

Solution 1

Solution 2

```
1 // Copyright © 2020 AlgoExpert, LLC. All rights reserved.
2
3 package main
4
5 ▾ type Item struct {
6     ArrayIdx int
7     Num      int
8 }
9
10 // O(nk) time | O(n + k) space - where where n is the total
11 // number of array elements and k is the number of arrays
12 ▾ func MergeSortedArrays(arrays [][]int) []int {
13     sortedList := []int{}
14     elementIdxs := make([]int, len(arrays))
15
16     for {
17         smallestItems := []Item{}
18         ▾ for arrayIdx := 0; arrayIdx < len(arrays); arrayIdx++ {
19             relevantArray := arrays[arrayIdx]
20             elementIdx := elementIdxs[arrayIdx]
21             ▾ if elementIdx == len(relevantArray) {
22                 continue
23             }
24             ▾ smallestItems = append(smallestItems, Item{
25                 ArrayIdx: arrayIdx,
26                 Num:      relevantArray[elementIdx],
27             })
28         }
29
30         ▾ if len(smallestItems) == 0 {
31             break
32         }
33         nextItem := getMinValue(smallestItems)
34         sortedList = append(sortedList, nextItem.Num)
35         elementIdxs[nextItem.ArrayIdx] += 1
36     }
37     return sortedList
38 }
39
40 ▾ func getMinValue(items []Item) Item {
41     minValueItem := items[0]
42     ▾ for i := 1; i < len(items); i++ {
43         ▾ if items[i].Num < minValueItem.Num {
44             minValueItem = items[i]
45         }
46     }
47     return minValueItem
48 }
49
```

