Rajalakshmi Engineering College

Name: Rayvan Sanjai
Email: 240701425@rajalakshmi.edu.in
Roll no: 2116240701425
Phone: 9380572043
Branch: REC
Department: I CSE FD
Batch: 2028
Degree: B.E - CSE

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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

```c
#include<stdio.h>
#include<stdlib.h>
struct node{
    int id;
    struct node*prev;
    struct node*next;};
struct node*head=NULL;
struct node*tail=NULL;
void insert(int id){
    struct node*nnode=(struct node*)malloc(sizeof(node));
    nnode->id=id;
    nnode->next=NULL;
    if(head==NULL){
        nnode->prev=NULL;
        head=nnode;
        tail=nnode; }else{
        tail->next=nnode;
        nnode->prev=tail;
        tail=nnode;
        }}
void display(){
    struct node*temp=head;
    while(temp!=NULL){
        printf("%d ",temp->id);
```

```c
        temp=temp->next;}
    printf("\n");}
int main(){
    int N,id;
    scanf("%d",&N);
    for(int i=0;i<N;i++){
        scanf("%d",&id);
        insert(id);
    }
    display();
    return 0;
}
```

Status : Correct   **Marks : 10/10**