**WEEK 6**

**Evaluating arithmetic expression**

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**#include <stdio.h>**

**#include <stdlib.h>**

**#include <ctype.h>**

**#define MAX\_SIZE 100**

**int stack[MAX\_SIZE];**

**int top = -1;**

**void push(int item) {**

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

**printf("Stack Overflow\n");**

**} else {**

**top++;**

**stack[top] = item;**

**}**

**}**

**int pop() {**

**if (top < 0) {**

**printf("Stack Underflow\n");**

**return -1;**

**} else {**

**return stack[top--];**

**}**

**}**

**int evaluateExpression(char\* exp) {**

**int i, operand1, operand2, result;**

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

**if (isdigit(exp[i])) {**

**push(exp[i] - '0');**

**} else {**

**operand2 = pop();**

**operand1 = pop();**

**switch (exp[i]) {**

**case '+':**

**push(operand1 + operand2);**

**break;**

**case '-':**

**push(operand1 - operand2);**

**break;**

**case '\*':**

**push(operand1 \* operand2);**

**break;**

**case '/':**

**push(operand1 / operand2);**

**break;**

**}**

**}**

**}**

**result = pop();**

**return result;**

**}**

**int main() {**

**char exp[MAX\_SIZE];**

**printf("Enter the arithmetic expression: ");**

**scanf("%s", exp);**

**int result = evaluateExpression(exp);**

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

**return 0;**

**}**