Package 'texPreview'

August 29, 2017

Type Package

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

Version 1.1.0

Date 2017-08-28

Maintainer Jonathan Sidi <yonis@metrumrg.com>

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 (>= 2.3.0)

Imports rstudioapi,magick,svgPanZoom,utils,xml2

Suggests magrittr (>= 1.0.1),xtable,shiny,rmarkdown, knitr

License GPL-2 | GPL-3

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

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

LazyData false

NeedsCompilation no

RoxygenNote 6.0.1

R topics documented:

1

---

buildUsepackage   *Build usepackage command for TeX document*

Description

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

Usage

```
buildUsepackage(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

```
buildUsepackage(pkg = 'xcolor')
buildUsepackage(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(buildUsepackage,
pkg =        list('times','geometry','tikz'),
options=     list(NULL   ,geom.opts ,NULL),
uselibrary = list(NULL   ,NULL      ,use.opts)
))
```

---

getTexPackages   *Get list of TeX packages installed on System*

Description

Fetch all TeX packages currently installed on system

Usage

```
getTexPackages()
```

Details

If OS is Windows function checks against MikTex else function checks against TexLive.

Value

character

Examples

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

---

texPreview   *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

```
texPreview(obj, tex_lines = NULL, stem = NULL, fileDir = NULL,
  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$get("density"),
  print.xtable.opts = tex_opts$get("print.xtable.opts"),
  opts.html = tex_opts$get("opts.html"), ...)
```

Arguments

`obj`	character, TeX script
`tex_lines`	vector of character, in case of special needs, instead of asking texPreview 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
`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$get('density)
`print.xtable.opts`	
	list, contains arguments to pass to print.table, relevant only if xtable is used as the input, Default: tex_opts$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 buildUsepackage, 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
 texPreview(obj = xtable::xtable(head(iris,10)))

#use knitr kable to create tex output
 texPreview(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}'

texPreview(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
  texPreview(tex_lines = tikzEx)

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

---

tex_opts	*Default and current tex options*

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()`:
```
List of 9
 $ margin          :List of 4
  ..$ left  : num 10
  ..$ top   : num 5
  ..$ right : num 10
  ..$ bottom: num 5
 $ imgFormat       : chr "png"
 $ print.xtable.opts: list()
 $ html.opts       :List of 2
  ..$ width : chr "100%"
  ..$ height: chr "100%"
 $ cleanup         : chr [1:3] "aux" "log" "Doc"
 $ engine          : chr "pdflatex"
 $ returnType      : chr "viewer"
 $ density         : num 150
 $ resizebox       : logi TRUE
```

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')
```

Index