Python for Informatics

Assignment 3

"Looping, Searching, and Slicing"

Background:

Part 1 of this assignment requires that you receive input from the user. This means that you need to utilize the ***input(…)*** function. By supplying a string literal to the input(…) function, you can prompt the user so that they understand that they are supposed to input a number, or 'done'.

Part 2 of this assignment requires that you process a string variable in your code named ***avg_str***. Note that there is no mention of a user in the description of Part 2. ***In Part 2 of this assignment, there is no user!***

Description:

1. Write a program called "process_numbers.py" that repeatedly reads numbers input by the user until the user types "done". After the user has entered "done", print out (i.e. *print*) the total, count, maximum, minimum, and average of the entered numbers. Note that you are not allowed to use a ***list*** for this assignment. Lists are not covered until Chapter 8 of our textbook.
2. Given the following python statement…

   avg_str = 'Average value read: 0.72903'

   Use the ***find()*** method and ***string slicing*** to extract the portion of the string after the colon character and then use the ***float()*** function to convert the extracted string into a floating point value. Your code should provide a "general" solution, meaning that the number you extract could be any floating point number (it may or may not be preceded by a space, it may or may not begin with "0", it may or may not end with "3", and its length is not known before your program executes). A generalized solution will successfully extract values such as "***0.72903",*** "***3.14159265359",*** "***2.81",*** etc.. In other words, your solution will not make any *a priori* assumptions regarding the format or content of the number, other than it being a floating point value that follows the colon character. No validation of the numeric value is required. Your code should only assume that it is a value that can be properly converted into a floating point value. You make use of the string value as it is, but it can change by way of editing. Through editing operations, the numeric value may

change, and spaces may be added or removed between the colon and the numeric value. Except for numeric characters and spaces, no extra characters, special or otherwise, will be introduced.

Save your code in a file named “parse_float.py”.

3. Read the Python document on string methods at this URL:

   https://docs.python.org/3.5/library/stdtypes.html#string-methods

   Spend some time playing with some of these methods. Note that the brackets ([]) in the documentation denote that the bracketed elements are optional.

Deliverable:

Two Python .py files, named “process_numbers.py” and “parse_float.py” respectively, submitted as attachments at our course shell assignment page. Please ensure that your full name is specified at the top of each file within a Python comment.

Submission Deadline:

Please see the course schedule in our syllabus for all assignment submission deadlines.

Peerwise Reminder:

Do you know where your multiple choice Peerwise questions are? Are you letting 10 easy course points slip away?