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R topics documented:

kimisc-package .................................................. 2
coalesce.na-deprecated ....................................... 3
cut_format ......................................................... 3
df_to_list-deprecated ......................................... 4
kimisc-package

**kimisc: Kirill’s Miscellaneous Functions**

**Description**

A collection of useful functions not found anywhere else, mainly for programming: Pretty intervals, generalized lagged differences, checking containment in an interval, and an alternative interface to `assign()`.

**Author(s)**

Kirill Müller

**See Also**

Useful links:

- [http://krlmr.github.io/kimisc](http://krlmr.github.io/kimisc)
coalesce.na-deprecated

Replaces NA values

Description

This (vectorized) function returns the first non-NA argument, similar to the SQL function `COALESCE`. If a vector or matrix is passed as first argument, the remaining arguments are recycled to generate a vector/matrix of the same dimension, and coalescing is done element by element.

Usage

```r
coalesce.na(x, ...)
```

Arguments

- `x` The first value to coalesce.
- `...` Other values to coalesce.

Value

A vector of the same length as `x`.

See Also

Other deprecated functions: `df_to_list-deprecated`, `hms.to.seconds-deprecated`, `kimisc-deprecated`, `list_to_df-deprecated`, `nc-deprecated`, `nlist-deprecated`, `ofactor-deprecated`, `sample.rows-deprecated`, `seconds.to.hms-deprecated`, `thisfile-deprecated`, `tll-deprecated`, `vswitch-deprecated`

Examples

```r
coalesce.na(NA, -1)
coalesce.na(5, 3)
coalesce.na(c(1, NA, NA), c(NA, 2))
coalesce.na(matrix(c(NA, 1:3), nrow=2))
coalesce.na(NA)
```

cut_format

Convert Numeric to Factor, with custom formatting

Description

This is an enhanced version of `base::cut()` that allows a custom formatting to be applied to the values.
Usage

cut_format(x, breaks, include.lowest = FALSE, right = TRUE,
ordered_result = FALSE, ..., format_fun = format, sep = ",",
paren = c("","[", "]")

Arguments

x a numeric vector which is to be converted to a factor by cutting.
breaks [numeric] A vector of two or more unique cut points
include.lowest logical, indicating if an ‘x[i]’ equal to the lowest (or highest, for right = FALSE) ‘breaks’ value should be included.
right logical, indicating if the intervals should be closed on the right (and open on the left) or vice versa.
ordered_result logical: should the result be an ordered factor?
... Passed to cut()
format_fun [function(x): character] A vectorized function that performs the desired formatting. Default: base::format()
sep [character(1)] The separator between lower and upper end of the interval. Default: ",,
paren [character(4)] Opening and closing parentheses in two variants. Default: c("","[", "]")

See Also

http://stackoverflow.com/q/14456371/946850

Examples

cut_format(runif(10), seq(0, 1, by = 0.25), format_fun = function(x) paste(x * 100, "%"))
cut_format(runif(10), seq(0, 1, by = 0.25), paren = c("<", "[", "]", "]")

---

\textit{df_to_list-deprecated}  \textit{Converts a name-value data frame to a named list}

Description

This function converts a data frame back to a list. It is the reverse operation to \textit{list_to_df}.

Usage

df_to_list(df_for_list)

Arguments

df_for_list The data frame to be converted to a list
Details

In a data frame with more than two columns, heuristics are applied to detect the name and value column.

See Also

Other deprecated functions: coalesce.na-deprecated, hms.to.seconds-deprecated, kimisc-deprecated, list_to_df-deprecated, nc-deprecated, nlist-deprecated, ofactor-deprecated, sample.rows-deprecated, seconds.to.hms-deprecated, thisfile-deprecated, tll-deprecated, vswitch-deprecated

---

export |Exports to an environment

Description

This function is a wrapper around export.list() that exports variables by their name to another environment.

Usage

export(..., target.env = .GlobalEnv)

Arguments

... variables to be exported.

target.env The target environment. Use the global environment by default.

Value

Invisible NULL.

Author(s)

Roland

References

http://stackoverflow.com/a/17484932/946850

See Also

export.list, assign
Examples

local({
  newly.created.var <- 5
  export(newly.created.var)
})
newly.created.var
rm(newly.created.var)

---

export.list
Exports to an environment

Description

This function is a wrapper around `assign()` that exports the contents of a named list to an environment. The variable names in the target environment are constructed from the names of the list items or taken from a separate argument.

Usage

`export.list(arg.list, arg.names = names(arg.list), target.env = .GlobalEnv)`

Arguments

- `arg.list`: list of objects, possibly named.
- `arg.names`: names to use for the items in the target environment. Use the names of `arg.list` by default.
- `target.env`: The target environment. Use the global environment by default.

Value

Invisible NULL.

Author(s)

Roland

References

http://stackoverflow.com/a/17484932/946850

See Also

export, assign

Examples

`export.list(list(newly.created.var=5))`
newly.created.var
rm(newly.created.var)`
**gdiff**

*Generalized lagged differences*

**Description**

Returns suitably lagged and iterated differences using arbitrary difference functions.

**Usage**

```r
gdiff(x, lag = 1L, differences = 1L, FUN = `-/`, ...)```

**Arguments**

- `x`: a numeric vector or matrix containing the values to be differenced.
- `lag`: an integer indicating which lag to use.
- `differences`: an integer indicating the order of the difference.
- `FUN`: A distance function that accepts two parameters
- `...`: further arguments to be passed to or from methods.

**Value**

If `x` is a vector of length `n` and `differences = 1`, then the computed result is equal to the successive differences `FUN(x[(1+lag):n], x[1:(n-lag)])`.

If difference is larger than one this algorithm is applied recursively to `x`. Note that the returned value is a vector which is shorter than `x`.

If `x` is a matrix then the difference operations are carried out on each column separately.

**See Also**

`base::diff()`

**Examples**

```r
gdiff(1:4)
gdiff(1:4, FUN = `/`)```
hms.to.seconds-deprecated

Converts a time value given in H:M:S format to the number of seconds since midnight

Description

This function is very similar to strptime with the %X conversion specification. Anything with three numbers between two colons is interpreted as a time, no consistency check is performed on the actual hour, minute and second values. Thus, strings like 25:15:00 and 23:78:101 also will be converted. Incorrectly formatted strings are converted to NA with a warning.

Usage

hms.to.seconds(x)

Arguments

x A (vector of) strings in H:M:S format.

Value

A (vector of) integer values of the same length as x.

See Also

base::strptime()

Other deprecated functions: coalesce.na-deprecated, df_to_list-deprecated, kimisc-deprecated, list_to_df-deprecated, nc-deprecated, nlist-deprecated, ofactor-deprecated, sample.rows-deprecated, seconds.to.hms-deprecated, thisfile-deprecated, tll-deprecated, vswitch-deprecated

Examples

hms.to.seconds(c("00:00:01", "00:01:00", "01:00:00"))
hms.to.seconds(c("25:15:00", "23:78:101"))
hms.to.seconds("invalid")
in.interval.lo

Description

This function checks if the values in the x parameter are contained in the interval \((lo, hi]\). NA values are treated as "not in the interval".

Usage

```
in.interval.lo(x, lo, hi)
```

Arguments

- **x**: A vector of values. (Lists will be coerced to a numeric vector.)
- **lo**: Left end of the interval.
- **hi**: Right end of the interval.

Value

A boolean vector of the same length as x.

See Also

```
in.interval.ro, nin.interval.lo, nin.interval.ro
```

Examples

```
in.interval.lo(c(-1, 0, 1, 2), 0, 1)
in.interval.lo(NA, 1, 3)
```

in.interval.ro

Description

This function checks if the values in the x parameter are contained in the interval \([lo, hi)\). NA values are treated as "not in the interval".

Usage

```
in.interval.ro(x, lo, hi)
```
list_to_df-deprecated

Arguments

x A vector of values. (Lists will be coerced to a numeric vector.)
lo Left end of the interval.
hi Right end of the interval.

Value

A boolean vector of the same length as x.

See Also

in.interval.lo, nin.interval.lo, nin.interval.ro

Examples

in.interval.ro(c(-1L, 0, 1, 2), 0, 1)
in.interval.ro(NA, 1, 3)

kimisc-deprecated  Deprecated functions

Description

The "See also" section contains the deprecated functions in this package.

See Also

Other deprecated functions: coalesce.na-deprecated, df_to_list-deprecated, hms.to.seconds-deprecated, list_to_df-deprecated, nc-deprecated, nlist-deprecated, ofactor-deprecated, sample.rows-deprecated, seconds.to.hms-deprecated, thisfile-deprecated, tll-deprecated, vswitch-deprecated

list_to_df-deprecated  Converts a list to a name-value data frame

Description

This function coerces its input to a list and returns a data frame with as many rows as there are list items in the input, and two columns (one for the names, one for the values). If the list is not named, the natural sequence will be used as item names.

Usage

list_to_df(list_for_df)
Arguments

list_for_df  The object to be converted to a data frame

See Also

Other deprecated functions: coalesce.na-deprecated, df_to_list-deprecated, hms.to.seconds-deprecated, kimisc-deprecated, nc-deprecated, nlist-deprecated, ofactor-deprecated, sample.rows-deprecated, seconds.to.hms-deprecated, thisfile-deprecated, tll-deprecated, vswitch-deprecated

nc-deprecated  Smart named vector

Description

This function is a wrapper around c() that assigns names to unnamed arguments based on the unevaluated expression used in the call.

Usage

nc(...)

Arguments

...  Vector elements, possibly named

Value

A named vector.

Author(s)

Hadley Wickham

References


See Also

c, nlist

Other deprecated functions: coalesce.na-deprecated, df_to_list-deprecated, hms.to.seconds-deprecated, kimisc-deprecated, list_to_df-deprecated, nlist-deprecated, ofactor-deprecated, sample.rows-deprecated, seconds.to.hms-deprecated, thisfile-deprecated, tll-deprecated, vswitch-deprecated
Examples

```r
a <- 1; b <- 2; c <- 3
nc(a, b, d=c)
nc(mean(c(a, b, c)))
```

---

**nin.interval.lo**

Checks if values are outside of an interval (open on the left)

---

**Description**

This function checks if the values in the `x` parameter are contained in the interval `(lo, hi]`. NA values are treated as "not in the interval".

**Usage**

```r
nin.interval.lo(x, lo, hi)
```

**Arguments**

- `x` A vector of values. (Lists will be coerced to a numeric vector.)
- `lo` Left end of the interval.
- `hi` Right end of the interval.

**Value**

A boolean vector of the same length as `x`.

**See Also**

`in.interval.lo, in.interval.ro, nin.interval.ro`

**Examples**

```r
nin.interval.lo(c(-1, 0, 1, 2), 0, 1)
nin.interval.lo(NA, 1, 3)
```
nin.interval.ro

Checks if values are outside of an interval (open on the right)

Description

This function checks if the values in the \( x \) parameter are contained in the interval \([lo, hi)\). NA values are treated as "not in the interval".

Usage

\[
\text{nin.interval.ro}(x, lo, hi)
\]

Arguments

- \( x \): A vector of values. (Lists will be coerced to a numeric vector.)
- \( lo \): Left end of the interval.
- \( hi \): Right end of the interval.

Value

A boolean vector of the same length as \( x \).

See Also

in.interval.lo, in.interval.ro, nin.interval.lo

Examples

\[
\text{nin.interval.ro}(c(-1, 0, 1), 0, 1) \\
\text{nin.interval.ro}(\text{NA}, 1, 3)
\]

nlist-deprecated

Smart named list

Description

This function is a wrapper around \texttt{list()} that assigns names to unnamed arguments based on the unevaluated expression used in the call.

Usage

\[
\text{nlist}(...) \\
\]

Arguments

\[
... \quad \text{List items, possibly named}
\]
ofactor-deprecated

Value
A named list.

Author(s)
Hadley Wickham

References

See Also
list

Other deprecated functions: coalesce.deprecated, df_to_list-deprecated, hms.to.seconds-deprecated, kimisc-deprecated, list_to_df-deprecated, nc-deprecated, ofactor-deprecated, sample.rows-deprecated, seconds.to.hms-deprecated, thisfile-deprecated, tll-deprecated, vswitch-deprecated

Examples

```r
a <- 1; b <- 2; c <- 3
nlist(a, b, d=c)
nlist(mean(c(a, b, c)))
```

ofactor-deprecated  Order-preserving factors

Description
The function ofactor() is a convenience wrapper for factor() that orders the levels as they appear in the data if the levels argument is not specified.

Usage

```r
ofactor(x = character(), ...)
```

Arguments

x
A vector of data, usually taking a small number of distinct values.

...  Other arguments passed on to `base::factor()`.

Value
A factor. See `base::factor()` for details.
See Also

Other deprecated functions: coalesce.na-deprecated, df_to_list-deprecated, hms.to.seconds-deprecated, kimisc-deprecated, list_to_df-deprecated, nc-deprecated, nlist-deprecated, sample.rows-deprecated, seconds.to.hms-deprecated, thisfile-deprecated, tll-deprecated, vswitch-deprecated

Examples

ofactor(3:1)
ofactor(9:12, exclude=11)
identical(ofactor(3:1, levels=1:3), factor(3:1))

sample.rows-deprecated

Random Samples and Permutations for Data Frames

Description

This function takes a sample of the specified size from the rows of x using either with or without replacement.

Usage

sample.rows(x, size, replace = FALSE, prob = NULL)

Arguments

x A data frame.
size A non-negative integer giving the number of items to choose.
replace Should sampling be with replacement?
prob A vector of probability weights for obtaining the rows of the data frame being sampled.

Details

This function internally calls sample.int().

Value

A data frame of the same shape as x.

See Also

Other deprecated functions: coalesce.na-deprecated, df_to_list-deprecated, hms.to.seconds-deprecated, kimisc-deprecated, list_to_df-deprecated, nc-deprecated, nlist-deprecated, ofactor-deprecated, seconds.to.hms-deprecated, thisfile-deprecated, tll-deprecated, vswitch-deprecated
examples
Determines the path of the currently running script

R does not store nor export the path of the currently running script. This is an attempt to circumvent this limitation by applying heuristics (such as call stack and argument inspection) that work in many cases.

Usage

```
thisfile()
thisfile_source()
thisfile_r()
thisfile_rscript()
thisfile_knit()
```

Details

This functions currently work only if the script was sourced, processed with knitr, or run with Rscript or using the --file parameter to the R executable. For code run with Rscript, the exact value of the parameter passed to Rscript is returned.

Value

The path of the currently running script, NULL if it cannot be determined.

Author(s)

Kirill Müller, Hadley Wickham, Michael R. Head

References

http://stackoverflow.com/q/1815606/946850

See Also

```
base::source(), utils::Rscript(), base::getwd()
```

Other deprecated functions: coalesce.na-deprecated, df_to_list-deprecated, hms.to.seconds-deprecated, kimisc-deprecated, list_to_df-deprecated, nc-deprecated, nlist-deprecated, ofactor-deprecated, sample.rows-deprecated, seconds.to.hms-deprecated, till-deprecated, vswitch-deprecated
tll-deprecated

Transposes a list of lists

Description

The argument is assumed to be a list of \( n \) (named) lists with length \( m \) each. It is converted to a (named) list of \( m \) elements with length \( n \) each.

Usage

\[
tll(l)
\]

Arguments

1  List of lists, possibly named.

Value

A list of lists corresponding to a transposition of the argument.

See Also

base::t()

Other deprecated functions: coalesce.na-deprecated, df_to_list-deprecated, hms.to.seconds-deprecated, kimisc-deprecated, list_to_df-deprecated, nc-deprecated, nlist-deprecated, ofactor-deprecated, sample.rows-deprecated, seconds.to.hms-deprecated, thisfile-deprecated, vswitch-deprecated

Examples

\[
tll(list(list(1L R)L list(SL T)))
tll(list(list(a]1L b]R)L list(a]SL b]T)))
tll(list(x]list(a]1L b]R)L y]list(a]SL b]T)))
\]
vswitch-deprecated

Vectorized switch

Description
The function vswitch is a vectorized version of \texttt{base::switch()} optimized for performance.

Usage
\begin{verbatim}
\texttt{vswitch(EXPR, ...)}
\end{verbatim}

Arguments

\begin{itemize}
\item \texttt{EXPR} an expression evaluating to a number or a character string.
\item \texttt{...} the list of alternatives. If it is intended that \texttt{EXPR} has a character-string value these will be named, perhaps except for one alternative to be used as a ‘default’ value.
\end{itemize}

Details

Only the \texttt{EXPR} argument is treated as a vector. In particular, if any of the alternatives (or the default alternative) is a vector, the result will be a list of vectors.

Value

The value of one of the elements of \texttt{...}, or \texttt{NA} whenever no element is selected. Contrary to \texttt{base::switch()} the result is always visible.

See Also

Other deprecated functions: \texttt{coalesce.na-deprecated, df_to_list-deprecated, hms.to.seconds-deprecated, kimisc-deprecated, list_to_df-deprecated, nc-deprecated, nlist-deprecated, ofactor-deprecated, sample.rows-deprecated, seconds.to.hms-deprecated, thisfile-deprecated, till-deprecated}
Index

assign, 5, 6
assign(), 6

base::cut(), 3
base::diff(), 7
base::factor(), 14
base::format(), 4
base::getwd(), 17
base::source(), 17
base::strftime(), 16
base::strptime(), 8
base::switch(), 19
base::t(), 18

c, 11
c(), 11
coalesce.na (coalesce.na-deprecated), 3
coalesce.na-deprecated, 3
cut_format, 3
df_to_list (df_to_list-deprecated), 4
df_to_list-deprecated, 4

eXport, 5, 6
eXport.list, 5, 6
eXport.list(), 5

factor(), 14
gdiff, 7

hms.to.seconds
    (hms.to.seconds-deprecated), 8
hms.to.seconds-deprecated, 8

in.interval.lo, 9, 10, 12, 13
in.interval.ro, 9, 9, 12, 13

kimisc (kimisc-package), 2
kimisc-deprecated, 10
kimisc-package, 2

list, 14
list(), 13
list_to_df(), 4
list_to_df (list_to_df-deprecated), 10
list_to_df-deprecated, 10
nc (nc-deprecated), 11
nc-deprecated, 11
nin.interval.lo, 9, 10, 12, 13
nin.interval.ro, 9, 10, 12, 13
nlist, 11
nlist (nlist-deprecated), 13
nlist-deprecated, 13

ofactor (ofactor-deprecated), 14
ofactor-deprecated, 14

sample.int(), 15
sample.rows (sample.rows-deprecated), 15
sample.rows-deprecated, 15
seconds.to.hms
    (seconds.to.hms-deprecated), 16
seconds.to.hms-deprecated, 16

thisfile (thisfile-deprecated), 17
thisfile-deprecated, 17
thisfile_knit (thisfile-deprecated), 17
thisfile_r (thisfile-deprecated), 17
thisfile_rscript (thisfile-deprecated), 17
thisfile_source (thisfile-deprecated), 17
tll (tll-deprecated), 18
tll-deprecated, 18

utils::Rscript(), 17

vswitch (vswitch-deprecated), 19
vswitch-deprecated, 19

20