

SPORTS NUTRITION DATABASE

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INTRODUCTION

- 1 . A sports nutrition database is a comprehensive collection of nutritional information tailored for Athletics.
- 2 . It serves as a vital resource for optimizing performance through dietary choices.
- 3 . Understanding this database can help athletes make informed decisions regarding their nutrition.
- 4 . In the world of sports ,a well planned nutrition strategy is essential for optimizing Athletic performance.

PROBLEM STATEMENT:

Sports Nutrition Database POC:

CRUD : Nutrition data

`provide_dietary_guidance(athlete_id)`: provide dietary guidance and nutrition plans for athletes .

`Track_nutritional_intake(intake_data)`: Track and analyze Athlete's nutritional intake.

CLASSES OUTLINE:

- 1.**Nutrient**: Represents a single type of nutrient.
- 2.**Food**: Represents a food item containing various nutrients.
- 3.**Athlete**: Contains athlete-specific information.
- 4.**Nutrition Database**: Handles CRUD operations for nutrients and foods.
- 5.**Athlete Manager**: Manages athlete dietary guidance and tracking nutritional intake.

OUTPUT MENU:

- 1.Create a Nutritional Database :
- 2. Read Nutritional Database:
- 3.Update Nutritional Database:
- 4.Delete Nutritional Database:

REAL-LIFE EXAMPLE:

- **I.CRUD OPERATIONS:**
- **Create:-**The nutritionist adds a new food item with nutritional details:
e.g:- 4g protein,22g carbs , and 120 calories.
- **Read :-** The nutritionist views the existing nutrient data to ensure that each athlete's meal plans are well-balanced.
- **Update:-** The nutritionist updates the protein content of chicken breast after obtaining a new nutritional analysis.
- **Delete:-**Old or obsolete enteries, such as rarely used foods ,are removed from the database to keep the data current.

2.PROVIDE DIETARY GUIDANCE:

Provide_dietary_guidance:

- Each athlete requires a tailored dietary plans based on their individual needs, preferences and training goals .The system provides personalized dietary guidance to optimize nutrition and performance.
- John Doe ,a weightlifter , aiming to increase his muscle mass,receives a dietary plan high in protein . the system recommends meals such as grilled chicken, brown rice and steamed broccoli , with an emphasis on post-workout protein intake through shakes or bars.

TRACK NUTRITIONAL INTAKE:

1. The system allows athletes to log their daily food intake , helping track nutritional consumption against their dietary plans. Nutritionist can analyze this data to make informed adjustments.

Eg : John Doe logs his meals over a week, indicating that he consistently meets his protein goals but struggles to consume enough vegetables. The system highlights this trend, prompting the nutritionist to adjust his meal plan to include more colorful vegetables and suggest easy ways to incorporate them into his meals.

ALGORITHM

Nutrition database management

1. Create Nutrient objects.

- Input: name, unit, daily value.
- Output: Nutrient object.

2. Create Food objects.

- Input: name.
- Output: Food object.

3. Update Food objects with nutrient content.

- Input: food name, nutrient object, amount.
- Output: Updated Food object.

Athlete management

- 1. Create Athlete objects.
 - - Input: ID, name, sport, weight, height, age, activity level.
 - - Output: Athlete object.
- 2. Track nutritional intake for athletes.
 - - Input: athlete ID, food object.
 - - Output: Updated Athlete object.

Dietary Guidance and Intake Display

- 1. Provide dietary guidance.
 - - Input: athlete ID.
 - - Output: Dietary guidance string.
- 2. Calculate daily nutritional intake.
 - - Input: athlete ID.
 - - Output: Daily nutritional intake dictionary.
- 3. Display daily nutritional intake.
 - - Input: athlete ID.
 - - Output: Formatted daily nutritional intake string.

CONCLUSION:

- Efficiency managing and organizing nutritional data to tailor dietary plans.
- Providing personalized dietary guidance based on athlete-specific needs and goals.
- Tracking and analyzing nutritional intake, enabling dynamic adjustments to meal plans.
- This comprehensive system ensures athletes receive optimal nutrition, helping them enhance performance , support recovery , and maintain overall health, which is critical in a competitive sports environment.

THANK YOU
