//

// main.cpp

// postfixCal

//

// Created by Jeff on 11/21/16.

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//

#include<iostream>

#include<string>

#include<cstdlib>

#include<cmath>

#include<stack>

#include<ctype.h>

using namespace std;

int calc(char token, int num1, int num2);

int main(){

string postfix;

while(true){

cout << "\n Enter a postfix expression: ";

getline(cin,postfix);

if(postfix == "q") break;

cout << "\npostfix => " << postfix << endl;

std::deque<char>postfixStk ;

for(auto item:postfix) postfixStk.push\_back(item);

stack<int> stk; // operand

int num1, num2, result, step =1;

while(!postfixStk.empty()){

char token = postfixStk.front();

if(isalnum(token)){

stk.push(token-'0');

postfixStk.pop\_front();

}

else if(token == '+'||token == '-'||token == '\*' || token == '/' || token == '^'){

postfixStk.pop\_front();

num2 = stk.top(); stk.pop();

num1 = stk.top(); stk.pop();

result = calc(token,num1,num2);

stk.push(result);

cout << "Step " << step << ":" << result

<<" = " << num1 << token << num2 << endl;

step++;

}

}cout << "Answer : " << result;

}

}

int calc(char token, int num1,int num2){

int result;

switch(token){

case '\*': result = num1 \* num2;

break;

case '/': result = num1 / num2;

break;

case '-': result = num1 - num2;

break;

case '+': result = num1 + num2;

break;

case '^': result = pow(num1,num2);

}

return result;

}

