

Inversions

Let $A[1 \dots n]$ be an array of n distinct numbers. If $i < j$ and $A[i] > A[j]$, then the pair (i, j) is called an ***inversion*** of A . Give an algorithm that determines the number of inversions in any permutation on n elements in $O(n \lg n)$ worst-case time. (*Hint*: Modify merge sort.)