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Project 2 Write-Up

Sorting Algorithm Comparison

Due to the extreme differences in runtime and comparisons it is quite obvious to find that Selection sort is far inferior to both qSort and STLSort. Methods. Selection sort requires every element be compared to every other element until the list is completed making its Big-Theta runtime θ(n2). QSort and STLSort share a similar runtime of θ(n log2 n). However, due to QSort’s implementation in outdated C the actual runtime is much slower than newer versions of C++ standard Sort function. As cited from an article published about comparing the runtime of Sort and QSort on 1,000,000 random integers to find that “STL’s sort runs 20% to 50% faster than the hand-coded quicksort and 250% to 1000% faster than the C qsort library function1.” Therefore, the most practical implementation of a sort in C++ is the STLSort method.

References:

1. https://www.geeksforgeeks.org/c-qsort-vs-c-sort/