**Name:** Estiward Casado Antigua

**Date Created:** February 16, 2025

**Program Description:**

This program asks the user to input their monthly expenses. For each expense the user should input the type that it is and the amount. The program should then return the total of each expense, the highest expense, and the lowest expense.

**Functions used in the Program (in order that they are called):**

1. **Function Name:** main()

**Description:**

This function has a while loop for the user to input information about their monthly expenses. It then uses the inputs to create two lists, one for the type of expense and another for the actual expense amount. The function then totals the expenses. It then finds the lowest and highest costs from the cost list, and then uses their indexes to find out their type from the type list. Finally, everything is displayed to the user.

**Parameters:** None

**Variables:**

* 1. expense\_type\_list (list) – list that stores user input of type
  2. expense\_cost\_list (list) – list that stores user input of costs
  3. expense\_type (str) – string is the user’s input for each time the while loop runs
  4. expense\_cost (float) – float is the user’s input for each time the while loop runs
  5. total\_expense (float) – the total of each item in the expense\_cost\_list
  6. lowest\_expense (float) – item with lowest value from the expense\_cost\_list
  7. lowest\_expense\_name (string) – item from the expense\_type\_list that corresponds to the item with the lowest value from the expense\_cost\_list
  8. highest\_expense (float) - item with highest value from the expense\_cost\_list
  9. highest\_expense\_name (string) - item from the expense\_type\_list that corresponds to the item with the highest value from the expense\_cost\_list

**Logical Steps:**

1. The lists are initialized.
2. A while loop is created.
3. For each iteration of the loop the expense type is input and then checked to see if anything was input. If not, then the loop ends. If something was input, then the user is prompted to input how much the expense costs. There is a try except statement where it is attempted to convert the cost into a float. All exceptions are caught and the program displays that the input was invalid and starts another iteration of the loop.
4. Then, the expense type and expense cost variables are appended to their respective lists.
5. Steps 3-5 are repeated until the user doesn’t type anything.
6. Once outside of the loop, reduce is used to take a sum of the expense cost list for the total expense variable.
7. Then, the lowest expense is found and assigned by using the min() function on the expense cost list. The lowest expense’s corresponding expense type is found by getting the index of the lowest expense.
8. The same is repeated for the highest expense except the max() function is used.
9. The total monthly expense is printed along with the lowest and highest expense along with their corresponding expense types.

**Returns:** None

**Logical Steps:**

1. Functools module is imported.
2. The main() function is called and its code is run.

**Repository Link:** <https://github.com/coppajo/COP2373>

**Output:**

**A screen shot of a computer

AI-generated content may be incorrect.**