Two Sum

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1 Description

You are given two integer arrays nums1 and nums2, sorted in non-decreasing order, and two integers m and n, representing the number of elements in nums1 and nums2 respectively.

Merge nums1 and nums2 into a single array sorted in non-decreasing order.

The final sorted array should not be returned by the function, but instead be stored inside the array nums1. To accommodate this, nums1 has a length of m + n, where the first m elements denote the elements that should be merged, and the last n elements are set to 0 and should be ignored. nums2 has a length of n.

2 Solution

1. Two pointers from head
   Copy the first m elements of nums1 and store them in a new list raw nums1. Use the two pointers which starts from head to read the elements of raw nums1 and nums2 and compare the 2 elements. Insert the less one into nums1.
2. Two pointers from tail
   This method is very similar with the above one. By letting pointers start reading from tail, the space complexity can be improved. We don't need a new list to store the elements in nums since the first m elements won't be overwritten before they insert into the sorted list.