Macros Tracker

B. Tech CSE (AI/ML)

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SCHOOL OF ENGINEERING & TECHNOLOGY

UNDER SUPERVISION OF

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INTRODUCTION

- A macros tracker helps us to break down daily food items macros (mainly protein, carbohydrates & fats) to achieve the desire goal.
- It is used by athletes, sportsperson & celebrities to maintain their physical fitness.

1) Role of Python

- Python can be used to implement algorithms for setting nutrition goals (e.g., daily caloric intake or macro ratios) and then track progress against those goals.
- Simple python is used to make this project so no libraries are included.

2) Key Objectives of the Project

- It safeguards user data mainly personal health metrics and progress.
- Provides nearby 90-95% accurate results.
- It can provide more than 2 food items macro data at a single time.

3)How the System Works

- The user will select the serial number of food item he/she wants.
- In next line it will ask the quantity of the selected food item in (grams).
- Then if you want to add another food item, you can select it by writing its serial number and if it's done, you'll simply write "done" and press enter.
- It will provide you the amount of protein, carbohydrates & fats present in your meal.

4) Importance and Applications

- It is a simple macro tracker which is easy to operate & execute.
- It can be used for dietary optimization for specific conditions.
- It is a time saving & less human effort system.

OBJECTIVE

1)To calculate 90-95% accurate macros of the selected food items.

2) To safeguards the user personal data like health metrics and progress.

3)To spread awareness about maintaining a good physical health by knowing what is present in your food items.

4)To create a simple user-friendly implementation that is easy to operate & execute.

5) Allowing users to customize the app to fit their individual needs.

IMPLEMENTATIONS

DEFINE FOOD DATA STRUCTURE

We will define a dictionary structure to store food data (e.g., name, calories, protein, carbs, fats) and a list to keep track of meals logged by the user.

STORE FOOD AND MACRONUTRIENTS INFORMATION

we will create a sample dictionary to store food and its corresponding macronutrient information (calories, protein, carbs, fats).

USER INTERACTION AND DATA ENTRY

The program interacts with the user via the terminal or command line. Users can:

> Add food items by name and quantity (e.g., "banana" with a quantity of 2).

> See their total macros for the day.

CHALLENGES FACED

1. Accuracy & Database Limitations

- **Incomplete food databases**: Many macro trackers don't have all food items, especially local or home-cooked meals.
- **Incorrect entries**: User-generated entries in public databases can be wrong or inconsistent.
- **Serving size confusion**: Difficult to measure or estimate portions accurately without a scale.
- **Lack of customization**: Not all apps allow users to adjust macro targets (e.g., keto vs. balanced diet).

2. User Behaviour & Compliance

- **Forgetting to log meals**: Especially common with snacks or eating out.
- **Underestimating or overestimating portions**: Leads to inaccurate macro counts.
- **Logging fatigue**: People often stop using the tracker after a few weeks due to effort required.
- **Emotional resistance**: Some users feel guilty or obsessed when constantly logging food.

3. Privacy & Data Concerns

- **Data sharing**: Some users worry about how their dietary data is used or sold.
- **Account security**: Personal health data breaches can be a risk.

4. Nutritional Nuance Oversimplification

- **Ignoring micronutrients**: Most macro trackers don't track vitamins and minerals.
- **Lack of context**: Doesn't account for meal timing, nutrient absorption, or exercise impacts.
- **One-size-fits-all approach**: Apps may not adjust recommendations for specific goals or conditions (e.g. diabetes, bodybuilding).

EXPECTED OUTCOME

1) Data-Driven Decision Making

> Users can adjust diet plans based on real-time data trends.

> Historical tracking helps refine long-term eating habits.

2) Customized Recommendations

> The system may suggest daily macro targets based on age, weight, height, and activity level.

> Integration with meal plans or recipe suggestions for easier adherence.

3) **Improved User Engagement**

> Gamification features or streaks can boost user retention.

> Alerts and reminders can encourage consistent logging.

4) **Analytics and Reports**

> Visual reports showing macro breakdowns over time.

> Weekly or monthly summaries to track progress.