

# CSCI/CMPE 3328 Object Oriented Programming in C#

## 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 arrays. Please store the numbers and deviation from mean and deviation squared in arrays. There are other simpler ways to calculate standard deviation. However, I expect you to follow this formula and create arrays as I suggested.

Write a program to read numbers, entered as a text stream delimited by space, into an array and calculate standard deviation on the set of numbers. Here is the formula for standard deviation:

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

$\sigma$  = 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, 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/CMPE 3328] [Assignment #] [Your Name Here] [Your Student ID Here]

- **Appendix: Examples of Screen Captures**

