Operating System Lab

February 15, 2016

1. 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 FIVE separate worker threads. One thread will determine the average of the numbers, the second will determine the maximum value, the third will determine the minimum value, the fourth will determine the standard deviation and the fifth will determine the median 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 standard deviation value is 7.78

   The median value is 81

   The variables representing the average, minimum, and maximum, standard deviation and median 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.

2. Write a multithreaded program that outputs prime numbers. This program should work as follows: The user will run the program and will enter a number on the command line. The program will then create a separate thread that outputs all the prime numbers less than or equal to the number entered by the user.