

Rajalakshmi Engineering College

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Batch: 2028

Degree: B.E - AI & ML

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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* prev,*next;
```

```
}node;
```

```
node*tail=NULL;
```

```
void insert(node** head,int value){
```

```
    node* newnode=(node*)malloc(sizeof(node));
```

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

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

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

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

```
        *head=tail=newnode;
```

```
        return;
```

```
    }
```

```
    else{
```

```
        tail->next=newnode;
```

```
        newnode->prev=tail;
```

```
        tail=newnode;
```

```
    }
```

```
}
```

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

```
int main(){  
    node* head=NULL;  
    int n;  
    scanf("%d",&n);  
    for(int i=0;i<n;i++){  
        int val;  
        scanf("%d",&val);  
        insert(&head,val);  
    }  
    display(head);  
}
```

Status : Correct

Marks : 10/10