

CSCI/CMPE 4341 Topics: Programming in Python

Assignment #5

Instructor: Dr. Xiang Lian
Due Date: See the course Web page

The purpose of this assignment is for you to become fluent in manipulating sequences. Please store the numbers and deviation from mean and deviation squared in sequences. There are other simpler ways to calculate standard deviation. However, I expect you to follow this formula and create a sequence (e.g., list) as I suggested.

Write a Python program to read numbers, entered as a text stream delimited by space, into a sequence and calculate standard deviation on the set of numbers. **You can write the Python program for the command-line window (not necessary with GUI).**

Here is the formula for standard deviation:

$$\sigma = \sqrt{\frac{\sum [x - \bar{x}]^2}{n - 1}}$$

σ = lower case sigma
 \sum = capital sigma
 \bar{x} = x bar

where:

- Lower case sigma means 'standard deviation';
- Capital sigma means 'the sum of'; and
- x bar means 'the mean'.

Here are the steps needed to solve this formula:

1. Enter a set of scores;
2. Find the average of these scores;
3. Find the deviation of each of the scores from the mean and square the difference;
4. Sum all the deviation squared;
5. Divide the sum by total number of scores minus 1;
6. Find the Square root of the result, which is exactly the standard deviation.

Please submit:

1. Program listing (*.py source code; or the entire package for GUI applications), and

2. The screen captures (as given in the Appendix)

Please submit all files in a compressed *.zip file.

- Your program should begin with a comment section that would include the following:

PROGRAMMERS NAME: _____

STUDENT ID: _____

CLASS: _____ ASSIGNMENT #: _____

DATE DUE: _____ DATE TURNED IN: _____

- Upload the *.zip file you created to the Blackboard. The subject of the submission must include the following information:
[CSCI 4341] [Assignment #] [Your Name Here] [Your Student ID Here]

- Appendix: Examples of Screen Captures**

