Asmahan Ibrahim Yosef Albetar 1220165

How the hybrid sorting algorithm came to be

I intended to start by combining each sorting algorithm's optimal time complexity and space complexity. The Merge sort's optimal time complexity was O(nlog(n)), while Quick sort had the best space complexity, which was O(1). After doing some research and attempting to combine them without success, I came to the conclusion that the heap sort is the ideal method because it combines the space complexity of Quick sort with the time complexity of Merge sort. This, amazingly, has not gone over 30 ms for sorting data of size 50,000, whether sorted or unsorted! For the same data, Merge Sort and Quick Sort have sort times more than 200 ms.