Package ‘rmarkdown’

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rmarkdown-package

R Markdown Document Conversion

Description

Convert R Markdown documents into a variety of formats including HTML, MS Word, PDF, and Beamer.

Details

The rmarkdown package includes high level functions for converting to a variety of formats. For example:

```r
render("input.Rmd", html_document())
render("input.Rmd", pdf_document())
```

You can also specify a plain markdown file in which case knitting will be bypassed:

```r
render("input.md", html_document())
```

Additional options can be specified along with the output format:

```r
render("input.Rmd", html_document(toc = TRUE))
render("input.Rmd", pdf_document(latex_engine = "lualatex"))
render("input.Rmd", beamer_presentation(incremental = TRUE))
```

You can also include arbitrary pandoc command line arguments along with the other options:

```r
render("input.Rmd", pdf_document(toc = TRUE, pandoc_args = "--listings"))
```

See Also

render, html_document, pdf_document, word_document, beamer_presentation
all_output_formats

Determine all output formats for an R Markdown document

Description
Read the YAML metadata (and any common output YAML file) for the document and return the output formats that will be generated by a call to `render`.

Usage
```r
call_output_formats(input, output_yaml = NULL)
```

Arguments
- `input`: Input file (Rmd or plain markdown)
- `output_yaml`: Paths to YAML files specifying output formats and their configurations. The first existing one is used. If none are found, then the function searches YAML files specified to the `output.yaml` top-level parameter in the YAML front matter, `_output.yml` or `_output.yaml`, and then uses the first existing one.

Details
This function is useful for front-end tools that require additional knowledge of the output to be produced by `render` (e.g. to customize the preview experience).

Value
A character vector with the names of all output formats.

available_templates

List available R Markdown template in a package

Description
List the available template by name that can be used with `draft()` to create a new document for R Markdown from a package.

Usage
```r
available_templates(package = "rmarkdown", full_path = FALSE)
```

Arguments
- `package`: Package to list template from. Default to `rmarkdown`
- `full_path`: Set to TRUE to get the full path to the available templates
Value

A character vector of templates name to use within `draft()`. If `full_path = TRUE`, it returns the full path to the templates.

Examples

```r
# List rmarkdown templates & create a draft
available_templates()

# List rticles templates
available_templates("rticles")
```

---

### beamer_presentation

**Convert to a Beamer presentation**

Description

Format for converting from R Markdown to a Beamer presentation.

Usage

```r
beamer_presentation(
    toc = FALSE,
    slide_level = NULL,
    number_sections = FALSE,
    incremental = FALSE,
    fig_width = 10,
    fig_height = 7,
    fig_crop = "auto",
    fig_caption = TRUE,
    dev = "pdf",
    df_print = "default",
    theme = "default",
    colortheme = "default",
    fonttheme = "default",
    highlight = "default",
    template = "default",
    keep_tex = FALSE,
    keep_md = FALSE,
    latex_engine = "pdflatex",
    citation_package = c("default", "natbib", "biblatex"),
    self_contained = TRUE,
    includes = NULL,
    md_extensions = NULL,
    pandoc_args = NULL
)
```
Arguments

toc TRUE to include a table of contents in the output (only level 1 headers will be included in the table of contents).

slide_level The heading level which defines individual slides. By default this is the highest header level in the hierarchy that is followed immediately by content, and not another header, somewhere in the document. This default can be overridden by specifying an explicit slide_level.

number_sections TRUE to number section headings

incremental TRUE to render slide bullets incrementally. Note that if you want to reverse the default incremental behavior for an individual bullet you can precede it with >. For example: > - Bullet Text. See more in Pandoc’s Manual

fig_width Default width (in inches) for figures

fig_height Default height (in inches) for figures

fig_cropping Whether to crop PDF figures with the command pdfcrop. This requires the tools pdfcrop and ghostscript to be installed. By default, fig_cropping = TRUE if these two tools are available.

fig_caption TRUE to render figures with captions

device Graphics device to use for figure output (defaults to pdf)

df_print Method to be used for printing data frames. Valid values include "default", "kable", "tibble", and "paged". The "default" method uses a corresponding S3 method of print, typically print.data.frame. The "kable" method uses the knitr:kable function. The "tibble" method uses the tibble package to print a summary of the data frame. The "paged" method creates a paginated HTML table (note that this method is only valid for formats that produce HTML). In addition to the named methods you can also pass an arbitrary function to be used for printing data frames. You can disable the df_print behavior entirely by setting the option rmarkdown:df_print to FALSE. See Data frame printing section in bookdown book for examples.

theme Beamer theme (e.g. "AnnArbor").

colortheme Beamer color theme (e.g. "dolphin").

fonttheme Beamer font theme (e.g. "structurebold").

highlight Syntax highlighting style passed to Pandoc. Supported built-in styles include "default", "tango", "pygments", "kate", "monochrome", "espresso", "zenburn", "haddock", and "breezedark".

Two custom styles are also included, "arrow", an accessible color scheme, and "rstudio", which mimics the default IDE theme. Alternatively, supply a path to a `.theme` file to use a custom Pandoc style. Note that custom theme requires Pandoc 2.0+.

Pass NULL to prevent syntax highlighting.

template Pandoc template to use for rendering. Pass "default" to use the rmarkdown package default template; pass NULL to use pandoc’s built-in template; pass a path to use a custom template that you’ve created. See the documentation on pandoc online documentation for details on creating custom templates.
beamer_presentation

- **keep_tex**: Keep the intermediate tex file used in the conversion to PDF
- **keep_md**: Keep the markdown file generated by knitting.
- **latex_engine**: LaTeX engine for producing PDF output. Options are "pdflatex", "lualatex", "xelatex" and "tectonic".
- **citation_package**: The LaTeX package to process citations, natbib or biblatex. Use default if neither package is to be used, which means citations will be processed via the command pandoc-citeproc.
- **self_contained**: Whether to generate a full LaTeX document (TRUE) or just the body of a LaTeX document (FALSE). Note the LaTeX document is an intermediate file unless keep_tex = TRUE.
- **includes**: Named list of additional content to include within the document (typically created using the `includes` function).
- **md_extensions**: Markdown extensions to be added or removed from the default definition of R Markdown. See the `rmarkdown_format` for additional details.
- **pandoc_args**: Additional command line options to pass to pandoc

**Details**

See the [online documentation](https://bookdown.org/bookdown) for additional details on using the `beamer_presentation` format.

Creating Beamer output from R Markdown requires that LaTeX be installed.

R Markdown documents can have optional metadata that is used to generate a document header that includes the title, author, and date. For more details see the documentation on R Markdown metadata.

R Markdown documents also support citations. You can find more information on the markdown syntax for citations in the Bibliographies and Citations article in the online documentation.

**Value**

R Markdown output format to pass to `render()`

**Examples**

```r
## Not run:
library(rmarkdown)

# simple invocation
render("pres.Rmd", beamer_presentation())

# specify an option for incremental rendering
render("pres.Rmd", beamer_presentation(incremental = TRUE))

## End(Not run)
```
Description

R Markdown can also compile R scripts to a notebook which includes commentary, source code, and script output. Notebooks can be compiled to any output format including HTML, PDF, and MS Word.

Overview

To compile a notebook from an R script you simply pass the script to `render`. For example:

```r
rmarkdown::render("analysis.R")
rmarkdown::render("analysis.R", "pdf_document")
```

The first call to `render` creates an HTML document, whereas the second creates a PDF document.

By default the name of the script, username, and current date and time are included in the header of the generated notebook. You can override this default behavior by including explicit metadata in a specially formatted R comment:

```r
#' ---
#' title: "Crop Analysis Q3 2013"
#' author: "John Smith"
#' date: "May 3rd, 2014"
#' ---
```

Including Markdown

Note that the R comment used above to add a title, author, and date includes a single-quote as a special prefix character. This is a `roxygen2` style comment, and it's actually possible to include many such comments in an R script, all of which will be converted to markdown content within the generated notebook. For example:

```r
#' A script comment that includes **markdown** formatting.
```

Rather than displaying as an R comment in the compiled notebook any `roxygen2` style comment will be treated as markdown and rendered accordingly.

**knitr Spin**

Including markdown within R comments is possible because `render` calls the `knitr spin` function to convert the R script to an Rmd file. The `spin` function also enables you to add knitr chunk options with another special comment prefix (`#*`).

Here's an example of a script that uses the various features of `spin`:

```r
```

For more details on `knitr::spin` see the following documentation:

`https://yihui.org/knitr/demo/stitch/`
context_document

Convert to a ConTeXt document

Description

Format for converting from R Markdown to PDF using ConTeXt.

Usage

context_document(
  toc = FALSE,
  toc_depth = 2,
  number_sections = FALSE,
  fig_width = 6.5,
  fig_height = 4.5,
  fig_crop = "auto",
  fig_caption = TRUE,
  dev = "pdf",
  df_print = "default",
  template = NULL,
  keep_tex = FALSE,
  keep_md = FALSE,
  citation_package = c("default", "natbib", "biblatex"),
  includes = NULL,
  md_extensions = NULL,
  output_extensions = NULL,
  pandoc_args = NULL,
  context_path = NULL,
  context_args = NULL,
  ext = c(".pdf", ".tex")
)

Arguments

toc TRUE to include a table of contents in the output
toc_depth Depth of headers to include in table of contents
number_sections TRUE to number section headings
fig_width Default width (in inches) for figures
fig_height Default height (in inches) for figures
fig_crop Whether to crop PDF figures with the command pdfcrop. This requires the tools pdfcrop and ghostscript to be installed. By default, fig_crop = TRUE if these two tools are available.
fig_caption TRUE to render figures with captions
dev Graphics device to use for figure output (defaults to pdf)
df_print Method to be used for printing data frames. Valid values include "default", "kable", "tibble", and "paged". The "default" method uses a corresponding S3 method of print, typically print.data.frame. The "kable" method uses the knitr::kable function. The "tibble" method uses the tibble package to print a summary of the data frame. The "paged" method creates a paginated HTML table (note that this method is only valid for formats that produce HTML). In addition to the named methods you can also pass an arbitrary function to be used for printing data frames. You can disable the df_print behavior entirely by setting the option rmarkdown.df_print to FALSE. See Data frame printing section in bookdown book for examples.

template Pandoc template to use for rendering. Pass "default" to use the rmarkdown package default template; pass NULL to use pandoc’s built-in template; pass a path to use a custom template that you’ve created. See the documentation on pandoc online documentation for details on creating custom templates.

keep_tex Keep the intermediate tex file used in the conversion to PDF

keep_md Keep the markdown file generated by knitting.

citation_package The LaTeX package to process citations, natbib or biblatex. Use default if neither package is to be used, which means citations will be processed via the command pandoc-citeproc.

includes Named list of additional content to include within the document (typically created using the includes function).

md_extensions Markdown extensions to be added or removed from the default definition of R Markdown. See the rmarkdown_format for additional details.

output_extensions Pandoc extensions to be added or removed from the output format, e.g., "-smart" means the output format will be latex-smart.

pandoc_args Additional command line options to pass to pandoc

context_path Path of the ConTeXt executable. If not provided, ConTeXt has to be available from the PATH environment variable.

context_args Command line arguments passed to ConTeXt.

ext Format of the output document (defaults to ".pdf").

Details

ConTeXt needs to be installed. To install the most recent version, see https://wiki.contextgarden.net/Installation. A less recent version is also available in TeX Live, you can install it with tinytex::tlmgr_install("context").

R Markdown documents can have optional metadata that is used to generate a document header that includes the title, author, and date. For more details see the documentation on R Markdown metadata.

R Markdown documents also support citations. You can find more information on the markdown syntax for citations in the Bibliographies and Citations article in the online documentation.
convert_ipynb

Conversion route from Jupyter/IPython notebooks to R Markdown documents.

## Description

Read a Jupyter/IPython notebook file (`.ipynb`) via `jsonlite::fromJSON()`, convert its code cells to R Markdown code chunks, preserve Markdown cells, and write out the results to an Rmd file.

## Usage

```r
convert_ipynb(input, output = xfun::with_ext(input, "Rmd"))
```

## Arguments

- `input`: Path to the input `.ipynb` file.
- `output`: The output file path.

## Details

This simple converter may have some rough edges, depending on how many IPython-specific features are used in a notebook. For example, line magics are not automatically converted (warnings will be issued if line magics are detected), but you may consider using or writing R functions to replace them in R Markdown (e.g., the `%%load` magic may be replaced by `reticulate::source_python()`). Cell magics will be converted to code chunks with the `knitr` language engine names being the magic names. For example, the cell magic `%%js` is converted to ````{js}` in R Markdown. This does not always work because not all IPython cell magics have their counterparts in `knitr`'s language engines, but common cell magics like `%%bash`, `%%sh`, `%%js`, `%%perl`, `%%python`, and `%%ruby` should work.

## Value

The output file path (invisibly).
**Examples**

```r
# this is not a real ipynb file, but illustrates what convert_ipynb() does
nb_data <- list(
  cells = list(
    list(cell_type = 'markdown', source = 'Hi **Markdown**!'),
    list(cell_type = 'code', source = 'print("Hi R Markdown!")')
  ),
  metadata = list(
    kernelspec = list(language = 'python')
  )
)

nb_file = tempfile(fileext = '.ipynb')
jsonlite::write_json(nb_data, nb_file, auto_unbox = TRUE, pretty = TRUE)
xfun::file_string(nb_file)  # show file content

# convert to R Markdown
nb_rmd = rmarkdown::convert_ipynb(nb_file)
xfun::file_string(nb_rmd)
```

---

**default_output_format**  Determine the default output format for an R Markdown document

**Description**

Read the YAML metadata (and any common output YAML file) for the document and return the output format that will be generated by a call to `render`.

**Usage**

```r
default_output_format(input, output_yaml = NULL)
```

**Arguments**

- **input**  Input file (Rmd or plain markdown)
- **output_yaml**  Paths to YAML files specifying output formats and their configurations. The first existing one is used. If none are found, then the function searches YAML files specified to the output_yaml top-level parameter in the YAML front matter, _output.yml or _output.yaml, and then uses the first existing one.

**Details**

This function is useful for front-end tools that require additional knowledge of the output to be produced by `render` (e.g. to customize the preview experience).

**Value**

A named list with a `name` value containing the format name and a `options` value that is a list containing all the options for the format and their values. An option’s default value will be returned if the option isn’t set explicitly in the document.
**draft**  
Create a new document based on a template

**Description**
Create (and optionally edit) a draft of an R Markdown document based on a template.

**Usage**
draft(file, template, package = NULL, create_dir = "default", edit = TRUE)

**Arguments**
- `file`  
  File name for the draft
- `template`  
  Template to use as the basis for the draft. This is either the full path to a template directory or the name of a template directory within the `rmarkdown/templates` directory of a package.
- `package`  
  (Optional) Name of package where the template is located.
- `create_dir`  
  TRUE to create a new directory for the document (the "default" setting leaves this behavior up to the creator of the template).
- `edit`  
  TRUE to edit the template immediately

**Details**
The `draft` function creates new R Markdown documents based on templates that are either located on the filesystem or within an R package. The template and its supporting files will be copied to the location specified by `file`.

**Value**
The file name of the new document (invisibly).

**Note**
An R Markdown template consists of a directory that contains a description of the template, a skeleton Rmd file used as the basis for new documents, and optionally additional supporting files that are provided along with the skeleton (e.g. a logo graphic).

If the template directory is contained within a package then it should be located at `inst/rmarkdown/templates`. For example, a package named `pubtools` that wanted to provide a template named `quarterly_report` would need to provide the following files within the `pubtools/inst/rmarkdown/templates` directory:

- `quarterly_report/template.yaml`
- `quarterly_report/skeleton/skeleton.Rmd`
The `template.yaml` file should include a `name` field. If you want to ensure that a new directory is always created for a given template, then you can add the `create_dir` field to the `template.yaml` file. For example:

```yaml
create_dir: true
```

The `skeleton/skeleton.Rmd` file should include the initial contents you want for files created from this template. Additional files can be added to the `skeleton` directory, for example:

```r
dskeleton/logo.png
```

These files will automatically be copied to the directory containing the new R Markdown draft.

### Examples

```r
## Not run:

rmarkdown::draft("Q4Report.Rmd",
    template="/opt/rmd/templates/quarterly_report")

rmarkdown::draft("Q4Report.Rmd",
    template="quarterly_report", package="pubtools")

## End(Not run)
```

---

**find_external_resources**

*Find External Resource References*

**Description**

Given an R Markdown document or HTML file, attempt to determine the set of additional files needed in order to render and display the document.

**Usage**

```r
find_external_resources(input_file, encoding = "UTF-8")
```

**Arguments**

- `input_file`: path to the R Markdown document or HTML file to process
- `encoding`: Ignored. The encoding is always assumed to be UTF-8.

**Details**

This routine applies heuristics in order to scan a document for possible resource references.

In R Markdown documents, it looks for references to files implicitly referenced in Markdown (e.g. ![alt](img.png)), in the document’s YAML header, in raw HTML chunks, and as quoted strings in R code chunks (e.g. read.csv("data.csv")).
Resources specified explicitly in the YAML header for R Markdown documents are also returned. To specify resources in YAML, use the `resource_files` key:

```yaml
---
title: My Document
author: My Name
resource_files:
  - data/mydata.csv
  - images/figure.png
---
```

Each item in the `resource_files` list can refer to:

1. A single file, such as `images/figure.png`, or
2. A directory, such as `resources/data`, in which case all of the directory’s content will be recursively included, or
3. A wildcard pattern, such as `data/*.csv`, in which case all of the files matching the pattern will be included. No recursion is done in this case.

In HTML files (and raw HTML chunks in R Markdown documents), this routine searches for resources specified in common tag attributes, such as `<img src="..."`, `<link href="..."`, etc.

In all cases, only resources that exist on disk and are contained in the document’s directory (or a child thereof) are returned.

**Value**

A data frame with the following columns:

- **path** The relative path from the document to the resource
- **explicit** Whether the resource was specified explicitly (`TRUE`) or discovered implicitly (`FALSE`)  
- **web** Whether the resource is needed to display a Web page rendered from the document

**find_pandoc**

*Find the pandoc executable*

**Description**

Searches for the pandoc executable in a few places and use the highest version found, unless a specific version is requested.

**Usage**

```r
find_pandoc(cache = TRUE, dir = NULL, version = NULL)
```
Arguments

- **cache**: Whether to search for pandoc again if a Pandoc directory containing the pandoc executable of the expected version (if provided) has been found previously. Search again if `cache = FALSE`.
- **dir**: A character vector of potential directory paths under which pandoc may be found. If not provided, this function searches for pandoc from the environment variable `RSTUDIO_PANDOC` (the RStudio IDE will set this variable to the directory of Pandoc bundled with the IDE), the environment variable `PATH`, and the directory `~/.opt/pandoc`.
- **version**: The version of Pandoc to look for (e.g., "2.9.2.1"). If not provided, this function searches for the highest version under the potential directories.

Value

A list containing the directory and version of Pandoc (if found).

Note

Usually you do not need to install Pandoc if you use the RStudio IDE, because the IDE has bundled a version of Pandoc. If you have installed a version of Pandoc by yourself and want to use this version instead, you may use the `dir` argument of this function.

Examples

```r
rmarkdown::find_pandoc()
rmarkdown::find_pandoc(dir = '~/Downloads/Pandoc')
rmarkdown::find_pandoc(version = '2.7.3')
```

---

**github_document**

Convert to GitHub Flavored Markdown

Description

Format for converting from R Markdown to GitHub Flavored Markdown.

Usage

```r
github_document(
  toc = FALSE,
  toc_depth = 3,
  number_sections = FALSE,
  math_method = "default",
  preserve_yaml = FALSE,
  fig_width = 7,
  fig_height = 5,
  dev = "png",
  df_print = "default",
)```
includes = NULL,
md_extensions = NULL,
hard_line_breaks = TRUE,
pandoc_args = NULL,
html_preview = TRUE,
keep_html = FALSE
)

Arguments

toc TRUE to include a table of contents in the output
toc_depth Depth of headers to include in table of contents
number_sections TRUE to number section headings
math_method "default" means that native Github support for math notations using Mathjax syntax will be used. Other possible value is "webtex" where equation will be rendered to an image in the resulting Markdown. See html_document() for option to change webtex URL. Set math_method to NULL to opt-out any math treatment.
preserve_yaml Preserve YAML front matter in final document.
fig_width Default width (in inches) for figures
fig_height Default height (in inches) for figures
dev Graphics device to use for figure output (defaults to png)
df_print Method to be used for printing data frames. Valid values include "default", "kable", "tibble", and "paged". The "default" method uses a corresponding S3 method of print, typically print.data.frame. The "kable" method uses the knitr::kable function. The "tibble" method uses the tibble package to print a summary of the data frame. The "paged" method creates a paginated HTML table (note that this method is only valid for formats that produce HTML). In addition to the named methods you can also pass an arbitrary function to be used for printing data frames. You can disable the df_print behavior entirely by setting the option rmarkdown.df_print to FALSE. See Data frame printing section in bookdown book for examples.
includes Named list of additional content to include within the document (typically created using the includes function).
md_extensions Markdown extensions to be added or removed from the default definition of R Markdown. See the rmarkdown_format for additional details.
hard_line_breaks TRUE to generate markdown that uses a simple newline to represent a line break (as opposed to two-spaces and a newline).
pandoc_args Additional command line options to pass to pandoc
html_preview TRUE to also generate an HTML file for the purpose of locally previewing what the document will look like on GitHub.
keep_html TRUE to keep the preview HTML file in the working directory. Default is FALSE.
Details

See the online documentation for additional details on using the github_document() format.

Value

R Markdown output format to pass to render()

About Math support

Default behavior is to keep any inline equation using $ and any block equation using $$ in the resulting markdown as Github will process those using Mathjax. This feature is only available with Pandoc 2.10.1 and above

When using "webtex", PNG images with a white background are used by default so that it shows correctly on Github on both light and dark theme. You can choose to only output SVG for better quality by changing the URL used:

```
output:
  github_document:
    math_method:
      engine: webtex
      url: https://latex.codecogs.com/svg.image?
```

Background or fonts color cannot be changed for now and your equation may not be visible on dark theme.

Using "webtex" will be the default with Pandoc 2.0.4 until Pandoc 2.10. Before 2.0.4, Github document output does not support math.

---

**html-dependencies**

*Provide common HTML dependencies for R Markdown formats*

### Description

These functions provide common HTML dependencies (e.g. jquery, bootstrap) for re-use by other R Markdown formats.

### Usage

- `html_dependency_jquery()`
- `html_dependency_jqueryui()`
- `html_dependency_bootstrap(theme)`
- `html_dependency_tocify()`
- `html_dependency_font_awesome()`
Arguments

**theme**

One of the following:

- A `bslib::bs_theme()` object (or a list of `bslib::bs_theme()` argument values)
  - Use this option for custom themes using Bootstrap 4 or 3.
  - In this case, any `.scss`/`.sass` files provided to the `css` parameter may utilize the theme’s underlying Sass utilities (e.g., variables, mixins, etc).
- NULL for no theme (i.e., no `html_dependency_bootstrap()`).
- A character string specifying a Bootswatch 3 theme name (for backwards-compatibility).

**highlight**

Highlighter to use

---

**html_document**  
*Convert to an HTML document*

Description

Format for converting from R Markdown to an HTML document.

Usage

```r
html_document(
  toc = FALSE,
  toc_depth = 3,
  toc_float = FALSE,
  number_sections = FALSE,
  anchor_sections = FALSE,
  section_divs = TRUE,
  fig_width = 7,
  fig_height = 5,
  fig_retina = 2,
  fig_caption = TRUE,
  dev = "png",
)```
df_print = "default",
code_folding = c("none", "show", "hide"),
code_download = FALSE,
self_contained = TRUE,
theme = "default",
highlight = "default",
highlight_downlit = FALSE,
math_method = "default",
mathjax = "default",
template = "default",
extra_dependencies = NULL,
css = NULL,
includes = NULL,
keep_md = FALSE,
lib_dir = NULL,
md_extensions = NULL,
pandoc_args = NULL,
...)

Arguments

\textbf{toc} \quad \text{TRUE to include a table of contents in the output}
\textbf{toc_depth} \quad \text{Depth of headers to include in table of contents}
\textbf{toc_float} \quad \text{TRUE to float the table of contents to the left of the main document content. Rather than TRUE you may also pass a list of options that control the behavior of the floating table of contents. See the \textit{Floating Table of Contents} section below for details.}
\textbf{number_sections} \quad \text{TRUE to number section headings}
\textbf{anchor_sections} \quad \text{TRUE to show section anchors when mouse hovers for all headers. A list can also be passed with style and/or depth to customize the behavior. See \textit{Anchor Sections Customization} section.}
\textbf{section_divs} \quad \text{Wrap sections in <div> tags, and attach identifiers to the enclosing <div> rather than the header itself.}
\textbf{fig_width} \quad \text{Default width (in inches) for figures}
\textbf{fig_height} \quad \text{Default height (in inches) for figures}
\textbf{fig_retina} \quad \text{Scaling to perform for retina displays (defaults to 2, which currently works for all widely used retina displays). Set to NULL to prevent retina scaling. Note that this will always be NULL when keep_md is specified (this is because \texttt{fig_retina} relies on outputting HTML directly into the markdown document).}
\textbf{fig_caption} \quad \text{TRUE to render figures with captions}
\textbf{dev} \quad \text{Graphics device to use for figure output (defaults to png)}
\textbf{df_print} \quad \text{Method to be used for printing data frames. Valid values include "default", "kable", "tibble", and "paged". The "default" method uses a corresponding S3
method of print, typically `print.data.frame`. The "kable" method uses the `knitr::kable` function. The "tibble" method uses the `tibble` package to print a summary of the data frame. The "paged" method creates a paginated HTML table (note that this method is only valid for formats that produce HTML). In addition to the named methods you can also pass an arbitrary function to be used for printing data frames. You can disable the `df_print` behavior entirely by setting the option `rmarkdown.df_print` to FALSE. See Data frame printing section in bookdown book for examples.

code_folding
- Enable document readers to toggle the display of R code chunks. Specify "none" to display all code chunks. Specify "hide" or "show" to hide or show all R code chunks by default, and let readers toggle the states on browsers. See the Code folding

code_download
- Embed the Rmd source code within the document and provide a link that can be used by readers to download the code.

self_contained
- Produce a standalone HTML file with no external dependencies, using data: URLs to incorporate the contents of linked scripts, stylesheets, images, and videos. Note that even for self contained documents MathJax is still loaded externally (this is necessary because of its size).

theme
- One of the following:
  - A `bslib::bs_theme()` object (or a list of `bslib::bs_theme()` argument values)
    - Use this option for custom themes using Bootstrap 4 or 3.
    - In this case, any `.scss/.sass` files provided to the `css` parameter may utilize the theme’s underlying Sass utilities (e.g., variables, mixins, etc).
  - NULL for no theme (i.e., no `html_dependency_bootstrap()`).
  - A character string specifying a Bootswatch 3 theme name (for backwards-compatibility).

highlight
- Syntax highlight engine and style. See the Highlighting section below for details.
  - "default" (and "textmate") will use highlightjs as syntax highlighting engine instead of Pandoc.
  - Any other value will be passed as Pandoc’s highlighting style. Pandoc’s built-in styles include "tango", "pygments", "kate", "monochrome", "espresso", "zenburn", "haddock" and "breezedark".
  - Two custom styles are also included, "arrow", an accessible color scheme, and "rstudio", which mimics the default IDE theme. Alternatively, supply a path to a ".theme” to use a custom Pandoc style. Note that custom theme requires Pandoc 2.0+
  - Pass NULL to prevent syntax highlighting.

highlight_downlit
- TRUE to use the `downlit` package as syntax highlight engine to highlight inline code and R code chunks (including providing hyperlinks to function documentation). The package needs to be installed to use this feature.
Only Pandoc color schemes are supported with this engine. With highlight = "default", it will use the accessible theme called "arrow". To learn more about `downlit` highlighting engine, see https://downlit.r-lib.org/.

**math_method**

Math rendering engine to use. This will define the math method to use with Pandoc.

- It can be a string for the engine, one of "mathjax", "mathml", "webtex", "katex", "gladtex", or "r-katex" or "default" for `mathjax`.
- It can be a list of
  - engine: one of "mathjax", "mathml", "webtex", "katex", or "gladtex".
  - url: A specific url to use with `mathjax`, `katex` or `webtex`. Note that for engine = "mathjax", url = "local" will use a local version of MathJax (which is copied into the output directory).

For example,

```r
output:
  html_document:
    math_method:
      engine: katex
      url: https://cdn.jsdelivr.net/npm/katex@0.11.1/dist
```

See Pandoc’s Manual about Math in HTML for the details about Pandoc supported methods.

Using math_method = "r-katex" will opt-in server side rendering using KaTeX thanks to `katex` R package. This is useful compared to math_method = "katex" to have no JS dependency, only a CSS dependency for styling equation.

**mathjax**

Include mathjax. The "default" option uses an https URL from a MathJax CDN. The "local" option uses a local version of MathJax (which is copied into the output directory). You can pass an alternate URL or pass NULL to exclude MathJax entirely.

**template**

Pandoc template to use for rendering. Pass "default" to use the rmarkdown package default template; pass NULL to use pandoc’s built-in template; pass a path to use a custom template that you’ve created. Note that if you don’t use the "default" template then some features of html_document won’t be available (see the Templates section below for more details).

**extra_dependencies**

Extra dependencies as a list of the html_dependency class objects typically generated by htmltools::htmlDependency().

**css**

CSS and/or Sass files to include. Files with an extension of .sass or .scss are compiled to CSS via sass::sass(). Also, if theme is a bslib::bs_theme() object, Sass code may reference the relevant Bootstrap Sass variables, functions, mixins, etc.

**includes**

Named list of additional content to include within the document (typically created using the includes function).

**keep_md**

Keep the markdown file generated by knitting.

**lib_dir**

Directory to copy dependent HTML libraries (e.g. jquery, bootstrap, etc.) into. By default this will be the name of the document with _files appended to it.
markdown extensions  Markdown extensions to be added or removed from the default definition of R Markdown. See the \texttt{rmarkdown\_format} for additional details.

pandoc\_args Additional command line options to pass to pandoc

... Additional function arguments to pass to the base R Markdown HTML output formatter \texttt{html\_document\_base}

Details

See the online documentation for additional details on using the html\_document format.

R Markdown documents can have optional metadata that is used to generate a document header that includes the title, author, and date. For more details see the documentation on R Markdown metadata.

R Markdown documents also support citations. You can find more information on the markdown syntax for citations in the Bibliographies and Citations article in the online documentation.

Value

R Markdown output format to pass to \texttt{render}

Highlighting

There are three highlighting engines available to HTML documents:

- **highlightjs** It does highlighting in the browser, using javascript. It can only be used with the default template (i.e template = "default") and it has two styles ("default" and "textmate"). When activated, it adds two additional dependencies to the output file: a JS script and a CSS file. For now, this is the default engine for the default template - this could change in the future.

- **Pandoc** Pandoc's built-in highlighting engine works with any template, default or custom, and style can be chosen among the built-in ones ("tango", "pygments", "kate", "monochrome", "espresso", "zenburn", "haddock" and "breezedark") or a path to a custom theme ".theme" file (see Details in the Pandoc Manual). \texttt{rmarkdown} includes two custom themes to select with highlight parameter:
  - "arrow", an accessible style using colors optimized for accessibility and color contrast
  - "rstudio", a color scheme close to RStudio's default highlighting and highlightjs's textmate.

Custom themes are only available for Pandoc 2.0 and above.

- **downlit** \texttt{downlit} is an R package that provides a syntax highlighting engine in R. It will also do automatic linking of R code (requires internet connectivity). It is activated only if highlight\_downlit = \texttt{TRUE} and only affects R code, leaving highlighting for other languages unchanged. The default color scheme is the accessible theme "arrow".

It requires some CSS in the template to correctly style links. This is included in the default template, but if you want to use with a custom template, you will need to add this to your template:

```{r}
$if(highlight-downlit)$
<style type="text/css">
  code a:any-link {
  ```
Anchor Sections Customization

This will be the default to activate anchor sections link on header

```yaml
output:
  html_document:
    anchor_sections: TRUE
```

There are currently two options to modify the default behavior

**style** Select a predefined visual style:

- style = "dash", the default, uses '#', a minimalist choice that evokes the id selector from HTML and CSS.
- style = "symbol" will use a link symbol
- style = "icon" will use an svg icon.

You can also customize using a css rule in your document. For example, to get a pictogram:

```css
a.anchor-section::before {
  content: '\01F517';
}
```

About how to apply custom CSS in R Markdown document, see [https://bookdown.org/yihui/rmarkdown-cookbook/html-css.html](https://bookdown.org/yihui/rmarkdown-cookbook/html-css.html)

**depth** Select the maximum header level to add the anchor link to. For example, this yaml will use the symbol style and only with level 1 and 2 headings:

```yaml
output:
  html_document:
    anchor_sections:
      style: icon
      depth: 2
```

If omitted, anchor will be added to all headers (equivalent of depth=6). You can also set anchors manually with depth = 0 using this syntax

```yaml
# my header {.hasAnchor}
```

Using anchor sections will add some CSS to your document output for the styling, and a JS script if section_divs = TRUE. The anchor link itself is added using a Lua filter, and hence requires Pandoc 2.0+
Navigation Bars

If you have a set of html documents which you’d like to provide a common global navigation bar for, you can include a "_navbar.yml" or "_navbar.html" file within the same directory as your html document and it will automatically be included at the top of the document.

The "_navbar.yml" file includes title, type, left, and right fields (to define menu items for the left and right of the navbar respectively). Menu items include title and href fields. For example:

```yaml
title: "My Website"
type: default
left:
  - text: "Home"
    href: index.html
  - text: "Other"
    href: other.html
right:
  - text: GitHub
    href: https://github.com
```

The type field is optional and can take the value "default" or "inverse" (which provides a different color scheme for the navigation bar).

Alternatively, you can include a "_navbar.html" file which is a full HTML definition of a bootstrap navigation bar. For a simple example of including a navigation bar see https://github.com/rstudio/rmarkdown-website/blob/master/_navbar.html. For additional documentation on creating Bootstrap navigation bars see https://getbootstrap.com/docs/4.5/components/navbar/.

Floating Table of Contents

You may specify a list of options for the toc_float parameter which control the behavior of the floating table of contents. Options include:

- `collapsed` (defaults to TRUE) controls whether the table of contents appears with only the top-level (H2) headers. When collapsed the table of contents is automatically expanded inline when necessary.
- `smooth_scroll` (defaults to TRUE) controls whether page scrolls are animated when table of contents items are navigated to via mouse clicks.
- `print` (defaults to TRUE) controls whether the table of contents appears when user prints out the HTML page.

Code folding

Code blocks become foldable by specifying "show" or "hide" to the code_folding parameter. The state can be toggled individually on browsers. The document-wide toggle button is also provided for html_document and some of its extensions such as html_notebook. Note that this feature applies not only to source codes of chunks, but also markdown code blocks.

Supported languages are R, Python, Bash, SQL, C++, Stan, and Julia. To support code blocks with other languages, add `foldable` class to them (i.e., `class.source = "foldable"` as a chunk option).
The default initial state of code folding respects the value given to the `code_folding` parameter. To override the behavior individually, add `fold-none` to disable, `fold-hide` to initially hide, `fold-show` to initially show.

**Tabbed Sections**

You can organize content using tabs by applying the `.tabset` class attribute to headers within a document. This will cause all sub-headers of the header with the `.tabset` attribute to appear within tabs rather than as standalone sections. For example:

```markdown
## Quarterly Results {.tabset}

### By Product

### By Region
```

With `html_document()`, you can also specify two additional attributes to control the appearance and behavior of the tabs. The `.tabset-fade` attribute causes the tabs to fade in and out when switching. The `.tabset-pills` attribute causes the visual appearance of the tabs to be "pill" rather than traditional tabs. For example:

```markdown
## Quarterly Results {.tabset .tabset-fade .tabset-pills}
```

If tabbed sections relies on `html_dependency_tabset()`, for example by `html_vignette()`, these two attributes are not supported.

**Templates**

You can provide a custom HTML template to be used for rendering. The syntax for templates is described in the pandoc documentation. You can also use the basic pandoc template by passing `template = NULL`.

Note however that if you choose not to use the "default" HTML template then several aspects of HTML document rendering will behave differently:

- The `theme` parameter does not work (you can still provide styles using the `css` parameter).
- For the `highlight` parameter, the default highlighting engine will resolve to Pandoc instead of highlightjs and highlighting style will default to "pygments". "textmate" style is not available as related to highlightjs.
- The `toc_float` parameter will not work.
- The `code_folding` parameter will not work.
- Tabbed sections (as described above) will not work.
- Navigation bars (as described above) will not work.
- MathJax will not work if `self_contained` is `TRUE` (these two options can’t be used together in normal pandoc templates).

Due to the above restrictions, you might consider using the `includes` parameter as an alternative to providing a fully custom template.
## html_document_base

**Base output format for HTML-based output formats**

### Description

Creates an HTML base output format suitable for passing as the `base_format` argument of the `output_format` function.

### Usage

```r
html_document_base(
  theme = NULL,
  self_contained = TRUE,
  lib_dir = NULL,
  math_method = "default",
  mathjax = "default",
  pandoc_args = NULL,
  template = "default",
  dependency_resolver = NULL,
  copy_resources = FALSE,
  extra_dependencies = NULL,
  css = NULL,
  bootstrap_compatible = FALSE,
  ...
)
```

### Arguments

- **theme**: One of the following:
  - A `bslib::bs_theme()` object (or a list of `bslib::bs_theme()` argument values)
    - Use this option for custom themes using Bootstrap 4 or 3.
    - In this case, any `.scss/.sass` files provided to the `css` parameter may utilize the theme’s underlying Sass utilities (e.g., variables, mixins, etc).
  - `NULL` for no theme (i.e., no `html_dependency_bootstrap()`).
• A character string specifying a **Bootswatch 3** theme name (for backwards-compatibility).

**self_contained**

Produce a standalone HTML file with no external dependencies, using data: URLs to incorporate the contents of linked scripts, stylesheets, images, and videos. Note that even for self contained documents MathJax is still loaded externally (this is necessary because of its size).

**lib_dir**

Directory to copy dependent HTML libraries (e.g. jquery, bootstrap, etc.) into. By default this will be the name of the document with `.files` appended to it.

**math_method**

Math rendering engine to use. This will define the math method to use with Pandoc.

- It can be a string for the engine, one of "mathjax", "mathml", "webtex", "katex", "gladtex", or "r-katex" or "default" for mathjax.
- It can be a list of
  - `engine`: one of "mathjax", "mathml", "webtex", "katex", or "gladtex".
  - `url`: A specific url to use with mathjax, katex or webtex. Note that for `engine = "mathjax"`, `url = "local"` will use a local version of MathJax (which is copied into the output directory).

For example,

```r
output:
  html_document:
    math_method:
      engine: katex
      url: https://cdn.jsdelivr.net/npm/katex@0.11.1/dist
```

See Pandoc’s Manual about Math in HTML for the details about Pandoc supported methods.

Using `math_method = "r-katex"` will opt-in server side rendering using KaTeX thanks to katex R package. This is useful compared to `math_method = "katex"` to have no JS dependency, only a CSS dependency for styling equation.

**mathjax**

Include mathjax. The "default" option uses an https URL from a MathJax CDN. The "local" option uses a local version of MathJax (which is copied into the output directory). You can pass an alternate URL or pass `NULL` to exclude MathJax entirely.

**pandoc_args**

Additional command line options to pass to pandoc

**template**

Pandoc template to use for rendering. Pass "default" to use the rmarkdown package default template; pass `NULL` to use pandoc’s built-in template; pass a path to use a custom template that you’ve created. Note that if you don’t use the "default" template then some features of `html_document` won’t be available (see the Templates section below for more details).

**dependency_resolver**

A dependency resolver

**copy_resources**

Copy resources

**extra_dependencies**

Extra dependencies as a list of the `html_dependency` class objects typically generated by `htmltools::htmlDependency()`.
CSS and/or Sass files to include. Files with an extension of .sass or .scss are compiled to CSS via \texttt{sass::sass()}. Also, if \texttt{theme} is a \texttt{bslib::bs_theme()} object, Sass code may reference the relevant Bootstrap Sass variables, functions, mixins, etc.

\begin{description}
\item[bootstrap_compatible] Bootstrap compatible
\item[... Ignored]
\end{description}

Value

HTML base output format.

\begin{verbatim}
html_fragment Convert to an HTML fragment.
\end{verbatim}

Description

An html fragment is suitable for inclusion into an external html page. See \texttt{html_document} for full details - this is a minor variation that assumes you will include the output into an existing document (e.g. a blog post).

Usage

\begin{verbatim}
html_fragment(
number_sections = FALSE,
section_divs = TRUE,
fig_width = 7,
fig_height = 5,
fig_retina = 2,
fig_caption = TRUE,
dev = "png",
df_print = "default",
mathjax = TRUE,
includes = NULL,
keep_md = FALSE,
md_extensions = NULL,
pandoc_args = NULL,
...)
\end{verbatim}

Arguments

\begin{description}
\item[number_sections \texttt{TRUE} to number section headings]
\item[section_divs Wrap sections in <div> tags, and attach identifiers to the enclosing <div> rather than the header itself.]
\end{description}
html_notebook

fig_width  Default width (in inches) for figures
fig_height Default height (in inches) for figures
fig_retina Scaling to perform for retina displays (defaults to 2, which currently works for all widely used retina displays). Set to NULL to prevent retina scaling. Note that this will always be NULL when keep_md is specified (this is because fig_retina relies on outputting HTML directly into the markdown document).
fig_caption TRUE to render figures with captions
dev Graphics device to use for figure output (defaults to png)
df_print Method to be used for printing data frames. Valid values include "default", "kable", "tibble", and "paged". The "default" method uses a corresponding S3 method of print, typically print.data.frame. The "kable" method uses the knitr::kable function. The "tibble" method uses the tibble package to print a summary of the data frame. The "paged" method creates a paginated HTML table (note that this method is only valid for formats that produce HTML). In addition to the named methods you can also pass an arbitrary function to be used for printing data frames. You can disable the df_print behavior entirely by setting the option rmarkdown.df_print to FALSE. See Data frame printing section in bookdown book for examples.
mathjax TRUE to convert $ and $$ math blocks into MathJax compatible output. Note that you’ll still need to ensure that the page where the fragment is included loads the required MathJax scripts.
includes Named list of additional content to include within the document (typically created using the includes function).
keep_md Keep the markdown file generated by knitting.
md_extensions Markdown extensions to be added or removed from the default definition of R Markdown. See the rmarkdown_format for additional details.
pandoc_args Additional command line options to pass to pandoc
... Additional arguments passed to html_document

Details
See the online documentation for additional details on using the html_fragment format.

Value
R Markdown output format to pass to render

---

**html_notebook**  
*Convert to an HTML notebook*

**Description**
Format for converting from R Markdown to an HTML notebook.
html_notebook(
  toc = FALSE,
  toc_depth = 3,
  toc_float = FALSE,
  number_sections = FALSE,
  fig_width = 7,
  fig_height = 5,
  fig_retina = 2,
  fig_caption = TRUE,
  code_folding = "show",
  theme = "default",
  highlight = "textmate",
  highlight_downlit = FALSE,
  math_method = "default",
  mathjax = "default",
  extra_dependencies = NULL,
  css = NULL,
  includes = NULL,
  md_extensions = NULL,
  pandoc_args = NULL,
  output_source = NULL,
  self_contained = TRUE,
  ...
)

Arguments

  toc        TRUE to include a table of contents in the output
  toc_depth  Depth of headers to include in table of contents
  toc_float  TRUE to float the table of contents to the left of the main document content. Rather than TRUE you may also pass a list of options that control the behavior of the floating table of contents. See the Floating Table of Contents section below for details.
  number_sections  TRUE to number section headings
  fig_width  Default width (in inches) for figures
  fig_height Default height (in inches) for figures
  fig_retina Scaling to perform for retina displays (defaults to 2, which currently works for all widely used retina displays). Set to NULL to prevent retina scaling. Note that this will always be NULL when keep_md is specified (this is because fig_retina relies on outputting HTML directly into the markdown document).
  fig_caption TRUE to render figures with captions
  code_folding Enable document readers to toggle the display of R code chunks. Specify "none" to display all code chunks. Specify "hide" or "show" to hide or show all R code chunks by default, and let readers toggle the states on browsers. See the Code folding
theme One of the following:
• A `bslib::bs_theme()` object (or a list of `bslib::bs_theme()` argument values)
  – Use this option for custom themes using Bootstrap 4 or 3.
  – In this case, any `.scss`/`.sass` files provided to the `css` parameter may
  utilize the theme’s underlying Sass utilities (e.g., variables, mixins, etc).
• NULL for no theme (i.e., no `html_dependency_bootstrap()`).
• A character string specifying a Bootswatch 3 theme name (for backwards-
  compatibility).
highlight Syntax highlight engine and style. See the Highlighting section below for de-
  tails.
"default" (and "textmate") will use highlightjs as syntax highlighting engine in-
stead of Pandoc.
Any other value will be passed as Pandoc’s highlighting style. Pandoc’s built-in
styles include "tango", "pygments", "kate", "monochrome", "espresso", "zen-
burn", "haddock" and "breezedark".
Two custom styles are also included, "arrow", an accessible color scheme, and
"rstudio", which mimics the default IDE theme. Alternatively, supply a path to a
'.theme' to use a custom Pandoc style. Note that custom theme requires Pandoc
2.0+.
Pass NULL to prevent syntax highlighting.
highlight_downlit TRUE to use the `downlit` package as syntax highlight engine to highlight inline
code and R code chunks (including providing hyperlinks to function document-
ation). The package needs to be installed to use this feature.
Only Pandoc color schemes are supported with this engine. With highlight =
"default", it will use the accessible theme called "arrow". To learn more about
downlit highlighting engine, see https://downlit.r-lib.org/.
math_method Math rendering engine to use. This will define the math method to use with
Pandoc.
• It can be a string for the engine, one of "mathjax", "mathml", "webtex",
  "katex", "gladtex", or "r-katex" or "default" for mathjax.
• It can be a list of
  – engine: one of "mathjax", "mathml", "webtex", "katex", or "gladtex".
  – url1: A specific url to use with mathjax, katex or webtex. Note that for
eengine = "mathjax", url1 = "local" will use a local version of Math-
  Jax (which is copied into the output directory).
For example,
output:
html_document:
  math_method:
    engine: katex
    url: https://cdn.jsdelivr.net/npm/katex@0.11.1/dist
See Pandoc’s Manual about Math in HTML for the details about Pandoc supported methods.

Using `math_method = "r-katex"` will opt-in server side rendering using KaTeX thanks to katex R package. This is useful compared to `math_method = "katex"` to have no JS dependency, only a CSS dependency for styling equation.

`mathjax` Include mathjax. The “default” option uses an https URL from a MathJax CDN. The “local” option uses a local version of MathJax (which is copied into the output directory). You can pass an alternate URL or pass NULL to exclude MathJax entirely.

`extra_dependencies` Extra dependencies as a list of the html_dependency class objects typically generated by htmltools::htmlDependency().

`css` CSS and/or Sass files to include. Files with an extension of .sass or .scss are compiled to CSS via sass::sass(). Also, if theme is a bslib::bs_theme() object, Sass code may reference the relevant Bootstrap Sass variables, functions, mixins, etc.

`includes` Named list of additional content to include within the document (typically created using the includes function).

`md_extensions` Markdown extensions to be added or removed from the default definition of R Markdown. See the rmarkdown_format for additional details.

`pandoc_args` Additional command line options to pass to pandoc

`output_source` Define an output source for R chunks (ie, outputs to use instead of those produced by evaluating the underlying R code). See html_notebook_output for more details.

`self_contained` Produce a standalone HTML file with no external dependencies. Defaults to TRUE. In notebooks, setting this to FALSE is not recommended, since the setting does not apply to embedded notebook output such as plots and HTML widgets.

**Details**

See the online documentation for additional details on using the html_notebook format.

---

**html_notebook_metadata**

*Generate R Notebook Metadata*

**Description**

A structured helper for the construction of metadata used by the R Notebook output functions. See html_notebook_output for more details.
html_notebook_output

Usage

html_notebook_metadata(iframe = TRUE)

Arguments

iframe Boolean; should output be shown in an <iframe>?

---

html_notebook_output Generate R Notebook Output

Description

Utilities for generating output for the html_notebook format, through the output_source function attached to a output_format.

Usage

html_notebook_output_html(html, meta = NULL)

html_notebook_output_img(
    path = NULL,
    bytes = NULL,
    attributes = NULL,
    meta = NULL,
    format = c("png", "jpeg")
)

html_notebook_output_png(
    path = NULL,
    bytes = NULL,
    attributes = NULL,
    meta = NULL,
    format = c("png", "jpeg")
)

html_notebook_output_code(code, attributes = list(class = "r"), meta = NULL)

Arguments

html Arbitrary HTML content to insert.

meta An R list of arbitrary meta-data. The data will be converted to JSON, base64-encoded, and injected into the header comment.

path A path to a file. For functions accepting both path and bytes, if bytes is NULL, the bytewise contents will be obtained by reading the file.

bytes The bytewise representation of content.
html_vignette

attributes A named \texttt{R} list of HTML attributes. These will be escaped and inserted into the generated HTML as appropriate.

format The image format; one of "png" or "jpeg".

code Source code.

Details

See the online documentation for additional details on using the html_notebook format.

---

\texttt{html_vignette} \hspace{1cm} Convert to an HTML vignette

Description

A HTML vignette is a lightweight alternative to \texttt{html_document()} suitable for inclusion in packages to be released to CRAN. It reduces the size of a basic vignette from 100k to around 10k.

Usage

\begin{verbatim}
html_vignette(
    fig_width = 3,
    fig_height = 3,
    dev = "png",
    df_print = "default",
    css = NULL,
    highlight = "pygments",
    keep_md = FALSE,
    readme = FALSE,
    self_contained = TRUE,
    tabset = FALSE,
    code_folding = c("none", "show", "hide"),
    extra_dependencies = NULL,
    pandoc_args = NULL,
    ...
)
\end{verbatim}

Arguments

\begin{itemize}
  \item \texttt{fig_width} Default width (in inches) for figures
  \item \texttt{fig_height} Default height (in inches) for figures
  \item \texttt{dev} Graphics device to use for figure output (defaults to \texttt{png})
  \item \texttt{df_print} Method to be used for printing data frames. Valid values include "default", "kable", "tibble", and "paged". The "default" method uses a corresponding S3 method of \texttt{print}, typically \texttt{print.data.frame}. The "kable" method uses the \texttt{knitr::kable} function. The "tibble" method uses the \texttt{tibble} package to print a summary of the data frame. The "paged" method creates a paginated HTML
\end{itemize}
html_vignette

table (note that this method is only valid for formats that produce HTML). In addition to the named methods you can also pass an arbitrary function to be used for printing data frames. You can disable the df_print behavior entirely by setting the option rmarkdown.df_print to FALSE. See Data frame printing section in bookdown book for examples.

css  

One or more css files to include.

highlight, ...  

Additional arguments passed to html_document(). Please note that theme and fig_retina are hard-coded. Setting any of those will yield an error.

keep_md  

Keep the markdown file generated by knitting.

readme  

Use this vignette as the package README.md file (i.e. render it as README.md to the package root). Note that if there are image files within your vignette you should be sure to add `README_files` to `.Rbuildignore`.

self_contained  

Produce a standalone HTML file with no external dependencies, using data: URLs to incorporate the contents of linked scripts, stylesheets, images, and videos. Note that even for self contained documents MathJax is still loaded externally (this is necessary because of its size).

tabset  

Opt-in tabbed-sections feature inspired by html_document(). See section "Tabbed Sections" for the detail. This feature also allows navigation to the tab from table of contents and URL.

code_folding  

Enable document readers to toggle the display of R code chunks. Specify "none" to display all code chunks. Specify "hide" or "show" to hide or show all R code chunks by default, and let readers toggle the states on browsers. See the Code folding

extra_dependencies  

Extra dependencies as a list of the html_dependency class objects typically generated by htmltools::htmlDependency().

pandoc_args  

Additional command line options to pass to pandoc

Details

Compared to html_document(), it:

- never uses retina figures
- never uses a theme
- has a smaller default figure size
- uses a custom css stylesheet

See the online documentation for additional details on using the html_vignette() format.

Value

R Markdown output format to pass to render()
Tabbed Sections

You can organize content using tabs by applying the `.tabset` class attribute to headers within a document. This will cause all sub-headers of the header with the `.tabset` attribute to appear within tabs rather than as standalone sections. For example:

```markdown
## Quarterly Results {.tabset}

### By Product

### By Region

With `html_document()`, you can also specify two additional attributes to control the appearance and behavior of the tabs. The `.tabset-fade` attribute causes the tabs to fade in and out when switching. The `.tabset-pills` attribute causes the visual appearance of the tabs to be "pill" rather than traditional tabs. For example:

```markdown
## Quarterly Results {.tabset .tabset-fade .tabset-pills}
```

If tabbed sections relies on `html_dependency_tabset()`, for example by `html_vignette()`, these two attributes are not supported.

Code folding

Code blocks become foldable by specifying "show" or "hide" to the `code_folding` parameter. The state can be toggled individually on browsers. The document-wide toggle button is also provided for `html_document` and some of its extensions such as `html_notebook`. Note that this feature applies not only to source codes of chunks, but also markdown code blocks.

Supported languages are R, Python, Bash, SQL, C++, Stan, and Julia. To support code blocks with other languages, add `foldable` class to them (i.e., `class.source = "foldable"` as a chunk option).

The default initial state of code folding respects the value given to the `code_folding` parameter. To override the behavior individually, add `fold-none` to disable, `fold-hide` to initially hide, `fold-show` to initially show.

---

**includes**

*Include content within output*

**Description**

Specify additional content to be included within an output document.

**Usage**

```r
includes(in_header = NULL, before_body = NULL, after_body = NULL)
```

```r
includes_to_pandoc_args(includes, filter = identity)
```
Arguments

in_header  One or more files with content to be included in the header of the document.
before_body  One or more files with content to be included before the document body.
after_body  One or more files with content to be included after the document body.
includes  Includes to convert to pandoc args.
filter  Filter to pre-process includes with.

Details

Non-absolute paths for resources referenced from the `in_header`, `before_body`, and `after_body` parameters are resolved relative to the directory of the input document.

Value

Includes list or pandoc args

Examples

```r
## Not run:
library(rmarkdown)

html_document(includes = includes(before_body = "header.htm"))

pdf_document(includes = includes(after_body = "footer.tex"))

## End(Not run)
```

---

**ioslides_presentation**  *Convert to an ioslides Presentation*

Description

Format for converting from R Markdown to an *ioslides* presentation.

Usage

```r
ioslides_presentation(
  number_sections = FALSE,
  logo = NULL,
  slide_level = 2,
  incremental = FALSE,
  fig_width = 7.5,
  fig_height = 4.5,
  fig_retina = 2,
  fig_caption = TRUE,
  dev = "png",
```

df_print = "default",
smart = TRUE,
self_contained = TRUE,
widescreen = FALSE,
smaller = FALSE,
transition = "default",
math_method = "mathjax",
mathjax = "default",
analytics = NULL,
template = NULL,
css = NULL,
includes = NULL,
keep_md = FALSE,
lib_dir = NULL,
md_extensions = NULL,
pandoc_args = NULL,
extra_dependencies = NULL,
...)

Arguments

number_sections  TRUE to number section headings
logo  Path to file that includes a logo for use in the presentation (should be square and at least 128x128).
slide_level  Header level to consider as slide separator (Defaults to header 2).
incremental  TRUE to render slide bullets incrementally. Note that if you want to reverse the default incremental behavior for an individual bullet you can preceded it with >. For example: > - Bullet Text.
fig_width  Default width (in inches) for figures
fig_height  Default height (in inches) for figures
fig_retina  Scaling to perform for retina displays (defaults to 2, which currently works for all widely used retina displays). Set to NULL to prevent retina scaling. Note that this will always be NULL when keep_md is specified (this is because fig_retina relies on outputting HTML directly into the markdown document).
fig_caption  TRUE to render figures with captions
dev  Graphics device to use for figure output (defaults to png)
df_print  Method to be used for printing data frames. Valid values include "default", "kable", "tibble", and "paged". The "default" method uses a corresponding S3 method of print, typically print.data.frame. The "kable" method uses the knitr::kable function. The "tibble" method uses the tibble package to print a summary of the data frame. The "paged" method creates a paginated HTML table (note that this method is only valid for formats that produce HTML). In addition to the named methods you can also pass an arbitrary function to be used for printing data frames. You can disable the df_print behavior entirely
by setting the option `rmarkdown.df_print` to `FALSE`. See Data frame printing section in bookdown book for examples.

**smart**
Produce typographically correct output, converting straight quotes to curly quotes, --- to em-dashes, -- to en-dashes, and ... to ellipses.

**self_contained**
Produce a standalone HTML file with no external dependencies, using data: URLs to incorporate the contents of linked scripts, stylesheets, images, and videos. Note that even for self contained documents MathJax is still loaded externally (this is necessary because of its size).

**widescreen**
Display presentation with wider dimensions.

**smaller**
Use smaller text on all slides. You can also enable this for individual slides by adding the `.smaller` attribute to the slide header (see Presentation Size below for details).

**transition**
Speed of slide transitions. This can be "default", "slower", "faster", or a numeric value with a number of seconds (e.g. 0.5).

**math_method**
Math rendering engine to use. This will define the math method to use with Pandoc.

- It can be a string for the engine, one of "mathjax", "mathml", "webtex", "katex", "gladtex", or "r-katex" or "default" for `mathjax`.
- It can be a list of
  - `engine`: one of "mathjax", "mathml", "webtex", "katex", or "gladtex".
  - `url`: A specific url to use with `mathjax`, `katex` or `webtex`. Note that for `engine = "mathjax", url = "local"` will use a local version of MathJax (which is copied into the output directory).

For example,
```r
output:
  html_document:
    math_method:
      engine: katex
      url: https://cdn.jsdelivr.net/npm/katex@0.11.1/dist
```

See Pandoc’s Manual about Math in HTML for the details about Pandoc supported methods.

Using `math_method = "r-katex"` will opt-in server side rendering using KaTeX thanks to `katex` R package. This is useful compared to `math_method = "katex"` to have no JS dependency, only a CSS dependency for styling equation.

**mathjax**
Include mathjax. The "default" option uses an https URL from a MathJax CDN. The "local" option uses a local version of MathJax (which is copied into the output directory). You can pass an alternate URL or pass `NULL` to exclude MathJax entirely.

**analytics**
A Google analytics property ID.

**template**
Pandoc template to use for rendering. Pass "default" to use the `rmarkdown` package default template; pass `NULL` to use pandoc’s built-in template; pass a path to use a custom template that you’ve created. Note that if you don’t use the "default" template then some features of `html_document` won’t be available (see the Templates section below for more details).
css
includes
keep_md
lib_dir
md_extensions
pandoc_args
extra_dependencies

---
title: "Habits"
author: John Doe
date: March 22, 2005
output: ioslides_presentation
---

# In the morning

## Getting up

- Turn off alarm
- Get out of bed

## Breakfast

- Eat eggs
- Drink coffee

# In the evening

## Dinner

- Eat spaghetti
- Drink wine

----------

![](images/spaghetti.jpg)

## Going to sleep

- Get in bed
- Count sheep

You can add a subtitle to a slide or section by including text after the pipe (|) character. For example:

### Getting up

| What I like to do first thing

**Display Modes**

The following single character keyboard shortcuts enable alternate display modes:

- 'f' enable fullscreen mode
- 'w' toggle widescreen mode
- 'o' enable overview mode
- 'h' enable code highlight mode
- 'p' show presenter notes

Pressing Esc exits all of these modes. See the sections below on *Code Highlighting* and *Presenter Mode* for additional detail on those modes.

**Incremental Bullets**

You can render bullets incrementally by adding the `incremental` option:

```yaml
---
output:
  ioslides_presentation:
    incremental: true
---
```
If you want to render bullets incrementally for some slides but not others you can use this syntax:

```
> - Eat eggs
> - Drink coffee
```

**Presentation Size**

You can display the presentation using a wider form factor using the `widescreen` option. You can specify that smaller text be used with the `smaller` option. For example:

```---
output:
  ioslides_presentation:
    widescreen: true
    smaller: true
---
```

You can also enable the `smaller` option on a slide-by-slide basis by adding the `.smaller` attribute to the slide header:

```## Getting up {.smaller}
```

**Adding a Logo**

You can add a logo to the presentation using the `logo` option (the logo should be square and at least 128x128). For example:

```---
output:
  ioslides_presentation:
    logo: logo.png
---
```

A 128x128 version of the logo graphic will be added to the title slide and an icon version of the logo will be included in the bottom-left footer of each slide.

**Build Slides**

Slides can also have a `.build` attribute that indicate that their content should be displayed incrementally. For example:

```## Getting up {.build}
```

Slide attributes can be combined if you need to specify more than one, for example:

```## Getting up {.smaller .build}
```
Code Highlighting

It’s possible to select subsets of code for additional emphasis by adding a special "highlight" comment around the code. For example:

```r
### <b>
x <- 10
y <- x * 2
### </b>
```

The highlighted region will be displayed with a bold font. When you want to help the audience focus exclusively on the highlighted region press the ‘h’ key and the rest of the code will fade away.

Tables

The ioslides template has an attractive default style for tables so you shouldn’t hesitate to add tables for presenting more complex sets of information. Pandoc markdown supports several syntaxes for defining tables which are described in the pandoc online documentation.

Advanced Layout

You can center content on a slide by adding the `.flexbox` and `.vcenter` attributes to the slide title. For example:

```r
## Dinner {.flexbox .vcenter}
```

You can horizontally center content by enclosing it in a `div` tag with class `centered`. For example:

```r
div class="centered">
This text is centered.
</div>
```

You can do a two-column layout using the `columns-2` class. For example:

```r
div class="columns-2">
  ![Image](image.png)
  - Bullet 1
  - Bullet 2
  - Bullet 3
</div>
```

Note that content will flow across the columns so if you want to have an image on one side and text on the other you should make sure that the image has sufficient height to force the text to the other side of the slide.
Text Color

You can color content using base color classes red, blue, green, yellow, and gray (or variations of them e.g. red2, red3, blue2, blue3, etc.). For example:

```html
<div class="red2">
This text is red
</div>
```

Presenter Mode

A separate presenter window can also be opened (ideal for when you are presenting on one screen but have another screen that's private to you). The window stays in sync with the main presentation window and also shows presenter notes and a thumbnail of the next slide. To enable presenter mode add `?presentme=true` to the URL of the presentation, for example:

`mypresentation.html?presentme=true`

The presenter mode window will open and will always re-open with the presentation until it's disabled with:

`mypresentation.html?presentme=false`

To add presenter notes to a slide you include it within a "notes" div. For example:

```html
<div class="notes">
This is my *note*.
- It can contain markdown
- like this list
</div>
```

Printing and PDF Output

You can print an ioslides presentation from within browsers that have good support for print CSS (i.e. as of this writing Google Chrome has the best support). Printing maintains most of the visual styles of the HTML version of the presentation.

To create a PDF version of a presentation you can use Print to PDF from Google Chrome.
knitr_options  

Knitr options for an output format

Description

Define the knitr options for an R Markdown output format.

Usage

knitr_options(
  opts_knit = NULL,
  opts_chunk = NULL,
  knit_hooks = NULL,
  opts_hooks = NULL,
  opts_template = NULL
)

Arguments

- opts_knit: List of package level knitr options (see `opts_knit`)
- opts_chunk: List of chunk level knitr options (see `opts_chunk`)
- knit_hooks: List of hooks for R code chunks, inline R code, and output (see `knit_hooks`)
- opts_hooks: List of hooks for code chunk options (see `opts_hooks`)
- opts_template: List of templates for chunk level knitr options (see `opts_template`)

Value

An list that can be passed as the knitr argument of the output_format function.

See Also

- output_format

knitr_options_html  

Knitr options for an HTML output format

Description

Define knitr options for an R Markdown output format that creates HTML output.

Usage

knitr_options_html(fig_width, fig_height, fig_retina, keep_md, dev = "png")
knitr_options_pdf

Arguments

fig_width  Default width (in inches) for figures
fig_height Default height (in inches) for figures
fig_retina Scaling to perform for retina displays (defaults to 2, which currently works for all widely used retina displays). Set to NULL to prevent retina scaling. Note that this will always be NULL when keep_md is specified (this is because fig_retina relies on outputting HTML directly into the markdown document).
keep_md Keep the markdown file generated by knitting.
dev Graphics device to use for figure output (defaults to png)

Value

An list that can be passed as the knitr argument of the output_format function.

See Also

knitr_options, output_format

Description

Define knitr options for an R Markdown output format that creates PDF output.

Usage

knitr_options_pdf(fig_width, fig_height, fig_crop, dev = "pdf")

Arguments

fig_width  Default width (in inches) for figures
fig_height Default height (in inches) for figures
fig_crop Whether to crop PDF figures with the command pdfcrop. This requires the tools pdfcrop and ghostscript to be installed. By default, fig_crop = TRUE if these two tools are available.
dev Graphics device to use for figure output (defaults to png)

Value

An list that can be passed as the knitr argument of the output_format function.

See Also

knitr_options, output_format
**knit_params_ask**

*Run a shiny application asking for parameter configuration for the given document.*

### Description

Run a shiny application asking for parameter configuration for the given document.

### Usage

```r
knit_params_ask(
  file = NULL,
  input_lines = NULL,
  params = NULL,
  shiny_args = NULL,
  save_caption = "Save",
  encoding = "UTF-8"
)
```

### Arguments

- **file**
  - Path to the R Markdown document with configurable parameters.

- **input_lines**
  - Content of the R Markdown document. If NULL, the contents of file will be read.

- **params**
  - A named list of optional parameter overrides used in place of the document defaults.

- **shiny_args**
  - Additional arguments to `runApp`.

- **save_caption**
  - Caption to use use for button that saves/confirms parameters.

- **encoding**
  - Ignored. The encoding is always assumed to be UTF-8.

### Value

named list with overridden parameter names and value.

**latex-dependencies**

*Provide common \LaTeX{} dependencies*

### Description

These functions provide common \LaTeX{} dependencies (e.g. tikz) for R Markdown formats that use \LaTeX{}.

### Usage

```r
latex_dependency_tikz(libraries, options = NULL, extra_lines = NULL)
```
**Arguments**

- `libraries`  A character vector of tikz libraries to load
- `options`    The LaTeX options for the package
- `extra_lines` LaTeX code related to the package added to the preamble

---

**latex_dependency**  
*Define a LaTeX package dependency*

---

**Description**

Define a LaTeX package dependency

**Usage**

`latex_dependency(name, options = NULL, extra_lines = NULL)`

**Arguments**

- `name`  The LaTeX package name
- `options`  The LaTeX options for the package
- `extra_lines` LaTeX code related to the package added to the preamble

---

**md_document**  
*Convert to a markdown document*

---

**Description**

Format for converting from R Markdown to another variant of markdown (e.g. strict markdown or github flavored markdown)

**Usage**

```r
md_document(
  variant = "markdown_strict",
  preserve_yaml = FALSE,
  toc = FALSE,
  toc_depth = 3,
  number_sections = FALSE,
  standalone = FALSE,
  fig_width = 7,
  fig_height = 5,
  fig_retina = NULL,
  dev = "png",
  df_print = "default",
)```
includes = NULL,
md_extensions = NULL,
pandoc_args = NULL,
ext = ".md"
)

Arguments

variant  Markdown variant to produce (defaults to "markdown_strict"). Other valid values are "commonmark", "gfm", "commonmark_x", "markdown_mmd", markdown_phpextra", "markdown_github", or even "markdown" (which produces pandoc markdown). You can also compose custom markdown variants, see the pandoc online documentation for details.

preserve_yaml  Preserve YAML front matter in final document.

toc  TRUE to include a table of contents in the output

toc_depth  Depth of headers to include in table of contents

number_sections  TRUE to number section headings

standalone  Set to TRUE to include title, date and other metadata field in addition to Rmd content as a body.

fig_width  Default width (in inches) for figures

fig_height  Default height (in inches) for figures

fig_retina  Scaling to perform for retina displays. Defaults to NULL which performs no scaling. A setting of 2 will work for all widely used retina displays, but will also result in the output of <img> tags rather than markdown images due to the need to set the width of the image explicitly.

dev  Graphics device to use for figure output (defaults to png)

df_print  Method to be used for printing data frames. Valid values include "default", "kable", "tibble", and "paged". The "default" method uses a corresponding S3 method of print, typically print.data.frame. The "kable" method uses the knitr::kable function. The "tibble" method uses the tibble package to print a summary of the data frame. The "paged" method creates a paginated HTML table (note that this method is only valid for formats that produce HTML). In addition to the named methods you can also pass an arbitrary function to be used for printing data frames. You can disable the df_print behavior entirely by setting the option rmarkdown.df_print to FALSE. See Data frame printing section in bookdown book for examples.

includes  Named list of additional content to include within the document (typically created using the includes function).

md_extensions  Markdown extensions to be added or removed from the default definition of R Markdown. See the rmarkdown_format for additional details.

pandoc_args  Additional command line options to pass to pandoc

ext  Extension of the output file (defaults to ".md").
Details

See the online documentation for additional details on using the md_document() format.

R Markdown documents can have optional metadata that is used to generate a document header that includes the title, author, and date. For more details see the documentation on R Markdown metadata.

Value

R Markdown output format to pass to render()

Examples

```r
## Not run:
library(rmarkdown)
render("input.Rmd", md_document())
render("input.Rmd", md_document(variant = "markdown_github"))
## End(Not run)
```

---

metadata

**metadata**

*The YAML metadata of the current R Markdown document*

Description

The object metadata stores the YAML metadata of the current R Markdown document as a list, which you may use in the R code chunks, e.g. rmarkdown::metadata$title (the title of the document), rmarkdown::metadata$author, and rmarkdown::metadata$foo (if you have a YAML field named foo), etc.

Format

An object of class list of length 0.

Examples

```r
rmarkdown::metadata
```
odt_document

Convert to an OpenDocument Text (ODT) document

Description

Format for converting from R Markdown to an ODT document.

Usage

odt_document(
  number_sections = FALSE,
  fig_width = 5,
  fig_height = 4,
  fig_caption = TRUE,
  template = "default",
  reference_odt = "default",
  includes = NULL,
  keep_md = FALSE,
  md_extensions = NULL,
  pandoc_args = NULL
)

Arguments

number_sections  TRUE to number section headings
fig_width        Default width (in inches) for figures
fig_height       Default height (in inches) for figures
fig_caption      TRUE to render figures with captions
template         Pandoc template to use for rendering. Pass "default" to use the rmarkdown package default template; pass NULL to use pandoc’s built-in template; pass a path to use a custom template that you’ve created. See the documentation on pandoc online documentation for details on creating custom templates.
reference_odt    Use the specified file as a style reference in producing an odt file. For best results, the reference odt should be a modified version of an odt file produced using pandoc. Pass "default" to use the rmarkdown default styles.
includes        Named list of additional content to include within the document (typically created using the includes function).
keep_md         Keep the markdown file generated by knitting.
md_extensions   Markdown extensions to be added or removed from the default definition of R Markdown. See the rmarkdown_format for additional details.
pandoc_args     Additional command line options to pass to pandoc
output_format

Details

See the online documentation for additional details on using the odt_document format.

R Markdown documents can have optional metadata that is used to generate a document header that includes the title, author, and date. For more details see the documentation on R Markdown metadata.

R Markdown documents also support citations. You can find more information on the markdown syntax for citations in the Bibliographies and Citations article in the online documentation.

Value

R Markdown output format to pass to render

Examples

```r
## Not run:
library(rmarkdown)

# simple invocation
render("input.Rmd", odt_document())

# specify an option for syntax highlighting
render("input.Rmd", odt_document(highlight = "zenburn"))

## End(Not run)
```

output_format

Define an R Markdown output format

Description

Define an R Markdown output format based on a combination of knitr and pandoc options.

Usage

```r
output_format(
  knitr,
  pandoc,
  keep_md = FALSE,
  clean_supporting = TRUE,
  df_print = NULL,
  pre_knit = NULL,
  post_knit = NULL,
  pre_processor = NULL,
  intermediates_generator = NULL,
  post_processor = NULL,
  on_exit = NULL,
  file_scope = NULL,
  base_format = NULL
)
```
Arguments

knitr Knitr options for an output format (see knitr_options)
pandoc Pandoc options for an output format (see pandoc_options)
keep_md Keep the markdown file generated by knitting. Note that if this is TRUE then clean_supporting will always be FALSE.
clean_supporting Cleanup any supporting files after conversion see render_supporting_files
df_print Method to be used for printing data frames. Valid values include "default", "kable", "tibble", and "paged". The "default" method uses a corresponding S3 method of print, typically print.data.frame. The "kable" method uses the knitr::kable function. The "tibble" method uses the tibble package to print a summary of the data frame. The "paged" method creates a paginated HTML table (note that this method is only valid for formats that produce HTML). In addition to the named methods you can also pass an arbitrary function to be used for printing data frames. You can disable the df_print behavior entirely by setting the option rmarkdown.df_print to FALSE. See Data frame printing section in bookdown book for examples.
pre_knit An optional function that runs before knitting which receives the input (input filename passed to render) and ... (for future expansion) arguments.
post_knit An optional function that runs after knitting which receives the metadata, input_file, runtime, and ... (for future expansion) arguments. This function can return additional arguments to pass to pandoc and can call knitr::knit_meta_add to add additional dependencies based on the contents of the input_file or on other assets side by side with it that may be used to produce html with dependencies during subsequent processing.
pre_processor An optional pre-processor function that receives the metadata, input_file, runtime, knit_meta, files_dir, and output_dir and can return additional arguments to pass to pandoc.
intermediates_generator An optional function that receives the original input_file, and the intermediates directory (i.e. the intermediates_dir argument to render). The function should generate and return the names of any intermediate files required to render the input_file.
post_processor An optional post-processor function that receives the metadata, input_file, output_file, clean, and verbose parameters, and can return an alternative output_file.
on_exit A function to call when rmarkdown::render() finishes execution (as registered with a on.exit handler).
file_scope A function that will split markdown input to pandoc into multiple named files. This is useful when the caller has concatenated a set of Rmd files together (as bookdown does), and those files may need to processed by pandoc using the --file-scope option. The function should return a named list of files w/ name and content for each file.
base_format An optional format to extend.
Value

An R Markdown output format definition that can be passed to `render`.

See Also

`render`, `knitr_options`, `pandoc_options`

Examples

```r
## Not run:
output_format(knitr = knitr_options(opts_chunk = list(dev = 'png'))),
             pandoc = pandoc_options(to = "html"))

## End(Not run)
```

output_metadata

The output metadata object

Description

This object provides a mechanism for users to attach metadata as an attribute (named `rmd_output_metadata`) of the returned value of `render()`. The initial value of the metadata comes from in the `rmd_output_metadata` field of the YAML frontmatter of an R Markdown document. The metadata can be queried via the `output_metadata$get()` method, and modified via the `output_metadata$set()` method.

paged_table

Create a table in HTML with support for paging rows and columns

Description

Create a table in HTML with support for paging rows and columns

Usage

```r
paged_table(x, options = NULL)
```

Arguments

- `x` a data frame to be rendered as a paged table.
- `options` options for printing the paged table. See details for specifics.
### pandoc_args

#### Details

Below are the recognized table pagination options.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>max.print</td>
<td>The number of rows to print.</td>
<td>1000</td>
</tr>
<tr>
<td>sql.max.print</td>
<td>The number of rows to print from a SQL data table.</td>
<td>1000</td>
</tr>
<tr>
<td>rows.print</td>
<td>The number of rows to display.</td>
<td>10</td>
</tr>
<tr>
<td>cols.print</td>
<td>The number of columns to display.</td>
<td>10</td>
</tr>
<tr>
<td>cols.min.print</td>
<td>The minimum number of columns to display.</td>
<td>-</td>
</tr>
<tr>
<td>pages.print</td>
<td>The number of pages to display under page navigation.</td>
<td>-</td>
</tr>
<tr>
<td>paged.print</td>
<td>When set to FALSE turns off paged tables.</td>
<td>TRUE</td>
</tr>
<tr>
<td>rownames.print</td>
<td>When set to FALSE turns off row names.</td>
<td>TRUE</td>
</tr>
</tbody>
</table>

**Note:** There is a hard cap of 10,000 rows to ensure that pandoc will not fail when rendering the document.

---

### pandoc_args

#### Functions for generating pandoc command line arguments

**Description**

Functions that assist in creating various types of pandoc command line arguments (e.g. for templates, table of contents, highlighting, and content includes).

**Usage**

```r
pandoc_variable_arg(name, value)
pandoc_metadata_arg(name, value)
pandoc_include_args(in_header = NULL, before_body = NULL, after_body = NULL)
pandoc_highlight_args(highlight, default = "tango")
pandoc_latex_engine_args(latex_engine)
pandoc_toc_args(toc, toc_depth = 3)
pandoc_citeproc_args()
pandoc_lua_filter_args(lua_files)
```

**Arguments**

- name: Name of template variable to set.
- value: Value of template variable (defaults to true if missing).
in_header  One or more files with content to be included in the header of the document.
before_body One or more files with content to be included before the document body.
after_body  One or more files with content to be included after the document body.
highlight  The name of a pandoc syntax highlighting theme.
default  The highlighting theme to use if "default" is specified.
latex_engine  LaTeX engine for producing PDF output. Options are "pdflatex", "lualatex", "xelatex", and "tectonic".
toc  TRUE to include a table of contents in the output.
toc_depth  Depth of headers to include in table of contents.
lua_files  Character vector of file paths to Lua filter files. Paths will be transformed by pandoc_path_arg.

Details
Non-absolute paths for resources referenced from the in_header, before_body, and after_body parameters are resolved relative to the directory of the input document.

Value
A character vector with pandoc command line arguments.

About Pandoc citeproc
For Pandoc version before 2.11, a pandoc filter ‘pandoc-citeproc’ is used. Since Pandoc 2.11, the feature is built-in and activated using ‘--citeproc’ flag. ‘pandoc_citeproc_arg’ will return the correct switches depending on the Pandoc version in use.

Examples
```r
## Not run:
library(rmarkdown)
pandoc_include_args(before_body = "header.htm")
pandoc_include_args(before_body = "header.tex")
pandoc_highlight_args("kate")
pandoc_latex_engine_args("pdflatex")
pandoc_toc_args(toc = TRUE, toc_depth = 2)
## End(Not run)
```
Check pandoc availability and version

Description

Determine whether pandoc is currently available on the system (optionally checking for a specific version or greater). Determine the specific version of pandoc available.

Usage

pandoc_available(version = NULL, error = FALSE)
pandoc_version()

Arguments

version Required version of pandoc
error Whether to signal an error if pandoc with the required version is not found

Details

The system environment variable ‘PATH’ as well as the version of pandoc shipped with RStudio (its location is set via the environment variable ‘RSTUDIO_PANDOC’ by RStudio products like the RStudio IDE, RStudio Server, Shiny Server, and RStudio Connect, etc) are scanned for pandoc and the highest version available is used. Please do not modify the environment variable ‘RSTUDIO_PANDOC’ unless you know what it means.

Value

pandoc_available returns a logical indicating whether the required version of pandoc is available. pandoc_version returns a numeric_version with the version of pandoc found.

Examples

```r
## Not run:
library(rmarkdown)
if (pandoc_available())
  cat("pandoc", as.character(pandoc_version()), "is available!
"
if (pandoc_available("1.12.3"))
  cat("required version of pandoc is available!
"
## End(Not run)
```
pandoc_citeproc_convert

Convert a bibliography file

Description

Convert a bibliography file (e.g. a BibTeX file) to an R list, JSON text, or YAML text

Usage

pandoc_citeproc_convert(file, type = c("list", "json", "yaml"))

Arguments

file Bibliography file

Arguments

file Bibliography file

type Conversion type

Value

For `type = "list"`, and R list. For `type = "json"` or `type = "yaml"`, a character vector with the specified format.

pandoc_convert

Convert a document with pandoc

Description

Convert documents to and from various formats using the pandoc utility.

Usage

pandoc_convert(
  input,
  to = NULL,
  from = NULL,
  output = NULL,
  citeproc = FALSE,
  options = NULL,
  verbose = FALSE,
  wd = NULL
)
**pandoc_exec**

Get the path of the pandoc executable

---

**Description**

Returns the path of the pandoc executable used by functions in the the **rmarkdown** package. This is the most recent version of pandoc found in either the system path or shipped with RStudio.

---

**Arguments**

- **input**: Character vector containing paths to input files (files must be UTF-8 encoded).
- **to**: Format to convert to (if not specified, you must specify **output**).
- **from**: Format to convert from (if not specified then the format is determined based on the file extension of **input**).
- **output**: Output file (if not specified then determined based on format being converted to).
- **citeproc**: TRUE to run the pandoc-citeproc filter (for processing citations) as part of the conversion.
- **options**: Character vector of command line options to pass to pandoc.
- **verbose**: TRUE to show the pandoc command line which was executed.
- **wd**: Working directory in which code will be executed. If not supplied, defaults to the common base directory of **input**.

**Details**

Supported input and output formats are described in the pandoc user guide. The system path as well as the version of pandoc shipped with RStudio (if running under RStudio) are scanned for pandoc and the highest version available is used.

**Examples**

```r
## Not run:
library(rmarkdown)

# convert markdown to various formats
pandoc_convert("input.md", to = "html")
pandoc_convert("input.md", to = "latex")

# process citations
pandoc_convert("input.md", to = "html", citeproc = TRUE)

# add some pandoc options
pandoc_convert("input.md", to = "latex", options = c("--listings"))

## End(Not run)
```

---

**pandoc_exec**

Get the path of the pandoc executable

---
pandoc_options

Usage

pandoc_exec()

Details

See the pandoc manual for pandoc commands.

pandoc_options

Pandoc options for an output format

Description

Define the pandoc options for an R Markdown output format.

Usage

pandoc_options(
  to,
  from = rmarkdown_format(),
  args = NULL,
  keep_tex = FALSE,
  latex_engine = c("pdflatex", "lualatex", "xelatex", "tectonic"),
  ext = NULL,
  lua_filters = NULL,
  convert_fun = NULL
)

Arguments

to  Pandoc format to convert to
from Pandoc format to convert from
args Character vector of command line arguments to pass to pandoc
keep_tex Keep the intermediate tex file used in the conversion to PDF (applies only to 'latex' and 'beamer' target formats)
l latex_engine LaTeX engine to producing PDF output (applies only to 'latex' and 'beamer' target formats)

ext File extension (e.g. ".tex") for output file (if NULL chooses default based on to). This is typically used to force the final output of a latex or beamer conversion to be .tex rather than .pdf.

lua_filters Character vector of file paths to Lua filters to use with this format. They will be added to pandoc command line call using --lua-filter argument. See vignette("lua-filters", package = "rmarkdown") to know more about Lua filters.
**convert_fun**

A function to convert the input file to the desired output format in `render()`. If not provided, `pandoc_convert()` will be used. If a custom function is provided, its arguments and returned value should match the `pandoc_convert()` function. Note that this function does not have to use Pandoc but can also use other tools such as `commonmark`.

**Details**

The `from` argument should be used very cautiously as it’s important for users to be able to rely on a stable definition of supported markdown extensions.

**Value**

An list that can be passed as the pandoc argument of the `output_format` function.

**See Also**

`output_format`, `rmarkdown_format`

---

**pandoc_path_arg**

*Transform path for passing to pandoc*

**Description**

Transform a path for passing to pandoc on the command line. Calls `path.expand` on all platforms. On Windows, transform it to a short path name if it contains spaces, and then convert forward slashes to back slashes (as required by pandoc for some path references).

**Usage**

```r
pandoc_path_arg(path, backslash = TRUE)
```

**Arguments**

- `path` : Path to transform
- `backslash` : Whether to replace forward slashes in `path` with backslashes on Windows.

**Value**

Transformed path that can be passed to pandoc on the command line.
pandoc_self_contained_html

Create a self-contained HTML document using pandoc.

Description
Create a self-contained HTML document by base64 encoding images, scripts, and stylesheets referred by the input document.

Usage
pandoc_self_contained_html(input, output)

Arguments
input Input html file to create self-contained version of.
output Path to save output.

Value
(Invisibly) The path of the generated file.

pandoc_template Render a pandoc template.

Description
Use the pandoc templating engine to render a text file. Substitutions are done using the metadata list passed to the function.

Usage
pandoc_template(metadata, template, output, verbose = FALSE)

Arguments
metadata A named list containing metadata to pass to template.
template Path to a pandoc template.
output Path to save output.
verbose TRUE to show the pandoc command line which was executed.

Value
(Invisibly) The path of the generated file.
parse_html_notebook  Parse an HTML Notebook

Description
Parse an HTML notebook, retrieving annotation information related to generated outputs in the document, as well as the original R Markdown source document.

Usage
parse_html_notebook(path)

Arguments
path  The path to an R Notebook file (with extension .nb.html).

Details
See the online documentation for additional details on using the html_notebook format.

pdf_document  Convert to a PDF/LaTeX document

Description
Formats for converting from R Markdown to a PDF or LaTeX document.

Usage
pdf_document(
  toc = FALSE,
  toc_depth = 2,
  number_sections = FALSE,
  fig_width = 6.5,
  fig_height = 4.5,
  fig_crop = "auto",
  fig_caption = TRUE,
  dev = "pdf",
  df_print = "default",
  highlight = "default",
  template = "default",
  keep_tex = FALSE,
  keep_md = FALSE,
  latex_engine = "pdflatex",
  citation_package = c("default", "natbib", "biblatex"),
  includes = NULL,
md_extensions = NULL,
output_extensions = NULL,
pandoc_args = NULL,
extra_dependencies = NULL
)

latex_document(...)
latex_fragment(...)

Arguments

toc TRUE to include a table of contents in the output
toc_depth Depth of headers to include in table of contents
number_sections TRUE to number section headings
fig_width Default width (in inches) for figures
fig_height Default height (in inches) for figures
fig_crop Whether to crop PDF figures with the command pdfcrop. This requires the tools pdfcrop and ghostscript to be installed. By default, fig_crop = TRUE if these two tools are available.
fig_caption TRUE to render figures with captions
dev Graphics device to use for figure output (defaults to pdf)
df_print Method to be used for printing data frames. Valid values include "default", "kable", "tibble", and "paged". The "default" method uses a corresponding S3 method of print, typically print.data.frame. The "kable" method uses the knitr::kable function. The "tibble" method uses the tibble package to print a summary of the data frame. The "paged" method creates a paginated HTML table (note that this method is only valid for formats that produce HTML). In addition to the named methods you can also pass an arbitrary function to be used for printing data frames. You can disable the df_print behavior entirely by setting the option rmarkdown.df_print to FALSE. See Data frame printing section in bookdown book for examples.
highlight Syntax highlighting style passed to Pandoc. Supported built-in styles include "default", "tango", "pygments", "kate", "monochrome", "espresso", "zenburn", "haddock", and "breezedark".
Two custom styles are also included, "arrow", an accessible color scheme, and "rstudio", which mimics the default IDE theme. Alternatively, supply a path to a '.theme' file to use a custom Pandoc style. Note that custom theme requires Pandoc 2.0+.
Pass NULL to prevent syntax highlighting.
template Pandoc template to use for rendering. Pass "default" to use the rmarkdown package default template; pass NULL to use pandoc's built-in template; pass a path to use a custom template that you've created. See the documentation on pandoc online documentation for details on creating custom templates.
pdf_document

keep_tex  Keep the intermediate tex file used in the conversion to PDF
keep_md   Keep the markdown file generated by knitting.
ltx_engine LaTeX engine for producing PDF output. Options are "pdflatex", "lualatex", "xelatex" and "tectonic".
citation_package  The LaTeX package to process citations, natbib or biblatex. Use default if neither package is to be used, which means citations will be processed via the command pandoc-citeproc.
includes  Named list of additional content to include within the document (typically created using the includes function).
md_extensions Markdown extensions to be added or removed from the default definition of R Markdown. See the rmarkdown_format for additional details.
output_extensions Pandoc extensions to be added or removed from the output format, e.g., "-smart" means the output format will be latex-smart.
pandoc_args Additional command line options to pass to pandoc
extra_dependencies A LaTeX dependency \texttt{latex_dependency()}, a list of LaTeX dependencies, a character vector of LaTeX package names (e.g. c("framed", "hyperref")), or a named list of LaTeX package options with the names being package names (e.g. list(hyperef = c("unicode=true", "breaklinks=true"), lmodern = NULL)). It can be used to add custom LaTeX packages to the .tex header.

Details

See the online documentation for additional details on using the pdf_document format.

Creating PDF output from R Markdown requires that LaTeX be installed.

R Markdown documents can have optional metadata that is used to generate a document header that includes the title, author, and date. For more details see the documentation on R Markdown metadata.

R Markdown documents also support citations. You can find more information on the markdown syntax for citations in the Bibliographies and Citations article in the online documentation.

Many aspects of the LaTeX template used to create PDF documents can be customized using metadata. For example:

```
---
title: "Crop Analysis Q3 2013"
fontsize: 11pt
geometry: margin=1in
---
```

Available metadata variables include:

lang  Document language code (e.g. "es", "fr", "pt-BR")
fontsize  Font size (e.g. 10pt, 11pt, 12pt)
documentclass  LaTeX document class (e.g. article)
classoption  Option for documentclass (e.g. oneside); may be repeated
gameometry  Options for geometry class (e.g. margin=lin); may be repeated
mainfont, sansfont, monofont, mathfont  Document fonts (works only with xelatex and luatex, see the latex_engine option)
linkcolor, urlcolor, citecolor  Color for internal, external, and citation links (red, green, magenta, cyan, blue, black)
linestretch  Options for line spacing (e.g. 1, 1.5, 3)

Value
R Markdown output format to pass to render

Examples

```r
## Not run:
library(rmarkdown)

# simple invocation
render("input.Rmd", pdf_document())

# specify an option for latex engine
render("input.Rmd", pdf_document(latex_engine = "luatex"))

# add a table of contents and pass an option to pandoc
render("input.Rmd", pdf_document(toc = TRUE, "--listings"))

## End(Not run)
```

pkg_file_lua

Get the full paths of Lua filters in an R package

Description
Lua filters stored in a source package in the ‘inst/rmarkdown/lua’ directory will be installed to the ‘rmarkdown/lua’ directory in the package path. This function finds the full paths of the Lua filters in the installed packages.

Usage

```r
pkg_file_lua(filters = NULL, package = "rmarkdown")
```

Arguments

<table>
<thead>
<tr>
<th>filters</th>
<th>A character vector of filenames for Lua filters to be retrieved in ‘rmarkdown/lua’ folder of the package. By default (NULL), if none is provided, it returns all filters in that folder.</th>
</tr>
</thead>
<tbody>
<tr>
<td>package</td>
<td>The name of the package in which to look for the filters.</td>
</tr>
</tbody>
</table>
Value

A character vector of absolute file paths for the Lua filter from the package. The returned paths have been processed by \texttt{pandoc\_path\_arg()}, so they are ready to be used by Pandoc.

Examples

# list all Lua filters stored in the \texttt{rmarkdown} package
pkg_file_lua()
# get a specific filter
pkg_file_lua(c("pagebreak.lua", "latex\_div.lua"))

\begin{verbatim}

\end{verbatim}

powerpoint\_presentation

\textit{Convert to a PowerPoint presentation}

Description

Format for converting from R Markdown to a PowerPoint presentation. Pandoc v2.0.5 or above is required.

Usage

\begin{verbatim}

powerpoint\_presentation(
  toc = FALSE,
  toc_depth = 2,
  number_sections = FALSE,
  incremental = FALSE,
  fig\_width = 5,
  fig\_height = 4,
  fig\_caption = TRUE,
  df\_print = "default",
  keep\_md = FALSE,
  md\_extensions = NULL,
  slide\_level = NULL,
  reference\_doc = "default",
  pandoc\_args = NULL
)

\end{verbatim}

Arguments

\begin{verbatim}

toc TRUE to include a table of contents in the output
toc\_depth Depth of headers to include in table of contents
number\_sections TRUE to number section headings
incremental TRUE to render slide bullets incrementally. Note that if you want to reverse the default incremental behavior for an individual bullet you can precede it with \texttt{>}. For example: \texttt{> \textendash Bullet Text}. See more in Pandoc's Manual

\end{verbatim}
publish_site

Description

Publish a website to RStudio Connect

Usage

```r
publish_site(
  site_dir = ".",
  site_name = NULL,
  method = c("rsconnect"),
  server = NULL,
  account = NULL,
  render = TRUE,
  launch_browser = interactive()
)
```
Arguments

- **site_dir**: Directory containing website. Defaults to current working directory.
- **site_name**: Name for the site (names must be unique within an account). Defaults to the 'name' provided by the site generator (or to the name of the site_dir if there is no 'name' specified).
- **method**: Publishing method (currently only "rsconnect" is available)
- **server**: Server name. Required only if you use the same account name on multiple servers.
- **account**: Account to deploy application to. This parameter is only required for the initial deployment of an application when there are multiple accounts configured on the system.
- **render**: ‘TRUE’ to render the site locally before publishing.
- **launch_browser**: If 'TRUE', the system’s default web browser will be launched automatically after the site is deployed. Defaults to ‘TRUE’ in interactive sessions only.

Examples

```r
## Not run:
library(rmarkdown)
publish_site()
## End(Not run)
```

---

### relative_to

**Relative path utility function**

**Description**

Given a directory and a file, return a relative path from the directory to the file, or the unmodified file path if the file does not appear to be in the directory.

**Usage**

```
relative_to(dir, file)
```

**Arguments**

- **dir**: Directory
- **file**: File

**Value**

Relative path from the directory to the file (or the unmodified file path if the file does not appear to be in the directory).
Render R Markdown

Description

Render the input file to the specified output format using pandoc. If the input requires knitting then `knit` is called prior to pandoc.

Usage

```r
render(
  input,
  output_format = NULL,
  output_file = NULL,
  output_dir = NULL,
  output_options = NULL,
  output_yaml = NULL,
  intermediates_dir = NULL,
  knit_root_dir = NULL,
  runtime = c("auto", "static", "shiny", "shinyrmd", "shiny_prerendered"),
  clean = TRUE,
  params = NULL,
  knit_meta = NULL,
  envir = parent.frame(),
  run_pandoc = TRUE,
  quiet = FALSE,
  encoding = "UTF-8"
)
```

Arguments

- **input**: The input file to be rendered. This can be an R script (.R), an R Markdown document (.Rmd), or a plain markdown document.
- **output_format**: The R Markdown output format to convert to. The option "all" will render all formats defined within the file. The option can be the name of a format (e.g. "html_document") and that will render the document to that single format. One can also use a vector of format names to render to multiple formats. Alternatively, you can pass an output format object (e.g. `html_document()`). If using `NULL` then the output format is the first one defined in the YAML frontmatter in the input file (this defaults to HTML if no format is specified there). If you pass an output format object to `output_format`, the options specified in the YAML header or `_output.yml` will be ignored and you must explicitly set all the options you want when you construct the object. If you pass a string, the output format will use the output parameters in the YAML header or `_output.yml`.
- **output_file**: The name of the output file. If using `NULL` then the output filename will be based on filename for the input file. If a filename is provided, a path to the
output file can also be provided. Note that the `output_dir` option allows for specifying the output file path as well, however, if also specifying the path, the directory must exist. If `output_file` is specified but does not have a file extension, an extension will be automatically added according to the output format. To avoid the automatic file extension, put the `output_file` value in `I()`, e.g., `I('my-output')`.

**output_dir**
The output directory for the rendered `output_file`. This allows for a choice of an alternate directory to which the output file should be written (the default output directory of that of the input file). If a path is provided with a filename in `output_file` the directory specified here will take precedence. Please note that any directory path provided will create any necessary directories if they do not exist.

**output_options**
List of output options that can override the options specified in metadata (e.g. could be used to force `self_contained` or `mathjax = "local"`). Note that this is only valid when the output format is read from metadata (i.e. not a custom format object passed to `output_format`).

**output_yaml**
Paths to YAML files specifying output formats and their configurations. The first existing one is used. If none are found, then the function searches YAML files specified to the `output_yaml` top-level parameter in the YAML front matter, `_output.yml` or `_output.yaml`, and then uses the first existing one.

**intermediates_dir**
Intermediate files directory. If a path is specified then intermediate files will be written to that path. If `NULL`, intermediate files are written to the same directory as the input file.

**knit_root_dir**
The working directory in which to knit the document; uses knitr's `root.dir` knit option. If `NULL` then the behavior will follow the knitr default, which is to use the parent directory of the document.

**runtime**
The runtime target for rendering. The `static` option produces output intended for static files; `shiny` produces output suitable for use in a Shiny document (see `run`). The default, `auto`, allows the runtime target specified in the YAML metadata to take precedence, and renders for a static runtime target otherwise.

**clean**
Using `TRUE` will clean intermediate files that are created during rendering.

**params**
A list of named parameters that override custom `params` specified within the YAML front-matter (e.g. specifying a dataset to read or a date range to confine output to). Pass "ask" to start an application that helps guide parameter configuration.

**knit_meta**
(This option is reserved for expert use.) Metadata generated by knitr.

**envir**
The environment in which the code chunks are to be evaluated during knitting (can use `new.env()` to guarantee an empty new environment).

**run_pandoc**
An option for whether to run pandoc to convert Markdown output.

**quiet**
An option to suppress printing during rendering from knitr, pandoc command line and others. To only suppress printing of the last "Output created: " message, you can set `rmarkdown.render.message` to `FALSE`.

**encoding**
Ignored. The encoding is always assumed to be UTF-8.
Details

Note that the `knitr` error option is set to FALSE during rendering (which is different from the `knitr` default value of TRUE).

For additional details on rendering R scripts see Compiling R scripts to a notebook.

If no `output_format` parameter is specified then the output format is read from the YAML front-matter of the input file. For example, the following YAML would yield a PDF document:

```yaml
output: pdf_document
```

Additional format options can also be specified in metadata. For example:

```yaml
output:
  pdf_document:
    toc: true
    highlight: zenburn
```

Multiple formats can be specified in metadata. If no `output_format` is passed to `render` then the first one defined will be used:

```yaml
output:
  pdf_document:
    toc: true
    highlight: zenburn
  html_document:
    toc: true
    theme: united
```

Formats specified in metadata can be any one of the built in formats (e.g. `html_document, pdf_document`) or a format defined in another package (e.g. `pkg::custom_format`).

If there is no format defined in the YAML then `html_document` will be used.

Value

When `run_pandoc = TRUE`, the compiled document is written into the output file, and the path of the output file is returned. When `run_pandoc = FALSE`, the path of the Markdown output file, with attributes `knit_meta` (the `knitr` meta data collected from code chunks) and `intermediates` (the intermediate files/directories generated by `render()`).

R Markdown

R Markdown supports all of the base pandoc markdown features as well as some optional features for compatibility with GitHub Flavored Markdown (which previous versions of R Markdown were based on). See `rmarkdown_format` for details.

See Also

`knit, output_format, https://pandoc.org`
render\_delayed

**Delay Rendering for an Expression**

**Description**
In a Shiny document, evaluate the given expression after the document has finished rendering, instead of during render.

**Usage**

`render\_delayed(expr)`

**Arguments**

- `expr` The expression to evaluate.

**Details**
This function is useful inside Shiny documents. It delays the evaluation of its argument until the document has finished its initial render, so that the document can be viewed before the calculation is finished.

Any expression that returns HTML can be wrapped in `render\_delayed`.

**Examples**

```r
## Not run:
library(rmarkdown)

# Render the default (first) format defined in the file
def_format <- render("input.Rmd")

# Render all formats defined in the file
render("input.Rmd", "all")

# Render a single format, using parameters for \code{html_document} from
# the YAML header parameters.
render("input.Rmd", "html_document")

# Render a single format, ignoring parameters for \code{html_document} in
# the YAML header. Any parameters not passed as arguments to
# \code{html_document()} will be assigned to their default values, regardless
# of anything in the YAML header
render("input.Rmd", html_document(toc = TRUE, toc_depth = 2))

# Render multiple formats
render("input.Rmd", c("html_document", "pdf_document"))

## End(Not run)
```
Value

An object representing the expression.

Note

expr is evaluated in a copy of the environment in which the render_delayed call appears. Consequently, no side effects created by expr are visible in succeeding expressions, nor are changes to the environment after the call to render_delayed visible to expr.

expr must be an expression that produces HTML.

Examples

```r
## Not run:
# Add the following code to an R Markdown document

div(Sys.time())

render_delayed({
  Sys.sleep(3) # simulate an expensive computation
  div(Sys.time())
})

div(Sys.time())

## End(Not run)
```

---

render_site

Render multiple documents as a website

Description

Render all of the R Markdown documents within a directory as a website.

Usage

```r
render_site(
  input = ".",
  output_format = "all",
  envir = parent.frame(),
  quiet = FALSE,
  encoding = "UTF-8"
)

clean_site(input = ".", preview = TRUE, quiet = FALSE, encoding = "UTF-8")

site_generator(input = ".", output_format = NULL)

site_config(input = ".", encoding = "UTF-8")
```
default_site_generator(input, output_format_filter = NULL, ...)

Arguments

input      Website directory (or the name of a file within the directory).
output_format R Markdown format to convert to (defaults to "all").
envir      The environment in which the code chunks are to be evaluated during knitting (can use new.env to guarantee an empty new environment).
quiet      TRUE to suppress messages and other output.
encoding   Ignored. The encoding is always assumed to be UTF-8.
preview    Whether to list the files to be removed rather than actually removing them. Defaulting to TRUE to prevent removing without notice.
output_format_filter
            An optional function which is passed the input file and the output format, and which returns a (potentially modified) output format.
...        Currently unused.

Details

The render_site function enables you to render a collection of markdown documents within a directory as a website. There are two requirements for a directory to be rendered as a website:

1. It must contain either an "index.Rmd" or "index.md" file.
2. It must contain a site configuration file ("_site.yml").

The most minimal valid website is an empty "index.Rmd" and an empty "_site.yml". With this configuration a single empty webpage would be generated via a call to render_site. If you add additional markdown documents to the directory they will also be rendered. By default a site is rendered in the following fashion:

1. R Markdown (.Rmd) and plain markdown (.md) files in the root directory are rendered. Note however that markdown files beginning with "_" are not rendered (this is a convention to designate files that are included by top level documents).
2. All output and supporting files are copied to a "_site" subdirectory of the website directory (this is configurable, see discussion below).
3. The following files are *not* copied to the "_site" sub-directory:
   - Files beginning with "." (hidden files).
   - Files beginning with "_"
   - Files known to contain R source code (e.g. ".R", ".s", ".Rmd"), R data (e.g. ".RData", ".rds"), configuration data (e.g. ".Rproj", "rsconnect") or package project management data (e.g. "packrat", "renv").

Note that you can override which files are included or excluded via settings in "_site.yml" (described below).
4. Normally R Markdown renders documents as self-contained HTML. However, render_site ensures that dependencies (e.g. CSS, JavaScript, images, etc.) remain in external files. CSS/JavaScript libraries are copied to a "site_libs" sub-directory and plots/images are copied to "_files" sub-directories.

You can remove the files generated by render_site using the clean_site function.

Value

render_site returns the name of the site output file (relative to the input directory). clean_site returns the names of the generated files removed during cleaning. site_config returns the contents of _site.yml as an R list. default_site_generator returns the default site generator for R Markdown websites.

Configuration

A "_site.yml" file can be used to configure the behavior of site generation. Here is an example configuration file:

```yaml
name: my-website
output_dir: _site
include: ["demo.R"]
exclude: ["docs.txt", "*.csv"]
navbar:
  title: "My Website"
  left:
    - text: "Home"
      href: index.html
    - text: "About"
      href: about.html
output:
  html_document:
    toc: true
    highlight: textmate
```

The name field provides a suggested URL path for your website when it is published (by default this is just the name of the directory containing the site). The output_dir indicates which directory to copy site content into ("_site" is the default if none is specified). Note that this can be "." to keep all content within the root website directory alongside the source code.

The include and exclude fields enable you to override the default behavior vis-a-vis what files are copied into the "_site" directory (wildcards can be used as in the above example).

The navbar field can be used to define a navigation bar for websites based on the html_document format.

Finally, the output field enables you to specify output options that are common to all documents within the website (you can also still provide local options within each document that override any common options).

new_session: true causes each file to be rendered in a new R session. This prevents the masking problem that arises when different files use functions from different packages (namespaces)
that share a common name, such as here::here and lubridate::here or dplyr::filter and MASS::filter. The default behaviour of render_site is to use a common R session.

autospin: true causes .R files to be spinned and rendered (as well as .Rmd files). If autospin is set to false (the default), .R files will not be spinned nor rendered. autospin can also enumerate a list of .R files to be spinned and rendered.

Custom Site Generation

The behavior of the default site generation function (rmarkdown::default_site) is described above. It is also possible to define a custom site generator that has alterntae behavior. A site generator is an R function that is bound to by including it in the "site:" field of the "index.Rmd" or "index.md" file. For example:

```
title: "My Book"
output: bookdown::gitbook
site: bookdown::bookdown_site
```

A site generation function should return a list with the following elements:

- **name**: The name for the website (e.g. the parent directory name).
- **output_dir**: The directory where the website output is written to. This path should be relative to the site directory (e.g. "." or ".site")
- **render**: An R function that can be called to generate the site. The function should accept the input_file, output_format, envir, and quiet arguments.
- **clean**: An R function that returns relative paths to the files generated by render_site (these files are the ones which will be removed by the clean_site function).
- **subdirs** *(optional)*: A logical flag that indicates if the generator supports nested source files in subdirectories of the project (TRUE) or only at the project root (FALSE) (e.g. blogdown::blogdown_site())

Note that the input_file argument will be NULL when the entire site is being generated. It will be set to a specific file name if a front-end tool is attempting to preview it (e.g. RStudio IDE via the Knit button).

When quiet = FALSE the render function should also print a line of output using the message function indicating which output file should be previewed, for example:

```
if (!quiet)
    message("\nOutput created: ", output)
```

Emitting this line enables front-ends like RStudio to determine which file they should open to preview the website.

See the source code of the rmarkdown::default_site function for a example of a site generation function.
render_supporting_files

Render supporting files for an input document

Description

Render (copy) required supporting files for an input document to the _files directory that is associated with the document.

Usage

render_supporting_files(from, files_dir, rename_to = NULL)

Arguments

from
The directory from which the files should be copied.
files_dir
The directory that will receive the copied files.
rename_to
An option to rename the source directory after the copy operation is complete.

Value

The relative path to the supporting files. This path is suitable for inclusion in HTML href and src attributes.

resolve_output_format

Resolve the output format for an R Markdown document

Description

Read the YAML metadata (and any common output YAML file) for the document and return an output format object that can be passed to the render function.

Usage

resolve_output_format(
  input,
  output_format = NULL,
  output_options = NULL,
  output_yaml = NULL
)
**Arguments**

input: Input file (Rmd or plain markdown)

output_format: Name of output format (or NULL to use the default format for the input file).

output_options: List of output options that should override the options specified in metadata.

output_yaml: Paths to YAML files specifying output formats and their configurations. The first existing one is used. If none are found, then the function searches YAML files specified to the output_yaml top-level parameter in the YAML front matter, _output.yml or _output.yaml, and then uses the first existing one.

**Details**

This function is useful for front-end tools that need to modify the default behavior of an output format.

**Value**

An R Markdown output format definition that can be passed to `render`.

---

**rmarkdown_format**  
_R Markdown input format definition_

**Description**

Compose a pandoc markdown input definition for R Markdown that can be passed as the from argument of `pandoc_options`.

**Usage**

`rmarkdown_format(extensions = NULL)`

`from_rmarkdown(implicit_figures = TRUE, extensions = NULL)`

**Arguments**

extensions: Markdown extensions to be added or removed from the default definition of R Markdown.

implicit_figures: Automatically make figures from images (defaults to TRUE).

**Details**

By default R Markdown is defined as all pandoc markdown extensions with the following tweaks for backward compatibility with the markdown package (+ features are added, - features are removed):

+autolink_bare_uris
+tex_math_single_backslash
For more on pandoc markdown see the pandoc online documentation.

Value

Pandoc markdown format specification

See Also

output_format, pandoc_options

Examples

```r
## Not run:
rmarkdown_format("-implicit_figures")

## End(Not run)
```

---

**title**: "Crop Analysis Q3 2013"

**author**: Martha Smith

**date**: October 23rd, 2013

---

Note that the title field is quoted. This is because titles often contained embedded colons (:) and colons followed by a space need to be quoted in YAML.

Details

When title, author, and date metadata is provided it’s used to automatically create a title section within output documents. If you don’t want this section included in your document then you should remove the corresponding metadata fields.

When generating PDF and Beamer output there are also a number of other metadata fields that can be included to customize the appearance and theme of PDF output. For more details see the documentation for pdf_document and beamer_presentation.
Convert to an RTF document

Description

Format for converting from R Markdown to an RTF document.

Usage

```r
tft_document(
  toc = FALSE,
  toc_depth = 3,
  number_sections = FALSE,
  fig_width = 5,
  fig_height = 4,
  keep_md = FALSE,
  md_extensions = NULL,
  pandoc_args = NULL
)
```

Arguments

- `toc` TRUE to include a table of contents in the output
- `toc_depth` Depth of headers to include in table of contents
- `number_sections` TRUE to number section headings
- `fig_width` Default width (in inches) for figures
- `fig_height` Default height (in inches) for figures
- `keep_md` Keep the markdown file generated by knitting.
- `md_extensions` Markdown extensions to be added or removed from the default definition of R Markdown. See the `rmarkdown_format` for additional details.
- `pandoc_args` Additional command line options to pass to pandoc

Details

See the online documentation for additional details on using the `rtf_document` format.

R Markdown documents can have optional metadata that is used to generate a document header that includes the title, author, and date. For more details see the documentation on R Markdown metadata.

R Markdown documents also support citations. You can find more information on the markdown syntax for citations in the Bibliographies and Citations article in the online documentation.

Value

R Markdown output format to pass to `render`
run

Run a Shiny document

Description

Start a Shiny server for the given document, and render it for display.

Usage

```r
run(
  file = "index.Rmd",
  dir = dirname(file),
  default_file = NULL,
  auto_reload = TRUE,
  shiny_args = NULL,
  render_args = NULL
)
```

Arguments

- **file**: Path to the R Markdown document to launch in a web browser. Defaults to `index.Rmd` in the current working directory, but may be `NULL` to skip launching a browser.
- **dir**: The directory from which to read input documents. Defaults to the parent directory of `file`.
- **default_file**: The file to serve at the Shiny server’s root URL. If `NULL` (the default), a sensible default is chosen (see Details).
- **auto_reload**: If `TRUE` (the default), automatically reload the Shiny application when the file currently being viewed is changed on disk.
- **shiny_args**: Additional arguments to `runApp`.
- **render_args**: Additional arguments to `render`.

Examples

```r
## Not run:

library(rmarkdown)

# simple invocation
render("input.Rmd", rtf_document())

# specify table of contents option
render("input.Rmd", rtf_document(toc = TRUE))

## End(Not run)
```
Details

The `run` function runs a Shiny document by starting a Shiny server associated with the document. The `shiny_args` parameter can be used to configure the server; see the `runApp` documentation for details.

Once the server is started, the document will be rendered using `render`. The server will initiate a render of the document whenever necessary, so it is not necessary to call `run` every time the document changes: if `auto_reload` is `TRUE`, saving the document will trigger a render. You can also manually trigger a render by reloading the document in a Web browser.

The server will render any R Markdown (.Rmd) document in `dir`; the `file` argument specifies only the initial document to be rendered and viewed. You can therefore link to other documents in the directory using standard Markdown syntax, e.g. `[Analysis Page 2](page2.Rmd).

If `default_file` is not specified, nor is a file specified on the URL, then the default document to serve at `/` is chosen from (in order of preference):

- If `dir` contains only one Rmd, that Rmd.
- The file `index.Rmd`, if it exists in `dir`.
- The first Rmd that has `runtime: shiny` in its YAML metadata.
- The file `index.html` (or `index.htm`), if it exists in `dir`.

If you wish to share R code between your documents, place it in a file named `global.R` in `dir`; it will be sourced into the global environment.

Value

Invisible `NULL`.

Note

Unlike `render`, `run` does not render the document to a file on disk. In most cases a Web browser will be started automatically to view the document; see `launch.browser` in the `runApp` documentation for details.

When using an external web browser with the server, specify the name of the R Markdown file to view in the URL (e.g. `http://127.0.0.1:1234/foo.Rmd`). A URL without a filename will show the `default_file` as described above.

Examples

```r
## Not run:
# Run the Shiny document "index.Rmd" in the current directory
rmarkdown::run()

# Run the Shiny document "shiny_doc.Rmd" on port 8241
rmarkdown::run("shiny_doc.Rmd", shiny_args = list(port = 8241))

## End(Not run)
```
shiny_prerendered_chunk

*Add code to a shiny_prerendered context*

**Description**

Programmatic equivalent to including a code chunk with a context in a runtime: shiny_prerendered document.

**Usage**

```r
shiny_prerendered_chunk(context, code, singleton = FALSE)
```

**Arguments**

- `context`  
  Context name (e.g. "server", "server-start")
- `code`  
  Character vector with code
- `singleton`  
  Collapse multiple identical versions of this chunk into a single chunk.

---

shiny_prerendered_clean

*Clean prerendered content for the specified Rmd input file*

**Description**

Remove the associated html file and supporting _files directory for a shiny_prerendered document.

**Usage**

```r
shiny_prerendered_clean(input)
```

**Arguments**

- `input`  
  Rmd input file to clean content for
**site_resources** 

*Determine website resource files for a directory*

**Description**

Determine which files within a given directory should be copied in order to serve a website from the directory. Attempts to automatically exclude source, data, hidden, and other files not required to serve website content.

**Usage**

```
site_resources(site_dir, include = NULL, exclude = NULL, recursive = FALSE)
```

**Arguments**

- `site_dir` Site directory to analyze
- `include` Additional files to include (glob wildcards supported)
- `exclude` Files to exclude (glob wildcards supported)
- `recursive` TRUE to return a full recursive file listing; FALSE to just provide top-level files and directories.

**Value**

Character vector of files and directories to copy

---

**slidy_presentation** 

*Convert to a slidy presentation*

**Description**

Format for converting from R Markdown to a slidy presentation.

**Usage**

```
slidy_presentation(  
  number_sections = FALSE,  
  incremental = FALSE,  
  slide_level = NULL,  
  duration = NULL,  
  footer = NULL,  
  font_adjustment = 0,  
  fig_width = 8,  
  fig_height = 6,  
  fig_retina = 2,  
  fig_caption = TRUE,
```

dev = "png",
df_print = "default",
self_contained = TRUE,
highlight = "default",
math_method = "default",
mathjax = "default",
template = "default",
css = NULL,
includes = NULL,
keep_md = FALSE,
lib_dir = NULL,
md_extensions = NULL,
pandoc_args = NULL,
extra_dependencies = NULL,
...
)

Arguments

number_sections

TRUE to number section headings

incremental

TRUE to render slide bullets incrementally. Note that if you want to reverse the
default incremental behavior for an individual bullet you can precede it with >.
For example: > - Bullet Text. See more in Pandoc's Manual

slide_level

The heading level which defines individual slides. By default this is the highest
header level in the hierarchy that is followed immediately by content, and not
another header, somewhere in the document. This default can be overridden by
specifying an explicit slide_level.

duration

Duration (in minutes) of the slide deck. This value is used to add a countdown
timer to the slide footer.

footer

Footer text (e.g. organization name and/or copyright)

font_adjustment

Increase or decrease the default font size (e.g. -1 or +1). You can also manually
adjust the font size during the presentation using the 'S' (smaller) and 'B'
(bigger) keys.

fig_width

Default width (in inches) for figures

fig_height

Default height (in inches) for figures

fig_retina

Scaling to perform for retina displays (defaults to 2, which currently works for
all widely used retina displays). Set to NULL to prevent retina scaling. Note that
this will always be NULL when keep_md is specified (this is because fig_retina
relies on outputting HTML directly into the markdown document).

fig_caption

TRUE to render figures with captions

dev

Graphics device to use for figure output (defaults to pdf)

df_print

Method to be used for printing data frames. Valid values include "default",
"kable", "tibble", and "paged". The "default" method uses a corresponding S3
method of print, typically print.data.frame. The "kable" method uses the
**knitr::kable** function. The "tibble" method uses the **tibble** package to print a summary of the data frame. The "paged" method creates a paginated HTML table (note that this method is only valid for formats that produce HTML). In addition to the named methods you can also pass an arbitrary function to be used for printing data frames. You can disable the df_print behavior entirely by setting the option `rmarkdown.df_print` to `FALSE`. See Data frame printing section in bookdown book for examples.

**self_contained**

Produce a standalone HTML file with no external dependencies, using data: URIs to incorporate the contents of linked scripts, stylesheets, images, and videos. Note that even for self contained documents MathJax is still loaded externally (this is necessary because of its size).

**highlight**

Syntax highlighting style passed to Pandoc. Supported built-in styles include "default", "tango", "pygments", "kate", "monochrome", "espresso", "zenburn", "haddock", and "bzeddark". Two custom styles are also included, "arrow", an accessible color scheme, and "rstudio", which mimics the default IDE theme. Alternatively, supply a path to a `.theme` file to use a custom Pandoc style. Note that custom theme requires Pandoc 2.0+.

Pass `NULL` to prevent syntax highlighting.

**math_method**

Math rendering engine to use. This will define the math method to use with Pandoc.

- It can be a string for the engine, one of "mathjax", "mathml", "webtex", "katex", "gladtex", or "r-katex" or "default" for mathjax.
- It can be a list of
  - engine: one of "mathjax", "mathml", "webtex", "katex", or "gladtex".
  - url: A specific url to use with mathjax, katex or webtex. Note that for engine = "mathjax", url = "local" will use a local version of MathJax (which is copied into the output directory).

For example,

```r
output:
  html_document:
    math_method:
      engine: katex
      url: https://cdn.jsdelivr.net/npm/katex@0.11.1/dist
```

See Pandoc's Manual about Math in HTML for the details about Pandoc supported methods.

Using `math_method = "r-katex"` will opt-in server side rendering using KaTeX thanks to katex R package. This is useful compared to `math_method = "katex"` to have no JS dependency, only a CSS dependency for styling equation.

**mathjax**

Include mathjax. The "default" option uses an https URL from a MathJax CDN. The "local" option uses a local version of MathJax (which is copied into the output directory). You can pass an alternate URL or pass `NULL` to exclude MathJax entirely.
slidy_presentation

**template** Pandoc template to use for rendering. Pass "default" to use the rmarkdown package default template; pass NULL to use pandoc's built-in template; pass a path to use a custom template that you've created. See the documentation on pandoc online documentation for details on creating custom templates.

**css** One or more css files to include.

**includes** Named list of additional content to include within the document (typically created using the includes function).

**keep_md** Keep the markdown file generated by knitting.

**lib_dir** Directory to copy dependent HTML libraries (e.g. jquery, bootstrap, etc.) into. By default this will be the name of the document with _files appended to it.

**md_extensions** Markdown extensions to be added or removed from the default definition of R Markdown. See the rmarkdown_format for additional details.

**pandoc_args** Additional command line options to pass to pandoc

**extra_dependencies** A LaTeX dependency latex_dependency(), a list of LaTeX dependencies, a character vector of LaTeX package names (e.g. c("framed", "hyperref")), or a named list of LaTeX package options with the names being package names (e.g. list(hyperef = c("unicode=true", "breaklinks=true"), lmodern = NULL)). It can be used to add custom LaTeX packages to the .tex header.

... Additional function arguments to pass to the base R Markdown HTML output formatter html_document_base

**Details**

See the online documentation for additional details on using the slidy_presentation format.

For more information on markdown syntax for presentations see the pandoc online documentation.

**Value**

R Markdown output format to pass to render

**Examples**

```r
## Not run:
library(rmarkdown)

# simple invocation
render("pres.Rmd", slidy_presentation())

# specify an option for incremental rendering
render("pres.Rmd", slidy_presentation(incremental = TRUE))

## End(Not run)
```
**word_document**  
*Convert to an MS Word document*

---

**Description**

Format for converting from R Markdown to an MS Word document.

**Usage**

```r
word_document(
  toc = FALSE,
  toc_depth = 3,
  number_sections = FALSE,
  fig_width = 5,
  fig_height = 4,
  fig_caption = TRUE,
  df_print = "default",
  highlight = "default",
  reference_docx = "default",
  keep_md = FALSE,
  md_extensions = NULL,
  pandoc_args = NULL
)
```

**Arguments**

- `toc`  
  - `TRUE` to include a table of contents in the output

- `toc_depth`  
  - Depth of headers to include in table of contents

- `number_sections`  
  - `TRUE` to number section headings

- `fig_width`  
  - Default width (in inches) for figures

- `fig_height`  
  - Default height (in inches) for figures

- `fig_caption`  
  - `TRUE` to render figures with captions

- `df_print`  
  - Method to be used for printing data frames. Valid values include "default", "kable", "tibble", and "paged". The "default" method uses a corresponding S3 method of `print`, typically `print.data.frame`. The "kable" method uses the `knitr::kable` function. The "tibble" method uses the `tibble` package to print a summary of the data frame. The "paged" method creates a paginated HTML table (note that this method is only valid for formats that produce HTML). In addition to the named methods you can also pass an arbitrary function to be used for printing data frames. You can disable the `df_print` behavior entirely by setting the option `rmarkdown.df_print` to `FALSE`. See Data frame printing section in `bookdown` book for examples.
highlight Syntax highlighting style passed to Pandoc. Supported built-in styles include "default", "tango", "pygments", "kate", "monochrome", "espresso", "zenburn", "haddock", and "breezedark". Two custom styles are also included, "arrow", an accessible color scheme, and "rstudio", which mimics the default IDE theme. Alternatively, supply a path to a `.theme` file to use a custom Pandoc style. Note that custom theme requires Pandoc 2.0+. Pass NULL to prevent syntax highlighting.

reference_docx Use the specified file as a style reference in producing a docx file. For best results, the reference docx should be a modified version of a docx file produced using pandoc. Pass "default" to use the rmarkdown default styles.

keep_md Keep the markdown file generated by knitting.

md_extensions Markdown extensions to be added or removed from the default definition of R Markdown. See the `markdown_format` for additional details.

pandoc_args Additional command line options to pass to pandoc

Details

See the online documentation for additional details on using the `word_document` format.

R Markdown documents can have optional metadata that is used to generate a document header that includes the title, author, and date. For more details see the documentation on R Markdown metadata.

R Markdown documents also support citations. You can find more information on the markdown syntax for citations in the Bibliographies and Citations article in the online documentation.

Value

R Markdown output format to pass to `render`

Examples

```r
## Not run:
library(rmarkdown)

# simple invocation
render("input.Rmd", word_document())

# specify an option for syntax highlighting
render("input.Rmd", word_document(highlight = "zenburn"))

## End(Not run)
```
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