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6/12/2025

**1. Program Description**

This Python program is designed to help users track and analyze their monthly expenses. It prompts the user to enter different types of expenses along with their corresponding amounts. Once the user is done entering data, the program calculates the total amount spent, identifies the highest single expense, and the lowest one. These results are then clearly displayed to the user.

The program makes use of the reduce() function from the functools module to process the list of expenses efficiently.

**2. Functions Used**

main()

* Description: The main function that handles user input, data collection, and analysis.
* Parameters: None
* Returns: None
* Responsibilities:
  + Prompts the user to enter multiple expense records.
  + Stores expense data in a list of tuples.
  + Uses lambda functions within reduce() to calculate:
    - Total expenses.
    - Highest expense.
    - Lowest expense.
  + Displays the results.

**3. Logical Steps of the Program**

1. Import Required Module:

* Import reduce from Python’s functools module.

1. Initialize Expense List:

* Create an empty list to store tuples of the format (expense\_type, amount).

1. User Input Loop:

* Repeatedly ask the user to input an expense type and its amount.
* Allow the user to exit input by typing "done" as the expense type.
* Validate the amount input.

1. Check for Empty Input:

* If no expenses were entered, exit the program with a message.

1. Analyze Data Using reduce():

* Total Expenses: Add all expense amounts using a lambda function.
* Highest Expense: Compare each tuple to find the one with the largest amount.
* Lowest Expense: Compare each tuple to find the one with the smallest amount.

1. Display Results:

* Output the total amount spent.
* Clearly label and display the type and amount of the highest and lowest expenses.

**4. Link to Repository**

<https://github.com/Shinymon/COP2373>

**5. Screenshot of Output**

A computer screen shot of a program

AI-generated content may be incorrect.