

Package ‘goxygen’

October 13, 2022

Type Package

Title In-Code Documentation for 'GAMS'

Version 1.0.3

Date 2020-08-11

Description

A collection of tools which extract a model documentation from 'GAMS' code and comments. In order to use the package you need to install 'pandoc' and 'pandoc-citeproc' first (<<https://pandoc.org/>>).

Imports pander, stringi, gms, citation, yaml

URL <https://github.com/pik-piam/goxygen>,
<https://doi.org/10.5281/zenodo.1411404>

BugReports <https://github.com/pik-piam/goxygen/issues>

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Encoding UTF-8

LazyData no

RoxygenNote 7.1.0

Suggests testthat, knitr, rmarkdown

VignetteBuilder knitr

NeedsCompilation no

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Repository CRAN

Date/Publication 2020-08-16 14:40:03 UTC

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.empty	<i>.empty</i>
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Description

helper function which adds an empty line in a markdown document

Usage

```
.empty(zz)
```

Arguments

zz	a connection object of class "textConnection" containing the markdown document
----	--

Author(s)

Jan Philipp Dietrich

See Also

[goxygen](#), [createModulePage](#)

.header *.header*

Description

helper function which writes a title for a markdown section

Usage

```
.header(zz, title, level, id = NULL)
```

Arguments

zz	a connection object of class "textConnection" containing the markdown document
title	the title to be used (character vector of length 1)
level	level of the heading (1 means main header, higher numbers reflect lower levels)
id	ID given to the title (relevant for anchors)

Author(s)

Jan Philipp Dietrich

See Also

[goxygen](#), [createModulePage](#)

.interfaceplot *.interfaceplot*

Description

helper function which includes interface plot figures in a markdown document, if available. The figures need to be created beforehand.

Usage

```
.interfaceplot(zz, name, docfolder)
```

Arguments

zz	a connection object of class "textConnection" containing the markdown document
name	Name of the module for which the interfaceplot should be shown
docfolder	folder the documentation should be written to relative to model folder

Author(s)

Jan Philipp Dietrich

See Also

[goxygen](#), [createModulePage](#)

.limitations

.limitations

Description

helper function which adds a "limitations" section.

Usage

```
.limitations(zz, limitations, emptyIfNULL = FALSE)
```

Arguments

<code>zz</code>	a connection object of class "textConnection" containing the markdown document
<code>limitations</code>	A character vector containing the given limitations
<code>emptyIfNULL</code>	switch which decides whether limitations section should be ignored, if limitations input is NULL or if it should state that there are no known limitations.

Author(s)

Jan Philipp Dietrich

See Also

[goxygen](#), [createModulePage](#)

.updateImagePaths *.updateImagePaths*

Description

helper function which updates relative image paths so that they refer to a subfolder images instead of referring to the current folder.

Usage

```
.updateImagePaths(x)
```

Arguments

x A character vector containing image paths.

Author(s)

Jan Philipp Dietrich

See Also

[goxygen](#), [createModulePage](#)

.write *.write*

Description

helper function which writes a character vector line by line in a markdown document

Usage

```
.write(zz, data)
```

Arguments

zz a connection object of class "textConnection" containing the markdown document

data a character vector to be written to the markdown document

Author(s)

Jan Philipp Dietrich

See Also

[goxygen](#), [createModulePage](#)

 buildHTML

buildHTML

Description

Converts a folder with markdown files and a corresponding literature library (if available) to HTML files and creates cross-links between them.

Usage

```
buildHTML(
  style = "classic",
  folder = "html",
  mdfolder = "markdown",
  literature = "literature.bib",
  citation = "../CITATION.cff",
  supplementary = "images",
  debug = FALSE
)
```

Arguments

style	visualization style to be used for the creation. Currently available styles are "classic" and "ming"
folder	location the HTML files should be written to
mdfolder	path to the markdown folder to be used as source
literature	path to a bibliography, if available (will be ignored if file does not exist)
citation	Citation information in citation file format (optional)
supplementary	a vector of files and/or folders required for the conversion (e.g. an images sub-directory with figures to be shown in the documents)
debug	logical which switches on/off a debug mode which will return additional status updates and keep build files

Details

Pandoc (<https://pandoc.org/>) together with pandoc-citeproc need to be installed on the system.

Author(s)

Jan Philipp Dietrich

See Also

[goxygen](#), [buildTEX](#)

buildMarkdown	<i>buildMarkdown</i>
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Description

Creates a folder filled with markdown files from a list object with markdown code

Usage

```
buildMarkdown(x, folder = "markdown")
```

Arguments

x	a named list of markdown codes which should be written as markdown files. The name of each entry will become the file name.
folder	folder the markdown files should be written to

Author(s)

Jan Philipp Dietrich

See Also

[goxygen](#), [buildHTML](#)

buildTEX	<i>buildTEX</i>
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Description

Converts a folder with markdown files and a corresponding literature library (if available) to a tex file

Usage

```
buildTEX(  
  file = "documentation.tex",  
  mdfolder = "markdown",  
  literature = "literature.bib",  
  citation = "../CITATION.cff",  
  supplementary = NULL,  
  pdf = TRUE  
)
```

Arguments

file	name of the tex file to be written
mdfolder	path to the markdown folder to be used as source
literature	path to a bibliography, if available (will be ignored if file does not exist)
citation	Citation information in citation file format (optional)
supplementary	a vector of files and/or folders required for the conversion (e.g. an images sub-directory with figures to be shown in the documents)
pdf	boolean which specifies whether pdf file should be generated from tex

Details

Pandoc (<https://pandoc.org/>) together with pandoc-citeproc need to be installed on the system.

Author(s)

Jan Philipp Dietrich, Kristine Karstens

See Also

[goxygen](#), [buildHTML](#)

check_pandoc

check_pandoc

Description

Support function which checks pandoc availability and stops with an error in case that pandoc cannot be found

Usage

```
check_pandoc(error = FALSE)
```

Arguments

error	boolean indicating whether function should throw an error in case of missing pandoc or return a boolean FALSE.
-------	--

Value

boolean indicating whether pandoc is available or not.

Author(s)

Jan Philipp Dietrich

createIndexPage *createIndexPage*

Description

Creates markdown code from a supplied data list

Usage

```
createIndexPage(data)
```

Arguments

data a list of data entries for the resulting markdown page. Following entries can be provided:

- title** Page title
- description** General description
- citation** A read in citation in Citation File Format (CFF)

Value

a character vector containing the produced markdown text

Author(s)

Jan Philipp Dietrich

See Also

[goxygen](#)

createListModularCode *createListModularCode*

Description

support function to create documentation of modular GAMS code.

Usage

```

createlistModularCode(
  cc,
  interfaces,
  path = ".",
  citation = NULL,
  unitPattern = c("\\(", "\\)"),
  includeCore = FALSE,
  mainfile = "main.gms",
  docfolder = "doc"
)

```

Arguments

cc	codeCheck information
interfaces	interface information
path	path to the model to be documented
citation	citation data read from a CFF file
unitPattern	pattern that is used to identify the unit in the description, default = c("\\(", "\\)")
includeCore	Boolean whether core should be included or not, default=FALSE
mainfile	main file of the model
docfolder	folder the documentation should be written to relative to model folder

Author(s)

Jan Philipp Dietrich

See Also

[codeCheck](#)

createlistSimpleCode *createListSimpleCode*

Description

support function to create documentation of non-modular GAMS code.

Usage

```

createlistSimpleCode(path = ".", citation = NULL, mainfile = "main.gms")

```

Arguments

path	path to the model to be documented
citation	citation data read from a CFF file
mainfile	main file of the model

Author(s)

Jan Philipp Dietrich

See Also

[codeCheck](#)

createModulePage	<i>createModulePage</i>
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Description

Creates markdown code from a supplied data list

Usage

```
createModulePage(data, docfolder)
```

Arguments

data	a list of data entries for the resulting markdown page. Following entries can be provided: name Name of the module title Page title description General description input Table containing inputs to the module output Table containing outputs from the module realizations A list of realizations with entries "description" and "limitations" for each of them declarations Table of declarations for internal objects stes Table containing sets used in the module authors Module authors seealso A vector with names of relevant other documentation pages.
docfolder	folder the documentation should be written to relative to model folder

Value

a character vector containing the produced markdown text

Author(s)

Jan Philipp Dietrich

See Also

[goxygen](#)

`createSimplePage` *createSimplePage*

Description

Creates markdown code from a supplied data list

Usage

```
createSimplePage(data)
```

Arguments

<code>data</code>	a list of data entries for the resulting markdown page. Following entries can be provided: <ul style="list-style-type: none">title Page titledescription General descriptionlimitations Limitations the implementation comes withauthors Module authors
-------------------	--

Value

a character vector containing the produced markdown text

Author(s)

Jan Philipp Dietrich

See Also

[goxygen](#)

extractDocumentation *extractDocumentation*

Description

Extracts doxygen-like GAMS documentation. Entries are introduced with an @type at the beginning of the line. In case of @realization also GAMS code is read and interpreted, in all other cases only the specific documentation comment is evaluated.

Usage

```
extractDocumentation(path, start_type = NULL, comment = "'*')
```

Arguments

path	path to the file(s) which should be evaluated
start_type	set type for first line of code. This can be useful to extract documentation even if no documentation type has been set (e.g reading equations.gms as type realization)
comment	comment chars used for documentation comments

Value

a list of documentation pieces with type as name of each element

Author(s)

Jan Philipp Dietrich

See Also

[goxygen](#)

Examples

```
mainfile <- paste0(system.file("dummymodel", package="gms"), "/main.gms")
calcfile <- paste0(system.file("dummymodel", package="gms"),
                  "/modules/02_crazymodule/complex/calculations.gms")
# extracting information from the main file of the model
extractDocumentation(mainfile)
# extracting information from a file with some equations in it
extractDocumentation(calcfile)
```

gamsequation2tex	<i>gamsequation2tex</i>
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Description

Convert a gams equation into latex code

Usage

```
gamsequation2tex(x)
```

Arguments

x	GAMS equation provided as character
---	-------------------------------------

Value

GAMS equation converted to latex code

Author(s)

Jan Philipp Dietrich

See Also

[goxygen](#)

Examples

```
x <- "eq_1 .. v_a =e= sum(j,v_b(j)*((1-s_c)+sum(cell(i,j),v_d(i)/f_d(i))));"
cat(gamsequation2tex(x))
```

goxygen	<i>goxygen</i>
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Description

Documentation function which extracts a full model documentation from a modularized gams model. The function extracts comments used as documentation, extracts code and can extract and convert GAMS equations as latex code. Output is returned in Markdown, HTML and PDF format.

Usage

```

goxygen(
  path = ".",
  docfolder = "doc",
  cache = FALSE,
  output = c("html", "tex", "pdf"),
  htmlStyle = "ming",
  cff = "CITATION.cff",
  modularCode = is.modularGAMS(),
  unitPattern = c("\\(", "\\)"),
  includeCore = FALSE,
  mainfile = "main.gms",
  ...
)

```

Arguments

path	path to the model to be documented
docfolder	folder the documentation should be written to relative to model folder
cache	Boolean to allow read data from existing cache file
output	List of output to be written, available are "html", "pdf" and "tex"
htmlStyle	visualization style to be used for the HTML creation. Currently available styles are "classic" and "ming". Ignored for outputs other than HTML.
cff	path to a citation file in citation-file-format (ignored if not existing)
modularCode	Boolean deciding whether code should be interpreted as modular GAMS code (only av)
unitPattern	pattern that is used to identify the unit in the description, default = c("\\(", "\\)")
includeCore	boolean whether core should be included or not, default=FALSE
mainfile	main file of the model
...	optional arguments to interfaceplot , passed via modules_interfaceplot .

Note

Documentation lines in the code must start with `*` to be detected as documentation. Identifier at the beginning of each block describe what kind of documentation is given. All identifiers start with `@` followed by the name of the identifier. Currently, following identifiers are available

- `@title` Title
- `@authors` List of authors
- `@description` Model description (only the documentation text will be interpreted)
- `@equations` Equation description (documentation text will be extracted and gams equations will be converted to latex code)
- `@code` Code description (documentation text and code will be extracted)
- `@limitations` details about limitations of an implementation

- @stop everything following will be ignored until the next identifier is mentioned again. Useful to stop a section

In addition you can store a model logo (100px height, 100px weight) as `logo.png` in the main folder of the model which then will be used in the HTML version of the documentation. If you want to add citations to your documentation you can do so by adding a bibtex file with the name `literature.bib` in the main folder of the model. To link these references in the text you can use the syntax `@<id>` in which "`<id>`" stands for the identifier given to the corresponding bibtex entry.

Author(s)

Jan Philipp Dietrich

See Also

[codeCheck](#), [interfaceplot](#)

Examples

```
# make sure that pandoc is available
if(check_pandoc()) {
  # run goxygen for dummy model and store documentation as HTML in a temporary directory
  docfolder <- paste0(tempdir(), "/doc")
  goxygen(system.file("dummymodel", package="gms"), docfolder=docfolder, output="html")
}
```

oldBuildHTML

oldBuildHTML

Description

Converts a folder with markdown files and a corresponding literature library (if available) to HTML files and creates cross-links between them.

Usage

```
oldBuildHTML(
  folder = "html",
  mdfolder = "markdown",
  literature = "literature.bib",
  citation = "../CITATION.cff",
  supplementary = NULL,
  addHTML = NULL
)
```


Arguments

folder	location the HTML files should be written to
mdfolder	path to the markdown folder to be used as source
literature	path to a bibliography, if available (will be ignored if file does not exist)
citation	Citation information in citation file format (optional)
supplementary	a vector of files and/or folders required for the conversion (e.g. an images sub-directory with figures to be shown in the documents)
addHTML	character vector with HTML code which should be added to the body of each HTML file.

Details

Pandoc (<https://pandoc.org/>) together with pandoc-citeproc need to be installed on the system.

Author(s)

Jan Philipp Dietrich

See Also

[goxygen](#), [buildTEX](#)

returnReferences *returnReferences*

Description

Support function to create a reference file linking references with corresponding addresses.

Usage

```
returnReferences(names, targets, file, level = 2)
```

Arguments

names	vector of reference names
targets	vector of reference addresses (same order and lengths as names)
file	name of the reference file to be written
level	level of the "References" title to be written

Author(s)

Jan Philipp Dietrich

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