Rajalakshmi Engineering College

Name: Maheendran S
Email: 241501103@rajalakshmi.edu.in
Roll no: 241501103
Phone: 9655220853
Branch: REC
Department: I AI & ML FA
Batch: 2028
Degree: B.E - AI & ML

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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

```c
// You are using GCC
#include<stdio.h>
#include<stdlib.h>
struct node{
    int data;
    struct node*next;
    struct node*prev;
};
struct node*create(int data){
    struct node*newnode=(struct node*)malloc(sizeof(struct node));
    newnode->data=data;
    newnode->next=NULL;
    newnode->prev=NULL;
    return newnode;
}
void append(struct node**head,int data){
    struct node*newnode=create(data);
    if(*head==NULL){
        *head=newnode;
        return;
    }

    struct node*temp=*head;
    while(temp->next!=NULL){
```

```c
        temp=temp->next;
      }
      temp->next=newnode;

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

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