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NeoColab_REC_CS23231_DATA STRUCTURES

REC_DS using C_Week 1_COD_Question 6

Attempt : 1
Total Mark : 10
Marks Obtained : 10

Section 1 : Coding

1. Problem Statement

John is tasked with creating a program to manage student roll numbers using a singly linked list.

Write a program for John that accepts students' roll numbers, inserts them at the end of the linked list, and displays the numbers.

Input Format

The first line of input consists of an integer N, representing the number of students.

The second line consists of N space-separated integers, representing the roll numbers of students.

Output Format

The output prints the space-separated integers singly linked list, after inserting the roll numbers of students at the end.

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 5
23 85 47 62 31

Output: 23 85 47 62 31

Answer

```
#include <stdio.h>
#include <stdlib.h>

struct Node {
    int rollNumber;
    struct Node* next;
};

struct Node* insertAtEnd(struct Node* head, int rollNumber) {
    struct Node* newNode = (struct Node*)malloc(sizeof(struct Node));
    if (newNode == NULL) {
        fprintf(stderr, "Memory allocation failed\n");
        exit(1);
    }

    newNode->rollNumber = rollNumber;
    newNode->next = NULL;

    if (head == NULL) {
        return newNode;
    }

    struct Node* current = head;
    while (current->next != NULL) {
        current = current->next;
    }

    current->next = newNode;
```

```
    return head;
}

// Function to display the list
void display(struct Node* head) {
    struct Node* current = head;
    while (current != NULL) {
        printf("%d", current->rollNumber);
        if (current->next != NULL)
            printf(" ");
        current = current->next;
    }
    printf("\n");
}

int main() {
    int N;
    scanf("%d", &N);

    struct Node* head = NULL;
    int roll;

    for (int i = 0; i < N; i++) {
        scanf("%d", &roll);
        head = insertAtEnd(head, roll);
    }
    display(head);

    struct Node* temp;
    while (head != NULL) {
        temp = head;
        head = head->next;
        free(temp);
    }
    return 0;
}
```

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