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=NULL;
   struct node*next=NULL;
};
void insertatend(struct node**head, int data)
{
   struct node*nnode=(struct node*)malloc(sizeof(struct node));
   nnode->id=data;
   nnode->next=NULL;
   if (*head==NULL)
   {
      nnode->prev=NULL;
      *head=nnode;
   }
   else
   {
      struct node*temp=*head;
      while (temp->next!=NULL)
      {
```

```
        temp=temp->next;
      }
      temp->next=nnode;
      nnode->prev=temp;
    }
}
void display(struct node**head)
{
    struct node*temp=*head;
    while (temp!=NULL)
    {
        printf("%d ",temp->id);
        temp=temp->next;
    }
}
int main()
{
    int n,x;
    struct node*head=NULL;
    scanf("%d",&n);
    for (int i=0;i<n;i++)
    {
        scanf("%d",&x);
        insertatend(&head,x);
    }
    display(&head);
}
```

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