Package ‘manydata’

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Title A Portal for Global Governance Data

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Description This is the core package for the many packages universe. It includes functions to help researchers work with and contribute to event datasets on global governance.

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URL https://github.com/globalgov/manydata

BugReports https://github.com/globalgov/manydata/issues

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coalesce_rows

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**Description**

For use with dplyr::summarise, for example

**Usage**

coalesce_rows(x)

**Arguments**

- **x**
  - A vector

**Details**

This function operates similarly to coalesce for columns, that is picking the first non-missing observation, but on observations rather than variables.

**Value**

A single value

**Source**

https://stackoverflow.com/questions/40515180/dplyr-how-to-find-the-first-non-missing-string-by-groups

**Examples**

```r
dplyr::summarise(emperors$wikipedia, coalesce_rows(emperors$wikipedia))
coalesce_rows(emperors$wikipedia$Beg)
```
consolidate

Consolidate database into a single dataset

Description

This function consolidates a set of datasets in a `many* package` database into a single dataset with some combination of the rows, columns, and observations of the datasets in the database. The function includes separate arguments for the rows and columns, as well as for how to resolve conflicts for observations across datasets. This provides users with considerable flexibility in how they combine data. For example, users may wish to stick to units that appear in every dataset but include variables coded in any dataset, or units that appear in any dataset but only those variables that appear in every dataset. Even then there may be conflicts, as the actual unit-variable observations may differ from dataset to dataset. We offer a number of resolve methods that enable users to choose how conflicts between observations are resolved.

Usage

```r
consolidate(
  database,
  rows = "any",
  cols = "any",
  resolve = "coalesce",
  key = "manyID"
)
```

Arguments

- **database**: A database object from one of the many packages
- **rows**: Which rows or units to retain. By default "any" (or all) units are retained, but another option is "every", which retains only those units that appear in all parent datasets.
- **cols**: Which columns or variables to retain. By default "any" (or all) variables are retained, but another option is "every", which retains only those variables that appear in all parent datasets.
- **resolve**: How should conflicts between observations be resolved? By default "coalesce", but other options include: "min", "max", "mean", "median", and "random". "coalesce" takes the first non-NA value. "max" takes the largest value. "min" takes the smallest value. "mean" takes the average value. "median" takes the median value. "random" takes a random value. For different variables to be resolved differently, you can specify the variables’ names alongside how each is to be resolved in a list (e.g. `resolve = c(var1 = "min", var2 = "max")`). In this case, only the variables named will be resolved and returned.
- **key**: An ID column to collapse by. By default "many_ID". Users can also specify multiple key variables in a list. For multiple key variables, the key variables must be present in all the datasets in the database (e.g. `key = c("key1", "key2")`). For equivalent key columns with different names across datasets, matching is
possible if keys are declared (e.g. `key = c("key1" = "key2")`). Missing observations in the key variable are removed.

Details

Text variables are dropped for more efficient consolidation.

Value

A single tibble/data frame.

Examples

```r
consolidate(database = emperors, key = "ID")
consolidate(database = favour(emperors, "UNRV"), rows = "every",
cols = "every", resolve = "coalesce", key = "ID")
consolidate(database = emperors, rows = "any", cols = "every",
resolve = "min", key = "ID")
consolidate(database = emperors, rows = "every", cols = "any",
resolve = "max", key = "ID")
consolidate(database = emperors, rows = "every", cols = "every",
resolve = "median", key = "ID")
consolidate(database = emperors, rows = "every", cols = "every",
resolve = "mean", key = "ID")
consolidate(database = emperors, rows = "every", cols = "every",
resolve = "random", key = "ID")
consolidate(database = emperors, rows = "every", cols = "every",
resolve = c(Beg = "min", End = "max"), key = "ID")
consolidate(database = emperors, rows = "any", cols = "any",
resolve = c(Death = "max", Cause = "coalesce"),
key = c("ID", "Beg"))
```
**Arguments**

- `database`: A many database.
- `key`: A variable key to join datasets by, "manyID" by default.
- `variable`: Would you like to focus on one, or more, specific variables? By default "all". For multiple variables, please declare variable names as a vector.
- `category`: Would you like to focus on one specific code category? By default "all" are returned. Other options include "confirmed", "unique", "missing", "conflicting", or "majority". For multiple variables, please declare categories as a vector.

**Details**

Confirmed values are the same in all datasets in database. Unique values appear once in datasets in database. Missing values are missing in all datasets in database. Conflicting values are different in the same number of datasets in database. Majority values have the same value in multiple, but not all, datasets in database.

`db_plot()` plots the database profile.

`db_comp()` creates a tibble comparing the variables in a database.

**Value**

A plot, or a tibble, with the profile of the variables across all datasets in a "many" database. For multiple categories across multiple variables, the functions return all rows that contain at least one of the selected variables coded as one of the categories.

**Examples**

```r
db_plot(database = emperors, key = "ID")
db_plot(database = emperors, key = "ID", variable = c("Beg", "End"))
db_plot(database = emperors, key = "ID", variable = c("Beg", "End"),
category = c("conflict", "unique"))
```

```r
db_comp(database = emperors, key = "ID")
db_comp(database = emperors, key = "ID", variable = "Beg")
db_comp(database = emperors, key = "ID", variable = c("Beg", "End"),
category = "conflict")
db_comp(database = emperors, key = "ID", variable = c("Beg", "End"),
category = c("conflict", "unique"))
```
Emperors database documentation

Description

Emperors database documentation

Usage

emperors

Format

The emperors database is a list that contains the following 3 datasets: wikipedia, UNRV, britannica. For more information and references to each of the datasets used, please use the data_source() and data_contrast() functions.

wikipedia: A dataset with 68 observations and the following 15 variables: ID, Beg, End, Full-Name, Birth, Death, CityBirth, ProvinceBirth, Rise, Cause, Killer, Dynasty, Era, Notes, Verif.

UNRV: A dataset with 99 observations and the following 7 variables: ID, Beg, End, Birth, Death, FullName, Dynasty.

britannica: A dataset with 87 observations and the following 3 variables: ID, Beg, End.

Details

```r
# $wikipedia
# ----------------------------------------------------------------------------
# | Column Name | Data Type | Observations | Missing | Missing (%) |
# |-------------|-----------|--------------|---------|-------------|
# | ID          | character | 68 | 0 | 0 |
# | Beg         | mdate     | 68 | 0 | 0 |
# | End         | mdate     | 68 | 0 | 0 |
# | FullName    | character | 68 | 0 | 0 |
# | Birth       | character | 68 | 5 | 7.35 |
# | Death       | character | 68 | 0 | 0 |
# | CityBirth   | character | 68 | 17 | 25 |
# | ProvinceBirth| character | 68 | 0 | 0 |
# | Rise        | character | 68 | 0 | 0 |
# | Cause       | character | 68 | 0 | 0 |
# | Killer      | character | 68 | 0 | 0 |
# | Dynasty     | character | 68 | 0 | 0 |
# | Era         | character | 68 | 0 | 0 |
# | Notes       | character | 68 | 22 | 32.35 |
# | Verif       | character | 68 | 57 | 83.82 |
# ----------------------------------------------------------------------------
```
### $UNRV

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Observations</th>
<th>Missing</th>
<th>Missing (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>character</td>
<td>99</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Beg</td>
<td>mdate</td>
<td>99</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>End</td>
<td>mdate</td>
<td>99</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Birth</td>
<td>character</td>
<td>99</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Death</td>
<td>character</td>
<td>99</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>FullName</td>
<td>character</td>
<td>99</td>
<td>5</td>
<td>5.05</td>
</tr>
<tr>
<td>Dynasty</td>
<td>character</td>
<td>99</td>
<td>37</td>
<td>37.37</td>
</tr>
</tbody>
</table>

### $britannica

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Observations</th>
<th>Missing</th>
<th>Missing (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>character</td>
<td>87</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Beg</td>
<td>mdate</td>
<td>87</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>End</td>
<td>mdate</td>
<td>87</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

---

**favour**  

Favour datasets in a database

**Description**

Favour datasets in a database

**Usage**

favour(database, dataset)

favor(database, dataset)

**Arguments**

- **database** A many database
- **dataset** The name of one, or more, datasets within the database to be favoured over others.

**Details**

The dataset declared becomes the reference for the first non NA value. If more than one dataset is declared, please list datasets in increasing order of importance (i.e. last dataset should be favoured over previous).
get_packages

Value
The database with datasets re-ordered accordingly

Examples
favour(emperors, "UNRV")
favour(emperors, c("wikipedia", "UNRV", "britannica"))

default
Find and download packages in the many packages universe

Description
Find and download packages in the many packages universe.

Usage
get_packages(pkg)

Arguments
pkg A character vector of package names or number of a package. To download multiple packages at once, please declare package names as a vector (e.g. c("pkg1", "pkg2").

Details
The function finds and download other packages that belong to the many universe of packages. It allows users to rapidly access the names and other descriptive information of these packages by simply calling the function. If users intend to download and install a package from the universe, they can type the package name within the function.

Value
If no package name is provided, this function prints a table (tibble) to the console with details on packages that are currently available within the many universe. This includes the name and description of the package, the latest installed and release version number, and the latest release date. It also include a list of numbers which orders the package and can be used to load the respective package instead of the name. If one or more package names are provided, these will be installed from Github.

Examples
get_packages()
### plot_releases

*A plotting function that visualises historical milestones/releases*

**Description**

The function will take a data frame that details this information, or more usefully, a Github repository listing.

**Usage**

```
plot_releases(repo)
```

**Arguments**

- `repo` the github repository to track, e.g. "globalgov/manydata"

**Details**

The function creates a project timeline graphic using ggplot2 with historical milestones and milestone statuses gathered from a specified GitHub repository.

**Value**

A ggplot graph object

**Source**


**Examples**

```r
c#plot_releases("globalgov/manydata")
```

### recollect

*Pastes unique string vectors*

**Description**

For use with dplyr::summarise, for example

**Usage**

```
recollect(x, collapse = "_")
```
repaint

Arguments

- x: A vector
- collapse: String indicating how elements separated

Details

This function operates similarly to reunite, but instead of operating on columns/observations, it pastes together unique rows/observations.

Value

A single value

Examples

```r
data <- data.frame(ID = c(1,2,3,3,2,1))
data1 <- data.frame(ID = c(1,2,3,3,2,1), One = c(1,NA,3,NA,2,NA))
recollect(data$ID)
recollect(data1$One)
```

**Description**

Fills missing data where known by other observations with the same id/index

Usage

```r
repaint(df, id, var)
```

Arguments

- df: a dataframe
- id: a string identifying a column in the dataframe for indexing
- var: a string identifying a column or columns in the dataframe to be filled

Value

A dataframe

Examples

```r
data <- data.frame(ID = c(1,2,3,3,2,1),
                   One = c(1,NA,3,NA,2,NA),
                   Two = c(NA,"B",NA,"C",NA,"A"))
repaint(data, "ID", c("One","Two"))
```
Set of data structure exploration functions for users

Description

The report family of functions allows users to quickly get information about and compare several aspects of a package in the many packages universe, and its' databases and datasets.

Usage

- `data_source(pkg, database = NULL, dataset = NULL)`
- `data_contrast(pkg, database = NULL, dataset = NULL)`
- `data_evolution(pkg, database, dataset, preparation_script = FALSE)`
- `open_codebook(pkg, database, dataset)`

Arguments

- **pkg** character string of the many package to report data on. Required input.
- **database** vector of character strings of the many package to report data on a specific database in a many package If NULL, the function returns a summary of all databases in the many package NULL by default for `data_source()` and `data_contrast()`.
- **dataset** character string of the many package to report data on a specific dataset in a specific database of a many package If NULL and database is specified, returns database level metadata. NULL by default for `data_source()` and `data_contrast()`.
- **preparation_script** Would you like to open the preparation script for the dataset? By default false.

Details

- `data_source()` displays names of the database/datasets and source material of data in a many package.
- `data_contrast()` displays information about databases and datasets contained in them. Namely the number of unique ID’s, the percentage of missing data, the number of observations, the number of variables, the minimum beginning date and the maximum ending date as well as the most direct URL to the original dataset.
- `data_evolution()` enables users to access the differences between raw data and the data made available to them in one of the 'many' packages.
- `open_codebook()` opens the original codebook of the specified dataset to allow users to look up the original coding rules. Note that no original codebook might exist for certain datasets. In the latter case, please refer to the source URL provided with each dataset by running `manydata::data_contrast()` as further information on coding rules available online.
retrieval_treaty

Value

A dataframe with the data sources
A list with the desired metadata to compare various datasets in a many package.
Either the data comparison between raw and available data or the preparation script detailing all the
steps taken to prepare raw data before making it available in one of the 'many' packages.
Opens a pdf version of the original codebook of the specified dataset, if available.

Examples

data_source(pkg = "manydata")
data_contrast(pkg = "manydata")
data_evolution(pkg = "manydata", database = "emperors",
dataset = "wikipedia")
#data_evolution(pkg = "manytrade", database = "agreements",
#dataset = "GPTAD")

---

retrieval_treaty  Retrieve international treaties

Description

Some databases and datasets across the 'many* packages' (e.g. manyenviron) contain a myriad of
information on international treaties governing an international domain. Researchers can, for exam-
ple, use retrieve_bilaterals() to retrieve which countries have signed bilateral agreements in a
respective year. Alternatively, researchers can use retrieve_multilaterals() to retrieve the ti-
tles of all multilateral agreements signed in the past 10 years. Alternatively, researchers can retrieve
treaties that modify, amend, or expand other treaties with retrieve_links(). Or, even, researchers
can retrieve membership lists of countries part to a certain treaty with retrieve_membership_list().
Finally, researchers can retrieve treaty texts available in 'many' datasets with retrieve_texts().
To retrieve information from several datasets in a database, researchers can consolidate() a
database into one dataset with some combination of the rows, columns, and observations before
getting the desired information.

Usage

retrieve_bilaterals(dataset)
retrieve_multilaterals(dataset)
retrieve_membership_list(dataset, actor = "StateID", treaty_type = NULL)
retrieve_treaty

retrieve_links(dataset, treaty_type = NULL)
retrieve_texts(dataset, treaty_type = NULL)

Arguments

dataset A dataset from one of the many packages.
treaty_type The type of treaties to be returned. NULL, by default. Other options are "bilateral" or "multilateral".

Value

A tibble of bilateral agreements.
A tibble of multilateral agreements.
A tibble of manyIDs and countries part of the treaty.
A tibble of manyIDs and their links.
A tibble of manyIDs and their texts.

Examples

membs <- tibble::tibble(manyID = c("ROU-RUS[RFP]_1901A", "ROU-RUS[RFP]_1901E", "GD16FI_1901A"), Title = c("Convention Between Roumania And Russia Concerning Fishing In The Danube And The Pruth", "Convention Between Roumania And Russia Concerning Fishing In The Danube And The Pruth", "Convention Between The Governments Of Denmark And The United Kingdom Of Great Britain And Northern Ireland For Regulating The Fisheries Of Their Respective Subjects Outside Territorial Waters In The Ocean Surrounding The Faroe Islands"), Beg = c("1901-02-22", "1901-02-22", "1901-06-24")) retrieve_bilaterals(membs)
membs <- tibble::tibble( manyID = c("ROU-RUS[RFP]_1901A", "ROU-RUS[RFP]_1901A", "GD16FI_1901A"), Title = c("Convention Between Roumania And Russia Concerning Fishing In The Danube And The Pruth", "Convention Between Roumania And Russia Concerning Fishing In The Danube And The Pruth", "Convention Between The Governments Of Denmark And The United Kingdom Of Great Britain And Northern Ireland For Regulating The Fisheries Of Their Respective Subjects Outside Territorial Waters In The Ocean Surrounding The Faroe Islands"), Beg = c("1901-02-22", "1901-02-22", "1901-06-24")) retrieve_multilaterals(membs)
membs <- tibble::tibble(StateID = c("ROU", "RUS", "DNK"), manyID = c("ROU-RUS[RFP]_1901A", "ROU-RUS[RFP]_1901A", "GD16FI_1901A")) retrieve_membership_list(dataset = membs)
reunite <- tibble::tibble(manyID = c("ROU-RUS[RFP]_1901A", "ROU-RUS[RFP]_1901A:ROU-RUS[RFP]_1901A", "GD16FI_1901A"))
retrieve_links(dataset = membs)
membs <- tibble::tibble(manyID = c("ROU-RUS[RFP]_1901A", "ROU-RUS[RFP]_1901A:ROU-RUS[RFP]_1901A", "GD16FI_1901A"), Text = c("treaty 1", "treaty 2", "treaty 3"))
retrieve_texts(dataset = membs)
#retrieve_texts(dataset = manyenviron::agreements$HUGGO)

---

**reunite**

*Pastes unique string vectors*

**Description**

A vectorised function for use with dplyr’s mutate, etc

**Usage**

```r
reunite(..., sep = "_")
```

**Arguments**

- `...` Variables to pass to the function, currently only two at a time
- `sep` Separator when vectors reunited, by default "_"

**Value**

A single vector with unique non-missing information

**Examples**

```r
data <- data.frame(fir=c(NA, "two", "three", NA),
sec=c("one", NA, "three", NA), stringsAsFactors = FALSE)
transmutate(data, single = reunite(fir, sec))
```
**transmutate**

---

**transmutate**  
*Drop only columns used in formula*

---

**Description**

A function between dplyr’s transmute and mutate

**Usage**

`transmutate(.data, ...)`

**Arguments**

- `.data`  
  Data frame to pass to the function
- `...`  
  Variables to pass to the function

**Value**

Data frame with mutated variables and none of the variables used in the mutations, but, unlike `dplyr::transmute()`, all other unnamed variables.

**Source**


**Examples**

```r
pluck(emperors, "wikipedia")
transmutate(emperors$wikipedia, Beginning = Beg)
```
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