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## Daily Coding Problem: Problem #44 [Medium]

1 message

**Daily Coding Problem** <founders@dailycodingproblem.com>

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To: sjayaraj@nyit.edu



Daily Coding Problem

Good morning! Here's your coding interview problem for today.

This problem was asked by Google.

We can determine how "out of order" an array  $A$  is by counting the number of inversions it has. Two elements  $A[i]$  and  $A[j]$  form an inversion if  $A[i] > A[j]$  but  $i < j$ . That is, a smaller element appears after a larger element.

Given an array, count the number of inversions it has. Do this faster than  $O(N^2)$  time.

You may assume each element in the array is distinct.

For example, a sorted list has zero inversions. The array  $[2, 4, 1, 3, 5]$  has three inversions:  $(2, 1)$ ,  $(4, 1)$ , and  $(4, 3)$ . The array  $[5, 4, 3, 2, 1]$  has ten inversions: every distinct pair forms an inversion.

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