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>
struct node{
   int id;
   struct node*prev;
   struct node*next;
};
struct node*head=NULL;
struct node*tail=NULL;
void insert(int id){
   struct node*nnode=(struct node*)malloc(sizeof(node));
   nnode->id=id;
   nnode->next=NULL;
   if(head==NULL){
      nnode->prev=NULL;
      head=nnode;
      tail=nnode;
   }
   else{
      tail->next=nnode;
      nnode->prev=tail;
      tail=nnode;
   }
}
```

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

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