

CS 1510: Intro to Computing - Fall 2017

Assignment 6: Examining Olympic Medal Counts

Code Due: Tuesday, October 24, 2017, by 11:59 p.m.

Introduction

We will look at the idea of how many olympic medals were won by a country compared to it's population. The 2014 population of the medal-earning countries that participated in the [Sochi](#) winter olympics was 2,516,757,975 people. Further, 295 medals were won in the winter olympics in Sochi. This means that there were:

$295 / 2,516,757,975 * 10,000,000 = 1.172$ medals awarded for every 10,000,000 people

For each country, we can use its population and its medal count to calculate whether it was above average, below average, WELL above average, or WELL below average based on:

Ratio	Result
Less than 0.672	WELL Below Average
0.672 - 1.171	Below Average
1.172	Average
1.173-1.672	Above Average
Greater than 1.672	WELL Above Average

The Assignment

Download the data from the 2014 Winter Olympics in Sochi: **hw06.csv** (available on elearning and the course website)

This is a text file (although it is likely that your operating system will recognize it as openable by Excel and give it an Excel icon). Open this file with either Excel or a text editor. Notice that this file consists of a header line and then a sequence of data consisting of comma separate fields of country name, population, and medal count.

Write a program (called hw6.py) that:

- opens this file for reading
- reads and throws away the first line since it is the header line
- for each country line:
 - splits it into six components (remember how to use the split method of a string)
 - adds the gold, silver, and bronze medal counts to get a total medal count
 - uses population and medal count to calculate its average per 10 million people
 - prints to the screen a message with country, ratio, and an indication of whether this is above or below average

Once you get that working, modify the program to write to a file called results.txt rather than print to the screen.

HINT: Use the round function to round your computations to 3 decimal places. For example:

```
>>> round(1.172142903, 3)
1.172
>>>
```

Finally, after you have finished writing to the results.txt file, **print** the country with the highest and lowest ratios.

NOTE: You do NOT need to use functions in this assignment.

Notes and requirements:

1. Make sure that you save your program in the correctly named files
2. Use meaningful variable names with the proper style (use_snake_casing)
3. Use meaningful constants and names where appropriate and use proper style
4. Every file containing python code that you submit should contain a header comment block containing three pieces of information as shown below:

```
"""
```

```
File: filename
```

```
Author: your-name
```

```
Description: one-line description of the file
```

```
"""
```

Final Submission

Submit the file **hw6py** to eLearning.