Mean:

Threads	1	2	4	8	16	32	64	128	512	1024	2048
Time (ms)	19	20	26	37	29	32	37	58	106	202	219
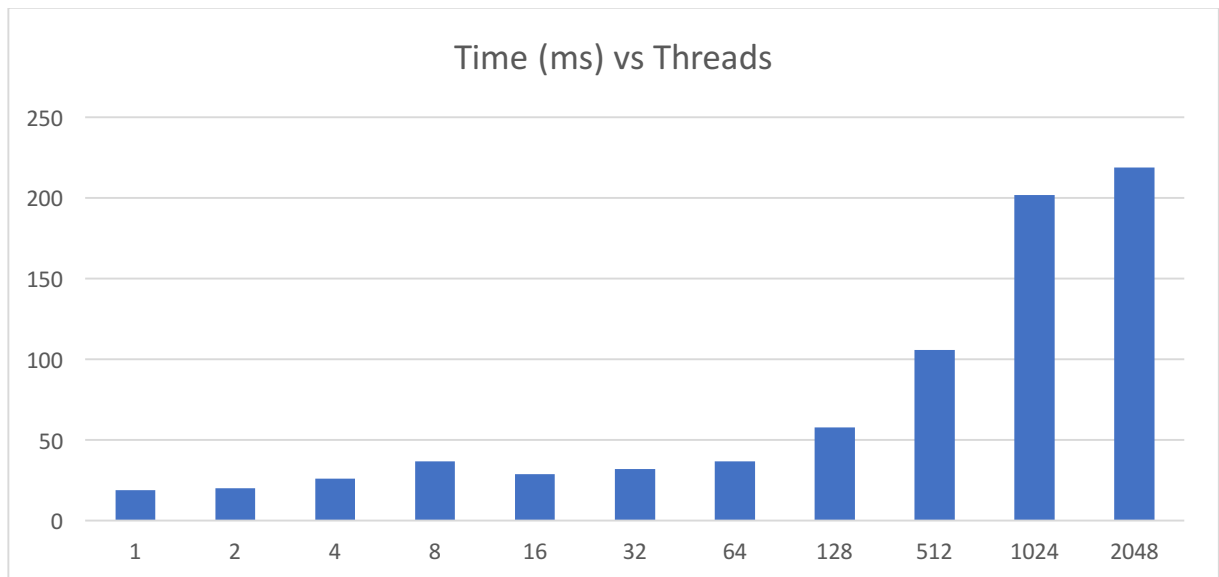
Median:

Threads	1	2	4	8	16	32	64	128	512	1024	2048
Time(ms)	92395	44103	21946	10407	4832	2529	1601	1364	4455	8970	14175
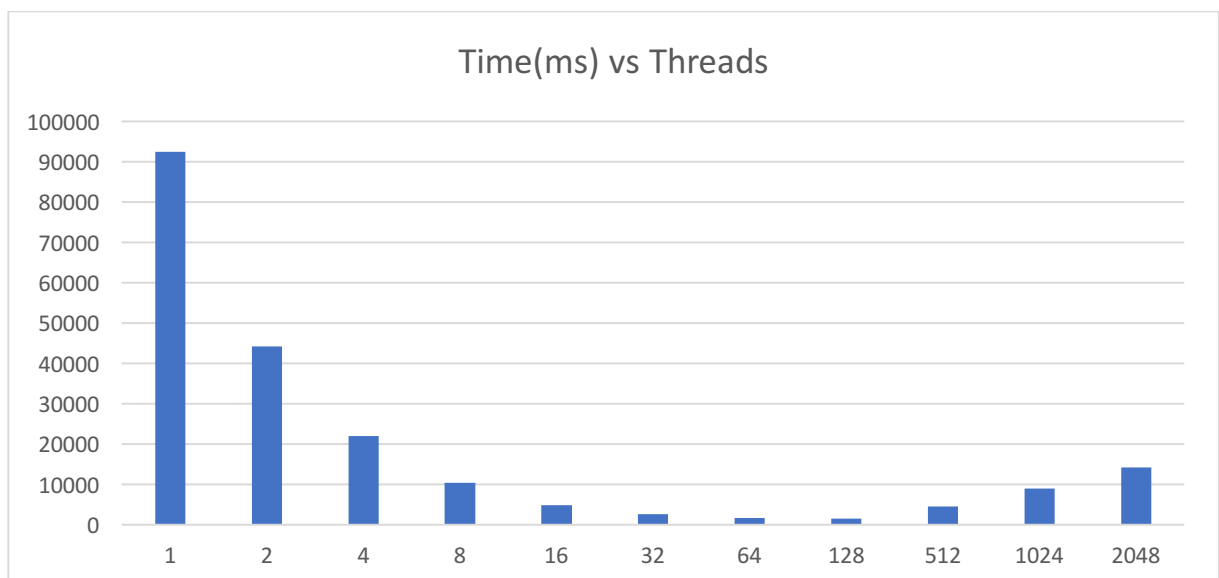
Merge sort complexity is **O(n log n),** which will run faster as n gets smaller. Increasing the number of threads (**k**) reduces n per thread, which in turn reduces the running time for the sorting and merging. However, as **k** > 128, the cost of context switching is higher than the benefit of a shorter sorting time, in addition to additional number of iterations the program must run through to merge **k** arrays. This results in a slower running time as **k** > 128.