**Take Home Exercise:**

**Description:** Write a function that reads and sort the incoming CSV file and outputs the result into another CSV files.

**Requirement:**

**1. Use pseudo codes to plan out your script**

**2. Use loops to sort the incoming rows by one of the columns**

**3. Output the result into another CSV file**

Pseudo Code:

1. Start
2. Create a Dataset with a list that contains the header ID, Name, and Age.
3. Write Data to CSV:
   1. Create output.csv to write the data set.
   2. Create and utilize a Csv writer
   3. Write the rows from the data to the new Csv file
4. Read data from CSV file to sort data:
   1. Open the new CSV file with data
   2. Create a csv reader object
   3. Read the row to find ID
   4. Store the header to sort.
   5. Store the data in a list
5. Define bubble\_sortID(rows):
   1. Set n as the number of rows
   2. For I from 0 to n-1:
      1. For J from 0 to n-i-2:
         1. If the ID in row[j] is greater than the ID in row [j+1]:
         2. Swap the rows
6. Call bubble\_sortID
7. Create a new sorted data file to ‘Sorted\_data.csv’
   1. Open the ‘sorted\_data.csv’
   2. Create a csv writer object to modify csv
   3. Write the header row
   4. Write the sorted data rows
8. Display the sorted Data from ‘sorted\_data.csv’
   1. Open “sorted\_data”
   2. Create a csv reader object
   3. Print the rows in ‘sorted\_data’
9. End

**Code using Loops (Bubble sort):**

import csv

data = [

    ['ID', 'Name', 'Age'],

    [5, 'Alice', 30],

    [2, 'Bob', 25],

    [3, 'William', 26],

    [8, 'Allen', 27],

    [1, 'ChanYoung', 26]

]

with open('output.csv', 'w', newline='') as csvfile:

    csvwriter = csv.writer(csvfile)

    csvwriter.writerows(data)

with open('output.csv', 'r') as csvfile:

    csvreader = csv.reader(csvfile)

    header = next(csvreader)

    rows = [row for row in csvreader]

def bubble\_sortID(rows):

    n = len(rows)

    for i in range(n):

        for j in range(0, n - i - 1):

            if rows[j][0] > rows[j + 1][0]:

                rows[j], rows[j + 1] = rows[j + 1], rows[j]

bubble\_sortID(rows)

with open('sorted\_data.csv', 'w', newline='') as csvfile:

    csvwriter = csv.writer(csvfile)

    csvwriter.writerow(header)

    csvwriter.writerows(rows)

with open('sorted\_data.csv', 'r') as csvfile:

    csvreader = csv.reader(csvfile)

    for row in csvreader:

        print(row)

**Sources:**

<https://www.geeksforgeeks.org/reading-csv-files-in-python/>

<https://stackoverflow.com/questions/17262256/how-to-read-one-single-line-of-csv-data-in-python>