

[CSCI 58000 Algorithms] Program 2 – Column Sort

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Dimensions	$r = 5000$	$s = 20$
General sort used	Heap sort	
	General sort time (sec)	Column sort time (sec)
Trial 1	1.243	3.932
Trial 2	1.245	3.944
Trial 3	1.249	3.893

On my local machine, ColumnSort took more than  $3\times$  more time at sorting the 100,000-element array as the  $O(n \lg n)$  HeapSort algorithm. In a serial processor setting, the algorithm as I had implemented it is unsuitable and not worth the effort. ColumnSort appears to be better suited for a parallel environment, such that the sorting of individual columns in steps 1, 3, 5, and 7 of ColumnSort becomes a distributed process onto multiple threads.