

CS5800: Algorithms Spring 2018

Assignment 2.4

Saptaparna Das

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- 4.(i) The outer loop makes the array size double in every iteration. So, it will take $\log_2 n$ iterations to sort an array of n elements. Now, in each iteration, there are approximately n comparisons happening. So total time taken is $O(n \log n)$.
- (ii) Disadvantage of bottom up merge sort over traditional merge sort is it uses extra space.
- Advantage of bottom up merge sort is there is no recursion overhead.