

Numbo

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Chapter 1

Namespace Index

1.1 Namespace List

Here is a list of all documented namespaces with brief descriptions:

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ivsmath	7
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stddev	12

Chapter 2

Hierarchical Index

2.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

Exception	
ivsmath.InvalidRadical	13
object	
HelpWindow.Ui_MainWindow	15
kalkulacka.Ui_Calculator	14
ivsmath.Operator	13
ivsmath.Precedence	14

Chapter 3

Class Index

3.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

ivsmath.InvalidRadical	13
ivsmath.Operator	13
ivsmath.Precedence	14
kalkulacka.Ui_Calculator	14
HelpWindow.Ui_MainWindow	15

Chapter 4

Namespace Documentation

4.1 HelpWindow Namespace Reference

Classes

- class [Ui_MainWindow](#)

Variables

- **app** = QtWidgets.QApplication(sys.argv)
- **MainWindow** = QtWidgets.QMainWindow()
- **ui** = [Ui_MainWindow](#)()

4.1.1 Detailed Description

HelpWindow.py created by: PyQt5 UI code generator 5.14.1

4.2 ivsmath Namespace Reference

Classes

- class [InvalidRadical](#)
- class [Operator](#)
- class [Precedence](#)

Functions

- def [get_infix](#) (string)
- def [get_postfix](#) (infix)
- def [division](#) (a, b)
- def [radical](#) (a, b)
- def [factorial](#) (a)
- def [power](#) (a, b)
- def [sin](#) (x)
- def [handle_operation](#) (stack, operator)
- def [evaluate_postfix](#) (postfix)
- def [format_expr](#) (x)
- def [evaluate_expression](#) (expression)

Variables

- `expression = input()`

4.2.1 Detailed Description

Math library for calculator Numbo

4.2.2 Function Documentation

4.2.2.1 `division()`

```
def ivsmath.division (  
    a,  
    b )
```

It divides b by a

Args:

 a (float): The number to divide by
 b (float): The first number

Returns:

 float: Division of the given numbers

4.2.2.2 `evaluate_expression()`

```
def ivsmath.evaluate_expression (  
    expression )
```

It evaluates the expression

Args:

 expression (str): The math expression to evaluate

Returns:

 (str): Result

4.2.2.3 evaluate_postfix()

```
def ivsmath.evaluate_postfix (
    postfix )
```

It evaluates a postfix expression.

Args:

postfix (str): List of postfix expression

Returns:

float: Result

4.2.2.4 factorial()

```
def ivsmath.factorial (
    a )
```

It calculates the factorial.

Args:

a (float): The number to find the factorial of

Returns:

int: Factorial of a

4.2.2.5 format_expr()

```
def ivsmath.format_expr (
    x )
```

The function formats a given number by limiting the number of digits before and after the decimal point and converting it to scientific notation if necessary.

Args:

x (float): The input value that needs to be formatted

Returns:

str: Formatted version of the input 'x'

4.2.2.6 get_infix()

```
def ivsmath.get_infix (
    string )
```

It takes a string and returns the infix expression.

Args:

string (str): The string to be converted to infix

Returns:

list: infix list

4.2.2.7 `get_postfix()`

```
def ivsmath.get_postfix (  
    infix )
```

It converts infix to postfix

Args:

`infix (list)`: The infix expression to be converted to postfix

Returns:

`list`: postfix list

4.2.2.8 `handle_operation()`

```
def ivsmath.handle_operation (  
    stack,  
    operator )
```

It handles the operations for `evaluate_postfix`

Args:

`stack (list)`: List of numbers

`operator (list)`: The operator to be applied to the stack.

4.2.2.9 `power()`

```
def ivsmath.power (  
    a,  
    b )
```

It returns the value of `a` to the power of `b`.

Args:

`a (float)`: The exponent

`b (float)`: The base

Returns:

`float`: `a` to the power of `b`

4.2.2.10 `radical()`

```
def ivsmath.radical (  
    a,  
    b )
```

It calculates the radical.

Args:

`b (float)`: The index

`a (float)`: The radicand

Returns:

`float`: The `a` root of `b`

4.2.2.11 sin()

```
def ivsmath.sin (
    x )
```

The function calculates the sine of an angle in degrees using the Taylor series approximation.

Args:

x (float): The input angle in degrees for which the sine value needs to be calculated.

Returns:

float: The sine value of the input angle in radians, rounded to 10 decimal places.

4.3 kalkulacka Namespace Reference

Classes

- class [Ui_Calculator](#)

Variables

- string **buffer** = "
- bool **pow** = False
- int **lenpow** = 0
- int **index** = -2
- **app** = QtWidgets.QApplication(sys.argv)
- **Calculator** = QtWidgets.QMainWindow()
- **ui** = [Ui_Calculator](#)()

4.3.1 Detailed Description

GUI for Numbo calculator

4.4 profiler Namespace Reference

Variables

- **results** = pstats.Stats(profile)

4.4.1 Detailed Description

Program for profiling stddev.py

4.5 stddev Namespace Reference

Functions

- def [convert_string](#) ()
- def [arithmetic_mean](#) ()
- def [variance](#) ()
- def [standard_deviation](#) ()

4.5.1 Detailed Description

Calculates the standard deviation.

4.5.2 Function Documentation

4.5.2.1 arithmetic_mean()

```
def stddev.arithmetic_mean ( )
```

Calculates the arithmetic mean of the given input numbers.

4.5.2.2 convert_string()

```
def stddev.convert_string ( )
```

Converts input to floats.

4.5.2.3 standard_deviation()

```
def stddev.standard_deviation ( )
```

Calculates the standard deviation based on the variance.

4.5.2.4 variance()

```
def stddev.variance ( )
```

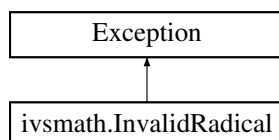
Calculates the variance based on the arithmetic mean and the given input numbers.

Chapter 5

Class Documentation

5.1 ivsmath.InvalidRadical Class Reference

Inheritance diagram for ivsmath.InvalidRadical:



5.1.1 Detailed Description

Raised when there is number < 0 under even radical

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

- ivsmath.py

5.2 ivsmath.Operator Class Reference

Public Member Functions

- def **__init__** (self, char)
- def **get_eval** (self)
- def **__le__** (self, other)
- def **__ge__** (self, other)

Public Attributes

- **char**

5.2.1 Detailed Description

Operator class for comparing precedences

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

- ivsmath.py

5.3 ivsmath.Precedence Class Reference

Static Public Attributes

- int **PLUS** = 1
- int **MINUS** = 1
- int **MUL** = 2
- int **DIV** = 2
- int **POW** = 3
- int **RADICAL** = 3
- int **FAC** = 4
- int **SIN** = 4
- int **BRACKET** = 5

5.3.1 Detailed Description

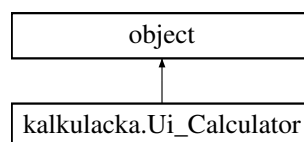
Precedence enum
contains operators and their precedence

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

- ivsmath.py

5.4 kalkulacka.Ui_Calculator Class Reference

Inheritance diagram for kalkulacka.Ui_Calculator:



Public Member Functions

- def **openHelp** (self)
- def **setupUi** (self, Calculator)
- def **retranslateUi** (self, Calculator)

Public Attributes

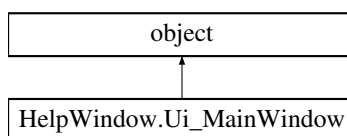
- `window`
- `ui`
- `centralwidget`
- `label`
- `button1`
- `button4`
- `button7`
- `button8`
- `button5`
- `button2`
- `button3`
- `button6`
- `button9`
- `pushButton_0`
- `buttoneq`
- `buttondel`
- `buttonplus`
- `buttonsub`
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- `buttonpow`
- `buttonodmocnina`
- `buttofactorial`
- `buttonsin`
- `buttonclear`
- `buttonlb`
- `buttonrb`
- `pushciarka`
- `ytaodmocnia`
- `menubar`
- `menuHelp`
- `statusbar`
- `actionOpen_Manual`

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

- `kalkulacka.py`

5.5 HelpWindow.Ui_MainWindow Class Reference

Inheritance diagram for HelpWindow.Ui_MainWindow:



Public Member Functions

- def **setupUi** (self, MainWindow)
- def **retranslateUi** (self, MainWindow)

Public Attributes

- **centralwidget**
- **textBrowser**
- **menubar**
- **statusbar**

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

- HelpWindow.py

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