

Rajalakshmi Engineering College

Name: Ravi Sankar
Email: 240701424@rajalakshmi.edu.in
Roll no: 240701424
Phone: 8122932671
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 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>
```

```
// Define the node structure
```

```
typedef struct Node {
```

```
    int roll;
```

```
    struct Node* next;
```

```
} Node;
```

```
// Function to insert at the end
```

```
void insertEnd(Node** head, int roll) {
```

```
    Node* newNode = (Node*)malloc(sizeof(Node));
```

```
    newNode->roll = roll;
```

```
    newNode->next = NULL;
```

```
    if (*head == NULL) {
```

```
        *head = newNode;
```

```
        return;
```

```
    }
```

```
    Node* temp = *head;
```

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

```
        temp = temp->next;
```

```
    temp->next = newNode;
```

```
}
```

```
// Function to print the list
```

```
void printList(Node* head) {  
    Node* temp = head;  
    while (temp != NULL) {  
        printf("%d ", temp->roll);  
        temp = temp->next;  
    }  
    printf("\n");  
}
```

```
// Free memory  
void freeList(Node* head) {  
    Node* temp;  
    while (head != NULL) {  
        temp = head;  
        head = head->next;  
        free(temp);  
    }  
}
```

```
int main() {  
    int N, roll;  
    Node* head = NULL;  
  
    scanf("%d", &N);  
  
    for (int i = 0; i < N; i++) {  
        scanf("%d", &roll);  
        insertEnd(&head, roll);  
    }  
  
    printList(head);  
    freeList(head);  
    return 0;  
}
```

Status : Correct

Marks : 10/10