

Package ‘pandocfilters’

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Title Pandoc Filters for R

Version 0.1-6

Description The document converter 'pandoc' <<https://pandoc.org/>> is widely used in the R community. One feature of 'pandoc' is that it can produce and consume JSON-formatted abstract syntax trees (AST). This allows to transform a given source document into JSON-formatted AST, alter it by so called filters and pass the altered JSON-formatted AST back to 'pandoc'. This package provides functions which allow to write such filters in native R code. Although this package is inspired by the Python package 'pandocfilters' <<https://github.com/jgm/pandocfilters/>>, it provides additional convenience functions which make it simple to use the 'pandocfilters' package as a report generator. Since 'pandocfilters' inherits most of it's functionality from 'pandoc' it can create documents in many formats (for more information see <<https://pandoc.org/>>) but is also bound to the same limitations as 'pandoc'.

URL <https://pandoc.org/>, <https://github.com/jgm/pandocfilters/>

Depends R (>= 3.0.0)

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`as.block` *Block Objects*

Description

In pandoc "block" objects are used as container for "inline" objects and to give them specific roles. Objects of the classes "NULL" and "character" can be coerced to "block".

Usage

```
as.block(x)
```

Arguments

x an object of type "NULL" or "character" or "block".

Value

an object of class "block".

Examples

```
as.block("some text")
as.block(NULL)
```

`as.inline` *Inline Objects*

Description

Objects of the classes "NULL" and "character" can be coerced to "inline".

Usage

```
as.inline(x)
```

Arguments

x an object of type "NULL", "character" or "inline".

Value

an object of class "inline".

Examples

```
as.inline("some text")
as.inline(NULL)
```

<code>astrapply</code>	<i>Apply a Function on a AST</i>
------------------------	----------------------------------

Description

Apply the function FUN on the abstract syntax tree (AST) obtained from pandoc.

Usage

```
astrapply(x, FUN, ...)
```

Arguments

<code>x</code>	a list representing the AST obtained from pandoc.
<code>FUN</code>	the function to be applied to the AST.
<code>...</code>	optional arguments to FUN.

Value

A list containing the modified AST.

<code>Attr</code>	<i>Attributes</i>
-------------------	-------------------

Description

A constructor for pandoc attributes.

Usage

```
Attr(identifier = "", classes = character(), key_val_pairs = list())
```

Arguments

<code>identifier</code>	a character string
<code>classes</code>	a character giving the classes
<code>key_val_pairs</code>	a list of tuple of type "character"

Examples

```
Attr("A", c("B", "C"), list(c("D", "E")))
```

BlockQuote

Block Quote

Description

Constructs a block object of type "BlockQuote".

Usage

```
BlockQuote(blocks)
```

Arguments

blocks a block object or list of block objects

Examples

```
BlockQuote(Plain("Hello R!"))
```

BulletList

Bullet List

Description

Constructs a block object of type "BulletList".

Usage

```
BulletList(llblocks)
```

Arguments

llblocks a list of lists of blocks

Examples

```
bullet_1 <- Plain("A")
bullet_2 <- Plain(Str("B"))
bullet_3 <- list(Plain(list(Str("C"))))
BulletList(list(bullet_1, bullet_2, bullet_3))
```

c.block

Combine Block Objects

Description

Objects of class "block" can be combined by using the generic default method "c" (combine).

Usage

```
## S3 method for class 'block'  
c(...)
```

Arguments

... objects to be concatenated.

Value

an list of "block" objects.

Examples

```
c(Header( "R Basics" ), Header("What is R?", level=2),  
Plain(c(Emph("R"), Space(), "is a system for ", Strong("statistical computation"))))
```

c.inline

Combine Inline Objects

Description

Objects of class "inline" can be combined by using the generic default method "c" (combine).

Usage

```
## S3 method for class 'inline'  
c(...)
```

Arguments

... objects to be concatenated.

Value

an list of "inline" objects.

Examples

```
c(Str("some"), Strong("text"))
```

Citation

Citation

Description

Constructs an object of type "Citation".

Usage

```
Citation(
    suffix,
    id,
    note_num = 0L,
    mode = "AuthorInText",
    prefix = list(),
    hash = 0L
)
```

Arguments

suffix	a inline object or list of inline objects
id	a character string (not visible in the text)
note_num	an integer
mode	a character string giving the citation mode, possible values are "AuthorInText", "SuppressAuthor" and "NormalCitation".
prefix	a inline object or list of inline objects
hash	an integer

Cite

Citation

Description

Constructs an inline object of type "Cite".

Usage

```
Cite(citation, x)
```

Arguments

citation	an object of type "Citation"
x	a inline object or a list of inline objects

Examples

```
ci <- Citation(suffix=list(Str("Suffix_1")),
              id="Citation_ID_1", prefix=list(Str("Prefix_1")))
Cite(ci, Str("some text"))
```

Code

Inline Code

Description

Constructs an inline object of type "Code".

Usage

```
Code(code, name = "", language = NULL, line_numbers = FALSE, start_from = 1)
```

Arguments

code	a character string giving the inline code
name	an optional character string giving the name of the inline code chunk
language	an optional character string giving the programming language
line_numbers	a logical which controls if line numbers should be used
start_from	an integer giving the first line number

Examples

```
Code("lm(hello ~ world)", "my_r_inline_code", "R", TRUE, 0)
Code("lm(hello ~ world)")
```

CodeBlock

Code Block

Description

Constructs a block object of type "CodeBlock".

Usage

```
CodeBlock(attr, code)
```

Arguments

attr	an object of type "Attr"
code	a character string containing the source code.

Examples

```
attr <- Attr("id", "Programming Language", list(c("key", "value")))
code <- "x <- 3\nprint('Hello R!')"
```

```
CodeBlock(attr, code)
```

 Definition

Definition

Description

Constructs a Definition which can be used as an element of a "DefinitionList".

Usage

```
Definition(key, value)
```

Arguments

key	a inline object or list of inline objects
value	a block object or list of block objects

Examples

```
Definition("some key", Plain("some value"))
```

 DefinitionList

Definition List

Description

Constructs a block object of type "DefinitionList".

Usage

```
DefinitionList(x)
```

Arguments

x	a list of key value pairs, the key is a list of "inline" objects and the values are a list of lists of objects of type "block".
---	---

Details

In the pandoc API <https://johnmacfarlane.net/BayHac2014/doc/pandoc-types/Text-Pandoc-Definition.html> the DefinitionList is described as follows, each list item is a pair consisting of a term (a list of "inline" objects) and one or more definitions (each a list of blocks).

Examples

```
key <- list(Str("key"))
value <- list(list(Plain(list(Str("value")))))
DefinitionList(list(list(key, value), Definition("some key", Plain("some value"))))
```

Div*Generic Block Container with Attributes*

Description

Constructs a block object of type "Div".

Usage

```
Div(blocks, attr = Attr())
```

Arguments

blocks	a block object or list of block objects
attr	an object of type "Attr"

Examples

```
blocks <- Plain("Hello R!")
Div(blocks)
```

document*Create a new Document*

Description

Constructs an object of type "document".

Usage

```
document()
```

Details

Each document has the following methods:

```
to_json()
```

Description

Returns the JSON representation of the document.

```
write(con, format = "markdown", writer = write.pandoc)
```

Description

Write the JSON-formatted AST to a connection.

Arguments

<code>con</code>	a connection object or a character string to which the document is written.
<code>format</code>	a character string giving the format (e.g. "latex", "html").
<code>writer</code>	an optional writer function, see write.pandoc .

Note

Any function with the three arguments `x`, `con` and `format` can be used as writer function.

```
append(x)
```

Description

Append a new block to the document.

Arguments

`x` block object or list of block objects.

```
append_plain(x)
```

Description

For more information about the arguments see [Plain](#).

```
append_para(x)
```

Description

For more information about the arguments see [Para](#).

```
append_code_block(attr, code)
```

Description

For more information about the arguments see [CodeBlock](#).

```
append_block_quote(blocks)
```

Description

For more information about the arguments see [BlockQuote](#).

```
append_ordered_list(lattr, lblocks)
```

Description

For more information about the arguments see [OrderedList](#).

```
append_bullet_list(lblocks)
```

Description

For more information about the arguments see [BulletList](#).

`append_definition_list(x)`

Description

For more information about the arguments see [DefinitionList](#).

`append_header(x, level=1L, attr=Attr())`

Description

For more information about the arguments see [Header](#).

`append_horizontal_rule()`

Description

For more information about the arguments see [HorizontalRule](#).

`append_table(rows, col_names=NULL, aligns=NULL, col_width=NULL, caption=list())`

Description

For more information about the arguments see [Table](#).

`append_div(blocks, attr)`

Description

For more information about the arguments see [Div](#).

`append_null()`

Description

For more information about the arguments see [Null](#).

Emph

Emphasized Text

Description

Constructs an inline object of type "Emph".

Usage

`Emph(x)`

Arguments

`x` a inline object or a list of inline objects

Examples

`Emph("emphasize")`

filter	<i>Filter JSON-formatted AST.</i>
--------	-----------------------------------

Description

Apply a filter on the JSON-formatted abstract syntax tree (AST).

Usage

```
filter(FUN, ..., input = stdin(), output = stdout())
```

Arguments

FUN	the function to be applied on the AST.
...	optional arguments to FUN.
input	a connection object or a character string from which the JSON-formatted AST is read.
output	a connection object or a character string to which the JSON-formatted AST is written.

get_pandoc_path	<i>Get Pandoc Path</i>
-----------------	------------------------

Description

Get the path of pandoc.

Usage

```
get_pandoc_path()
```

`get_pandoc_types_version`*Get Pandoc-Types Version*

Description

Get the version of pandoc-types.

Usage

```
get_pandoc_types_version(type = c("numeric", "character"))
```

Arguments

`type` a character giving the type of the return value.

Examples

```
get_pandoc_types_version()
```

`get_pandoc_version` *Get Pandoc Version*

Description

Get the version of pandoc.

Usage

```
get_pandoc_version(type = c("numeric", "character"))
```

Arguments

`type` a character giving the type of the return value.

Examples

```
get_pandoc_version()
```

Header

Header

Description

Constructs a block object of type "Header".

Usage

```
Header(x, level = 1L, attr = Attr())
```

Arguments

x	a inline object or a list of inline objects
level	an integer giving the level
attr	an object of type "Attr"

Examples

```
Header("My Header")
```

HorizontalRule

Horizontal Rule

Description

Constructs a block object of type "HorizontalRule".

Usage

```
HorizontalRule()
```

Examples

```
HorizontalRule()
```

Image

Image

Description

Constructs an inline object of type "Image".

Usage

```
Image(target, text, caption = "", attr = Attr())
```

Arguments

target	a character string giving the target (hyper reference)
text	a inline object or a list of inline objects giving the visible part
caption	a character string describing the picture
attr	an optional object of type "Attr"

Details

Further Usage examples can be found in the README.

Examples

```
Image("https://Rlogo.jpg", "some_text", "fig:some_caption")
```

is.block

Block Objects

Description

Tests if an object has the class attribute "block".

Usage

```
is.block(x)
```

Arguments

x	an object to be tested.
---	-------------------------

Value

a logical indicating if the provided object is of type "block".

Examples

```
is.block(as.block(NULL))
```

`is.inline`

Inline Objects

Description

Tests if an object has the class attribute "inline".

Usage

`is.inline(x)`

Arguments

`x` an object to be tested.

Value

a logical indicating if the provided object is of type "inline".

Examples

`is.inline(as.inline(NULL))`

`LineBreak`

Hard Line Break

Description

Constructs an inline object of type "LineBreak".

Usage

`LineBreak()`

Examples

`LineBreak()`

Link	<i>Hyperlink</i>
------	------------------

Description

Constructs an inline object of type "Link".

Usage

```
Link(target, text, title = "", attr = Attr())
```

Arguments

target	a character string giving the target (hyper reference)
text	a inline object or a list of inline objects giving the visible part
title	an optional character string giving the title
attr	an optional object of type "Attr"

Details

Further Usage examples can be found in the README.

Examples

```
Link("https://cran.r-project.org/", "Text_Shown", "some title")
```

ListAttributes	<i>ListAttributes</i>
----------------	-----------------------

Description

A constructor for pandoc list attributes.

Usage

```
ListAttributes(
  first_number = 1L,
  style = "DefaultStyle",
  delim = "DefaultDelim"
)
```

Arguments

first_number	an integer giving the first number of the list
style	a character string giving the style, possible values are "DefaultStyle", "Example", "Decimal", "LowerRoman", "UpperRoman", "LowerAlpha" and "UpperAlpha".
delim	a character string giving the delimiter, possible values are "DefaultDelim", "Period", "OneParen" and "TwoParens".

 Math
*TeX Math***Description**

Constructs an inline object of type "Math".

Usage

```
Math(x)
```

Arguments

x	a character string
---	--------------------

Examples

```
Math("3*x^2")
```

 Note
*Note***Description**

Constructs an inline object of type "Note".

Usage

```
Note(x)
```

Arguments

x	a pandoc block object or a list of pandoc block objects
---	---

Examples

```
block <- Plain("x")
Note(block)
```

Null	<i>Nothing</i>
------	----------------

Description

Constructs a block object of type "Null".

Usage

```
Null()
```

Examples

```
Null()
```

OrderedList	<i>Ordered List</i>
-------------	---------------------

Description

Constructs a block object of type "OrderedList".

Usage

```
OrderedList(lattr, llblocks)
```

Arguments

lattr	a list of attributes
llblocks	a list of lists of blocks

Examples

```
ordered_1 <- Plain("A")
ordered_2 <- list(Plain(Str("B")))
ordered_3 <- list(Plain(list(Str("C"))))
OrderedList(ListAttributes(), ordered_1)
OrderedList(ListAttributes(), list(ordered_1, ordered_2, ordered_3))
```

pandoc_to_json *Utility functions for testing filters*

Description

Utility functions for testing filters

Usage

```
pandoc_to_json(file, from = "markdown")
```

```
pandoc_from_json(json, to = "markdown", exchange = c("file", "arg"))
```

Arguments

file	file name
from	markdown, html, latex or native
json	a JSON representation of the AST to be passed to pandoc
to	markdown, html, latex or native
exchange	a character string

Para *Paragraph*

Description

Constructs a block object of type "Para".

Usage

```
Para(x)
```

Arguments

x	a inline object or list of inline objects
---	---

Examples

```
Para("x")
```

Plain

Plain Text

Description

Constructs a block object of type "Plain", a plain paragraph.

Usage

```
Plain(x)
```

Arguments

x a inline object or list of inline objects

Examples

```
Plain("x")
```

Quoted

Quoted Text

Description

Constructs an inline object of type "Quoted".

Usage

```
Quoted(x, quote_type = "DoubleQuote")
```

Arguments

x a inline object or a list of inline objects
quote_type a character giving the quote type, valid types are "SingleQuote" and "DoubleQuote"

Examples

```
Quoted("some text", quote_type="SingleQuote")  
Quoted("some text", quote_type="DoubleQuote")
```

RawInline	<i>Raw Inline</i>
-----------	-------------------

Description

Constructs an inline object of type "RawInline".

Usage

```
RawInline(format, x)
```

Arguments

format	a character string giving the format (e.g. "latex", "html")
x	a character string giving the inline

Examples

```
RawInline("latex", "some RawInline")
```

set_pandoc_path	<i>Set Pandoc Path</i>
-----------------	------------------------

Description

Set the path to pandoc.

Usage

```
set_pandoc_path(path = "pandoc")
```

Arguments

path	a character giving the location of pandoc (default is "pandoc" which uses the pandoc set in the system path).
------	---

SmallCaps	<i>Small Caps Text</i>
-----------	------------------------

Description

Constructs an inline object of type "SmallCaps".

Usage

```
SmallCaps(x)
```

Arguments

x a inline object or a list of inline objects

Examples

```
SmallCaps("The latex command for 'small caps' is 'textsc'!")
```

SoftBreak	<i>Soft Line Break</i>
-----------	------------------------

Description

Constructs an inline object of type "SoftBreak".

Usage

```
SoftBreak()
```

Examples

```
SoftBreak()
```

Space	<i>Inter-word space</i>
-------	-------------------------

Description

Constructs an inline object of type "Space".

Usage

```
Space()
```

Examples

```
Space()
```

Span	<i>Generic Inline Container with Attributes</i>
------	---

Description

Constructs an inline object of type "Span".

Usage

```
Span(attr, inline)
```

Arguments

attr	an object of type "Attr"
inline	a inline object or a list of inline objects which will be shown

Examples

```
attr <- Attr("A", "B", list(c("C", "D")))
Span(attr, "some inline string")
```

Str	<i>Text (String)</i>
-----	----------------------

Description

Constructs an inline object of type "Str".

Usage

```
Str(x)
```

Arguments

x	a character string
---	--------------------

Details

To minimize the amount of unnecessary typing, pandoc filters automatically converts character strings to pandoc objects of type "Str" if needed. Furthermore, if a single inline object is provided where a list of inline objects is needed **pandocfilters** automatically converts this inline object into a list of inline objects. For example, the canonical way to emphasize the character string "some text" would be `Emph(list(Str("some text")))` since single inline objects are automatically transformed to lists of inline objects, this is equivalent to `Emph(Str("some text"))`. Since a character string is automatically transformed to an inline object, this is equivalent to `Emph("some string")`. In short, whenever a list of inline objects is needed one can also use a single inline object or a character string.

Examples

```
Str("SomeString")
```

Strikeout

Strikeout Text

Description

Constructs an inline object of type "Strikeout".

Usage

```
Strikeout(x)
```

Arguments

x a inline object or a list of inline objects

Examples

```
Strikeout("strikeout")
```

Strong

Strongly Emphasized Text

Description

Constructs an inline object of type "Strong".

Usage

```
Strong(x)
```

Arguments

x a inline object or a list of inline objects

Examples

```
Strong("strong")
```

Subscript

Subscripted Text

Description

Constructs an inline object of type "Subscript".

Usage

Subscript(x)

Arguments

x a inline object or a list of inline objects

Examples

Subscript("some text written in superscript")

Superscript

Superscripted Text

Description

Constructs an inline object of type "Superscript".

Usage

Superscript(x)

Arguments

x a inline object or a list of inline objects

Examples

Superscript("some text written in superscript")

Table	<i>Table</i>
-------	--------------

Description

Constructs a block object of type "Table".

Usage

```
Table(
  rows,
  col_names = NULL,
  aligns = NULL,
  col_width = NULL,
  caption = list()
)
```

Arguments

rows	an object of class "matrix", "data.frame", "table" or a list of lists of pandoc objects of type "TableCell"
col_names	a list of objects of type "TableCell"
aligns	a character vector of alignments, possible values are "l" for left, "r" for right, "c" for center and "d" for default.
col_width	a numeric vector
caption	a inline object or a list of inline objects giving the caption

Details

Table, with caption, column alignments (required), relative column widths (0 = default), column headers (each a list of blocks), and rows (each a list of lists of blocks)

TableCell	<i>Table Cell</i>
-----------	-------------------

Description

Table cells is a constructor for plain table cells.

Usage

```
TableCell(x)
```

Arguments

x	a character string giving the content of the table cell
---	---

Details

In general table cells are a list of block elements, the constructor TableCell creates a plain table cell.

Examples

```
TableCell("Cell 1")
```

```
write.pandoc
```

Write the JSON-formatted AST to a connection

Description

Write the JSON-formatted AST to a connection.

Usage

```
write.pandoc(json, file, format, exchange = c("arg", "file"))
```

Arguments

json	a JSON representation of the AST to be written out
file	a connection object or a character string to which the JSON-formatted AST is written
format	a character string giving the format (e.g. "latex", "html")
exchange	a character string

Details

If you want to apply a filter to the document before it get's written out, or your pandoc installation is not registered in the PATH it can be favorable to provide your own writer function to the document class.

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