

Rajalakshmi Engineering College

Name: Sherwin G M
Email: 240701496@rajalakshmi.edu.in
Roll no: 240701496
Phone: 7708605966
Branch: REC
Department: I CSE FD
Batch: 2028
Degree: B.E - CSE

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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;
```

```
node* head=NULL;
```

```
void insert(int ele)
```

```
{
```

```
    node*newnode=(node*)malloc(sizeof(node));
```

```
    newnode->next=NULL;
```

```
    newnode->prev=NULL;
```

```
    newnode->data=ele;
```

```
    if(head==NULL)
```

```
    {
```

```
        head=newnode;
```

```
    }
```

```
    else{
```

```
        node*temp=head;
```

```
        while(temp->next!=NULL)
```

```

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

```

Status : Correct

Marks : 10/10