Package 'latexSymb'

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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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Contents

+ *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)
```

il LaTeX *Environments*

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

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

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

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

...	Objects that can be passed to as.character.
x	An object of class latex_symb

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

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

pths LaTeX *Enclosings*

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

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

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