

Problem List

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21. Merge Two Sorted Lists

Solved

EasyTopicsCompanies

You are given the heads of two sorted linked lists `list1` and `list2`.

Merge the two lists into one **sorted** list. The list should be made by splicing together the nodes of the first two lists.

Return the head of the merged linked list.

Example 1:

```
graph LR
    subgraph List1 [list1]
        direction LR
        n1_1((1)) --> n1_2((2))
        n1_2 --> n1_4((4))
    end
    subgraph List2 [list2]
        direction LR
        n2_1((1)) --> n2_3((3))
        n2_3 --> n2_4((4))
    end
    subgraph Merged [Merged List]
        direction LR
        m1((1)) --> m2((1))
        m2 --> m3((2))
        m3 --> m4((3))
        m4 --> m5((4))
        m5 --> m6((4))
    end
```

Input: `list1 = [1,2,4]`, `list2 = [1,3,4]`
Output: `[1,1,2,3,4,4]`

Example 2:

Input: `list1 = []`, `list2 = []`
Output: `[]`

Example 3:

Input: `list1 = []`, `list2 = [0]`
Output: `[0]`

Constraints:

- The number of nodes in both lists is in the range `[0, 50]`.
- `-100 <= Node.val <= 100`
- Both `list1` and `list2` are sorted in **non-decreasing** order.

Seen this question in a real interview before? 1/5

YesNo

Accepted 4.4M | Submissions 6.8M | Acceptance Rate 65.0%

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Code

C++Auto

```
9  * };
10 */
11 class Solution {
12 public:
13     ListNode* mergeTwoLists(ListNode* head1, ListNode* head2) {
14
15         if (head1 == NULL)
16             return head2;
17         if (head2 == NULL)
18             return head1;
19
20         ListNode* ans = new ListNode(-1);
21         ListNode* ptr = ans;
22
23         while (head1 != NULL and head2 != NULL) {
24
25             if (head1->val <= head2->val) {
26                 ptr->next = head1;
27                 ptr = head1;
28                 head1 = head1->next;
29             } else {
30                 ptr->next = head2;
31                 ptr = head2;
32                 head2 = head2->next;
33             }
34
35             if (head1 != NULL) {
36                 ptr->next = head1;
37             }
38
39             if (head2 != NULL) {
40                 ptr->next = head2;
41             }
42             return ans->next;
43         }
44     };
45 }
```

Saved

Ln 1, Col 1

Testcase

Test Result