# 合并两个排序的链表

## 题目

[牛客网](https://www.nowcoder.com/practice/d8b6b4358f774294a89de2a6ac4d9337?tpId=13&tqId=11169&rp=1&ru=%2Fta%2Fcoding-interviews&qru=%2Fta%2Fcoding-interviews%2Fquestion-ranking&tPage=1)

输入两个单调递增的链表，输出两个链表合成后的链表，当然我们需要合成后的链表满足单调不减规则。

## 解题思路

1. 双指针指向两个链表
2. 循环选取最小值，加入结果集

public ListNode Merge(ListNode list1, ListNode list2) {  
 ListNode head = new ListNode(-1);  
 ListNode cursor = head;  
  
 while (list1 != null || list2 != null) {  
 if (list1 == null) {  
 while (list2 != null) {  
 cursor.next = list2;  
 cursor = cursor.next;  
 list2 = list2.next;  
 }  
  
 continue;  
 }  
  
 if (list2 == null) {  
 while (list1 != null) {  
 cursor.next = list1;  
 cursor = cursor.next;  
 list1 = list1.next;  
 }  
  
 continue;  
 }  
  
 if (list1.val < list2.val) {  
 cursor.next = list1;  
 cursor = cursor.next;  
  
 list1 = list1.next;  
 } else {  
 cursor.next = list2;  
 cursor = cursor.next;  
  
 list2 = list2.next;  
 }  
 }  
  
 return head.next;  
}