**Institute of Computer Technology**

**B. Tech. Computer Science and Engineering**

**Sub: DS**

**Course Code: 2CSE302**

**Practical – 8**

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**Sem - 3**

**Branch: CS**

**Class: A**

**Batch: 32**

**Problem Definition-1:** Write a program in C to create and display a Singly Linked List.

**Code:**

#include<stdio.h>

#include<stdlib.h>

*// Define the structure for the linked list node*

struct Node {

    int data;

    struct Node \*next;

};

*// Function to display the linked list*

void displayList(struct Node \*ptr) {

    while (ptr != NULL) {

        printf("Data = %d\n", ptr->data);

        ptr = ptr->next;

    }

}

int main() {

    struct Node \*head = NULL;

    struct Node \*temp = NULL;

    struct Node \*newNode = NULL;

    int n, data, i;

*// Input the number of nodes*

    printf("Input the number of nodes: ");

    scanf("%d", &n);

*// Create the linked list based on the input*

    for(i = 1; i <= n; i++) {

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

        if(newNode == NULL) {

            printf("Memory allocation failed\n");

            return -1;

        }

*// Input data for the current node*

        printf("Input data for node %d: ", i);

        scanf("%d", &data);

        newNode->data = data;

        newNode->next = NULL;

        if(head == NULL) {

*// If this is the first node, set it as the head*

            head = newNode;

            temp = head;

        } else {

*// Otherwise, link the new node to the previous one*

            temp->next = newNode;

            temp = temp->next;

        }

    }

*// Display the data in the linked list*

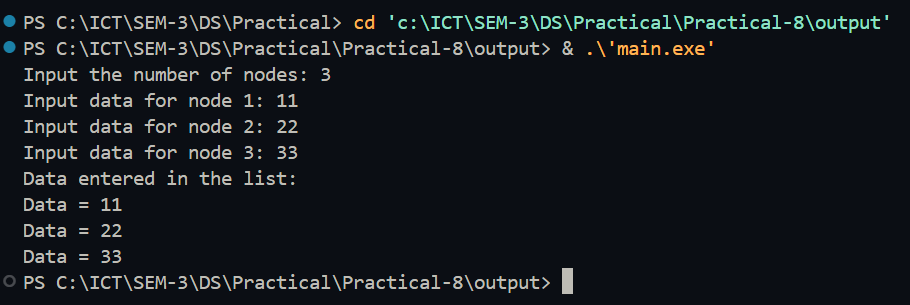
    printf("Data entered in the list:\n");

    displayList(head);

    return 0;

}

**Output:**

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