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Problem 1

I

Insertion Sort is implemented by scanned the already sorted former array and find a place to insert the new element. In the best case, every element is smaller than the next element, therefore the new element is larger than all elements in the former array. So, there is no move in the best case.

ii

Insertion Sort is implemented by scanned the already sorted former array and find a place to insert the new element. In real implementation, because the former array is sorted, the algorithm starts with compare the new element with the former element which is the last element in the former sorted array. In the best case, the new element is always larger than the former element. Therefore, except the first element, for each element of the array, there is only one comparison. The total number of comparisons in a 1000-length-array is 999.

figures

