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Written task, task 1

Specify the sorting algorithm chosen for (c) and state its asymptotic speed in terms of the Best, Average and Worst Case:

I chose Insertion Sort for the CustomSort class.

Best Case: O(n) — when the list is already sorted.

Average Case: O(n²) — for random data.

Worst Case: O(n²) — when the list is sorted in reverse order.

Comparison with Merge Sort and Quick Sort

Merge Sort: O(n log n) for Best, Average, and Worst Case.

Quick Sort: Best and Average Case: O(n log n); Worst Case: O(n²).

Insertion Sort is slower for large datasets than both Merge Sort and Quick Sort.  
Conclusion: Merge Sort is the most ideal algorithm for sorting objects, as it has consistent O(n log n) performance and is stable.