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Course: CMPS-385

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Project: No. 4 Part 1

Purpose: Evaluate a postfix expression using STACKAC.h

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#include <iostream>

#include <string>

#include "STACKPAC.h"

// function prototytpes

std::string getInput();

float calculate(char op, float a, float b);

int main()

{

/\* name: main

input: N/A

output: N/A

purpose: main function to drive the program \*/

STACK<float, 10> s;

std::string expression = getInput();

for (char c : expression)

{

if (isdigit(c))

{

s.push(float(c-'0'));

}

else

{

float a = s.pop();

float b = s.pop();

float result = calculate(c, a, b);

s.push(result);

}

}

std::cout << expression << " = " << s.pop() << std::endl;

system("pause");

return 0;

}

std::string getInput()

{

/\* name: getINput

input: N/A

output: string

purpose: get the postix expression (input) from the user \*/

std::string expression;

std::cout << "Enter a postfix expression: ";

std::cin >> expression;

return expression;

}

float calculate(char op, float a, float b)

{

/\* name: calculate

input: char op, float a, float b

output: float

purpose: performs math operations dependent on operator

and returns the result of a, b \*/

if (op == '+') return b + a;

else if (op == '-') return b - a;

else if (op == '\*') return b \* a;

else if (op == '/') return b / a;

}

