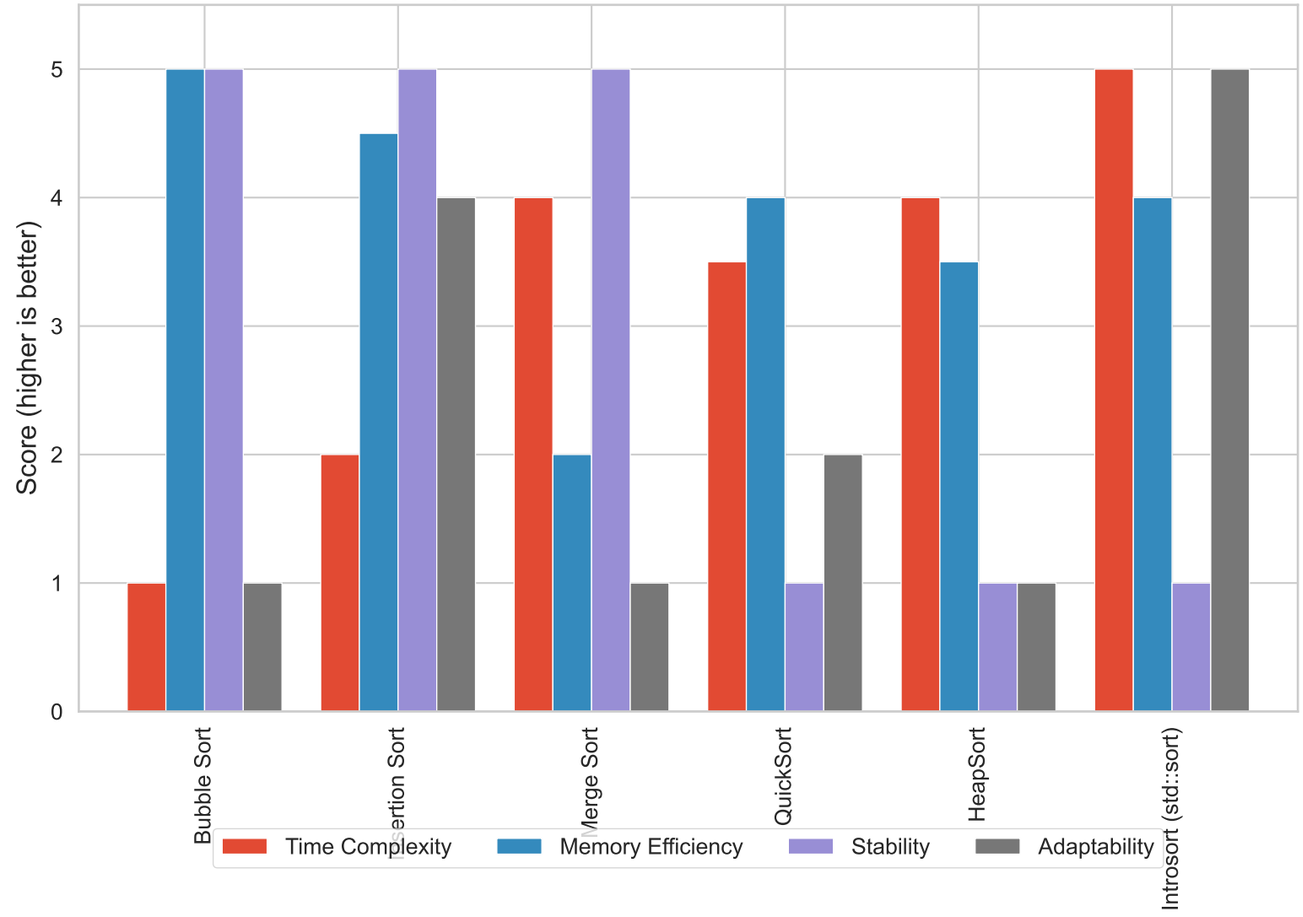
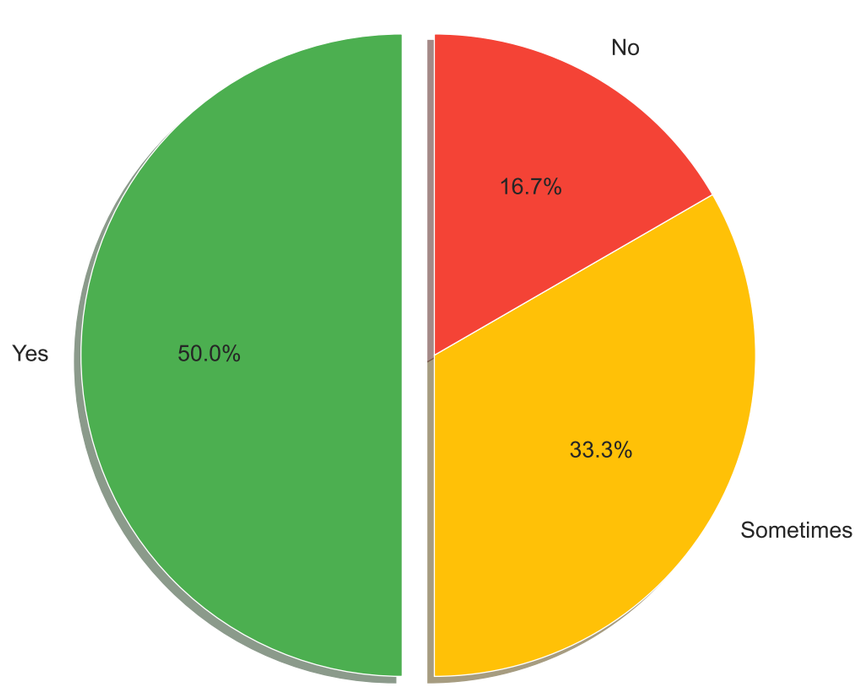
Sorting Algorithms in Quantitative Finance

Algorithm	Best Case	Worst Case	Used in Finance	Notes
Bubble Sort	O(n)	O(n²)	No	Too slow for large datasets
Insertion Sort	O(n)	O(n²)	Sometimes	Good for small or nearly sorted datasets
Merge Sort	O(n log n)	O(n log n)	Yes	Used in external sorting (e.g., large-scale trading data
QuickSort	O(n log n)	O(n²)	Sometimes	Fast but bad worst-case performance
HeapSort	O(n log n)	O(n log n)	Yes	Good for priority queues
Introsort (std::sort)	O(n log n)	O(n log n)	Yes	Hybrid: QuickSort + HeapSort + InsertionSort

Algorithm Performance Characteristics



Usage in Financial Applications



Note: Introsort (std::sort) combines the advantages of multiple algorithms, making it the preferred choice for most financial applications.