

UHMath

Inherits From:	Object
Declared In:	UHMath.h

Class Description

UHMath object communicates with *Mathematica* using MathLink. The user can send any valid *Mathematica* expression to it via **evaluateExpression: toString:** or **plotExpression: toPSView:**. These two general methods will message *Mathematica*'s kernel to carry out the computations. The method **evaluateExpression: toString:** should be used if text output is expected. If the expected output is a graph, use **plotExpression: toPSView:**. These methods use the same link to *Mathematica*; therefore, as long as the link is not closed, the connection to the kernel remains open and *Mathematica* overhead is reduced.

Instance Variables

```
int code;  
MLINK mlp;  
char * plotErrorText;  
NXStream *stream;  
id resultText;
```

id resultPSView;

code	An integer describing the type of packet sent by <i>Mathematica</i> .
mlp	Link to <i>Mathematica</i> .
*plotErrorText	Pointer to a text string containing the most recent plotting errors.
*stream	Pointer to a stream which contains output sent by <i>Mathematica</i> .
resultText	The outlet for evaluateExpressionFrom: . It must be a scrollView or a Text object.
resultPSView	The outlet for plotExpressionFrom: . It must be a PSView.

Method Types

Initializing a new UHMath object - init

Opening and closing a link

- openLink
- closeLink

Mathematica requests

- ± evaluateExpression: toString:
- ± evaluateExpressionFrom:
- ± evaluateExpression: toText:
- ± plotExpression: toPSView:

± plotExpressionFrom:

Errors

- plotError

Instance Methods

closeLink:

- **closeLink**

Closes the link to *Mathematica*. Returns **self** if successful, otherwise returns **nil**.

See also: - **openLink**.

evaluateExpression: toString:

- **evaluateExpression:(char *)exp toString:(char **)string**

It evaluates the expression in *exp* and places the result in *string*. Returns **self**.

See also: \pm **evaluateExpressionFrom:**, \pm **evaluateExpression: toText:**, - **plotExpression: toPSView:**, \pm **plotExpressionFrom:**.

evaluateExpression: toText:

- **evaluateExpression:(char *)exp toText:(id)aText**

It evaluates the expression in *exp* and places the result in *aText*, which must be a **Text** object. Returns **self**.

See also: \pm **evaluateExpressionFrom:**, \pm **evaluateExpression: toString:**, - **plotExpression: toPSView:**, \pm **plotExpressionFrom:**.

evaluateExpressionFrom:

- **evaluateExpressionFrom:sender**

It takes the expression from *sender* and places the result in *resultText*, which must be a **Text** or a **ScrollView** object. The *sender* must be a subclass of **Control**. Returns **self** if successful, otherwise returns **nil**.

See also: \pm **evaluateExpression: toText**, \pm **evaluateExpression: toString:**, - **plotExpression: toPSView:**, \pm **plotExpressionFrom:**.

init

- **init**

Returns **self**.

openLink

- **openLink**

Opens a link to *Mathematica*. Returns **self** if successful, otherwise returns **nil**.

See also: - **closeLink**.

plotError

-(char *) **plotError**

Returns the most recent plotting error.

See also: - **plotExpression: toPSView:**.

plotExpression: toPSView:

- **plotExpression:(char *)exp toPSView: aView**

It plots the expression in *exp* to *aView*, which must be a **PSView**. Returns **self** if successful, otherwise returns **nil**.

See also: - **evaluateExpression: toString:**, **± evaluateExpressionFrom:**, **± evaluateExpression: toText:**, **±plotExpressionFrom:**.

plotExpressionFrom:

- **plotExpressionFrom:***sender*

It takes the plot expression from *sender* and plots it to *resultPSView*, which must be a **PSView**. The *sender* must be a subclass of `Control`. Returns **self** if successful, otherwise returns **nil**.

See also: - **evaluateExpression: toString:**, **± evaluateExpression: toText:**, **± evaluateExpressionFrom:**, **± plotExpression: toPSView:**.