

Package ‘rjdworkspace’

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Type Package

Title Manipulate 'JDemetra+' Workspaces

Version 1.1.9

Description Set of tools to manipulate the 'JDemetra+' workspaces.

Based on the 'RJDemetra' package (which interfaces with version 2 of the 'JDemetra+' (<<https://github.com/jdemetra/jdemetra-app>>), the seasonal adjustment software officially recommended to the members of the European Statistical System (ESS) and the European System of Central Banks).

This package provides access to additional workspace manipulation functions such as meta-data manipulation, raw paths and wrangling of several workspaces simultaneously.

These additional functionalities are useful as part of a CVS data production chain.

Depends R (>= 3.1.1)

Imports rJava (>= 0.9-8), RJDemetra, XML

License EUPL

URL <https://github.com/InseeFrLab/rjdworkspace>

BugReports <https://github.com/InseeFrLab/rjdworkspace/issues>

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copy_ws	<i>Copy a WS</i>
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Description

Copy a WS

Usage

```
copy_ws(ws_name, from, to = tempdir(), overwrite = TRUE, verbose = TRUE)
```

Arguments

ws_name	the name of the WS
from	the path to the folder containing the WS (the XML file + the WS folder)
to	the path to the new folder which will contains the WS (the XML file + the WS folder)
overwrite	Overwrite existing file (Defaults to TRUE)
verbose	A boolean to print indications on the processing status (optional and TRUE by default)

Value

the function returns invisibly (with invisible()) a boolean specifying if the transfer was done or an error if the specified paths or workspace don't exists

Examples

```
# Déplacement d'un WS dans un environnement temporaire
destination_dir <- tempdir()

# Copy of a workspace in a temporary environment
copy_ws(
  ws_name = "ws_output",
  from = file.path(system.file("extdata", package = "rjdworkspace"), "WS"),
  to = destination_dir
)
```

get_comment

*Extract comments***Description**

Function to extract the comments of a workspace

Usage

```
get_comment(x)
```

Arguments

x the object from which the comments are retrieved.

Value

A string or list of string with all the comment contained in a SA-Item, a SA-Processing or a workspace (depending on the argument x).

Examples

```
library("RJDemetra")
ws_dir <- file.path(system.file("extdata", package = "rjdworkspace"), "WS")

path_ws_to <- file.path(ws_dir, "ws_output.xml")

ws_output <- load_workspace(path_ws_to)
print(get_comment(ws_output))

sap_output <- get_object(ws_output, pos = 3)
print(get_comment(sap_output))

sa_item <- get_object(sap_output, pos = 3)
print(get_comment(sa_item))
```

manipulate_sa_item *Manipulate Saltems*

Description

Functions to remove/replace/add a sa_item from/to a SA-Processing.

Usage

```
remove_sa_item(sap, pos = 1L)

remove_all_sa_item(sap)

replace_sa_item(sap, pos = 1L, sa_item)

add_new_sa_item(sap, sa_item)
```

Arguments

sap	the SA-Processing.
pos	the index of the sa_item to remove or to replace.
sa_item	sa_item object.

Value

The functions remove_sa_item(), remove_all_sa_item() and replace_sa_item() return invisibly (with invisible()) TRUE or an error. The function add_new_sa_item() returns invisibly (with invisible()) the updated SA-Item.

Examples

```
library("RJDemetra")

sa_x13 <- jx13(series = ipi_c_eu[, "FR"])
sa_ts <- jtramoSeats(series = ipi_c_eu[, "FR"])

wk <- new_workspace()
sap1 <- new_multiprocessing(workspace = wk, name = "sap-1")
add_sa_item(workspace = wk, multiprocessing = "sap-1",
             sa_obj = sa_x13, name = "X13")
add_sa_item(workspace = wk, multiprocessing = "sap-1",
             sa_obj = sa_ts, name = "TramoSeats")

sa_item1 <- get_object(x = sap1, pos = 1L)

remove_sa_item(sap = sap1, pos = 1L) # Remove the first sa-item
add_new_sa_item(sap = sap1, sa_item = sa_item1) # Add the sa-item at the end
```

```
# To replace the first sa_item by "sa_item1"
replace_sa_item(sap = sap1, pos = 1L, sa_item = sa_item1)
```

replace_series

Partial update of a workspace metadata

Description

replace_series() allows to update a selection of series by the same-named series from another workspace. When only the metadata differs, it is the partial version of the update_metadata function.

Generic function to identify and return the duplicates in a list

Usage

```
replace_series(
  ws_from,
  ws_to,
  selected_series,
  mp_from_name,
  mp_to_name,
  verbose = TRUE
)

verif_duplicates(s)

verif_ws_duplicates(ws, verbose = TRUE)
```

Arguments

ws_from	The workspace containing the most up-to-date version of the selected_series series
ws_to	The workspace to update
selected_series	The vector containing the series-to-update's names.
mp_from_name	The name of the SA-Processing containing the series to update (optional)
mp_to_name	The name of the SA-Processing to update (optional)
verbose	A boolean to print indications on the processing status (optional and TRUE by default)
s	a list of characters
ws	The workspace to scan

Details

If the arguments `mp_from_name` & `mp_to_name` are unspecified, the update will be performed using the workspaces' first `SAProcessing`. If a series is specified in the `selected_series` vector is missing in a workspace, no replacement will be performed and the function will return the list of missing series. Otherwise, if all is well, the function returns the workspace `ws_to` updated.

`verif_duplicates()` identifies and returns the duplicates in a list `verif_ws_duplicates()` identifies duplicated series in a `SAProcessing` (SAP) and `SAProcessings` in a workspace

Value

the updated workspace

If there are no duplicates, the function returns an empty data frame. Otherwise, it returns a data frame giving the name and number of duplicates found within the argument (list).

a list containing the name and number of occurrences of duplicated SAPs and series

Examples

```
library("RJDemetra")
dir_ws <- tempdir()
template_ws <- file.path(system.file("extdata", package = "rjdworkspace"),
                          "WS")

# Moving the WS in a temporary environment
copy_ws(
  ws_name = "ws_output",
  from = template_ws,
  to = dir_ws
)
copy_ws(
  ws_name = "ws_input",
  from = template_ws,
  to = dir_ws
)
path_ws_from <- file.path(dir_ws, "ws_input.xml")
path_ws_to <- file.path(dir_ws, "ws_output.xml")
ws_input <- load_workspace(path_ws_from)
ws_output <- load_workspace(path_ws_to)

replace_series(
  ws_from = ws_input,
  ws_to = ws_output,
  mp_from_name = "SAProcessing-2",
  mp_to_name = "SAProcessing-2",
  selected_series = c("RF1039", "RF1041"),
  verbose = TRUE
)

s <- c("a", "b", "a", "c", "a", "c")
print(rjdworkspace::verif_duplicates(s))
```

set_comment	<i>Change comment</i>
-------------	-----------------------

Description

Function to change the comments of a sa_item object

Usage

```
set_comment(x, comment)
```

Arguments

x	the sa_item of which the comments will be changed.
comment	the new comment.

Value

a new sa_item.

set_metadata	<i>Set the metadata of a SaItem</i>
--------------	-------------------------------------

Description

Function to set the name of a "sa_item" from the one contained in another "sa_item".

Usage

```
set_metadata(sa_from, sa_to)
```

Arguments

sa_from	the "sa_item" object from which the desired metadata is retrieved.
sa_to	the "sa_item" object to modify.

Value

a new "sa_item" with the specification of sa_to and the metadata of sa_from.

set_name	<i>Set the name of a SaItem</i>
----------	---------------------------------

Description

Function to set the name of a "sa_item".

Usage

```
set_name(sa_item, name)
```

Arguments

sa_item	a "sa_item" object.
name	the new name.

Value

a new "sa_item" with the new name.

Examples

```
library("RJDemetra")

sa_x13 <- jx13(series = ipi_c_eu[, "FR"])

wk <- new_workspace()
sap1 <- new_multiprocessing(workspace = wk, name = "sap-1")

add_sa_item(workspace = wk, multiprocessing = "sap-1",
            sa_obj = sa_x13, name = "Wrong name")

sa_item1 <- get_object(x = sap1, pos = 1L)

new_sa_item <- set_name(sa_item = sa_item1, name = "Good name")
replace_sa_item(sap = sap1, pos = 1L, sa_item = new_sa_item)

# The first sa_item of sap1 is now "Good name"
get_name(x = get_object(x = sap1, pos = 1L))
```

set_spec

Set the specification of a SalItem

Description

Function to set the specification of a "sa_item".

Usage

```
set_spec(sa_item, spec)
```

Arguments

sa_item	a "sa_item" object.
spec	the object into which the new specification is extracted/stored.

Value

a new "sa_item" with the new specification

Examples

```
library("RJDemetra")

sa_x13 <- jx13(series = ipi_c_eu[, "FR"])
sa_ts <- jtramo_seats(series = ipi_c_eu[, "FR"])

wk <- new_workspace()
sap1 <- new_multiprocessing(workspace = wk, name = "sap-1")

add_sa_item(
  workspace = wk,
  multiprocessing = "sap-1",
  sa_obj = sa_x13,
  name = "tramo seats"
)

sa_item1 <- get_object(x = sap1, pos = 1L)
new_sa_item <- set_spec(sa_item = sa_item1, spec = sa_ts)

# The first sa_item is now seasonally adjusted with TRAMO-SEATS
replace_sa_item(sap = sap1, pos = 1, sa_item = new_sa_item)
```

set_ts*Change the input time series of a Saltem*

Description

Function to change the input time series of a Saltem

Usage

```
set_ts(sa_item, ts)
```

Arguments

sa_item	the sa_item to modify.
ts	the new <code>stats::ts()</code> object.

Value

a sa_item

Examples

```
library("RJDemetra")

# Definition of the original time series
sa_x13 <- jx13(series = ipi_c_eu[, "FR"])

wk <- new_workspace()
sap1 <- new_multiprocessing(workspace = wk, name = "sap-1")

# Adding a new SA-Item (`sa_x13`) to `sap1`
add_sa_item(workspace = wk, multiprocessing = "sap-1",
            sa_obj = sa_x13, name = "X13")

# Retrieving the adjusted series
sa_item1 <- get_object(x = sap1, pos = 1L)

# Creation of a new sa_item and change of the input time series
new_sa_item <- set_ts(sa_item = sa_item1, ts = ipi_c_eu[, "BE"])
# Replacement of the series in the workspace
replace_sa_item(sap = sap1, pos = 1L, sa_item = new_sa_item)
```

transfer_series	<i>Transfer_series</i>
-----------------	------------------------

Description

To copy & paste series from one workspace to another

Usage

```
transfer_series(
  ws_from,
  ws_to,
  selected_series,
  pos_sap_from,
  pos_sap_to,
  name_sap_from,
  name_sap_to,
  verbose = TRUE,
  create_sap = TRUE,
  replace_series = TRUE
)
```

Arguments

ws_from	The workspace containing the additionnal series
ws_to	The workspace to add series to
selected_series	The vector containing the series-to-update's names.
pos_sap_from	The position of the SA-Processing to transfer the series from
pos_sap_to	The position of the SA-Processing to transfer the series to
name_sap_from	The name of the SA-Processing to transfer the series from (optional)
name_sap_to	The name of the SA-Processing to transfer the series to (optional)
verbose	A boolean to print indications on the processing status (optional and TRUE by default)
create_sap	A boolean to create a new SA-Processing if not existing (optional)
replace_series	A boolean to replace existing series (optional)

Details

To use this function you need to first launch `load_workspace` and after `save_workspace` to save the changes.

`name_sap_to` and `name_sap_from` refer to the SAP's name and not SAP's file's name.

The transfer will fail if: - `name_sap_from` doesn't exist - `pos_sap_from` < 0 or exceed the maximum number of SAP - `pos_sap_to` < 0 or exceed the maximum number of SAP - The arguments

pos_sap_from and name_sap_from are referring to different objects. - The arguments pos_sap_to and name_sap_to are referring to different objects.

If name_sap_to and pos_sap_to are unspecified, the update will be performed using the workspaces' first SAProcessing (same for the SAP from). However if the informations of one on the two SAP (from or to) are specified (name or position), they will be attributed by default to the other workspace.

If name_sap_to doesn't refer to an existing SAP, a new SAP will be created (if create_sap is TRUE).

If a sa_item has a specification which uses external regressor, you have to be sure that the regressors are also in the destination workspace.

Value

the workspace ws_to augmented with series present in ws_from and not already in ws_to

Examples

```
library("RJDemetra")
dir_ws <- tempdir()
template_ws <- file.path(system.file("extdata", package = "rjdworkspace"),
                           "WS")

# Moving the WS in a temporary environment
copy_ws(
  ws_name = "ws_output",
  from = template_ws,
  to = dir_ws
)
copy_ws(
  ws_name = "ws_input",
  from = template_ws,
  to = dir_ws
)
path_ws_from <- file.path(dir_ws, "ws_input.xml")
path_ws_to <- file.path(dir_ws, "ws_output.xml")
ws_input <- load_workspace(path_ws_from)
ws_output <- load_workspace(path_ws_to)

# Existing SAP
transfer_series(
  ws_from = ws_input,
  ws_to = ws_output,
  name_sap_from = "SAProcessing-1",
  name_sap_to = "SAProcessing-1",
  verbose = TRUE
)

transfer_series(
  ws_from = ws_input,
  ws_to = ws_output,
  pos_sap_from = 1,
  pos_sap_to = 1,
```

```

        verbose = TRUE
    )

    # Existing series
    transfer_series(
        ws_from = ws_input, ws_to = ws_output,
        pos_sap_from = 2,
        pos_sap_to = 2,
        verbose = TRUE,
        replace_series = FALSE
    )
    transfer_series(
        ws_from = ws_input, ws_to = ws_output,
        pos_sap_from = 2,
        pos_sap_to = 2,
        verbose = TRUE,
        replace_series = TRUE
    )

    # Create a new SAP
    # transfer_series(ws_from = ws_input, ws_to = ws_output,
    #               name_sap_from = "SAProcessing-1",
    #               name_sap_to = "New-SAProcessing-from-R",
    #               verbose = TRUE,
    #               create = FALSE)

    transfer_series(
        ws_from = ws_input, ws_to = ws_output,
        name_sap_from = "SAProcessing-1",
        name_sap_to = "New-SAProcessing-from-R",
        verbose = TRUE,
        create = TRUE
    )

    RJDemetra::save_workspace(workspace = ws_output, file = path_ws_to)

```

update_metadata

Update the metadata from a workspace

Description

Functions to update the metadata of a workspace by those contained in another one

Usage

```
update_metadata(ws_from, ws_to)
```

```
update_metadata_roughly(ws_from, ws_to)
```

Arguments

ws_from Workspace that contains the new metadata.
ws_to Workspace to update.

Details

update_metadata() checks the SA-Processings and Saltems' names within the two workspaces before updating ws_to's metadata. update_metadata_roughly() does not do any checks: ws_to's first SA-Processing's first Saltem metadata is updated with ws_from's first SA-Processing's first Saltem metadata. Both functions create and return a new workspace containing the updated series.

Value

the updated workspace

Examples

```
library("RJDemetra")

path_to_ws1 <- file.path(
  system.file("extdata", package = "rjdworkspace"),
  "WS/ws_example_1.xml"
)
path_to_ws2 <- file.path(
  system.file("extdata", package = "rjdworkspace"),
  "WS/ws_example_2.xml"
)

ws_1 <- load_workspace(path_to_ws1)
compute(ws_1)
ws_2 <- load_workspace(path_to_ws2)
compute(ws_2)

updated_workspace <- update_metadata_roughly(ws_from = ws_1, ws_to = ws_2)
path_to_output <- file.path(tempdir(), "ws_update_meta_roughly.xml")
save_workspace(workspace = updated_workspace, file = path_to_output)

updated_workspace <- update_metadata(ws_from = ws_1, ws_to = ws_2)
path_to_output <- file.path(tempdir(), "ws_update_meta.xml")
save_workspace(workspace = updated_workspace, file = path_to_output)
```

update_path

Update the path to the raw series file

Description

Function to update the path of the raw data file in a workspace. This function works with .csv, .xls and .xlsx format.

Usage

```
update_path(ws_xml_path, raw_data_path, pos_sap, pos_sa_item, verbose = TRUE)
```

Arguments

ws_xml_path	the path to the xml file of the workspace
raw_data_path	the new path to the raw data
pos_sap	the index of the SA-Processing containing the series (Optional)
pos_sa_item	the index of the SA-Item containing the series (Optional)
verbose	A boolean to print indications on the processing status (optional and TRUE by default)

Details

The argument `pos_sap` and `pos_sa_item` are optional. If `pos_sa_item` is not supplied, all SA-Item will be updated. If `pos_sap` is not supplied, all SA-Processing will be updated.

If `pos_sa_item` is supplied, `pos_sap` must be specified.

It's also important that the new data file has the same structure as the previous file : - same column names - same column position - same extension and format (.csv, .xls or .xlsx)

Value

the workspace `ws_to` augmented with series present in `ws_from` and not already in `ws_to`

Examples

```
library("RJDemetra")
new_dir <- tempdir()
ws_template_path <- file.path(system.file("extdata", package = "rjdworkspace"),
                               "WS")

# Moving the WS in a temporary environment
copy_ws(
  ws_name = "ws_example_path",
  from = ws_template_path,
  to = new_dir
)

# Moving the raw data in a temporary environment
data_path <- file.path(system.file("extdata", package = "rjdworkspace"),
                       "data_file.csv")

file.copy(
  from = data_path,
  to = new_dir
)

path_ws <- file.path(new_dir, "ws_example_path.xml")
new_raw_data_path <- file.path(new_dir, "data_file.csv")
```

```
update_path(  
    ws_xml_path = path_ws,  
    raw_data_path = new_raw_data_path,  
    pos_sap = 1L,  
    pos_sa_item = 1L:2L  
)  
update_path(  
    ws_xml_path = path_ws,  
    raw_data_path = new_raw_data_path,  
    pos_sap = 1L  
)  
update_path(  
    ws_xml_path = path_ws,  
    raw_data_path = new_raw_data_path  
)
```

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