

When would the order of the Quick sort become $O(n^2)$?

Why does the efficiency of the Quick sort decrease if numerous items in the list to sort are the same

Does the order (Big-O) of the Merge sort change if the original state of the array is different (random, inverted, ordered)? Explain why or why not.

Show what the following array would look like after each pass for the Merge sort (each merged list), and the Quick sort (each partition evaluated). Label your output. For the quick sort choose the pivot value by using the expression:

$$\text{pivot} = a[(L + R) / 2];$$

For the Quick sort clearly mark the pivot value used for each partition, and the order in which the partitions are evaluated.

19 08 77 14 33 26 28 15