

## Complexity Report

### Insertion Sort

N	No. Of comparisons	No. Of moves	I/O Time	Sorting Time
1000	2.497500e+04	5.469300e+04	0.000000e+00	0.000000e+00
10000	4.214990e+05	9.132340e+05	0.000000e+00	1.000000e-02
100000	6.338375e+06	1.364907e+07	7.000000e-02	5.000000e-02
1000000	8.862490e+07	1.899581e+08	8.700000e-01	5.500000e-01

### Selection sort

N	No. Of comparisons	No. Of moves	I/O Time	Sorting Time
1000	1.152442e+07	2.985000e+03	7.000000e-02	0.000000e+00
10000	2.008761e+09	2.995800e+04	6.960000e+00	0.000000e+00
100000	3.073706e+11	2.999760e+05	6.217394e+02	7.968700e-02
1000000	Results are not available	Results are not available	Results are not available	Results are not available

For Insertion and Selection sort:  
Space Complexity:  $O(n)$

For Insertion sort:  
Time Complexity:  $O(n * \sqrt{\log n})$

For Selection sort:  
Time Complexity:  $O((n * (\log n))^2)$