Code

C Auto

```c
struct ListNode* mergeLists(struct ListNode* l1, struct ListNode* l2) {
    struct ListNode dummy;
    struct ListNode* tail = &dummy;
    dummy.next = NULL;

    while (l1 != NULL && l2 != NULL) {
        if (l1->val < l2->val) {
            tail->next = l1;
            l1 = l1->next;
        } else {
            tail->next = l2;
            l2 = l2->next;
        }
        tail = tail->next;
    }

    tail->next = (l1 != NULL) ? l1 : l2;
    return dummy.next;
}

struct ListNode* sortList(struct ListNode* head) {
    if (head == NULL || head->next == NULL)
        return head;


    struct ListNode *slow = head, *fast = head->next;
    while (fast != NULL && fast->next != NULL) {
        slow = slow->next;
        fast = fast->next->next;
    }

    struct ListNode* mid = slow->next;
    slow->next = NULL;

    struct ListNode* left = sortList(head);
    struct ListNode* right = sortList(mid);

    return mergeLists(left, right);
}

```