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Domain Winning Camp Worksheet (Practice Questions)
Subject: IT

Day 4

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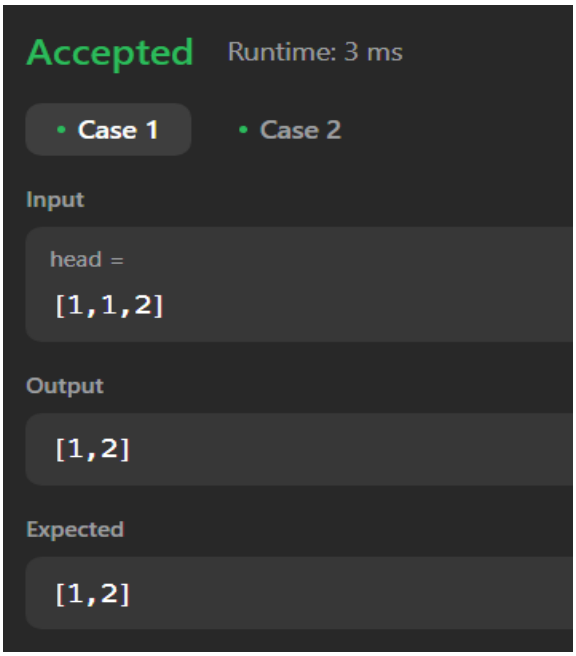
SECTION/GROUP: DWWC-43	**SUBJECT:** IT
DATE: 06/01/2023	**BRANCH:** CSE

Que-1: **Remove Duplicates from Sorted List**

Code:

```
class Solution {public:
        ListNode* deleteDuplicates(ListNode* head) {if(head==nullptr)
                return nullptr; ListNode
            *temp=head;
            while(temp!=nullptr && temp->next!=nullptr){if(temp->val==temp-
                >next->val){
                    temp->next=temp->next->next;
                }else
                    temp=temp->next;
            }
            return head;
        }
};
```

Output:



Que-2: Palindrome Linked List

Code:

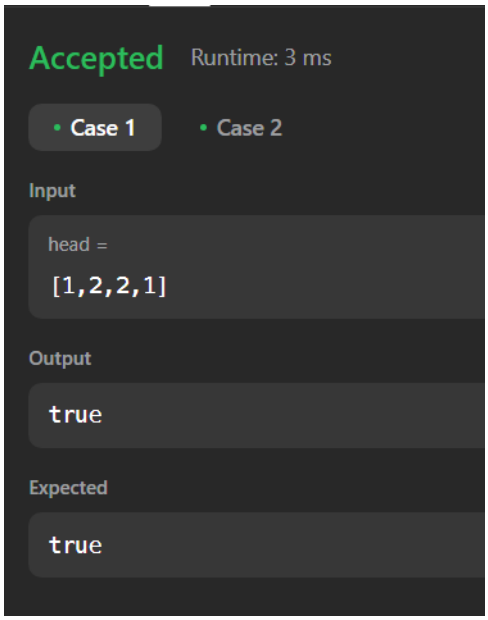
```
class Solution {public:
        ListNode* calmid(ListNode* head){ListNode*
                slow=head; ListNode* fast=head;
                while(fast!=nullptr && fast->next!=nullptr){slow=slow->next;
                        fast=fast->next->next;
                }
                return slow;
        }
```

```
ListNode* reverse(ListNode* head){
    ListNode* curr=head;
    ListNode *temp=nullptr;
    ListNode* prev=nullptr;
    while(curr!=nullptr){
        temp=curr->next;
        curr->next=prev;
        prev=curr;
        curr=temp;
    }
    return prev;
}

bool isPalindrome(ListNode* head) {
    ListNode* p1=head;
    ListNode* mid=calmid(head);
    ListNode* p2=reverse(mid);
    while(p1!=nullptr && p2!=nullptr){
        if(p1->val!=p2->val)
            return false;
        p1=p1->next;
        p2=p2->next;
    }
    return true;
```

```
    }
};
```

Output:

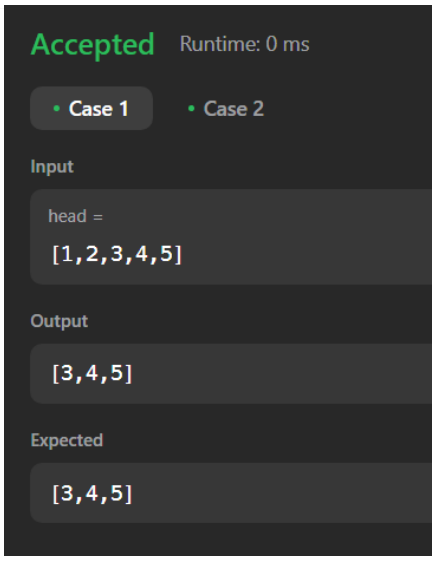


Que-3: Middle of the Linked List

Code:

```
class Solution {public:
    ListNode* middleNode(ListNode*  head)  { ListNode*
        fast=head,*slow=head; while(fast!=nullptr && fast->next!=nullptr){
            slow=slow->next; fast=fast->next-
            >next;
        }
        return slow;
    }
};
```

Output:



Que-4: [Add Two Numbers]

Code:

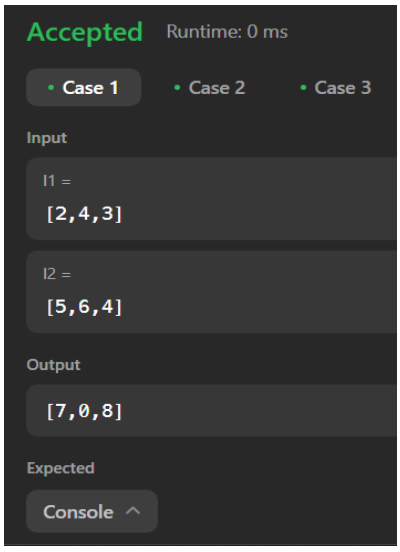
```
class Solution {
public:
    ListNode* addTwoNumbers(ListNode* l1, ListNode* l2) {
        ListNode* ans=nullptr;
        ListNode* temp=nullptr;
        int carr=0,val;
        while(l1!=nullptr || l2!=nullptr){
```

```
if(l1!=nullptr && l2!=nullptr){
    val = l1->val + l2->val + carr;
    l1 = l1->next;
    l2 = l2->next;
}
else if(l1 != nullptr) {
    val = l1->val + carr;
    l1 = l1->next;
}
else if(l2 != nullptr) {
    val = l2->val + carr;
    l2 = l2->next;
}
else {
    break;
}
carr=val/10;
```

```
if(ans==nullptr){
    temp=new ListNode(val%10);
    ans=temp;
}
else{
    temp->next=new ListNode(val%10);
```

```
                temp = temp->next;
            }
        }
        if(carr!=0){
            temp->next=new ListNode(carr);
        }
        return ans;
    }
};
```

Output:



Que-5: [Merge Two Sorted Lists]

```
class Solution {
public:
    ListNode* mergeTwoLists(ListNode* list1, ListNode*list2) {
        if(list1==nullptr){
            return list2;}

        if(list2==nullptr){
            return list1;}

        ListNode *temp=NULL,*head = NULL;
        if(list1->val<list2->val){
            temp =
            list1;
            head=temp
            ;
            list1 = list1->next;
        }
        else{
            temp =
            list2;
            head=temp
            ;
            list2 = list2->next;
        }

        while(list1!=nullptr && list2!=nullptr){if(list1-
            >val<list2->val){
                temp->next=list1;
                list1=list1->next;
                temp=temp->next;
            }
```

```
                else{
                        temp->next=list2;
                        list2=list2->next;
                        temp=temp->next;
                }
        }
        if(list1!=NULL)
        {
                temp->next = list1;
        }
        if(list2!=NULL)
        {
    }
};
```

Output: