

Package ‘csutil’

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Title Common Base-R Problems Relating to Lists

Version 2022.11.24

Description Utility functions that help with common base-R problems relating to lists. Lists in base-R are very flexible. This package provides functions to quickly and easily characterize types of lists. That is, to identify if all elements in a list are null, data.frames, lists, or fully named lists. Other functionality is provided for the handling of lists, such as the easy splitting of lists into equally sized groups, and the unnesting of data.frames within fully named lists.

Depends R (>= 3.3.0)

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URL <https://www.csids.no/csutil/>, <https://github.com/csids/csutil>

BugReports <https://github.com/csids/csutil/issues>

Encoding UTF-8

Imports data.table, magrittr, ggplot2

Suggests testthat, knitr, rmarkdown, rstudioapi, glue

RoxygenNote 7.1.2

VignetteBuilder knitr

NeedsCompilation no

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R topics documented:

easy_split	2
is_all_list_elements_null_or_df	3
is_all_list_elements_null_or_fully_named_list	3

is_all_list_elements_null_or_list	4
is_fully_named_list	5
unnest_dfs_within_list_of_fully_named_lists	5

Index	7
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easy_split	<i>Split a vector into a list of vectors</i>
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Description

Easily split a list into a list of equally sized vectors.

Usage

```
easy_split(x, size_of_each_group = NULL, number_of_groups = NULL)
```

Arguments

x	The vector to be split
size_of_each_group	If you want to split 'x' into a number of groups, each of 'size_of_each_group' size
number_of_groups	How many equally sized groups do you want?

Details

You can either specify the length of the list (via 'number_of_groups') or the length of the equally sized vectors within each list element (via 'size_of_each_group'). The last element of the list can be shorter than the other elements.

Value

A list containing equally sized vectors.

Examples

```
easy_split(letters[1:20], size_of_each_group = 3)
easy_split(letters[1:20], number_of_groups = 3)
```

`is_all_list_elements_null_or_df`*Are all elements in a list null or data.frames?*

Description

Checks if A) 'x' is a list, B) All elements in 'x' are either null or data.frame.

Usage

```
is_all_list_elements_null_or_df(x)
```

Arguments

x An object

Value

Boolean.

Examples

```
is_all_list_elements_null_or_df(data.frame())
is_all_list_elements_null_or_df(list(data.frame()))
is_all_list_elements_null_or_df(list(1, NULL))
is_all_list_elements_null_or_df(list(data.frame(), NULL))
is_all_list_elements_null_or_df(list("a"=1, 2))
```

`is_all_list_elements_null_or_fully_named_list`*Are all elements in a list null or fully named lists?*

Description

Checks if A) 'x' is a list, B) All elements in 'x' are either null or fully named lists.

Usage

```
is_all_list_elements_null_or_fully_named_list(x)
```

Arguments

x An object

Details

Fully named lists are lists with each element having a name.

Value

Boolean.

Examples

```
is_all_list_elements_null_or_fully_named_list(data.frame())
is_all_list_elements_null_or_fully_named_list(list(data.frame()))
is_all_list_elements_null_or_fully_named_list(list(1, NULL))
is_all_list_elements_null_or_fully_named_list(list(list(), NULL))
is_all_list_elements_null_or_fully_named_list(list(list("a" = 1), NULL))
is_all_list_elements_null_or_fully_named_list(list("a"=1, 2))
```

is_all_list_elements_null_or_list

Are all elements in a list null or lists?

Description

Checks if A) 'x' is a list, B) All elements in 'x' are either null or list.

Usage

```
is_all_list_elements_null_or_list(x)
```

Arguments

x An object

Value

Boolean.

Examples

```
is_all_list_elements_null_or_list(data.frame())
is_all_list_elements_null_or_list(list(data.frame()))
is_all_list_elements_null_or_list(list(1, NULL))
is_all_list_elements_null_or_list(list(list(), NULL))
is_all_list_elements_null_or_list(list("a"=1, 2))
```

is_fully_named_list *Is this a fully named list?*

Description

Checks if 'x' is a list with each element named.

Usage

```
is_fully_named_list(x)
```

Arguments

x An object

Value

Boolean.

Examples

```
is_fully_named_list(list())
is_fully_named_list(list(1))
is_fully_named_list(list("a"=1))
is_fully_named_list(list("a"=1, 2))
```

unnest_dfs_within_list_of_fully_named_lists
Unnest data.frames within fully named list

Description

Consider the situation where a function returns a list containing two data.frames. If this function is called repeatedly and the return values are stored in a list, we will have a list of fully named lists (each of which contains a data.frame). Typically, we want to extract the two data.frames from this nested list structure (and rbindlist them).

Usage

```
unnest_dfs_within_list_of_fully_named_lists(  
  x,  
  returned_name_when_dfs_are_not_nested = "data",  
  ...  
)
```

Arguments

`x` A list of fully named lists (which then contain data.frames)
`returned_name_when_dfs_are_not_nested` When `x` is a single list of data.frames, what name should be returned?
`...` parameters passed to `data.table::rbindlist`

Value

Fully named list, each element containing a data.table.

Examples

```
x <- list(
  list(
    "a" = data.frame("v1"=1),
    "b" = data.frame("v2"=3)
  ),
  list(
    "a" = data.frame("v1"=10),
    "b" = data.frame("v2"=30),
    "d" = data.frame("v3"=50)
  ),
  list(
    "a" = NULL
  ),
  NULL
)
print(x)
csutil::unnest_dfs_within_list_of_fully_named_lists(x)

x <- list(
  data.frame("v1"=1),
  data.frame("v3"=50)
)
print(x)
csutil::unnest_dfs_within_list_of_fully_named_lists(
  x,
  returned_name_when_dfs_are_not_nested = "NAME",
  fill = TRUE
)
```

Index

`easy_split`, 2

`is_all_list_elements_null_or_df`, 3

`is_all_list_elements_null_or_fully_named_list`,
3

`is_all_list_elements_null_or_list`, 4

`is_fully_named_list`, 5

`unnest_dfs_within_list_of_fully_named_lists`,
5