Due: June 10th 2019

3-Way Merge Sort

Merge sort involves recursively splitting the array into two subarrays (as equally-sized as possible), sorting them recursively and then finally merging three sorted arrays into one sorted array.

a. What is the number of comparisons 3-way merge makes in the worst case if given as input three arrays, each of size *M*?

b. Write a recurrence relation T(N) that expresses the worst-case number of key comparisons used in 3-way mergesort given an array of N elements as input.

c. Solve the recurrence relation and provide the complexity in Big-O notation. Please show your work.