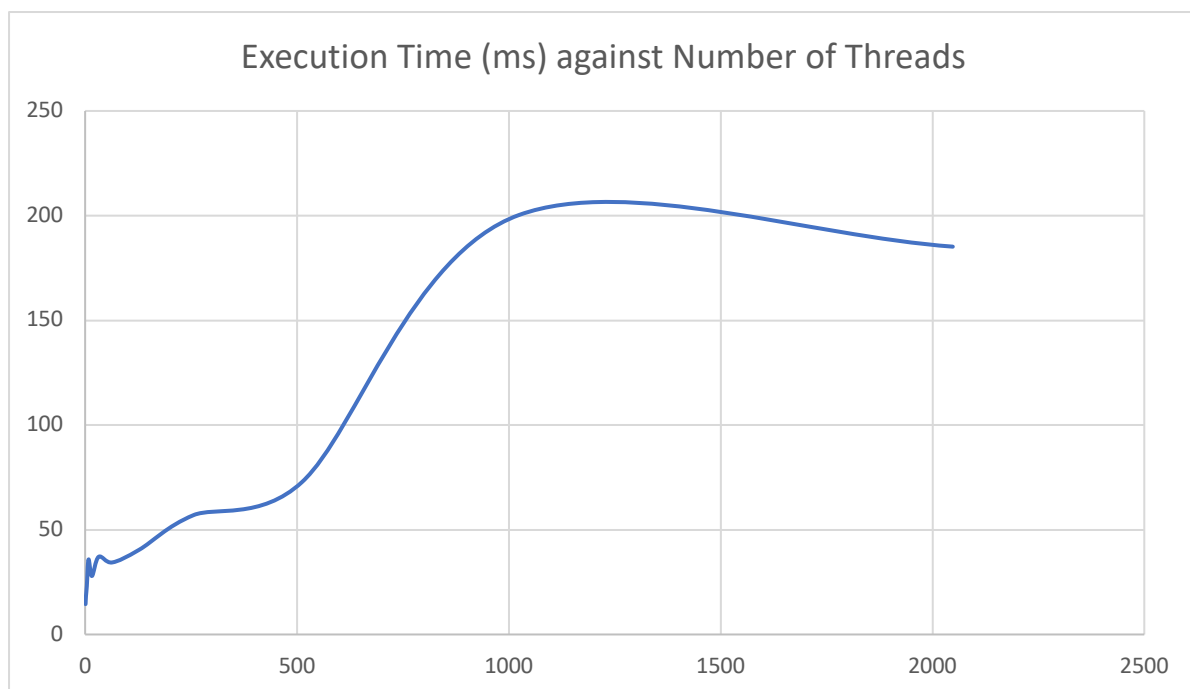


50.005 Computer System Engineering Lab 2 Multithread

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Section 1: Mean Thread

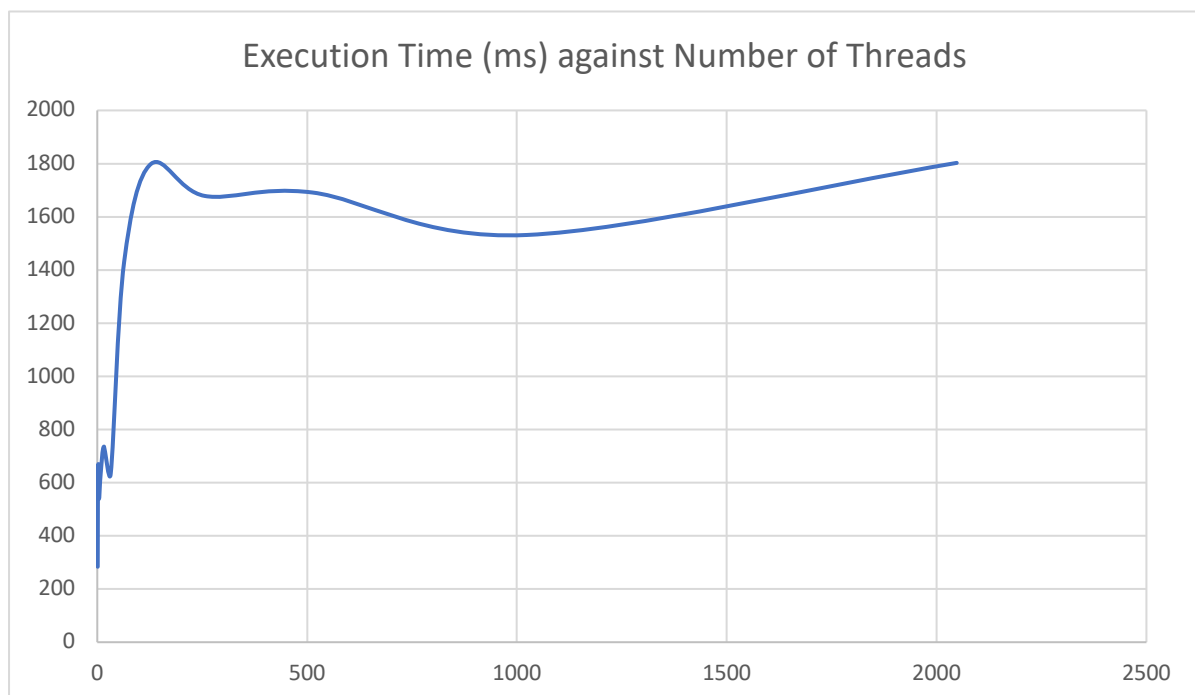
Number of Threads	Execution Time (ms)
1	14.5
2	18.4
4	23.1
8	35.8
16	27.9
32	37.1
64	34.4
128	40.5
256	57.0
512	72.8
1024	200.3
2048	185.2



In general, the execution time increases as the number of threads increases when computing mean. I believe this is because the creation and destruction of threads is very expensive, and the time taken to do so exceeds the small benefit of time saved via concurrency.

Section 2: Median Thread

Number of Threads	Execution Time (ms)
1	283.8
2	663.7
4	538.9
8	632.5
16	735.8
32	633.8
64	1430.5
128	1798.8
256	1678.4
512	1691.4
1024	1531.6
2048	1802.7



In the computation of median, we can see a similar trend where the execution time generally increases together with number of threads. However, the execution time for median computation is much larger than that of mean. This is because multithreading is used twice here, first to sort the sub-arrays and second to merge the arrays. Therefore, the creation and destruction time of the threads is two-fold.