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>
typedef struct node{
   int id;struct node *next;struct node *prev;
}node;
void append(node **head,int id){
   node *newnode=(node*)malloc(sizeof(node));
   newnode->id=id;
   newnode->next=NULL;
   newnode->prev=NULL;
   if(*head==NULL){
      *head=newnode;return;
   }
   node *t=*head;
   while(t->next!=NULL){
      t=t->next;
   }
   t->next=newnode;
   newnode->prev=t;
}
void display(node *head){
   while(head!=NULL){
      printf("%d ",head->id);
```

```
        head=head->next;
    }
    printf("\n");
}
void freelist(node *head){
    while(head!=NULL){
        node *t=head;
        head=head->next;
        free(t);
    }
}
int main(){
    int n;scanf("%d",&n);
    node *head=NULL;
    for(int i=0;i<n;i++){
        int id;scanf("%d",&id);append(&head,id);
    }
    display(head);freelist(head);return 0;
}
```

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