

Test Output Formatted As A Table:

(1000 Values)	Average Time (s)	Average Swaps	Average Comparisons
Bubble Sort	0.0033045	247014	498519
Merge Sort	0.0001767	9976	8704
Counting Sort	0.0050897	1000	1000

(10,000 Values)	Average Time (s)	Average Swaps	Average Comparisons
Bubble Sort	0.417295	24939739	49986680
Merge Sort	0.0023539	133616	120454
Counting Sort	0.0052842	10000	10000

(100,000 Values)	Average Time (s)	Average Swaps	Average Comparisons
Bubble Sort	45.942	(Too large for a long long int?)	(Too large for a long long int?)
Merge Sort	0.0246529	1668928	1536345
Counting Sort	0.0097517	100000	100000

(1,000,000Values)	Average Time (s)	Average Swaps	Average Comparisons
Bubble Sort	4607.8	864429122 (?)	1781934355 (?)
Merge Sort	0.295384	19951424	18673424
Counting Sort	0.0790045	1000000	1000000

Note: I suspect that the swap count and comparison count for bubble sort in the 1M value tests is incorrect because the count in the 100000 test went out of the range of a long long int, see the raw output below (bolded).

Raw Test Output (Directly From The Console):

Average times with 1000 values:

Bubble Sort: 0.0033007s
Average Swaps: 248529 Average Comparisons: 498780
Merge Sort: 0.000157s
Average Swaps: 9976 Average Comparisons: 8708
Counting Sort: 0.0049634s
Average Swaps: 1000 Average Comparisons: 1000

Average times with 10000 values:

Bubble Sort: 0.419986s
Average Swaps: 25047090 Average Comparisons: 49989831
Merge Sort: 0.0021304s
Average Swaps: 133616 Average Comparisons: 120466
Counting Sort: 0.0057106s
Average Swaps: 10000 Average Comparisons: 10000

Average times with 100000 values:

Bubble Sort: 45.942s
Average Swaps: -77423747 Average Comparisons: -154169176
Merge Sort: 0.0246529s
Average Swaps: 1668928 Average Comparisons: 1536345
Counting Sort: 0.0097517s
Average Swaps: 100000 Average Comparisons: 100000

Do 1,000,000 test? (Will run two times) [Y/N]: Y

Running test with 1M values, this will take some time...

Average times with 1000000 values:

Bubble Sort: 4607.8s
Average Swaps: 864429122 Average Comparisons: 1781934355
Merge Sort: 0.295384s
Average Swaps: 19951424 Average Comparisons: 18673424
Counting Sort: 0.0790045s
Average Swaps: 1000000 Average Comparisons: 1000000