Lab 8 – Sorting 🡪 Merge Sort vs. Quick Sort

For Merge sort worst case is O(n\*log(n)), for Quick sort: O(n2). For other cases (avg, best) both have O(n\*log(n)). However Quick sort is space constant where Merge sort depends on the structure you're sorting.

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| [Merge Sort](https://www.cprogramming.com/tutorial/computersciencetheory/mergesort.html) | O(n\*log(n)) | O(n\*log(n)) | O(n\*log(n)) | Depends | Stable | On arrays, merge sort requires O(n) space; on linked lists, merge sort requires constant space |
| [Quicksort](https://www.cprogramming.com/tutorial/computersciencetheory/quicksort.html) | O(n\*log(n)) | O(n\*log(n)) | O(n^2) | Constant | Stable | Randomly picking a pivot value (or shuffling the array prior to sorting) can help avoid worst case scenarios such as a perfectly sorted array. |