CSE 8A Programming Assignment 3

Name should be formatted as (last, first)
If you are working solo you may leave the right column blank.

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Part 1 Code:

```
# Copy and paste ALL of your program's code (including comments!) here
# Make sure to set the font to Courier New
# IMPORTANT: Make sure your code is properly formatted. Code that does not have
correct indentation will lose marks.

# BEGIN PROVIDED CODE
# ingest_data: given a file name and a field name, returns a list containing
# all the data in the given file for the given field name
import csv
def ingest_data(filename, fieldname):
    file_object = open(filename, newline='')
    rows = csv.reader(file_object, delimiter=',')
    headers = next(rows)
    try:
        field_idx = headers.index(fieldname)
    except ValueError:
        print('The field name', fieldname, 'does not exist in the headers.')
        print('Here are the value field names in this file:')
        for h in headers:
            print(h)
        return
    data_list = []
    count = 0
    limit = 3000 # CHANGE LIMIT
    for line in rows:
        if (count >= limit):
            print('Too many entries, returning first', limit, 'entries.')
            return data_list
        try:
            field_value = line[field_idx]
        except IndexError:
            print('Skipping row #', count, 'because field does not exist')
            continue
```

```
        data_list.append(field_value)
        count = count + 1
    return data_list

#function returns the name associated with the highest number
def analyze_data(name, numbers):
    i = 1
    maxscore = numbers[0]
    while(i < len(numbers)):
        if(numbers[i] > maxscore):
           maxscore = numbers[i]
           i += 1
        elif(numbers[i] <= maxscore):
           i+= 1
    j = 0
    indexofmax = numbers.index(maxscore)
    return name[indexofmax]

names = ingest_data("2012_SAT_Results.csv", "SCHOOL NAME")
satmath = ingest_data("2012_SAT_Results.csv", "SAT Math Avg. Score")

#below code converts the string in the list to float
for k in range(0, len(satmath)):
     satmath[k] = float(satmath[k])


school_best_at_math = analyze_data(names, satmath)
print("The school with the highest average SAT Math score is:"
,school_best_at_math)


# END PROVIDED CODE
```

Part 2 Tests:

2.1 Include the result of calling your analyze_data function with three different inputs. For each, show the line of code that makes the function call. Explain why you chose that input and how you know the test is correct.

Test 1

```
>>> data1 = ['Henry' , 'Jew' , 'Muslim']
>>> data2 = [5, 9 , 8]
>>> analyze_data(data1, data2)
'Jew'
>>>
```

Line off code that makes the function call is: analyze_data(data1, data2)

I chose these inputs because I had to make sure that single digit values worked and it did. It is correct because it returned Jew, the guy with the highest number, which was 9.

Test 2
>>> data1 = ['Henry' , 'Dick' , 'Bob']
>>> data2 = [5.5, 5.4 , 5.6]
>>> analyze_data(data1, data2)
'Bob'

Line of code that makes the function call is: analyze_data(data1, data2)

I chose these values for input because I had to make sure my program works even with decimal values. As you can see, Bob gets returned because he had the highest number, 5.6.

Test 3
>>> datanames = ['Elon Musk','Nick Bostrom', 'Sam Harris', 'Stuart Russell', 'David Hume']
>>> datamoney = [25234423534,3245432,5875,14321234,576437]
>>> analyze_data(datanames, datamoney)
'Elon Musk'
>>>
Line of code that makes the function call is: analyze_data(datanames, datamoney)

I chose these values for the input because I had to make sure that the list can handle more than 3 names and 3 numbers and also it can handle numbers greater than single digit.

*2.2.1 Show the result of running your full program **once**.*
========== RESTART: /Users/rands/Coding /Idle files/assignment3.py ==========
The school with the highest average SAT Math score is: STUYVESANT HIGH SCHOOL
>>>

2.2.2 Explain what data is in the data set you chose, what the program is calculating, and explain why the answer the program produces is correct.
The data set I chose are various schools in New York and their average sat math score. The program is calculating which school has the highest sat math average. The answer the program produces is correct because I know what the highest score is in the spreadsheet (735) and the program actually gives out the high school with that specific average score.

Known Bugs or Issues:
If you have known bugs or issues with your code, let us know here. If you think it works correctly, justify why.
I have no known bugs and my program works perfectly because it gave back out the right high school which was the high school with the highest sat math score avegage. I know this is correct because I ranked the scores already in order (from highest to lowest) in the excel spread sheet and the Stuyvesant high school came out on top.