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Project 5

When you look at the Graph that contains all the graphs, the bubble and insertion sort would take the longest out of all of them, with bubble sort being the largest. In addition, the four other sorts (Merge Sort, Shell Sort, Quick Sort, Iterative Merge Sort) would be the fastest having the most similar graphs from each other with the lowest calculation being the Quick Sort. The biggest of the 4 sorts would be the Merge Sort.

All Sorts

Bubble Sort

Best Case: O(n)

Average Case: O(n^2)

Worst: O(n^2)

Insertion Sort

Best Case: O(n)

Average Case: O(n^2)

Worst Case: O(n^2)

Merge Sort

Best Case: O(n log n)

Average Case: O(n log n)

Worst Case: O(n log n)

Iterative Merge Sort

Best Case: O(n log n)

Average Case: O(n log n)

Worst Case: O(n log n)

Quick Sort

Best Case: O(n log n)

Average Case: O(n log n)

Worst Case: O(n^2)

Shell Sort

Best Case: O(n log n)

Average Case: depends on gap sequence

Worst Case: O(n^2)