

Package ‘TKCat’

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Type Package

Title Tailored Knowledge Catalog

Version 1.0.7

Description Facilitate the management of data from knowledge resources that are frequently used alone or together in research environments.

In 'TKCat', knowledge resources are manipulated as modeled database (MDB) objects. These objects provide access to the data tables along with a general description of the resource and a detail data model documenting the tables, their fields and their relationships.

These MDBs are then gathered in catalogs that can be easily explored and shared.

Finally, 'TKCat' provides tools to easily subset, filter and combine MDBs and create new catalogs suited for specific needs.

URL <https://patzaw.github.io/TKCat/>, <https://github.com/patzaw/TKCat/>

BugReports <https://github.com/patzaw/TKCat/issues>

Depends R (>= 3.6), ReDaMoR (>= 0.7.0), magrittr, DBI, dplyr

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Author Patrice Godard [aut, cre, cph]

Maintainer Patrice Godard <patrice.godard@gmail.com>

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add_chMDB_user *Add a user to an MDB of a [chTKCat](#) object*

Description

Add a user to an MDB of a [chTKCat](#) object

Usage

```
add_chMDB_user(x, mdb, login, admin = FALSE)
```

Arguments

x	a chTKCat object
mdb	name of the modeled database
login	login of the user to drop
admin	if the user is an admin of the MDB

Value

No return value, called for side effects

add_chTKCat_collection
Import a collection in a [chTKCat](#) database

Description

Import a collection in a [chTKCat](#) database

Usage

```
add_chTKCat_collection(x, json, overwrite = FALSE)
```

Arguments

x	a chTKCat object
json	a single character indicating the collection to import. Can be: <ul style="list-style-type: none"> • a path to a file • the name of a local collection (see list_local_collections()) • the json text defining the collection
overwrite	a logical indicating if the existing collection should be replaced.

Value

No return value, called for side effects

add_collection_member *Add a collection member to an MDB*

Description

Add a collection member to an MDB

Usage

```
add_collection_member(x, collection, table, ...)
```

Arguments

x	an MDB object
collection	a collection title in list_local_collections()
table	the table providing the collection member
...	definition of the collection fields as lists (e.g. <code>be=list(static=TRUE, value="Gene")</code> or <code>organism=list(static=TRUE, value="Homo sapiens", type="Scientific name")</code>)

archive_chMDB *Archive a chMDB in a [chTKCat](#)*

Description

Archive a chMDB in a [chTKCat](#)

Usage

```
archive_chMDB(
  x,
  name,
  defaultTS = as.POSIXct("1970-01-01 00:00.0", tz = "UTC")
)
```

Arguments

x	a chTKCat object
name	the name of the database to archive
defaultTS	a default timestamp value to use when not existing in the DB (default: <code>as.POSIXct("1970-01-01 00:00.0", tz="UTC")</code>)

Value

No return value, called for side effects

as_chMDB	<i>Push an MDB object in a ClickHouse database</i>
----------	---

Description

Push an **MDB** object in a ClickHouse database

Usage

```
as_chMDB(x, tkcon, timestamp = Sys.time(), overwrite = FALSE, by = 10^5)
```

Arguments

x	an MDB object
tkcon	a chTKCat object
timestamp	a single POSIXct value as a timestamp for the chMDB instance. The default value is the current system time. If this value is smaller or equal to the chMDB current value, an error is thrown. If NA, the current instance is overwritten (if the overwrite parameter is set to TRUE) without changing the existing timestamp.
overwrite	a logical indicating if existing data should be overwritten (default: FALSE)
by	the size of the batch: number of records to write together (default: 10^5)

Value

A **chMDB** object.

as_fileMDB.chMDB	<i>Write an MDB object</i>
------------------	-----------------------------------

Description

Write an **MDB** object

Usage

```
## S3 method for class 'chMDB'
as_fileMDB(
  x,
  path,
  readParameters = list(delim = "\t", na = "<NA>"),
  htmlModel = TRUE,
  compress = TRUE,
  by = 10^5,
  ...
)

## S3 method for class 'fileMDB'
as_fileMDB(
  x,
  path,
  readParameters = list(delim = "\t", na = "<NA>"),
  htmlModel = TRUE,
  compress = TRUE,
  by = 10^5,
  ...
)

as_fileMDB(
  x,
  path,
  readParameters = list(delim = "\t", na = "<NA>"),
  htmlModel = TRUE,
  compress = TRUE,
  by = 10^5,
  ...
)

## S3 method for class 'memoMDB'
as_fileMDB(
  x,
  path,
  readParameters = list(delim = "\t", na = "<NA>"),
  htmlModel = TRUE,
  compress = TRUE,
  by = 10^5,
  ...
)

## S3 method for class 'metaMDB'
as_fileMDB(
  x,
  path,
```

```

readParameters = list(delim = "\t", na = "<NA>"),
htmlModel = TRUE,
compress = TRUE,
by = 10^5,
...
)

```

Arguments

x	an MDB object
path	the path where the MDB should be written
readParameters	The following parameters are currently supported: <ul style="list-style-type: none"> • delim: a single character used to separate fields within a record (default: <code>'\t'</code>) • quoted_na: a single logical indicating if missing values inside quotes should be treated as missing values or strings. WARNING: THIS PARAMETER IS NOT TAKEN INTO ACCOUNT WITH readr>=2.0.0. • na: String used for missing values. The default value for reading a fileMDB is "NA". But the default value for writing a fileMDB is ""<NA>"". This value is written in the DESCRIPTION.json file to avoid ambiguity when reading the fileMDB.
htmlModel	a logical. If TRUE (default) the model is also plotted in an html file.
compress	a logical specifying whether saving data is to use "gzip" compression (default: TRUE)
by	the size of the batch: number of records to write together (default: 10^5)
...	method specific parameters

Value

A [fileMDB](#) object.

as_memoMDB

Convert any MDB object in a [memoMDB](#) object

Description

Convert any MDB object in a [memoMDB](#) object

Usage

```
as_memoMDB(x, ...)
```

Arguments

x	a MDB object
...	additional parameters for the memoMDB() function.

Value

A [memoMDB](#) object

See Also

[get_confrontation_report](#), [ReDaMoR::format_confrontation_report](#) and [ReDaMoR::format_confrontation_report_md](#) for getting and formatting the report confronting the data to the model.

change_chTKCat_password
Change chTKCat password

Description

Change chTKCat password

Usage

```
change_chTKCat_password(x, login, password)
```

Arguments

x	a chTKCat object
login	user login
password	new user password

Value

No return value, called for side effects

check_chTKCat *Check a [chTKCat](#) object*

Description

Check a [chTKCat](#) object

Usage

```
check_chTKCat(x, verbose = FALSE)
```

Arguments

x	a chTKCat object
verbose	a logical indicating if information messages should be displayed.

Value

Invisible result: [chTKCat](#) object

chMDB

An *MDB* (Modeled DataBase) relying on ClickHouse: *chMDB*

Description

An [MDB](#) (Modeled DataBase) relying on ClickHouse: *chMDB*

Rename tables of a [chMDB](#) object

Usage

```
chMDB(
  tkcon,
  dbTables,
  dbInfo,
  dataModel,
  collectionMembers = NULL,
  check = TRUE,
  n_max = 10,
  verbose = FALSE
)

## S3 replacement method for class 'chMDB'
names(x) <- value

## S3 method for class 'chMDB'
rename(.data, ...)

## S3 method for class 'chMDB'
x[i]

## S3 method for class 'chMDB'
x[[i]]
```

Arguments

tkcon	a chTKCat object
dbTables	a named vector of tables in <code>tkcon\$chcon</code> with <code>all(names(dbTables) %in% names(dataModel))</code>
dbInfo	a list with DB information: "name" (only mandatory field), "title", "description", "url", "version", "maintainer".
dataModel	a ReDaMoR::RelDataModel object
collectionMembers	the members of collections as provided to the <code>collection_members<-</code> function (default: <code>NULL</code> ==> no member).

check	logical: if TRUE (default) the data are confronted to the data model
n_max	maximum number of records to read for checks purpose (default: 10). If 0, the data are not checked. See also ReDaMoR::confront_data() .
verbose	if TRUE display the data confrontation report
x	a chMDB object
value	new table names
.data	a chMDB object
...	Use new_name = old_name to rename selected tables
i	the index or the name of the tables to take

Value

A [chMDB](#) object

See Also

- MDB methods: [db_info](#), [data_model](#), [data_tables](#), [collection_members](#), [count_records](#), [dims](#), [filter_with_tables](#), [as_fileMDB](#)
- Additional general documentation is related to [MDB](#).
- [filter.chMDB](#), [slice.chMDB](#)
- [chTKCat](#), [db_disconnect\(\)](#), [db_reconnect\(\)](#)

chTKCat

Connect to a ClickHouse TKCat instance

Description

Connect to a ClickHouse TKCat instance

Usage

```
chTKCat(
  host = "localhost",
  port = 9111L,
  user = "default",
  password,
  settings = list(max_query_size = 1073741824, use_uncompressed_cache = 0, load_balancing
    = "random", max_memory_usage = 0, allow_introspection_functions = 1,
    joined_subquery_requires_alias = 0),
  ports = NULL,
  drv = ClickHouseHTTP::ClickHouseHTTP(),
  ...
)
```

Arguments

host	a character string specifying the host heberging the database (default: localhost)
port	an integer specifying the port on which the database is listening (default: 9111)
user	user name
password	user password
settings	list of Clickhouse settings
ports	a named list of available ports for accessing ClickHouse (default: NULL; example: c(Native=9101, HTTP=9111))
drv	a DBI driver for connecting to ClickHouse (default: ClickHouseHTTP::ClickHouseHTTP() ; other supported driver: RClickhouse::clickhouse())
...	additional parameters for connection (see ClickHouseHTTP::dbConnect , ClickHouseHTTPDriver-method for the default driver)

Value

a chTKCat object

See Also

[check_chTKCat\(\)](#), [db_disconnect\(\)](#), [db_reconnect\(\)](#)

ch_insert

Insert records by batches in a Clickhouse table

Description

Insert records by batches in a Clickhouse table

Usage

```
ch_insert(con, dbName, tableName, value, by = 10^6)
```

Arguments

con	the clickhouse connection
dbName	the name of the database
tableName	the name of the table
value	the table to import
by	the size of the batch: number of records to import together (default: 10^6)

Value

No return value, called for side effects

collection_members.TKCat
Collection members

Description

Collection members

Collection members

Usage

```
## S3 method for class 'TKCat'  
collection_members(x, ...)  
  
## S3 method for class 'chMDB'  
collection_members(x, ...)  
  
## S3 replacement method for class 'chMDB'  
collection_members(x) <- value  
  
## S3 method for class 'chTKCat'  
collection_members(x, ...)  
  
## S3 method for class 'fileMDB'  
collection_members(x, ...)  
  
## S3 replacement method for class 'fileMDB'  
collection_members(x) <- value  
  
collection_members(x, ...)  
  
collection_members(x) <- value  
  
## S3 method for class 'memoMDB'  
collection_members(x, ...)  
  
## S3 replacement method for class 'memoMDB'  
collection_members(x) <- value  
  
## S3 method for class 'metaMDB'  
collection_members(x, ...)
```

Arguments

x an object with embedded collection members
... names of the collections to focus on. By default, all of them are taken.

value the new collection members. A data.frame with the following columns:

- **collection** (character): The name of the collection
- **cid** (character): Collection identifier
- **resource** (character): The name of the resource
- **mid** (integer): The identifier of the member
- **table** (character): The table recording collection information
- **field** (character): The collection field.
- **static** (logical): TRUE if the field value is common to all elements.
- **value** (character): The name of the table column if static is FALSE or the field value if static is TRUE.
- **type** (character): the type of the field. (not necessarily used ==> NA if not)

Value

A `dplyr::tibble` with the following columns:

- **collection** (character): The name of the collection
- **cid** (character): Collection identifier
- **resource** (character): The name of the resource
- **mid** (integer): The identifier of the member
- **table** (character): The table recording collection information
- **field** (character): The collection field.
- **static** (logical): TRUE if the field value is common to all elements.
- **value** (character): The name of the table column if static is FALSE or the field value if static is TRUE.
- **type** (character): the type of the field. (not necessarily used ==> NA if not)

compare_MDB

Compare two MDB objects

Description

Compare two MDB objects

Usage

```
compare_MDB(former, new)
```

Arguments

former	an MDB object
new	an MDB object

Value

A tibble with 4 columns:

- **Information:** Compared information
- **Former:** value for the former object
- **New:** value for the new object
- **Identical:** a logical indicating if the 2 values are identical

count_records.MDB	<i>Count the number of records</i>
-------------------	------------------------------------

Description

Count the number of records

Usage

```
## S3 method for class 'MDB'
count_records(x, ...)

count_records(x, ...)
```

Arguments

x	an object with embedded data tables
...	the name of the tables to consider (default: all of them)

Value

A named vector with the number of records per table.

create_chMDB	<i>Create a database in a chTKCat</i>
--------------	---

Description

Create a database in a [chTKCat](#)

Usage

```
create_chMDB(x, name, public = FALSE)
```

Arguments

x	a chTKCat object
name	the name of the new database
public	if the database data are accessible to any user (default:FALSE)

Value

No return value, called for side effects

create_chTKCat_user *Create a chTKCat user*

Description

Create a chTKCat user

Usage

```
create_chTKCat_user(
  x,
  login,
  password,
  contact,
  admin = FALSE,
  provider = admin
)
```

Arguments

x	a chTKCat object
login	user login
password	user password
contact	contact information (can be NA)
admin	a logical indicating if the user is an admin of the chTKCat instance (default: TRUE)
provider	a logical indicating if the user is data provider (TRUE) or a data consumer (FALSE: default). If admin is set to TRUE provider will be set to TRUE

Value

No return value, called for side effects

data_files	<i>Get the data files from a fileMDB object</i>
------------	---

Description

Get the data files from a [fileMDB](#) object

Usage

```
data_files(x)
```

Arguments

x a [fileMDB](#) object

Value

a list with "dataFiles" and "readParameters" for reading the files.

data_file_size	<i>Get the size of data files from a fileMDB object</i>
----------------	---

Description

Get the size of data files from a [fileMDB](#) object

Usage

```
data_file_size(x, hr = FALSE)
```

Arguments

x a [fileMDB](#) object
hr a logical indicating if the values should be "human readable". (default: FALSE)

Value

a numeric vector with size in bytes (hr=FALSE) or a character vector with size and units (hr=TRUE)

data_model.chMDB *Get object data model*

Description

Get object data model

Usage

```
## S3 method for class 'chMDB'
data_model(x, ...)

## S3 method for class 'fileMDB'
data_model(x, ...)

data_model(x, ...)

## S3 method for class 'memoMDB'
data_model(x, ...)

## S3 method for class 'metaMDB'
data_model(x, rtOnly = FALSE, recursive = FALSE, ...)
```

Arguments

x	an object with an embedded data model
...	method specific parameters
rtOnly	if TRUE, the function only returns the relational tables and the corresponding foreign tables (default: FALSE)
recursive	if TRUE and rtOnly, the function returns also the relational tables from embedded metaMDBs.

Value

A [ReDaMoR::RelDataModel](#) object

data_tables.chMDB *Get object data tables*

Description

Get object data tables

Usage

```
## S3 method for class 'chMDB'
data_tables(x, ..., skip = 0, n_max = Inf)

## S3 method for class 'fileMDB'
data_tables(x, ..., skip = 0, n_max = Inf)

data_tables(x, ..., skip = 0, n_max = Inf)

## S3 method for class 'memoMDB'
data_tables(x, ..., skip = 0, n_max = Inf)

## S3 method for class 'metaMDB'
data_tables(x, ..., skip = 0, n_max = Inf)
```

Arguments

x	an object with embedded data tables
...	the name of the tables to get (default: all of them)
skip	the number of rows to skip (default: 0)
n_max	maximum number of rows to return (default: Inf)

Value

A list of [dplyr::tibble](#) and [matrix](#)

db_disconnect.chMDB *Disconnect an object from a database*

Description

Disconnect an object from a database

Usage

```
## S3 method for class 'chMDB'
db_disconnect(x)

## S3 method for class 'chTKCat'
db_disconnect(x)

db_disconnect(x)

## S3 method for class 'metaMDB'
db_disconnect(x)
```

Arguments

x an object with a database connection

Value

No return value, called for side effects

db_info.chMDB	<i>DB information</i>
---------------	-----------------------

Description

DB information

DB information

Usage

```
## S3 method for class 'chMDB'
db_info(x, ...)

## S3 replacement method for class 'chMDB'
db_info(x) <- value

## S3 method for class 'fileMDB'
db_info(x, ...)

## S3 replacement method for class 'fileMDB'
db_info(x) <- value

db_info(x, ...)

db_info(x) <- value

## S3 method for class 'memoMDB'
db_info(x, ...)

## S3 replacement method for class 'memoMDB'
db_info(x) <- value

## S3 method for class 'metaMDB'
db_info(x, ...)

## S3 replacement method for class 'metaMDB'
db_info(x) <- value
```

Arguments

x	an object with embedded database information
...	method specific parameters
value	list with the following elements: <ul style="list-style-type: none"> • name: a single character • title: a single character • description: a single character • url: a single character • version: a single character • maintainer: a single character vector • size: a numeric vector providing the size of the DB in bytes

Value

A list with the following elements:

- **name**: a single character
- **title**: a single character
- **description**: a single character
- **url**: a single character
- **version**: a single character
- **maintainer**: a single character vector
- **size**: a numeric vector providing the size of the DB in bytes

db_reconnect.chMDB *Reconnect an object to a database*

Description

Reconnect an object to a database

Usage

```
## S3 method for class 'chMDB'
db_reconnect(x, user, password, ntries = 3, ...)

## S3 method for class 'chTKCat'
db_reconnect(x, user, password, ntries = 3, ...)

db_reconnect(x, user, password, ntries = 3, ...)

## S3 method for class 'metaMDB'
db_reconnect(x, user, password, ntries = 3, ...)
```

Arguments

x	an object with a database connection
user	user name. If not provided, it's taken from x
password	user password. If not provided, first the function tries to connect without any password. If it fails, the function asks the user to provide a password.
ntries	the number of times the user can enter a wrong password (default: 3)
...	additional parameters for methods

Value

A new database connection object.

db_tables	<i>Get the DB tables from a chMDB or metaMDB object</i>
-----------	---

Description

Get the DB tables from a [chMDB](#) or [metaMDB](#) object

Usage

```
db_tables(x, host)
```

Arguments

x	a chMDB or a metaMDB object
host	the name of host (as returned by <code>[get_hosts]</code>) to focus on. Only used with metaMDB objects.

Value

a list with a `chTKCat` object (`tkcon`) and a named vector of DB table names (`dbTables`).

`dims.chMDB`*Detailed information about the format of the tables*

Description

Detailed information about the format of the tables

Usage

```
## S3 method for class 'chMDB'
dims(x, ...)

## S3 method for class 'fileMDB'
dims(
  x,
  ...,
  by = 1000,
  estimateThr = 5e+07,
  estimateSample = 10^6,
  showWarnings = TRUE
)

dims(x, ...)

## S3 method for class 'memoMDB'
dims(x, ...)

## S3 method for class 'metaMDB'
dims(x, ...)
```

Arguments

<code>x</code>	an object with embedded data tables
<code>...</code>	the name of the tables to consider (default: all of them)
<code>by</code>	the size of the batch: number of lines to count together (default: 1000)
<code>estimateThr</code>	file size threshold in bytes from which an estimation of row number should be computed instead of a precise count (default: 50000000 = 50MB)
<code>estimateSample</code>	number of values on which the estimation is based (default: 10 ⁶)
<code>showWarnings</code>	a warning is raised by default if estimation is done.

Value

A tibble with one row for each considered table and the following columns:

- name: the name of the table
- format: "table" or "matrix"

- ncol: number of columns
- nrow: number of rows
- records: number of records (nrow for tables and ncol*nrow for matrices)
- transposed: FALSE by default. TRUE only for matrices stored in a transposed format.

drop_chMDB *Drop a database from a [chTKCat](#)*

Description

Drop a database from a [chTKCat](#)

Usage

```
drop_chMDB(x, name)
```

Arguments

x	a chTKCat object
name	the name of the database to remove

Value

No return value, called for side effects

drop_chTKCat_user *Drop a user from a [chTKCat](#) object*

Description

Drop a user from a [chTKCat](#) object

Usage

```
drop_chTKCat_user(x, login)
```

Arguments

x	a chTKCat object
login	login of the user to drop

Value

No return value, called for side effects

empty_chMDB	<i>Empty a chMDB in a chTKCat</i>
-------------	-----------------------------------

Description

Empty a chMDB in a [chTKCat](#)

Usage

```
empty_chMDB(x, name, timestamp = NA)
```

Arguments

x	a chTKCat object
name	the name of the database to empty
timestamp	timestamp of the instance to empty. If NA (default) the current instance is emptied.

Value

No return value, called for side effects

explore_MDBs.TKCat	<i>Explore available MDB in a shiny web interface</i>
--------------------	---

Description

Explore available [MDB](#) in a shiny web interface

Usage

```
## S3 method for class 'TKCat'
explore_MDBs(
  x,
  subSetSize = 100,
  download = FALSE,
  workers = 4,
  title = NULL,
  skinColors = "green",
  logoDiv = TKCAT_LOGO_DIV,
  rDirs = NULL,
  tabTitle = "TKCat",
  tabIcon = "www/TKCat-small.png",
  ...
)
```

```

## S3 method for class 'chTKCat'
explore_MDBs(
  x,
  subSetSize = 100,
  host = x$chcon@host,
  download = FALSE,
  workers = 4,
  userManager = NULL,
  title = NULL,
  skinColors = c("blue", "yellow"),
  logoDiv = TKCAT_LOGO_DIV,
  tabTitle = "chTKCat",
  tabIcon = "www/TKCat-small.png",
  rDirs = NULL,
  ...
)

explore_MDBs(x, ...)

```

Arguments

<code>x</code>	a TKCat related object (e.g. chTKCat)
<code>subSetSize</code>	the maximum number of records to show
<code>download</code>	a logical indicating if data can be downloaded (default: <code>FALSE</code>). If <code>TRUE</code> a temporary directory is created and made available for shiny.
<code>workers</code>	number of available workers when download is available (default: 4)
<code>title</code>	A title for the application. If <code>NULL</code> (default): the <code>chTKCat</code> instance name
<code>skinColors</code>	two colors for the application skin: one for default connection ("blue" by default) and one for user connection ("yellow" by default). Working values: "blue", "black", "purple", "green", "red", "yellow".
<code>logoDiv</code>	a shiny::div object with a logo to display in side bar. The default is the TKCat hex sticker with a link to TKCat github repository.
<code>rDirs</code>	a named character vector with resource path for shiny::addResourcePath
<code>tabTitle</code>	a title to display in tab (default: "chTKCat")
<code>tabIcon</code>	a path to an image (in available resource paths: "www", "doc" or in <code>rDirs</code>) to use as a tab icon.
<code>...</code>	method specific parameters
<code>host</code>	the name of the host to show in the application
<code>userManager</code>	URL for user management interface (see manage_chTKCat_users()). If <code>NULL</code> (default), the functionality is not added.

Value

No return value, called for side effects

filter.chMDB	<i>Filter a chMDB object and return a memoMDB</i>
--------------	---

Description

Filter a [chMDB](#) object and return a [memoMDB](#)

Usage

```
## S3 method for class 'chMDB'
filter(.data, ..., by = 10^5, .preserve = FALSE)
```

Arguments

.data	a chMDB object
...	each argument should have the name of one of the tables of the chMDB object and contain a simple logical expression involving the names of the corresponding table.
by	the size of the batch: number of records to filter together (default: 10 ⁵)
.preserve	not used

Value

a [memoMDB](#) object

filter.fileMDB	<i>Filter a fileMDB object and return a memoMDB</i>
----------------	---

Description

Filter a [fileMDB](#) object and return a [memoMDB](#)

Usage

```
## S3 method for class 'fileMDB'
filter(.data, ..., .preserve = FALSE)
```

Arguments

.data	a fileMDB object
...	each argument should have the name of one of the tables of the fileMDB object and contain a simple logical expression involving the names of the corresponding table.
.preserve	not used

Value

a [memoMDB](#) object

filter.memoMDB	<i>Filter a memoMDB object</i>
----------------	--

Description

Filter a [memoMDB](#) object

Usage

```
## S3 method for class 'memoMDB'
filter(.data, ..., .preserve = FALSE)
```

Arguments

.data	a memoMDB object
...	each argument should have the name of one of the tables of the memoMDB object and contain a simple logical expression involving the names of the corresponding table.
.preserve	not used

Value

a filtered [memoMDB](#) object

filter.metaMDB	<i>Filter a metaMDB object</i>
----------------	--

Description

Filter a [metaMDB](#) object

Usage

```
## S3 method for class 'metaMDB'
filter(.data, ..., .preserve = FALSE)
```

Arguments

.data	a metaMDB object
...	each argument should have the name of one of the tables of the metaMDB object and contain a simple logical expression involving the names of the corresponding table.
.preserve	not used

Value

a filtered [memoMDB](#) object

```
filter_mdb_matrix.chMDB
```

Filter a matrix stored in an MDB

Description

Filter a matrix stored in an MDB

Usage

```
## S3 method for class 'chMDB'
filter_mdb_matrix(x, tableName, ...)

## S3 method for class 'fileMDB'
filter_mdb_matrix(x, tableName, .by = 10^5, ...)

filter_mdb_matrix(x, tableName, ...)

## S3 method for class 'memoMDB'
filter_mdb_matrix(x, tableName, ...)

## S3 method for class 'metaMDB'
filter_mdb_matrix(x, tableName, ...)
```

Arguments

x	an MDB object
tableName	a character vector of length 1 corresponding to the name of the table to filter (must be a matrix)
...	character vectors with the row names and/or columns names to select. The names of the parameters must correspond to the name of the column and of the row fields (the matrix cannot be filtered from values).
.by	the size of the batch: number of lines to process together (default: 10000)

Value

A sub-matrix of tableName in x. Only existing elements are returned. No error is raised if any element is missing. The result must be checked and adapted to user needs.

Examples

```
## Not run:
## Return the matrix of expression values focused on the selected genes
filter_mdb_matrix(x=db, "Expression_value", gene=c("SNCA", "MAPT"))

## End(Not run)
```

```
filter_with_tables.chMDB
```

*Filter an **MDB** object according to provided tables*

Description

Filter an **MDB** object according to provided tables

Usage

```
## S3 method for class 'chMDB'
filter_with_tables(x, tables, checkTables = TRUE, by = 10^5, ...)

## S3 method for class 'fileMDB'
filter_with_tables(x, tables, checkTables = TRUE, by = 10^5, ...)

filter_with_tables(x, tables, checkTables = TRUE, ...)

## S3 method for class 'memoMDB'
filter_with_tables(x, tables, checkTables = TRUE, ...)

## S3 method for class 'metaMDB'
filter_with_tables(x, tables, checkTables = TRUE, ...)
```

Arguments

x	an MDB object
tables	a named list of tibbles to filter with. The names should correspond to the table names in x and the tibbles should fit the data model.
checkTables	if TRUE, the tables are confronted to their model in the data model of x.
by	the size of the batch: number of lines to process together (default: 10000)
...	method specific parameters

Value

a **memoMDB** object

format.chTKCat	<i>Format a chTKCat object for printing</i>
----------------	---

Description

Format a [chTKCat](#) object for printing

Usage

```
## S3 method for class 'chTKCat'  
format(x, ...)
```

Arguments

x	a chTKCat object
...	not used

Value

A single character

get_chMDB_timestamps	<i>Get instance timestamps of an MDB in chTKCat</i>
----------------------	---

Description

Get instance timestamps of an MDB in [chTKCat](#)

Usage

```
get_chMDB_timestamps(x, name)
```

Arguments

x	a chTKCat object
name	the name of the database

Value

A tibble with the instance "timestamp" and a logical indicating if it's the "current" one or not.

`get_chTKCat_collection`*Get a collection from a [chTKCat](#)*

Description

Get a collection from a [chTKCat](#)

Usage

```
get_chTKCat_collection(x, title)
```

Arguments

x	a chTKCat object
title	the title of the collection to get

Value

The definition of the collection as a JSON string.

`get_collection_mapper` *Get the default mapper function for a collection*

Description

Get the default mapper function for a collection

Usage

```
get_collection_mapper(collection)
```

Arguments

collection	the name of the targeted collection (it should belong to local collections: see list_local_collections()).
------------	---

Value

A function to map collection members.

`get_confrontation_report`*Get the last generated MDB confrontation report*

Description

Get the last generated MDB confrontation report

Usage

```
get_confrontation_report()
```

Value

A confrontation report generated by `ReDaMoR::confront_data()`

`get_hosts.DBIConnection`*Get database hosts*

Description

Get database hosts

Usage

```
## S3 method for class 'DBIConnection'  
get_hosts(x, ...)
```

```
## S3 method for class 'chMDB'  
get_hosts(x, ...)
```

```
## S3 method for class 'chTKCat'  
get_hosts(x, ...)
```

```
get_hosts(x, ...)
```

```
## S3 method for class 'metaMDB'  
get_hosts(x, ...)
```

Arguments

<code>x</code>	an object with database connection(s)
<code>...</code>	additional parameters for methods.

Value

A character vector with hosts information (generaly 1) in the following shape: "host:port"

get_local_collection *Get the json definition of a local collection of concepts*

Description

Get the json definition of a local collection of concepts

Usage

```
get_local_collection(title)
```

Arguments

title the title of the collection to get

Value

The definition of the collection as a JSON string.

get_MDB.TKCat *Get an **MDB** object from a **TKCat** related object*

Description

Get an **MDB** object from a **TKCat** related object

Usage

```
## S3 method for class 'TKCat'
get_MDB(x, dbName, ...)

## S3 method for class 'chTKCat'
get_MDB(x, dbName, timestamp = NA, check = TRUE, n_max = 10, ...)

get_MDB(x, dbName, ...)
```

Arguments

x a **TKCat** related object (e.g. **chTKCat**)

dbName the name of the database

... method specific parameters

timestamp the timestamp of the instance to get. Default=NA: get the current version.

check logical: if TRUE (default) the data are confronted to the data model

n_max maximum number of records to read for checks purpose (default: 10). See also [ReDaMoR::confront_data\(\)](#).

Value

An [MDB](#) object

See Also

[get_confrontation_report](#), [ReDaMoR::format_confrontation_report](#) and [ReDaMoR::format_confrontation_report_md](#) for getting and formatting the report confronting the data to the model.

get_query.chMDB	<i>Get SQL query</i>
-----------------	----------------------

Description

Get SQL query

Usage

```
## S3 method for class 'chMDB'
get_query(x, query, autoalias = !is_current_chMDB(x), ...)

## S3 method for class 'chTKCat'
get_query(x, query, ...)

get_query(x, query, ...)
```

Arguments

x	an object with a database connection
query	the SQL query
autoalias	Change this parameter only if you know what you're doing. if TRUE, make relevant alias to query the chMDB using the table names from the data model. If FALSE, the user must know the table instance name in the remote database. By default, autoalias is set to TRUE when using a non-current instance of the database.
...	method specific parameters

Value

A tibble with query results

```
get_shared_collections
```

Get collections shared by 2 objects and return member combinations

Description

Get collections shared by 2 objects and return member combinations

Usage

```
get_shared_collections(x, y)
```

Arguments

x an MDB object

y an MDB object

Value

A tibble with the following fields:

- **collection** the name of the collection
- **mid.x** the collection member identifier in x
- **table.x** the table of the collection member in x
- **mid.y** the collection member identifier in y
- **table.y** the table of the collection member in y

```
heads.chMDB
```

Get the first records of each object data tables

Description

Get the first records of each object data tables

Usage

```
## S3 method for class 'chMDB'
heads(x, ..., n = 6L)
```

```
## S3 method for class 'fileMDB'
heads(x, ..., n = 6L)
```

```
heads(x, ..., n = 6L)
```

```
## S3 method for class 'memoMDB'  
heads(x, ..., n = 6L)  
  
## S3 method for class 'metaMDB'  
heads(x, ..., n = 6L)
```

Arguments

x	an object with embedded data tables
...	the name of the tables to get (default: all of them)
n	maximum number of records to return (default: 6)

Value

A list of [dplyr::tibble](#) and [matrix](#)

import_collection_mapper

Import a function to map collection members

Description

Import a function to map collection members

Usage

```
import_collection_mapper(collection, fun)
```

Arguments

collection	the name of the targeted collection (it should belong to local collections: see list_local_collections()).
fun	a function which takes 2 data.frames (x and y) with fields described in the collection definition and map the different elements.

Value

No return value, called for side effects. The function will be used to map collection members.

```
import_local_collection
```

Import a the definition of a collection of concepts in the local environment

Description

Import a the definition of a collection of concepts in the local environment

Usage

```
import_local_collection(txt, overwrite = FALSE)
```

Arguments

txt	a JSON string or file
overwrite	a single logical. If TRUE the collection is overwritten if it already exists (default: FALSE)

Value

No return value, called for side effects. The collection will be available and operations will be possible on its members.

```
init_chTKCat
```

Initialize a chTKCat database

Description

The initialization can only be done locally (host="localhost")

Usage

```
init_chTKCat(x, instance, version, path, login, password, contact)
```

Arguments

x	a chTKCat object
instance	instance name of the database
version	version name of the database
path	path to ClickHouse folder
login	login of the primary administrator of the database
password	password for the primary administrator of the database
contact	contact information for the primary administrator of the database

Value

a [chTKCat](#)

is.chMDB

Check if the object is a [chMDB](#) object

Description

Check if the object is a [chMDB](#) object

Usage

is.chMDB(x)

Arguments

x any object

Value

A single logical: TRUE if x is a [chMDB](#) object

is.chTKCat

Check the object is a [chTKCat](#) object

Description

Check the object is a [chTKCat](#) object

Usage

is.chTKCat(x)

Arguments

x any object

Value

A single logical: TRUE if x is a [chTKCat](#) object

is.fileMDB	<i>Check if the object is a fileMDB object</i>
------------	--

Description

Check if the object is a [fileMDB](#) object

Usage

```
is.fileMDB(x)
```

Arguments

x	any object
---	------------

Value

A single logical: TRUE if x is an [fileMDB](#) object

is.MDB	<i>Check if the object is an MDB object</i>
--------	---

Description

Check if the object is an [MDB](#) object

Usage

```
is.MDB(x)
```

Arguments

x	any object
---	------------

Value

A single logical: TRUE if x is an [MDB](#) object.

is.memoMDB *Check if the object is a memoMDB object*

Description

Check if the object is a [memoMDB](#) object

Usage

is.memoMDB(x)

Arguments

x any object

Value

A single logical: TRUE if x is an [memoMDB](#) object

is.metaMDB *Check if the object is a metaMDB object*

Description

Check if the object is a [metaMDB](#) object

Usage

is.metaMDB(x)

Arguments

x any object

Value

A single logical: TRUE if x is an [metaMDB](#) object

is.TKCat	<i>Check the object is a TKCat object</i>
----------	---

Description

Check the object is a [TKCat](#) object

Usage

is.TKCat(x)

Arguments

x	any object
---	------------

Value

A single logical: TRUE if x is a [TKCat](#) object

is_chMDB_public	<i>Is a chMDB public</i>
-----------------	--------------------------

Description

Is a chMDB public

Usage

is_chMDB_public(x, mdb)

Arguments

x	a chTKCat object
mdb	name of the modeled database

Value

A logical indicating if the chMDB is public or not.

is_current_chMDB	<i>Check if the chMDB object refers to the current instance of the MDB</i>
------------------	--

Description

Check if the [chMDB](#) object refers to the current instance of the MDB

Usage

```
is_current_chMDB(x)
```

Arguments

x a [chMDB](#) object

Value

A single logical: TRUE if x refers to the current instance of the MDB.

join_mdb_tables	<i>Join connected tables</i>
-----------------	------------------------------

Description

Join connected tables

Usage

```
join_mdb_tables(
  x,
  ...,
  type = c("left", "right", "inner", "full"),
  jtName = NA
)
```

Arguments

x an MDB object

... at least 2 names of tables to join

type the type of join among:

- "left": includes all rows of the first provided table
- "right": includes all rows of the last provided table
- "inner": includes all rows in all provided tables
- "full": includes all rows in at least one provide table

jtName the name of the joint. IF NA (default), the name is then the name is the first provided table name.

Value

A [metaMDB](#) corresponding to `x` with the joined tables replaced by the joint. If less than 2 table names are provided, the function returns the original `x` MDB.

`list_chMDB_timestamps` *List instance timestamps of an MDB in [chTKCat](#)*

Description

List instance timestamps of an MDB in [chTKCat](#)

Usage

```
list_chMDB_timestamps(x, name)
```

Arguments

<code>x</code>	a chTKCat object
<code>name</code>	the name of the database

Value

A tibble with the instance of each table at each timestamp. The "current" attribute indicate the current timestamp instance. If there is no recorded timestamp, the function returns NULL.

`list_chMDB_users` *List users of an MDB of a [chTKCat](#) object*

Description

List users of an MDB of a [chTKCat](#) object

Usage

```
list_chMDB_users(x, mdbs = NULL)
```

Arguments

<code>x</code>	a chTKCat object
<code>mdbs</code>	names of the modeled databases. If NULL (default), all the databases are considered.

Value

A tibble with 3 columns:

- user: the user login
- mdb: the name of the modeled database
- admin: if the user is an admin of the MDB

list_chTKCat_collections

List collections available in a [chTKCat](#)

Description

List collections available in a [chTKCat](#)

Usage

```
list_chTKCat_collections(x, withJson = FALSE)
```

Arguments

x a [chTKCat](#) object
withJson if TRUE, returns the json strings of the collection (default: FALSE)

Value

A tibble with the title, the description and optionally the json definition of the collections

list_chTKCat_users *List [chTKCat](#) user*

Description

List [chTKCat](#) user

Usage

```
list_chTKCat_users(x)
```

Arguments

x a [chTKCat](#) object

Value

A tibble with 3 columns:

- login: user login
- contact: user contact information
- admin: if the user is an admin of the chTKCat object

list_local_collections

List local collections of concepts

Description

List local collections of concepts

Usage

```
list_local_collections(withJson = FALSE)
```

Arguments

withJson if TRUE, returns the json strings of the collection (default: FALSE)

Value

A tibble with the title, the description and optionally the json definition of the collections

list_MDBs.TKCat

List available [MDB](#)

Description

List available [MDB](#)

Usage

```
## S3 method for class 'TKCat'
list_MDBs(x, withInfo = TRUE)

## S3 method for class 'chTKCat'
list_MDBs(x, withInfo = TRUE)

list_MDBs(x, withInfo = TRUE)
```

Arguments

x	a TKCat related object (e.g. <code>chTKCat</code>)
withInfo	if TRUE (default), the function returns a table with <code>db_info</code> . If FALSE, it returns only MDB names.

Value

A tibble with information about the **MDB** available in a **TKCat** related object.

list_tables	<i>List tables in a clickhouse database</i>
-------------	---

Description

List tables in a clickhouse database

Usage

```
list_tables(con, dbNames = NULL)
```

Arguments

con	the clickhouse connection
dbNames	the name of databases to focus on (default NULL ==> all)

Value

A tibble with the following columns:

- **database**: the name of the database
- **name**: the name of the table
- **total_rows**: the number of rows in the table
- **total_bytes**: the size of the table

manage_chTKCat_users *Manage user information in a shiny interface*

Description

Manage user information in a shiny interface

Usage

```
manage_chTKCat_users(x, pwdFile = NULL)
```

Arguments

x	a chTKCat object
pwdFile	a local file in which the password for x can be found. If NULL (default), the connection is shared by all sessions and can be disabled at some point.

map_collection_members
Map different collection members

Description

Map different collection members

Usage

```
map_collection_members(  
  x,  
  y,  
  collection,  
  xm,  
  ym,  
  suffix = c("_x", "_y"),  
  fun = NA,  
  ...  
)
```

Arguments

x	a data.frame
y	a data.frame
collection	the name of the collection.

<code>xm</code>	collection member x: a data.frame with the fields "field", "static", "value", "type" as returned by the <code>read_collection_members()</code> function.
<code>ym</code>	collection member y: a data.frame with the fields "field", "static", "value", "type" as returned by the <code>read_collection_members()</code> function.
<code>suffix</code>	the suffix to append to field names from x and y tables. Default: <code>c("_x", "_y")</code>
<code>fun</code>	the function used to map x and y collection members. By default (NA) it is automatically identified if recorded in the system. The way to write this function is provided in the details section.
<code>...</code>	additional parameters for the fun function.

Details

`fun` must have at least an `x` and a `y` parameters. Each of them should be a data.frame with all the field values given in `xm` and `ym`. Additional parameters can be defined and will be forwarded using `...`. `fun` should return a data frame with all the fields values given in `xm` and `ym` followed by `"_x"` and `"_y"` suffix.

Value

A tibble giving necessary information to map elements in `x` and `y`. The columns corresponds to the field values in `xm` and `ym` followed by a suffix (default: `c("_x", "_y")`). Only fields documented as non static in `xm` and `ym` are kept.

MDB

MDB

Description

The class "MDB" provides general functions for handling modeled databases. The MDB classes implemented in the TKCat package are: `fileMDB`, `memoMDB`, `chMDB` and `metaMDB`. These classes provide additional functions.

Usage

```
## S3 method for class 'MDB'
names(x)

## S3 method for class 'MDB'
length(x)

## S3 method for class 'MDB'
lengths(x, use.names = TRUE)

## S3 method for class 'MDB'
as.list(x, ...)
```

```

## S3 method for class 'MDB'
select(.data, ...)

## S3 method for class 'MDB'
pull(.data, var = -1, name = NULL, ...)

## S3 method for class 'MDB'
c(...)

## S3 method for class 'MDB'
merge(
  x,
  y,
  by = get_shared_collections(x, y),
  dbInfo = list(name = paste(db_info(x)$name, db_info(y)$name, sep = "_")),
  dmAutoLayout = TRUE,
  rtColor = "yellow",
  funs = list(),
  ...
)

```

Arguments

<code>x</code>	an MDB object
<code>use.names</code>	return the names of the tables
<code>...</code>	additional parameters
<code>.data</code>	an MDB object
<code>var</code>	a variable specified as in dplyr::pull
<code>name</code>	not used but kept for compatibility with the generic function
<code>y</code>	an MDB object
<code>by</code>	a tibble as returned by the get_shared_collections() function which indicates which collection members should be merged through a relational table. If the collection is NA, the relational table is built by merging identical columns in table.x and table.y. If the collection is provided, the relational table is build using the map_collection_members() function.
<code>dbInfo</code>	a list with DB information: " name " (only mandatory field), "title", "description", "url", "version", "maintainer".
<code>dmAutoLayout</code>	if TRUE (default) the layout of the merged data model is automatically adjusted.
<code>rtColor</code>	the color of the relational tables in the merged data model (default: "yellow")
<code>funs</code>	a named list of functions (default: list()). If there is no function for mapping a collection in this list, it is taken automatically using the get_collection_mapper() function.

Value

`names()` returns the table names.

`length()` returns the number of tables in `x`.

`lengths()` returns the number of fields for each table in `x`.

`as.list.MDB()` returns a simple list of tibbles with all the data from the tables in `x`.

A [metaMDB](#) object gathering `x` and `y` along with relational tables between them created using collection members and mapping functions automatically chosen or provided by the `funcs` parameter. `...` can be used to send parameters to the mapper functions.

See Also

MDB methods: [db_info](#), [data_model](#), [data_tables](#), [collection_members](#), [count_records](#), [filter_with_tables](#), [as_fileMDB](#) Additional documentation is provided for each specific class: [fileMDB](#), [memoMDB](#), [chMDB](#) and [metaMDB](#).

MDBs

Get a list of MDB from [metaMDB](#) object

Description

Get a list of MDB from [metaMDB](#) object

Usage

`MDBs(x)`

Arguments

`x` a [metaMDB](#) object

Value

A list of MDB objects

memoMDB

*An **MDB** (Modeled DataBase) in memory: memoMDB***Description**

An **MDB** (Modeled DataBase) in memory: memoMDB

Rename tables of a **memoMDB** object

Usage

```
memoMDB(
  dataTables,
  dataModel,
  dbInfo,
  collectionMembers = NULL,
  check = TRUE,
  checks = c("unique", "not nullable", "foreign keys"),
  verbose = FALSE
)
```

```
## S3 replacement method for class 'memoMDB'
names(x) <- value
```

```
## S3 method for class 'memoMDB'
rename(.data, ...)
```

```
## S3 method for class 'memoMDB'
x[i]
```

```
## S3 method for class 'memoMDB'
x[[i]]
```

```
## S3 method for class 'memoMDB'
x$i
```

Arguments

dataTables	a list of tibbles
dataModel	a ReDaMoR::RelDataModel object
dbInfo	a list with DB information: " name " (only mandatory field), "title", "description", "url", "version", "maintainer".
collectionMembers	the members of collections as provided to the collection_members<- function (default: NULL ==> no member).
check	logical: if TRUE (default) the data are confronted to the data model

checks	a character vector with the name of optional checks to be done (all of them c("unique", "not nullable", "foreign keys"))
verbose	if TRUE display the data confrontation report (default: FALSE)
x	a memoMDB object
value	new table names
.data	a memoMDB object
...	Use new_name = old_name to rename selected tables
i	the index or the name of the tables to take

Value

A memoMDB object

See Also

- MDB methods: [db_info](#), [data_model](#), [data_tables](#), [collection_members](#), [count_records](#), [dims](#), [filter_with_tables](#), [as_fileMDB](#)
- Additional general documentation is related to [MDB](#).
- [filter.memoMDB](#), [slice.memoMDB](#)

Examples

```
hpo <- read_fileMDB(
  path=system.file("examples/HPO-subset", package="ReDaMoR"),
  dataModel=system.file("examples/HPO-model.json", package="ReDaMoR"),
  dbInfo=list(
    "name"="HPO",
    "title"="Data extracted from the HPO database",
    "description"=paste(
      "This is a very small subset of the HPO!",
      "Visit the reference URL for more information"
    ),
    "url"="http://human-phenotype-ontology.github.io/"
  )
) %>%
  as_memoMDB()
count_records(hpo)

## Too long on win-builder.r-project.org
## Not run:

hpoSlice <- slice(hpo, HPO_diseases=1:10)
count_records(hpoSlice)

if("stringr" %in% installed.packages()[,"Package"]){
  epilHP <- filter(
    hpo,
    HPO_diseases=stringr::str_detect(
      label, stringr::regex("epilepsy", ignore_case=TRUE)
    )
  )
}
```

```

    )
  )
  count_records(epiIHP)
}

```

```
## End(Not run)
```

```
mergeTrees_from_RelDataModel
      Create ClickHouse MergeTree tables from a
      ReDaMoR::RelDataModel
```

Description

Create ClickHouse MergeTree tables from a [ReDaMoR::RelDataModel](#)

Usage

```
mergeTrees_from_RelDataModel(con, dbName, dbm)
```

Arguments

con	the clickhouse connection
dbName	the name of the database in which the tables should be written
dbm	a ReDaMoR::RelDataModel object

Value

No return value, called for side effects

```
mergeTree_from_RelTableModel
      Create a ClickHouse MergeTree table from a
      ReDaMoR::RelTableModel
```

Description

Create a ClickHouse MergeTree table from a [ReDaMoR::RelTableModel](#)

Usage

```
mergeTree_from_RelTableModel(con, dbName, tm)
```

Arguments

con	the clickhouse connection
dbName	the name of the database in which the table should be written
tm	a ReDaMoR::RelTableModel object

Value

No return value, called for side effects

metaMDB	<i>A metaMDB object</i>
---------	-------------------------

Description

A metaMDB object is an [MDB](#) gathering several other MDBs glued by relational tables.

Usage

```
metaMDB(MDBs, relationalTables, dataModel, dbInfo, check = TRUE)
```

```
## S3 replacement method for class 'metaMDB'
names(x) <- value
```

```
## S3 method for class 'metaMDB'
rename(.data, ...)
```

```
## S3 method for class 'metaMDB'
x[i]
```

```
## S3 method for class 'metaMDB'
x[[i]]
```

```
## S3 method for class 'metaMDB'
x$i
```

Arguments

MDBs	a list of MDB objects
relationalTables	a list of tibbles corresponding to the relational tables between the different MDBs
dataModel	a ReDaMoR::RelDataModel object gathering all the data model of all the MDBs plus the relational tables
dbInfo	a list with DB information: "name" (only mandatory field), "title", "description", "url", "version", "maintainer".

check	logical: if TRUE (default) the data are confronted to the data model
x	a metaMDB object
value	new table names
.data	a metaMDB object
...	Use new_name = old_name to rename selected tables
i	the index or the name of the tables to take

Value

A metaMDB object

See Also

- MDB methods: [db_info](#), [data_model](#), [data_tables](#), [collection_members](#), [count_records](#), [dims](#), [filter_with_tables](#), [as_fileMDB](#)
- Additional general documentation is related to [MDB](#).
- [filter.metaMDB](#), [slice.metaMDB](#)
- [get_confrontation_report](#), [ReDaMoR::format_confrontation_report](#) and [ReDaMoR::format_confrontation_report_md](#) for getting and formatting the report confronting the data to the model.

read_collection_members

Read a collection member JSON file

Description

Read a collection member JSON file

Usage

```
read_collection_members(txt)
```

Arguments

txt a JSON string or file

Value

A tibble with the description of the collection members of a resource

read_fileMDB	<i>Read a fileMDB from a path</i>
--------------	---

Description

Read a [fileMDB](#) from a path

Usage

```
read_fileMDB(
  path,
  dbInfo = NULL,
  dataModel = NULL,
  collectionMembers = NULL,
  check = TRUE,
  n_max = 10,
  verbose = TRUE
)
```

Arguments

path	the path to a folder with data or with the following structure: <ul style="list-style-type: none"> • data: a folder with the data • DESCRIPTION.json: a file with db information • model: a folder with the data model json file with the same name as the one given in the DESCRIPTION.json file
dbInfo	a list or a json file with DB information: " name " (only mandatory field), "title", "description", "url" (or "reference URL"), "version", "maintainer". If NULL (default), the DESCRIPTION.json file found in path. This file should also contains relevant parameters for the <code>readr::read_delim()</code> function. For example: <ul style="list-style-type: none"> • delim delimiter (default: <code>'\t'</code>) • quoted_na: Should missing values inside quotes be treated as missing values or as strings or strings. WARNING: THIS PARAMETER IS NOT TAKEN INTO ACCOUNT WITH readr>=2.0.0. • na: String used for missing values. The default value for reading a fileMDB is "NA". But the default value for writing a fileMDB is "<NA>". This value is written in the DESCRIPTION.json file to avoid ambiguity when reading the fileMDB.
dataModel	a <code>ReDaMoR::RelDataModel</code> object or json file. If NULL (default), the model json file found in path/model.
collectionMembers	the members of collections as provided to the <code>collection_members<-</code> function. If NULL (default), the members are taken from json files found in path/model/Collections
check	logical: if TRUE (default) the data are confronted to the data model

n_max maximum number of records to read for checks purpose (default: 10). See also [ReDaMoR::confront_data\(\)](#).

verbose if TRUE (default) display the data confrontation report

Value

A [fileMDB](#) object

See Also

[get_confrontation_report](#), [ReDaMoR::format_confrontation_report](#) and [ReDaMoR::format_confrontation_report_md](#) for getting and formatting the report confronting the data to the model.

relational_tables *Get a list of relational tables*

Description

Get a list of relational tables

Usage

```
relational_tables(x, recursive = FALSE)
```

Arguments

x a [metaMDB](#) object

recursive if TRUE, function returns also the relational tables from embedded metaMDBs.

Value

A list of relational tables (tibbles)

remove_chMDB_user *Drop a user of an MDB of a [chTKCat](#) object*

Description

Drop a user of an MDB of a [chTKCat](#) object

Usage

```
remove_chMDB_user(x, mdb, login)
```

Arguments

x	a chTKCat object
mdb	name of the modeled database
login	login of the user to drop

Value

No return value, called for side effects

remove_chTKCat_collection

Remove a collection from a [chTKCat](#) database

Description

Remove a collection from a [chTKCat](#) database

Usage

```
remove_chTKCat_collection(x, title)
```

Arguments

x	a chTKCat object
title	the title of the collection to remove

Value

No return value, called for side effects

scan_fileMDBs

Scan a catalog of [fileMDB](#)

Description

Scan a catalog of [fileMDB](#)

Usage

```
scan_fileMDBs(path, subdirs = NULL, check = TRUE, n_max = 10)
```

Arguments

path	directory from which all the fileMDB should be read
subdirs	the sub directories (relative to path) to take into account. If NULL (default) all the sub directories are considered.
check	logical: if TRUE (default) the data are confronted to the data model
n_max	maximum number of records to read for checks purpose (default: 10). See also ReDaMoR::confront_data() .

Value

a TKCat object

See Also

[read_fileMDB](#)

search_MDB_fields.TKCat

Search fields in a TKCat related object

Description

Search fields in a [TKCat](#) related object

Usage

```
## S3 method for class 'TKCat'
search_MDB_fields(x, searchTerm)
```

```
## S3 method for class 'chTKCat'
search_MDB_fields(x, searchTerm)
```

```
search_MDB_fields(x, searchTerm)
```

Arguments

x	a TKCat related object (e.g. chTKCat)
searchTerm	a single character with the term to search

Value

An [MDB](#) object

```
search_MDB_tables.TKCat
```

Search tables in a [TKCat](#) related object

Description

Search tables in a [TKCat](#) related object

Usage

```
## S3 method for class 'TKCat'
search_MDB_tables(x, searchTerm)
```

```
## S3 method for class 'chTKCat'
search_MDB_tables(x, searchTerm)
```

```
search_MDB_tables(x, searchTerm)
```

Arguments

x	a TKCat related object (e.g. chTKCat)
searchTerm	a single character with the term to search

Value

An [MDB](#) object

```
set_chMDB_access
```

Set chMDB access

Description

Set chMDB access

Usage

```
set_chMDB_access(x, mdb, public)
```

Arguments

x	a chTKCat object
mdb	name of the modeled database
public	if access is public

Value

No return value, called for side effects

set_chMDB_timestamp *Set timestamp of the current version of an MDB in [chTKCat](#)*

Description

Set timestamp of the current version of an MDB in [chTKCat](#)

Usage

```
set_chMDB_timestamp(x, name, timestamp)
```

Arguments

x	a chTKCat object
name	the name of the database to affect
timestamp	a single POSIXct value as a timestamp for the chMDB instance.

Value

No return value, called for side effects

show_collection_def *Show the definition of a collection*

Description

This function prints details regarding a collection: title, description and arguments information. These arguments are those that can be used to document collection members within an [MDB](#) using the [add_collection_member\(\)](#) function.

Usage

```
show_collection_def(collection, silent = FALSE)
```

Arguments

collection	a json string with the collection definition as returned by get_local_collection()
silent	a logical indicating if the definition should be written (TRUE by default) or not.

Value

A list with:

- collection **title**
- collection **description**
- a list of **arguments** for defining collection members as a list of elements with:
 - the **type** of the argument element
 - **allowed** values if any

Examples

```
get_local_collection("BE") %>% show_collection_def()
```

slice.chMDB	<i>Subset a chMDB object according to row position in one table and return a memoMDB</i>
-------------	--

Description

Subset a [chMDB](#) object according to row position in one table and return a [memoMDB](#)

Usage

```
## S3 method for class 'chMDB'
slice(.data, ..., by = 10^5, .preserve = FALSE)
```

Arguments

.data	a chMDB object
...	a single argument. The name of this argument should be a table name of x and the value of this argument should be vector of integers corresponding to row indexes.
by	the size of the batch: number of records to slice together (default: 10 ⁵)
.preserve	not used

Value

a [memoMDB](#) object

slice.fileMDB	<i>Subset a fileMDB object according to row position in one table and return a memoMDB</i>
---------------	--

Description

Subset a [fileMDB](#) object according to row position in one table and return a [memoMDB](#)

Usage

```
## S3 method for class 'fileMDB'
slice(.data, ..., .preserve = FALSE)
```

Arguments

.data	a fileMDB object
...	a single argument. The name of this argument should be a table name of x and the value of this argument should be vector of integers corresponding to row indexes.
.preserve	not used

Value

a [memoMDB](#) object

slice.memoMDB	<i>Subset a memoMDB object according to row position in one table</i>
---------------	---

Description

Subset a [memoMDB](#) object according to row position in one table

Usage

```
## S3 method for class 'memoMDB'
slice(.data, ..., .preserve = FALSE)
```

Arguments

.data	a memoMDB object
...	a single argument. The name of this argument should be a table name of x and the value of this argument should be vector of integers corresponding to row indexes.
.preserve	not used

Value

a [memoMDB](#) object

slice.metaMDB	Subset a <i>metaMDB</i> object according to row position in one table
---------------	---

Description

Subset a *metaMDB* object according to row position in one table

Usage

```
## S3 method for class 'metaMDB'
slice(.data, ..., .preserve = FALSE)
```

Arguments

.data	a <i>metaMDB</i> object
...	a single argument. The name of this argument should be a table name of x and the value of this argument should be vector of integers corresponding to row indexes.
.preserve	not used

Value

a *memoMDB* object

TKCat	<i>TKCat: a catalog of MDB</i>
-------	--------------------------------

Description

TKCat: a catalog of *MDB*

Rename a *TKCat* object

Usage

```
TKCat(..., list = NULL)

## S3 replacement method for class 'TKCat'
names(x) <- value

## S3 method for class 'TKCat'
rename(.data, ...)

## S3 method for class 'TKCat'
x[i]

## S3 method for class 'TKCat'
c(...)
```

Arguments

...	TKCat objects
list	a list of MDB objects
x	a TKCat object
value	new MDB names
.data	a TKCat object
i	index or names of the MDB to take

Value

a TKCat object

See Also

[scan_fileMDBs](#)

unarchive_chMDB

Unarchive a chMDB in a chTKCat

Description

Unarchive a chMDB in a chTKCat

Usage

unarchive_chMDB(x, name)

Arguments

x	a chTKCat object
name	the name of the database to archive

Value

No return value, called for side effects

update_chMDB_grants *Update grants on tables in an MDB of a [chTKCat](#) object*

Description

The update is done automatically based on user access.

Usage

```
update_chMDB_grants(x, mdb)
```

Arguments

x	a chTKCat object
mdb	name of the modeled database

Value

No return value, called for side effects

update_chTKCat_user *Update a [chTKCat](#) user information*

Description

Update a [chTKCat](#) user information

Usage

```
update_chTKCat_user(x, login, contact, admin, provider)
```

Arguments

x	a chTKCat object
login	user login
contact	contact information (can be NA)
admin	a logical indicating if the user is an admin of the chTKCat instance
provider	a logical indicating if the user is data provider (TRUE) or a data consumer (FALSE: default)

Value

No return value, called for side effects

```
write_collection_members
```

Write a collection member JSON file

Description

Write a collection member JSON file

Usage

```
write_collection_members(colMembers, path = NA, collection = NULL)
```

Arguments

colMembers	A tibble as returned by read_collection_members()
path	the JSON file to write. If NA (default), the JSON file is not written but returned by the function.
collection	The collection definition (json string). If NULL (default), it is taken from TKCat environment (see list_local_collections()).

Value

The JSON representation of collection members. If a path is provided, then the JSON is also written in it.

```
write_MergeTree
```

Write a Clickhouse [MergeTree](https://clickhouse.com/docs/en/engines/table-engines/mergetree-family/mergetree/MergeTree) table

Description

Write a Clickhouse **MergeTree** table

Usage

```
write_MergeTree(
  con,
  dbName,
  tableName,
  value,
  rtypes = NULL,
  nullable = NULL,
  sortKey = NULL
)
```

Arguments

con	the clickhouse connection
dbName	the name of the database
tableName	the name of the table
value	the table to import
rtypes	a named character vector giving the R type of each and every columns. If NULL (default), types are guessed from value.
nullable	a character vector indicating the name of the columns which are nullable (default: NULL)
sortKey	a character vector indicating the name of the columns used in the sort key. If NULL (default), all the non-nullable columns are used in the key.

Value

No return value, called for side effects

\$.chMDB

*An **MDB** (Modeled DataBase) based on files: fileMDB*

Description

An **MDB** (Modeled DataBase) based on files: fileMDB

Rename tables of a **fileMDB** object

Usage

```
## S3 method for class 'chMDB'
x$i

fileMDB(
  dataFiles,
  dbInfo,
  dataModel,
  readParameters = DEFAULT_READ_PARAMS,
  collectionMembers = NULL,
  check = TRUE,
  n_max = 10,
  verbose = FALSE
)

## S3 replacement method for class 'fileMDB'
names(x) <- value

## S3 method for class 'fileMDB'
```

```

rename(.data, ...)

## S3 method for class 'fileMDB'
x[i]

## S3 method for class 'fileMDB'
x[[i]]

## S3 method for class 'fileMDB'
x$i

```

Arguments

<code>x</code>	a fileMDB object
<code>i</code>	the index or the name of the tables to take
<code>dataFiles</code>	a named vector of path to data files with <code>all(names(dataFiles) %in% names(dataModel))</code>
<code>dbInfo</code>	a list with DB information: "name" (only mandatory field), "title", "description", "url", "version", "maintainer".
<code>dataModel</code>	a ReDaMoR::RelDataModel object
<code>readParameters</code>	a list of parameters for reading the data file. (e.g. <code>list(delim='\t', quoted_na=FALSE,)</code>)
<code>collectionMembers</code>	the members of collections as provided to the collection_members<- function (default: <code>NULL ==></code> no member).
<code>check</code>	logical: if <code>TRUE</code> (default) the data are confronted to the data model
<code>n_max</code>	maximum number of records to read for checks purpose (default: 10). See also ReDaMoR::confront_data() .
<code>verbose</code>	if <code>TRUE</code> display the data confrontation report (default: <code>FALSE</code>)
<code>value</code>	new table names
<code>.data</code>	a fileMDB object
<code>...</code>	Use <code>new_name = old_name</code> to rename selected tables

Value

A [fileMDB](#) object

See Also

- MDB methods: [db_info](#), [data_model](#), [data_tables](#), [collection_members](#), [count_records](#), [dims](#), [filter_with_tables](#), [as_fileMDB](#)
- Additional general documentation is related to [MDB](#).
- [filter.fileMDB](#), [slice.fileMDB](#)

Examples

```

hpof <- read_fileMDB(
  path=system.file("examples/HPO-subset", package="ReDaMoR"),
  dataModel=system.file("examples/HPO-model.json", package="ReDaMoR"),
  dbInfo=list(
    "name"="HPO",
    "title"="Data extracted from the HPO database",
    "description"=paste(
      "This is a very small subset of the HPO!",
      "Visit the reference URL for more information"
    ),
    "url"="http://human-phenotype-ontology.github.io/"
  )
)
count_records(hpof)

## The following commands take time on fileMDB object
## Not run:

select(hpof, HPO_hp:HPO_diseases)
toTake <- "HPO_altId"
select(hpof, all_of(toTake))

hpoSlice <- slice(hpof, HPO_diseases=1:10)
count_records(hpoSlice)

if("stringr" %in% installed.packages()[,"Package"]){
  epilHP <- filter(
    hpof,
    HPO_diseases=stringr::str_detect(
      label, stringr::regex("epilepsy", ignore_case=TRUE)
    )
  )
  count_records(epilHP)
  label <- "Rolandic epilepsy"
  cn <- sym("label")
  reHP <- filter(
    hpof,
    HPO_diseases=!!cn==!!label
  )
}

## End(Not run)

```

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