###### Information and Computer Science Department

**ICS 103: Computer Programming in C**

**First Semester 2018-2019 (182)  
Homework No. 3  
[Posted: Thursday March 7]  
[Due Date: Monday March 18, 2019 @ 11:59 PM (Before Midnight)]**

**Submission Guidelines:**

Submit a zipped file containing the following files:

* HW3.c (C source file) containing your answer to the programming question.

**PLEASE DO NOT INCLUDE .EXE FILES IN YOUR SUBMISSION**

The zipped file should be named as follows:

**HW\_3\_XXXXXXXXX\_YourFamilyName\_Lecture\_Section\_No.zip**

where:

XXXXXXXXX is your 9 digit KFUPM ID.

YourFamilyName is your family name

Lecture\_Section\_No is the number of your ICS 103 lecture section

Submission should be made through your ICS 103 Lecture section Blackboard course page under **HW\_3 Assignment** submission link.

**Important Notes:**

* Submission of the homework solution should be in a zipped filed with the format specified above. **Any different formatting/naming will result in reducing the total homework score by half!**
* **Cheating is taken seriously**. Any cheating attempt will result in 0 for this homework and the remaining ones.
* **EACH STUDENT IS REQUIRED TO DO THE HOMEWORK ALONE**. COPYING FROM ANY SOURCE IS REGARDED AS CHEATING.
* **No late submissions are allowed**.
* **Submissions via email are not accepted and will be simply ignored**.
* **You must use proper indentation and meaningful variable names in your programs.**

**Problem statement**

Write a modular C program to compute the mean and standard deviation of three numbers inserted by the user. You should follow the following steps in developing the program:

1. Your program should continue displaying the following menu until the user inserts 4.

|  |
| --- |
| 1. Compute mean and standard variation in the ***main*** function 2. Compute mean in **MeanFun** function and standard variation in **StdFun** function 3. Use  ***MeanAndStd*** to compute the mean and Std 4. Quit |

The above menu should be created in a function called ***Menu*** function. Getting the choice from the user will be in ***Menu*** function.

1. If the user inserts 1, do the following:

* Get three numbers from the user in the ***main*** function, then compute and display the mean and standard deviation in the ***main*** function (no functions to be used in this part, all computations will be in the ***main*** function).

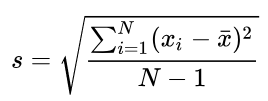
1. If the user inserts 2, do the following:
   1. In the ***main*** function, get three numbers from the user
   2. Call **MeanFun** function to compute the mean of the three numbers that are inserted in the main function.
   3. Call **StdFun** function to compute the standard deviation using the mean computed in ***MeanFun*** function and the three numbers that are inserted in the ***main*** function.
   4. Print the mean and standard deviation in the ***main*** function.
2. If the user inserts 3, do the following:
   1. In the ***main*** function, get three numbers from the user and call a function called ***MeanAndStd*** function
   2. In ***MeanAndStd*** function, call **MeanFun** and **StdFun** functions,created in the previous question, to compute the mean and standard deviation.
   3. Print the mean and standard deviation in the ***main*** function.

Notes:

* Mean of three numbers (number1, number2, and number3) is computed as following:

**=**

* The standard deviation is computed as follows:

 where is the mean value of N numbers inserted by the user. In this problem, N is 3.

Sample run

