Source Code

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Name: Eranus Thompson

Postfix notation using stacks

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#include <iostream>

#include <iomanip>

#include <stack>

#include <string>

using namespace std;

int main() {

stack<double> value;

double num, num1, num2;

string strOper;

cout << "Type in a postFix express or stop to stop" << endl;

cin >> strOper;

while (strOper != "stop") {

//if the string is +, pop the last 2 values

//from the stack and push back their sum

if (strOper == "+") {

num1 = value.top();

value.pop();

num2 = value.top();

value.pop();

value.push(num1 + num2);

}

//if the string is \*, pop the last 2 values

//from the stack and push back their product

else if (strOper == "\*") {

num1 = value.top();

value.pop();

num2 = value.top();

value.pop();

value.push(num1 \* num2);

}

//if the string is - , pop the last 2 values

//from the stack and push back the second – the first

else if (strOper == "-") {

num1 = value.top();

value.pop();

num2 = value.top();

value.pop();

value.push(num2 - num1);

}

//if the string is /, pop the last 2 values

//from the stack and push back the second / the first

else if (strOper == "/") {

num1 = value.top();

value.pop();

num2 = value.top();

value.pop();

value.push(num2 / num1);

}

//if the string is =, prints the top of the stack

//and pop the stack

else if (strOper == "=") {

cout << fixed << showpoint << setprecision(5)

<< value.top() << endl;

value.pop();

}

//if the string is a num, converts the string to a

//double and push it on stack

else {

num = atof(strOper.c\_str());

value.push(num);

}

cin >> strOper;

}

return 0;

}

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Input: 1 3 + =

Output: 4.00000

Input: 10 5 \ =

Output: 2.00000

Input: 10 6 2 + 3 - / =

Output: 4.00000

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