write a program to evaluate postfix expression using stack in c

#include <stdio.h>

#include <stdlib.h>

#include <ctype.h>

#define MAX\_SIZE 100

// Stack data structure

struct Stack {

int top;

int items[MAX\_SIZE];

};

// Push an item to the stack

void push(struct Stack\* stack, int item) {

if (stack->top == MAX\_SIZE - 1) {

printf("Stack Overflow\n");

}

else {

stack->top++;

stack->items[stack->top] = item;

}

}

// Pop an item from the stack

int pop(struct Stack\* stack) {

if (stack->top == -1) {

printf("Stack Underflow\n");

return -1;

}

else {

int item = stack->items[stack->top];

stack->top--;

return item;

}

}

// Evaluate postfix expression

int evaluatePostfix(char\* postfix) {

int i, operand1, operand2, result;

struct Stack stack;

// Initialize stack

stack.top = -1;

// Traverse postfix expression

for (i = 0; postfix[i] != '\0'; i++) {

// If current character is an operand

if (isdigit(postfix[i])) {

push(&stack, postfix[i] - '0');

}

// If current character is an operator

else {

operand1 = pop(&stack);

operand2 = pop(&stack);

switch (postfix[i]) {

case '+':

result = operand2 + operand1;

break;

case '-':

result = operand2 - operand1;

break;

case '\*':

result = operand2 \* operand1;

break;

case '/':

result = operand2 / operand1;

break;

default:

printf("Invalid operator\n");

return -1;

}

push(&stack, result);

}

}

return pop(&stack);

}

// Main function

int main() {

char postfix[MAX\_SIZE];

printf("Enter postfix expression: ");

scanf("%s", postfix);

int result = evaluatePostfix(postfix);

printf("Result: %d\n", result);

return 0;

}

