Rajalakshmi Engineering College

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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>
struct node{
   int data;
   struct node *next;
   struct node *prev;
};
typedef struct node Node;
Node* createNode(int data){
   Node* newNode=(Node*)malloc(sizeof(Node));
   newNode->data=data;
   newNode->next=NULL;
   newNode->prev=NULL;
   return newNode;
}
Node* InsertAtEnd(int data,Node* head){
   Node* newNode=createNode(data);
   if(head==NULL){
      head=newNode;
      return newNode;
   }
   Node* temp=head;
   while(temp->next!=NULL){
      temp=temp->next;
```

```
    }
    temp->next=newNode;
    newNode->prev=temp;
    return head;
}
void print(Node* head){
    Node *temp=head;
    while(temp!=NULL){
        printf("%d ",temp->data);
        temp=temp->next;
    }
}
int main(){
    Node* head = NULL;
    int n,data;
    scanf("%d",&n);
    for(int i=0;i<n;i++){
        scanf("%d",&data);
        head=InsertAtEnd(data,head);
    }
    print(head);
}
```

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