**Part 1:**

We were asked to analyze financial data of a company for part one of week 3’s module. We were asked to find the total number of months, net total profit/loss, record the changes between each row profit/loss and then average of those, and finally to show the greatest increase and decrease of profits.

Over a total span of 86 months, the company was able to maintain a positive net profit which is good because it means they did not lose money overall. The average change between profit/loss values is negative. This means the quantity (profit/loss amount) is decreasing over time. Also looking at the greatest increase in profit compared to the decrease shows that it pretty much evened out between to the two with $1.86 and $-1.83 so I guess the company broke even.

Final script:

#Import files

import os

import csv

#Create filepath to csv data

FilePath = "Childers\_submission 3/PyBank/Resources/Childers\_budget\_data.csv"

#Declare variables

total\_Months = 0

total\_ProfitLoss = 0

#Create list of deltas between each row's profit/loss amount

Deltas = []

last\_ProfitLoss = 0

#Set max and min

max\_Delta = -999999999

min\_Delta = 999999999

max\_Month = ""

min\_Month = ""

#Read the csv file data and delimiter makes each comma in csv turn into a new column

with open(FilePath, encoding='UTF-8') as csvfile:

csvreader = csv.reader(csvfile, delimiter=",")

#Read the header row first

csv\_header = next(csvreader)

print(f"CSV Header: {csv\_header}")

#Read each row after the header

for row in csvreader:

print(row)

#Incorporate changes between rows to calculate profit

if total\_Months != 0: #If not equal to 0

Delta = int(row[1]) - last\_ProfitLoss

Deltas.append(Delta)

#Check if there is a max/min delta

if Delta > max\_Delta:

max\_Delta = Delta

max\_Month = row[0]

elif Delta < min\_Delta:

min\_Delta = Delta

min\_Month = row[0]

else:

pass #Don’t do anything with the delta

#Assign as the last month profit

last\_ProfitLoss = int(row[1])

#Move to next row

total\_Months = total\_Months + 1

#Calculate profit loss from last month

total\_ProfitLoss = total\_ProfitLoss + int(row[1])

#Profit loss to the variable

total\_ProfitLoss = total\_ProfitLoss + int(row[1])

#Calculate average of the deltas and display aka take the total sum of changes and divide by number of deltas

avg\_Delta = sum(Deltas) / len(Deltas)

print(avg\_Delta)

#Show the total months listed, profit loss, and greatest decrease/increase

print(total\_Months)

print(total\_ProfitLoss)

print(min\_Delta)

print(min\_Month)

print(max\_Delta)

print(max\_Month)

#Export to a text file

with open("Childers\_budgetdata\_output\_module3.txt", "w") as txt\_file:

output = f"""

Financial Analysis

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Total Months: {total\_Months}

Total: ${total\_ProfitLoss}

Average Change: ${round(avg\_Delta, 2)}

Greatest Increase in Profits: {max\_Month} (${max\_Delta})

Greatest Decrease in Profits: {min\_Month} (${min\_Delta})"""

txt\_file.write(output)

Final text:

Financial Analysis

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Total Months: 86

Total: $45128396

Average Change: $-8311.11

Greatest Increase in Profits: Aug-16 ($1862002)

Greatest Decrease in Profits: Feb-14 ($-1825558)

**Part 2:**

This problem asked us to analyze election data. We needed to find out the number of voters, list of candidates, how many votes each candidate received, the percentage of votes each candidate received, and who won. We had to create a dictionary of candidates to place them in key pairs to manipulate the data by counting how many votes each candidate received. We then had to calculate the percentage of votes they each received and format an output to show the candidates, votes, percentage of votes, and winner. It looks like Diana won by a landslide and Raymon was probably an independent runner (his votes were so low!).

Final script:

#Import files

import os

import csv

#Create filepath to csv data

FilePath = "Childers\_submission 3/PyPoll/Resources/Childers\_election\_data.csv"

#Declare variables

total\_Votes = 0

#Create dictionary of candidates

candidate\_dictionary = {}

#Read the csv file data

with open(FilePath, encoding='UTF-8') as csvfile:

csvreader = csv.reader(csvfile, delimiter=",")

#Read the top row

csv\_header = next(csvreader)

print(f"CSV Header: {csv\_header}")

#Read rows after the header

for row in csvreader:

#Count votes

total\_Votes = total\_Votes + 1

#Store candidates and add 1 if candidate name is in the dictionary

candidate\_name = row[2]

if candidate\_name in candidate\_dictionary.keys():

candidate\_dictionary[candidate\_name] = candidate\_dictionary[candidate\_name] + 1

else:

candidate\_dictionary[candidate\_name] = 1

#Find which candidate won

winner\_vote = 0

winner = ""

#Compare votes

for candidate\_name in candidate\_dictionary.keys():

votes = candidate\_dictionary[candidate\_name]

if votes > winner\_vote:

winner\_vote = votes

winner = candidate\_name

#Show total votes

print(total\_Votes)

print(candidate\_dictionary)

print(winner, winner\_vote)

#Export to text file

with open("Childers\_electiondata\_output\_module3.txt", "w") as txt\_file:

output = f"""

Election Results

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Total Votes: {total\_Votes}

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for key in candidate\_dictionary.keys():

percent = round(100\*candidate\_dictionary[key]/total\_Votes, 2)

newLine = f"{key}: {percent}% ({candidate\_dictionary[key]})\n"

output += newLine

finalLine = f"""

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Winner: {winner}

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output += finalLine

print(output)

txt\_file.write(output)

Final text:

Election Results

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Total Votes: 369711

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Charles Casper Stockham: 23.05% (85213)

Diana DeGette: 73.81% (272892)

Raymon Anthony Doane: 3.14% (11606)

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Winner: Diana DeGette

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