Programming Project #7

Assignment Overview

The goal of this project is to gain more practice with dictionaries and creating functions. It is due before midnight of October 28. It is worth 50 points, 5% of your overall grade.

Background

In this project you will read in poverty data collected by the 2010 U.S. census for each county in Michigan. We will do some statistics using this data.

The data comes from the U.S. census of 2010 and has been updated for 2011. It is located at http://www.census.gov//did/www/saipe/data/statecounty/data/2011.html and is available in a number of formats. We will work with the txt version. The web site describes the format of this text file, indicating the columns the data occurs in. For the most part, we can ignore the column numbers and just work with the file as space-separated data.   However, the county name may have spaces in it so it is best to use a string slice.

Some things to note about the data:
- The first line has data for the entire state. We are only interested in county data—the rest of the lines in the file.
- The data we care about for each **county** are:
    - count of people age 0-17 (i.e., children) in poverty (index 8)
    - percentage of people age 0-17 (i.e., children) in poverty (index 11)
    - median household income (index 20)
    - county name (columns 193-238)

Using this data:
1. Find the county with the <u>highest</u> percentage of children in poverty and **print** its name, percentage, count of children in poverty and the median household income.
2. Find the county with the <u>lowest</u> percentage of children in poverty and **print** its name, percentage, count of children in poverty and the median household income.
3. Loop to continually prompt for a county and **print** its name, percentage, count of children in poverty and the median household income. The entered value should not be case sensitive and only the county name is used, i.e. entering "clinton" or "Clinton" gets the data for Clinton County (that is, you don't search using "Clinton County"). Reprompt if county is not found. Type 'q' or 'quit' in any case to quit the loop.

Program specifications

Required functions:

     a. Each print specified above will print the same data so create a `print_data` function. This function will be used by the next functions.

     b. Create a function for the highest percentage data: `print_highest_data`

     c. Create a function for the lowest percentage data: `print_lowest_data`

     d. Create a function for the county data: `print_county_data`

Deliverables

The deliverable for this assignment is the following file:

       proj07.py – the source code for your Python program

Be sure to use the specified file name and submit it for grading via the **handin** system before the project deadline.

Notes

1. Python 3 has a special formatting instruction to insert commas within numbers. It is specified by including a comma in the format specifier:

```
print("{:16,d}".format(12345))
          12,345
```