

Package: latexSymb (via r-universe)

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Type Package

Title Use 'R' to Write 'LaTeX' Code

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Description Simplify the task of writing 'LaTeX' code by using 'R'.
Instead of using 'LaTeX' utilities like 'newcommand', write 'R'
functions for more flexibility and readability. Also,
additional support for grouping makes it easier to write
complicated expressions.

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Encoding UTF-8

VignetteBuilder knitr, rmarkdown

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+

*Arithmetic***Description**

There are natural interpretations for doing arithmetic operations on objects of class `latexSymb`. Namely, their output is another object of that class, constructed using the `repr` of the arguments and the corresponding symbol for the operation. These functions implement the elementary ones.

Usage

```
a + b
a - b
a / b
a * b
a ^ b
under(a,b)
```

Arguments

`a` An object that can be passed to `as.character`
`b` An object that can be passed to `as.character`

Value

An object of class `latex_symb` whose `repr` is:

- For `+` and `-`, the concatenation of `a`'s `repr`, the corresponding arithmetic symbol, and `b`'s `repr`.
- For `*`, the concatenation of the `repr`, with a space between.
- For `/`, `a` and `b`'s `repr` inside `\frac{}{}`.
- For `^`, `a`'s `repr`, a caret and `b`'s `repr` in braces.
- For `under`, `a`'s `repr`, an underscore and `b`'s `repr` in braces

Examples

```
a <- lsymb("\\alpha")
b <- lsymb("\\beta")
a+b
a-b
a*b
a/b
a^b
under(a,b)
```

Description

Equations and symbols in LaTeX can be either inline or on their own. `il` wraps expressions for the former, `lenv` for the latter.

Usage

```
il(x)
lenv(name, rows)
```

Arguments

<code>x</code>	An object of class <code>latex_symb</code>
<code>name</code>	The name of the LaTeX environment. For instance, <code>align</code> or <code>gather</code>
<code>.</code>	
<code>rows</code>	A list of objects that can be passed to <code>as.character</code> .

Value

- For `il`, `x`'s repr surrounded by dollar signs.
- For `lenv`, a multiline string whose lines are: 1. A `\begin` statement for `name`; 2. The character representation of each row; 3. An `\end` statement for `name`

Examples

```
a1 <- lsymb("\\alpha")
be <- lsymb("\\beta")
il(a1)
lenv("align",
  c(
    lsymb(a1^2 - be^2, "&=", 0, "\\|"),
    lsymb(pths(a1 - be)*pths(a1 + be), "&=", 0)
  )
)
```

`lsymb`*Create, print and turn to string objects of class latex_symb*

Description

The class `latex_symb` is simply a wrapper for a string with LaTeX code. `lsymb` creates the wrapper, `as.character` and `print` extract the string.

Usage

```
lsymb(...)  
## S3 method for class 'latex_symb'  
print(x, ...)  
## S3 method for class 'latex_symb'  
as.character(x, ...)
```

Arguments

<code>...</code>	Objects that can be passed to <code>as.character</code> .
<code>x</code>	An object of class <code>latex_symb</code>

Value

- `lsymb` returns an object of class `latex_symb`. It is an S3 class, whose objects are lists with a single component called `repr`. `repr` is the LaTeX code for the object, which is obtained by pasting the character representations of all the arguments.
- `print.lsymb` passes the `repr` of its first argument, plus additional arguments, to `print`. The returned value is whatever `print` returns.
- `as.character.lsymb` passes the `repr` of its first argument, plus additional arguments, to `as.character`. The returned value is whatever `as.character` returns.

Examples

```
a1 <- lsymb("\\alpha")  
print(a1)  
as.character(a1)
```

Description

It is cumbersome to have to write `left` and `right` every time a grouping is used in LaTeX. These functions take care of that.

Usage

```
pths(x)
br(x)
sqbr(x)
ang(x)
```

Arguments

`x` An object that can be passed to `as.character`.

Value

An object of class `latex_symb` whose `repr` is `x`'s `repr` enclosed by the corresponding symbols.

Examples

```
a1 <- lsymb("\\alpha")
pths(a1)
br(a1)
sqbr(a1)
ang(a1)
```

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