

PA06

Examining Olympic Medal Counts

Objective: Get more practice with loops, conditionals, and files

Code due by Monday, March 24th at 11:00 AM

Paperwork due the same day at the start of class

An introduction

We will look at the idea of how many Olympic medals were won by a country compared to its population. The current 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
1.672 and higher	WELL Above Average

The Assignment

Download the following data from the 2014 Winter Olympics in Sochi:

- [medalData.csv](#)

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 basic 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 pa06.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 it's 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
>>>
```

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

Final Submission

Please prepare all of this in a file called pa06.py .

To upload your homework for grading, log on to eLearning, select this class, and navigate to the "Assignment Submissions" area. Click on the "Programming Assignment 6" folder and upload the python file in its designated location.

In addition to this, you should print paper copies of your code and design document. Please submit these stapled printouts in the following order in class the day the assignment is due:

- design document
- pa06.py