C PROJECT ON HEALTH TRACKING SYSTEM

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HEALTH TRACKING SYSTEM

Abstract

This project aims to develop a simple menu-driven **Health Tracking System** using the C programming language.
The software allows users to enter their body details, record their daily food intake, calculate total calories and protein consumed, and receive personalized fitness suggestions such as muscle gain, fat loss, or maintenance.

The program uses basic C programming concepts such as variables, data types, arrays, structures, loops, conditional statements, and user-defined functions.
This project demonstrates how core concepts can be applied to build real-world applications that promote health and fitness.

Introduction

In today's world, tracking daily nutrition is important to maintain a healthy lifestyle. People often struggle with knowing how many calories and protein they consume and whether it aligns with their goals.

This project provides a simple, command-line–based health assistant.
Users can:

- Enter weight, height, age, and fitness goals

- Log food items with quantities

- Automatically calculate calories and protein

- Get suggestions for improvements

The main goal is to demonstrate logical and structured programming in C.

Objectives

1. To build a simple, interactive health tracking application.

2. To calculate total calories and protein based on food intake.

3. To give suggestions according to user goals (gain/loss/maintain).

4. To practice concepts such as:

   ○ Variables

   ○ Conditional statements

   ○ Loops

   ○ Arrays

   ○ Structures

   ○ Functions

   ○ Menu-driven programs

Problem Statement

Users often eat without knowing how many calories or how much protein they consume.
There is a need for a simple program that:

• Tracks food consumption

• Computes total nutrition

• Helps users make informed decisions about their diet

This project solves this problem using basic C programming.

Methodology

The project follows these steps:

1. Take user details (weight, height, age, sex, activity level)

2. Select fitness goal (gain, loss, maintain)

3. Provide a list of predefined foods

4. Allow user to add entries with quantity

5. Store entries in arrays/structures

6. Calculate total calories and protein using formulas

7. Display results and health recommendations

Concepts Used

- **Variables & Data Types:** To store numerical values (weight, calories, etc.)

- **Input/Output:** `scanf()`, `printf()`

- **Operators:** Arithmetic for calorie calculation

- **Conditional Statements:** `if—else`, `switch`

- **Loops:** `while`, `for` for menus and repeated input

- **Arrays:** To store multiple foods

- **Functions:** To divide program into small modules

- **Structures:** To create custom data types for food items and entries

- **Menu-Driven Program:** Repeated options using loops

- **Macros:** Using `#define` for constants

Algorithm (Step-by-step)

1. Start

2. Display project title

3. Read user weight, height, age, sex

4. Read activity level

5. Read fitness goal

6. Initialize food list

7. Loop menu:

    1. Add food entry

    2. Show entries

    3. Calculate total nutrition

    4. Give suggestions

    5. Reset entries

6. Exit

8. For each food entry:

    1. Multiply quantity (grams) with per-100g nutrition

9. Display totals

10. Display suggestions

11. Stop

Applications

- Gym enthusiasts

- Diet and fitness planning

- Weight management

- Nutritional awareness

- Daily calorie tracking

- Beginners learning C programming

Advantages

- Simple and menu-driven

- Beginner-friendly

- Uses core C concepts only

- Useful for real-life diet management

- No external library required

- Works on all systems

Limitations

- Only works through terminal (no GUI)

- Predefined food list (cannot add new items)

- Approximate calorie values

- No database or storage for next day's entries

OUTPUT:
For example: For muscle gain

```
aadya2006@aadya2006:~/Desktop/CPROJECT$ nano CPROJECT.c
aadya2006@aadya2006:~/Desktop/CPROJECT$ nano CPROJECT.C
aadya2006@aadya2006:~/Desktop/CPROJECT$ nano CPROJECT.c
aadya2006@aadya2006:~/Desktop/CPROJECT$ gcc CPROJECT.c -o CPROJECT
aadya2006@aadya2006:~/Desktop/CPROJECT$ ./CPROJECT
=======================================
   Health Tracking System
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Enter your weight in kg (e.g. 65): 65
Enter your height in cm (e.g. 170): 169
Enter your age in years: 19
Sex: 1) Male  2) Female : 1

Activity level:
 1) Sedentary (little or no exercise)
 2) Light (1-3 days/week)
 3) Moderate (3-5 days/week)
 4) Active (6-7 days/week)
 5) Very active (hard exercise or physical job)
Choose (1-5): 3

Fitness goal:
 1) Muscle gain  2) Fat loss  3) Maintenance
Choose (1-3): 1


========== Main Menu ==========
1. Add food entry (what you ate today)
2. Show today's entries
3. Show totals & suggestions
```

Caption

```
========== Main Menu ==========
1. Add food entry (what you ate today)
2. Show today's entries
3. Show totals & suggestions
4. Reset today's entries
0. Exit
Enter choice: 1

Available foods (index : name — kcal/100g — protein/100g):
 1: Boiled Rice                :  130.0 kcal :   2.7 g protein
 2: Chicken Breast (cooked)    :  165.0 kcal :  31.0 g protein
 3: Egg (large, cooked)        :  155.0 kcal :  13.0 g protein
 4: Apple                      :   52.0 kcal :   0.3 g protein
 5: Banana                     :   89.0 kcal :   1.1 g protein
 6: Whole Milk (100ml)         :   60.0 kcal :   3.2 g protein
 7: Almonds                    :  579.0 kcal :  21.2 g protein
 8: Oats (raw)                 :  389.0 kcal :  16.9 g protein
 9: Paneer (cottage cheese)    :  265.0 kcal :  18.0 g protein
10: Wheat Bread (100g)         :  265.0 kcal :   9.0 g protein
11: Salmon (cooked)            :  208.0 kcal :  20.4 g protein
12: Lentils (cooked)           :  116.0 kcal :   9.0 g protein
13: Potato (boiled)            :   87.0 kcal :   2.0 g protein
14: Broccoli (cooked)          :   35.0 kcal :   2.4 g protein
15: Peanut Butter              :  588.0 kcal :  25.0 g protein

Enter food index (1-15) to add or 0 to cancel: 1 150
Enter amount consumed in grams (e.g. 150): Added: 150 g of Boiled Rice
```

Caption

```
4. Reset today's entries
0. Exit
Enter choice: 1

Available foods (index : name — kcal/100g — protein/100g):
 1: Boiled Rice                :  130.0 kcal :   2.7 g protein
 2: Chicken Breast (cooked)    :  165.0 kcal :  31.0 g protein
 3: Egg (large, cooked)        :  155.0 kcal :  13.0 g protein
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14: Broccoli (cooked)          :   35.0 kcal :   2.4 g protein
15: Peanut Butter              :  588.0 kcal :  25.0 g protein

Enter food index (1-15) to add or 0 to cancel: 2 300
Enter amount consumed in grams (e.g. 150): Added: 300 g of Chicken Breast (cooked)


========== Main Menu ==========
1. Add food entry (what you ate today)
2. Show today's entries
3. Show totals & suggestions
4. Reset today's entries
0. Exit
Enter choice: 9 300
Invalid option. Choose again.
```

Caption

```
3. Show totals & suggestions
4. Reset today's entries
0. Exit
Enter choice: 9 300
Invalid option. Choose again.


========== Main Menu ==========
1. Add food entry (what you ate today)
2. Show today's entries
3. Show totals & suggestions
4. Reset today's entries
0. Exit
Enter choice: 2

Today's food entries:
No.  Food                    Grams   kcal    Protein(g)
---- ----------------------- ------  ------  ----------
 1)  Boiled Rice              150    195.0      4.0
 2)  Chicken Breast (cooked)  300    495.0     93.0


========== Main Menu ==========
1. Add food entry (what you ate today)
2. Show today's entries
3. Show totals & suggestions
4. Reset today's entries
0. Exit
Enter choice: 3

Total today: 690.0 kcal, 97.0 g protein

--- Personalized Summary & Suggestions ---
Estimated BMR: 1616 kcal/day
```

Caption

```
========== Main Menu ==========
1. Add food entry (what you ate today)
2. Show today's entries
3. Show totals & suggestions
4. Reset today's entries
0. Exit
Enter choice: 3

Total today: 690.0 kcal, 97.0 g protein

--- Personalized Summary & Suggestions ---
Estimated BMR: 1616 kcal/day
Estimated TDEE: 2505 kcal/day (with activity)
Goal: Muscle gain
Target calories: ~2805 kcal/day
Protein target: ~117 g/day (1.8 g/kg)

Today consumed: 690 kcal and 97.0 g protein.
- You are below kcal target for gaining. Increase portion sizes and add calorie-dense healthy foods (nuts, milk, oats, peanut butter).

Protein advice: Need ~20.0 g more protein today.
- Add 1-2 protein sources: chicken (100 g ~31 g), eggs, paneer, lentils, milk.

Exercise suggestions:
- Focus on resistance training 3-5 times/week. Compound movements (squat, bench, row) and progressive overload.

Practical tips: Spread protein across meals, prefer whole foods, stay hydrated, sleep well, re-evaluate every 2-4 weeks.


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Caption