

Rajalakshmi Engineering College

Name: swetha veeramani
Email: 241501261@rajalakshmi.edu.in
Roll no: 241501261
Phone: 9790907713
Branch: REC
Department: I AI & ML FC
Batch: 2028
Degree: B.E - AI & ML

Scan to verify results



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{
    int id;
    struct node*prev;
    struct node*next;
};
struct node*createnode(int id){
    struct node* newnode=(struct node*)malloc(sizeof(struct node));
    if(newnode==NULL)
        exit(1);
    newnode->id=id;
    newnode->prev=NULL;
    newnode->next=NULL;
    return newnode;
}
void insert(struct node** head,struct node** tail,int id){
    struct node* newnode=createnode(id);
    if(*head==NULL){
        *head=newnode;
        *tail=newnode;
    }
    else{
```

```

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

```

Status : Correct

Marks : 10/10