

Problem 3: Given two singly linked lists that are sorted in increasing order of node values, merge two **sorted** linked lists and return them as a sorted list. The list should be made by splicing together the nodes of the first two lists.

```
class ListNode:
```

```
    def __init__(self, val=0, next=None):
```

```
        self.val = val
```

```
        self.next = next
```

```
def mergeTwoLists(l1, l2):
```

```
    dummy = ListNode(-1)
```

```
    current = dummy
```

```
    while l1 and l2:
```

```
        if l1.val <= l2.val:
```

```
            current.next = l1
```

```
            l1 = l1.next
```

```
        else:
```

```
            current.next = l2
```

```
            l2 = l2.next
```

```
        current = current.next
```

```
    current.next = l1 if l1 else l2
```

```
    return dummy.next
```

```
def printLinkedList(head):
```

```
    result = []
```

```
    while head:
```

```
        result.append(head.val)
```

```
        head = head.next
```

```
    return result
```

```
l1 = ListNode(3)
```

```
l1.next = ListNode(7)
```

```
l1.next.next = ListNode(10)
```

```
l2 = ListNode(1)
```

```
l2.next = ListNode(2)
```

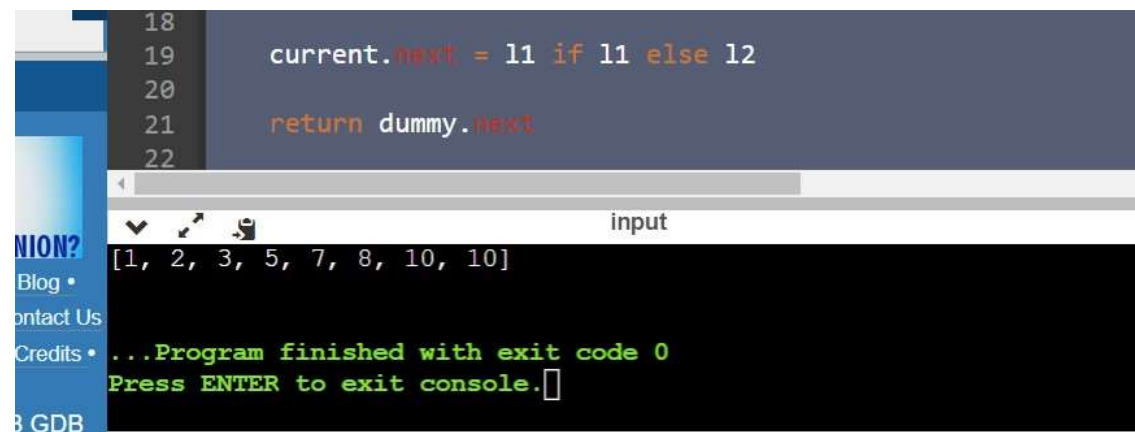
```
l2.next.next = ListNode(5)
```

```
l2.next.next.next = ListNode(8)
```

```
l2.next.next.next.next = ListNode(10)
```

```
merged_list = mergeTwoLists(l1, l2)
```

```
print(printLinkedList(merged_list))
```



The screenshot shows a code editor with the following Python code:

```
18
19     current.next = l1 if l1 else l2
20
21     return dummy.next
22
```

Below the code editor is a terminal window. The input field shows the list `[1, 2, 3, 5, 7, 8, 10, 10]`. The terminal output displays the message `...Program finished with exit code 0` and `Press ENTER to exit console.`