

Package ‘rpn’

June 7, 2016

Type Package

Title Converter and Interpreter for Reverse Polish Notation Expressions

Description Pure R implementation of a simple (Reverse) Polish Notation (RPN) interpreter and converter.

Version 1.0

Date 2016-06-06

Maintainer Jakob Bossek <j.bossek@gmail.com>

URL <https://github.com/jakobbossek/rpn>

BugReports <https://github.com/jakobbossek/rpn/issues>

License BSD_2_clause + file LICENSE

Depends BBmisc (>= 1.6), checkmate (>= 1.1),

Suggests testthat

ByteCompile yes

RoxygenNote 5.0.1

NeedsCompilation no

Author Jakob Bossek [aut, cre]

Repository CRAN

Date/Publication 2016-06-07 16:36:19

R topics documented:

rpn	2
Index	4

rpn *Reverse Polish Notation converter/interpreter.*

Description

Expects an expression in (reverse) polish notation as a character vector and returns the expression in infix notation and the evaluated expression.

Usage

```
rpn(rpn.expr, reverse = TRUE, eval = TRUE, clean = TRUE, vars = list(),  
    ops = list())
```

Arguments

rpn.expr	[character] Character vector representing the expression to convert in (reverse) polish notation.
reverse	[logical(1)] Is rpn.expr in reverse polish notation or polish notation? Default is TRUE, i.e., reverse polish notation.
eval	[logical(1)] Shall the expression be evaluated? Default is TRUE.
clean	[logical(1)] Should braces be removed from rpn.expr before interpretation? Default is TRUE.
vars	[list] Named list of variables which are used in the rpn.expr beside constants. Default is the empty list.
ops	[list] Optional named list of operators. If non-empty, the list must be of key-value type, i.e., the key is the name of the function and the value is a list with the 1) the length of the parameter vector the corresponding function expects, 2) a logical value indicating whether the function is a binary infix operator and third the actual function to be called in case the expression is evaluated.

Details

This is a pure R implementation.

Value

List with the components

infix Infix representation of rpn.expr.

value Evaluated expression or NA if eval is set to FALSE.

References

Lukasiewicz, Jan (1957). Aristotle's Syllogistic from the Standpoint of Modern Formal Logic. Oxford University Press.

Examples

```
# simple example
r = c("4", "6", "*", "6", "+")
rpn(r)
rpn(r, eval = FALSE)

# the same example but with a variable
r = c("x", "6", "*", "6", "+")
rpn(r, eval = TRUE, vars = list(x = 4))
rpn(r, eval = FALSE)

# now a more complex expression with variables and custom operators/functions
rpe = c("x", "5", "6.4", "mysum", "5", "mystuff")
mysum = function(x, y, z) x + y + z # arity 3 and no infix operation
mystuff = function(x, y) 2 * (x + y) # arity 2 and no infix operation
ops = list(mysum = list(3, FALSE, mysum), mystuff = list(2, FALSE, mystuff))
vars = list(x = 3.6)
res = rpn(rpe, ops = ops, vars = vars)
```

Index

rpn, [2](#)