

Package ‘CITAN’

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URL <https://github.com/gagolews/CITAN>

BugReports <https://github.com/gagolews/CITAN/issues>

Title CITation ANalysis Toolpack

Description Supports quantitative research in scientometrics and bibliometrics.

Provides various tools for preprocessing bibliographic data retrieved, e.g., from Elsevier's Scopus, computing bibliometric impact of individuals, or modelling phenomena encountered in the social sciences. This package is deprecated; see 'agop' instead.

Depends R (>= 3.2.0), agop, RSQLite

Imports stringi, DBI, grDevices, graphics, stats, utils, methods

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as.character.authorinfo
<i>Coerce an authorinfo object to character string</i>

Description

Converts an object of class authorinfo to a character string. Such an object is returned by e.g. [lbsGetInfoAuthors](#).

Usage

```
## S3 method for class 'authorinfo'
as.character(x, ...)
```

Arguments

- | | |
|-----|--------------------------------------|
| x | a single object of class authorinfo. |
| ... | unused. |

Details

An authorinfo object is a list with the following components:

- IdAuthor — numeric; author’s identifier in the table Biblio_Authors,
- Name — character; author’s name.

Value

A character string

See Also

[print.authorinfo](#), [lbsSearchAuthors](#), [lbsGetInfoAuthors](#)

as.character.docinfo *Coerce a docinfo object to character string*

Description

Converts an object of class docinfo to a character string. Such an object is returned by e.g. [lbsGetInfoDocuments](#).

Usage

```
## S3 method for class 'docinfo'
as.character(x, ...)
```

Arguments

x	a single object of class docinfo.
...	unused.

Details

A docinfo object is a list with the following components:

- IdDocument — numeric; document identifier in the table Biblio_Documents,
- Authors — list of authorinfo objects (see e.g. [as.character.authorinfo](#)).
- Title — title of the document,
- BibEntry — bibliographic entry,
- AlternativeId — unique character identifier,
- Pages — number of pages,
- Citations — number of citations,
- Year — publication year,
- Type — type of document, see [lbsCreate](#).

Value

A character string

See Also

[lbsSearchDocuments](#), [as.character.authorinfo](#), [print.docinfo](#),
[lbsGetInfoDocuments](#)

dbExecQuery	<i>Execute a query and free its resources</i>
-------------	---

Description

Executes an SQL query and immediately frees all allocated resources.

Usage

```
dbExecQuery(conn, statement, rollbackOnError = FALSE)
```

Arguments

conn	a DBI connection object.
statement	a character string with the SQL statement to be executed.
rollbackOnError	logical; if TRUE, then the function executes rollback on current transaction if an exception occurs.

Details

This function may be used to execute queries like CREATE TABLE, UPDATE, INSERT, etc.

It has its own exception handler, which prints out detailed information on caught errors.

See Also

[dbSendQuery](#), [dbClearResult](#), [dbGetQuery](#)

lbsAssess	<i>Calculate impact of given authors</i>
-----------	--

Description

Given a list of authors' citation sequences, the function calculates values of many impact functions at a time.

Usage

```
lbsAssess(
  citseq,
  f = list(length, index_h),
  captions = c("length", "index_h"),
  orderByColumn = 2,
  bestRanks = 20,
  verbose = T
)
```

Arguments

citseq	list of numeric vectors, e.g. the output of lbsGetCitations .
f	a list of n functions which compute the impact of an author. The functions must calculate their values using numeric vectors passed as their first arguments.
captions	a list of n descriptive captions for the functions in f.
orderByColumn	column to sort the results on. 1 for author names, 2 for the first function in f, 3 for the second, and so on.
bestRanks	if not NULL, only a given number of authors with the greatest impact (for each function in f) will be included in the output.
verbose	logical; TRUE to inform about the progress of the process.

Value

A data frame in which each row corresponds to the assessment results of some citation sequence. The first column stands for the authors' names (taken from `names(citseq)`), the second for the valuation of `f[[1]]`, the third for `f[[2]]`, and so on. See Examples below.

See Also

[lbsConnect](#), [lbsGetCitations](#)

Examples

```
## Not run:
conn <- lbsConnect("Bibliometrics.db");
## ...
citseq <- lbsGetCitations(conn,
  surveyDescription="Scientometrics", documentTypes="Article",
  idAuthors=c(39264,39265,39266));
print(citseq);
## $`Liu X.`
## 40116 34128 39122 29672 32343 32775      # Author name
##    11    4    1    0    0    0      # IdDocument
##    attr(,"IdAuthor")
## [1] 39264      # IdAuthor
##
## $`Xu Y.`
## 38680 38605 40035 40030 40124 39829 39745 29672
##    30    14    8    6    6    5    3    0
##    attr(,"IdAuthor")
## [1] 39265
##
## $`Wang Y.`
## 29992 29672 29777 32906 33858 33864 34704
##    1    0    0    0    0    0    0    0
##    attr(,"IdAuthor")
## [1] 39266
library("agop")
print(lbsAssess(citseq,
```

```
f=list(length, sum, index.h, index.g, function(x) index.rp(x,1),
      function(x) sqrt(prod(index.lp(x,1))),
      function(x) sqrt(prod(index.lp(x,Inf)))),
captions=c("length", "sum", "index.h", "index.g", "index.w",
"index.lp1", "index.lpInf"));
##      Name length sum index.h index.g index.w index.lp1 index.lpInf
## 3  Xu Y.      8  72      5      8      7  8.573214  5.477226
## 2 Wang Y.     7   1      1      1      1  1.000000  1.000000
## 1  Liu X.     6  16      2      4      3  4.157609  3.316625
## ...
dbDisconnect(conn);
## End(Not run)
```

lbsClear	<i>Clear a Local Bibliometric Storage</i>
----------	---

Description

Clears a Local Bibliometric Storage by dropping all tables named Biblio_* and all views named ViewBiblio_*.

Usage

```
lbsClear(conn, verbose = TRUE)
```

Arguments

- conn database connection object, see [lbsConnect](#).
- verbose logical; TRUE to be more verbose.

Details

For safety reasons, an SQL transaction opened at the beginning of the removal process is not committed (closed) automatically. You should do manually (or rollback it), see Examples below.

Value

TRUE on success.

See Also

[lbsConnect](#), [lbsCreate](#), [Scopus_ImportSources](#), [lbsDeleteAllAuthorsDocuments](#) [dbCommit](#), [dbRollback](#)

Examples

```
## Not run:
conn <- lbsConnect("Bibliometrics.db");
lbsClear(conn);
dbCommit(conn);
lbsCreate(conn);
Scopus_ImportSources(conn);
## ...
lbsDisconnect(conn);
## End(Not run)
```

lbsConnect

Connect to a Local Bibliometric Storage

Description

Connects to a Local Bibliometric Storage handled by the SQLite engine (see **RSQLite** package documentation).

Usage

```
lbsConnect(dbfilename)
```

Arguments

dbfilename filename of an SQLite database.

Details

Do not forget to close the connection (represented by the connection object returned) with the [lbsDisconnect](#) function after use.

Please note that the database may be also accessed by using lower-level functions from the **DBI** package called on the returned connection object. The table-view structure of a Local Bibliometric Storage is presented in the man page of the [lbsCreate](#) function.

Value

An object of type `SQLiteConnection`, used to communicate with the SQLite engine.

See Also

[lbsCreate](#), [lbsDisconnect](#)

Examples

```
## Not run:
conn <- lbsConnect("Bibliometrics.db")
## ...
lbsDisconnect(conn)
## End(Not run)
```

lbsCreate

Create a Local Bibliometric Storage

Description

Creates an empty Local Bibliometric Storage.

Usage

```
lbsCreate(conn, verbose = TRUE)
```

Arguments

conn	a connection object, see lbsConnect .
verbose	logical; TRUE to be more verbose.

Details

The function may be executed only if the database contains no tables named Biblio_* and no views named ViewBiblio_*.

The following SQL code is executed.

```
CREATE TABLE Biblio_Categories (\cr
  -- Source classification codes (e.g. ASJC)\cr
  IdCategory      INTEGER PRIMARY KEY ASC,\cr
  IdCategoryParent INTEGER NOT NULL,\cr
  Description      VARCHAR(63) NOT NULL,\cr
  FOREIGN KEY(IdCategoryParent) REFERENCES Biblio_Categories(IdCategory)\cr
);
```

```
CREATE TABLE Biblio_Sources (
  IdSource      INTEGER PRIMARY KEY AUTOINCREMENT,
  AlternativeId VARCHAR(31) UNIQUE NOT NULL,
  Title         VARCHAR(255) NOT NULL,
  IsActive      BOOLEAN,
  IsOpenAccess  BOOLEAN,
  Type          CHAR(2) CHECK (Type IN ('bs', 'cp', 'jo')),
  -- Book Series / Conference Proceedings / Journal
  -- or NULL in all other cases
  Impact1       REAL, -- value of an impact factor
```

```

Impact2      REAL, -- value of an impact factor
Impact3      REAL, -- value of an impact factor
Impact4      REAL, -- value of an impact factor
Impact5      REAL, -- value of an impact factor
Impact6      REAL, -- value of an impact factor
);

CREATE TABLE Biblio_SourcesCategories (
    -- links Sources and Categories
    IdSource      INTEGER NOT NULL,
    IdCategory    INTEGER NOT NULL,
    PRIMARY KEY(IdSource, IdCategory),
    FOREIGN KEY(IdSource)      REFERENCES Biblio_Sources(IdSource),
    FOREIGN KEY(IdCategory)    REFERENCES Biblio_Categories(IdCategory)
);

CREATE TABLE Biblio_Documents (
    IdDocument    INTEGER PRIMARY KEY AUTOINCREMENT,
    IdSource      INTEGER,
    AlternativeId  VARCHAR(31) UNIQUE NOT NULL,
    Title         VARCHAR(255) NOT NULL,
    BibEntry      TEXT,
    -- (e.g. Source Title,Year,Volume,Issue,Article Number,PageStart,PageEnd)
    Year          INTEGER,
    Pages         INTEGER,
    Citations     INTEGER NOT NULL,
    Type          CHAR(2) CHECK (Type IN ('ar', 'ip', 'bk',
        'cp', 'ed', 'er', 'le', 'no', 'rp', 're', 'sh')),
    -- Article-ar / Article in Press-ip / Book-bk /
    -- Conference Paper-cp / Editorial-ed / Erratum-er /
    -- Letter-le/ Note-no / Report-rp / Review-re / Short Survey-sh
    -- or NULL in all other cases
    FOREIGN KEY(IdSource)      REFERENCES Biblio_Sources(IdSource),
    FOREIGN KEY(IdLanguage)    REFERENCES Biblio_Languages(IdLanguage)
);

CREATE TABLE Biblio_Citations (
    IdDocumentParent  INTEGER NOT NULL, # cited document
    IdDocumentChild   INTEGER NOT NULL, # reference
    PRIMARY KEY(IdDocumentParent, IdDocumentChild),
    FOREIGN KEY(IdDocumentParent) REFERENCES Biblio_Documents(IdDocument),
    FOREIGN KEY(IdDocumentChild)  REFERENCES Biblio_Documents(IdDocument)
);

CREATE TABLE Biblio_Surveys (
    -- each call to lbsImportDocuments() puts a new record here,
    -- they may be grouped into so-called 'Surveys' using 'Description' field
    IdSurvey          INTEGER PRIMARY KEY AUTOINCREMENT,

```

```

        Description    VARCHAR(63) NOT NULL,    -- survey group name
        FileName       VARCHAR(63),            -- original file name
        Timestamp      DATETIME                 -- date of file import
    );

CREATE TABLE Biblio_DocumentsSurveys (
    -- note that the one Document may often be found in many Surveys
    IdDocument        INTEGER NOT NULL,
    IdSurvey           INTEGER NOT NULL,
    PRIMARY KEY(IdDocument, IdSurvey),
    FOREIGN KEY(IdSurvey) REFERENCES Biblio_Surveys(IdSurvey),
    FOREIGN KEY(IdDocument) REFERENCES Biblio_Documents(IdDocument)
);

CREATE TABLE Biblio_Authors (
    IdAuthor           INTEGER PRIMARY KEY AUTOINCREMENT,
    Name               VARCHAR(63) NOT NULL,
    AuthorGroup        VARCHAR(31), # used to merge authors with non-unique representations
);

CREATE TABLE Biblio_AuthorsDocuments (
    -- links Authors and Documents
    IdAuthor           INTEGER NOT NULL,
    IdDocument         INTEGER NOT NULL,
    PRIMARY KEY(IdAuthor, IdDocument),
    FOREIGN KEY(IdAuthor) REFERENCES Biblio_Authors(IdAuthor),
    FOREIGN KEY(IdDocument) REFERENCES Biblio_Documents(IdDocument)
);

```

In addition, the following views are created.

```

CREATE VIEW ViewBiblio_DocumentsSurveys AS
SELECT
    Biblio_DocumentsSurveys.IdDocument AS IdDocument,
    Biblio_DocumentsSurveys.IdSurvey AS IdSurvey,
    Biblio_Surveys.Description AS Description,
    Biblio_Surveys.Filename AS Filename,
    Biblio_Surveys.Timestamp AS Timestamp
FROM Biblio_DocumentsSurveys
JOIN Biblio_Surveys
    ON Biblio_DocumentsSurveys.IdSurvey=Biblio_Surveys.IdSurvey;

CREATE VIEW ViewBiblio_DocumentsCategories AS
SELECT
    IdDocument AS IdDocument,
    DocSrcCat.IdCategory AS IdCategory,
    DocSrcCat.Description AS Description,
    DocSrcCat.IdCategoryParent AS IdCategoryParent,

```

```

        Biblio_Categories.Description AS DescriptionParent
FROM
(
    SELECT
        Biblio_Documents.IdDocument AS IdDocument,
        Biblio_SourcesCategories.IdCategory AS IdCategory,
        Biblio_Categories.Description AS Description,
        Biblio_Categories.IdCategoryParent AS IdCategoryParent
    FROM Biblio_Documents
    JOIN Biblio_SourcesCategories
        ON Biblio_Documents.IdSource=Biblio_SourcesCategories.IdSource
    JOIN Biblio_Categories
        ON Biblio_SourcesCategories.IdCategory=Biblio_Categories.IdCategory
) AS DocSrcCat
JOIN Biblio_Categories
    ON DocSrcCat.IdCategoryParent=Biblio_Categories.IdCategory;

```

Value

TRUE on success.

See Also

[lbsConnect](#), [lbsClear](#), [Scopus_ImportSources](#), [lbsTidy](#) /internal/ /internal/ /internal/

Examples

```

## Not run:
conn <- lbsConnect("Bibliometrics.db");
## ...
lbsCreate(conn);
Scopus_ImportSources(conn);
## ...
lbsDisconnect(conn);
## End(Not run)

```

lbsDeleteAllAuthorsDocuments

Delete all authors, documents and surveys from a Local Bibliometric Storage

Description

Deletes author, citation, document, and survey information from a Local Bibliometric Storage.

Usage

```
lbsDeleteAllAuthorsDocuments(conn, verbose = TRUE)
```

Arguments

conn database connection object, see [lbsConnect](#).
 verbose logical; TRUE to be more verbose.

Details

For safety reasons, an SQL transaction opened at the beginning of the removal process is not committed (closed) automatically. You should do manually (or rollback it), see Examples below.

Value

TRUE on success.

See Also

[lbsClear](#), [dbCommit](#), [dbRollback](#)

Examples

```
## Not run:
conn <- lbsConnect("Bibliometrics.db")
lbsDeleteAllAuthorsDocuments(conn)
dbCommit(conn)
## ...
lbsDisconnect(conn)
## End(Not run)
```

lbsDescriptiveStats	<i>Perform preliminary analysis of data in a Local Bibliometric Storage</i>
---------------------	---

Description

Performs preliminary analysis of data in a Local Bibliometric Storage by creating some basic descriptive statistics (numeric and graphical). Dataset may be restricted to any given document types or a single survey.

Usage

```
lbsDescriptiveStats(
  conn,
  documentTypes = NULL,
  surveyDescription = NULL,
  which = (1L:7L),
  main = "",
  ask = (prod(par("mfcol")) < length(which) && dev.interactive()),
  ...,
  cex.caption = 1
)
```

Arguments

conn	connection object, see lbsConnect .
documentTypes	character vector or NULL; specifies document types to restrict to; a combination of Article, Article in Press, Book, Conference Paper, Editorial, Erratum, Letter, Note, Report, Review, Short Survey. NULL means no restriction.
surveyDescription	single character string or NULL; survey to restrict to, or NULL for no restriction.
which	numeric vector with elements in 1,...,7, or NULL; plot types to be displayed.
main	title for each plot.
ask	logical; if TRUE, the user is asked to press return before each plot.
...	additional graphical parameters, see plot.default .
cex.caption	controls size of default captions.

Details

Plot types (accessed with which):

- 1 — "Document types",
- 2 — "Publication years",
- 3 — "Citations per document",
- 4 — "Citations of cited documents per type",
- 5 — "Number of pages per document type",
- 6 — "Categories of documents" (based on source categories),
- 7 — "Documents per author".

Note that this user interaction scheme is similar in behavior to the [plot.lm](#) function.

See Also

[plot.default](#), [lbsConnect](#) /internal/ /internal/

Examples

```
## Not run:
conn <- lbsConnect("Bibliometrics.db");
## ...
lbsDescriptiveStats(conn, surveyDescription="Scientometrics",
  documentTypes=c("Article", "Note", "Report", "Review", "Short Survey"));
## ...
lbsDisconnect(conn);
## End(Not run)
```

lbsDisconnect	<i>Disconnect from a Local Bibliometric Storage</i>
---------------	---

Description

Disconnects from a Local Bibliometric Storage.

Usage

```
lbsDisconnect(conn)
```

Arguments

conn database connection object, see [lbsConnect](#).

See Also

[lbsConnect](#)

Examples

```
## Not run:
conn <- lbsConnect("Bibliometrics.db");
## ...
lbsDisconnect(conn);
## End(Not run)
```

lbsGetCitations	<i>Fetch authors' citation sequences</i>
-----------------	--

Description

Creates ordered citation sequences of authors in a Local Bibliometric Storage.

Usage

```
lbsGetCitations(
  conn,
  documentTypes = NULL,
  surveyDescription = NULL,
  idAuthors = NULL,
  verbose = TRUE
)
```

Arguments

conn	a connection object as produced by lbsConnect .
documentTypes	character vector or NULL; specifies document types to restrict to; a combination of Article, Article in Press, Book, Conference Paper, Editorial, Erratum, Letter, Note, Report, Review, Short Survey. NULL means no restriction.
surveyDescription	single character string or NULL; survey to restrict to or NULL for no restriction.
idAuthors	numeric vector of authors' identifiers for which the sequences are to be created or NULL for all authors in the database.
verbose	logical; TRUE to inform about the progress of the process.

Details

A citation sequence is a numeric vector consisting of citation counts of all the documents mapped to selected authors. However, the function may take into account only the documents from a given Survey (using surveyDescription parameter) or of chosen types (documentTypes).

Value

A list of non-increasingly ordered numeric vectors is returned. Each element of the list corresponds to a citation sequence of some author. List names attribute are set to authors' names. Moreover, each vector has a set IdAuthor attribute, which uniquely identifies the corresponding record in the table Biblio_Authors. Citation counts come together with IdDocuments (vector elements are named).

The list of citation sequences may then be used to calculate authors' impact using [lbsAssess](#) (see Examples below).

See Also

[lbsConnect](#), [lbsAssess](#)

Examples

```
## Not run:
conn <- lbsConnect("Bibliometrics.db");
## ...
citseq <- lbsGetCitations(conn,
  surveyDescription="Scientometrics", documentTypes="Article",
  idAuthors=c(39264,39265,39266));
print(citseq);
## $`Liu X.`                                # Author name
## 40116 34128 39122 29672 32343 32775      # IdDocument
##    11     4     1     0     0     0      # Citation count
## attr(,"IdAuthor")
## [1] 39264                                # IdAuthor
##
## $`Xu Y.`
## 38680 38605 40035 40030 40124 39829 39745 29672
##    30    14     8     6     6     5     3     0
## attr(,"IdAuthor")
```

```
## [1] 39265
##
## $`Wang Y.`
## 29992 29672 29777 32906 33858 33864 34704
##      1      0      0      0      0      0      0
## attr(,"IdAuthor")
## [1] 39266
print(lbsAssess(citseq,
  f=list(length, sum, index.h, index.g, function(x) index.rp(x,1),
    function(x) sqrt(prod(index.lp(x,1))),
    function(x) sqrt(prod(index.lp(x,Inf)))),
  captions=c("length", "sum", "index.h", "index.g", "index.w",
    "index.lp1", "index.lpInf")));
##      Name length sum index.h index.g index.w index.lp1 index.lpInf
## 3  Xu Y.      8  72      5      8      7  8.573214  5.477226
## 2  Wang Y.     7   1      1      1      1  1.000000  1.000000
## 1  Liu X.      6  16      2      4      3  4.157609  3.316625
## ...
dbDisconnect(conn);
## End(Not run)
```

lbsGetInfoAuthors	<i>Retrieve author information</i>
-------------------	------------------------------------

Description

Retrieves basic information on given authors.

Usage

```
lbsGetInfoAuthors(conn, idAuthors)
```

Arguments

- | | |
|-----------|--|
| conn | a connection object as produced by lbsConnect . |
| idAuthors | a numeric or integer vector with author identifiers (see column IdAuthor in the table Biblio_Authors). |

Value

- A list of authorinfo objects, that is lists with the following components:
- IdAuthor — numeric; author’s identifier in the table Biblio_Authors,
 - Name — character; author’s name.
 - AuthorGroup — character; author group (used to merge author records).

See Also

[lbsSearchAuthors](#), [lbsSearchDocuments](#), [lbsGetInfoDocuments](#),
[as.character.authorinfo](#), [print.authorinfo](#),

Examples

```
## Not run:
conn <- dbBiblioConnect("Bibliometrics.db");
## ...
id <- lbsSearchAuthors(conn, c("Smith\
lbsGetInfoAuthors(conn, id);
## ...
## End(Not run)
```

lbsGetInfoDocuments	<i>Retrieve document information</i>
---------------------	--------------------------------------

Description

Retrieves information on given documents.

Usage

```
lbsGetInfoDocuments(conn, idDocuments)
```

Arguments

conn	a connection object as produced by lbsConnect .
idDocuments	a numeric or integer vector with document identifiers (see column <code>IdDocument</code> in the table <code>Biblio_Documents</code>).

Value

A list of `docinfo` objects, that is lists with the following components:

- `IdDocument` — numeric; document identifier in the table `Biblio_Documents`,
- `Authors` — list of `authorinfo` objects (see e.g. [as.character.authorinfo](#)).
- `Title` — title of the document,
- `BibEntry` — bibliographic entry,
- `AlternativeId` — unique character identifier,
- `Pages` — number of pages,
- `Citations` — number of citations,
- `Year` — publication year,
- `Type` — document type, e.g. Article or Conference Paper.

See Also

[print.docinfo](#), [lbsSearchDocuments](#), [lbsGetInfoAuthors](#),
[as.character.authorinfo](#), [as.character.docinfo](#)

Examples

```
## Not run:
conn <- dbBiblioConnect("Bibliometrics.db");
## ...
id <- lbsSearchDocuments(conn,
idAuthors=lbsSearchAuthors(conn, "Knuth\
lbsGetInfoDocuments(conn, id);
## ...
## End(Not run)
```

lbsImportDocuments	<i>Import bibliographic data into a Local Bibliometric Storage.</i>
--------------------	---

Description

Imports bibliographic data from a special 11-column data.frame object (see e.g. [Scopus_ReadCSV](#)) into a Local Bibliometric Storage.

Usage

```
lbsImportDocuments(
  conn,
  data,
  surveyDescription = "Default survey",
  surnameFirstnameCommaSeparated = FALSE,
  originalFilename = attr(data, "filename"),
  excludeRows = NULL,
  updateDocumentIfExists = TRUE,
  warnSourceTitle = TRUE,
  warnExactDuplicates = FALSE,
  verbose = TRUE
)
```

Arguments

conn	a connection object, see lbsConnect .
data	11 column data.frame with bibliometric entries; see above.
surveyDescription	description of the survey. Allows for documents grouping.
surnameFirstnameCommaSeparated	logical; indicates wher surnames are separated from first names (or initials) by comma or by space (FALSE, default).
originalFilename	original filename; attr(data, "filename") used by default.
excludeRows	a numeric vector with row numbers of data to be excluded or NULL.

updateDocumentIfExists	logical; if TRUE then documents with existing AlternativeId will be updated.
warnSourceTitle	logical; if TRUE then warnings are generated if a given SourceTitle is not found in Biblio_Sources.
warnExactDuplicates	logical; TRUE to warn if exact duplicates are found (turned off by default).
verbose	logical; TRUE to display progress information.

Details

data must consist of the following 11 columns (in order). Otherwise the process will not be executed.

1	Authors	character	Author(s) name(s), comma-separated, surnames first.
2	Title	character	Document title.
3	Year	numeric	Year of publication.
4	SourceTitle	character	Title of the source containing the document.
5	Volume	character	Volume.
6	Issue	character	Issue.
7	PageStart	numeric	Start page; numeric.
8	PageEnd	numeric	End page; numeric.
9	Citations	numeric	Number of citations; numeric.
10	AlternativeId	character	Alternative document identifier.
11	DocumentType	factor	Type of the document.

DocumentType is one of “Article”, “Article in Press”, “Book”, “Conference Paper”, “Editorial”, “Erratum”, “Letter”, “Note”, “Report”, “Review”, “Short Survey”, or NA (other categories are interpreted as NA).

Note that if data contains a large number of records (>1000), the whole process may take a few minutes.

Sources (e.g. journals) are identified by SourceTitle (table Biblio_Sources). Note that generally there is no need to concern about missing SourceTitles of conference proceedings.

Each time a function is called, a new record in the table Biblio_Surveys is created. Such surveys may be grouped using the Description field, see [lbsCreate](#).

Value

TRUE on success.

See Also

[Scopus_ReadCSV](#), [lbsConnect](#), [lbsCreate](#)

Examples

```
## Not run:
conn <- lbsConnect("Bibliometrics.db");
## ...
data <- Scopus_ReadCSV("db_Polish_MATH/Poland_MATH_1987-1993.csv");
lbsImportDocuments(conn, data, "Poland_MATH");
## ...
lbsDisconnect(conn);
## End(Not run)
```

lbsSearchAuthors	<i>Find authors that satisfy given criteria</i>
------------------	---

Description

Finds authors by name.

Usage

```
lbsSearchAuthors(conn, names.like = NULL, group = NULL)
```

Arguments

conn	connection object, see lbsConnect .
names.like	character vector of SQL-LIKE patterns to match authors' names.
group	character vector of author group identifiers.

Details

names.like is a set of search patterns in an SQL LIKE format, i.e. an underscore _ matches a single character and a percent sign % matches any set of characters. The search is case-insensitive.

Value

Integer vector of authors' identifiers which match at least one of given SQL-LIKE patterns.

See Also

[lbsGetInfoAuthors](#), [lbsSearchDocuments](#), [lbsGetInfoDocuments](#)

Examples

```
## Not run:
conn <- dbBiblioConnect("Bibliometrics.db");
## ...
id <- lbsSearchAuthors(conn, c("Smith\
lbsGetInfoAuthors(conn, id);
## ...
## End(Not run)
```

lbsSearchDocuments	<i>Find documents that satisfy given criteria</i>
--------------------	---

Description

Searches for documents meeting given criteria (e.g. document titles, documents' authors identifiers, number of citations, number of pages, publication years or document types).

Usage

```
lbsSearchDocuments(
  conn,
  titles.like = NULL,
  idAuthors = NULL,
  citations.expr = NULL,
  pages.expr = NULL,
  year.expr = NULL,
  documentTypes = NULL,
  alternativeId = NULL,
  surveyDescription = NULL
)
```

Arguments

conn	connection object, see lbsConnect .
titles.like	character vector of SQL-LIKE patterns to match documents' titles or NULL.
idAuthors	numeric or integer vector with author identifiers (see column IdAuthor in the table Biblio_Authors) or NULL.
citations.expr	expression determining the desired number of citations or NULL, see Examples below.
pages.expr	expression determining the desired number of pages or NULL, see Examples below.
year.expr	expression determining the desired publication year or NULL, see Examples below.
documentTypes	character vector or NULL; specifies document types to restrict to; a combination of Article, Article in Press, Book, Conference Paper, Editorial, Erratum, Letter, Note, Report, Review, Short Survey. NULL means no such restriction.
alternativeId	character vector of documents' AlternativeIds.
surveyDescription	single character string or NULL; survey description to restrict to or NULL.

Details

titles.like is a set of search patterns in an SQL LIKE format, i.e. an underscore _ matches a single character and a percent sign % matches any set of characters. The search is case-insensitive. The expressions passed as parameters citations.expr, pages.expr, year.expr must be acceptable by SQL WHERE clause in the form WHERE field <expression>, see Examples below.

Value

Integer vector of documents' identifiers matching given criteria.

See Also

[lbsGetInfoAuthors](#), [lbsSearchAuthors](#), [lbsGetInfoDocuments](#)

Examples

```
## Not run:
conn <- dbBiblioConnect("Bibliometrics.db");
## ...
idd <- lbsSearchDocuments(conn, pages.expr=">= 400",
  year.expr="BETWEEN 1970 AND 1972");
lbsGetInfoDocuments(conn, idd);
## ...
## End(Not run)
```

lbsTidy

Clean up a Local Bibliometric Storage

Description

Cleans up a Local Bibliometric Storage by removing all authors with no documents, fixing documents with missing survey information, and executing the VACUUM SQL command.

Usage

```
lbsTidy(
  conn,
  newSuveyDescription = "lbsTidy_Merged",
  newSuveyFilename = "lbsTidy_Merged"
)
```

Arguments

`conn` database connection object, see [lbsConnect](#).

`newSuveyDescription` character; default survey description for documents with missing survey info.

`newSuveyFilename` character; default survey filename for documents with missing survey info.

Value

TRUE on success.

See Also

[lbsConnect](#), [lbsCreate](#), [Scopus_ImportSources](#), [lbsDeleteAllAuthorsDocuments](#), [dbCommit](#), [dbRollback](#)

print.authorinfo	<i>Print an authorinfo object</i>
------------------	-----------------------------------

Description

Prints out an object of class authorinfo. Such an object is returned by e.g. [lbsGetInfoAuthors](#).

Usage

```
## S3 method for class 'authorinfo'
print(x, ...)
```

Arguments

x	an object of class authorinfo.
...	unused.

Details

For more information see man page for [as.character.authorinfo](#).

See Also

[as.character.authorinfo](#), [lbsSearchAuthors](#), [lbsGetInfoAuthors](#)

print.docinfo	<i>Print a docinfo object</i>
---------------	-------------------------------

Description

Prints out an object of class docinfo. Such an object is returned by e.g. [lbsGetInfoDocuments](#).

Usage

```
## S3 method for class 'docinfo'
print(x, ...)
```

Arguments

x	an object of class docinfo.
...	unused.

Details

For more information see man page for [as.character.docinfo](#).

See Also

[as.character.docinfo](#), [lbsSearchDocuments](#), [lbsGetInfoDocuments](#)

Scopus_ASJC	<i>Scopus ASJC (All Science. Journals Classification) classification codes</i>
-------------	--

Description

List of Elsevier’s *SciVerse Scopus ASJC* (All Science. Journals Classification) source classification codes.

Usage

Scopus_ASJC

Format

An object of class NULL of length 0.

Details

Last update: October 2011. The data file is based on the official and publicly available (no permission needed as stated by Elsevier) Scopus list of covered titles.

It consists of 334 ASJC 4-digit integer codes (column ASJC) together with their group identifiers (column ASJC_Parent) and descriptions (column Description).

ASJC codes are used to classify Scopus sources (see [Scopus_SourceList](#)).

See Also

[Scopus_SourceList](#), [Scopus_ReadCSV](#), [Scopus_ImportSources](#)

Scopus_ImportSources	<i>Import SciVerse Scopus coverage information and ASJC codes to a Local Bibliometric Storage</i>
----------------------	---

Description

Imports *SciVerse Scopus* covered titles and their ASJC codes to an empty Local Bibliometric Storage (LBS).

Usage

```
Scopus_ImportSources(conn, verbose = T)
```

Arguments

conn	a connection object, see lbsConnect .
verbose	logical; TRUE to display progress information.

Details

This function should be called prior to importing any document information to the LBS with the function [lbsImportDocuments](#).

Note that adding all the sources takes some time.

Only elementary ASJC and *SciVerse Scopus* source data read from [Scopus_ASJC](#) and [Scopus_SourceList](#) will be added to the LBS (Biblio_Categories, Biblio_Sources, Biblio_SourcesCategories).

Value

TRUE on success.

See Also

[Scopus_ASJC](#), [Scopus_SourceList](#), [Scopus_ReadCSV](#), [lbsConnect](#), [lbsCreate](#)

Examples

```
## Not run:
conn <- lbsConnect("Bibliometrics.db");
lbsCreate(conn);
Scopus_ImportSources(conn);
## ...
lbsDisconnect(conn);
## End(Not run)
```

Scopus_ReadCSV	<i>Import bibliography entries from a CSV file.</i>
----------------	---

Description

Reads bibliography entries from a UTF-8 encoded CSV file.

Usage

```
Scopus_ReadCSV(
  filename,
  stopOnError = TRUE,
  dbIdentifier = "Scopus",
  alternativeIdPattern = "^.*\\id=|\\&.*$",
  ...
)
```

Arguments

filename	the name of the file which the data are to be read from, see read.csv .
stopOnError	logical; TRUE to stop on all potential parse errors or just warn otherwise.
dbIdentifier	character or NA; database identifier, helps detect parse errors, see above.
alternativeIdPattern	character; regular expression used to extract AlternativeId, NA to get the id as is,
...	further arguments to be passed to <code>read.csv</code> .

Details

The [read.csv](#) function is used to read the bibliography. You may therefore freely modify its behavior by passing further arguments (...), see the manual page of [read.table](#) for details.

The CSV file should consist at least of the following columns.

1. Authors: Author name(s) (surname first; multiple names are comma-separated, e.g. "Smith John, Nowak G. W."),
2. Title: Document title,
3. Year: Year of publication,
4. Source.title: Source title, e.g. journal name,
5. Volume: Volume number,
6. Issue: Issue number,
7. Page.start: Start page number,
8. Page.end: End page number,
9. Cited.by: Number of citations received,
10. Link: String containing unique document identifier, by default of the form ...id=UNIQUE_ID&... (see alternativeIdPattern parameter),

11. Document.Type: Document type, one of: “Article”, “Article in Press”, “Book”, “Conference Paper”, “Editorial”, “Erratum”, “Letter”, “Note”, “Report”, “Review”, “Short Survey”, or NA (other categories are treated as NAs),
12. Source: Data source identifier, must be the same as the dbIdentifier parameter value. It is used for parse errors detection.

The CSV file to be read may, for example, be created by *SciVerse Scopus* (Export format=*comma separated file*, *.csv* (e.g. *Excel*), Output=*Complete format* or *Citations only*). Note that the exported CSV file sometimes needs to be corrected by hand (wrong page numbers, single double quotes in character strings instead of two-double quotes etc.). We suggest to make the corrections in a “Notepad”-like application (in plain text). The function tries to indicate line numbers causing potential problems.

Value

A data.frame containing the following 11 columns:

Authors	Author name(s), comma-separated, surnames first.
Title	Document title.
Year	Year of publication.
AlternativeId	Unique document identifier.
SourceTitle	Title of the source containing the document.
Volume	Volume.
Issue	Issue.
PageStart	Start page; numeric.
PageEnd	End page; numeric.
Citations	Number of citations; numeric.
DocumentType	Type of the document; see above.

The object returned may be imported into a local bibliometric storage via [lbsImportDocuments](#).

See Also

[Scopus_ASJC](#), [Scopus_SourceList](#), [lbsConnect](#), [Scopus_ImportSources](#), [read.table](#), [lbsImportDocuments](#)

Examples

```
## Not run:
conn <- lbsConnect("Bibliometrics.db");
## ...
data <- Scopus_ReadCSV("db_Polish_MATH/Poland_MATH_1987-1993.csv");
lbsImportDocuments(conn, data, "Poland_MATH");
## ...
lbsDisconnect(conn);
## End(Not run)
```

Scopus_SourceList	<i>Scopus covered source list</i>
-------------------	-----------------------------------

Description

List of Elsevier's *SciVerse Scopus* covered titles (journals, conference proceedings, book series, etc.)

Usage

Scopus_SourceList

Format

An object of class NULL of length 0.

Details

Last update: October 2011. The data file is based on the official and publicly available (no permission needed as stated by Elsevier) Scopus list of covered titles.

This data frame consists of 30794 records. It has the following columns.

SourceId	Unique source identifier in <i>SciVerse Scopus</i> (integer).
Title	Title of the source.
Status	Status of the source, either Active or Inactive.
SJR_2009	SCImago Journal Rank 2009.
SNIP_2009	Source Normalized Impact per Paper 2009.
SJR_2010	SCImago Journal Rank 2010.
SNIP_2010	Source Normalized Impact per Paper 2010.
SJR_2011	SCImago Journal Rank 2011.
SNIP_2011	Source Normalized Impact per Paper 2011.
OpenAccess	Type of Open Access, see below.
Type	Type of the source, see below.
ASJC	A list of semicolon-separated ASJC classification codes, see Scopus_ASJC .

OpenAccess is one of DOAJ, Not OA (not Open Access source), OA but not registered, OA registered.

Type is one of Book Series, Conference Proceedings, Journal, Trade Journal

The data.frame is sorted by Status (Active sources first) and then by SJR_2011 (higher values first).

See Also

[Scopus_ASJC](#), [Scopus_ReadCSV](#), [Scopus_ImportSources](#)

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