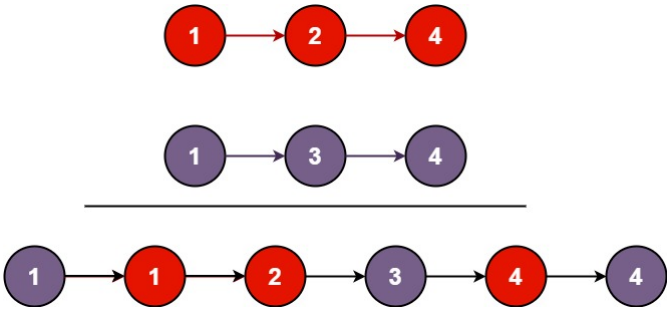
21 合并两个有序链表

Label：链表 递归
将两个升序链表合并为一个新的 升序 链表并返回。新链表是通过拼接给定的两个链表的所有节点组成的。



- 迭代

```
class Solution {
    public ListNode mergeTwoLists(ListNode l1, ListNode l2) {

        ListNode dummy = new ListNode();
        ListNode curr = dummy;
        ListNode curr1 = l1;
        ListNode curr2 = l2;
        while (curr1 != null && curr2 != null) {
            if (curr1.val >= curr2.val) {
                curr.next = curr2;
                curr2 = curr2.next;
            } else {
                curr.next = curr1;
                curr1 = curr1.next;
            }
            curr = curr.next;
        }


        // 合并剩余
        if (curr1 != null) {
            curr.next = curr1;
            curr = curr.next;
            curr1 = curr1.next;
        }

        if (curr2 != null) {
            curr.next = curr2;
            curr = curr.next;
            curr2 = curr2.next;
        }
        return dummy.next;
    }
}
```

- 递归

```
class Solution {
    public ListNode mergeTwoLists(ListNode l1, ListNode l2) {
        if (l1 == null || l2 == null) {
            return l1 == null ? l2 : l1;
        }

        if (l1.val < l2.val) {
            l1.next =  mergeTwoLists(l1.next,l2);
            return l1;
        }else {
            l2.next =  mergeTwoLists(l1,l2.next);
            return l2;
        }
    }
}
```