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Application’s Theme:No. 2 Social Impact

Assignment Title: Food and Nutrition Awareness Backend Application for Social Impact

**Idea and Concept of the Proposed Back-End Application**

The proposed backend application aims to enhance nutritional awareness and promote healthy eating habits for individuals of all ages, with a specific focus on highlighting dietary restrictions for the elderly. This idea was inspired by several situations in my life. I have friends with type 1 and type 2 diabetes, family members with high cholesterol, and elderly relatives with specific dietary needs. I have also used similar applications before, such as “MyFitnessPal” (MyFitnessPal, n.d.). It is a platform that allows me to track my macronutrients, micronutrients and manually log my daily calorie intake. It also shows my progress and calculates the calorie intake I need per day to lose weight and better understand my body (Orin, 2014). This application inspired me to enhance its functionality further.

The application I plan to develop will serve as a database-driven system that stores information about various food items, their nutritional content, and any dietary restrictions they may have. By providing transparency about food items, the system encourages informed dietary choices and supports social impact initiatives in health and nutrition.

This application aligns with the need for better nutrition management in communities, especially as dietary needs vary with age and health conditions. The solution can be integrated into community health programs, restaurants, or grocery stores, similar to the current ‘Nutri-Grade’ (Hub, n.d.) labels on the drinks we have in Singapore. This ensures that individuals have access to vital information about their food intake. It is particularly impactful for caregivers and families responsible for elderly individuals, guiding and enabling them to make safe and healthy dietary choices (Health, 2022).

**Description of the Functions and Features to Be Implemented**

The backend application will be built using Node.js and Express.js with Microsoft SQL Server as the database.

**Functions:**

1. CRUD Operations:

* Create: Add new food items to the database, including their nutritional information and dietary restrictions. Add user, email, and user identification number.
* Read: Retrieve a list of all food items and users, including their details.
* Update: Modify the dietary restrictions or other details of a specific food item.
* Delete: Remove food items or user from database.

1. Search and Filtering:

* Allow users to search for food items by name or filter them based on specific dietary restrictions (e.g. low sugar, high fiber).

1. Dietary Restriction Indicators:

* Flag dietary restrictions that are particularly relevant to elderly individuals such as high sodium or high cholesterol.

1. Nutritional Transparency:

* Display detailed nutritional information, including calories, proteins, carbohydrates, and fats for each food.

1. Additional Notes:

* Include optional notes for each food item, such as preparation tips or health benefits.

**Features:**

API Endpoints: The application will expose RESTful API endpoints to allow integration with a frontend application or third-party systems.

User-Friendly Data Model: Database will be made easy to store and retrieve data efficiently. Fields include FoodName, NutritionalInfo, DietaryRestrictions, and AdditionalNotes.

Scalability: System will be designed to handle large volume of food items, ensuring scalability for future growth and integrations. However, as the food APIs are not free, my system is based on a mock data I created.

Social Impact Focus: The application is to raise awareness about the nutritional value of food and emphasize the importance of dietary restrictions, particularly for elderly individuals, to reduce health risks, maintain well-being, and better understand what we are consuming.

# **References**

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