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* next;
   struct Node* prev;
};
struct Node* head=NULL;

void add(Node**head,int id){
   Node* newNode=(struct Node*)malloc(sizeof(Node));
   Node* p= *head;
   newNode->data=id;
   newNode->next=NULL;
   if (*head==NULL){
      newNode->prev=*head;
      *head=newNode;
   }
   else{
      while(p->next!=NULL){
         p=p->next;
      }
```

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

void dis(Node*head){
    if (head!=NULL){
        Node *t=head;
        while(t!=NULL){
            printf("%d ",t->data);
            t=t->next;
        }
        printf("\n");
    }
    else{
        printf("Empty list!");
    }
}

int main(){
    int n,id;
    scanf("%d",&n);
    while (n--){
        scanf("%d",&id);
        add(&head,id);
    }
    dis(head);
    return 0;
}
```

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