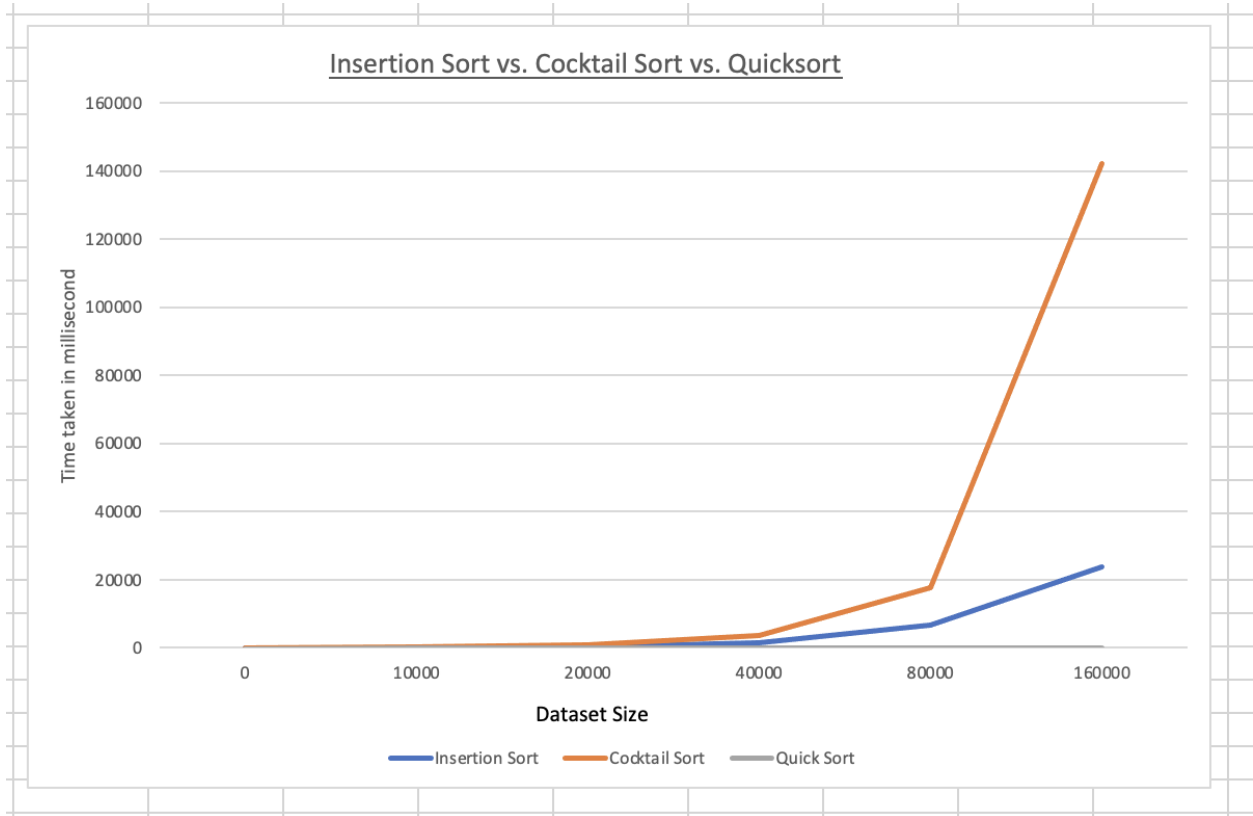
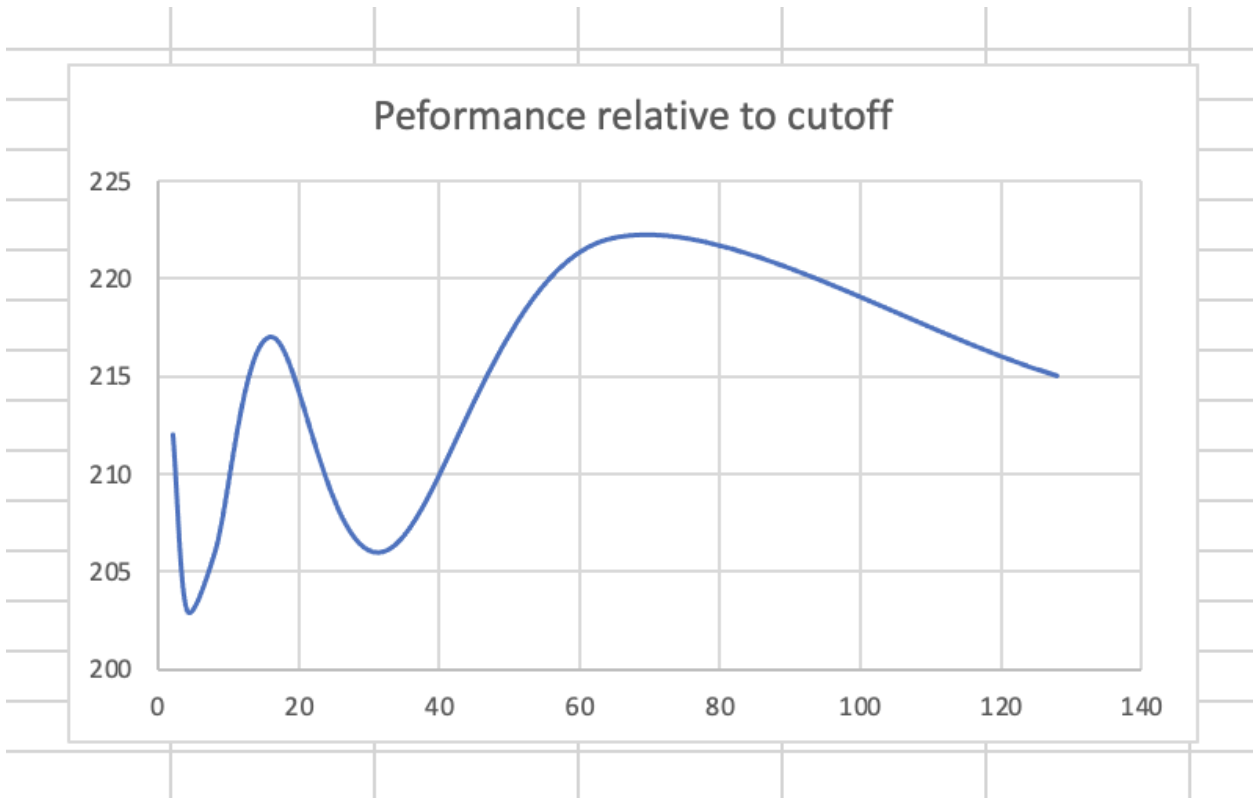


	0	10000	20000	40000	80000	160000
Insertion Sort	0	91	340	1478	6578	23717
Cocktail Sort	0	188	960	3734	17548	142335
Quick Sort	0	2	3	6	13	26



From the plot and table above, I can see that there are three pretty different complexities. I see that quick sort is not quite linear -> as the dataset size doubles, the time taken nearly doubles as well and the increase is pretty big. For cocktail sort, it looks like the time taken increases exponentially. The insertion sort also increases a lot but not as much as cocktail sort. I can assume insertion sort takes $O(N\log N)$, cocktail sort takes $O(N^2)$, and Quick sort is $O(N\log N)$

Cutoff	2	4	8	16	32	64	128
Performance	212	203	206	217	206	222	215



The cutoff that had the fastest performance was the value 4. I can see this because at value 4, the graph is the lowest.

	0	100000	200000	300000	400000	500000	600000
Quicksort	0	19	39	59	70	92	113
Modified Quicksort with cutoff value 4	0	20	31	60	70	89	112

