Title: Diet Planner Using Python

1. Introduction

Maintaining a healthy diet has become important for people of all ages. However, many students and beginners struggle to calculate their daily calorie needs and plan meals according to their goals.
This project aims to create a simple **Diet Planner** using Python that can calculate a user's calorie requirements and suggest a basic meal plan based on their diet type and fitness goal.
The project is written in a simple format so that even a Class 12 student can understand and execute it.

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2. Objective

The main objectives of this project are:

- To calculate the user's **BMR (Basal Metabolic Rate)**.
- To estimate **TDEE (Total Daily Energy Expenditure)** based on activity level.
- To adjust calories according to the user's goal (Shredding, Bulking or Maintaining).
- To generate a simple **vegetarian or non-vegetarian meal plan**.
- To recommend daily **water intake**.

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3. Technologies Used

- **Python 3**
- Basic input/output statements
- Functions
- Mathematical formulas

No external libraries are required.

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4. System Requirements

- Any system capable of running Python 3
- Code editor like VS Code / IDLE
- Command line or terminal

5. Methodology

Step 1: Collecting user details

The program takes inputs such as:

- Name
- Gender
- Age
- Height (cm)
- Weight (kg)
- Activity level
- Fitness goal
- Diet type

Step 2: BMR Calculation

The project uses the **Mifflin-St Jeor Equation**, which is one of the commonly used formulas for calculating BMR.

Step 3: TDEE Calculation

The BMR is multiplied by an activity factor depending on whether the user is lightly active, moderately active, or highly active.

Step 4: Goal-based Adjustment

- **Shred** → reduce calories
- **Bulk** → increase calories
- **Maintain** → keep calories same

Step 5: Meal Planning

A simple four-meal plan is generated:

- Breakfast
- Lunch
- Snack
- Dinner

Separate plans are created for **veg** and **non-veg** users.

Step 6: Water Intake Calculation

Water intake is calculated using a basic rule:
Weight × 0.035 liters

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6. Code Used in the Project

```
def calculate_bmr(gender, weight, height, age):
    if gender == "male":
        s = 5
    else:
        s = -161
    return (10 * weight) + (6.25 * height) - (5 * age) + s



def calculate_tdee(bmr, activity):
    if activity == "low":
        return bmr * 1.2
    elif activity == "medium":
        return bmr * 1.55
    elif activity == "high":
        return bmr * 1.9
    else:
        return bmr



def adjust_calories(tdee, goal):
    if goal == "shred":
        return tdee - 300
    elif goal == "bulk":
        return tdee + 300
```

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    else:
        return tdee


def get_meal_plan(diet):
    if diet == "veg":
        breakfast = "Oats with milk"
        lunch = "Dal, rice and vegetables"
        snack = "Fruits or nuts"
        dinner = "Paneer with roti"
    else:
        breakfast = "Eggs and toast"
        lunch = "Chicken, rice and vegetables"
        snack = "Fruits or yogurt"
        dinner = "Chicken curry with roti"

    return breakfast, lunch, snack, dinner


def main():
    print("---- DIET PLANNER ----")

    name = input("Enter your name: ")
    gender = input("Gender (male/female): ").lower()
    age = int(input("Age: "))
    height = float(input("Height in cm: "))
    weight = float(input("Weight in kg: "))
    activity = input("Activity level (low/medium/high): ").lower()
    goal = input("Goal (shred/bulk/maintain): ").lower()
```

```
    diet = input("Diet type (veg/non-veg): ").lower()

    bmr = calculate_bmr(gender, weight, height, age)
    tdee = calculate_tdee(bmr, activity)
    target_calories = adjust_calories(tdee, goal)

    breakfast, lunch, snack, dinner = get_meal_plan(diet)
    water = weight * 0.035

    print("\n----- RESULT -----")
    print("Name: " + name)
    print("BMR: " + str(round(bmr)))
    print("Daily Calorie Requirement: " + str(round(target_calories)))
    print("\nDaily Meal Plan:")
    print("Breakfast: " + breakfast)
    print("Lunch: " + lunch)
    print("Snack: " + snack)
    print("Dinner: " + dinner)
    print("\nRecommended Water Intake (liters): " + str(round(water, 2)))


main()
```

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7. Output (Sample)

---- DIET PLANNER ----

Enter your name: Rahul

Gender (male/female): male

Age: 18

Height in cm: 175

Weight in kg: 70

Activity level (low/medium/high): medium

Goal (shred/bulk/maintain): shred

Diet type (veg/non-veg): veg

----- RESULT -----

Name: Rahul

BMR: 1663

Daily Calorie Requirement: 2057

Daily Meal Plan:

Breakfast: Oats with milk

Lunch: Dal, rice and vegetables

Snack: Fruits or nuts

Dinner: Paneer with roti

Recommended Water Intake (liters): 2.45

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8. Conclusion

This project successfully calculates a user's daily calorie requirements and generates a simple diet plan based on their preferences. It demonstrates the use of mathematical formulas, input handling, conditional statements, and basic Python functions.
Overall, it is a practical and beginner-friendly project suitable for Class 12 students working on Python applications.

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9. Future Enhancements

- Adding a larger food database
- Including macro calculations (protein, carbs, fats)
- Allowing weekly or monthly diet plans
- Adding a GUI interface using Tkinter