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Data Structures

Project Two

Efficiency Analysis

The approximate efficiencies for the three sorting algorithms within this project are on average O(n^2) for bubble sort, O(n log(n)) for merge sort, and O(n) for shell sort. For small values of n, merge and shell sort seem to be similar (low exec. times) while bubble sort seems to be wildly inefficient for all values of n. Additionally, merge sort seems to have some inconsistencies in execution for small values of n, likely to do with it’s powers of 2 property (i.e., the function will struggle dealing with objects just in excess of 2^n); however, merge does extremely well with large array sizes. Shell sort’s efficiency times seem to be pretty predictable and consistent throughout.