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#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <ctype.h>

#define MAX_SIZE 100

// Function to check if a character is an operator
int isOperator(char ch) {
    return (ch == '+' || ch == '-' || ch == '*' || ch == '/' || ch == '^');
}

// Function to get the precedence of an operator
int getPrecedence(char op) {
    if (op == '^')
        return 4;
    else if (op == '*' || op == '/')
        return 3;
    else if (op == '+' || op == '-')
        return 2;
    else
        return 1; // Default for '('
}

// Function to convert infix to postfix
void infixToPostfix(char infix[], char postfix[]) {
    char stack[MAX_SIZE];
    int top = -1;
    int i, j;

    for (i = 0, j = 0; infix[i] != '\0'; i++) {
        if (isalnum(infix[i])) {
            postfix[j++] = infix[i];
        } else if (infix[i] == '(') {
            stack[++top] = infix[i];
        } else if (infix[i] == ')') {
            while (top != -1 && stack[top] != '(') {
                postfix[j++] = stack[top--];
            }
            top--; // Pop '('
        } else if (isOperator(infix[i])) {
            while (top != -1 && getPrecedence(stack[top]) >= getPrecedence(infix[i])) {
                postfix[j++] = stack[top--];
            }
            stack[++top] = infix[i];
        }
    }
}

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while (top != -1) {
    postfix[j++] = stack[top--];
}

postfix[j] = '\0';
}

int main() {
    char infix[MAX_SIZE], postfix[MAX_SIZE];

    printf("Enter infix expression: ");
    scanf("%s", infix);

    infixToPostfix(infix, postfix);

    printf("Infix Expression: %s\n", infix);
    printf("Postfix Expression: %s\n", postfix);
    printf("Shreyash Sinha 1BM22CS273");
    return 0;
}

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Enter infix expression: A-(B/C+(D%E+F)/G)*H
Infix Expression: A-(B/C+(D%E+F)/G)*H
Postfix Expression: ABC/DEF+G/+H*-
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