

# 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>
```

```
struct Node {
```

```
    int data;
```

```
    struct Node* prev;
```

```
    struct Node* next;
```

```
};
```

```
struct Node* createNode(int data){
```

```
    struct Node* newnode = (struct Node*)malloc(sizeof(struct Node));
```

```
    newnode->data=data;
```

```
    newnode->prev=NULL;
```

```
    newnode->next=NULL;
```

```
    return newnode;
```

```
}
```

```
void insertEnd(struct Node** head, int data){
```

```
    struct Node* newnode=createNode(data);
```

```
    if(*head == NULL){
```

```
        *head = newnode;
```

```
        return;
```

```
}
```

```

    struct Node* temp = *head;
    while(temp->next != NULL){
        temp=temp->next;
    }
    temp->next = newnode;
    newnode->prev=temp;

}

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

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

}

```

**Status :** Correct

**Marks :** 10/10