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

```c
#include <stdio.h>
#include <stdlib.h>

struct node{
    int id;
    struct node* p;
    struct node* n;
};

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

void display(struct node* head){
```

```c
        struct node* temp = head;
        while(temp!=NULL){
            printf("%d\n",temp->id);
            temp=temp->n;
        }
    }

    int main(){
        int x, id;
        struct node* head=NULL;
        scanf("%d",&x);
        for(int i=0;i<x;i++){
            scanf("%d",&id);
            insertatend(&head,id);
        }
        display(head);
        return 0;
    }
```

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