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INFO 6205
Program Structures & Algorithms
Assignment 4 – Li Hua

Objective:

The objective of this experiment to implement a parallel algorithm and compare the efficiency of different partition threads with arrays of integers in different size (cutoff point) by measuring the time of sorting.

Experiment Design:

I implemented the parallel algorithm with different cutoff values and number of threads. And then changed cutoff points to check the influence it brought to the time complexity of two different algorithms. After that, I increased the number of threads to power of 2 to test the time consumed.

For observation consideration, I took the total time for 10 experiments as the expected total time cost.

Please check the Excel file for detailed dataset.

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Conclusion:

According to the chart, we can draw the conclusion that under 2 threads, no matter how large the array size (which equals to cutoff point) is, parallel sorting took less than half time of what system sorting took.

For multithreads experiment, when I increased the threads number to 4 threads, parallel sorting took less time than 2 threads. While 8 threads parallel sorting took almost same time with that of 4 threads.