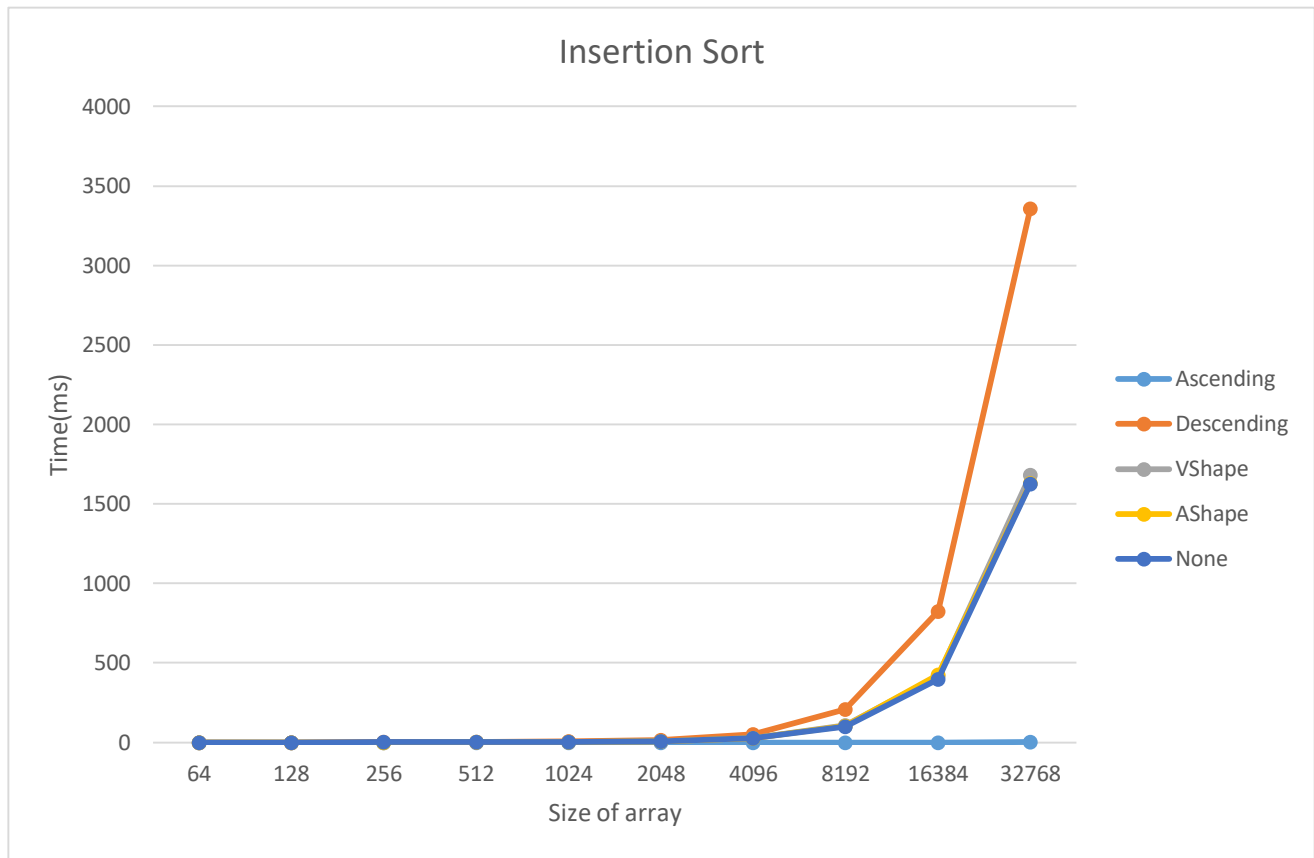


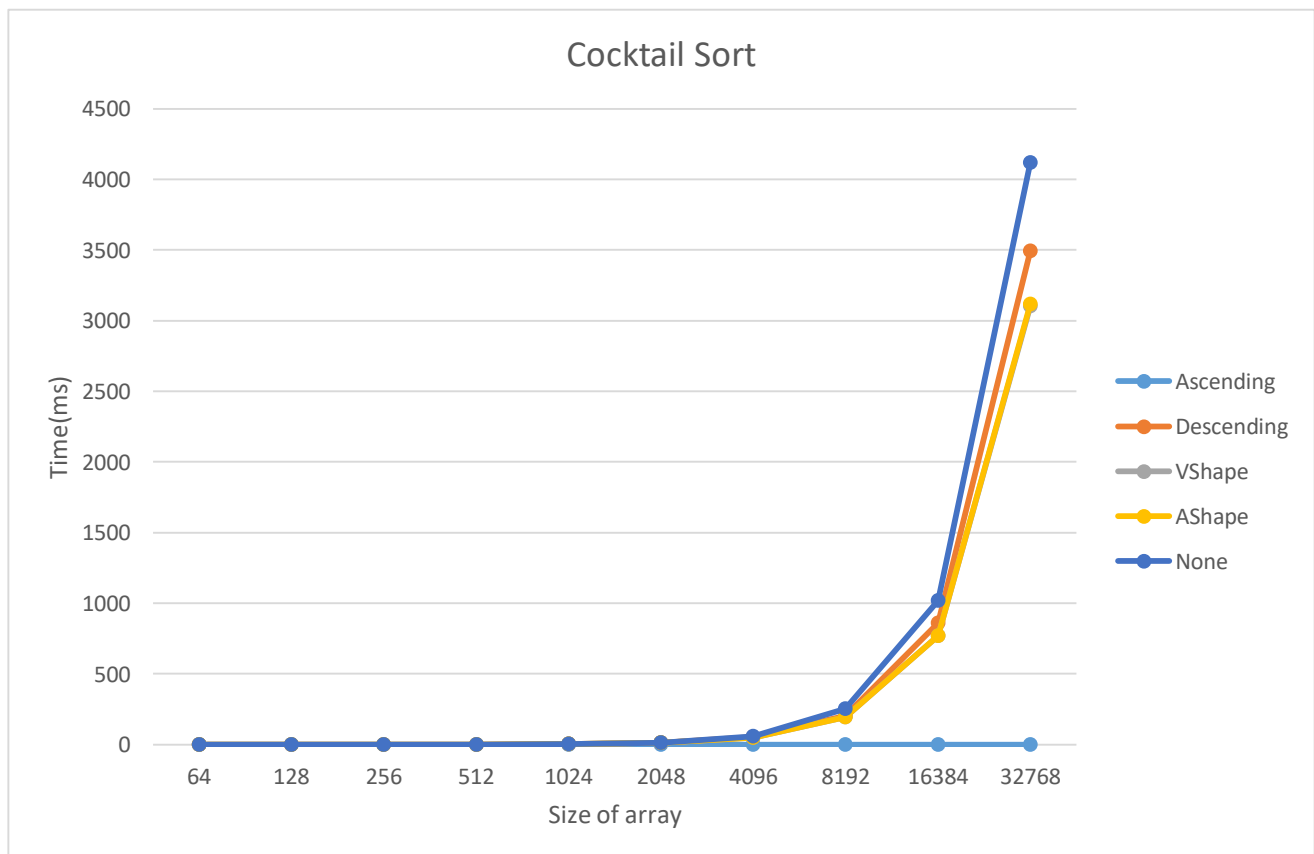
# Project 3 - Sorting algorithms

Author: Serhii Holishevskiy

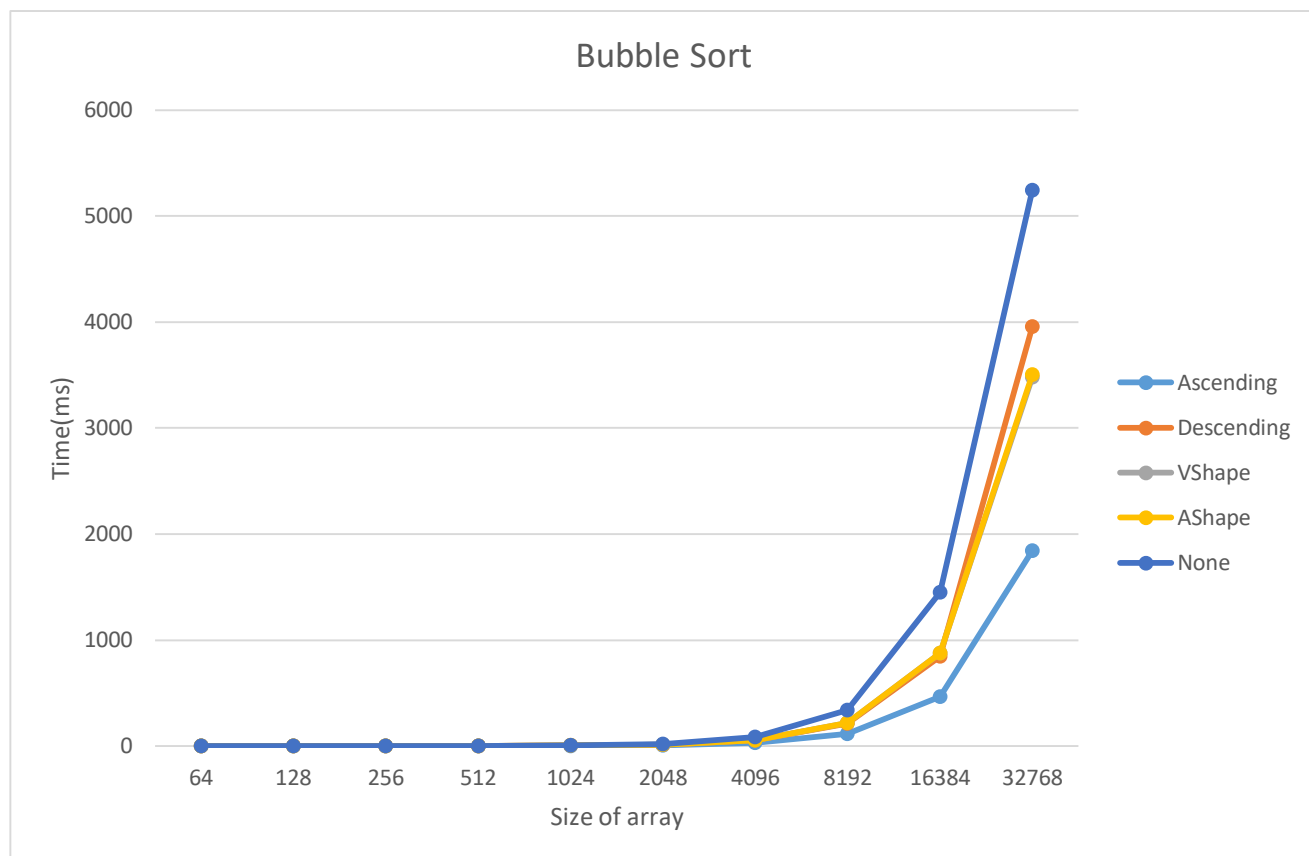
## Insertion Sort:



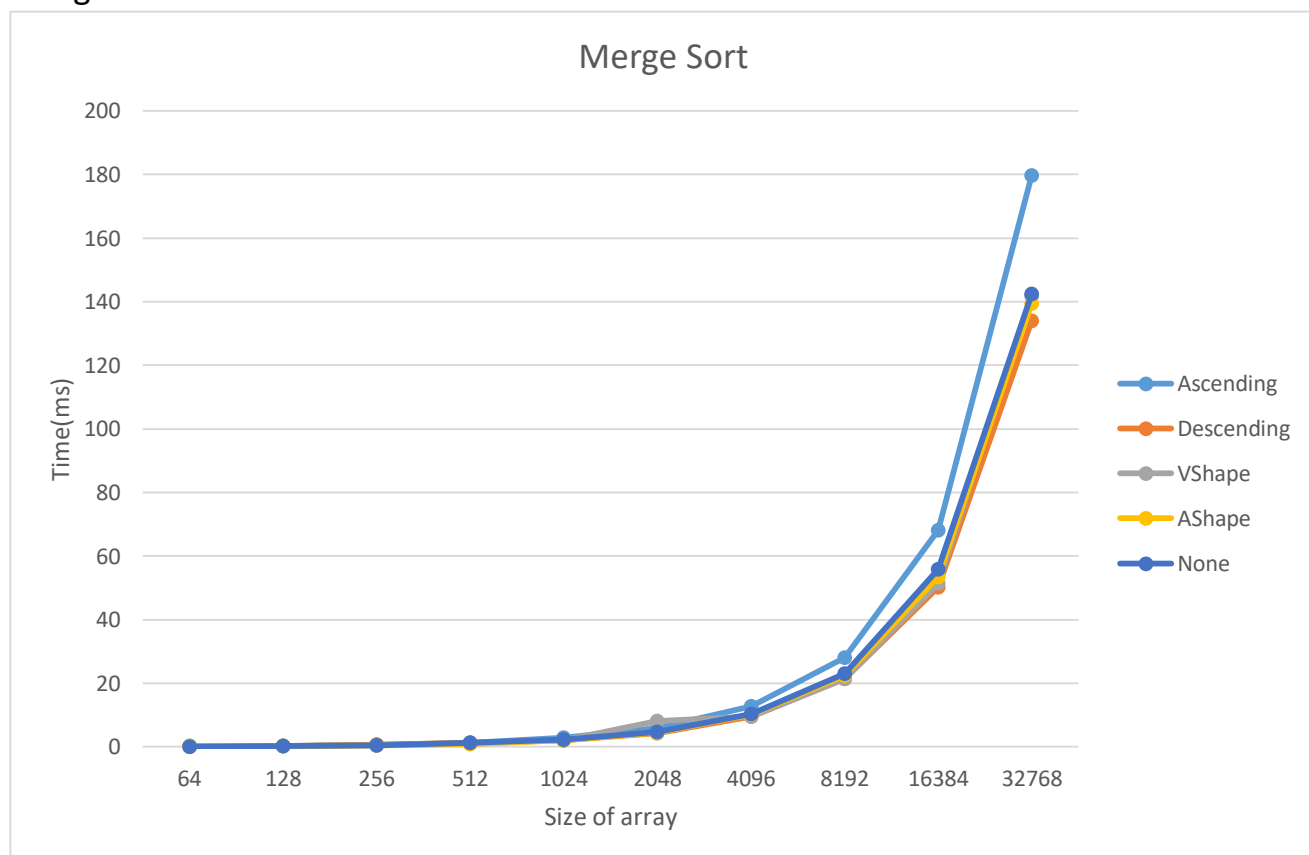
## Cocktail Sort:



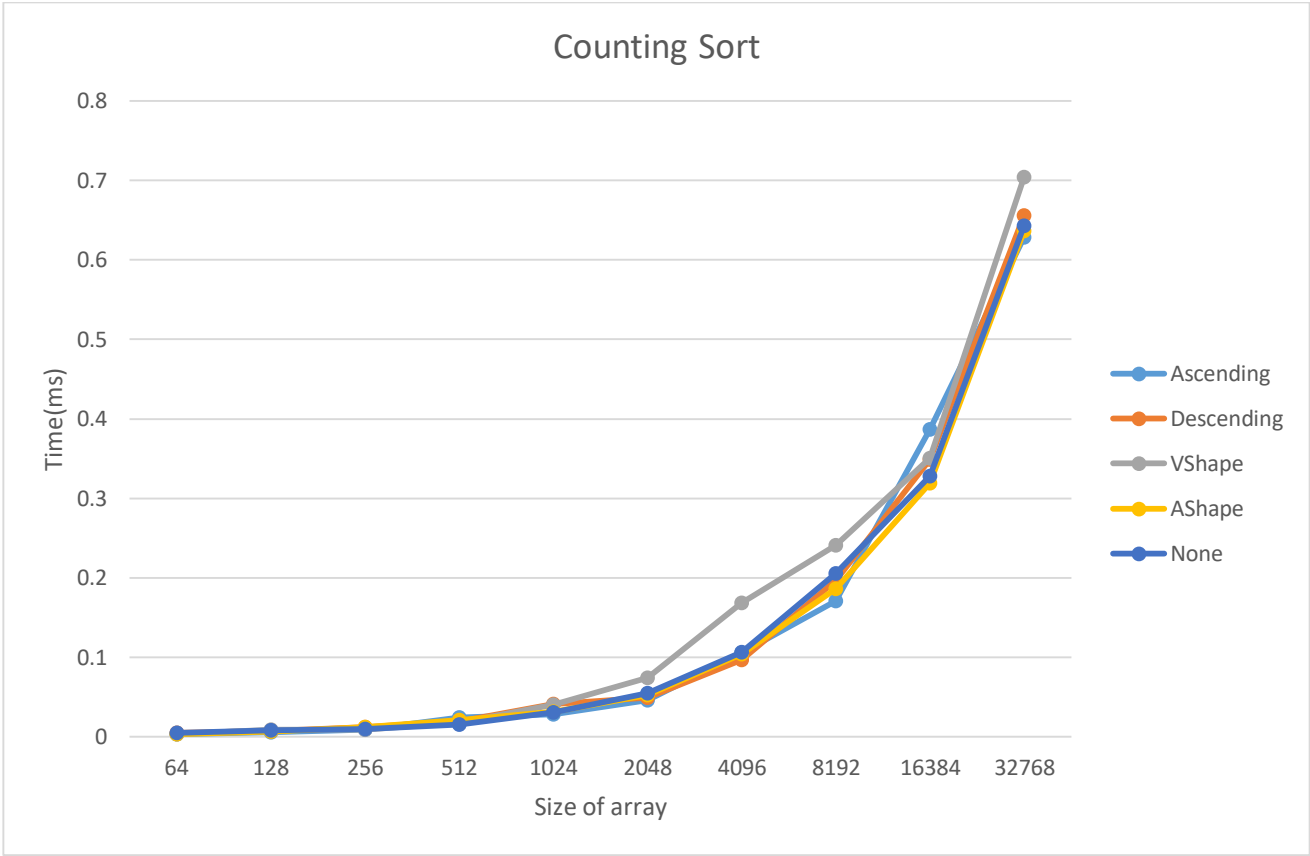
## Bubble Sort:



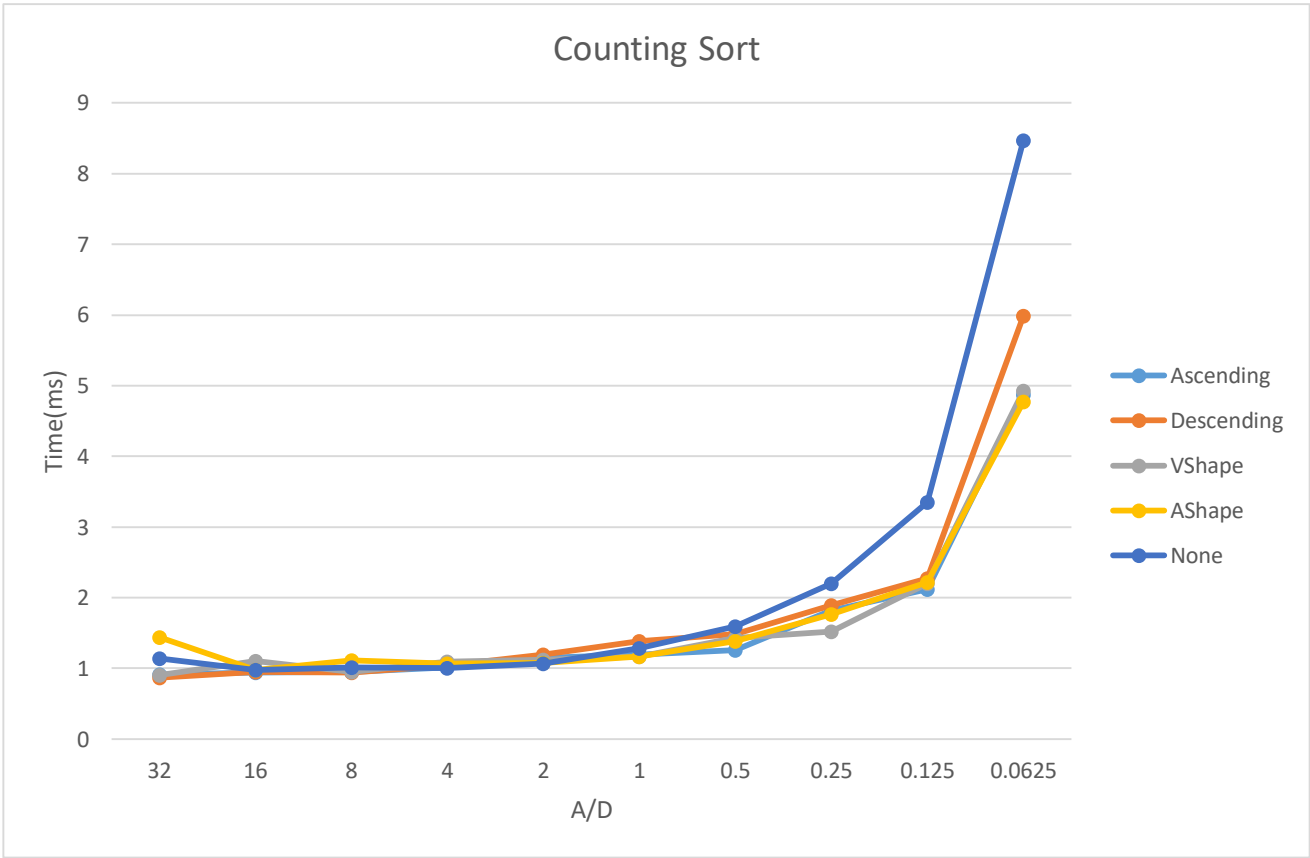
## Merge Sort:

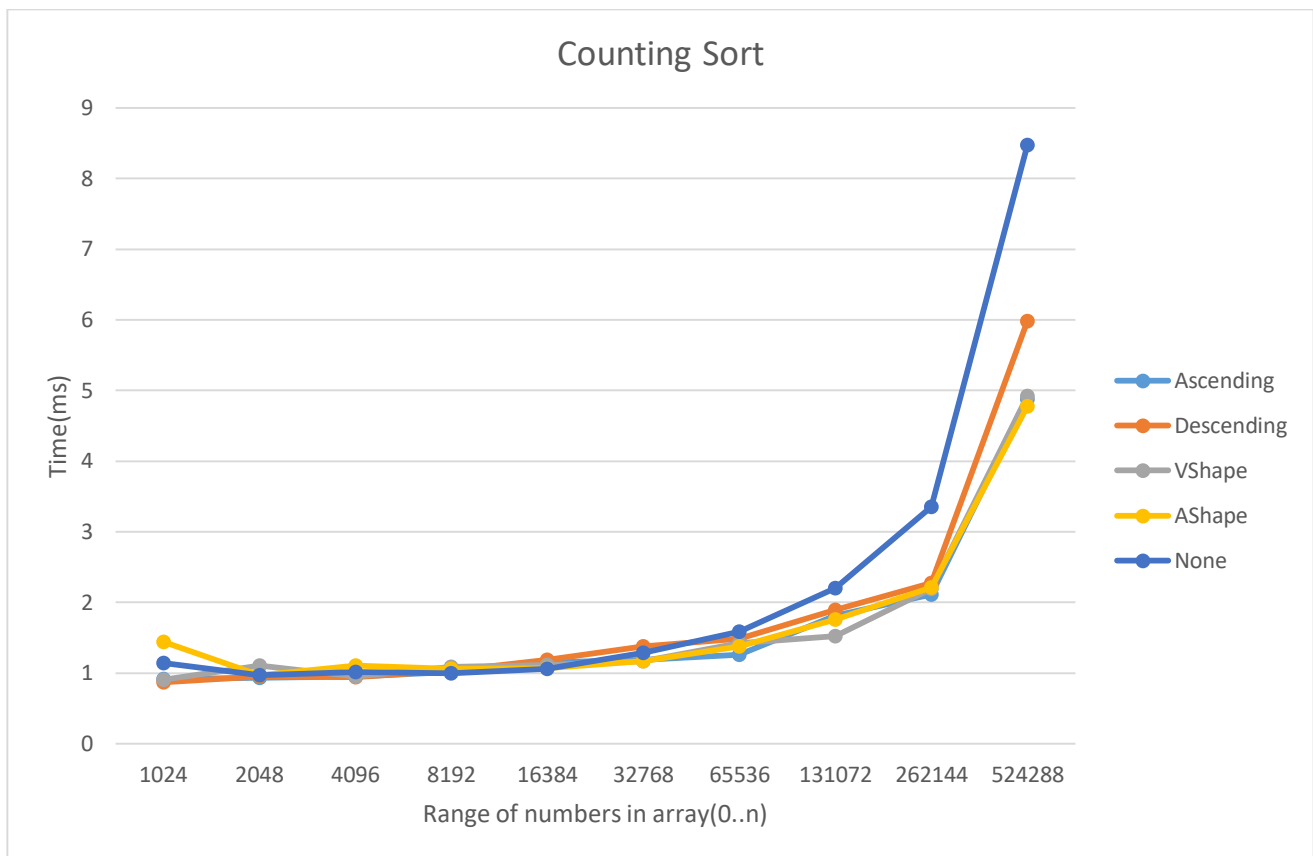


## Counting Sort:

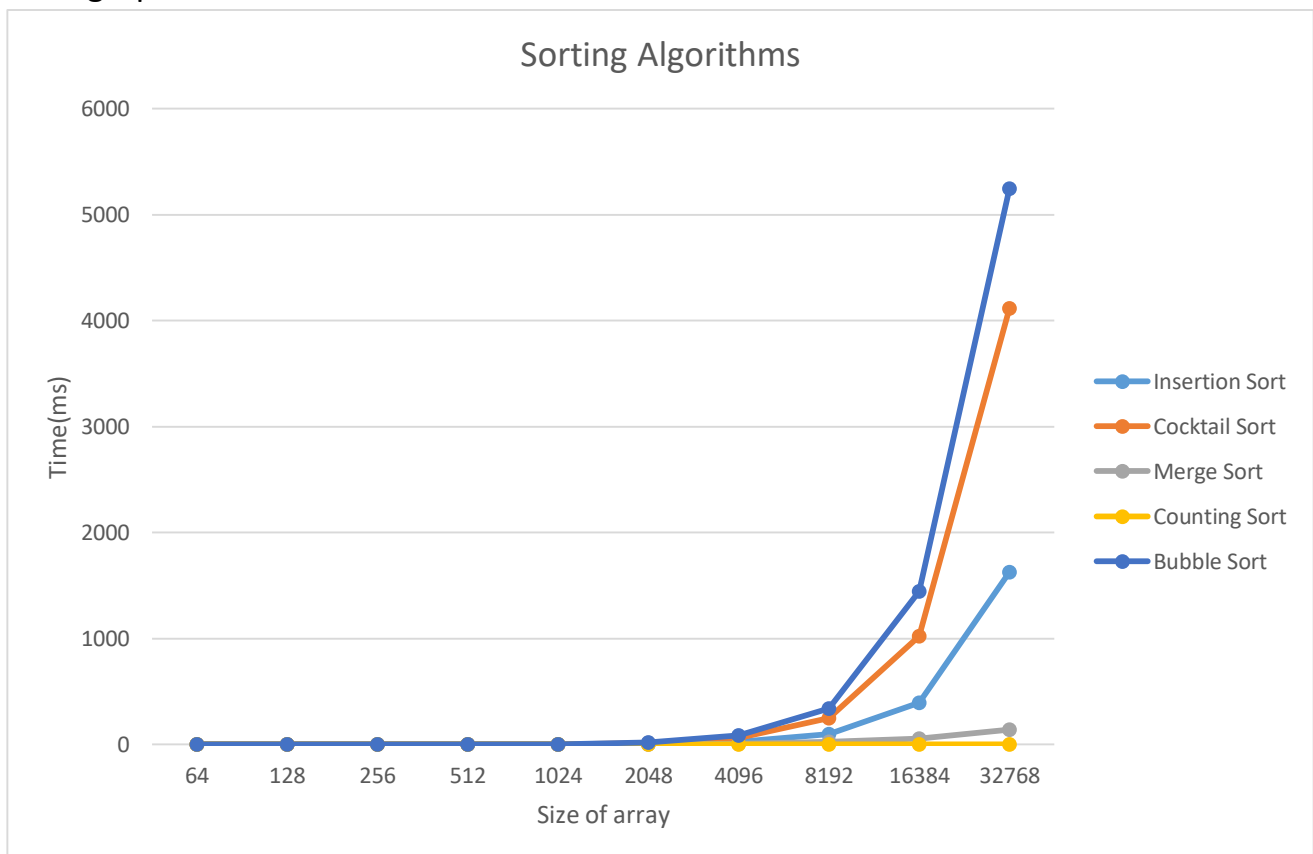


Counting Sort with A/D rate:





Final graph:



Conclusion: For all sorting algorithms the array had numbers in range  $[-100, 100]$ . As we can see in final graph, Bubble Sort is the worst comparing to other ones, Cocktail Sort has almost the same result. Insertion Sort has better sort time, but also being very bad for big data. Advanced algorithms (Counting and Merge Sorts) showed very good while increasing size of array, and Counting Sort won the competition

being the fastest one and the sort time is nearly the same for different sizes of array. This sort algorithm works longer if we increase the range of numbers in array, that showed in one of the graphs.