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
{
   struct node*prev;
   int data;
   struct node*next;
};

struct node*head = NULL;

void insertatend(int e)
{
   struct node*newnode;
   newnode = (struct node*)malloc(sizeof(struct node));
   newnode->prev = NULL;
   newnode->data = e;
   newnode->next = NULL;

   if(head == NULL)
   head = newnode;
```

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

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

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