IPO Example

Budgeting Calculator

Design a program to help manage personal budgets. The user of the program will enter their weekly wages, essential expenses (food, housing, and transport), inessential expenses, and yearly savings target. If the savings target cannot be met without cutting essentials, the program should tell the user it is an unrealistic target. If the user is on track to meet their target, the program should congratulate them. Otherwise, the program should calculate and display how much they need to cut their spending to reach their savings target.

Example output

```
Enter your weekly wages: $750
Enter your weekly food cost: $100
Enter your weekly housing cost: $250
Enter your weekly transport cost: $50
Enter the amount you spend per week on inessentials: $200
Enter your yearly savings goal: $10000

You need to reduce your spending by $42.31 per week to reach
your target.
```

Sample solution

Note that there are many ways to approach the processing for the program and this is just one.

We know we need to determine whether the savings target is realistic, and if it is, to determine whether the user is on track to meet the savings target. We can calculate the maximum realistic savings target, and the current projected savings, to compare to the user's target.

Input	Processing	Output
wages food_cost housing_cost transport_cost inessential_expenses savings_goal	total_essential_expenses projected_savings max_realistic_savings	spending_reduction

```
total_essential_expenses = food_cost + housing_cost + transport_cost
max_realistic_savings = (income – total_essential_expenses) × 52


if savings_target > max_realistic_savings
   display unrealistic savings target message

otherwise
   projected_savings = (income – total_essential_expenses – inessential_expenses) × 52
```

```
if projected_savings >= savings_goal
    display congratulatory message
otherwise
    spending_reduction = (savings_goal - projected_savings) / 52
    display spending_reduction and message
```