Information System Supporting Diet Plan

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Abstract. The Information System Supporting Diet Plan addresses the growing need to improve public health outcomes. This study focuses on the development of a comprehensive meal planning framework that aligns with established and promotes balanced dietary intake. The project emphasizes the integration of macronutrients and micronutrients in appropriate proportions to support physiological functions, prevent chronic diseases, and enhance overall well-being. Special attention is given to individual differences such as age, gender, activity level, and medical conditions to ensure adaptability and inclusivity. In addition, the system incorporates evidence-based strategies for portion control, nutrient timing, and food diversity to encourage sustainable eating behaviors. By combining scientific knowledge with practical application, the Information System Supporting Diet Plan seeks to provide an accessible and scalable model for fostering long-term health and nutrition literacy.
Keywords: activity tracking, calorie tracking, diet plan, food, healthy meal.

INTRODUCTION

A balanced diet plays a crucial role in maintaining overall health, preventing chronic diseases, and supporting physical and mental well-being. However, many individuals struggle to plan their meals effectively due to limited knowledge of nutrition, busy lifestyles, or lack of access to personalized guidance. To address this challenge, a healthy meal plan system can be served as a structured approach to providing users with nutritionally balanced, customized, and easily accessible diet recommendations. Such a system integrates nutritional guidelines, dietary preferences, and health goals to generate meal plans that are both practical and sustainable. By leveraging technology and evidence-based dietary standards, the system not only promotes healthier eating habits but also encourages long-term lifestyle changes. This introduction highlights the significance of developing a healthy meal plan system as a tool to bridge the gap between nutritional knowledge and everyday dietary practices.

PROBLEM

Despite the proven importance of balanced nutrition in preventing obesity, diabetes, cardiovascular diseases, and other health complications, many individuals face challenges in maintaining a healthy diet. Common problems include lack of nutritional awareness, difficulty in meal planning, limited time for food preparation, and the influence of fast food consumption. Additionally, most existing meal planning approaches fail to consider individual differences such as age, health conditions, lifestyle, allergies, and personal preferences. As a result, people often follow generic diet plans that are either unsustainable or nutritionally inadequate. This

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gap highlights the need for an intelligent and personalized healthy meal plan system that can provide tailored dietary recommendations, promote healthier eating habits, and support long-term well-being.

APPROACH

The system consists of two roles User and Administrator. Figure 1 illustrates with a login step where the administrator enters their email and password. If the credentials are incorrect, the process loops back to the login step until valid details are provided. Once successfully logged in, the admin gains access to various system functionalities, including viewing the dashboard, managing the user list, checking the survey list, monitoring the progress list, viewing the payment list, managing contact information, and handling user feedback. After completing these tasks, the admin can log out, and the process ends.

Firstly, the user process in the system, beginning with accessing the home page and logging in using an email and password. If the credentials are invalid, the user is redirected back to the login step until valid details are entered. Once logged in successfully, the user can perform several actions within the system. These include filling out a health survey, viewing their Body Mass Index (BMI), making payments, and receiving a customized meal plan. Additionally, the user can update their progress and provide feedback to the system. After completing these tasks, the user has the option to log out, which ends the process.

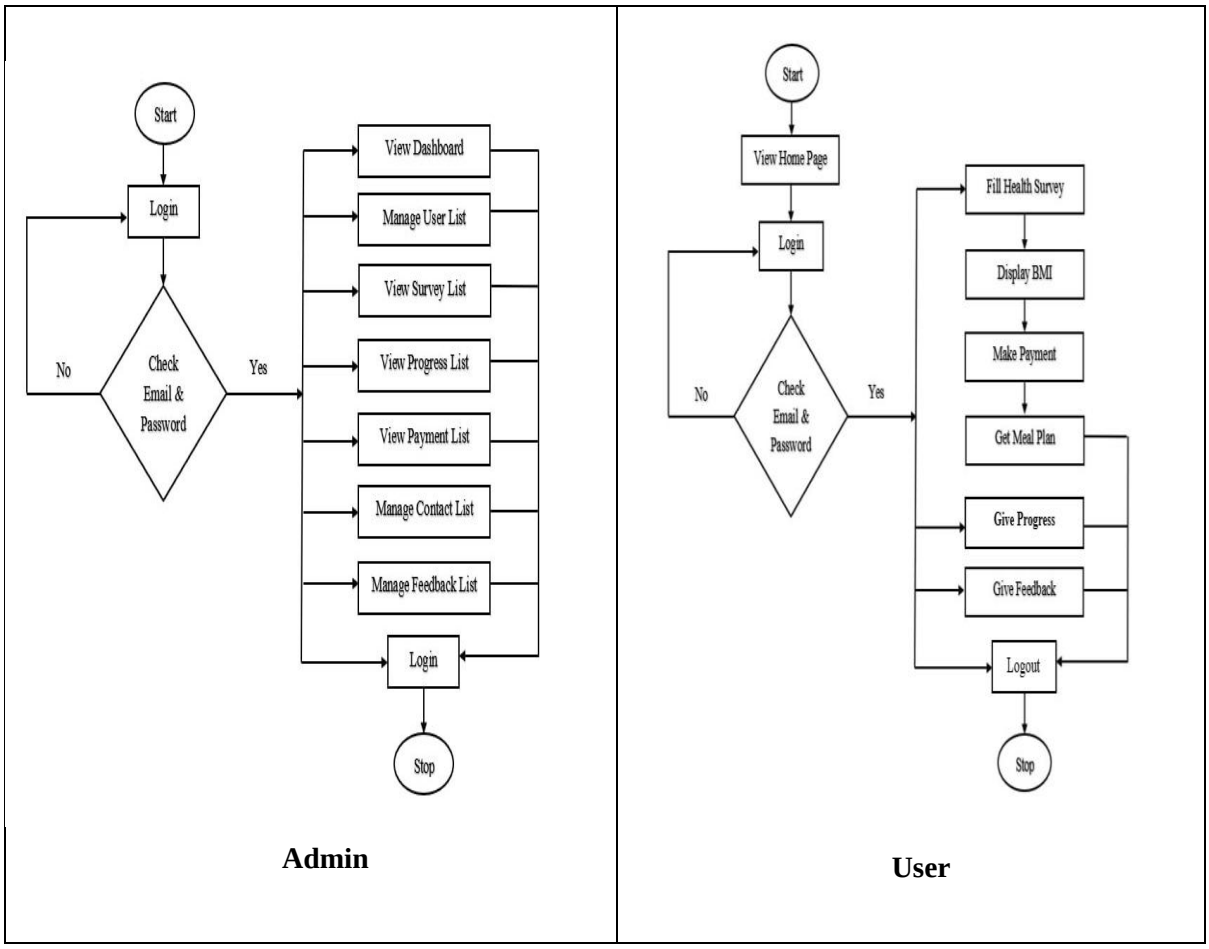

Figure 1: System Flow Diagram

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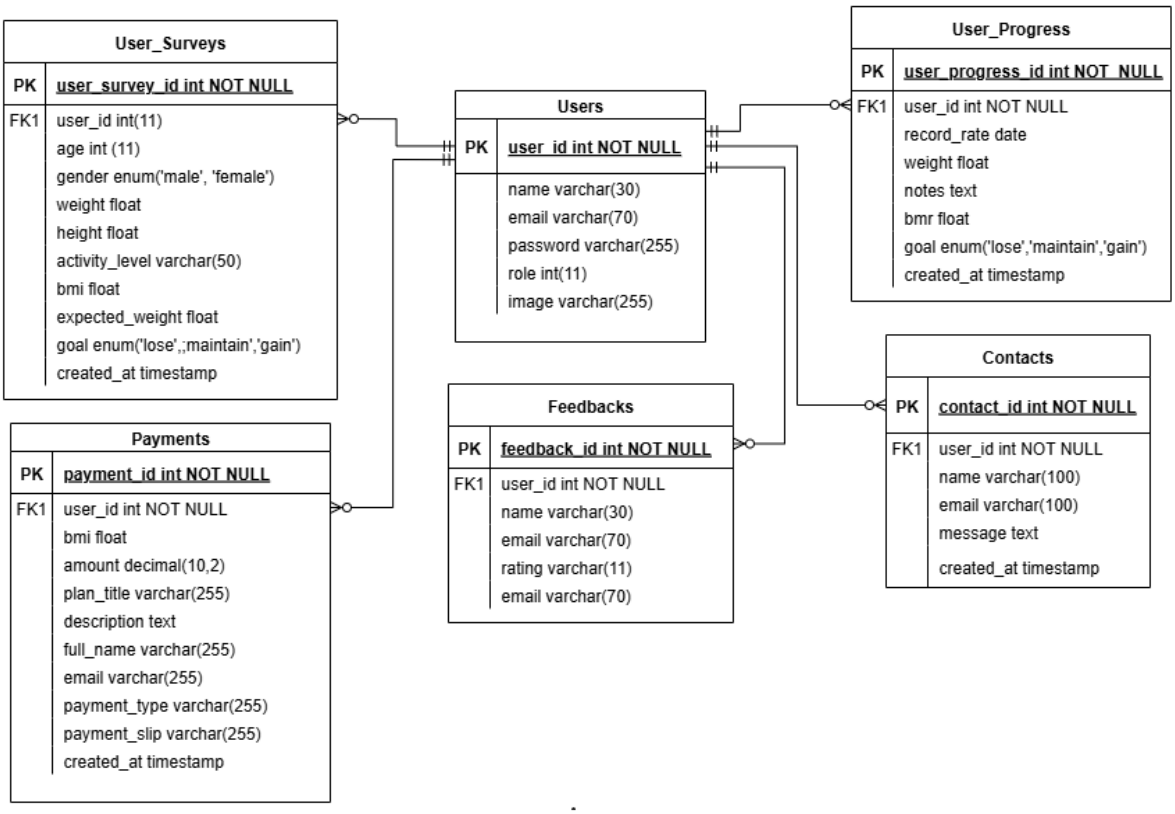

Figure 2: Database Design

Figure 2 presents the Entity Relationship Diagram (ERD) for the Information System Supporting Diet Plan, illustrating the database structure and relationships between key entities. The ERD serves as the foundation for data modeling, ensuring referential integrity and efficient querying through well-defined primary key and foreign keys. The database design allows the application to capture a user's initial information via user surveys, which then helps in the recommendation of a specific meal plan. This meal plan is composed of several meals (e.g., breakfast, lunch, dinner), and each meal is made up of different Foods. Finally, the user's journey and results can be tracked over time in the user progress table. This structure ensures that all data is organized, interconnected, and easily accessible for creating a dynamic and personalized meal planning experience.

RESULTS

The results of Information System Supporting Diet Plan is to focus on the gradual transformation brings to everyday life. Over time, nourishing the body with balanced meals creates a foundation for sustained energy, sharper focus, and greater emotional stability. Instead of quick fixes or restrictive diets, a healthy plan encourages consistency, leading to natural improvements in weight control, metabolism, and overall physical strength. It also cultivates mindful eating habits, helping you become more aware of portion sizes, food choices, and how meals affect your body. The outcome is not just improved health markers like lower cholesterol, steady blood sugar, or reduced risk of chronic illness but also a deeper sense of confidence and well-being. In essence, the true result of a healthy meal plan is a lifestyle shift that supports long-term vitality, making healthy choices feel natural and enjoyable rather than

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forced. The long-term result is not only a healthier body but also a lifestyle rooted in balance, resilience, and well-being one where making nutritious choices becomes second nature. Figure 3 illustrates the implementation of the Information System Supporting Diet Plan, showcasing its effectiveness in healthy plan and meal guide for weight management. The system can give a structured choice from food groups.

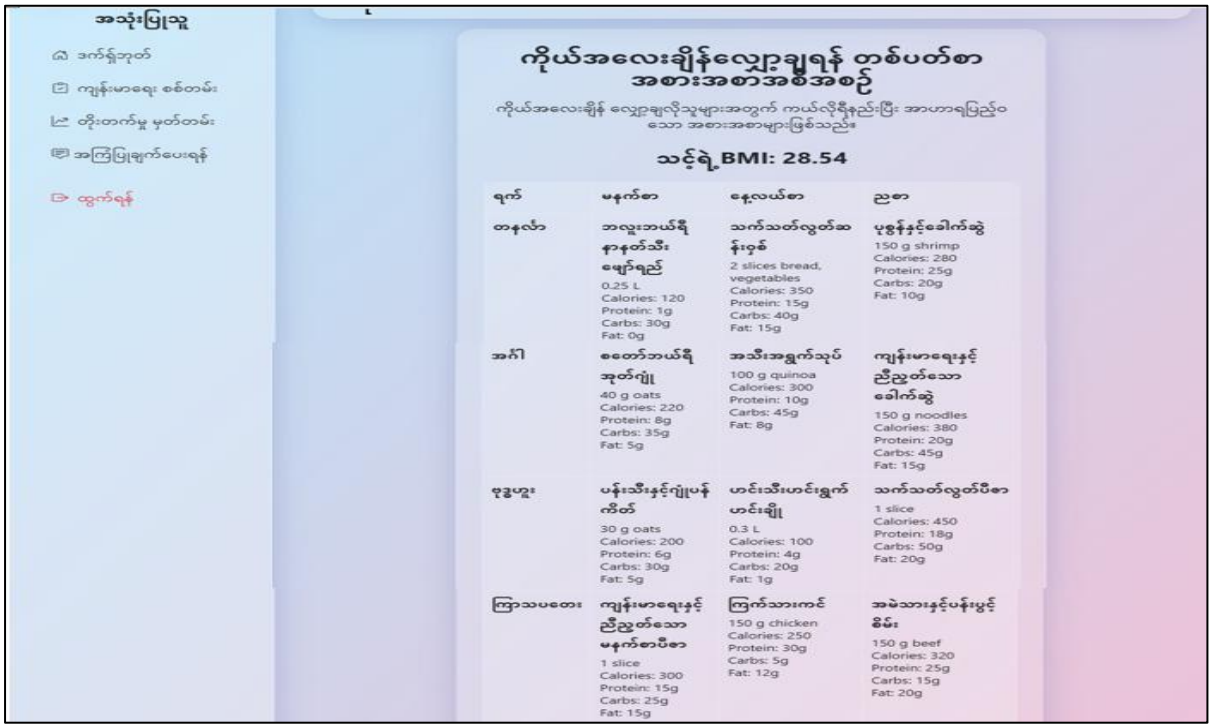

Figure 3: Implementation of this system

CONCLUSION

The information system supporting diet plan provides an innovative and practical solution to the challenges of maintaining a balanced diet in today's fast-paced world. By integrating user-specific information such as age, body composition, activity level, health conditions, and food preferences with evidence-based nutritional guidelines, the system generates meal plans that are both personalized and sustainable. Unlike generic diet charts, this tailored approach empowers individuals to adopt healthier eating patterns that align with their unique needs and goals. The inclusion of features such as calorie tracking, nutrient analysis, portion recommendations, and continuous feedback not only increases user engagement but also promotes accountability in daily food choices. Over time, these functionalities support the development of long-term healthy habits, reduce dependency on unhealthy alternatives, and contribute to the prevention of diet-related diseases including obesity, diabetes, and cardiovascular disorders. In a broader context, the system demonstrates how technology-driven solutions can bridge the gap between nutritional knowledge and everyday practice. It offers individuals a structured yet flexible pathway toward improved well-being, while also holding potential as a scalable public health tool. Ultimately, the healthy meal plan system highlights the importance of combining personalization, accessibility, and sustainability in promoting lifelong healthy eating habits. It helps individuals adopt healthier eating patterns through

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features like calorie tracking and nutrient analysis, while encouraging accountability and better food choices. Over time, it reduces dependency on unhealthy options and builds lasting healthy habits. Beyond individual use, it has potential as a scalable public health tool to prevent obesity and nutrition-related disorders. Over all, it emphasizes personalization, accessibility, and sustainability in promoting lifelong healthy eating.

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