IT UNIVERSITY OF COPENHAGEN

BDSA 2014

Assignment 36.1

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Namespace Documentation

3.1 Package ReversePolishCalculator

Classes

- class ReversePolishCalculator

  The class takes a string as input, and if the string is in the format of a reverse Polish calculator expression, then it will calculate and return the result. Features Can handle the operators: +, -, ∗, /, sqrt, cos, sin and pov (^) Can handle negative numbers if written in the form -x Tokens are separated by a whitespace. If a "token" includes a letter then the token is ignored.
- class ReversePolishCalculatorTests

  A test class which ensures that the reverse Polish calculator works as intended most of the time.

Chapter 4

Class Documentation

4.1 ReversePolishCalculator.ReversePolishCalculator Class Reference

The class takes a string as input, and if the string is in the format of a reverse Polish calculator expression, then it will calculate and return the result. Features Can handle the operators: +, -, ∗, /, sqrt, cos, sin and pov (^) Can handle negative numbers if written in the form -x Tokens are separated by a whitespace. If a "token" includes a letter then the token is ignored.

Static Public Member Functions

- static decimal CalculateExpression (string rpce)

  Calculates the input reverse calculator string expression. Can handle a number of faulties.

4.1.1 Detailed Description

The class takes a string as input, and if the string is in the format of a reverse Polish calculator expression, then it will calculate and return the result. Features Can handle the operators: +, -, ∗, /, sqrt, cos, sin and pov (^) Can handle negative numbers if written in the form -x Tokens are separated by a whitespace. If a "token" includes a letter then the token is ignored.

4.1.2 Member Function Documentation

4.1.2.1 static decimal ReversePolishCalculator.ReversePolishCalculator.CalculateExpression (string *rpce*) [static]

Calculates the input reverse calculator string expression. Can handle a number of faulties.

Parameters

rpce	A String in the Reverse Polish Calculator expression format

Returns

0 if faulty otherwise the result

The documentation for this class was generated from the following file:

- BDSA-Exercises/BDSA2014/ReversePolishCalculator/ReversePolishCalculator.cs

4.2 ReversePolishCalculator.ReversePolishCalculatorTests Class Reference

A test class which ensures that the reverse Polish calculator works as intended most of the time.

Public Member Functions

- void TestNullInput ()

  Testcase where the input is null - should return 0.
- void TestEmptyInput ()

  Testcase where the input is "" - should return 0.
- void TestPlusOperator ()

  Testcase where the input contains a + operator (5 5 +) - should return 10.
- void TestMinusOperator ()

  Testcase where the input contains a - operator (3 5 -) - should return -2.
- void TestMultiplyOperator ()

  Testcase where the input contains a ∗ operator (3 4 ∗) - should return 12.
- void TestDivideOperator ()

  Testcase where the input contains a / operator (12 4 ∗) - should return 3.
- void TestPovOperator ()

  Testcase where the input contains a pov (^) operator (5 2 pov) - should return 25. (2 5 ^) - should return 32.
- void TestSinOperator ()

  Testcase where the input contains sin operator (30 sin) - should return Math.Sin(30).
- void TestCosOperator ()

  Testcase where the input contains cos operator (30 cos) - should return Math.Cos(30).
- void TestSqrtOperator ()

  Testcase where the input contains sqrt operator (25 sqrt) - should return Math.Cos(5).
- void TestComplexExpressionOperator ()

  Testcase where the input contains multiple operators and values.
- void TestExpressionWithLettersOperator ()

  Testcase where the input contains letters and letters combined with numbers.

4.2.1 Detailed Description

A test class which ensures that the reverse Polish calculator works as intended most of the time.

4.2.2 Member Function Documentation

4.2.2.1 void ReversePolishCalculator.ReversePolishCalculatorTests.TestComplexExpressionOperator ( )

Testcase where the input contains multiple operators and values.

4.2.2.2 void ReversePolishCalculator.ReversePolishCalculatorTests.TestCosOperator ( )

Testcase where the input contains cos operator (30 cos) - should return Math.Cos(30).

4.2.2.3 void ReversePolishCalculator.ReversePolishCalculatorTests.TestDivideOperator ( )

Testcase where the input contains a / operator (12 4 ∗) - should return 3.

4.2.2.4 void ReversePolishCalculator.ReversePolishCalculatorTests.TestEmptyInput ( )

Testcase where the input is "" - should return 0.

4.2.2.5 void ReversePolishCalculator.ReversePolishCalculatorTests.TestExpressionWithLettersOperator ( )

Testcase where the input contains letters and letters combined with numbers.

4.2.2.6 void ReversePolishCalculator.ReversePolishCalculatorTests.TestMinusOperator ( )

Testcase where the input contains a - operator (3 5 -) - should return -2.

4.2.2.7 void ReversePolishCalculator.ReversePolishCalculatorTests.TestMultiplyOperator ( )

Testcase where the input contains a $*$ operator (3 4 $*$) - should return 12.

4.2.2.8 void ReversePolishCalculator.ReversePolishCalculatorTests.TestNullInput ( )

Testcase where the input is null - should return 0.

4.2.2.9 void ReversePolishCalculator.ReversePolishCalculatorTests.TestPlusOperator ( )

Testcase where the input contains a + operator (5 5 +) - should return 10.

4.2.2.10 void ReversePolishCalculator.ReversePolishCalculatorTests.TestPovOperator ( )

Testcase where the input contains a pov ($\hat{}$) operator (5 2 pov) - should return 25. (2 5 $\hat{}$) - should return 32.

4.2.2.11 void ReversePolishCalculator.ReversePolishCalculatorTests.TestSinOperator ( )

Testcase where the input contains sin operator (30 sin) - should return Math.Sin(30).

4.2.2.12 void ReversePolishCalculator.ReversePolishCalculatorTests.TestSqrtOperator ( )

Testcase where the input contains sqrt operator (25 sqrt) - should return Math.Cos(5).

The documentation for this class was generated from the following file:

- BDSA-Exercises/BDSA2014/ReversePolishCalculator/ReversePolishCalculator.tests.cs