

CS 118 Homework 5

Due Saturday, 11/2/2019 by 11:59 pm

Topics that you need to know BEFORE starting on this homework:

1. CSV files
2. Functions

First, STUDY the appropriate chapters in the text and look over programs that we do in class on CSV files and functions.

Then write a Python program, named **expendituresYourInitials.py**, which will read a file called **expenditures.csv** that has three fields: a year field, an item field, and an expenditure field.

The program should be coded as follows:

Define a function called **getDataFromFile** that will be passed two parameters, a file name and the name of a list. The function should read the CSV file referenced by the filename and put each list representing a line in the file onto the list passed in as a parameter.

Define a function called **menu** that does not take any parameters. The function should display the following menu to the user, get the user's choice and return that choice.

Enter 1 to see all of the data in the file.

Enter 2 to see the total expenditure for all years or just for a particular year.

Enter 3 to see the total expenditure for all items or for a specific item.

Enter Q or q to quit.

Define a function called **displayAllData** that will be passed the list that has the data and will display all of the data as individual values in neat rows and under appropriate column headings. (Look up how to format output neatly in your text.) This function should display the data 25 lines at a time until either the data runs out or the user enters Q (or q).

Define a function called **getTotalByYear** that will be passed one parameter, the list that was filled with data. The function will total the expenditures field as follows:

It should ask the user to enter either the word "every" or a particular year. If the user enters the word "every", then all expenditures in the expenditures column should be totaled and displayed by the function. Else, only expenditures for the particular year should be totaled and displayed.

Define a function called **getTotalByItem** that will be passed one parameter, the list that was filled with data. The function should total the expenditures field as follows:

It should ask the user to enter either the word "every" or a particular item. If the user enters the word "every", then all expenditures in the expenditures column should be totaled and displayed by the function. Else, only expenditures for the particular item should be totaled and displayed.

Outside of the functions and just below them your program should do the following:

Assign an empty list to a variable that will hold all of the data.

Assign the string " **expenditures.csv** " to a variable that will store the file name.

Call the getDataFromFile function and pass it the variable with the file name and the variable with the empty list.

Call the menu function and store what it returns in a variable.

While the user's choice is not q and user's choice is not Q do:

If the choice is 1, then call the displayAllData function and pass it the list.

If the choice is 2, then call the getTotalByYear function and pass it the list.

Else if the choice is 3, then call the getTotalByItem function and pass it the list.

Else print the fact that the choice was invalid.

Call the menu function and store what it returns in the same variable as above the loop.

Test your program THOROUGHLY and when you are done, ZIP up (compress) the Python file AND the CSV file into ONE zipped file and upload the ZIPPED file onto Canvas where you got these instructions.