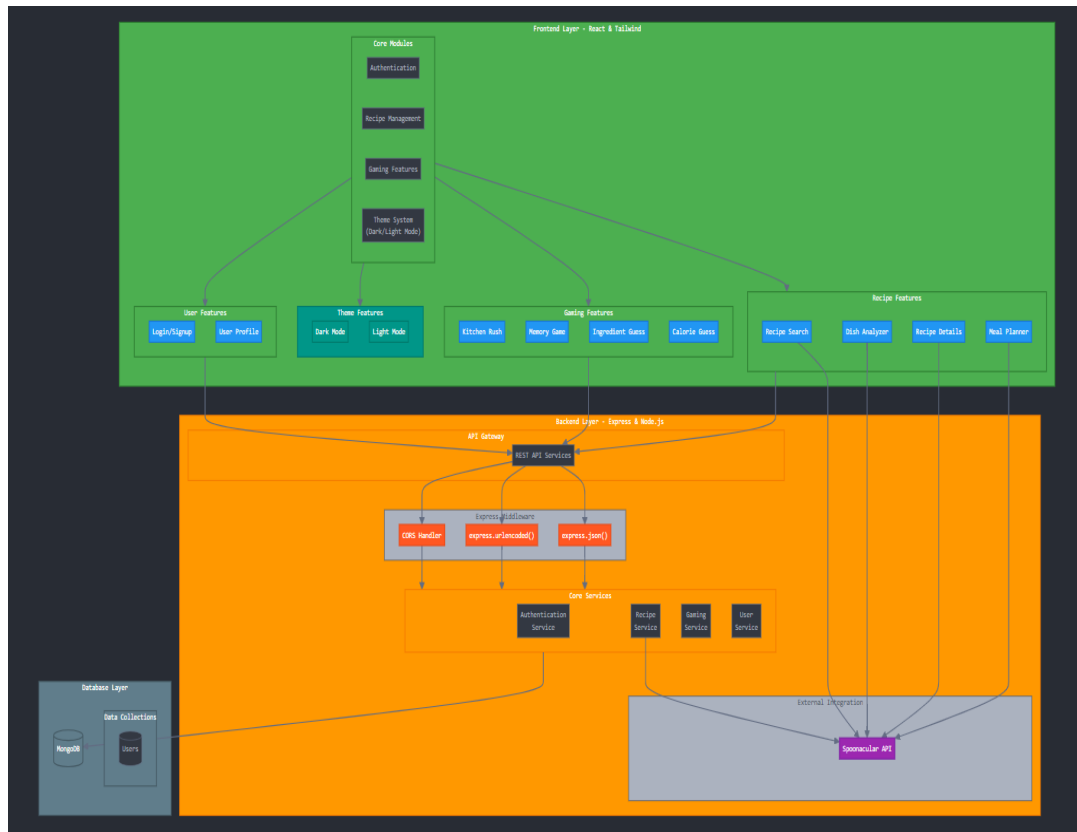


Fig 2: Architecture Diagram

VII. FUTURE SCOPE

- Integration with Smart Kitchen Devices.
- Nutrition and Healthy Monitoring.
- Subscription Services.
- Gamification and User Engagement.

VIII. CONCLUSION

The Ingrecipe Platform offers a comprehensive and robust solution for users looking to simplify meal planning and improve their dietary choices. This integrated approach helps users manage but also align with their nutritional objectives.

The platform's capacity to provide personalized recommendations based on available ingredients and dietary requirements positions it as a valuable resource for both novice and experienced cooks. Users can easily explore a diverse array of recipes tailored to their specific needs, ultimately fostering healthier eating habits and reducing food waste. Furthermore, the integration of a nutrition analyzer equips users with essential information about the caloric and nutritional content of their meals, facilitating informed decision-making in their dietary choices.

Looking forward, there are numerous opportunities to enhance and expand the Ingrecipe Platform. Enhancements may involve improved integration with local grocery stores, real-time inventory updates, and potential partnerships with online grocery delivery services to streamline experience.

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IX. REFERENCES

- [1] Kumar, R., & Sinha, P. (2020). An Overview of Recipe Recommendation Systems: Trends and Techniques. In *International Journal of Computer Applications*, 975. DOI: 10.5120 / ijca2020917757.
- [2] Keller, K., & Lechner, M. (2019). The Role of Nutritional Analysis in Promoting Healthy Eating: A Comprehensive Review. In *Journal of Nutrition Education and Behavior*, 51(3), 250-256. DOI: 10.1016/j.jneb.2018.11.010.
- [3] G. Csurka, C. Bray, C. Dance, and L. Fan. Visual categorization with bags of keypoints. *ECCV WS on Statistical Learning in Computer Vision*, pages 1-22, 2004.
- [4] M. Calonder, V. Lepetit, C. Strecha, and P. Fua, BRIEF: Binary robust independent elementary features. In *Proc. of European Conference on Computer Vision*, 2010.
- [5] E. Rublee, V. Rabaud, K. Konolige, and G. Bradski. ORB: An efficient alternative to SIFT or SURF. In *Proc. of International Conference on Computer Vision*, 2011.
- [6] Y. Shidochi, T. Takahashi, I. Ide, and H. Murase. Finding replace- able materials in cooking recipe texts considering characteristic cooking actions. In *Proc. of ACM MM WS on Multimedia for Cooking and Eating Activities (CEA'09)*, pages 9-14, 2009.
- [7] M. Ueda, M. Takahata, and S. Nakajima. User's food preference extraction for cooking recipe recommendation. In *Proc. of the 2nd Workshop on Semantic Personalized Information Management: Retrieval and Recommendation*, 2011.
- [8] H. Bay, T. Tuytelaars, and L. Van Gool. SURF: Speeded up robust features. In *Proc. of European Conference on Computer Vision*, pages 404-415, 2006.
- [9] G. Csurka, C. Bray, C. Dance, and L. Fan. Visual categorization with bags of keypoints. *ECCV WS on Statistical Learning in Computer Vision*, pages 1-22, 2004.