Cal State LA
CS 4440

Project Report

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April 17, 2023

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Report Details

Approach: My first approach is to attempt to implement the three methods: Mean, Standard Deviation, and Median. Those three are the main functions of how the project would run. Those three methods were easy to implement with the math library since it was already given, and I had to put them together. I have never used threads before, so I'm still trying to figure out how to implement them. My approach is pretty standard because I do what I already know and finish up what I don't know. After researching threads, I got the hang of it, and it was pretty simple to implement into my program. I had an idea of how to implement threads, but executing my idea was the most challenging part. Ideas and creativity are straightforward to brainstorm, but when it always comes to performing the part, it's hard, but you will get through it and provide a finished product in the end.

Task allocation:

- Managing the tasks that need to get done is like my approach. I manage my tasks of implementing the things I know, which are the three methods: Mean, Standard Deviation, and Median. Those are the tasks I did first, then I just finished whatever was left. Of course, I researched the three methods and how to implement threads for a quick overview before starting anything. Since the project has a math function, I must add a math library header file, "math.h" for the program to execute and run math functions.
- After sorting out my three methods, I implemented the threads. It was challenging, but after experimenting with it, it was pretty simple and straight to the point of how it works.
- Therefore, I tried my best to tidy up the code overall and add comments here and there if it's needed for the users to understand the code better.

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Methods: There are three methods I had to make, which are the Mean, Standard Deviation, and Median. The details of the three methods were pretty easy to implement because it's based on an already provided equation. I didn't have to form an equation from scratch. Also, I had to implement three threads since there are three methods. Each thread worker would be synchronized altogether at the end. If you just look at the outside of threads, there aren't many details about threads, but if you think about it and dive into it, you'll see a better image and details of how threads are put all together.

Difficulties:

- The first difficulty I encountered was compiling the standard deviation C file because it had the "math" library. To fix that, I had to add something else at the end of the compile line. "gcc -o project project.c" to "gcc -o project project.c -lm." With "-lm" added at the end, it links my program with the library for it to compile the math library commands such as "pow" and "sqrt" for my code. Without "-lm," it was unable to find where the functions "pow" and "sqrt" is defined.
- Another difficulty is related to adding "lm" for the math library, but this time it's for threads. I was getting an error compiling it, but after researching, I had to add "-lpthread" at the end of compiling, just like the math library issue I had.
- Threads implementation was complex because it was my first time using them in C programming. CS 3035 class taught me C programming but not with threads, so I have yet to gain experience with it. Overall, the C programming experience made it easier for me to adapt and get along with it.

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Sources:

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