

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 id;
    struct node*prev;
    struct node*next;
};
struct node*head=NULL;
struct node*tail=NULL;
typedef struct node Node;
void insert(int id){
    Node*newnode=(Node*)malloc(sizeof(Node));
    newnode->id=id;
    newnode->next=NULL;
    if(head==NULL){
        newnode->prev=NULL;
        head=newnode;
        tail=newnode;
    }
    else{
        tail->next=newnode;
        newnode->prev=tail;
        tail=newnode;
    }
}
```

```
    }  
}  
void display(){  
    Node*temp=head;  
    while(temp!=NULL){  
        printf("%d ",temp->id);  
        temp=temp->next;  
    }  
    printf("\n");  
}  
int main(){  
    int data;  
    int n;  
    scanf("%d",&n);  
    for(int i=0;i<n;i++){  
        scanf("%d",&data);  
        insert(data);  
    }  
    display();  
}
```

Status : Correct

Marks : 10/10