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

```
#include <stdio.h>
#include <stdlib.h>
typedef struct node
{
   int data;
   struct node* next;
   struct node* prev;
}Node;
void insertAtend(Node** head,int data)
{
   Node* newNode = (Node*)malloc(sizeof(Node));
   newNode -> data = data;
   newNode -> next = NULL;
   newNode -> prev = NULL;
   if(*head == NULL)
   {
      *head = newNode;
      return;
   }
   Node* temp = *head;
   while(temp -> next != NULL)
   {
      temp = temp -> next;
   }
```

```
    temp -> next = newNode;
    newNode -> prev = temp;
}
void Traverse(Node* head)
{
    Node* temp = head;
    while(temp != NULL)
    {
        printf("%d ",temp -> data);
        temp = temp -> next;
    }
}
int main()
{
    int n,e;
    Node* head = NULL;
    scanf("%d",&n);
    for(int i=0;i<n;i++)
    {
        scanf("%d",&e);
        insertAtend(&head,e);
    }
    Traverse(head);

}
```

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