CISC 3110 Ari Mermelstein

Homework #1 : Due September 7

In this assignment, you will maintain data on students in a class. Each student has a first name, last name, an exam grade, and a letter grade (which all must be stored). There are no more than 100 students in the class.

1. You will read in data from a file called students.txt. Each line in the file will look like this:
   Ari Mermelstein 89
2. After you have read in the information for all of the students, you must calculate the following.
   a. Compute the letter grade for each student. Print out each student's name with their associated letter grade.
   b. Display the name and grade of the student who attained the highest grade.
   c. Calculate and display the mean (average) of the grades in the class.
   d. Calculate and display the standard deviation of the grades in the class.

The formula for standard deviation is as follows.

$$\sigma = \sqrt{\frac{1}{n-1}\sum_{i=0}^{n-1}(test_i - \bar{X})^2}$$

This means, subtract each test from the average, then square the result of the subtraction, and add it to a running total. After you've done this, divide by n-1 and take the square root. σ is the symbol for standard deviation and X is the symbol for the mean.

Note: All calculations and file reading must be done in functions. Your main program should be relatively short. I'm looking to see your programming style and your thought process. All functions should be commented explaining to me what they do. I can't read your minds. It is your choice how you choose to store the names and grades. You may do this as 4 parallel arrays (one for each datum) or as a simple class with 4 data members, this is entirely up to you. You must also create the data file by yourself.