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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 data;
    struct Node* prev;
    struct Node* next;
}Next;

Node* createNode(int data){
    Node* newNode=(Node*)malloc(sizeof(Node));
    newNode->data=data;
    newNode->prev=NULL;
    newNode->next=NULL;
    return newNode;
}
void append(Node**head_ref,int data){
    Node* newNode=createNode(data);
    if(*head_ref==NULL){
        *head_ref=newNode;
        return;
    }
    Node* temp=*head_ref;
    while(temp->next!=NULL){
```

```
        temp=temp->next;
    }
    temp->next=newNode;
    newNode->prev=temp;
}

void displayList(Node* head){
    Node* temp=head;
    while(temp!=NULL){
        printf("%d ",temp->data);
        temp=temp->next;
    }
    printf("\n");
}

int main()
{
    int N,id;
    Node*head=NULL;
    scanf("%d",&N);
    for(int i=0;i<N;i++){
        scanf("%d",&id);
        append(&head,id);
    }
    displayList(head);
}
```

Status : Correct *Marks : 10/10*