1.Print element of Linked list

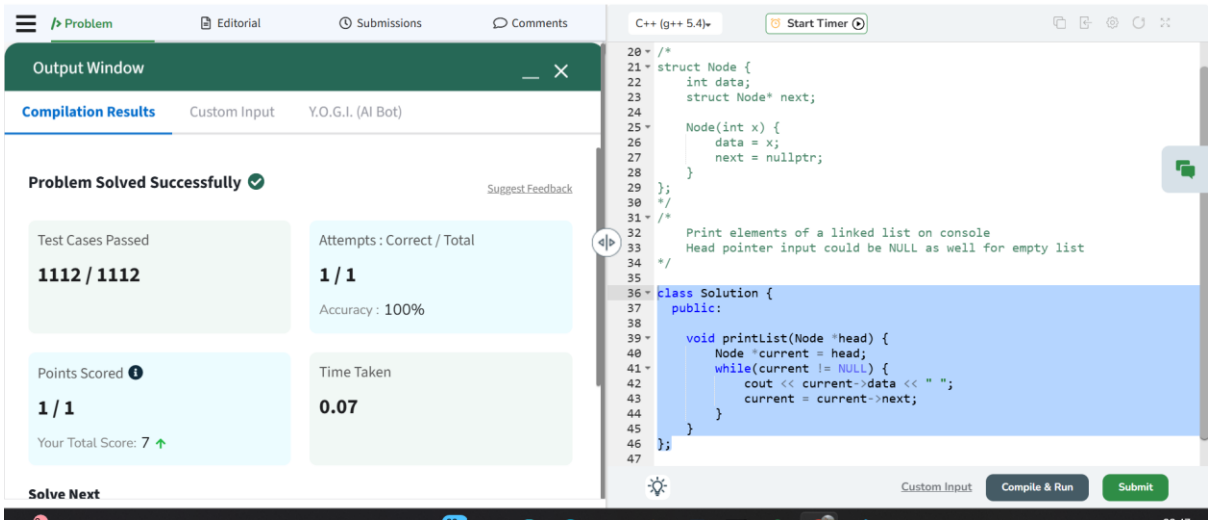
Code:

```
//{ Driver Code Starts
#include <iostream>
#include <sstream>
#include <vector>
using namespace std;

struct Node {
   int data;
   struct Node* next;

   Node(int x) {
      data = x;
      next = nullptr;
   }
};



// } Driver Code Ends

/*
struct Node {
   int data;
   struct Node* next;

   Node(int x) {
      data = x;
      next = nullptr;
   }
};
```

```
*/
/*
   Print elements of a linked list on console
   Head pointer input could be NULL as well for empty list
*/

class Solution {
  public:

   void printList(Node *head) {
      Node *current = head;
      while(current != NULL) {
         cout << current->data << " ";
         current = current->next;
      }
   }
};




//{ Driver Code Starts.

int main() {
   int t;
   cin >> t;
   cin.ignore(); // Ignore the newline character after t

   while (t--) {
      string input;
      getline(cin, input); // Read the entire line for the array elements
```

```
        stringstream ss(input);
        Node *head = nullptr, *tail = nullptr;
        int x;

        // Building the linked list from input
        while (ss >> x) {
            if (head == nullptr) {
                head = new Node(x);
                tail = head;
            } else {
                tail->next = new Node(x);
                tail = tail->next;
            }
        }

        Solution ob;
        ob.printList(head);
        cout << endl;
        cout << "~" << endl;
    }

    return 0;
}

// } Driver Code Ends
```

Output:

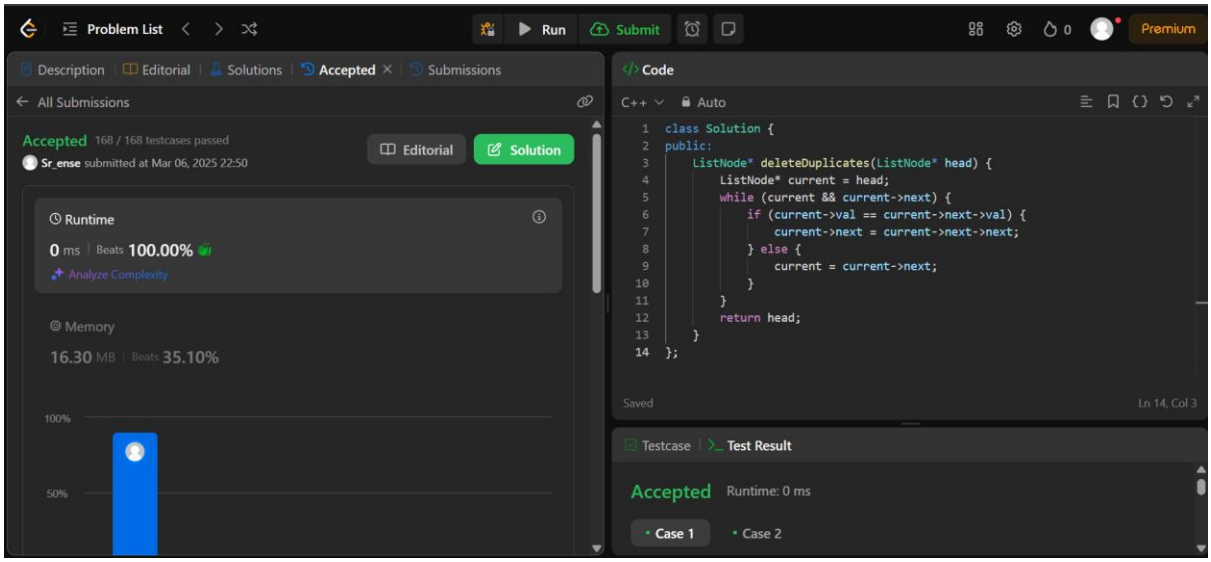


2. Remove-duplicates-from-sorted-list

Code:

```
class Solution {

public:

   ListNode* deleteDuplicates(ListNode* head) {

      ListNode* current = head;

      while (current && current->next) {

         if (current->val == current->next->val) {

            current->next = current->next->next;

         } else {

            current = current->next;

         }

      }

      return head;

   }

};
```

Output:



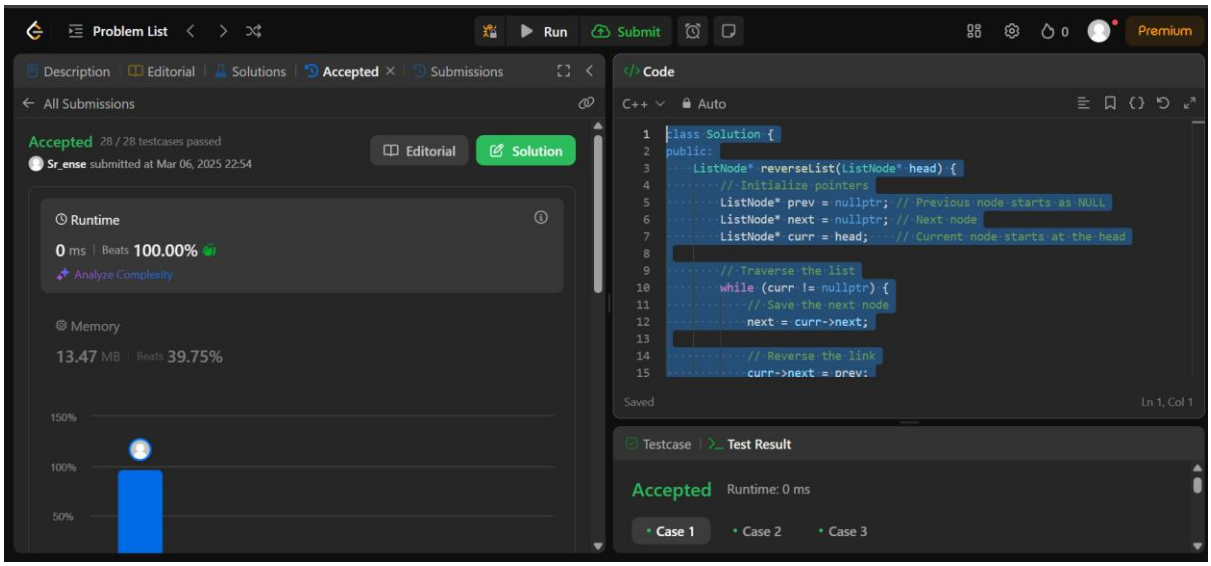
3.Reverse a linked list

Code:

```
class Solution {
public:
    ListNode* reverseList(ListNode* head) {
        // Initialize pointers
        ListNode* prev = nullptr; // Previous node starts as NULL
        ListNode* next = nullptr; // Next node
        ListNode* curr = head;    // Current node starts at the head

        // Traverse the list
        while (curr != nullptr) {
            // Save the next node
            next = curr->next;

            // Reverse the link
            curr->next = prev;

            // Move pointers forward
            prev = curr; // Move prev to the current node
```

```
            curr = next; // Move curr to the next node
        }

        // prev is now the new head of the reversed list
        return prev;
    }
};
```

Output:



4. Delete the middle node of the linked list

Code:

```
/**
 * Definition for singly-linked list.
 * struct ListNode {
 *     int val;
 *     ListNode *next;
 *     ListNode() : val(0), next(nullptr) {}
 *     ListNode(int x) : val(x), next(nullptr) {}
 *     ListNode(int x, ListNode *next) : val(x), next(next) {}
 * };
```

```
 */
class Solution {
public:
    ListNode* deleteMiddle(ListNode* head) {
    if(head==NULL || head->next==NULL) return NULL;
     ListNode* slow=head;
     ListNode* fast=head->next;
     while(fast->next!=NULL && fast->next->next!=NULL)
     {
        slow=slow->next;
        fast=fast->next->next;
     }
     slow->next=slow->next->next;
     return head;
    }
};
```

Output: