21. Merge Two Sorted Lists

Merge two sorted linked lists and return it as a new list. The new list should be made by splicing together the nodes of the first two lists.

**Example:**

**Input:** 1->2->4, 1->3->4  
**Output:** 1->1->2->3->4->4

/\*\*

\* Definition for singly-linked list.

\* struct ListNode {

\* int val;

\* ListNode \*next;

\* ListNode(int x) : val(x), next(NULL) {}

\* };

\*/

class Solution {

public:

ListNode\* mergeTwoLists(ListNode\* l1, ListNode\* l2) {

struct ListNode\* dummy = new ListNode(0);

struct ListNode\* tail = dummy;

while(l1&&l2){

if(l1->val<=l2->val){

tail->next=l1;

tail=l1;

l1=l1->next;

}else{

tail->next=l2;

tail=l2;

l2=l2->next;

}

}

if(l1) tail->next=l1;

else tail->next=l2;

return dummy->next;

}

};