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Aim : Stack Implementation (conversion from infix to postfix expression)

Stack.cpp

```cpp
#include <iostream>
#include <stack>
#include <string>

using namespace std;

int precedence(char op) {
   if (op == '^')
       return 3;
   else if (op == '*' || op == '/')
       return 2;
   else if (op == '+' || op == '-')
       return 1;
   else
       return -1;
}

string infixToPostfix(string infix) {
   stack<char> s;
   string postfix = "";

   for (int i = 0; i < infix.length(); i++) {
       char c = infix[i];

       if (isalnum(c)) {
           postfix += c;
       } else if (c == '(') {
           s.push(c);
       } else if (c == ')') {
```

```
            while (!s.empty() && s.top() != '(') {
                postfix += s.top();
                s.pop();
            }
            s.pop();
        } else {
            while (!s.empty() && precedence(c) <= precedence(s.top())) {
                postfix += s.top();
                s.pop();
            }
            s.push(c);
        }
    }

    while (!s.empty()) {
        postfix += s.top();
        s.pop();
    }

    return postfix;
}

int main() {
    string infixExpression;
    cout << "Enter an infix expression: ";
    cin >> infixExpression;

    string postfixExpression = infixToPostfix(infixExpression);
    cout << "Postfix expression: " << postfixExpression << endl;

    return 0;
}
```

OUTPUT :

```
mca@mca-HP-280-G3-SFF-Business-PC:~/snehal$ ./a.out
Enter an infix expression: a+2bc+3ca
Postfix expression: a2bc+3ca+
```