



Selection sort is known to be a quadratic sort that has a time complexity $O(N^2)$. When sorting through the array with my selection sort implementation, $O(N^2)$ performance was observed. As the number of elements increased, time performance grew quadratically as expected. Merge sort has a time complexity of $O(N \log N)$ and performs significantly faster than selection sort or insertion sort when implemented correctly. When sorting through the array with my implementation of merge sort, $O(N \log N)$ performance was observed. The performance graph resembled a linear trend. When comparing the two sorts, it is evident that merge sort performs significantly better than selection sort. When plotting both performances on a graph, the growth of selection sort is so dramatic that it seems like there is no growth for merge sort.