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EX-6: Evaluation of 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 '/':
            if (operand2 == 0) {
printf("Error: Division by zero\n");
return -1;
            }
            push(operand1 / operand2);
break;
            default:
printf("Error: Unsupported operator %c\n", exp[i]);
return -1;
        }
    }
}
result = pop();
```

```

        if (top >= 0) {
            printf("Error: Invalid postfix expression\n");
return -1;
        }
        return result;
    } int
main() {
    char exp[MAX_SIZE];

    printf("Enter the arithmetic expression: ");
    scanf("%s", exp);

    int result = evaluateExpression(exp);

    if (result != -1) {
        printf("Result: %d\n", result);
    }
    return 0;
}

```

### Output

Enter the infix expression : a/b^c+d\*e-f\*g abc^/de\*+fg\*-