Assignment . 8

#include <iostream>

#include <stack>

#include <string>

using namespace std;

bool isMatchingPair(char left, char right) {

return (left == '(' && right == ')') ||

(left == '{' && right == '}') ||

(left == '[' && right == ']');

}

bool isWellParenthesized(string expr) {

stack<char> s;

for (char c : expr) {

if (c == '(' || c == '{' || c == '[') {

s.push(c);

} else if (c == ')' || c == '}' || c == ']') {

if (s.empty() || !isMatchingPair(s.top(), c)) {

return false;

}

s.pop();

}

}

return s.empty();

}

int main() {

string expression;

cout << "Enter an expression: ";

cin >> expression;

if (isWellParenthesized(expression)) {

cout << "The expression is well parenthesized." << endl;

} else {

cout << "The expression is not well parenthesized." << endl;

}

return 0;

}

Enter an expression: (a + b) \* [c - {d / e}]

The expression is well parenthesized.