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1 // You are given two integer arrays nums1 and nums2, sorted in non-decreasing order, and two integers m and n,
2 // representing the number of elements in nums1 and nums2 respectively.
3 // Merge nums1 and nums2 into a single array sorted in non-decreasing order.
4 // The final sorted array should not be returned by the function, but instead be stored inside the array nums1.
5 // To accommodate this, nums1 has a length of m + n, where the first m elements denote the elements that should
6 // be merged, and the last n elements are set to 0 and should be ignored. nums2 has a length of n.
7 import java.util.Scanner;
8 public class arrShiftSortMerge {
9     public static void main(String[] args) {
10         Scanner sc = new Scanner(System.in);
11         System.out.println("Enter size of arr1");
12         int n1 = sc.nextInt();
13         System.out.println("Enter " + n1 + " elements");
14         int[] arr1 = new int[n1];
15         for (int i = 0; i < n1; i++)
16             arr1[i] = sc.nextInt();
17         System.out.println("Enter size of arr2");
18         int n2 = sc.nextInt();
19         System.out.println("Enter " + n2 + " elements");
20         int[] arr2 = new int[n2];
21         for (int i = 0; i < n2; i++)
22             arr2[i] = sc.nextInt();
23         // Create new array tmp with size n1 + n2 and filled with elements of arr1 and zeroes
24         int[] tmp = new int[n1+n2];
25         for(int i = 0; i < n1+n2; i++) {
26             if (i < n1)
27                 tmp[i] = arr1[i];
28             else
29                 tmp[i] = 0;
30         }
31         merge(tmp, n1, arr2, n2);
32     }
33
34     public static void merge(int[] arr1, int n1, int[] arr2, int n2) {
35         int i = n1 - 1;
36         int j = n2 - 1;
37         int k = n1 + n2 - 1;
38         while (j >= 0) {
39             if (i >= 0 && arr1[i] > arr2[j])
40                 arr1[k--] = arr1[i--];
41             else
42                 arr1[k--] = arr2[j--];
43         }
44         for (i = 0; i < arr1.length; i++)
45             System.out.print(arr1[i] + " ");
46     }
47 }
```