MTA Revision

Problem Solving

Problem Statement

Write a Python program that performs the following tasks:

1. **Prompt the user** to enter the number of items sold.
2. For each item, **prompt for the item's name** and **its price** (a positive float).
3. **Calculate the total sales** by summing up the prices of all items.
4. Print the **total sales amount**.
5. **Determine** if the total sales amount is more than $100. Print "Sales target met" if it is, otherwise print "Sales target not met".

Instructions

1. **Input Details**:
    - Number of items sold: Integer
    - Item name: String
    - Item price: Positive float
2. **Output Details**:
    - Total sales amount
    - Message indicating if the sales target of $100 is me

Examples :

Inputs :

3

Laptop

800.50

Mouse

25.75

Keyboard

45.20

out put :

```
Total sales amount: 871.45
Sales target met
```

Tips

- Use a loop to process each item's name and price.
- Keep a running total of the sales amount.
- Use conditional statements to check if the total sales exceed $100.

This problem is straightforward and doesn't require using lists, focusing instead on basic loops and conditionals.

Problem Statement

Write a Python program that performs the following tasks:

1. **Prompt the user** to enter a number representing the number of days worked in a week.
2. For each day worked, **prompt for the number of hours worked** (a positive float).
3. **Calculate the total hours worked** in the week.
4. **Determine** if the total hours worked exceed 40 hours. Print "Overtime" if it does, otherwise print "Regular hours".

Instructions

1. **Input Details**:
    - Number of days worked: Integer
    - Hours worked each day: Positive float
2. **Output Details**:
    - Total hours worked
    - Message indicating if overtime is applicable

Example

Input:

Copy code

```
5
8.0
7.5
8.0
9.0
8.5
```

Output:

mathematica

```
Total hours worked: 41.0
Overtime
```

Tips

- Use a loop to collect hours worked each day.
- Maintain a running total of hours worked.
- Use a conditional statement to check if the total hours exceed 40.

This problem is straightforward and focuses on basic arithmetic operations and conditional statements without requiring lists.

Last One :

Question 1: [5 marks]

Write an algorithm that prompts the user to enter the value of ***x***, and then calculates and prints *y(x)* using the equation below using the proper control instruction:

$$y(x) = \begin{cases} -2x - \frac{1}{2} & x \geq 0 \\ 2x - \frac{1}{2} & x < 0 \end{cases}$$

Just Try :

Question 2: [10 marks]

Write a python program that does the following:

- Prompt the user to enter the number of students in a class
- For each student, the name, the MTA grade /30, and the TMA grade /20 should be entered to the list ***Record.***
- For each student, the Continuous Assessment (CA), which is the sum of both assessments, should be calculated and added to the list as well.
- Print the count of students who got less than 15 in CA.
- List the names of the students who got less than 15 in CA one after another, separated by commas.

NB: Do not worry about validating the entry. We consider that all entered values are valid.