

3-Way Merge Sort

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.