Callaghan Donnelly

My “Improved” merge sort is actually much slower than the regular merge sort, and this can be seen in the data collected in the spreadsheet. It is however still leagues ahead of the quadratic sorts, which is definitely comforting. I also describe in the comments in my program a potential implementation that could make it even faster than quicksort, but due to my lack of knowledge of multiprocessing in Java, as well as my lack of knowledge of the required overhead for aforementioned multiprocessing, this seemed like a much more streamlined solution.

A piece of paper with writing on it

Description automatically generated with medium confidence

The algorithm is essentially Binary Search – cutting the sorted array in halves – until it reaches the correct position to place the double that was pulled from whatever sub-array is being merged in. The speed up, is it checks at the start whether or not the lowest of the presorted array is higher than the highest of the array that is being merged into (the array in which all the sorted data will be in). Thus, possibly saving huge chunks of time.

Text, letter

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