

Package ‘texPreview’

May 5, 2019

Type Package

Title Compile and Preview Snippets of 'LaTeX' in 'RStudio'

Version 1.3.2

Date 2019-04-08

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Description

Compile and preview snippets of 'LaTeX'. Can be used directly from the R console, from 'RStudio', in Shiny apps and R Markdown documents. Must have 'pdflatex' or 'xelatex' or 'lualatex' in 'PATH'.

Depends R (>= 3.3.0)

Imports rstudioapi, magick, svgPanZoom, utils, xml2, htmltools, base64enc, whisker, rematch2

Suggests magrittr, xtable, shiny, rmarkdown, knitr, testthat, covr, slickR

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URL <https://github.com/metrumresearchgroup/texPreview>

BugReports <https://github.com/metrumresearchgroup/texPreview/issues>

LazyData false

NeedsCompilation no

RoxygenNote 6.1.1

VignetteBuilder knitr

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Date/Publication 2019-05-05 20:20:04 UTC

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build_usepackage	<i>Build usepackage command for TeX document</i>
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Description

input TeX package name and optional package functions to create usepackage call

Usage

```
build_usepackage(pkg, options = NULL, uselibrary = NULL,
  chk.inst = FALSE)
```

Arguments

pkg	character, name of TeX package
options	character, name(s) of options to use in the package
uselibrary	character, part of document preamble to specify a uselibrary call related to package
chk.inst	logical, invokes a check to see if pkg is currently installed on system (default FALSE)

Details

if options and uselibrary are NULL (default) then only the call for the package is returned. See the TeX wikibook for more information https://en.wikibooks.org/wiki/LaTeX/Document_Structure#Packages on the usepackage command. If chk.inst finds that the package is not installed on system function returns NULL.

Value

character

Examples

```
build_usepackage(pkg = 'xcolor')
build_usepackage(pkg = 'xcolor',options = 'usenames')

#build many at once using mapply

geom.opts=c('paperwidth=35cm','paperheight=35cm','left=2.5cm','top=2.5cm')
use.opts="\usetikzlibrary{mindmap,backgrounds}"

unlist(mapply(build_usepackage,
  pkg =      list('times','geometry','tikz'),
  options=   list(NULL      ,geom.opts ,NULL),
  uselibrary = list(NULL      ,NULL      ,use.opts)
))
```

get_texpackages	<i>Get list of TeX packages installed on System</i>
-----------------	---

Description

Fetch all TeX packages currently installed on system

Usage

```
get_texpackages()
```

Details

If OS is Windows function checks against MikTeX else function checks against TeXLive.

Value

character

Examples

```
## Not run: head(get_texpackages())
```

tex_opts	<i>Default and current tex options</i>
----------	--

Description

Options for functions in the texPreview package. When running R code, the object `tex_opts` (default options) is not modified by chunk headers (local chunk options are merged with default options), whereas `tex_opts_current` (current options) changes with different chunk headers and it always reflects the options for the current chunk.

Usage

```
tex_opts
```

```
tex_opts_current
```

Format

An object of class `list` of length 5.

Details

Normally we set up the global options once in the first code chunk in a document using `tex_opts$set()`, so that all *latter* chunks will use these options. Note the global options set in one chunk will not affect the options in this chunk itself, and that is why we often need to set global options in a separate chunk.

Below is a list of default chunk options, retrieved via `tex_opts$get()`:

These options correspond to fields in the direct call to `texPreview`, which are listed in explained in the help manual.

Note

`tex_opts_current` is read-only in the sense that it does nothing if you call `tex_opts_current$set()`; you can only query the options via `tex_opts_current$get()`.

Examples

```
tex_opts$get('margin')
```

tex_preview

Render and Preview snippets of TeX in R Viewer

Description

input TeX script into the function and it renders a pdf and converts it an image which is sent to Viewer.

Usage

```
tex_preview(obj, tex_lines = NULL, stem = NULL,
  fileDir = tex_opts$get("fileDir"), overwrite = TRUE,
  margin = tex_opts$get("margin"),
  imgFormat = tex_opts$get("imgFormat"),
  returnType = tex_opts$get("returnType"),
  resizebox = tex_opts$get("resizebox"), usrPackages = NULL,
  engine = tex_opts$get("engine"), cleanup = tex_opts$get("cleanup"),
  keep_pdf = FALSE, tex_message = FALSE,
  density = tex_opts$get("density"), svg_max = tex_opts$get("svg_max"),
  print.xtable.opts = tex_opts$get("print.xtable.opts"),
  opts.html = tex_opts$get("opts.html"), ...)
```

Arguments

<code>obj</code>	character, TeX script
<code>tex_lines</code>	vector of character, in case of special needs, instead of asking <code>texPreview</code> to build up, you may choose to pass in the contents of the complete LaTeX file directly. It should be a vector of character with each element as a line of raw TeX code.

stem	character, name to use in output files, Default: NULL
fileDir	character, output destination. If NULL a temp.dir() will be used and no output will be saved, Default: tex_opts\$get('fileDir')
overwrite	logical, controls if overwriting of output stem* files given their existences
margin	table margin for pdflatex call, Default: tex_opts\$get('margin')
imgFormat	character, defines the type of image the PDF is converted to Default: tex_opts\$get('imgFormat')
returnType	character, one of "viewer", "html", or "tex" determining appropriate return type for the rendering process, Default: tex_opts\$get('returnType')
resizebox	logical, forces a tabular tex object to be constrained on the margins of the document, Default: tex_opts\$get('resizebox')
usrPackages	character, vector of usepackage commands, see details for string format
engine	character, specifies which latex to pdf engine to use ('pdflatex', 'xelatex', 'lualatex'), Default: tex_opts\$get('engine')
cleanup	character, vector of file extensions to clean up after building pdf, Default: tex_opts\$get('cleanup')
keep_pdf	logical, controls if the rendered pdf file should be kept or deleted, Default is FALSE
tex_message	logical, controls if latex executing messages are displayed in console. Default is FALSE
density	numeric, controls the density of the image. Default is 150: tex_opts\$get('density')
svg_max	numeric, maximum svg file size allowable to preview, Default: tex_opts\$get('svg_max')
print.xtable.opts	list, contains arguments to pass to print.table, relevant only if xtable is used as the input, Default: tex_opts\$get('print.xtable.opts')
opts.html	list, html options, Default: tex_opts\$get('opts.html')
...	passed to system

Details

The function assumes the system has pdflatex installed and it is defined in the PATH. The function does not return anything to R. If fileDir is specified then two files are written to the directory. An image file of the name stem with the extension specified in imgFormat. The default extension is png. The second file is the TeX script used to create the output of the name stem.tex. If you do not wish to view the console output, pass the corresponding arguments to ..., e.g., ignore.stdout=TRUE. usrPackage accepts a vector of character strings built by the function [build_usepackage](#), of the form `\usepackage[option1,option2,...]{package_name}`, see the TeX wikibook for more information https://en.wikibooks.org/wiki/LaTeX/Document_Structure#Packages.

Examples

```
data('iris')
if(interactive()){

#use xtable to create tex output
```

```

tex_preview(obj = xtable::xtable(head(iris,10)))

#use knitr kable to create tex output
tex_preview(knitr::kable(mtcars, "latex"))

tex='\begin{tabular}{llr}
\hline
\multicolumn{2}{c}{Item} \\\
\cline{1-2}
Animal & Description & Price (\$) \\\
\hline
Gnat & per gram & 13.65 \\\
& each & 0.01 \\\
Gnu & stuffed & 92.50 \\\
Emu & stuffed & 33.33 \\\
Armadillo & frozen & 8.99 \\\
\hline
\end{tabular}'

tex_preview(obj = tex,stem = 'eq',imgFormat = 'svg')
tikz_example <- system.file('examples/tikz/credit-rationing.tex',package = 'texPreview')
tikzEx=readLines(tikz_example,warn = FALSE)

#use tex_lines parameter to pass full document
tex_preview(tex_lines = tikzEx)

#use texPreview preamble to build document chunks
usetikz <- paste(tikzEx[14:23],collapse="\n")
bodytikz <- paste(tikzEx[25:90],collapse="\n")
tex_preview(obj = bodytikz,usrPackages = build_usepackage(pkg = 'tikz',uselibrary = usetikz))
}

```

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