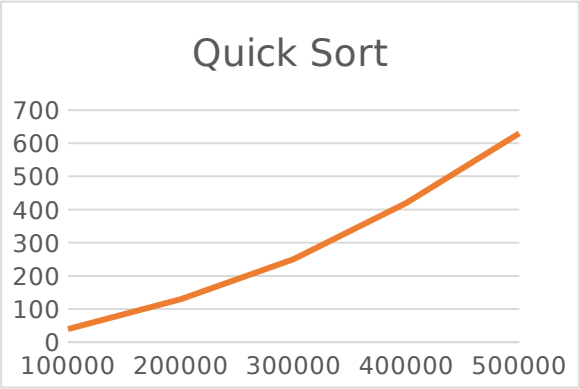
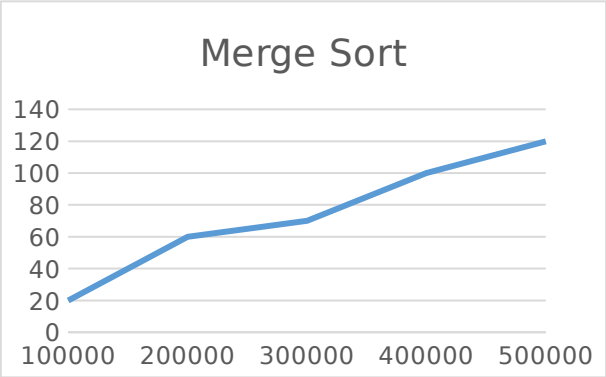
Report:

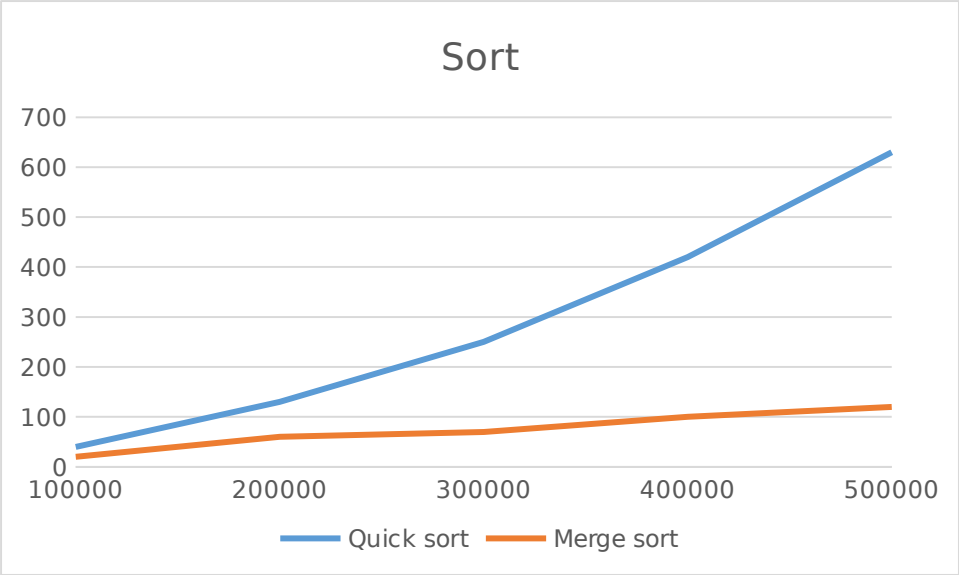
I ran my sorting algorithms on a variety on textfiles with between 100, 000 and 500, 000 numbers.

I ran the both random number files and files with the same number repeated.

Quick sort	
Number of numbers	Time
100000	40
200000	130
300000	250
400000	420
500000	630
Merge sort	
Number of numbers	Time
100000	22
200000	45
300000	72
400000	95
500000	129







As can be seen quicksort is running in O [n^2] and mergesort is running in O [nlogn]

Quick sort same number	
Number of numbers	Time
100000	7699
200000	211722
300000	NA
400000	NA
500000	NA
Merge sort – same number	
Number of numbers	Time
100000	19
200000	42
300000	62
400000	85
500000	112

As can be seem, mergesort does not change with an array of the same numbers, staying at O[nlogn] whilst Quicksort quickly becomes unmanageable, failing to complete with any more than 200K numbers