Results:

Output of code:

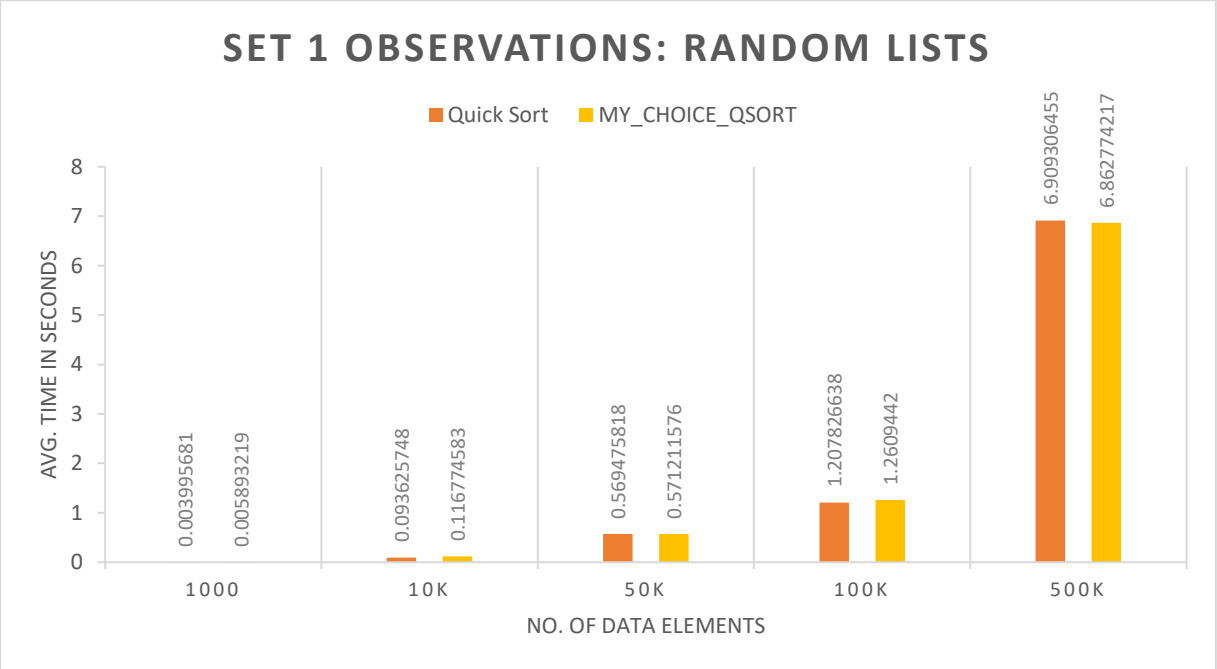
Set 1 observations:

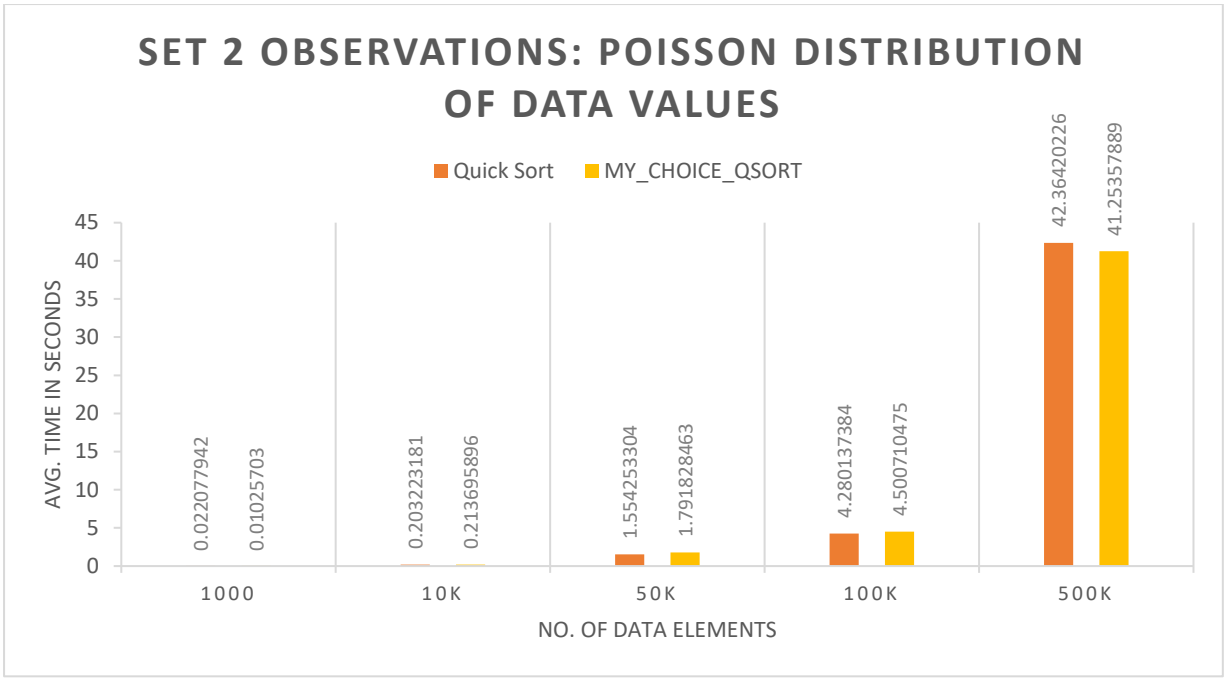
ALGORITHM	N	COMPARISONS	TIME
Quick sort	1000	248502	0.06245112419128418
MY_CHOICE_QSORT	1000	62002	0.015660762786865234
Quick sort	10000	124749	0.03120279312133789
MY_CHOICE_QSORT	10000	124251	0.046866416931152344
Quick sort	50000	124749	0.03128933906555176
MY_CHOICE_QSORT	50000	124251	0.046814918518066406
Quick sort	100000	124749	0.031244277954101562
MY_CHOICE_QSORT	100000	124251	0.03124260902404785
Quick sort	500000	124749	0.04686307907104492
MY_CHOICE_QSORT	500000	124251	0.03124403953552246

Set 2 observations:

ALGORITHM	N	COMPARISONS	TIME
Quick sort	1000	124749	0.046863555908203125
MY_CHOICE_QSORT	1000	124251	0.03129076957702637
Quick sort	10000	124749	0.046816349029541016
MY_CHOICE_QSORT	10000	124251	0.03127264976501465
Quick sort	50000	124749	0.046880483627319336
MY_CHOICE_QSORT	50000	124251	0.03123021125793457
Quick sort	100000	124749	0.04686617851257324
MY_CHOICE_QSORT	100000	124251	0.031204700469970703
Quick sort	500000	124749	0.06248593330383301
MY_CHOICE_QSORT	500000	124251	0.04945945739746094

The results for the two algorithms are showed in the following graphs. The graphs are obtained by taking the average time of 20 runs of the code for executing the respective algorithms.




SET 2 OBSERVATIONS: POISSON DISTRIBUTION OF DATA VALUES
Quick Sort
MY_CHOICE_QSORT
AVG. TIME IN SECONDS
45
40
35
30
25
20
15
10
5
0
0.022077942
0.01025703
0.203223181
0.213695896
1.554253304
1.791828463
4.280137384
4.500710475
42.36420226
41.25357889
1000
10K
50K
100K
500K
NO. OF DATA ELEMENTS