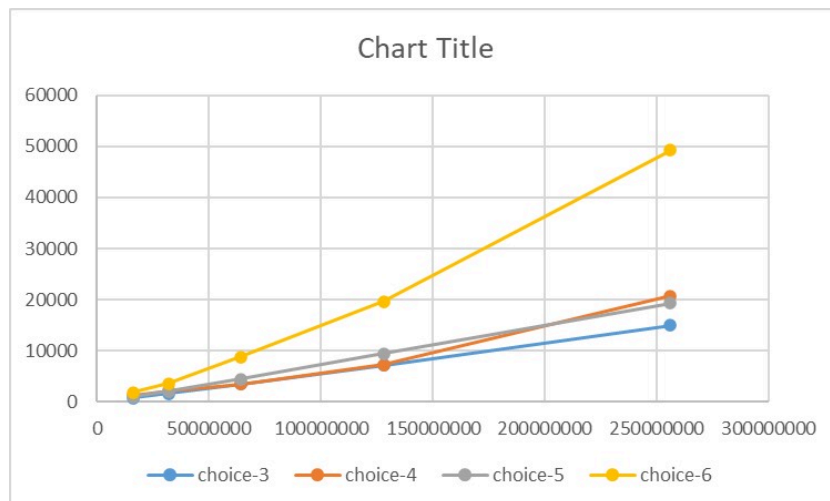


Comparison of 4 different Msort Algorithms with a threshold of 16:

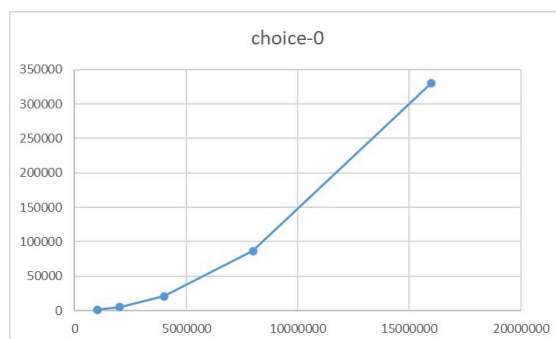
1. Choice-3 (blue): Msort-3
2. Choice-4 (orange): Msort-4
3. Choice-5 (Grey): Msort-5
4. Choice-6 (yellow): Msort-6

N-value ranges from 16M to 256M



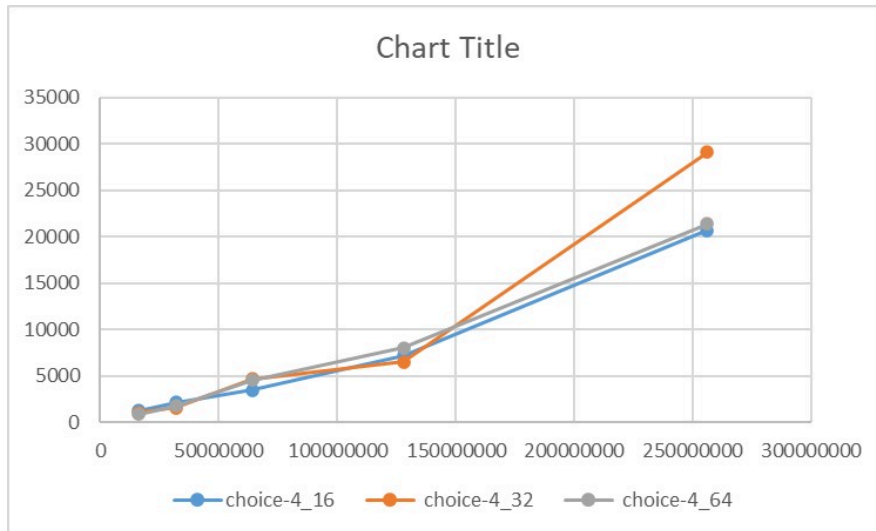
According to the provided graph, when the threshold is set to 16, all the algorithms except for choice-6 are initially performing relatively quickly. However, as the input size increases, it becomes apparent that choice-3 is outperforming all the other options. Additionally, choice-4 and choice-5 are almost equally effective, while choice-6 lags significantly behind the other algorithms in terms of speed.

Choice-0: Msort 0(N ranges from 1M to 16M)



When the value of N is large, choice- 0 takes a lot of time to run and doesn't perform well. This is evident from the graph, which shows that the time taken by the algorithm increases rapidly as the size of N increases. The difference between the time taken for a size of 8M and 16M is also clearly visible.

Comparison of 2 different Msort Algorithms with varying threshold values:

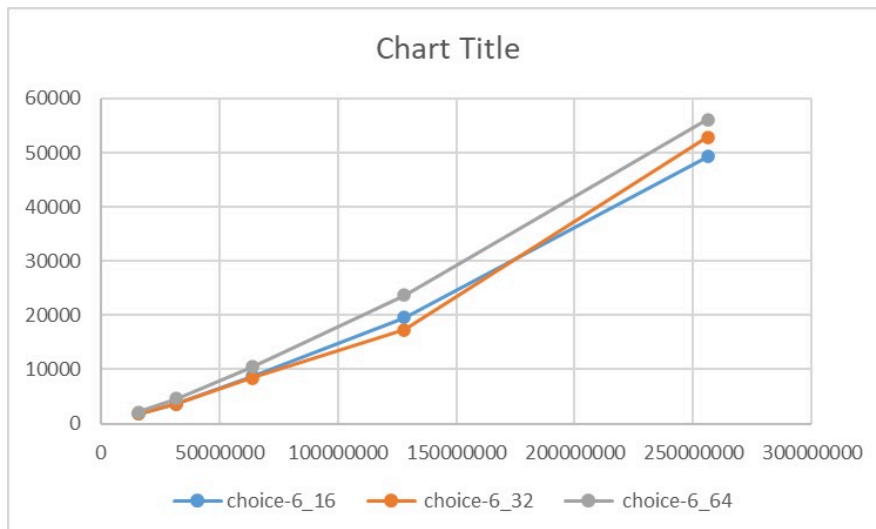


Threshold values are 16,32,64 and n ranges from 16M to 256M

1. Choice-4: Msort-4

Based on the presented graph, it is noticeable that when the input size is small, the choice-4 algorithm with a threshold of 16 performs quicker than the other two thresholds. However, as the size of the input increases, choice-4 with threshold 16 and choice-4 with threshold 64 display similar performance. On the other hand, choice-4 with a threshold of 32 operates much slower compared to the other two thresholds.

2. Choice-6: Msort-6



The presented graph indicates that as the input size increases, the choice-6 algorithm with a threshold of 64 exhibits slower performance. In contrast, initially, the choice-6 algorithm with a threshold of 32 performs better. However, as the input size continues to grow, the choice-6 algorithm with a threshold of 16 outperforms the other two thresholds.

Conclusion:

The graphs presented suggest that when the threshold is set to 16, both choice-3 and choice-4 algorithms perform better than all other algorithms. However, it's important to note that the graph only reflects the speed of each algorithm and does not provide any information on their accuracy or effectiveness.