Package ‘ripe’
December 6, 2019

Title  Rerun ‘Magrittr’ Pipelines
Version  0.1.0
Description  Functions in a ‘magrittr’ pipeline are evaluated sequentially making it impossible to rerun them directly from the end of the pipeline, while preserving stochastic characteristics embedded within the pipeline. This package allows the user to rerun pipelines using natural ‘magrittr’ syntax.
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Imports  magrittr
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Author  Jonathan Sidi [aut, cre]
Maintainer  Jonathan Sidi <yonicd@gmail.com>
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lazy

Convert magrittr chain lazy function

Description

Input a chain in magrittr syntax and make it a lazyeval function.

Usage

lazy(x)

Arguments

x magrittr chain of functions

Value

function

See Also

Other ripe: ripe()

Examples

f <- stats::runif(20)%>%sample(10)%>%lazy()
f()

ripe

Replicate magrittr chain

Description

Lazily replicate magrittr chain

Usage

ripe(x, f, ...)

Arguments

x chain
f replication function
... arguments to pass to f
Value

object that f outputs

See Also

rerun

Other ripe: lazy()

Examples

```r
stats::runif(20) %>%
sample(4) %>%
ripe(replicate,n=4,simplify=FALSE)

stats::runif(20) %>%
sample(4) %>%
ripe(lapply,X=1:4)
```

Description

Pipe an object forward into a function or call expression.

Details

Using `%>%` with unary function calls

When functions require only one argument, `x %>% f` is equivalent to `f(x)` (not exactly equivalent; see technical note below.)

Placing lhs as the first argument in rhs call

The default behavior of `%>%` when multiple arguments are required in the rhs call, is to place `lhs` as the first argument, i.e. `x %>% f(y)` is equivalent to `f(x,y)`.

Placing lhs elsewhere in rhs call

Often you will want `lhs` to the `rhs` call at another position than the first. For this purpose you can use the dot `.` as placeholder. For example, `y %>% f(x,.)` is equivalent to `f(x,y)` and `z %>% f(x,y,arg = .)` is equivalent to `f(x,y,arg = z)`.

Using the dot for secondary purposes

Often, some attribute or property of `lhs` is desired in the `rhs` call in addition to the value of `lhs` itself, e.g. the number of rows or columns. It is perfectly valid to use the dot placeholder several times in the `rhs` call, but by design the behavior is slightly different when using it inside nested function calls. In particular, if the placeholder is only used in a nested function call, `lhs` will also be placed as the first argument! The reason for this is that in most use-cases this produces the most readable code. For example, `iris %>% subset(1:nrow(.), %% 2 == 0)` is equivalent to `iris %>%
In the context of the `magrittr` package, the `%>%` operator is used to chain operations together. While it is possible to subset a data set, such as `subset(.,1:nrow(.) %% 2 == 0)` for even rows, this expression can be made slightly more compact. For example, `1:10 %>% c(min(.),max(.))` is equivalent to `c(min(1:10), max(1:10))`.

Using `%>%` with call- or function-producing rhs

It is possible to force evaluation of `rhs` before the piping of `lhs` takes place. This is useful when `rhs` produces the relevant call or function. To evaluate `rhs` first, enclose it in parentheses, i.e. `a %>% (function(x) x^2)`, and `1:10 %>% (call("sum"))`. Another example is for reference class methods which are accessed using the `$` operator, where one would do `x %>% (rc$f)`, and not `x %>% rc$f`.

Using lambda expressions with `%>%`

Each `rhs` is essentially a one-expression body of a unary function. Therefore defining lambdas in `magrittr` is very natural, and as the definitions of regular functions: if more than a single expression is needed one encloses the body in a pair of braces, `{ rhs }`. However, note that within braces there are no "first-argument rule": it will be exactly like writing a unary function where the argument name is "." (the dot).

Using the dot-place holder as lhs

When the dot is used as `lhs`, the result will be a functional sequence, i.e. a function which applies the entire chain of right-hand sides in turn to its input. See the examples.

Technical notes

The `magrittr` pipe operators use non-standard evaluation. They capture their inputs and examines them to figure out how to proceed. First a function is produced from all of the individual right-hand side expressions, and then the result is obtained by applying this function to the left-hand side. For most purposes, one can disregard the subtle aspects of `magrittr`'s evaluation, but some functions may capture their calling environment, and thus using the operators will not be exactly equivalent to the "standard call" without pipe-operators.

Another note is that special attention is advised when using non-`magrittr` operators in a pipe-chain (`,`, `+`, `*`, etc.), as operator precedence will impact how the chain is evaluated. In general it is advised to use the aliases provided by `magrittr`.

See Also

`%<>%`, `%T>%`, `%%`

Examples

```r
# Basic use:
iris %>% head

# Use with lhs as first argument
iris %>% head(10)

# Using the dot place-holder
"Ceci n'est pas une pipe" %>% gsub("une", "un", .)
```
# When dot is nested, lhs is still placed first:
sample(1:10) %>% paste0(LETTERS[.])

# This can be avoided:
rnorm(100) %>% {c(min(.), mean(.), max(.))} %>% floor

# Lambda expressions:
iris %>%
  {
    size <- sample(1:10, size = 1)
    rbind(head(., size), tail(., size))
  }

# Renaming in lambdas:
iris %>%
  {
    my_data <- .
    size <- sample(1:10, size = 1)
    rbind(head(my_data, size), tail(my_data, size))
  }

# Building unary functions with %>%
trig_fest <- . %>% tan %>% cos %>% sin

1:10 %>% trig_fest
trig_fest(1:10)
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