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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;
};

typedef struct node node;
node * head=NULL;

void insert(int data)
{
   node * temp=(node * )malloc(sizeof(node));
   temp->data=data;
   temp->next=NULL;
   temp->prev=NULL;

   if(head==NULL)
   {
      head=temp;
```

```
    }
    else
    {
        node * a=head;
        while(a->next!=NULL)
        {
            a=a->next;
        }
        a->next=temp;
        temp->prev=a;
    }
}

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

int main()
{
    int n;
    scanf("%d",&n);

    int b;
    for(int i=0;i<n;i++)
    {
        scanf("%d",&b);
        insert(b);
    }
    display();
}
```

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