EECE 4029: Operating Systems and Systems Programming

SPRING 2022

HOMEWORK II

Given: Feb. 15, 2022

Programming problem:

Write a multithreaded program that calculates various statistical values for a list of numbers. This program will be passed a series of numbers on the command line and will then create three separate worker threads. One thread will determine the average of the numbers, the second will determine the maximum value, and the third will determine the minimum value. For example, suppose your program is passed the integers

90 81 78 95 79 72 85

The program will report

The average value is 82

The minimum value is 72

The maximum value is 95

The variables representing the average, minimum, and maximum values will be stored globally. The worker threads will set these values, and the parent thread will output the values once the workers have exited.

Please submit your source code for this question. To receive full credits for this problem, please include screen shots of your test results.

```
osc@ubuntu:~$ gcc -pthread -o q6 q6.c
osc@ubuntu:~$ ./q6 1 2 3 4 5
Arguments entered: 1 2 3 4 5
The average value is 3.000000
The maximum value is 5
The minimum value is 1
osc@ubuntu:~$
```

```
osc@ubuntu:~$ ./q6 90 81 78 95 79 72 85
Arguments entered: 90 81 78 95 79 72 85
The average value is 82.857140
The maximum value is 95
The minimum value is 72
osc@ubuntu:~$ _
```