DATABASE MANAGEMENT SYSTEM

MC-212

RECIPE PLANNER

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Problem Statement: -

Managing a diverse collection of recipes, planning meals, and providing nutritional information can be complex and time-consuming. This is particularly true for food bloggers, nutritionists and meal prep services, who need to cater to various dietary needs and preferences. The primary challenges include organizing recipes, creating personalized meal plans, and offering seasonal and time-based recipe recommendations, along with efficient user and subscription management.

Many individuals and businesses face issues related to:

- Recipe Management

- Meal Planning and Scheduling

- Nutritional and Dietary Management

- User and Subscription Management

- Seasonal and Time-Based Recipe Recommendations

- ## **Key Issues and Requirements**

1. Recipe Management:

- **Recipe Details:** Maintain a detailed list of all recipes, including ingredients, instructions, nutritional information, and tags for cuisine, dietary restrictions, and difficulty level.

- **Recipe Updates:** Ensure that recipes are regularly updated and accurate.

- **Search and Filter:** Implement advanced search and filter options to make finding recipes easy based on various criteria i.e. ingredients, diet.

- **Relation:** For one ingredient, there can be many recipe.

2. Nutritional and Dietary Management:

- **Nutritional Information:** Include detailed nutritional information for each recipe.

- **Dietary Filters:** Allow users to filter recipes based on dietary restrictions.

- **Health Goals:** Enable users to track and manage their health goals through the recipes and meal plans.

3. User and Subscription Management:

- **User Profiles:** Maintain user profiles.

- **Subscription Tiers:** Offer different subscription levels with various features and benefits (for uploader only).

- **Personalized Recommendations:** Provide personalized recipe and meal plan recommendations based on user preferences.

- **Rating-based reward**: Allow recipe uploader to get rewards as per their recipe reviews.

- **Relation**: Here the user and recipe will have one to many relationships.

4. Seasonal and Time-Based Recipe Recommendations:

- **Seasonal Collections:** Curate recipe collections based on seasons and special occasions.

- **Time-Based Suggestions:** Offer recipes suited for different times of the day (e.g., breakfast, lunch, dinner).

- **Dynamic Updates:** Regularly update the recipe collections to ensure variety and relevance.

- **Relation:** For particular time or season, there can many recipies.

Database Requirements

To address these challenges, the recipe management system database must include the following components:

1. **Recipes**
   - Recipe ID
   - Recipe Name
   - Ingredients
   - Instructions
   - Nutritional Information
   - Category
   - Dietary Restrictions
   - Preparation and Cooking Time
   - User Ratings

2. **Ingredients**
   - Ingredient ID
   - Ingredient Name
   - Quantity Required
   - Unit of Measurement

3. **Users**
   - User ID (Primary Key)
   - Username

- Password

- Contact Information

- Subscription

- Personal Ratings and Reviews

4. **Subscriptions**

   - Subscription ID (Primary Key)

   - User ID

   - Subscription Level

   - Start Date

   - End Date

   - Payment Information

5. **Seasonal and Time-Based Recommendations**

   - Recommendation ID

   - Season

   - Special Occasion

   - Linked Recipes

- ## **Expected List of Questions (Queries)**

  - **Recipe Management Queries:**

    - What are the top-rated recipes for dinner?

    - What are the most popular recipes based on user ratings?

    - Which recipes were added recently?

    - What recipes have the highest nutritional value for protein?

- **Ingredient Management Queries:**
    - Which ingredients are used in the highest quantities?
    - What are the benefit of used ingredient in recipe?
    - Which ingredient are used for making the recipe?

- **Nutritional and Dietary Management Queries:**
    - What is the nutritional breakdown of a specific recipe?
    - What are the average caloric values of breakfast recipes?
    - What is the total nutritional intake for a user's meal plan?

- **Seasonal and Time-Based Recipe Recommendations Queries:**
    - What are the most popular summer recipes?
    - How many breakfast recipes are available?
    - What are the top recommended recipes for holiday meals?
    - Which recipes are currently trending?
    - What new recipes have been added for the current season?