

Algorithm	Number of Elements	Time (m sec)	Memory used (MB)	Memory available (MB)
Insertion Sort	1048576	243203	6	245
Merge Sort Take 1	8388608	1485	79	270
Merge Sort Take 1	16777216	3265	237	612
Merge Sort Take 1	33554432	6861	263	662
Merge Sort Take 1	67108864	14413	1060	1376
Merge Sort Take 1	134217728	29875	1294	1552
Merge Sort Take 2	8388608	1164	354	408
Merge Sort Take 2	16777216	2579	706	826
Merge Sort Take 2	33554432	5550	1410	1530
Merge Sort Take 2	67108864	11725	513	684
Merge Sort Take 2	134217728	24825	1025	1228
Merge Sort Take 2	268435456	51734	2058	2755
Merge Sort Take 3	8388608	1153	354	408
Merge Sort Take 3	16777216	2537	706	826
Merge Sort Take 3	33554432	5528	1410	1350
Merge Sort Take 3	67108864	11534	513	684
Merge Sort Take 3	134217728	24493	1025	1228
Merge Sort Take 3	268435456	50481	2058	2755

Observations:

Insertion sort is the worst performer when compared to Merge sort for large arrays

Insertion Sort, 1M elements ~4Mins (INF)

Shorthand notations: IS: Insertion Sort, MS: Merge Sort, ~:Similar

Time consumed: IS > MS Take1 > MS Take2 > MS Take3

(lower the better)

Memory consumed: MS Take1 < MS Take2 ~ MS Take3

(lower the better)