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* next;
   struct node* prev;
};

struct node* head=NULL; struct node* tail=NULL;

void insert(int id)
{
   struct node* newnode=(struct 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()
{
    struct node* temp=head;
    while(temp!=NULL)
    {
        printf("%d ",temp->id);
        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();
}
```

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