Project8

Listen

Project 8: Regular Expressions

Prob. 1

Using Regular expression, write a python program to parse the text file named 'student_data.txt'. Each line of the file contains a student's name and exam grade for four exams of the class, i.e., name exam1 exam2 exam3 exam4. Do the following:

1. Read the file and create a dictionary called students that use a student's name as the key and the list of exam grades as the value. Print the dictionary
    1. for example, 'Ashlyn':[89.0, 76.0, 78.0, 55.0] as a dictionary items
    2. The value is a list
    3. Each value in the list is a float number, not a string
    4. You must use REGULAR EXPRESSION to parse each line of the text file. Any other methods (do not use split()) would receive zero.
2. Extract and print all students' names.
3. Calculate the sum of all students for Exam1. When printing the result, show only two digits in the fractional part
4. Calculate the average of all students for Exam2. When printing the result, show only two digits in the fractional part
5. Calculate the class grade for each student. When printing the result, show only two digits in the fractional part
6. Calculate the average of the class. When printing the result, show only two digits in the fractional part
7. Find out how many students in the class is above average the the class.

Print out the results as follows.

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The result dictionary is {'Ashlyn': [89.0, 76.5, 78.0, 55.0], 'Aston': [90.0, 73.0, 95.0, 100.0], 'Austin': [97.0, 97.0, 72.0, 76.0], 'Baer': [74.0, 55.0,
87.0, 90.0], 'Battle': [93.0, 94.0, 95.0, 100.0], 'Blades': [59.0, 81.0, 94.0, 90.0], 'Brandt': [43.0, 76.5, 60.0, 57.0], 'Brooker': [86.0, 69.0, 82.0,
44.0], 'Cagle': [75.0, 60.0, 62.0, 86.0], 'Christopher': [83.0, 87.0, 81.0, 92.0], 'Clarke': [100.0, 96.0, 96.0, 100.0], 'Cody': [94.5, 80.0, 82.0, 83.0],
'Holmes': [89.0, 76.0, 78.0, 55.0], 'James': [90.0, 73.0, 95.0, 100.0], 'Jason': [97.0, 97.0, 72.0, 76.0], 'John': [93.0, 94.0, 95.0, 100.0], 'Johnson':
[59.0, 81.0, 94.0, 90.0], 'Jordan': [43.0, 87.0, 60.0, 67.0], 'Kaneshiro': [86.0, 78.0, 82.0, 44.0], 'Kelly': [75.0, 60.0, 62.5, 86.0], 'Malik': [83.5,
87.0, 81.0, 92.0], 'McFadden': [100.0, 96.0, 96.0, 100.0], 'Mercer': [94.0, 80.0, 82.0, 67.0], 'Miller': [92.0, 80.0, 79.0, 98.0], 'Phillip': [90.0, 73.0,
95.0, 100.0], 'Rohrer': [97.0, 97.0, 72.0, 76.0], 'Russell': [74.0, 55.0, 87.0, 90.0], 'Sharpton': [93.0, 94.0, 95.0, 100.0], 'Silva': [59.0, 81.0, 94.0,
90.0], 'Smith': [43.0, 69.0, 60.0, 75.0], 'Suri': [86.0, 88.0, 82.0, 44.0], 'Talkington': [75.0, 60.0, 62.0, 86.0], 'Tucker': [90.0, 73.0, 95.0, 100.0],
'Tyler': [97.0, 97.0, 72.0, 76.0], 'Tyson': [74.0, 55.0, 87.0, 90.0], 'Vincent': [59.0, 81.0, 94.0, 90.0], 'Watford': [86.0, 78.0, 82.0, 44.0], 'Wilson':
[75.0, 60.0, 62.0, 86.0], 'Woodside': [83.0, 87.0, 81.0, 92.0]}.

The students extracted from the file are: ['Ashlyn', 'Aston', 'Austin', 'Baer', 'Battle', 'Blades', 'Brandt', 'Brooker', 'Cagle', 'Christopher', 'Clarke',
'Cody', 'Holmes', 'James', 'Jason', 'John', 'Johnson', 'Jordan', 'Kaneshiro', 'Kelly', 'Malik', 'McFadden', 'Mercer', 'Miller', 'Phillip', 'Rohrer',
'Russell', 'Sharpton', 'Silva', 'Smith', 'Suri', 'Talkington', 'Tucker', 'Tyler', 'Tyson', 'Vincent', 'Watford', 'Wilson', 'Woodside']

The sum for exam 1 is 3166.00.

The avg for exam 2 is 79.03.

Ashlyn's grade for the class is 74.62.
Aston's grade for the class is 89.50
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Aston's grade for the class is 89.50.
Austin's grade for the class is 85.50.
Baer's grade for the class is 76.50.
Battle's grade for the class is 95.50.
Blades's grade for the class is 81.00.
Brandt's grade for the class is 59.12.
Brooker's grade for the class is 70.25.
Cagle's grade for the class is 70.75.
Christopher's grade for the class is 85.75.
Clarke's grade for the class is 98.00.
Cody's grade for the class is 84.88.
Holmes's grade for the class is 74.50.
James's grade for the class is 89.50.
Jason's grade for the class is 85.50.
John's grade for the class is 95.50.
Johnson's grade for the class is 81.00.
Jordan's grade for the class is 64.25.
Kaneshiro's grade for the class is 72.50.
Kelly's grade for the class is 70.88.
Malik's grade for the class is 85.88.
McFadden's grade for the class is 98.00.
Mercer's grade for the class is 80.75.
Miller's grade for the class is 87.25.
Phillip's grade for the class is 89.50.

Rohrer's grade for the class is 85.50.
Russell's grade for the class is 76.50.
Sharpton's grade for the class is 95.50.
Silva's grade for the class is 81.00.
Smith's grade for the class is 61.75.
Suri's grade for the class is 75.00.
Talkington's grade for the class is 70.75.
Tucker's grade for the class is 89.50.
Tyler's grade for the class is 85.50.
Tyson's grade for the class is 76.50.
Vincent's grade for the class is 81.00.
Watford's grade for the class is 72.50.
Wilson's grade for the class is 70.75.
Woodside's grade for the class is 85.75.

The average for the class is 80.87.

There are 22 students in the class whos grade is above average of the class
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Note:

1. You must use REGULAR EXPRESSION to parse the text file. Any other methods would receive zero.
2. You must open and read the file to parse the text. You cannot copy the text into your python script for analysis.
3. Only the python program is allowed. You cannot process the dataset in other tools such as Excel, OpenOffice, SSDT, etc.
4. You cannot modify the dataset in the text file.
5. You cannot extract the data manually (i.e. copy and paste the data from a file).
6. You cannot calculate the sum and average manually or using a calculator.
7. **When you are submitting your Project 8 Assignment to the assignment drop box, please remember to include the student_data.txt file in your submission.**