

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->44

Solution in C++

```
/**
 * 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) {
        ListNode *h=NULL, *p, *c;
        while(l1 || l2) {
            if (!l1) { c=l2; l2=l2->next; }
            else if (!l2) { c=l1; l1=l1->next; }
            else if (l1->val<l2->val) { c=l1; l1=l1->next; }
            else { c=l2; l2=l2->next; }

            if (!h) {
                h=new ListNode(c->val);
                p=h;
            }
            else {
                p->next = new ListNode(c->val);
                p=p->next;
            }
        }
        return h;
    }
};
```