

Package ‘rim’

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Type Package

Title R's Interface to Maxima, Bringing Symbolic Computation into R

Version 0.4.1

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Description

Provides an interface to the powerful and fairly complete computer algebra system maxima. It can be used to start and control maxima from within R by entering 'Maxima' commands. It facilitates outputting results from 'Maxima' in 'LaTeX' and 'MathML'. 2D and 3D plots can be displayed directly. This package also registers a 'knitr'-engine enabling 'Maxima' code chunks to be written in 'RMarkdown' documents.

URL <https://rcst.github.io/rim/>

BugReports <https://github.com/rcst/rim/issues>

SystemRequirements Maxima (<https://sourceforge.net/projects/maxima/>, tested with versions $\geq 5.42.1$), needs to be on PATH

License GPL (≥ 3)

Imports methods, Rcpp, R6, knitr, stringr, digest

LinkingTo Rcpp

RoxygenNote 7.1.1

Suggests testthat ($\geq 3.0.0$),

Config/testthat/edition 3

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rim-package	<i>rim</i>
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Description

Provides an interface to Maxima, a computer algebra system.

Usage

```
maxima.start(restart = FALSE)

maxima.stop()

maxima.get(command)

maxima.load(module)

maxima.apropos(keystring)

maxima.setformat(format = "linear")

maxima.getformat()

maxima.version()

maxima.isInstalled()

iprint(x)

## S3 method for class 'maxima'
print(x, ...)
```

Arguments

restart	If FALSE (default), then Maxima is started provided it is not running already. If TRUE starts or restarts Maxima.
command	A character vector containing the maxima command.
module	A character vector naming the maxima module to be loaded.
keystring	A character vector containing a search term.

format	A character vector naming the output display format. Can be one of "linear" (default), "text2d", "latex" (i.e. \$\$...\$\$), "mathml".
x	S3 object of class "maxima"
...	Additional arguments

Details

Note: You need to install the Maxima software separately in order to make use of this package.

Maxima is set up automatically on attachment via `library(rim)` and automatically started when a command is send (if it isn't running already) using `maxima.get()`. Using `maxima.start()` and `maxima.stop()`, one can stop and (re-)start the current Maxima session if needed, e.g. to clear Maxima command and output history.

To send a single command to Maxima and receive the corresponding output use `maxima.get()`. The output is returned in the format currently set (`maxima.getformat()`). The format can be changed using `maxima.setformat()`.

Functions

- `maxima.start`: (re-)starts Maxima.
- `maxima.stop`: Quits Maxima.
- `maxima.get`: Executes a single Maxima command provided by `command`. If no command ending character (; or \$ is provided, ; is appended.
- `maxima.load`: A wrapper to load a Maxima module named by `module`
- `maxima.apropos`: A wrapper to the Maxima helper function `apropos` to lookup existing Maxima functions that match `keystring`.
- `maxima.setformat`: Sets the format of the output string from Maxima.
- `maxima.getformat`: Returns the currently set format as a character vector
- `maxima.version`: Returns the version number of Maxima that is used
- `maxima.isInstalled`: Returns TRUE when an installation of Maxima has been detected, otherwise FALSE
- `iprint`: Prints the input command preceding with the corresponding input reference label of an maxima S3-object returned by `maxima.get()`
- `print.maxima`: Prints the maxima output part of an S3 object returned by `maxima.get()`

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See Also

Useful links:

- <https://rcst.github.io/rim/>
- Report bugs at <https://github.com/rcst/rim/issues>

[maxima.engine](#)

maxima.engine

knitr maxima engine

Description

An R-function that is registered as a knitr engine when package rim is attached, i.e. `library(rim)`.

Usage

```
maxima.engine(options)
```

```
maxima.engine.format(format = "linear")
```

Arguments

options	Named list of knitr options. Currently there are no maxima specific chunk options. To change the output format of the maxima engine set the variable <code>maxima.engine.format</code> to either "linear" (default), "latex", "mathml" or "text2d".
format	Character vector of length 1 naming the output format to be used for the knitr engine

Details

`maxima.engine` is called by `knit()` to evaluate maxima code chunks. When called upon the first code chunk of a document it runs Maxima in the in a separate process in server mode. This means that a single Maxima session is used for all Maxima code chunks of an RMarkdown document. Inputs and outputs can thus be used across chunks (using e.g. Maxima reference labels).

In addition, this function sets up Maxima specific output and chunk hooks to be used via chunk options.

Value

This functions prints the resulting output from maxima together with it's code

Functions

- `maxima.engine.format`: Sets the knitr engine format. It can be used both to set or get the current engine format. The current engine format is returned in both cases.

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