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PA3: Bucket Sort

3/30/2017

Overview:

Project 3 requires that I take a set of numbers read in from a file and I get the size and all the numbers and sort them in an array. Part 1 of the assignment is implementing bucket sort sequentially and part two requires that I implement bucket sort in parallel.

Sequential Bucket-Sort

Sequential bucket sort was pretty fast since it was a smaller set but big enough to get some data and see a relation for sequential. Below is a sample of the configuration file which I called “data.txt”.

10000
274
427
251
203
232
370
10
324
179

The top number is number of numbers in the file and all the numbers below are from 1 - 500.

Running sequential bucket sort produced a result that was not unusual since bucket sort is O(n^2). Below in Figure 1 is a graph with the times plotted for each sort.

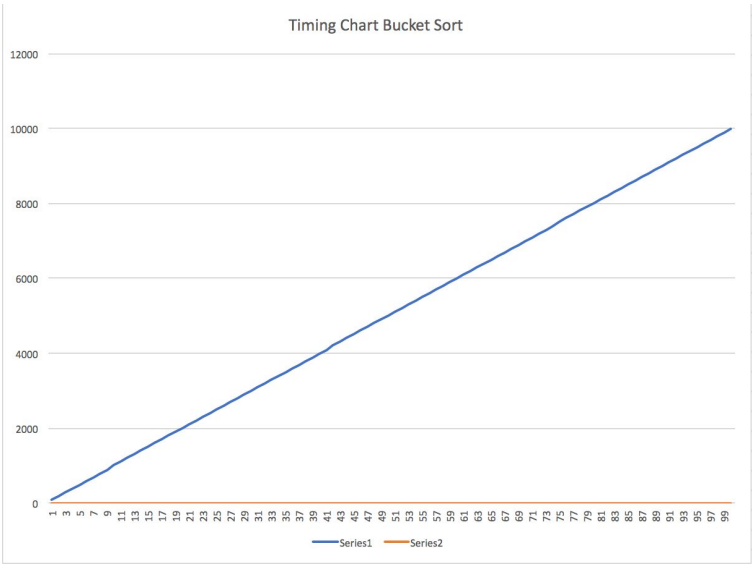

Figure 1: In the graph above, the Y-Axis is the size of the data set and the X-Axis is the time taken. As the numbers get larger, so does the execution time.