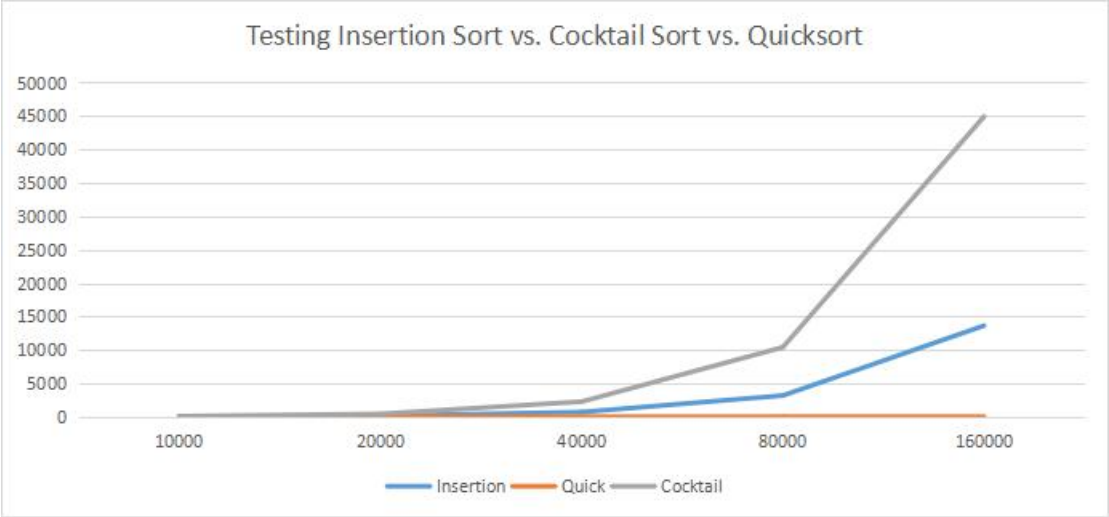
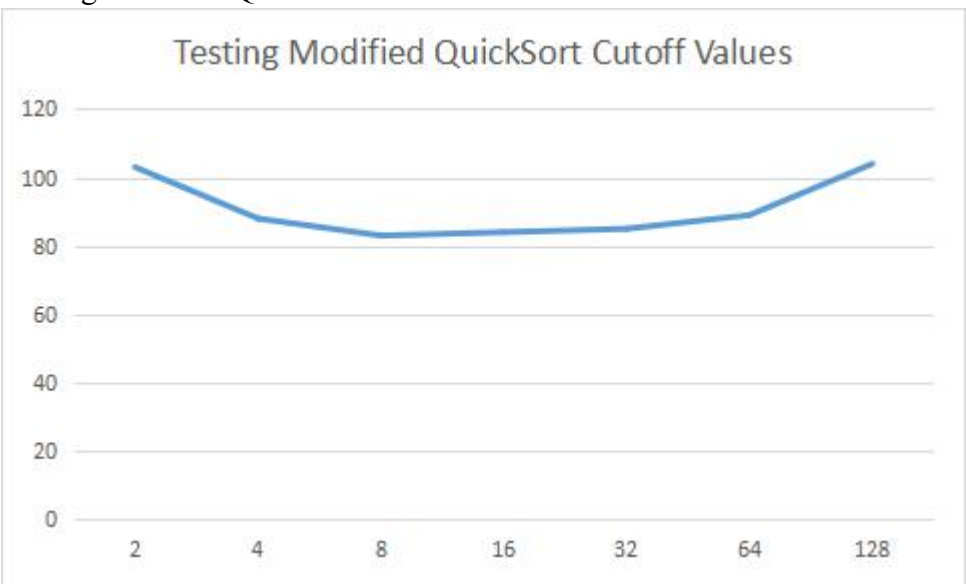
Testing Insertion Sort vs. Cocktail Sort vs. Quicksort



	Insertion	Quick	Cocktail
10000	41	1	87
20000	157	1	423
40000	694	2	2257
80000	3170	5	10394
160000	13629	11	44921

Among these three sorting methods, the one with the shortest run time is QuickSort, and the second is InsertionSort. CocktailSort takes the longest run time. This is because the runtime for QuickSort is O(nlogn), the runtime for InsertionSort is O(n^2), the runtime for cocktailSort is also O(n^2).

Testing Modified QuickSort Cutoff Values

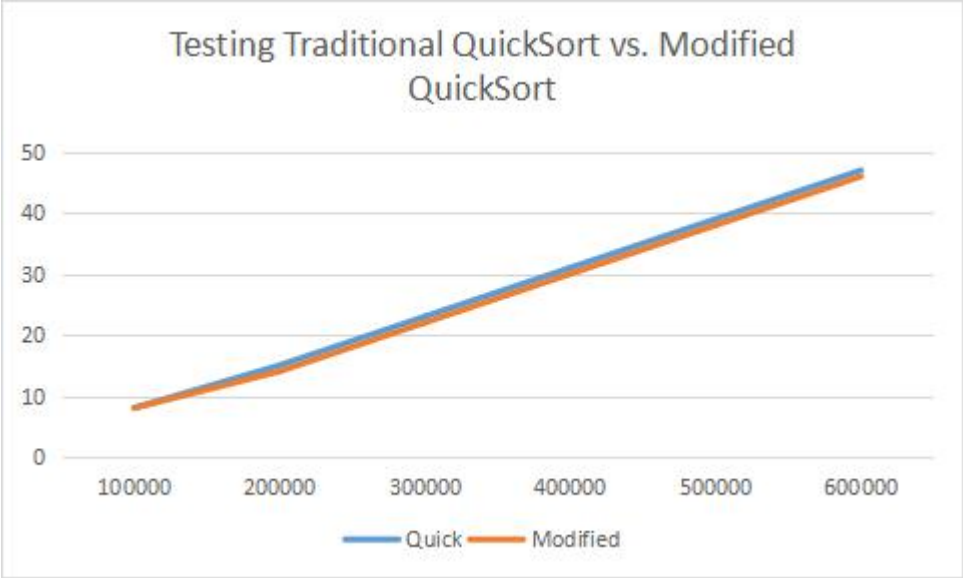


	Quick	Modified
2	2	103
4	4	88

8	8	83
16	16	84
32	32	85
64	64	89
128	128	104

From the graph above, we can see that the lowest runtime is when the curoff value is 8. So the cutoff value 8 will give us the fastest performance.

Testing Traditional QuickSort vs. Modified QuickSort



	Quick	Modified
100000	8	8
200000	15	14
300000	23	22
400000	31	30
500000	39	38
600000	47	46