

Rajalakshmi Engineering College

Name: Sidharth P
Email: 240701514@rajalakshmi.edu.in
Roll no: 240701514
Phone: 7695968308
Branch: REC
Department: I CSE FE
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

```
// You are using GCC
```

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

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

```
// Define a Node structure
```

```
struct Node {
```

```
    int rollNumber;
```

```
    struct Node* next;
```

```
};
```

```
// Function to insert a roll number at the end of the list
```

```
void insertAtEnd(struct Node** head, int rollNumber) {
```

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

```
    newNode->rollNumber = rollNumber;
```

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

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

```
        *head = newNode;
```

```
        return;
```

```
    }
```

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

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

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

```
    }
```

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

```
}
```

```

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

int main() {
    struct Node* head = NULL;
    int n, rollNumber;

    // Read the number of students
    scanf("%d", &n);

    // Read roll numbers and insert them at the end
    for (int i = 0; i < n; i++) {
        scanf("%d", &rollNumber);
        insertAtEnd(&head, rollNumber);
    }

    // Print the list
    printList(head);

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

    return 0;
}

```

Status : Correct

Marks : 10/10