

Solution 1

```
1 // Copyright © 2020 AlgoExpert, LLC. All rights reserved.
2
3 package main
4
5 ▼ type LinkedList struct {
6     Value int
7     Next *LinkedList
8 }
9
10 // O(n) time | O(1) space - where n is the number of nodes in the Linked List
11 ▼ func RearrangeLinkedList(head *LinkedList, k int) *LinkedList {
12     var smallerListHead, smallerListTail *LinkedList
13     var equalListHead, equalListTail *LinkedList
14     var greaterListHead, greaterListTail *LinkedList
15
16     node := head
17     ▼ for node != nil {
18     ▼     if node.Value < k {
19         smallerListHead, smallerListTail = growLinkedList(smallerListHead, smallerListTail, node)
20     ▼     } else if node.Value > k {
21         greaterListHead, greaterListTail = growLinkedList(greaterListHead, greaterListTail, node)
22     ▼     } else {
23         equalListHead, equalListTail = growLinkedList(equalListHead, equalListTail, node)
24     }
25
26     prevNode := node
27     node = node.Next
28     prevNode.Next = nil
29 }
30
31 firstHead, firstTail := connectLinkedLists(smallerListHead, smallerListTail, equalListHead, equalListTail)
32 finalHead, _ := connectLinkedLists(firstHead, firstTail, greaterListHead, greaterListTail)
33 return finalHead
34 }
35
36 ▼ func growLinkedList(head, tail, node *LinkedList) (*LinkedList, *LinkedList) {
37     newHead, newTail := head, node
38     ▼ if newHead == nil {
39         newHead = node
40     }
41     ▼ if tail != nil {
42         tail.Next = node
43     }
44     return newHead, newTail
45 }
46
47 ▼ func connectLinkedLists(headOne, tailOne, headTwo, tailTwo *LinkedList) (*LinkedList, *LinkedList) {
48     newHead, newTail := headOne, tailTwo
49     ▼ if newHead == nil {
50         newHead = headTwo
51     }
52     ▼ if newTail == nil {
53         newTail = tailOne
54     }
55
56     ▼ if tailOne != nil {
57         tailOne.Next = headTwo
58     }
59
60     return newHead, newTail
61 }
62
```

