

# Rajalakshmi Engineering College

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## NeoColab\_REC\_CS23231\_DATA STRUCTURES

### REC\_DS using C\_Week 2\_COD\_Question 4

Attempt : 1  
Total Mark : 10  
Marks Obtained : 10

#### Section 1 : Coding

##### 1. Problem Statement

Ravi is developing a student registration system for a college. To efficiently store and manage the student IDs, he decides to implement a doubly linked list where each node represents a student's ID.

In this system, each student's ID is stored sequentially, and the system needs to display all registered student IDs in the order they were entered.

Implement a program that creates a doubly linked list, inserts student IDs, and displays them in the same order.

##### ***Input Format***

The first line contains an integer N the number of student IDs.

The second line contains N space-separated integers representing the student IDs.

### **Output Format**

The output should display the single line containing N space-separated integers representing the student IDs stored in the doubly linked list.

Refer to the sample output for formatting specifications.

### **Sample Test Case**

Input: 5

10 20 30 40 50

Output: 10 20 30 40 50

### **Answer**

```
// You are using GCC
```

```
#include<stdio.h>
```

```
#include<stdlib.h>
```

```
typedef struct Node {  
    int data;  
    struct Node*next;  
    struct Node*prev;  
} Node;
```

```
void insert(Node**head,int data){  
    Node*newNode=(Node*)malloc(sizeof(Node));  
    newNode->data=data;  
    newNode->next=NULL;
```

```
    if(*head == NULL) {  
        newNode->prev = NULL;  
        *head=newNode;  
        return;  
    }
```

```
    Node*temp=*head;  
    while(temp->next!=NULL){  
        temp=temp->next;
```

```
    }  
    temp->next=newNode;  
    newNode->prev=temp;  
}
```

```
void display(Node*head){  
    Node*temp=head;  
    while(temp!=NULL){  
        printf("%d ",temp->data);  
        temp=temp->next;  
    }  
    printf("\n");  
}
```

```
int main(){  
    int N,value;  
    Node*head=NULL;  
    scanf("%d",&N);  
  
    for(int i=0;i<N;i++){  
        scanf("%d",&value);  
        insert(&head,value);  
    }  
    display(head);  
    return 0;  
}
```

**Status :** Correct

**Marks : 10/10**