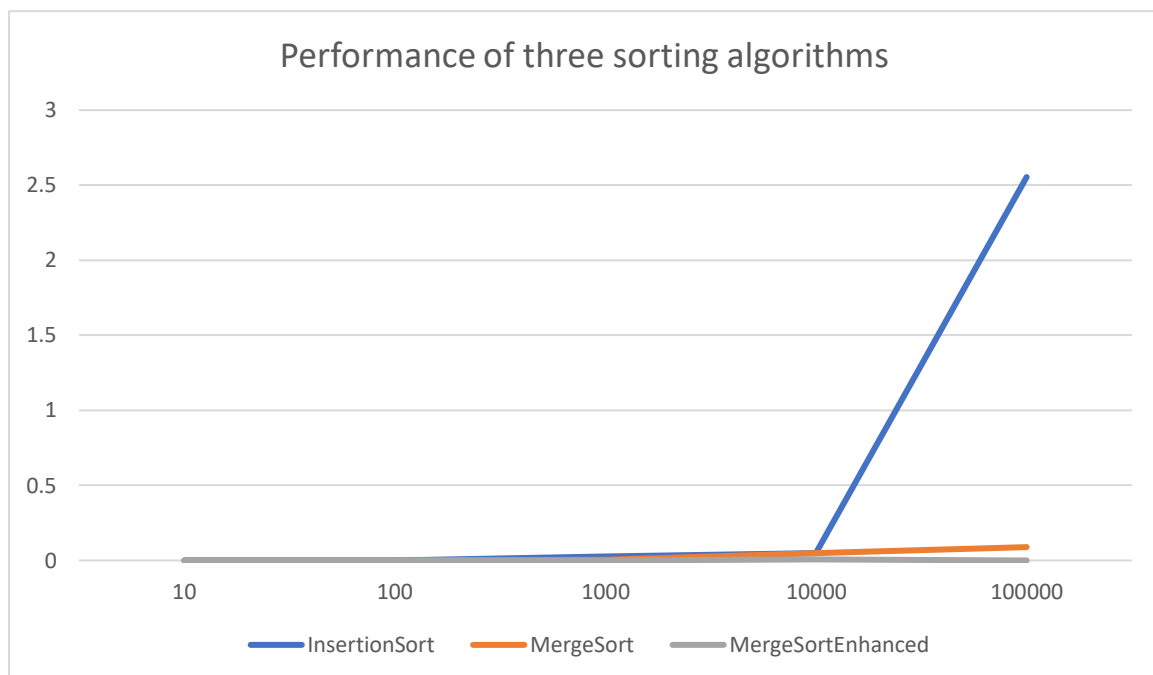


## Practical 5

### Part 1

1. Mergesort guarantees to sort an array in \_\_\_\_\_ time, regardless of the input:  
A. Linearithmic time
2. The main disadvantage of MergeSort is:  
A. It uses extra space in proportion to the size of the input
3. Merge sort makes use of which common algorithm strategy?  
A. Divide and conquer
4. Which sorting algorithm will take the least time when all elements of the input array are identical?  
A. Bogo Sort
5. Which sorting algorithm should you use when the order of input is not known?  
A. Mergesort

### Part3



I used 100 as the cutoff for 'MergeSortEnhanced'. The result is great, even if the input size is huge mergeEnhanced takes little time to compute, proving that the running time is linear. Insertion sort has a time complexity of  $O(n^2)$ . MergeSort has a time complexity of  $O(n \log n)$ .