

Project 10 Sample Solution

- Read the project description.
- Run the provided sample solution for all sample input files provided.
 - All data in input files is assumed correct
 - Try entering an invalid file name to open

`/home/work/cpe211/Executables/Project_10/Project_10_solution`

`/home/work/cpe211data/Project_10/CompareSolution.bash Project_10.cpp`

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Project 10 Overview

- Use a one-dimensional array to hold up to 50 floating point values
- Read in floating point numbers from an input file (anywhere from 1 to 50 values)
- Use functions to calculate various statistical values
- User defined functions are called from main only
- All output of the calculated statistical values is done in main

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Project 10 Constraints

- Global variables are not allowed
 - Using global variables, that is variables declared outside of any function body, will result in **zero (0) credit on this project**
- Functions must be written to:
 - Read in the floating point numbers
 - Find the median value of the numbers entered
 - Find the average of the numbers entered
 - Sort the numbers from high to low
 - Find the variance of the numbers
 - Open the input file: The input file is continually prompted for until a correct file name is entered

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Project 10 Operations

- Open a file for input
- Read the integer to determine number of float values that are to be used in calculations
- Read the float values into a one-dimensional array
- Calculate the various statistical values of the numbers
- Output the information to the terminal

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Input File Information

- First number in the file is the number of floating point values to read. This number needs to be verified as successfully read.
- Reading of the first number acts as a priming read for determining if the input file is empty.
- Specified number of floating point numbers follow the first number
- There is one number per line. Read all numbers with the extraction operator – no need to use the ignore function. Test the file stream status after each number is read to verify that a number was read.

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Read the Description

- Read the project description
- No user defined function can call other user defined functions.
- All output of information is done in main
- All calculations (except standard deviation) are performed in functions and values are returned to main.

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