//C Program to Implement a Stack using Linked List and develop functions to perform push and pop operations.

#include <stdio.h>

#include <stdlib.h>

// Structure to create a node with data and the next pointer

struct node {

int info;

struct node \*ptr;

}\*top,\*top1,\*temp;

int count = 0;

// Push() operation on a stack

void push(int data) {

if (top == NULL)

{

top =(struct node \*)malloc(1\*sizeof(struct node));

top->ptr = NULL;

top->info = data;

}

else

{

temp =(struct node \*)malloc(1\*sizeof(struct node));

temp->ptr = top;

temp->info = data;

top = temp;

}

count++;

printf("Node is Inserted\n\n");

}

int pop() {

top1 = top;

if (top1 == NULL)

{

printf("\nStack Underflow\n");

return -1;

}

else

top1 = top1->ptr;

int popped = top->info;

free(top);

top = top1;

count--;

return popped;

}

void display() {

// Display the elements of the stack

top1 = top;

if (top1 == NULL)

{

printf("\nStack Underflow\n");

return;

}

printf("The stack is \n");

while (top1 != NULL)

{

printf("%d--->", top1->info);

top1 = top1->ptr;

}

printf("NULL\n\n");

}

int main() {

int choice, value;

printf("\nImplementation of Stack using Linked List\n");

while (1) {

printf("\n1. Push\n2. Pop\n3. Display\n4. Exit\n");

printf("\nEnter your choice : ");

scanf("%d", &choice);

switch (choice) {

case 1:

printf("\nEnter the value to insert: ");

scanf("%d", &value);

push(value);

break;

case 2:

printf("Popped element is :%d\n", pop());

break;

case 3:

display();

break;

case 4:

exit(0);

break;

default:

printf("\nWrong Choice\n");

}

}

}