

Alg20 PA1 Report

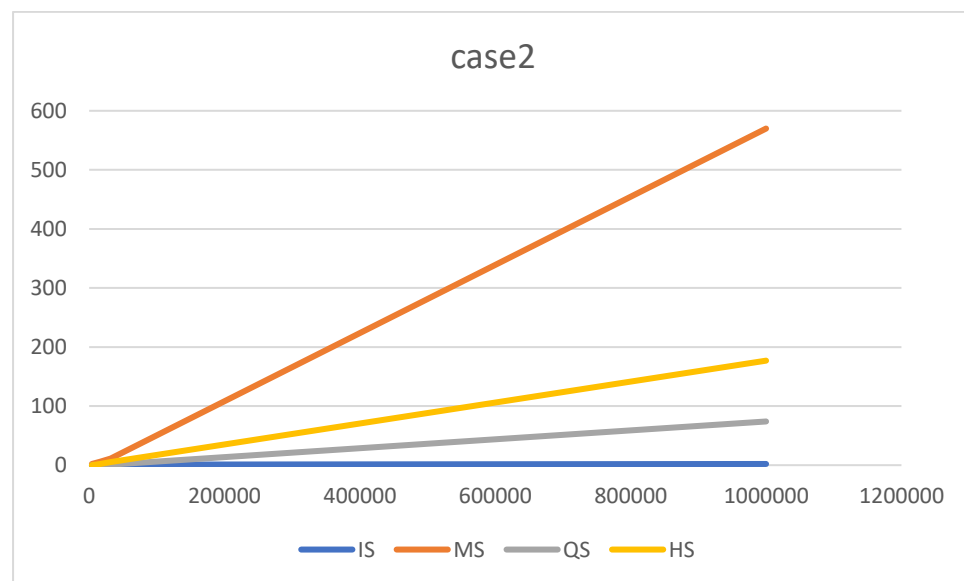
姓名：馬健凱

系級：電機三

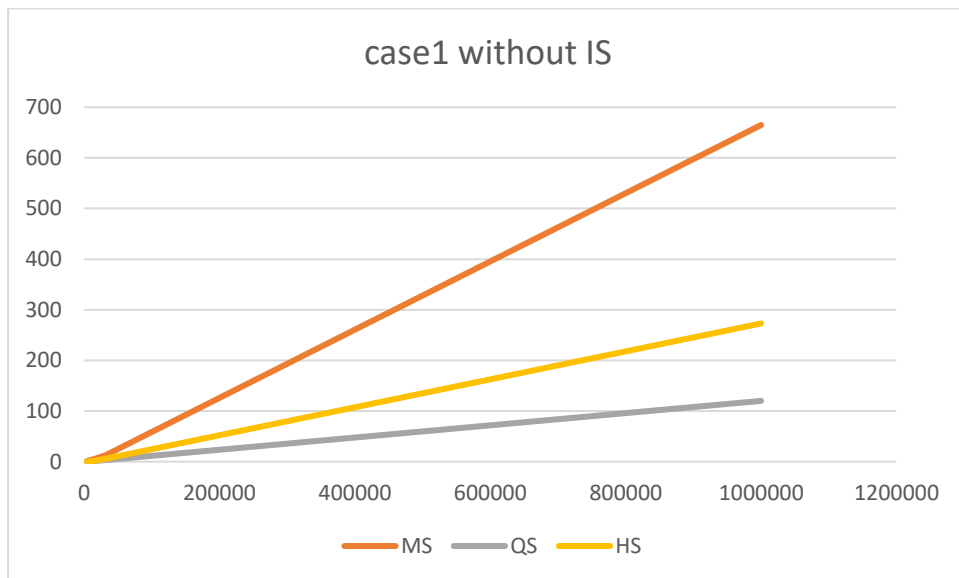
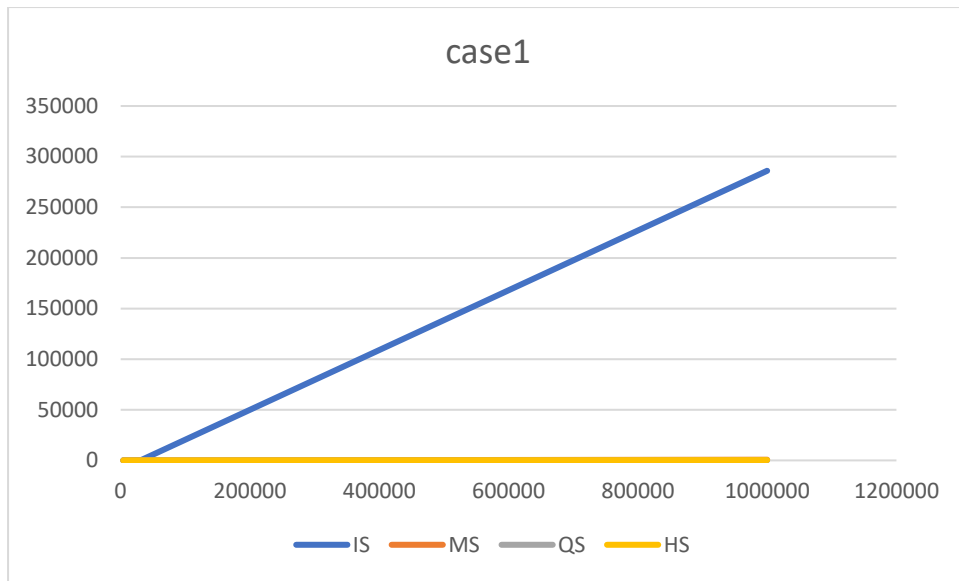
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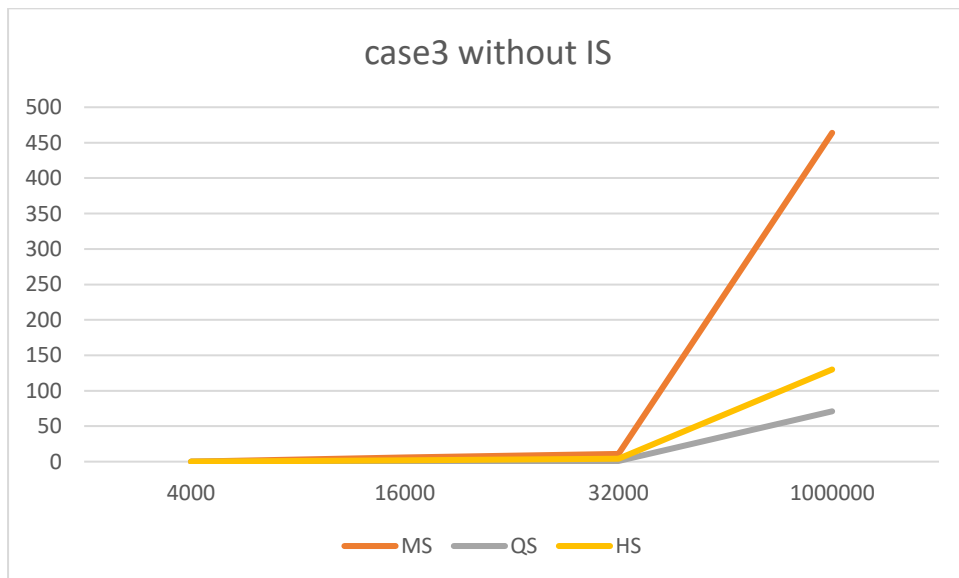
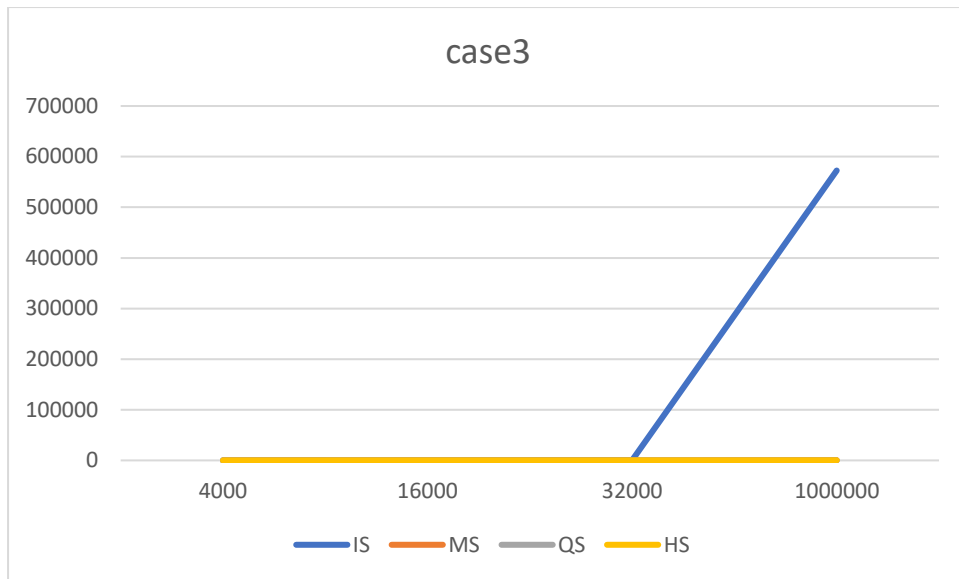
	IS		MS		QS		HS	
Input size	CPU time (ms)	Memory (KB)	CPU time (ms)	Memory (KB)	CPU time (ms)	Memory (KB)	CPU time (ms)	Memory (KB)
4000.case2	0	12500	2	12500	0	12500	0	12500
4000.case3	0	12500	0	12500	0	12500	0	12500
4000.case1	6.999	12500	1	12500	0	12500	0	12500
16000.case2	1	12648	5.999	12648	0	12648	2	12648
16000.case3	243.963	12648	5.999	12648	0	12648	2	12648
16000.case1	122.982	12648	5.999	12648	1	12648	2	12648
32000.case2	0.999	12648	10.998	12836	1	12648	4.999	12648
32000.case3	739.888	12648	10.999	12836	1	12648	3.999	12648
32000.case1	460.93	12648	12.998	12836	3	12648	5.999	12648
1000000.case2	1.999	18668	569.913	22760	73.988	18668	176.973	18668
1000000.case3	572586	18668	463.929	22760	70.989	18668	129.981	18668
1000000.case1	286023	18668	664.899	22760	119.982	18668	272.958	18668
5.case1	0	12500	0	12500	0	12500	0	12500



Case2: MS > HS > QS > IS



Case1: $IS > MS > HS > QS$



Case3: $IS > MS > HS > QS$

Findings:

1. Before I modify QuickSort, solving case2 was slow. I chose the number in the middle of the array to be the pivot, and QuickSort became faster.
2. I found out my implementation of MergeSort in PA0 is really bad. I didn't divide the vector, and my program couldn't terminate. I wrote MergeSort again and fixed it.