import os

import csv

pybank\_csv = os.path.join("budget\_data.csv")

with open(pybank\_csv,encoding='utf-8-sig') as csv\_file:

    # CSV reader specifies delimiter and variable that holds contents

    csv\_reader = csv.reader(csv\_file, delimiter=',')

    csv\_header = next(csv\_reader)

    #a list to store the months/years from the csv file

    months\_years = []

    #this list holds the data of profit/ loss from the csv file

    profit\_loss\_list = []

    #this list changes the data from profit\_loss\_list from string to integer

    ints\_list = []

    #pushing data from csv file to above created lists

    for row in csv\_reader:

        profit\_loss\_list.append(row[1])

        months\_years.append(row[0])

    #changing the profit and loss data from str to int

    for element in profit\_loss\_list:

        ints\_list.append(int(element))

#this new\_list\_avg saves the difference between one month and the next

new\_list\_avg = []

#iterating through the data and pushing the difference from profit and loss

for i in range(0,len(ints\_list)-1):

    a = ints\_list[i]

    b = ints\_list[i+1]

    c = b-a

    new\_list\_avg.append(c)

    #the total profit and loss sum for the period

    total\_profit\_and\_loss\_sum = sum(ints\_list)

    #the amount of months recorded

    amount\_of\_months = len(months\_years)

    #the average change is the sum of all the diffrence in profit and loss for the period, divided by the amount of difference from month to month

    sum\_of\_average\_change = sum(new\_list\_avg)/(len(new\_list\_avg))

    #recoding the greatest increase from month to month for the period

    greatest\_increase\_in\_profits = max(new\_list\_avg)

    #using the above greatest increse, finding which index it is in the list

    greatest\_increase\_in\_profits\_index = new\_list\_avg.index(greatest\_increase\_in\_profits)

    #using the index number from above calculation and finding which matching month/year it is in the months\_years list

    greatest\_increase\_in\_profits\_month = months\_years[greatest\_increase\_in\_profits\_index + 1]

    #recoding the greatest decrease from month to month for the period

    greatest\_decrease\_in\_profits = min(new\_list\_avg)

    #using the above greatest increse, finding which index it is in the list

    greatest\_decrease\_in\_profits\_index = new\_list\_avg.index(greatest\_decrease\_in\_profits)

    #using the index number from above calculation and finding which matching month/year it is in the months\_years list

    greatest\_decrease\_in\_profits\_month = months\_years[greatest\_decrease\_in\_profits\_index + 1]

print("Financial Analysis")

print("\*"\*25)

print(f"Total months: " + str(amount\_of\_months))

print(f"Total: " + "$" + str(total\_profit\_and\_loss\_sum))

print(f"Average Change: " + "$" + str(round(sum\_of\_average\_change,2)))

print(f"Greatest Increase in Profits: " + greatest\_increase\_in\_profits\_month + "   " + "($" + str(greatest\_increase\_in\_profits) + ")")

print(f"Greatest Decrease in Profits: " + greatest\_decrease\_in\_profits\_month + "   " + "($" + str(greatest\_decrease\_in\_profits) + ")")

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