Merge Without Extra Space

Hard Accuracy: 36.41% Submissions: 96947 Points: 8

Given two sorted arrays arr1[] of size N and arr2[] of size M. Each array is sorted in non-decreasing order. Merge the two arrays into one sorted array in non-decreasing order without using any extra space.

Example 1:

Input:

N = 4, M = 5arr1[] = {1, 3, 5, 7}

arr2[] = {0, 2, 6, 8, 9}

Output: 0 1 2 3 5 6 7 8 9

Explanation: Since you can't use any extra space, modify the given arrays

to form arr1[] = {0, 1, 2, 3}

arr2[] = {5, 6, 7, 8, 9}

Example 2:

Input:

N = 2, M = 3

arr1[] = {10, 12}

arr2[] = {5, 18, 20}

Output: 5 10 12 18 20

Explanation: Since you can't use any extra space, modify the given arrays

to form arr1[] = {5, 10} arr2[] = {12, 18, 20}

Your Task:

You don't need to read input or print anything. Complete the function **merge()** which takes the two arrays arr1[], arr2[] and their sizes n and m, as input parameters. The function does not return anything. Use the given arrays to sort and merge arr1[] and arr2[] in-place.

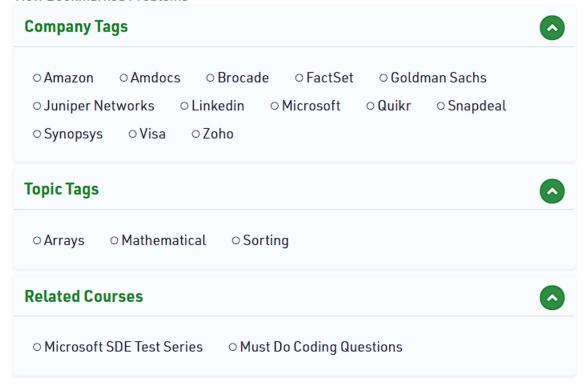
Note: The generated output will print all the elements of arr1[] followed by all the elements of arr2[].

Expected Time Complexity: O((n+m)*log(n+m)) Expected Auxiliary Space: O(1)

Constraints:

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1 <= N, M <= 5*10<sup>4</sup>
0 <= arr1<sub>i</sub>, arr2<sub>i</sub> <= 10<sup>6</sup>
```

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arr1[i]=arr2[j];
                arr2[j]=temp;
                i--;
                j++;
            }
            else
            j++;
        System.out.println(" i: "+i +" j : "+j);
        Arrays.sort(arr1);
        Arrays.sort(arr2);
        System.out.println(" --1---: " + Arrays.toString(arr1) + "--- 2---: "
+ Arrays.toString(arr2));
    public static void main(String[] args) throws IOException {
        BufferedReader br = new BufferedReader(new InputStreamReader(System.in));
        System.out.println(" enter the n1 and n2 ");
        String lineOne[] = br.readLine().trim().split("\\s");
        int n1 = Integer.parseInt(lineOne[0]);
        int n2 = Integer.parseInt(lineOne[1]);
        System.out.println("enter the element for 1st array");
        String[] lineTwo = br.readLine().trim().split("\\s");
        int arr[] = new int[n1];
        for (int i = 0; i < arr.length; i++) {</pre>
            arr[i] = Integer.parseInt(lineTwo[i]);
        }
        System.out.println("enter the element for 2nd array");
        String[] lineThree = br.readLine().trim().split("\\s");
        int arr2[] = new int[n2];
        for (int i = 0; i < arr2.length; i++) {</pre>
            arr2[i] = Integer.parseInt(lineThree[i]);
        }
        System.out.println(" 1 : " + Arrays.toString(arr) + " 2: " +
Arrays.toString(arr2));
        merge(arr, arr2, n1, n2);
}
```