

Package ‘W4MRUtils’

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Title Utils List for W4M - Workflow for Metabolomics

Version 0.0.1

Description Provides a set of utility function to prevent the spread of utilities script in W4M (Workflow For Metabolomics) scripts, and centralize them in a single package.

Some are meant to be replaced by real packages in a near future, like the `parse_args()` function: it is here only to prepare the ground for more global changes in W4M scripts and tools.

License AGPL (>= 3)

Encoding UTF-8

RoxygenNote 7.2.1

Imports methods

Suggests covr, DT, knitr, rmarkdown, testthat (>= 3.0.0)

Config/testthat/edition 3

VignetteBuilder knitr

Collate dataframe_helpers.R miniTools.R RcheckLibrary.R

NeedsCompilation no

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check_err	<i>Check Errors</i>
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Description

check_err Generic function stop in error if problems have been encountered

Usage

```
check_err(err_stock)
```

Arguments

err_stock vector of results returned by check functions

Value

NULL

Author(s)

M.Petera

convert_parameters	<i>Convert Parameters</i>
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Description

convert_parameters Applies a list of converters to each values on a list. If a value is modified during the conversion (successful conversion) then, no further convert will be applied to this value, so values are only converted once.

Usage

```
convert_parameters(args, converters)
```

Arguments

`args` a named list, which values will be converted.
`converters` a vector of function. Each function will be applied to each values with the exception of values already converted by a previous converter.

Value

a named list object with values converted by converters.

Author(s)

L.Pavot

Examples

```
boolean_converter <- function(x) {  
  return(if (x == "TRUE") TRUE else if (x == "FALSE") FALSE else x)  
}  
parameters <- W4MRUtils::convert_parameters(  
  list("x" = "TRUE"),  
  c(boolean_converter)  
)  
print(parameters$`some-parameter`)  
## "TRUE" has becomes TRUE.
```

`df_force_numeric` *Convert data frame to numeric.*

Description

`df_force_numeric` Converts integer columns of a data frame into numeric.

Usage

```
df_force_numeric(df, cols = NULL)
```

Arguments

`df` The data frame.
`cols` The set of columns to convert to numeric. By default (when set to NULL) all integer columns are converted. Set it to a character vector containing the names of the columns you want to convert, or to an integer vector containing the indices of the columns. Can be used to force conversion of non integer columns.

Value

The converted data.frame.

Examples

```
# Convert an integer data frame
df <- data.frame(a = as.integer(c(1, 4)), b = as.integer(c(6, 5)))
df <- W4MRUtils::df_force_numeric(df)
```

df_is	<i>Test type of a data frame.</i>
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Description

df_is This function tests if the columns of a data frame are all of the same type.

Usage

```
df_is(df, type)
```

Arguments

df	The data frame.
type	The type you expect the columns to have. It must be one of the R base types: - 'character' ; - 'factor' ; - 'integer' ; - 'numeric' ; - 'logical'.

Value

TRUE or FALSE.

Examples

```
# Test if a data frame contains only integers
df <- data.frame(a = c(1, 4), b = c(6, 5))
# should return FALSE since in R all integers are converted to
# numeric by default.
W4MRUtils::df_is(df, "integer")
# should return TRUE.
W4MRUtils::df_is(df, "numeric")
```

df_read_table	<i>Data frame loading from a file.</i>
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Description

df_read_table Reads a data frame from a file and possibly convert integer columns to numeric. This function calls the built-in read.table() method and then W4MRUtils::df_force_numeric().

Usage

```
df_read_table(file, force_numeric = FALSE, ...)
```

Arguments

file	The path to the file you want to load. See read.table() documentation for more information.
force_numeric	If set to TRUE, all integer columns will be converted to numeric.
...	Parameter to transmit to the read.table function.

Value

The loaded data frame.

Examples

```
# Load a data frame from a file and convert integer columns
file_path <- system.file(
  "extdata",
  "example_df_read_table.csv",
  package="W4MRUtils"
)
str(W4MRUtils::df_read_table(
  file_path,
  sep = ",",
  force_numeric = TRUE,
  header=TRUE
))
```

match2	<i>Table match check functions</i>
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Description

match2 To check if data_matrix and (variable or sample)metadata match regarding identifiers

Usage

```
match2(data_matrix, metadata, metadata_type)
```

Arguments

data_matrix data.frame containing data_matrix
metadata data.frame containing sample_metadata or variable_metadata
metadata_type "sample" or "variable" depending on metadata content

Value

character vector a list of errors encountered

Author(s)

M.Petera

match3	<i>match3</i>
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Description

match3 To check if the 3 standard tables match regarding identifiers

Usage

```
match3(data_matrix, sample_metadata, variable_metadata)
```

Arguments

data_matrix data.frame containing data_matrix
sample_metadata data.frame containing sample_metadata
variable_metadata data.frame containing variable_metadata

Value

character vector a list of errors encountered

Author(s)

M.Petera

 mini_tools

Mini tools for Galaxy scripting

Description

Mini tools for Galaxy scripting Mini tools for Galaxy scripting Coded by: M.Petera,

R functions to use in R scripts and wrappers to make things easier (lightening code, reducing verbose...)

V0: script structure + first functions V1: addition of functions to handle special characters in identifiers

 parse_args

Parse Command arguments

Description

parse_args Replacement for the parseCommandArgs utility from batch. Note that inputs like script.R some-list c(1, 2, 3) will result in args\$some-list to be the string "c(1, 2, 3)", and not a vector anymore as this ability was permitted by dangerous behaviours from the batch package (the usage of eval which MUST NEVER be used on user's inputs).

To get a list of numeric from users, instead of using the c(1, 2) trick, please, use regular lists parsing:

```
> args$`some-list`
[1] "1,2"
args$`some-list` <- as.numeric(strsplit(args$`some-list`, ",")[[1]])
> args$`some-list`
[1] 1 2
```

Usage

```
parse_args(args = NULL, convert_booleans = TRUE, convert_numerics = TRUE)
```

Arguments

`args` optional, provide arguments to parse. This function will use `'commandArgs()'` if `args` is not provided

`convert_booleans` logical - tells the function to convert values into logical if their value is "TRUE" or "FALSE".

`convert_numerics` logical - tells the function to convert values into numeric if possible.

Value

a named list object containing the input parameters in values and the parameters names in names

Author(s)

L.Pavot

Examples

```
parameters <- W4MRUtils::parse_args()
print(parameters$`some-parameter`)
```

R Check Tools

R check Tools

Description

R functions to use in R scripts (management of various generic subroutines)

V0: script structure + first functions V1: More detailed error messages in match functions

Author(s)

M.Petera,

reproduce_id	<i>Reproduce ID</i>
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Description

reproduce_id reproduce_id() reinjects original identifiers and original order into final tables

Usage

```
reproduce_id(data_matrix, metadata, metadata_type, id_match)
```

Arguments

data_matrix	data.frame containing data_matrix
metadata	data.frame containing samplemetadata or variablemetadata
metadata_type	"sample" or "variable" depending on metadata content
id_match	'id_match' element produced by stock_id

Value

a named list with two elements: data_matrix: the processed data matrix with its original names and order metadata: the processed metadata, with its original names and order.

Author(s)

M.Petera

Examples

```
myDM <- data.frame(data = 1:6, a = 2:7, b = 3:8, c = 2:7, d = 3:8, e = 2:7)
myvM <- data.frame(variable = 1:6, x = 4:9, y = 2:7, z = 3:8)

A <- W4MRUtils::stock_id(myDM, myvM, "variable")
myDM <- A$dataMatrix
myvM <- A$Metadata
A <- A$id.match

## processing that may change order or requires specific identifiers format
## ...
datamatrix <- as.data.frame(myDM)
sample_metadata <- as.data.frame(myvM)

B <- W4MRUtils::reproduce_id(datamatrix, sample_metadata, "variable", A)
datamatrix <- B$dataMatrix
sample_metadata <- B$Metadata
```

shy_lib

Shy Lib

Description

shy_lib Function to call packages without printing all the verbose (only getting the essentials, like warning messages for example)

Usage

```
shy_lib(...)
```

Arguments

... Name of libraries to load

Value

a list of attached packages

Author(s)

M.Petera

Examples

```
W4MRUtils::shy_lib("base", "utils")
```

source_local*source local*

Description

source_local Transforms a path to be relative to the main script, and sources the path. This helps source files located relatively to the main script without the need to know from where it was run.

Usage

```
source_local(...)
```

Arguments

... paths, character vector of file paths to source

Value

a vector resulting from the sourcing of the files provided.

Examples

```
W4MRUtils::source_local("example.R", "RcheckLibrary.R")
```

stock_id	<i>Stock ID</i>
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Description

stock_id Functions to stock identifiers before applying make.names() and to reinject it into final matrices. stock_id stocks original identifiers and original order needs checked data regarding table match.

Usage

```
stock_id(data_matrix, metadata, metadata_type)
```

Arguments

data_matrix a data.frame containing the data_matrix
 metadata a data.frame containing samplemetadata or variablemetadata
 metadata_type "sample" or "variable" depending on metadata content

Value

a names list with three elements:

- id.match a data.frame that contains original order of ids, names ;
- dataMatrix the modified data matrix with names sanitized
- Metadata the modified metadata matrix with names sanitized This object can be used in reproduce_id() to replace sanitized names in data matrix by original ones, in the right order.

Author(s)

M.Petera

Examples

```
myDM <- data.frame(data = 1:6, a = 2:7, b = 3:8, c = 2:7, d = 3:8, e = 2:7)
myvM <- data.frame(variable = 1:6, x = 4:9, y = 2:7, z = 3:8)

A <- W4MRUtils::stock_id(myDM, myvM, "variable")
myDM <- A$dataMatrix
myvM <- A$Metadata
A <- A$id.match

## processing that may change order or requires specific identifiers format
## ...
datamatrix <- as.data.frame(myDM)
sample_metadata <- as.data.frame(myvM)

B <- W4MRUtils::reproduce_id(datamatrix, sample_metadata, "variable", A)
datamatrix <- B$dataMatrix
sample_metadata <- B$Metadata
```

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