Package ‘mlstrOpalr’

June 23, 2023

Type Package

Title Support Compatibility Between 'Maelstrom' R Packages and 'Opal' Environment

Version 1.0.0

Description The goal of this package is to provide functions to support compatibility between 'Maelstrom' R packages and 'Opal' environment. 'Opal' is the 'OBiBa' core database application for biobanks. It is used to build data repositories that integrates data collected from multiple sources. 'Opal Maelstrom' is a specific implementation of this software. This 'Opal' client is specifically designed to interact with 'Opal Maelstrom' distributions to perform operations on the R server side. The user must have adequate credentials. Please see <https://opaldoc.obiba.org/en/dev/> for complete documentation.

License GPL-3

LazyData true

Depends R (>= 3.4)

Imports dplyr, rlang, tidyr, stringr, tools, opalr, fabR, madshapR

URL https://github.com/maelstrom-research/mlstrOpalr/

BugReports https://github.com/maelstrom-research/mlstrOpalr/issues

RoxygenNote 7.2.3

Suggests knitr

VignetteBuilder knitr

Encoding UTF-8

Language en-US

NeedsCompilation no

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data_dict_opalr_fix

Transform a data dictionary object from 'opalr' format to Opal format

Description

Transforms a data dictionary from 'opalr' format to Opal format. A data dictionary imported using the 'opalr' package has a different structure and will be transformed to the structure used in Maelstrom packages.

Usage

data_dict_opalr_fix(data_dict)

Arguments

data_dict A list of tibble(s) representing meta data to be transformed. Automatically generated if not provided.

Details

Opal is the OBiBa application for data management, and Opal environments can be integrated with RStudio environments using the package opalr. The user must have adequate credentials to interact with a specific Opal environment. Some function errors produced may be associated with the handler or Opal read/write permissions.

Value

A list of tibble(s) identifying a data dictionary.
See Also

Please see Opal documentation for complete documentation. madshapR::as_data_dict_mlstr()

Examples

```r
library(opalr)
opal <-
opal.login('administrator', 'password',
  url = 'https://opal-demo.obiba.org/')

# use DEMO_files provided by the package
library(madshapR)
library(stringr)

dossier <-
  DEMO_files[str_detect(names(DEMO_files), "dataset_MELBOURNE")]

tempdir <- basename(tempdir())
try(opal_project_create(opal, tempdir))

try(
opal_tables_push(
  opal, dossier, project_name = tempdir, .force = TRUE, .overwrite = TRUE))

# get the data dictionary and reshape it.
data_dict <-
  try(
    opal.table_dictionary_get(
      opal, project = tempdir, table = "dataset_MELBOURNE_1"))

data_dict <- try(data_dict_opalr_fix(data_dict))
```

Description

This function is a direct call to the documentation in the repository hosting the package. The user can access the description of the latest version of the package, the vignettes, and the list of functions.

Usage

mlstrOpalr_help()
opal_files_pull

Value

Nothing to be returned. The function opens a web page.

Examples

{
  mlstrOpalr_help()
}

opal_files_pull  Download files from an Opal environment

Description

Downloads files from an Opal environment to the local environment. This is a wrapper function for opalr::opal.file_download().

Usage

opal_files_pull(opal, from, to)

Arguments

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>opal</td>
<td>Opal login attributes.</td>
</tr>
<tr>
<td>from</td>
<td>A character string of a path where the files will be taken from in R.</td>
</tr>
<tr>
<td>to</td>
<td>A character string of a path where the files will be placed to in Opal.</td>
</tr>
</tbody>
</table>

Details

Opal is the OBiBa application for data management, and Opal environments can be integrated with RStudio environments using the package opalr. The user must have adequate credentials to interact with a specific Opal environment. Some function errors produced may be associated with the handler or Opal read/write permissions.

Value

Folder(s) containing files coming from Opal in user R environment.

See Also

Please see Opal documentation for complete documentation.
opal_files_push

Examples

```{
library(opalr)
opal <-
  opal.login('administrator','password',
    url = 'https://opal-demo.obiba.org/')

tempdir <- tempdir()
invisible(dir.create(paste0(tempdir,"/a_file")))
invisible(file.create(paste0(tempdir,"/a_file","/file.txt")))
try(opal_files_push(opal, from = paste0(tempdir,"/a_file"), to = tempdir))
try(opal_files_pull(opal, from = paste0(tempdir,"/a_file"), to = tempdir))
}
```

opal_files_push

Upload files to an Opal environment

Description

Uploads files from the local environment to an Opal environment. This is a wrapper function for `opalr::opal.file_upload()`.

Usage

opal_files_push(opal, from, to)

Arguments

- **opal**: Opal login attributes.
- **from**: A character string of a path where the files will be taken from in R.
- **to**: A character string of a path where the files will be placed to in Opal.

Details

Opal is the OBiBa application for data management, and Opal environments can be integrated with RStudio environments using the package opalr. The user must have adequate credentials to interact with a specific Opal environment. Some function errors produced may be associated with the handler or Opal read/write permissions.

Value

Folder(s) containing files coming from the user R environment in Opal. The path to Opal needs to be pasted with Opal absolute path.
opal_project_create

Create a project in an Opal environment

Description

Creates an empty project in an Opal environment. This is a wrapper function for opalr::opal.project_create().

Usage

opal_project_create(opal, project, tag = NULL)

Arguments

opal  Opal login attributes.
project  A character string to name the project in Opal.
tag  A character string to provide a tag for the Opal project.

Details

Opal is the OBiBa application for data management, and Opal environments can be integrated with RStudio environments using the package opalr. The user must have adequate credentials to interact with a specific Opal environment. Some function errors produced may be associated with the handler or Opal read/write permissions.

Value

A project in an Opal environment. If the project already exists, it will remain as it is, and no new project is created. The user must have adequate credentials to interact with their Opal environment.

See Also

Please see Opal documentation for complete documentation.

Examples

{

library(opalr)
opal <-
  opal.login('administrator','password',
    url ='https://opal-demo.obiba.org/

  tempdir <- tempdir()
invisible(dir.create(paste0(tempdir,"/a_file")))
invisible(file.create(paste0(tempdir,"/a_file","/file.txt")))
try(opal_files_push(opal, from = paste0(tempdir,"/a_file"), to = tempdir))

}
opal_tables_pull

See Also

Please see Opal documentation for complete documentation.

Examples

```
{

  library(opalr)
  opal <-
    opal.login('administrator','password',
               url = 'https://opal-demo.obiba.org/')

  tempdir <- basename(tempdir())
  try(opal_project_create(opal, tempdir))

}
```

opal_tables_pull  Download tables from an Opal project as a dossier

Description

Downloads a dossier or dataset from an Opal environment to the local environment. This is a
wrapper function for `opalr::opal.table_get()` and `opalr::opal.table_dictionary_get()`.

Usage

```
opal_tables_pull(
  opal,
  project,
  table_list = NULL,
  content = c("dataset", "data_dict"),
  keep_as_dossier = TRUE,
  .remove_id = FALSE
)
```

Arguments

- **opal**: Opal login attributes.
- **project**: A character string specifying the Opal project name.
- **table_list**: A vector character string specifying Opal tables name.
- **content**: A vector of character string which indicates if the function returns a dataset, or
data dictionary. Default is 'dataset'.
- **keep_as_dossier**: whether to return a dossier or a dataset if there is only one table. TRUE by
default, if FALSE returns dataset.
- **.remove_id**: whether to return the id column created in Opal or not. TRUE by default.
Details

Opal is the OBiBa application for data management, and Opal environments can be integrated with RStudio environments using the package opalr. The user must have adequate credentials to interact with a specific Opal environment. Some function errors produced may be associated with the handler or Opal read/write permissions.

Value

Objects (tibbles and list of tibbles) representing tables and their respective data dictionary.

See Also

Please see Opal documentation for complete documentation. madshapR::as_dossier() madshapR::as_dataset() madshapR::as_data_dict_mistr()

Examples

```r
library(opalr)
opal <-
opal.login('administrator', 'password',
  url = 'https://opal-demo.obiba.org/')

# use DEMO_files provided by the package
library(madshapR)
library(stringr)
dossier <-
  DEMO_files[str_detect(names(DEMO_files), "dataset_MELBOURNE")]

tempdir <- basename(tempdir())
try(opal_project_create(opal, tempdir))

try(
  opal_tables_push(
    opal, dossier, project_name = tempdir, .force = TRUE, .overwrite = TRUE))

###### Example pull a table from a project.
try(
  opal_tables_pull(
    opal, project = tempdir, table_list = 'dataset_MELBOURNE_1'))
```
opal_tables_push

Upload datasets into an Opal environment as tables in an Opal project

Description

Uploads a dossier or dataset from the local environment to an Opal environment. This is a wrapper function for opalr::opal.table_create(), opalr::opal.table_save() and opalr::opal.table_dictionary_update().

Usage

```r
opal_tables_push(
  opal,
  dossier = NULL,
  data_dict = NULL,
  dataset = NULL,
  table_name = NULL,
  project_name,
  .force = FALSE,
  .overwrite = FALSE
)
```

Arguments

- **opal**: Opal login attributes.
- **dossier**: List of tibble, each of them being datasets.
- **data_dict**: A list of tibble(s) representing meta data of an associated dataset. Automatically generated if not provided.
- **dataset**: A tibble identifying the input dataset observations associated to its data dictionary.
- **table_name**: A character string specifying an Opal table name.
- **project_name**: A character string specifying the Opal project name.
- **.force**: If the destination already exists, stop with an informative message if this flag is FALSE (default).
- **.overwrite**: If the destination table already exists, it will be replaced (deleted, re-created with associated permissions reinstated and then imported). Otherwise the table will be updated (data dictionaries merge may conflict). Default is FALSE.*

Details

Opal is the OBiBa application for data management, and Opal environments can be integrated with RStudio environments using the package opalr. The user must have adequate credentials to interact with a specific Opal environment. Some function errors produced may be associated with the handler or Opal read/write permissions.
Value

A table or table(s) in Opal.

See Also

Please see Opal documentation for complete documentation. madshapR::as_dossier() madshapR::as_dataset() madshapR::as_data_dict_mlstr()

Examples

```r
library(opalr)
opal <-
opal.login('administrator','password',
    url = 'https://opal-demo.obiba.org/')

# use DEMO_files provided by the package
library(madshapR)
library(stringr)

dossier <- DEMO_files[str_detect(names(DEMO_files),"dataset_MELBOURNE")]

tempdir <- basename(tempdir())
try(opal_project_create(opal, tempdir))

# push a table in a project.
try(
    opal_tables_push(
        opal,
        dataset = dossier$dataset_MELBOURNE_1,
        table_name = 'dataset_MELBOURNE_1',
        project_name = tempdir,
        .force = TRUE,
        .overwrite = TRUE))
```

---

taxonomy_opal_get  Get available taxonomies in format used by Opal

Description

Downloads all taxonomies from an Opal server in a specific tibble format used by Opal.

Usage

taxonomy_opal_get(opal)
Arguments

opal  Opal login attributes.

Details

Opal is the OBiBa application for data management, and Opal environments can be integrated with RStudio environments using the package opalr. The user must have adequate credentials to interact with a specific Opal environment. Some function errors produced may be associated with the handler or Opal read/write permissions.

Value

A tibble identifying a taxonomy (generally generated from Opal taxonomy).

See Also

Please see Opal documentation for complete documentation. madshapR::as_taxonomy()

Examples

```r
library(opalr)
opal <-
opal.login('administrator','password',
     url = 'https://opal-demo.obiba.org/')

try(taxonomy_opal_get(opal))
```

---

**taxonony_opal_mlstr_get**

*Get available taxonomies in format used by Maelstrom Research*

Description

Downloads all taxonomies from an Opal server in a specific tibble format used in the Maelstrom Research ecosystem.

Usage

```r
taxonomy_opal_mlstr_get(opal = NULL)
```

Arguments

opal  Opal login attributes.
Details

Opal is the OBiBa application for data management, and Opal environments can be integrated with RStudio environments using the package opalr. The user must have adequate credentials to interact with a specific Opal environment. Some function errors produced may be associated with the handler or Opal read/write permissions.

Value

A tibble identifying a taxonomy (generally generated from Opal taxonomy).

See Also

Please see Opal documentation for complete documentation. madshapR::as_taxonomy()

Examples

```r
library(opalr)
opal <-
  opal.login('administrator','password',
  url = 'https://opal-demo.obiba.org/')

try(taxonomy_opal_get(opal))
```

<table>
<thead>
<tr>
<th>valueType_list</th>
<th>Built-in tibble of allowed valueType values</th>
</tr>
</thead>
</table>

Description

Provides a built-in tibble showing the list of allowed Opal valueType values and their corresponding R data types. This tibble is mainly used for internal processes and programming.

Usage

valueType_list

Format

tibble:
A data frame with 12 rows and 6 columns:
- **valueType** data type as described in Opal
- **typeof** data type provided by base::typeof
- **class** data class provided by base::class
The `valueType` is a property of a variable and is required in certain functions to determine the handling of the variables. The `valueType` refers to the OBiBa-internal type of a variable. It is specified in a data dictionary in a column `valueType` and can be associated with variables as attributes. Acceptable `valueType` include 'text', 'integer', 'decimal', 'boolean', datetime', 'date'). The full list of OBiBa `valueType` possibilities and their correspondence with R data types are available using `valueType_list`.

**See Also**

- Opal documentation

**Examples**

```r
{
  valueType_list
}
```
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