Package ‘crunch’

June 7, 2019

Type    Package
Title    Crunch.io Data Tools
Description The Crunch.io service <http://crunch.io/> provides a cloud-based data store and analytic engine, as well as an intuitive web interface. Using this package, analysts can interact with and manipulate Crunch datasets from within R. Importantly, this allows technical researchers to collaborate naturally with team members, managers, and clients who prefer a point-and-click interface.

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'abstract-category.R' 'add-subvariable.R' 'add-variable.R'
'api.R' 'append-dataset.R' 'archive-and-publish.R'
'as-data-frame.R' 'as-vector.R' 'auth.R' 'batches.R'
'case-variables.R' 'categories.R' 'category.R'
'change-category-id.R' 'combine-categories.R'
'compare-categories.R' 'compare-datasets.R'
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addGeoMetadata

Add geodata metadata to a crunch variable

Description

If the variable matches a single geographic shapefile hosted by crunch, addGeoMetadata will make the appropriate CrunchGeography to add to a variable’s geo() metadata. It matches based on how well the contents of the variable match the feature properties that are in each shapefile.

Usage

addGeoMetadata(variable, ...)

Arguments

variable a Crunch variable to use for matching. This must be either a text or a categorical variable.

... arguments passed on to matchCatToFeat() for example a set of available geographic features as all_features if you want to limit the number of features to be considered.
addSubvariable

Details

If more than one property of the same geographic shapefile has the same highest matching score, the first one will be used.

If more than one geographic shapefile has the same highest matching score, an error will be printed listing the geographic shapefiles that matched. Information from this error can be used to setup an appropriate CrunchGeography by hand to connect a variable with the metadata needed.

Value

a CrunchGeography object that can be assigned into geo(variable)

Examples

## Not run:
geo(ds$state) <- addGeoMetadata(ds$state)

## End(Not run)

Description

Add subvariable to an array

Usage

addSubvariable(variable, subvariable)

addSubvariables(variable, subvariable)

Arguments

variable the array variable to modify
subvariable the subvariable to add, or a list of those to add, or a dataset subset. You can supply variables, variable definitions or lists of variables and variable definitions.

Value

variable with the indicated subvariables added.

See Also

subvariables()
addSummaryStat

Examples

```r
## Not run:
d$sallpets <- addSubvariable(ds$sallpets, ds$sallpets_4)
d$sallpetloc <- addSubvariables(ds$sallpetloc, ds[c("petloc_school", "petloc_daycare")])

## End(Not run)
```

---

**addSummaryStat**

*Add summary statistics to a CrunchCube*

**Description**

Use `addSummaryStat()` to add a summary statistic to a CrunchCube object. If not otherwise specified, the summary statistic will be `mean` and be placed at the bottom of the cube. You can change those defaults by passing any value you can use with `SummaryStat()` (e.g. position, categories, after).

**Usage**

```r
addSummaryStat(cube, stat = c("mean", "median"), var, margin, ...)
```

**Arguments**

- `cube` a CrunchCube to add stats to
- `stat` a character with the summary statistic to include (default: "mean")
- `var` a character with the name of the dimension variable to add the summary statistic for generally the alias of the variable in Crunch, but might include Crunch functions like `rollup()`, `bin()`, etc.
- `margin` which margin should the summary statistic be applied for (used in the cases of categorical arrays where a variable might contribute more than one margin)
- `...` options to pass to `SummaryStat()` (e.g., position, after, etc.)

**Value**

A CrunchCube with the summary statistic inserted added to the transforms of the variable specified

**See Also**

`SummaryStat`
# Examples

```r
## Not run:
pet_feelings

# animals
# feelings   cats  dogs
# extremely happy  9   5
# somewhat happy  12  12
# neutral         12  7
# somewhat unhappy 10  10
# extremely unhappy 11  12

# add a mean summary statistic to a CrunchCube
addSummaryStat(pet_feelings, stat = "mean", var = "feelings")

# animals
# feelings   cats  dogs
# extremely happy  9   5
# somewhat happy  12  12
# neutral         12  7
# somewhat unhappy 10  10
# extremely unhappy 11  12
# mean 4.90740740740741 4.34782608695652

# we can also store the CrunchCube for use elsewhere
pet_feelings <- addSummaryStat(pet_feelings, stat = "mean", var = "feelings")

pet_feelings

# animals
# feelings   cats  dogs
# extremely happy  9   5
# somewhat happy  12  12
# neutral         12  7
# somewhat unhappy 10  10
# extremely unhappy 11  12
# mean 4.90740740740741 4.34782608695652

# 'addSummaryStat' returns a CrunchCube that has had the summary statistic
# added to it, so that you can still use the Crunch logic for multiple
# response variables, missingness, etc.

class(pet_feelings)
# [1] "CrunchCube"
attr(,"package")
# [1] "crunch"

# Since 'pet_feelings' is a CrunchCube, although it has similar properties
# and behaviors to arrays, it is not a R array:
is.array(pet_feelings)
# [1] FALSE

# cleanup transforms
transforms(pet_feelings) <- NULL

# add a median summary statistic to a CrunchCube
pet_feelings <- addSummaryStat(pet_feelings, stat = "median", var = "feelings")

pet_feelings
```

# addVariables

addVariables

## Description

This function lets you add more than one variable at a time to a dataset. If you have multiple variables to add, this function will be faster than doing `ds$var <- value` assignment because it doesn’t refresh the dataset’s state in between variable POST requests.

## Usage

```r
addVariables(dataset, ...)
```

## Arguments

- `dataset` a CrunchDataset
- `...` `VariableDefinitions` or a list of `VariableDefinitions`. 

```r
# animals
# feelings    cats  dogs
# extremely happy  9   5
# somewhat happy   12  12
# neutral         12   7
# somewhat unhappy 10  10
# extremely unhappy 11  12
# median          5   5

# additionally, if you want a true matrix object from the CrunchCube, rather
# than the CrunchCube object itself, `applyTransforms()` will return the
# array with the summary statistics (just like subtotals and headings)

pet_feelings_array <- applyTransforms(pet_feelings)

pet_feelings_array

# animals
# feelings    cats  dogs
# extremely happy  9   5
# somewhat happy   12  12
# neutral         12   7
# somewhat unhappy 10  10
# extremely unhappy 11  12
# median          5   5

# and we can see that this is an array and no longer a CrunchCube
is.array(pet_feelings_array)

# [1] TRUE

## End(Not run)
Value

dataset with the new variables added (invisibly)

Description

These methods let you get and set names and aliases for variables in a Dataset’s catalog, or within Subvariables in an array variable. They work like the base R names methods.

Usage

aliases(x)
aliases(x) <- value
descriptions(x)
descriptions(x) <- value
emails(x)
types(x)
timestamps(x)
ids(x)
ids(x) <- value
values(x)
values(x) <- value

## S4 method for signature 'AbstractCategories'
names(x)

## S4 replacement method for signature 'AbstractCategories'
names(x) <- value

## S4 method for signature 'AbstractCategories'
ids(x)

## S4 method for signature 'BatchCatalog'
names(x)
## S4 replacement method for signature 'Categories'
ids(x) <- value

## S4 method for signature 'Categories'
values(x)

## S4 replacement method for signature 'Categories'
values(x) <- value

## S3 method for class 'CrunchDataFrame'
names(x)

## S4 method for signature 'CrunchCube'
names(x)

## S4 method for signature 'CrunchCube'
aliases(x)

## S4 method for signature 'CrunchCube'
descriptions(x)

## S4 method for signature 'CrunchCube'
types(x)

## S4 method for signature 'CrunchCube'
notes(x)

## S4 method for signature 'CrunchDataset'
names(x)

## S4 method for signature 'ShojiCatalog'
names(x)

## S4 replacement method for signature 'ShojiCatalog'
names(x) <- value

## S4 method for signature 'ShojiCatalog'
e-mails(x)

## S4 method for signature 'CrunchDeck'
names(x)

## S4 replacement method for signature 'CrunchDeck'
names(x) <- value

## S4 replacement method for signature 'MultitableCatalog'
names(x) <- value
## S4 method for signature 'ShojiFolder'

`types(x)`

## S4 method for signature 'ShojiOrder'

`names(x)`

## S4 method for signature 'OrderGroup'

`names(x)`

## S4 method for signature 'SlideCatalog'

`names(x)`

## S4 replacement method for signature 'SlideCatalog'

`names(x) <- value`

## S4 method for signature 'CategoricalArrayVariable'

`names(x)`

## S4 method for signature 'TabBookResult'

`names(x)`

## S4 method for signature 'TabBookResult'

`aliases(x)`

## S4 method for signature 'TabBookResult'

`descriptions(x)`

## S4 method for signature 'MultitableResult'

`names(x)`

## S4 method for signature 'MultitableResult'

`aliases(x)`

## S4 method for signature 'MultitableResult'

`descriptions(x)`

## S4 method for signature 'VariableCatalog'

`aliases(x)`

## S4 replacement method for signature 'VariableCatalog'

`aliases(x) <- value`

## S4 method for signature 'VariableCatalog'

`notes(x)`

## S4 replacement method for signature 'VariableCatalog'

`notes(x) <- value`
## S4 method for signature 'VariableCatalog'

```
descriptions(x)
```

## S4 replacement method for signature 'VariableCatalog'

```
descriptions(x) <- value
```

## S4 method for signature 'VariableCatalog'

```
types(x)
```

## S4 method for signature 'VariableCatalog'

```
ids(x)
```

## S4 method for signature 'VariableFolder'

```
aliases(x)
```

## S4 method for signature 'VersionCatalog'

```
names(x)
```

## S4 method for signature 'VersionCatalog'

```
descriptions(x)
```

## S4 method for signature 'VersionCatalog'

```
timestamps(x)
```

### Arguments

- **x**: a `VariableCatalog`, `Subvariables`, or similar object
- **value**: For the setters, an appropriate-length character vector to assign

### Details

Note that the `Dataset names` method returns the aliases of its variables by default. This behavior is controlled by `getOption("crunch.namekey.dataset")`. Set `options(crunch.namekey.dataset="name")` if you wish to use variable names. See the variables vignette for more information.

### Value

Getters return the character object in the specified slot; setters return x duly modified.

### See Also

- `Subvariables Categories base::names()`
- `vignette("variables", package="crunch")`
Get and set slide analyses

Description

Slides are composed of analyses, which are effectively CrunchCubes with some additional metadata. You can get and set a slide’s Analysis Catalog with the analyses method, and access an individual analysis with analysis.

Usage

analyses(x)

analysis(x)

analysis(x) <- value

query(x) <- value

cube(x)

cubes(x)

## S4 method for signature 'CrunchSlide'
analyses(x)

## S4 method for signature 'CrunchSlide'
analysis(x)

## S4 replacement method for signature 'CrunchSlide,formula'
analysis(x) <- value

## S4 replacement method for signature 'CrunchSlide,ANY'
query(x) <- value

## S4 method for signature 'CrunchSlide'
cubes(x)

## S4 method for signature 'CrunchSlide'
cube(x)

## S4 method for signature 'AnalysisCatalog'
cubes(x)

## S4 replacement method for signature 'Analysis,formula'
query(x) <- value
appendDataset

## S4 method for signature 'Analysis'

```r
cube(x)
```

### Arguments

- `x` A CrunchSlide, AnalysisCatalog, or Analysis
- `value` for the setter, a query

### Details

You can get the CrunchCube from a slide or analysis with the `cube` method and from a CrunchDeck with `cubes`. Analyses can be changed by assigning a formula into the `query` function.

### Examples

```r
## Not run:
analysis(slide)
cube(slide)
cubes(deck)
query(slide) <- ~ cyl + wt

## End(Not run)
```

---

**appendDataset**

Append one Crunch dataset to another

### Description

With Crunch, you can add additional rows to a dataset by appending a second dataset to the bottom of the original dataset. Crunch makes intelligent guesses to align the variables between the two datasets and to harmonize the categories and subvariables of variables, as appropriate.

### Usage

```r
appendDataset(dataset1, dataset2, upsert = FALSE)
```

### Arguments

- `dataset1` A CrunchDataset
- `dataset2` another CrunchDataset, or possibly a `data.frame`. If `dataset2` is not a Crunch dataset, it will be uploaded as a new dataset before appending. If it is a CrunchDataset, it may be subsetted with a filter expression on the rows and a selection of variables on the columns.
- `upsert` Logical: should the append instead "update" rows based on the primary key variable and "insert" (append) where the primary key values are new? Default is `FALSE`. Note that this upserting behavior requires a primary key variable to have been set previously; see `pk()`.
appendStream

Details

Variables are matched between datasets based on their aliases. Variables present in only one of the two datasets are fine; they’re handled by filling in with missing values for the rows corresponding to the dataset where they don’t exist. For variables present in both datasets, you will have best results if you ensure that the two datasets have the same variable names and types, and that their categorical and array variables have consistent categories. To preview how datasets will align when appended, see `compareDatasets()`.

Particularly if you’re appending to datasets that are already shared with others, you may want to use the fork-edit-merge workflow when appending datasets. This allows you to verify your changes before releasing them to the other viewers of the dataset. To do this fork the dataset with `forkDataset()`, append the new data to the fork, ensure that the append worked as expected, and then merge the fork back to the original dataset with `mergeFork()`. For more, see `vignette("fork-and-merge", package = "crunch")`.

Value

dataset1, updated with dataset2, potentially filtered on rows and variables, appended to it.

Examples

```r
## Not run:
ds <- loadDataset("Survey, 2016")
new_wave <- loadDataset("Survey, 2017")
ds <- appendDataset(ds, new_wave)
## End(Not run)
```

appendStream  

Manually trigger a pending append to a dataset

Description

Crunch allows you to stream data to a dataset. Streaming data is useful for datasets which have frequent updates (see the Crunch API documentation for more information). Crunch automatically appends streamed data periodically; however, if you would like to trigger appending pending streamed data to a dataset, you can call `appendStream()`.

Usage

`appendStream(ds)`

Arguments

- `ds` a CrunchDataset

Value

the dataset with pending stream data appended.
archive-and-publish  Get and set "archived" and "published" status of a dataset

Description

"Archived" datasets are excluded from some views. "Draft" datasets are visible only to editors, while published datasets are available to all viewers. A dataset can either be published or in draft, but not both. These properties are accessed and set with the "is" methods. You can also set the properties by assigning into the function. The verb functions archive and publish are alternate versions of the setters.

Usage

is.archived(x)

is.archived(x) <- value

is.draft(x)

is.draft(x) <- value

is.published(x)

is.published(x) <- value

## S4 method for signature 'CrunchDataset'
is.archived(x)

## S4 method for signature 'CrunchDataset'
is.draft(x)

## S4 method for signature 'CrunchDataset'
is.published(x)

## S4 replacement method for signature 'CrunchDataset,logical'
is.archived(x) <- value

archive(x)

## S4 replacement method for signature 'CrunchDataset,logical'
is.draft(x) <- value

## S4 replacement method for signature 'CrunchDataset,logical'
is.published(x) <- value

publish(x)
Arguments

- **x**: CrunchDataset
- **value**: logical

Value

For the getters, the logical value of whether the dataset is archived, in draft mode, or published, where draft and published are inverses. The setters return the dataset.

Examples

```r
## Not run:
ds <- loadDataset("mtcars")
is.draft(ds) # FALSE
is.published(ds) # TRUE
identical(is.draft(ds), !is.published(ds))
# Can make a dataset a "draft" by:
is.draft(ds) <- TRUE
is.published(ds) # FALSE
# Could also have set is.published(ds) <- FALSE
# Now, can go the other way by setting is.draft, is.published, or:
ds <- publish(ds)
is.published(ds) # TRUE

is.archived(ds) # FALSE
is.archived(ds) <- TRUE
is.archived(ds) # TRUE
# Could have achieved the same effect by:
ds <- archive(ds)

## End(Not run)
```
as-vector  

Convert Variables to local R objects

Description
Crunch Variables reside on the server, allowing you to work with datasets that are too big to bring into memory on your machine. Many functions, such as \texttt{max}, \texttt{mean}, and \texttt{crtabs()}, translate your commands into API queries and return only the result. But, not every operation you’ll want to perform has been implemented on the Crunch servers. If you need to do something beyond what is currently supported, you can bring a variable’s data into R with \texttt{as.vector(ds$var)} and work with it like any other R vector.

Usage

\begin{verbatim}
## S4 method for signature 'CrunchVariable'
as.vector(x, mode = "any")

## S4 method for signature 'CrunchExpr'
as.vector(x, mode = "any")
\end{verbatim}

Arguments

\begin{description}
\item[x] a CrunchVariable
\item[mode] for Categorical variables, one of either "factor" (default, which returns the values as factor); "numeric" (which returns the numeric values); or "id" (which returns the category ids). If "id", values corresponding to missing categories will return as the underlying integer codes; i.e., the R representation will not have any NA elements. Otherwise, missing categories will all be returned NA. For non-Categorical variables, the mode argument is ignored.
\end{description}

Details

\texttt{as.vector} transfers data from Crunch to a local R session. Note: \texttt{as.vector} returns the vector in the row order of the dataset. If filters are set that specify an order that is different from the row order of the dataset, the results will ignore that order. If you need the vector ordered in that way, use syntax like \texttt{as.vector(ds$var)[c(10, 5, 2)]} instead.

Value

an R vector of the type corresponding to the Variable. E.g. CategoricalVariable yields type factor by default, NumericVariable yields numeric, etc.

See Also

\texttt{as.data.frame} for another interface for (lazily) fetching data from the server as needed; \texttt{exportDataset()} for pulling all of the data from a dataset.
as.environment method for CrunchDataset

Description
This method allows you to eval within a Dataset.

Usage

```r
## S4 method for signature 'CrunchDataset'
as.environment(x)
```

Arguments

- `x` 
  CrunchDataset

Value

an environment in which named objects are (promises that return) CrunchVariables.

availableGeodataFeatures

*Get the property features for available geographies*

Description

Get the property features for available geographies

Usage

```r
availableGeodataFeatures(x = getAPIRoot(), geodatum_fields = c("name", 
  "description", "location"))
```

Arguments

- `x` 
  an API root address (default: the R-session default)
- `geodatum_fields` 
  character, what pieces of information about each geodatum should be retained? 
  (default: ‘c("name", "description", "location")‘)

Value

a dataframe with all of the available features and geographies for matching
batches

See the appended batches of this dataset

Description

See the appended batches of this dataset

Usage

batches(x)

Arguments

x a CrunchDataset

Value

a BatchCatalog

c-categories

S3 method to concatenate Categories and Category objects

Description

S3 method to concatenate Categories and Category objects

Usage

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

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

Arguments

... see c

Value

An object of class Categories
Examples

```r
cat.a <- Category(name = "First", id = 1, numeric_value = 1, missing = FALSE)
cat.b <- Category(name = "Second", id = 2)
cat.c <- Category(name = "Third", id = 3, missing = TRUE)
cats.1 <- Categories(cat.a, cat.b)
identical(cats.1, c(cat.a, cat.b))
identical(c(cats.1, cat.c), Categories(cat.a, cat.b, cat.c))
```

Description

This method gives you a view of a catalog, such as a VariableCatalog, as a data.frame in order to facilitate further exploration.

Usage

```r
## S3 method for class 'VariableCatalog'
as.data.frame(x, row.names = NULL,
optiona = FALSE, keys = c("alias", "name", "type"), ...)

## S3 method for class 'ShojiCatalog'
as.data.frame(x, row.names = NULL,
optiona = FALSE, ...)  

## S3 method for class 'BatchCatalog'
as.data.frame(x, row.names = NULL,
optiona = FALSE, keys = c("id", "status"), ...)

## S3 method for class 'FilterCatalog'
as.data.frame(x, row.names = NULL,
optiona = FALSE, keys = c("name", "id", "is_public"), ...)

## S3 method for class 'UserCatalog'
as.data.frame(x, row.names = NULL,
optiona = FALSE, keys = c("name", "email", "teams", "collaborator"), ...
```

Arguments

- `x` A catalog object
- `row.names` A character vector of elements to use as row labels for the resulting data.frame, or NULL, the default, adds no row labels.
- `optional` part of as.data.frame signature. Ignored.
categories-class

**Description**

CategoricalVariables, as well as the array types composed from Categoricals, contain Categories. Categories are a subclass of list that contains only Category objects. Category objects are themselves subclasses of lists and contain the following fields: "name", "id", "numeric_value", "missing", and optionally "selected".

**Usage**

Categories(..., data = NULL)

Category(..., data = NULL)
Arguments

... Category attributes
data For the constructor functions Category and Categories, you can either pass in attributes via ... or you can create the objects with a fully defined list representation of the objects via the data argument. See the examples.

Examples

cat.a <- Category(name = "First", id = 1, numeric_value = 1, missing = FALSE)
cat.b <- Category(data = list(name = "First", id = 1, numeric_value = 1, missing = FALSE))
identical(cat.a, cat.b)
cat.c <- Category(name = "Second", id = 2)
cats.1 <- Categories(cat.a, cat.c)
cats.2 <- Categories(data = list(cat.a, cat.c))
identical(cats.1, cats.2)

categoriesFromLevels  Convert a factor’s levels into Crunch categories.

Description

Crunch categorical variables have slightly richer metadata than R’s factor variables. This function generates a list of category data from a factor’s levels which can then be further manipulated in R before being imported into Crunch.

Usage

categoriesFromLevels(level_vect)

Arguments

level_vect A character vector containing the levels of a factor. Usually obtained by running base::levels()

Value

A list with each category levels id, name, numeric_value, and missingness.

Examples

categoriesFromLevels(levels(iris$Species))
cd

Change to different folder

Description

Like `cd` in a file system, this function takes you to a different folder, given a relative path specification.

Usage

`cd(x, path, create = FALSE)`

Arguments

- `x` A CrunchDataset or Folder (VariableFolder or ProjectFolder)
- `path` A character "path" to the folder: either a vector of nested folder names or a single string with nested folders separated by a delimiter ("/") default, configurable via options(crun.ch.delimiter). The path is interpreted as relative to the location of the folder `x` (when `x` is a dataset, that means the root, top-level folder). `path` may also be a Folder object.
- `create` logical: if the folder indicated by `path` does not exist, should it be created? Default is `FALSE`. Argument mainly exists for the convenience of `mv()`, which moves entities to a folder and ensures that the folder exists. You can call `cd` directly with `create=TRUE`, though that seems unnatural.

Value

A Folder (VariableFolder or ProjectFolder)

See Also

`mv()` to move entities to a folder; `rmdir()` to delete a folder; `base::setwd()` if you literally want to change your working directory in your local file system, which `cd()` does not do

Examples

```r
# Not run:
ds <- loadDataset("Example survey")
demo <- cd(ds, "Demographics")
names(demo)
# Or with %>%
require(magrittr)
ds <- ds %>%
  cd("Demographics") %>%
names()
# Can combine with mv() and move things with relative paths
ds %>%
  cd("Key Performance Indicators/Brand X") %>%
```
changeCategoryID  

Change the id of a category for a categorical variable

Description

Changes the id of a category from an existing value to a new one. The variable can be a categorical, categorical array, or multiple response variable. The category changed will have the same numeric value and missing status as before. The one exception to this is if the numeric value is the same as the id, then the new numeric value will be the same as the new id.

Usage

changeCategoryID(variable, from, to)

Arguments

- variable: the variable in a crunch dataset that will be changed (note: the variable must be categorical, categorical array, or multiple response)
- from: the (old) id identifying the category you want to change
- to: the (new) id for the category

Details

It is highly recommended to disable any exclusion filter before using changeCategoryID, especially if it is being called multiple times in quick succession (e.g. as part of an automated script). If a problematic exclusion is encountered changeCategoryID will attempt to disable and re-enable the exclusion, but that process will be repeated for every call made which could have adverse consequences (not to mention slow down processing time).

Value

variable with category from and all associated data values mapped to id to

Examples

## Not run:

ds$country <- changeCategoryID(ds$country, 2, 6)

## End(Not run)
collapseBatches  Remove batches from a dataset

**Description**

Sometimes append operations do not succeed, whether due to conflicts between the two datasets or other server-side issues. Failed appends can leave behind "error" status batch records, which can cause confusion. This function lets you delete batches that don’t match the status or statuses you want to keep.

**Usage**

```r
collapseBatches(dataset, keep = c("imported", "appended"))
```

**Arguments**

- `dataset`: CrunchDataset
- `keep`: character the statuses that you want to keep. By default, batches that don’t have either "imported" or "appended" status will be deleted.

**Value**

- `dataset` with the specified batches removed.

---

collapseCategories  Combine Categories in place

**Description**

This function allows you to combine the categories of a variable without making a copy of the variable.

**Usage**

```r
collapseCategories(var, from, to)
```

**Arguments**

- `var`: A categorical Crunch variable
- `from`: A character vector of categories you want to combine.
- `to`: A character string with the destination category.

**Value**

- the variable duly modified
combine

See Also

combine()

Combine categories or responses

Description

Crunch allows you to create a new categorical variable by combining the categories of another variable. For instance, you might want to recode a categorical variable with three categories small, medium, and large to one that has just small and large.

Usage

combine(variable, combinations = list(), ...)
combineCategories(variable, combinations = list(), ...)
combineResponses(variable, combinations = list(), ...)

Arguments

variable Categorical, Categorical Array, or Multiple Response variable
combinations list of named lists containing
1. "categories": category ids or names for categorical types, or for multiple response, "responses": subvariable names, aliases, or positional indices;
2. a "name" for the new category or response; and
3. optionally, other category ("missing", "numeric_value") or subvariable ("alias", "description") attributes. If combinations is omitted, the resulting variable will essentially be a copy (but see copy() for a more natural way to copy variables.

... Additional variable metadata for the new derived variable

Details

Categorical and categorical array variables can have their categories combined (by specifying categories in the combinations argument). Multiple response variables can only have their responses (or items) combined (by specifying responses in the combinations argument). Categorical array items are not able to be combined together (even by specifying responses).

dplyr users may experience a name conflict between crunch::combine() and dplyr:: combine(). To avoid this, you can either explicitly use the crunch:: prefix, or you can call combineCategories() and combineResponses(), provided for disambiguation.
Value

A \texttt{VariableDefinition} that will create the new combined-category or -response derived variable. Categories/responses not referenced in combinations will be appended to the end of the combinations.

Examples

```r
## Not run:
ds$fav_pet2 <- combine(ds$fav_pet,
  name = "Pets (combined)",
  combinations = list(
    list(name = "Mammals", categories = c("Cat", "Dog")),
    list(name = "Reptiles", categories = c("Snake", "Lizard"))
  )
)
ds$pets_owned2 <- combine(ds$allpets,
  name = "Pets owned (collapsed)",
  combinations = list(list(name = "Mammals", responses = c("Cat", "Dog")))
)
## End(Not run)
```

\texttt{compareDatasets} \hspace{1cm} \textit{Compare two datasets to see how they will append}

Description

When one dataset is appended to another, variables and subvariables are matched on their aliases, and then categories for variables that have them are matched on category name. This function lines up the metadata between two datasets as the append operation will so that you can inspect how well the datasets will align before you do the append.

Usage

\texttt{compareDatasets(A, B)}

Arguments

\begin{itemize}
  \item \texttt{A} \hspace{1cm} \texttt{CrunchDataset}
  \item \texttt{B} \hspace{1cm} \texttt{CrunchDataset}
\end{itemize}

Details

Calling \texttt{summary} on the return of this function will print an overview of places where the matching on variable alias and category name may lead to undesired outcomes, enabling you to alter one or both datasets to result in better alignment.
**Value**

An object of class 'compareDatasets', a list of three elements: (1) 'variables', a data.frame of variable metadata joined on alias; (2) 'categories', a list of data.frames of category metadata joined on category name, one for each variable with categories; and (3) 'subvariables', a list of data.frames of subvariable metadata joined on alias, one for each array variable.

Summary output reports on (1) variables that, when matched across datasets by alias, have different types; (2) variables that have the same name but don’t match on alias; (3) for variables that match and have categories, any categories that have the same id but don’t match on name; (4) for array variables that match, any subvariables that have the same name but don’t match on alias; and (5) array variables that, after assembling the union of their subvariables, point to subvariables that belong to other arrays.

**Examples**

```r
## Not run:
comp <- compareDataset(ds1, ds2)
summary(comp)
## End(Not run)
```

---

**conditionalTransform**  
*Conditional transformation*

**Description**

Create a new variable that has values when specific conditions are met. Conditions are specified using a series of formulas: the left-hand side is the condition that must be true (a CrunchLogicalExpr) and the right-hand side is where to get the value if the condition on the left-hand side is true. This is commonly a Crunch variable but may be a string or numeric value, depending on the type of variable you’re constructing.

**Usage**

```r
conditionalTransform(..., data, else_condition = NA, type = NULL, categories = NULL, formulas = NULL)
```

**Arguments**

- `...`: a list of conditions to evaluate (as formulas, see Details) as well as other properties to pass to the new conditional variable (i.e. alias, description)
- `data`: a Crunch dataset object to use
- `else_condition`: a default value to use if none of the conditions are true (default: NA)
- `type`: a character that is either "categorical", "text", "numeric" what type of output should be returned? If NULL, the type of the source variable will be used. (default: NULL) The source variables will be converted to this type if necessary.
categories a vector of characters if type="categorical", these are all of the categories that should be in the resulting variable, in the order they should be in the resulting variable or a set of Crunch categories.

formulas a list of conditions to evaluate (as formulas, see Details). If specified, ... must not contain other formulas specifying conditions.

Details

The type of the new variable can depend on the type(s) of the source variable(s). By default (type=NULL), the type of the new variable will be the type of all of the source variables (that is, if all of the source variables are text, the new variable type will be text, if all of the source variables are categorical, the new variable will be categorical). If there are multiple types in the source variables, the result will be a text variable. The default behavior can be overridden by specifying type = "categorical", "text", or "numeric".

conditionalTransform is similar to makeCaseVariable; however, conditionalTransform can use other Crunch variables as a source of a variable, whereas, makeCaseVariable can only use characters. This additional power comes at a cost: makeCaseVariable can be executed entirely on Crunch servers, so no data needs to be downloaded or uploaded to/from the local R session. conditionalTransform on the other hand will download the data necessary to construct the new variable.

Value

a Crunch VariableDefinition

Examples

```r
## Not run:

ds$cat_opinion <- conditionalTransform(pet1 == "Cat" ~ Opinion1,
pet2 == "Cat" ~ Opinion2,
pet3 == "Cat" ~ Opinion3,
data = ds,
name = "Opinion of Cats"
)
```

`## End(Not run)`

---

**consent**

*Give consent to do things that require permission*

Description

Potentially destructive actions require that you confirm that you really want to do them. If you’re running a script and you know that you want to perform those actions, you can preemptively provide consent.
ContextManager

Usage

consent()

with_consent(expr)

Arguments

expr Code to evaluate with consent

Value

consent returns an S3 class "contextManager" object, which you can use with with. with_consent evaluates its arguments inside the consent context.

See Also

with-context-manager ContextManager

Examples

## Not run:

with(consent(), delete(ds))

# Equivalent to:

with_consent(delete(ds))

## End(Not run)

ContextManager Context managers

Description

Context managers

Usage

ContextManager(enter = function() { }, exit = function() { },
error = NULL, as = NULL)

Arguments

enter function to run before taking actions
exit function to run after taking actions
error optional function to run if an error is thrown
as character optional way to specify a default name for assigning the return of the enter function.
copyVariable

Value
an S3 class "contextManager" object

See Also
with-context-manager

copyOrder

Description
Copy the variable order from one dataset to another.

Usage
copyOrder(source, target)

Arguments

source the dataset you want to copy the order from
target the dataset you want to copy the order to

Value
returns an object of class VariableOrder (which can be assigned to a dataset with ordering)

Examples
## Not run:
ordering(ds) <- copyOrder(ds1, ds)

## End(Not run)

copyVariable

Description
Makes a copy of a Crunch variable on the server.

Usage
copyVariable(x, deep = FALSE, ...)
copy(x, deep = FALSE, ...)
**Arguments**

- **x**: a CrunchVariable to copy
- **deep**: logical: should this be a deep copy, in which there is no dependence on the original variable, or a shallow one, in which the copy is more of a symbolic link? Default is `FALSE`, meaning symlink.

... Additional metadata to give to the new variable. If not given, the new variable will have a name that is the same as the original but with " (copy)" appended, and its alias will be the old alias with ".copy" appended.

**Details**

Copies can be shallow (linked) or deep. Shallow copying is faster and is preferable unless a true hard copy is required. Shallow copies are effectively pointers to the original variable, and then you append data to the original variable or otherwise alter its values, the values in the copy automatically update. This linking may be desirable, but it comes with some limitations. First, you cannot edit the values of the copy independently of the original. Second, some attributes of the copy are immutable: of note, properties of categories cannot be altered independently in the copy, but you can alter Subvariable names and ordering within arrays.

**Value**

a VariableDefinition for the copied variable. Assign into a Dataset to make the copy happen.

---

**createWithPreparedData**

*Upload a prepared data.frame with metadata to Crunch*

**Description**

If you have manually created a Crunch dataset object with `prepareDataForCrunch()` this function allows you to upload it to the app.

**Usage**

`createWithPreparedData(data, metadata = attr(data, "metadata"))`

**Arguments**

- **data**: a data.frame that meets the Crunch API specification, as returned by `prepareDataForCrunch()`, or a character path to a file or URL where such data has been written as CSV.
- **metadata**: list of Crunch metadata that corresponds to `data`. Default is the "metadata" attribute of `data`, as returned by `prepareDataForCrunch`, or a character path to a file where such metadata has been written as JSON.

**Value**

A CrunchDataset.
crtabs

Crunch xtabs: Crosstab and otherwise aggregate variables in a Crunch Dataset

Description

Create a contingency table or other aggregation from cross-classifying variables in a CrunchDataset.

Usage

crtabs(formula, data, weight = crunch::weight(data), useNA = c("no", "ifany", "always"))

Arguments

- **formula**: an object of class 'formula' object with the cross-classifying variables separated by '+' on the right side of the '~'. If aggregating by functions other than counts, include the aggregation expression on the left-hand side. Compare to stats::xtabs().
- **data**: an object of class CrunchDataset
- **weight**: a CrunchVariable that has been designated as a potential weight variable for data, or NULL for unweighted results. Default is the currently applied weight().
- **useNA**: whether to include missing values in tabular results. See base::table().

Value

an object of class CrunchCube

See Also

weight()

Crunch.io: instant, visual, collaborative data analysis

Description

Crunch.io provides a cloud-based data store and analytic engine. It has a web client for interactive data exploration and visualization. The crunch package for R allows analysts to interact with and manipulate Crunch datasets from within R. Importantly, this allows technical researchers to collaborate naturally with team members, managers, and clients who prefer a point-and-click interface: because all connect to the same dataset in the cloud, there is no need to email files back and forth continually to share results.
See Also

To learn more about using the package, see vignette("crunch"). To sign up for a Crunch.io account, visit https://app.crun.ch.io/.

**crunch-cut**  
*Cut a numeric Crunch variable*

**Description**

`crunch::cut()` is equivalent to `base::cut()` except that it operates on Crunch variables instead of in-memory R objects. The function takes a numeric variable and derives a new categorical variable from it based on the `breaks` argument. You can either break the variable into evenly spaced categories by specifying the number of breaks, or specify a numeric vector identifying the start and end point of each category. For example, specifying `breaks = 5` will break the numeric data into five evenly spaced portions while `breaks = c(1, 5, 10)` will recode the data into two groups based on whether the numeric vector falls between 1 and 5 or 5 and 10.

**Usage**

```r
## S4 method for signature 'NumericVariable'
cut(x, breaks, labels = NULL, name,
     include.lowest = FALSE, right = TRUE, dig.lab = 3,
     ordered_result = FALSE, ...)  
```

**Arguments**

- **x**: A Crunch NumericVariable
- **breaks**: Either a numeric vector of two or more unique cut points or a single number giving the number of intervals into which `x` is to be cut. If specifying cut points, values that are less than the smallest value in `breaks` or greater than the largest value in `breaks` will be marked missing in the resulting categorical variable.
- **labels**: A character vector representing the labels for the levels of the resulting categories. The length of the labels argument should be the same as the number of categories, which is one fewer than the number of breaks. If not specified, labels are constructed using interval notation. For example, `[1, 5)` indicates that the category goes from 1 to 5. The bracket shape indicates whether the boundary value is included in the category, i.e. whether it is "closed". `[1, 5)` indicates that the interval includes (is closed on) 1 but does not include (is open on) 5. If `labels = FALSE`, simple integer codes are returned instead of a factor.
- **name**: The name of the resulting Crunch variable as a character string.
- **include.lowest**: logical, indicating if an `x[i]` equal to the lowest (or highest, for `right = FALSE`) breaks value should be included.
- **right**: logical, indicating if the intervals should be closed on the right (and open on the left) or vice versa.
dig.lab integer which is used when labels are not given. It determines the number of digits used in formatting the break numbers.
ordered_result Ignored.
... further arguments passed to makeCaseVariable

Value

a Crunch VariableDefinition. Assign it into the dataset to create it as a derived variable on the server.

Examples

```r
## Not run:
dstr <- loadDataset("mtcars")
dstr$cat_var <- cut(dstr$mpg,
  breaks = c(10, 15, 20),
  labels = c("small", "medium"), name = "Fuel efficiency"
)
dstr$age <- sample(1:100, 32)
dstr$age4 <- cut(dstr$age, c(0, 30, 45, 65, 200),
  c("Youth", "Adult", "Middle-aged", "Elderly"),
  name = "Age (4 category)"
)
## End(Not run)
```

---

**crunch.uni**  
*Univariate statistics on Crunch objects*

---

**Description**

Univariate statistics on Crunch objects

**Usage**

```r
mean(x, ...)
```

```r
sd(x, na.rm = FALSE)
```

```r
median(x, na.rm = FALSE, ...)
```

```r
## S4 method for signature 'CrunchVariable'
mean(x, ...)
```

```r
## S4 method for signature 'NumericVariable'
mean(x, ...)
```

```r
## S4 method for signature 'CrunchVariable'
```
sd(x, na.rm = FALSE)

## S4 method for signature 'NumericVariable'
sd(x, na.rm = FALSE)

## S4 method for signature 'CrunchVariable'
min(x, na.rm)

## S4 method for signature 'NumericVariable'
min(x, na.rm = FALSE)

## S4 method for signature 'DatetimeVariable'
min(x, na.rm = FALSE)

## S4 method for signature 'CrunchVariable'
max(x, na.rm)

## S4 method for signature 'NumericVariable'
max(x, na.rm = FALSE)

## S4 method for signature 'DatetimeVariable'
max(x, na.rm = FALSE)

Arguments

- **x**
  - a NumericVariable, or for min and max, a NumericVariable or DatetimeVariable
- **...**
  - additional arguments to summary statistic function
- **na.rm**
  - logical: exclude missings?

See Also

- base::mean()
- stats::sd()
- stats::median()
- base::min()
- base::max()

---

**crunchBox**

*Make a CrunchBox*

**Description**

CrunchBoxes allow you to publish results to the world.

**Usage**

```r
crunchBox(dataset, filters = crunch::filters(dataset),
          weight = crunch::weight(dataset),
          brand_colors, static_colors, category_color_lookup, ...)

CrunchBox(dataset, filters = crunch::filters(dataset),
```
weight = crunch::weight(dataset), brand_colors, static_colors, category_color_lookup, ...)

Arguments

- **dataset**: A CrunchDataset, potentially a selection of variables from it.
- **filters**: FilterCatalog, or NULL for no filters. Default all filters in your catalog, filters(dataset).
- **weight**: a CrunchVariable that has been designated as a potential weight variable for dataset, or NULL for unweighted results. Default is the currently applied `weight()`.
- **brand_colors**: an optional color vector of length 3 or less, or a named list with names 'primary', 'secondary', and 'message'. See "Details" for more about color specification.
- **static_colors**: an optional vector of colors to use for categorical plots. Bars and lines are colored in the order of static_colors. See "Details" for more about color specification.
- **category_color_lookup**: an optional list of category names to colors to use for that category, wherever it appears in the data. This allows you to always see a category displayed in a specific color. See "Details" for more about color specification.
- **...**: additional metadata for the box, such as "title", "header", etc.

Details

In addition to specifying the variables and filters to include in your CrunchBox, you can provide custom color palettes. The arguments `brand_colors`, `static_colors`, and `category_color_lookup` allow you to provide color lists to use. Colors should be either a valid hexadecimal string representation, like "#fa1af1", or they may also be an R named color, such as "darkgreen".

Value

The URL to the newly created box.

See Also

- `preCrunchBoxCheck()` to provide guidance on what you’re including in the

Examples

```r
## Not run:
# Creating a CrunchBox with three variables
crunchBox(ds[c("var1", "var2", "var3")], title = "New CrunchBox")

# Creating a CrunchBox changing primary, secondary, and message brand colors
crunchBox(ds[c("var1", "var2", "var3")],
    title = "Branded CrunchBox",
    brand_colors = c("#ff0aa4", "#af17ff", "#260aff")
)

# Creating a CrunchBox changing category-specific colors
```
CrunchDataFrame

```r
crunchBox(ds[c("var1", "var2", "var3")],
  title = "CrunchBox with category colors",
  category_color_lookup = list(
    "agree" = "#ff00a4",
    "disagree" = "#af17ff",
    "don't know" = "#260aff"
  )
)
```

## End(Not run)

### Description

CrunchDataFrames are designed to mimic the ways that data.frames are used. They should be a drop-in replacement in many places where data.frames are used.

### Usage

```r
## S3 method for class 'CrunchDataFrame'

\text{dim}(x)
```

### Arguments

- `x` a CrunchDataFrame

### Details

CrunchDataFrames are generated not by downloading all of the variables from a dataset, but rather only the variables that are needed by subsequent functions. So, if you create a CrunchDataFrame, and then run a linear model using `lm()`, only the variables used by the linear model will be downloaded.

CrunchDataFrames can be altered (that is: adding more columns, removing columns, subsetting rows, etc.) with the same `[`, `[[`, and `$` syntax as data.frames.

### Description

Crunch Datasets
Crunch stores geographic data as variable metadata. There are a number of functions that help access and change this metadata.

**Usage**

```r
CrunchGeography(..., data = NULL)
```

```r
## S4 method for signature 'CrunchVariable'
geo(x)
```

```r
## S4 replacement method for signature 'CrunchVariable, CrunchGeography'
geo(x) <- value
```

```r
## S4 replacement method for signature 'CrunchVariable, 'NULL''
geo(x) <- value
```

```r
availableGeodata(x = getAPIRoot())
```

**Arguments**

- `...` for CrunchGeography, named arguments from which to construct a CrunchGeography: `geodatum`, `feature_key`, and `match_field`
- `data` for CrunchGeography, list of named arguments from which to construct a CrunchGeography: `geodatum`, `feature_key`, and `match_field`
- `x` a crunch variable
- `value` value of the geography property to set

**Details**

`geo` retrieves the geographic information associate with a variable. If there is geographic information it returns an object of class `CrunchGeography` otherwise it returns `NULL`.

CrunchGeography objects store geography metadata from a variable. There are three slots:

- `geodatum` an object of class CrunchGeodata which stores references to the Crunch-hosted (geo|topo)json to use
- `feature_key` a character string representing the feature inside of the (geo|topo)json which is used to match `match_field` (e.g. properties.name)
- `match_field` a character string representing the variable metadata information which is used to match `feature_key` to (e.g. name)
CrunchVariable-class

Value

geographic information of class CrunchGeography (NULL if there is none)

Examples

```r
## Not run:
geo(ds$location)

geo(ds$location)$feature_key <- "properties.name"
geo(ds$location)$match_field <- "name"

## End(Not run)
```

CrunchVariable-class  Variables in Crunch

Description

Variables are S4 objects. All inherit from the base class CrunchVariable.

Slots

- filter  either NULL or CrunchLogicalExpr
- tuple  VariableTuple

---

cube-computing  Work with CrunchCubes, MultitableResults, and TabBookResults

Description

These functions provide an interface like `base::margin.table()` and `base::prop.table()` for the CrunchCube object. CrunchCubes contain richer metadata than standard R array objects, and they also conceal certain complexity in the data structures from the user. In particular, multiple-response variables are generally represented as single dimensions in result tables, but in the actual data, they may comprise two dimensions. These methods understand the subtleties in the Crunch data types and correctly compute margins and percentages off of them.

Usage

```r
margin.table(x, margin = NULL)

prop.table(x, margin = NULL)

bases(x, margin = NULL)
```
## Arguments

- **x**: a CrunchCube
- **margin**: index, or vector of indices to generate margin for. See `base::prop.table()`. 
  `bases()` accepts 0 as an additional valid value for margin, which yields the unweighted counts for the query.
- **digits**: For `round`, the number of decimal places to round to. See `base::round()`

## Details

These functions also generalize to MultitableResults and TabBookResults, which are returned from a `tabBook()` request. When called on one of those objects, they effectively apply over each CrunchCube contained in them.

`bases` is an additional method for CrunchCubes. When making weighted requests, `bases` allows you to access the unweighted counts for every cell in the resulting table (array). The `bases` function takes a "margin" argument to work like `margin.table`, or with `margin=0` gives all cell counts.

## Value

When called on CrunchCubes, these functions return an array. Calling `prop.table` on a MultitableResult returns a list of `prop.tables` of the CrunchCubes it contains. Likewise, `prop.table` on a TabBookResult returns a list of lists of `prop.tables`.
Methods on Cube objects

Description

These methods provide an array-like interface to the CrunchCube object.

Usage

```r
## S4 method for signature 'CubeDims'
dimnames(x)

## S4 method for signature 'CubeDims'
dim(x)

## S4 method for signature 'CubeDims'
is.na(x)

## S4 method for signature 'CrunchCube'
dimensions(x)

## S4 replacement method for signature 'CrunchCube,CubeDims'
dimensions(x) <- value

## S4 method for signature 'CrunchCube'
dim(x)

## S4 method for signature 'CrunchCube'
dimnames(x)

## S4 method for signature 'CrunchCube'
measures(x)
```

Arguments

- `x` a CrunchCube or its CubeDims component.
- `value` for dimensions<- a CubeDims object to overwrite a CrunchCube dimensions

Value

Generally, the same shape of result that each of these functions return when applied to an array object.
See Also

cube-computing base::array

cube-missingness  Modify cube missing behavior

Description

By default, CrunchCubes do not show entries for missing categories. You can include missing values in a cube with showMissing(cube) and hide them again with hideMissing(cube).

Usage

```r
## S4 method for signature 'CrunchCube'
showMissing(cube)

## S4 method for signature 'CrunchCube'
hideMissing(cube)

## S4 method for signature 'CrunchCube'
showIfAny(cube)
```

Arguments

- `cube`  a CrunchCube

Description

Calculate standardized residuals from a CrunchCube

Standardized residuals, \((\text{observed} - \text{expected}) / \sqrt{V}\), where \(V\) is the residual cell variance (Agresti, 2007, section 2.4.5). Special care is taken for multiple-response variables which are in effect a series of separate tables where 'not selected' cells for each item are hidden.

Usage

```r
zScores(x)

## S4 method for signature 'CrunchCube'
zScores(x)

rstandard(model)
```
**Arguments**

- `x`: A CrunchCube representing a contingency table
- `value`: A CrunchCube representing a contingency table (for `rstandard()` only)

**Value**

An array of standardized residuals or Z-scores from the hypothesis being tested. The default method is that the joint distributions of (weighted) counts are equal to the marginal distributions of the table.

**References**


**See Also**

`stats::chisq.test`

---

**Description**

You can designate a dashboard that will show when the dataset is loaded in the Crunch web app. This dashboard could be a Crunch Shiny ("Crunchy") app, a CrunchBox, an RMarkdown website or something else.

**Usage**

```r
dashboard(x)

setDashboardURL(x, value)

dashboard(x) <- value
```

**Arguments**

- `x`: CrunchDataset
- `value`: For the setter, a URL (character) or NULL to unset the dashboard.

**Value**

The getter returns a URL (character) or NULL. The setter returns the dataset (`x`).
### dataset-owner

**Get and set the owner of a dataset**

**Description**

Get and set the owner of a dataset

**Usage**

```r
## S4 method for signature 'CrunchDataset'
owner(x)

## S4 replacement method for signature 'CrunchDataset'
owner(x) <- value
```

**Arguments**

- **x**: CrunchDataset
- **value**: For the setter, either a URL (character) or a Crunch object with a `self` method. Users and Projects are valid objects to assign as dataset owners.

**Value**

The dataset.

### dataset-to-R

**as.data.frame method for CrunchDataset**

**Description**

This method is defined principally so that you can use a CrunchDataset as a data argument to other R functions (such as `stats::lm()`) without needing to download the whole dataset. You can, however, choose to download a true data.frame.
### S3 method for class 'CrunchDataset'

```r
as.data.frame(x, row.names = NULL,
              optional = FALSE, force = FALSE, categorical.mode = "factor",
              row.order = NULL, include.hidden = TRUE, ...)
```

### S3 method for class 'CrunchDataFrame'

```r
as.data.frame(x, row.names = NULL,
              optional = FALSE, include.hidden = attr(x, "include.hidden"), ...)
```

#### Arguments

- **x**
  
a CrunchDataset or CrunchDataFrame

- **row.names**
  
  part of as.data.frame signature. Ignored.

- **optional**
  
  part of as.data.frame signature. Ignored.

- **force**
  
  logical: actually coerce the dataset to data.frame, or leave the columns as unevaluated promises. Default is FALSE.

- **categorical.mode**
  
  what mode should categoricals be pulled as? One of factor, numeric, id (default: factor)

- **row.order**
  
  vector of indices. Which, and their order, of the rows of the dataset should be presented as (default: NULL). If NULL, then the Crunch Dataset order will be used.

- **include.hidden**
  
  logical: should hidden variables be included? (default: TRUE)

- **...**
  
  additional arguments passed to as.data.frame (default method).

#### Details

By default, the as.data.frame method for CrunchDataset does not return a data.frame but instead CrunchDataFrame, which behaves like a data.frame without bringing the whole dataset into memory. When you access the variables of a CrunchDataFrame, you get an R vector, rather than a CrunchVariable. This allows modeling functions that require select columns of a dataset to retrieve only those variables from the remote server, rather than pulling the entire dataset into local memory.

If you call as.data.frame() on a CrunchDataset with force = TRUE, you will instead get a true data.frame. You can also get this data.frame by calling as.data.frame on a CrunchDataFrame (effectively calling as.data.frame on the dataset twice)

When a data.frame is returned, the function coerces Crunch Variable values into their R equivalents using the following rules:

- Numeric variables become numeric vectors
- Text variables become character vectors
- Datetime variables become either date or POSIXt vectors
- Categorical variables become either factors with levels matching the Crunch Variable's categories (the default), or, if categorical.mode is specified as "id" or "numeric", a numeric vector of category ids or numeric values, respectively
• Array variables (Categorical Array, Multiple Response) are decomposed into their constituent categorical subvariables. An array with three subvariables, for example, will result in three columns in the data.frame.

Column names in the data.frame are the variable/subvariable aliases.

Value

When called on a CrunchDataset, the method returns an object of class CrunchDataFrame unless force = TRUE, in which case the return is a data.frame. For CrunchDataFrame, the method returns a data.frame.

See Also

as.vector()

datasets

Get a catalog of datasets

Description

Crunch datasets are collected in folders called "projects". datasets() can be used to filter a project’s contents to see only datasets (and not other projects). You can also use it to pull a catalog of datasets from search results.

Usage

datasets(x = getAPIRoot())

datasets(x) <- value

Arguments

x a ProjectFolder or SearchResults that may contain datasets
value For assignment, a CrunchDataset to move

Details

The datasets()<- assignment function provides an alternative method for moving a dataset into a project. This may be more convenient in some cases than using mv().

Value

When x is a ProjectFolder, datasets() returns the folder with its "index" filtered to contain only datasets; otherwise, it returns an object of class DatasetCatalog. The assignment function returns the project x with the given dataset added to it.
Examples

```r
## Not run:
# Get the names of the datasets contained in a project
projects() %>%
  cd("Important Clients") %>%
  datasets() %>%
  names()

# The assignment method lets you move a dataset to a project
proj <- cd(projects(), "Important Clients")
ds <- loadDataset("New important client survey")
datasets(proj) <- ds

## End(Not run)
```

### decks

- **Get a dataset's DeckCatalog**

#### Description

Crunch decks are stored in catalogs. This function returns those catalogs so that you can access and manipulate decks in R.

#### Usage

```r
decks(dataset)
```

#### Arguments

- **dataset**
  - a Crunch Dataset

#### Value

- a DeckCatalog

### delete

- **Delete a Crunch object from the server**

#### Description

These methods delete entities, notably Datasets and Variables within them, from the server. This action is permanent and cannot be undone, so it should not be done lightly. Consider instead using archive for datasets and hide for variables.
Usage

dele(x, ...)

## S4 method for signature 'CrunchDataset'
delete(x, ...)

## S4 method for signature 'DatasetTuple'
delete(x, ...)

## S4 method for signature 'CrunchDeck'
delete(x, ...)

## S4 method for signature 'CrunchSlide'
delete(x, ...)

## S4 method for signature 'Multitable'
delete(x, ...)

## S4 method for signature 'CrunchTeam'
delete(x, ...)

## S4 method for signature 'CrunchVariable'
delete(x, ...)

## S4 method for signature 'VariableTuple'
delete(x, ...)

## S4 method for signature 'ShojiFolder'
delete(x, ...)

## S4 method for signature 'ShojiTuple'
delete(x, ...)

## S4 method for signature 'ShojiObject'
delete(x, ...)

## S4 method for signature 'ANY'
delete(x, ...)

Arguments

x  a Crunch object  
...  additional arguments, generally ignored

Details

Deleting requires confirmation. In an interactive session, you will be asked to confirm. To avoid that prompt, or to delete objects from a non-interactive session, wrap the call in `with_consent()`
to give your permission to delete.

See Also

hide() deleteDataset() deleteVariables() deleteSubvariables()

deletedataset  Delete a dataset from the dataset list

Description

This function lets you delete a dataset without first loading it, which is faster.

Usage

deleterDataset(x, ...)

Arguments

x The name (character) of a dataset, a path to a dataset, or a CrunchDataset. Unless x is a parsed folder path, it can only be of length 1—for your protection, this function is not vectorized.

... additional parameters passed to delete()

Details

The function also works on CrunchDataset objects, just like delete(), which may be useful if you have loaded another package that masks the crunch::delete() method.

Value

(Invisibly) the API response from deleting the dataset

See Also

delete(); cd() for details of parsing and walking dataset folder/project paths.
deleteSubvariables

**Delete subvariables from an array**

**Description**

Deleting variables requires confirmation. In an interactive session, you will be asked to confirm. To avoid that prompt, or to delete subvariables from a non-interactive session, wrap the call in `with_consent()` to give your permission to delete.

**Usage**

- `deleteSubvariables(variable, to.delete)`
- `deleteSubvariable(variable, to.delete)`

**Arguments**

- `variable`: the array variable
- `to.delete`: aliases (following `crunch.namekey.dataset`) or indices of variables to delete.

**Details**

To delete the subvariables the function unbinds the array, deletes the subvariable, and then binds the remaining subvariables into a new array.

**Value**

a new version of variable without the indicated subvariables

**See Also**

- `deleteVariable()`, `delete()`

---

deleteVariables

**Delete Variables Within a Dataset**

**Description**

This function permanently deletes a variable from a dataset.

**Usage**

- `deleteVariables(dataset, variables)`
- `deleteVariable(dataset, variables)`
**derivations**

**Arguments**

- **dataset**: the Dataset to modify
- **variables**: aliases (following `crunch.namekey.dataset`) or indices of variables to delete.

**Details**

In an interactive session, you will be prompted to confirm that you wish to delete the variable. To avoid that prompt, or to delete variables from a non-interactive session, wrap the call in `with_consent()` to give your permission to delete.

**Value**

(invisibly) dataset with the specified variables deleted

**See Also**

`delete(); deleteSubvariable();` For a non-destructive alternative, see `hide()`.

---

**derivations**

Get or set a derived variable’s expression

**Description**

Get a derived variable’s derivation formula as a `CrunchExpr` with `derivation(variable)`. Set (change) a derived variable’s derivation with `derivation(variable) <- expression`.

**Usage**

```r
## S4 method for signature 'CrunchVariable'
 derivation(x)

## S4 replacement method for signature 'CrunchVariable,ANY'
 derivation(x) <- value

## S4 replacement method for signature 'CrunchVariable,\'NULL\''
 derivation(x) <- value

## S4 method for signature 'CrunchVariable'
 is.derived(x)

## S4 replacement method for signature 'CrunchVariable,logical'
 is.derived(x) <- value
```
Arguments

x a variable
value a CrunchExpr to be used as the derivation (for the setter only) or NULL to integrate a derived variable. For is.derived, FALSE can be used to integrate a derived variable.

Details

To break a derivation link between a derived variable and the originating variable, set the derivation value of the derived variable to NULL with derivation(variable) <- NULL.

is.derived can be used to see if a variable is derived or not. Additionally setting a derived variable’s is.derived to FALSE will break the derivation link between two variables.

Value

a CrunchExpr of the derivation for derivation; a logical for is.derived; the variable given in x for is.derived<- returns

Examples

### Not run:

```r
d$s$derived_v1 <- d$s$v1 + 5
derivation(d$s$derived_v1)
  # Crunch expression: v1 + 5
derivation(d$s$derived_v1) <- d$s$v1 + 10
derivation(d$s$derived_v1)
  # Crunch expression: v1 + 10

is.derived(d$s$derived_v1)
  # TRUE
```

# to integrate or instantiate the variable in place (remove the link between variable v1 and the derivation) you can:
```r
derivation(d$s$derived_v1) <- NULL
```

# after integrating, the derived variable is no longer derived.
```r
is.derived(d$s$derived_v1)
  # FALSE
```

### End(Not run)
**describe-entity**  
Name, alias, and description for Crunch objects

**Description**

Name, alias, and description for Crunch objects

**Usage**

```r
name(x)

name(x) <- value

id(x)

value(x)

value(x) <- value

description(x)

description(x) <- value

startDate(x)

startDate(x) <- value

endDate(x)

endDate(x) <- value

alias(object, ...)

alias(x) <- value

digits(x)

digits(x) <- value

uniformBasis(x)

uniformBasis(x) <- value

notes(x)

notes(x) <- value
```
## S4 method for signature 'AbstractCategory'
name(x)

## S4 replacement method for signature 'AbstractCategory'
name(x) <- value

## S4 replacement method for signature 'NULL'
name(x) <- value

## S4 method for signature 'AbstractCategory'
id(x)

## S4 method for signature 'Category'
value(x)

## S4 replacement method for signature 'Category'
value(x) <- value

## S4 method for signature 'CrunchDataset'
name(x)

## S4 replacement method for signature 'CrunchDataset'
name(x) <- value

## S4 method for signature 'CrunchDataset'
description(x)

## S4 replacement method for signature 'CrunchDataset'
description(x) <- value

## S4 method for signature 'CrunchDataset'
startDate(x)

## S4 replacement method for signature 'CrunchDataset'
startDate(x) <- value

## S4 method for signature 'CrunchDataset'
endDate(x)

## S4 replacement method for signature 'CrunchDataset'
endDate(x) <- value

## S4 method for signature 'CrunchDataset'
notes(x)

## S4 method for signature 'CrunchDataset'
notes(x)
## S4 replacement method for signature 'CrunchDataset'
notes(x) <- value

## S4 replacement method for signature 'CrunchDeck'
name(x) <- value

## S4 method for signature 'CrunchDeck'
description(x)

## S4 replacement method for signature 'CrunchDeck'
description(x) <- value

## S4 method for signature 'Geodata'
description(x)

## S4 replacement method for signature 'Multitable'
name(x) <- value

## S4 method for signature 'ProjectFolder'
name(x)

## S4 replacement method for signature 'ShojiFolder'
name(x) <- value

## S4 method for signature 'ShojiObject'
name(x)

## S4 method for signature 'VariableTuple'
alias(object)

## S4 method for signature 'VariableTuple'
description(x)

## S4 method for signature 'VariableTuple'
notes(x)

## S4 method for signature 'CrunchVariable'
name(x)

## S4 replacement method for signature 'CrunchVariable'
name(x) <- value

## S4 method for signature 'CrunchVariable'
id(x)

## S4 method for signature 'CrunchVariable'
description(x)
## S4 replacement method for signature 'CrunchVariable'

`description(x) <- value`

## S4 method for signature 'CrunchVariable'

`alias(object)`

## S4 replacement method for signature 'CrunchVariable'

`alias(x) <- value`

## S4 method for signature 'CrunchVariable'

`notes(x)`

## S4 replacement method for signature 'CrunchVariable'

`notes(x) <- value`

## S4 method for signature 'CrunchVariable'

`digits(x)`

## S4 replacement method for signature 'NumericVariable'

`digits(x) <- value`

## S4 replacement method for signature 'CrunchVariable'

`digits(x) <- value`

## S4 method for signature 'MultipleResponseVariable'

`uniformBasis(x)`

## S4 replacement method for signature 'MultipleResponseVariable'

`uniformBasis(x) <- value`

### Arguments

- **x**: a Dataset or Variable.
- **value**: For the setters, a length-1 character vector to assign
- **object**: Same as x but for the alias method, in order to match the generic from another package. Note that alias and digits are only defined for Variables.
- **...**: additional arguments in the alias generic, ignored.

### Value

Getters return the character object in the specified slot; setters return `x` duly modified.

### See Also

`describe-catalog`
dichotomize

Indicate how categories represent a dichotomized value

Description

Multiple Response variables are Categorical Arrays in which one or more categories are set as "selected". These methods allow you to view and set that attribute.

Usage

is.dichotomized(x)
dichotomize(x, i)
undichotomize(x)
is.selected(x)
is.selected(x) <- value

## S4 method for signature 'Categories'
is.dichotomized(x)

## S4 method for signature 'Categories,numeric'
dichotomize(x, i)

## S4 method for signature 'Categories,logical'
dichotomize(x, i)

## S4 method for signature 'Categories,character'
dichotomize(x, i)

## S4 method for signature 'Categories'
undichotomize(x)

## S4 method for signature 'CategoricalVariable,ANY'
dichotomize(x, i)

## S4 method for signature 'CategoricalArrayVariable,ANY'
dichotomize(x, i)

## S4 method for signature 'CategoricalVariable'
undichotomize(x)

## S4 method for signature 'CategoricalArrayVariable'
undichotomize(x)
## S4 method for signature 'Categories'
is.selected(x)

## S4 replacement method for signature 'Categories'
is.selected(x) <- value

## S4 method for signature 'Category'
is.selected(x)

## S4 replacement method for signature 'Category'
is.selected(x) <- value

### Arguments

- **x**: Categories or a Variable subclass that has Categories
- **i**: For the dichotomize methods, the numeric or logical indices of the categories to mark as "selected", or if character, the Category "names". Note that unlike some other categorical variable methods, numeric indices are positional, not with reference to category ids.

- **value**: For `is.selected<-`, A logical vector indicating whether the category should be selected. For a single category the value should be either TRUE or FALSE. To change the selection status for a Categories object, supply a logical vector which is the same length as the number of categories.

### Details

dichotomize lets you specify which categories are "selected", while undichotomize strips that selection information. Dichotomize converts a Categorical Array to a Multiple Response, and undichotomize does the reverse. `is.dichotomized` reports whether categories have any selected values.

`is.selected` is lower level and maps more directly onto the "selected" attributes of categories. The best illustration of this difference is that `is.selected(categories(var))` returns a logical vector, a value for each category, while `is.dichotomized(categories(var))` returns a single TRUE/FALSE value.

### Value

- Categories or the Variable, (un)dichotomized accordingly

### See Also

describe-entity

### Examples

```r
## Not run:
ds <- newExampleDataset()
is.MR(ds$allpets)
is.dichotomized(categories(ds$allpets))
is.selected(categories(ds$allpets))
```
### dim-dataset

**Dataset dimensions**

**Description**

Dataset dimensions

**Usage**

```
## S4 method for signature 'CrunchDataset'

dim(x)

## S4 method for signature 'CrunchDataset'

ncol(x)
```

**Arguments**

- `x`  
  a Dataset

**Value**

integer vector of length 2, indicating the number of rows and non-hidden variables in the dataset. Array subvariables are excluded from the column count.

**See Also**

`base::dim()`

---

### dimension-comparison

**Column and row comparison**

**Description**

Comparing a column or row with a baseline column or row. This calculates the z-score for the cells when comparing `x` to the baseline columns.
Usage

compareCols(cube, ...)
compareRows(cube, ...)
compareDims(cube, dim = c("cols", "rows"), baseline, x)

Arguments

cube       a cube to calculate the comparison on
...        arguments passed from compareRows() or compareCols() to compareDims()
           (i.e. baseline and x)
dim        which dimension is being compared (rows or cols, only valid for compareDims())
baseline   a character, the column to use as a baseline to compare x against
x          a character, the column to compare against the baseline

Value

the z-score for the column or row given in x

dimension-comparison-pairwise

Pairwise column and row comparison

Description

Given a single baseline column compare each other row or column against this baseline. Internally
this function uses compareDims() iteratively.

Usage

compareColsPairwise(cube, ...)
compareRowsPairwise(cube, ...)
compareDimsPairwise(cube, dim = c("cols", "rows"), baseline)

Arguments

cube       a cube to calculate the comparison on
...        arguments passed from compareRowsPairwise() or compareColsPairwise()
           to compareDimsPairwise() (i.e. baseline)
dim        which dimension is being compared (rows or cols, only valid for compareDims())
baseline   a character, the column to use as a baseline to compare against all other columns
Details

Warning since there is more than one comparison being made against each baseline the z-scores, and especially the p-values derived from these z-scores should be interpreted with caution. Using standard p-value cutoffs will result in anti-conservative interpretations because of the multiple comparisons problem. Adjustments to p-value cut offs (e.g. Bonferroni correction) should be used when interpreting z-scores from the compare[Rows|Cols|Dims]Pairwise() family of functions.

Value

an array of z-score for the all the columns or rows compared to baseline. The baseline column is all 0s

displaySettings

Get or set a slide's display settings

Description

A slide’s display settings can be modified by assigning a named list

Usage

displaySettings(x)
displaySettings(x) <- value

## S4 method for signature 'CrunchDeck'
cubes(x)

## S4 method for signature 'CrunchSlide'
displaySettings(x)

## S4 replacement method for signature 'CrunchSlide,ANY'
displaySettings(x) <- value

## S4 method for signature 'AnalysisCatalog'
displaySettings(x)

## S4 replacement method for signature 'AnalysisCatalog,list'
displaySettings(x) <- value

## S4 method for signature 'Analysis'
displaySettings(x)

## S4 replacement method for signature 'Analysis,ANY'
displaySettings(x) <- value
**Arguments**

- `x`: a CrunchSlide, Analysis, or AnalysisCatalog
- `value`: a named list, for valid settings see docs.crunch.io

**Description**

Permanently delete rows from a dataset

**Usage**

```r
dropRows(dataset, expr)
```

**Arguments**

- `dataset`: a CrunchDataset
- `expr`: a CrunchLogicalExpr

**Value**

`dataset` without the rows indicated by `expr`

**See Also**

`exclusion` for a non-destructive way to suppress rows

**Examples**

```r
## Not run:
ds <- dropRows(ds, ds$gender == "Male")

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

**Description**

"duplicated" method for Crunch objects

**Usage**

```r
## S4 method for signature 'CrunchVariable'
duplicated(x, incomparables = FALSE, ...)

## S4 method for signature 'CrunchExpr'
duplicated(x, incomparables = FALSE, ...)
```

**Arguments**

- `x`: CrunchVariable or CrunchExpr
- `incomparables`: Ignored
- `...`: Ignored

**Value**

A CrunchLogicalExpr that evaluates TRUE for all repeated entries after the first occurrence of a value.

**See Also**

- `base::duplicated()`

## email

**Description**

Extract the email from a User Entity

**Usage**

```r
e-mail(x)

## S4 method for signature 'UserEntity'
e-mail(x)
```
Arguments

- **x**: a UserEntity returned from `me()`

Value

- a character string of the user’s email

---

**embedCrunchBox**

*Get HTML for embedding a CrunchBox*

Description

`crunchBox()` returns a URL to the box data that it generates, but in order to view it in a CrunchBox or to embed it on a website, you’ll need to translate that to the Box’s public URL and wrap it in some HTML. This function takes a CrunchBox and returns the HTML which you can embed in a website.

Usage

`embedCrunchBox(box, title = NULL, logo = NULL, ...)`

Arguments

- **box**: character URL of the box data, as returned by `crunchBox()`
- **title**: character title for the Box, to appear above the iframe. Default is `NULL`, meaning no title shown
- **logo**: character URL of a logo to show instead of a title. Default is `NULL`, meaning no logo shown. If both logo and title are provided, only the logo will be shown. Note also that logo must be a URL of a hosted image: it cannot be a path to a local file.
- **...**: Additional arguments, not currently used.

Value

Prints the HTML markup to the screen and also returns it invisibly.

See Also

`crunchBox()`

Examples

```r
## Not run:
box <- crunchBox(ds)
embedCrunchBox(box, logo = "/myco.example/img/logo_200px.png")

## End(Not run)
```
**exclusion**

**View and set exclusion filters**

**Description**

Exclusion filters express logic that defines a set of rows that should be dropped from the dataset. The rows aren't permanently deleted—you can recover them at any time by removing the exclusion filter—but they are omitted from all views and calculations, as if they had been deleted.

**Usage**

```r
exclusion(x)

exclusion(x) <- value
```

**Arguments**

- `x`: a Dataset
- `value`: an object of class CrunchLogicalExpr, or NULL

**Details**

Note that exclusion filters work opposite from how "normal" filters work. That is, a regular filter expression defines the subset of rows to operate on: it says "keep these rows." An exclusion filter defines which rows to omit. Applying a filter expression as a query filter will have the opposite effect if applied as an exclusion. Indeed, applying it as both query filter and exclusion at the same time will result in 0 rows.

**Value**

`exclusion` returns a CrunchFilter if there is one, else NULL. The setter returns `x` with the filter set.

---

**exportDataset**

**Export a dataset to a file**

**Description**

This function allows you to write a CrunchDataset to a .csv or SPSS .sav file.

**Usage**

```r
exportDataset(dataset, file, format = c("csv", "spss"),
               categorical = c("name", "id"), na = NULL, varelabel = c("name",
                                                             "description"), include.hidden = FALSE, ...)

## S4 method for signature 'CrunchDataset'
write.csv(x, ...)
```
exportDeck

Arguments

dataset    CrunchDataset, which may have been subsetted with a filter expression on the rows and a selection of variables on the columns.
file       character local filename to write to
format     character export format: currently supported values are "csv" and "spss".
categorical character: export categorical values to CSV as category "name" (default) or "id". Ignored by the SPSS exporter.
na          Similar to the argument in utils::write.table(), 'na' lets you control how missing values are written into the CSV file. Supported values are:
1. NULL, the default, which means that categorical variables will have the category name or id as the value, and numeric, text, and datetime variables will have the missing reason string;
2. A string to use for missing values.
3. "" means that empty cells will be written for missing values for all types.
varlabel   For SPSS export, which Crunch metadata field should be used as variable labels? Default is "name", but "description" is another valid value.
include.hidden logical: should hidden variables be included? (default: FALSE)
...        additional options. See the API documentation. Currently supported boolean options include 'include_personal' for personal variables (default: FALSE) and 'prefix_subvariables' for SPSS format: whether to include the array variable's name in each of its subvariables "varlabels" (default: FALSE).

Value

Invisibly, file.

exportDeck      Export a Crunch Deck

Description

Crunch decks can be exported as excel or json files.

Usage

exportDeck(deck, file, format = c("xlsx", "pptx", "json"))

Arguments

dock        A CrunchDeck
file        The file path to save the exported deck
format      Either "xlsx", "pptx", or "json"
Expressions

Value

the filename (file, if specified, or the the autogenerated file name).

---

Construct Crunch Expressions

Description

Crunch Expressions, i.e. CrunchExpr and CrunchLogicalExpr, encapsulate derivations of Crunch variables, which are only evaluated when passed to a function like as.vector. They allow you to compose functional expressions of variables and evaluate them against the server only when appropriate.

Usage

```r
x %in% table

## S4 method for signature 'CrunchExpr'
!x

## S4 method for signature 'CategoricalVariable,character'
x %in% table

## S4 method for signature 'CategoricalVariable,factor'
x %in% table

## S4 method for signature 'TextVariable,character'
x %in% table

## S4 method for signature 'NumericVariable,numeric'
x %in% table

## S4 method for signature 'DatetimeVariable,Date'
x %in% table

## S4 method for signature 'DatetimeVariable,POSIXt'
x %in% table

## S4 method for signature 'DatetimeVariable,character'
x %in% table

## S4 method for signature 'CategoricalVariable,numeric'
x %in% table

## S4 method for signature 'CategoricalVariable,numeric'
e1 == e2
```
## Arguments

- **x**
  - an input table For %in%. See base::match()
- **e1**
  - an input
- **e2**
  - an input

### Value

Most functions return a CrunchExpr or CrunchLogicalExpr. as.numeric returns an R vector.

### Description

If you want to transfer all teams, projects, and datasets owned by one user to another you can with `expropriateUser`. To have permission to use `expropriateUser` you must be an account admin and be from the same account as the user who is being expropriated. This is useful if a user leaves your organization and you want to transfer all of the teams, projects, and datasets they own to someone else.

### Usage

`expropriateUser(from, to)`
Arguments

from  a character of the email address of the user to expropriate from

to    a character of the email address of the user who should be the new owner

Details

The user given in to will become the owner of all of the teams, projects, and datasets that were previously owned by the user given in from.

Expropriating requires confirmation. In an interactive session, you will be asked to confirm. To avoid that prompt, or to expropriate datasets from a non-interactive session, wrap the call in with_consent() to give your permission to expropriate

Value

NULL if successful

filter-catalog  Get or set a dataset’s filters

Description

You can build and save filters in the Crunch web app, and these filters are stored in a FilterCatalog. This function allows you to retrieve and modify those filters.

Usage

```r
## S4 method for signature 'CrunchDataset'
filters(x)

## S4 replacement method for signature 'CrunchDataset'
filters(x) <- value
```

Arguments

x  a CrunchDataset

value  for the setter, a FilterCatalog

Value

an object of class FilterCatalog containing references to Filter entities usable in the web application. (Setter returns the Dataset.)
flipArrays

**Rearrange array subvariables**

**Description**

Sometimes it is useful to group subvariables across arrays in order to compare them more easily. This function generates a set of derived views of common subvariables across arrays. Because they are derived, they share data with the underlying array variables, and they are thus automatically updated when new data is appended.

**Usage**

```
flipArrays(variables, suffix = ", flipped")
```

**Arguments**

- **variables**
  List of variables, a variable catalog, or a dataset subset containing the categorical array or multiple response variables you want to rearrange.
- **suffix**
  character string to append to the new variable names. Pass "" if you don’t want it to append anything.

**Value**

A list of derived VariableDefinitions, one per unique subvariable name across all variables. Each variable in variables that contains this subvariable will appear as a subvariable in these new derived array definitions. Use `addVariables` to add these to your dataset.

**Examples**

```
## Not run:
ds <- addVariables(ds, flipArrays(ds[c("petloc", "petloc2")], suffix = ", rearranged"))
## End(Not run)
```

---

**folder**

**Find and move entities to a new folder**

**Description**

Find and move entities to a new folder

**Usage**

```
folder(x)
folder(x) <- value
```
forkDataset

Arguments

x

For folder, a Variable to find. For folder assignment, a Variable, selection of variables in a Dataset, or any other object that can be moved to a folder.

value

For assignment, a character "path" to the folder: either a vector of nested folder names or a single string with nested folders separated by a delimiter ("/") default)

Value

folder returns the parent folder of x, or NULL if the x is the root level. folder<- returns the x input, having been moved to the requested location.

See Also

mv() cd()

Examples

## Not run:
ds <- loadDataset("Example survey")
folder(ds$income) <- "Demographics/Economic"
folder(ds$income)
## [1] "Demographics"  "Economic"

## End(Not run)

describe

Create a fork of a dataset

Description

Forking a dataset makes a copy of the data that is linked by Crunch’s version control system to the original dataset. When you make edits to a fork, users of the original dataset do not see the changes.

Usage

forkDataset(dataset, name = defaultForkName(dataset), draft = FALSE, ...

Arguments

dataset

The CrunchDataset to fork

name

character name to give the fork. If omitted, one will be provided for you

draft

logical: Should the dataset be a draft, visible only to those with edit permissions? Default is FALSE.

... Additional dataset metadata to provide to the fork
Details

A common strategy for revising a dataset that has been shared with others is to fork it, make changes to the fork, and then merge those changes back into the original dataset. This workflow allows you to edit a dataset and review changes before publishing them, so that you don’t accidentally send your clients incorrect data. For more on this workflow, see vignette("fork-and-merge", package = "crunch").

Value

The new fork, a CrunchDataset.

See Also

mergeFork()
hiddenVariables  
Show the names of a dataset’s hidden variables

Description
Show the names of a dataset’s hidden variables

Usage
hiddenVariables(dataset, key = namekey(dataset))

Arguments
- dataset: the Dataset
- key: the Variable attribute to return. Default is "alias", following getOption("crunch.namekey.dataset").

Value
a vector of the names of Variables marked as hidden.

hide  
Hide and Unhide Variables

Description
Hide and Unhide Variables

Usage

## S4 method for signature 'CrunchVariable'
hide(x)

## S4 method for signature 'VariableCatalog'
hide(x)

## S4 method for signature 'CrunchVariable'
unhide(x)

## S4 method for signature 'VariableCatalog'
unhide(x)

Arguments
- x: a Variable or subset of a VariableCatalog to hide or unhide
hideVariables

Value

(invisibly) the Variable or VariableCatalog, hidden or unhidden

See Also

hideVariables

---

**hideVariables**  
*Hide and unhide variables within a dataset*

**Description**

Hide and unhide variables within a dataset

**Usage**

```r
hideVariables(dataset, variables)
hiddenVariables(x) <- value
unhideVariables(dataset, variables)
```

**Arguments**

- `dataset`: the Dataset to modify
- `variables`: names or indices of variables to (un)hide
- `x`: dataset, for `hiddenVariables<-`
- `value`: variables, for `hiddenVariables<-`

**Value**

(invisibly) dataset with the specified variables (un)hidden

**See Also**

hide
## http-methods

### Description

These methods let you communicate with the Crunch API, for more background see Crunch Internals.

### Usage

```r
crGET(...)  
crPUT(...)  
crPATCH(...)  
crPOST(...)  
crDELETE(...)  
```

#### Arguments

... see crunchAPI for details. `url` is the first named argument and is required; `body` is also required for PUT, PATCH, and POST.

### Value

Depends on the response status of the HTTP request and any custom handlers.

---

## importMultitable

### Description

Allows you to import a multitable from a different dataset

### Usage

```r
importMultitable(data, multitable, ...)  
```

#### Arguments

<table>
<thead>
<tr>
<th>data</th>
<th>a CrunchDataset in which to create the multitable</th>
</tr>
</thead>
<tbody>
<tr>
<td>multitable</td>
<td>an object of class Multitable that you want copied to the new dataset</td>
</tr>
</tbody>
</table>

... Additional multitable attributes to set. Options include name and is_public.
An object of class Multitable

Examples

```r
## Not run:
m <- newMultitable(~ gender + age4 + marstat, data = ds)
copied_m <- importMultitable(another_ds, m)
name(copied_m) # [1] "gender + age4 + marstat"

## End(Not run)
```

index.table

*Calculate an index table for a CrunchCube*

**Description**

Index tables are percentages of percentages. They take the percentage from prop.table(cube, margin) and, by default, divide that by the proportions of the other margin. The baseline argument can be used to provide baseline proportions to compare against.

**Usage**

```r
index.table(x, margin, baseline)
```

**Arguments**

- `x` A CrunchCube to calculate index table for
- `margin` which margin to index against (1 for rows, 2 for columns)
- `baseline` an arbitrary set of proportions to compare the table given in x to. Useful for comparing two separate cubes. baseline must have the same length as the extent of the dimension given in margin.

**Details**

`index.table()` is only implemented for 2 dimensional cubes. If you need to calculate indexes for a higher dimension Cube, please slice the cube first.

**Value**

an array of percentages indexed to the margin provided
Examples

```r
## Not run:
cube_object
# v7
# v4 C E
# B 5 2
# C 5 3
index.table(cube_object, 1)
# v7
# v4 C E
# B 107.1429 85.71429
# C 93.7500 112.50000
index.table(cube_object, 2)
# v7
# v4 C E
# B 100 80
# C 100 120
index.table(cube_object, 2, c(0.6, 0.4))
# v7
# v4 C E
# B 83.33333 66.66667
# C 125.00000 150.00000

## End(Not run)
```

**Description**

Insertions allow you to insert new categories into a categorical-like response on a variable’s transformations.

**Usage**

```r
Insertions(..., data = NULL)

Insertion(...)

.Insertion(..., data = NULL)

## S4 replacement method for signature 'Insertion'
anchor(x) <- value

## S4 replacement method for signature 'Subtotal'
anchor(x) <- value
```
## S4 replacement method for signature 'Heading'
anchor(x) <- value

## S4 replacement method for signature 'SummaryStat'
anchor(x) <- value

## S4 replacement method for signature 'Insertion,ANY'
subtotals(x) <- value

## S4 replacement method for signature 'Insertion'
arguments(x) <- value

## S4 replacement method for signature 'Subtotal'
arguments(x) <- value

## S4 replacement method for signature 'Heading'
arguments(x) <- value

## S4 replacement method for signature 'SummaryStat'
arguments(x) <- value

## S4 method for signature 'Insertion'
arguments(x)

## S4 method for signature 'Subtotal'
arguments(x, var_categories)

## S4 method for signature 'Heading'
arguments(x)

## S4 method for signature 'SummaryStat'
arguments(x, var_categories)

## S4 method for signature 'Insertion'
anchor(x)

## S4 method for signature 'Subtotal'
anchor(x, var_categories)

## S4 method for signature 'Heading'
anchor(x, var_categories)

## S4 method for signature 'SummaryStat'
anchor(x, var_categories)

## S4 method for signature 'Insertion'
func(x)
Arguments

... additional arguments to \(\cdot\), ignored
data For the constructor functions Insertion and Insertions, you can either pass in attributes via \(...\) or you can create the objects with a fully defined list representation of the objects via the data argument. See the examples.
x For the attribute getters and setters, an object of class Insertion or Insertions
value For \([<\cdot]\), the replacement Insertion to insert
var_categories categories (from \(\text{categories()}\)) to used by the arguments and anchor methods when needed to translate between category names and category ids.

Working with Insertions

Insertions are used to add information about a variable or CrunchCube that extends the data in the dataset but does not alter it. This new data includes: aggregations like subtotals that sum the count of more than one category together or headings which can be added between categories.

Insertions objects are containers for individual Insertion objects. The individual Insertions contain all the information needed to calculate, apply, and display insertions to CrunchCubes and categorical variables.

An Insertion must have two properties:

- anchor - which is the id of the category the insertion should follow
- name - the string to display

Additionally, Insertions may also have the following two properties (though if they have one, they must have the other):

- function - the function to use to aggregate (e.g. "subtotal")
- args - the category ids to use as operands to the function above.

Although it is possible to make both subtotals and headings using Insertion alone, it is much easier and safer to use the functions Subtotal() and Heading() instead. Not only are they more transparent, they also are quicker to type, accept both category names as well as ids, and have easier to remember argument names.
interactVariables  \hspace{1cm} \textit{Create a variable by interacting categorical variables}

\textbf{Description}

\texttt{interactVariables} takes two or more variables and creates a new one that is the cartesian product expansion of their unique values. For example, if we cross ethnicity (with 2 categories) and race (with 4 categories), the new variable would have 8 valid categories (e.g. black:hispanic, white:hispanic, black:non-hispanic, etc.) and 7 categories where at least one of the variables is missing (e.g. white:No Data).

\textbf{Usage}

\begin{verbatim}
interactVariables(..., name, sep = ":")
\end{verbatim}

\textbf{Arguments}

\begin{itemize}
\item \texttt{...}: a sequence of categorical variables to make an interaction from as well as other properties to pass about the case variable (i.e. alias, description)
\item \texttt{name}: a character to use as the name for the interaction variable
\item \texttt{sep}: a character to separate the values of the individual variables (default: ":")
\end{itemize}

\textbf{Value}

A \texttt{VariableDefinition} that creates the new interaction variable.

\textbf{Examples}

\begin{verbatim}
## Not run:
 ds$ethn_race <- interactVariables(ds$ethnicity, ds$race, name = "Interaction of ethnicity and race")

## End(Not run)
\end{verbatim}

\textbf{is-na-categories  \hspace{1cm} is.na for Categories}

\textbf{Description}

Crunch categorical variables allow you to set multiple categories as missing. For instance, you might have "not answered" and "doesn't know" both coded as missing. This function returns a logical vector of all dataset entries that fall into any of the missing categories. It also allows you to append additional categories to the list of missing categories using the setter.
Usage

```r
## S4 method for signature 'Categories'
is.na(x)

## S4 replacement method for signature 'Categories,character'
is.na(x) <- value

## S4 replacement method for signature 'Categories,logical'
is.na(x) <- value

## S4 method for signature 'Category'
is.na(x)

## S4 replacement method for signature 'Category,logical'
is.na(x) <- value
```

Arguments

- `x`: Categories or a single Category
- `value`: To change the missingness of categories, supply either:
  1. a logical vector of equal length of the categories (or length 1 for the Category method); or
  2. the names of the categories to mark as missing. If supplying the latter, any categories already indicated as missing will remain missing.

Value

Getters return logical, a named vector in the case of the Categories method; setters return `x` duly modified.

---

**is-public**

View and modify the "public" attribute of artifacts

Description

View and modify whether all dataset viewers have access to the dataset. This will return FALSE if the dataset is in draft.

Usage

```r
is.public(x)

is.public(x) <- value

## S4 method for signature 'CrunchFilter'
is.public(x)
```
Arguments

x  a Crunch object
value  an attribute to set

Value

For `is.public`, a logical value for whether the object is flagged as shared with all dataset viewers. (Its setter thus takes a logical value as well.) Catalogs of datasets return a vector of logicals corresponding to the length of the catalog, while entities return a single value.

---

**is.dataset**

Test whether a Crunch object belongs to a class

Description

Test whether a Crunch object belongs to a class

Usage

is.dataset(x)

is.CrunchExpr(x)

is.Expr(x)
is.editor

is.Geodata(x)

is.shoji(x)

is.variable(x)

is.Numeric(x)

is.Categorical(x)

is.Text(x)

is.Datetime(x)

is.Multiple(x)

is.MR(x)

is.MultipleResponse(x)

is.CA(x)

is.Array(x)

is.CategoricalArray(x)

Arguments

x  an object

Value

logical

-----------

is.editor  Read and set edit privileges

-----------

Description

Read and set edit privileges

Usage

is.editor(x)

is.editor(x) <- value
## S4 method for signature 'MemberCatalog'

```r
is.editor(x)
```

## S4 replacement method for signature 'MemberCatalog,logical'

```r
is.editor(x) <- value
```

## S4 method for signature 'PermissionCatalog'

```r
is.editor(x)
```

## S4 method for signature 'PermissionTuple'

```r
is.editor(x)
```

### Arguments

- **x**  
  PermissionCatalog or MemberCatalog

- **value**  
  For the setter, logical: should the indicated users be allowed to edit the associated object?

### Value

is.editor returns a logical vector corresponding to whether the users in the catalog can edit or not. is.editor<- returns the catalog, modified.

---

### joinDatasets

**Add columns from one dataset to another, joining on a key**

---

### Description

As `base::merge()` does for `data.frames`, this function takes two datasets, matches rows based on a specified key variable, and adds columns from one to the other.

### Usage

```r
joinDatasets(x, y, by = intersect(names(x), names(y)), by.x = by, by.y = by, all = FALSE, all.x = TRUE, all.y = FALSE, copy = TRUE)
```

```r
extendDataset(x, y, by = intersect(names(x), names(y)), by.x = by, by.y = by, all = FALSE, all.x = TRUE, all.y = FALSE, ...)
```

```r
merge(x, y, by = intersect(names(x), names(y)), by.x = by, by.y = by, all = FALSE, all.x = TRUE, all.y = FALSE, ...)
```

## S3 method for class 'CrunchDataset'

```r
merge(x, y, by = intersect(names(x), names(y)), by.x = by, by.y = by, all = FALSE, all.x = TRUE, all.y = FALSE, ...)
```
listDatasets

Arguments

x  CrunchDataset to add data to
y  CrunchDataset to copy data from. May be filtered by rows and/or columns.
by  character, optional shortcut for specifying by.x and by.y by alias if the key variables have the same alias in both datasets.
by.x  CrunchVariable in x on which to join, or the alias (following crunch.namekey.dataset) of a variable. Must be type numeric or text and have all unique, non-missing values.
by.y  CrunchVariable in y on which to join, or the alias (following crunch.namekey.dataset) of a variable. Must be type numeric or text and have all unique, non-missing values.
all  logical: should all rows in x and y be kept, i.e. a "full outer" join? Only FALSE is currently supported.
all.x  logical: should all rows in x be kept, i.e. a "left outer" join? Only TRUE is currently supported.
all.y  logical: should all rows in y be kept, i.e. a "right outer" join? Only FALSE is currently supported.
copy  logical: make a virtual or materialized join. Default is TRUE, which means materialized. Virtual joins are in fact not currently implemented, so the default is the only valid value.
...  additional arguments, ignored

Details

Since joining two datasets can sometimes produce unexpected results if the keys differ between the two datasets, you may want to follow the fork-edit-merge workflow for this operation. To do this, fork the dataset with forkDataset(), join the new data to the fork, ensure that the resulting dataset is correct, and merge it back to the original dataset with mergeFork(). For more, see vignette("fork-and-merge", package = "crunch").

Value

x extended by the columns of y, matched on the "by" variables.

listDatasets  Get the names of datasets in a project

Description

listDatasets() is a convenience function for quickly seeing what datasets are in a project. It is equivalent to names(datasets(proj)), with some additional optional arguments.
Usage

```r
listDatasets(kind = c("active", "all", "archived"), project = NULL,
             refresh = FALSE, shiny = FALSE)
```

Arguments

- **kind**: character specifying whether to look in active, archived, or all datasets. Default is "active", i.e. non-archived.
- **project**: `ProjectFolder` entity, character name of a project, or `NULL`, the default. If a Project entity or reference is supplied, the function will display datasets from that Project's datasets. If `NULL`, your personal folder will be used.
- **refresh**: logical: should the function check the Crunch API for new datasets? Default is `FALSE`.
- **shiny**: logical: launch a Shiny gadget to help select the right dataset. The gadget will return a valid `loadDataset()` call which loads the selected dataset. The gadget requires RStudio, as well as the `crunchy` package.

Details

Specifying `listDatasets(shiny = TRUE)` will, instead of printing dataset names, load a Shiny gadget that provides a GUI for navigating the project tree to find a dataset, if you’re running in RStudio.

Value

A character vector of dataset names, each of which would be a valid input for `loadDataset()`

---

### loadDataset

**Load a Crunch Dataset**

Description

This function gives you a Dataset object, which refers to a dataset hosted on the Crunch platform. With this Dataset, you can perform lots of data cleaning and analysis as if the dataset were fully resident on your computer, without having to pull data locally.

Usage

```r
loadDataset(dataset, kind = c("active", "all", "archived"),
             project = NULL, refresh = FALSE)
```
Arguments

- **dataset**
  character, the name or path to a Crunch dataset to load, or a dataset URL. If dataset is a path to a dataset in a project, the path will be parsed and walked, relative to project if specified, and the function will look for the dataset inside that project. If no path is specified and no project provided, the function will call a search API to do an exact string match on dataset names.

- **kind**
  character specifying whether to look in active, archived, or all datasets. Default is "active", i.e. non-archived.

- **project**
  ProjectFolder entity, character name (path) to a project, or NULL, the default. If a Project entity or reference is supplied, either here or as a path in dataset, the dataset lookup will be limited to that project only.

- **refresh**
  logical: should the function check the Crunch API for new datasets? Default is FALSE.

Details

You can specify a dataset to load by its human-friendly "name", possibly also by indicating a project (folder) to find it in. This makes code more readable, but it does mean that if the dataset is renamed or moved to a different folder, your code may no longer work. The fastest, most reliable way to use `loadDataset()` is to provide a URL to the dataset—the dataset's URL will never change.

Value

An object of class CrunchDataset.

See Also

See `cd()` for details of parsing and walking dataset folder/project paths.

Examples

```
## Not run:
d <- loadDatasets("A special dataset")
d2 <- loadDatasets("~/My dataset")
d3 <- loadDataset("My dataset", project = "~") # Same as d2

d4 <- loadDataset("https://app.crunch.io/api/datasets/bd3ad2/")

## End(Not run)
```

Description

Crunch allows a single active editor. If you have edit privileges but are not currently editing the dataset, you must unlock the dataset before making changes. You may then lock the dataset when you're done editing.
login

Usage

lock(dataset)

unlock(dataset)

Arguments

dataset a CrunchDataset

Value

dataset, invisibly, after having set the current editor.

Description

Note that you can store your Crunch account info in your .Rprofile under crunch.email and crunch.pw for convenience. If you do so, you can simply login() to authenticate. For running batch jobs, this could be particularly useful. However, be warned that storing your password in a plain text file such as .Rprofile is a security risk (though perhaps less so than in every .R script you write), and we cannot officially recommend that you do so.

Usage

login(email = envOrOption("crunch.email"),
password = envOrOption("crunch.pw"), ...)

Arguments

eemail the email address associated with the user’s Crunch account
password the password associated with the user’s Crunch account
... additional parameters passed in the authentication. Not currently supported by the Crunch API.

Details

Additionally, your email and password can be stored in and read from the environmental variables R_CRUNCH_EMAIL and R_CRUNCH_PW respectively.

If a password is not supplied (or, if no arguments are supplied and only the crunch.email is specified in .Rprofile), and you are in an interactive session, you will be prompted to enter your password. At present, this is the most secure practice as your password is not stored locally.
### logout  
*Kill the active Crunch session*

**Description**
Kill the active Crunch session

**Usage**
```r
logout()
```

### makeArray  
*Make a Categorical Array or Multiple Response variable*

**Description**
Array variables are composed of a set of "subvariables" bound together for display in the app. For example, you might have a set of survey questions that ask how the respondent would rate a tv show from 1-5. Array variables allow you to display all of their ratings in a compact table rather than a set of distinct variables.

**Usage**
```r
makeArray(subvariables, name, ...)
makeMR(subvariables, name, selections, ...)
deriveArray(subvariables, name, selections, ...)
```

**Arguments**
- `subvariables`: a list of Variable objects to bind together, or a Dataset subset which contains only the Variables to bind.
- `name`: character, the name that the new Categorical Array variable should have.
- `...`: Optional additional attributes to set on the new variable.
- `selections`: character, for `makeMR` and `deriveArray` the names of the categories to mark as the dichotomous selections. Required for `makeMR`; optional for `deriveArray`; ignored in `makeArray`.

**Value**
A VariableDefinition that when added to a Dataset will create the categorical-array or multiple-response variable. `deriveArray` will make a derived array expression (or a derived multiple response expression if selections are supplied), while `makeArray` and `makeMR` return an expression that "binds" variables together, removing them from independent existence.
makeArrayGadget  

Array builder

Description
Launch array builder gadget

Usage
makeArrayGadget() 

Details
Categorical Array and Multiple Response variables can be difficult to construct without being able to investigate the available variables, and their categories. This shiny gadget lets you select subvariables from the dataset list, and ensures that those variables have consistent categories. To use the gadget you must have at least one CrunchDataset loaded into the global environment.

Value
a valid call to makeArray() or makeMR()

makeCaseVariable  

Make a case variable

Description
The `makeCaseVariable` function derives a variable using values from other variables. These are evaluated in the order they are supplied in the list as the `cases` argument (they proceed in an IF, ELSE IF, ELSE IF, ..., ELSE fashion); the first one that matches selects the corresponding value from the case list.

Usage
makeCaseVariable(..., cases, data = NULL, name)

Arguments

...  
a sequence of named expressions to use as cases as well as other properties to pass about the case variable (i.e. alias, description)
cases  
a list of lists with each case condition to use each must include at least a name and an expression element. Cases may also include missing (logical) and numeric_value (numeric).
data  
(optional) a crunch dataset to use. Specifying this means you don’t have to put dataset$ in front of each variable name.
name  
a character to use as the name of the case variable to create
makeCaseVariable

Details

There are two ways to specify cases, but you must pick only one (note these two will produce the same case variable):

1. When you just want to specify conditions, you can use named conditions: makeCaseVariable(case1=ds$v1 == 1, case2 = ds$v2 == 2, name = "new case")

2. You can also use the cases argument, which is useful when you want to provide category ids, numeric values, or missingness: makeCaseVariable(cases=list(list(expression=ds$v1 == 1, name="case1"), list(expression=ds$v2 == 2, name = "case2"))

Rows in the dataset that do not match any of the provided "cases" will be assigned to an "else" category. By default, Crunch will use the system missing "No Data" category. Alternatively, you can provide an else case definition for these rows by including as the last "case" you provide one with its expression set to the string "else". See the examples for details.

Value

A VariableDefinition that will create the new case variable when assigned into the Dataset.

Examples

```r
## Not run:
makeCaseVariable(case1 = ds$v1 == 1, case2 = ds$v2 == 2, name = "new case")
makeCaseVariable(
    cases = list(
        list(expression = ds$v1 == 1, name = "case1"),
        list(expression = ds$v2 == 2, name = "case2")
    ),
    name = "new case"
)
```

```r
# different ways to specify else cases
makeCaseVariable(
    cases = list(
        list(expression = ds$v1 == 1, name = "case1"),
        list(expression = ds$v2 == 2, name = "case2"),
        list(expression = "else", name = "other")
    ),
    name = "new case"
)
makeCaseVariable(case1 = ds$v1 == 1, case2 = ds$v2 == 2, other = "else", name = "new case")
```

```r
# the dataset can be specified with data=
makeCaseVariable(case1 = v1 == 1, case2 = v2 == 2, data = ds, name = "new case")
```

## End(Not run)
makeMRFronText  
*Create Multiple Response Variable from Delimited lists*

**Description**

Surveys often record multiple response questions in delimited lists where each respondent’s selections are separated by a delimiter like ; or |. This function breaks the delimited responses into subvariables, uploads those subvariables to Crunch, and finally creates a multiple response variable from them.

**Usage**

`makeMRFronText(var, delim, name, selected = "selected", not_selected = "not_selected", unanswered = NA, ...)`

**Arguments**

- `var`: The variable containing the delimited responses
- `delim`: The delimiter separating the responses
- `name`: The name of the resulting MR variable
- `selected`: A character string used to indicate a selection, defaults to "selected"
- `not_selected`: Character string identifying non-selection, defaults to "not_selected"
- `unanswered`: Character string indicating non-response, defaults to NA.
- `...`: Other arguments to be passed on to `makeMR()`

**Value**

a Multiple response variable definition

makeWeight  
*Generate a weight variable*

**Description**

This function allows you to generate a weight variable by supplying a set of categorical variables and the target distribution for each of the variables’ categories. Weights are computed by iteratively ‘raking’ conditional ‘cells’ to the provided marginal targets.

**Usage**

`makeWeight(..., name)`
Arguments

... A series of expressions of the form variable ~ target_weights. The variable must be a categorical Crunch variable, and the target weights must be a numeric vector whose length should be equal to the number of categories contained in the variable, and whose sum is equal to 100 or 1. If you supply fewer target weights than there are categories makeWeight will pad the target weight vector with 0s.

name The name of the resulting variable

Details

For instance, if you wanted to create a weight variable which equally weighted four categories stored in ds$var you would call ds$weight1 <- makeWeight(ds$var ~ c(25, 25, 25, 25), name = "weight1"). Note that makeWeight returns a VariableDefinition, an expression that when assigned into your Dataset becomes a derived variable. This does not on its own set the new variable as "the weight" for your dataset. To set that attribute, use weight(). Alternatively, you can also create the variable and set the weight attribute in one step with weight(ds) <- makeWeight(ds$var ~ c(25, 25, 25, 25), name = "weight1")

Value

A crunch VariableDefinition() of the weight variable

See Also

weight<()::settings() for the "default weight" for other dataset viewers.

Examples

```r
# Not run:
mtcars$cyl <- as.factor(mtcars$cyl)
mtcars$gear <- as.factor(mtcars$gear)
ds <- newDataset(mtcars)
# Create a new "raked" variable
ds$weight <- makeWeight(ds$cyl ~ c(30, 30, 40, 0),
  ds$gear ~ c(20, 20, 60, 0),
  name = "weight"
)
summary(ds$weight)
# ds$weight is not "the weight" for the dataset unless you set it:
weight(ds) <- ds$weight
# Or, you can create the variable and set as weight in one step:
weight(ds) <- makeWeight(ds$var ~ c(25, 25, 25, 25), name = "weight2")
```

## End(Not run)
**matchCatToFeat**  
*Match categories with features from geodata*

**Description**

Match categories with features from geodata

**Usage**

```r
matchCatToFeat(categories, all_features = availableGeodataFeatures())
```

**Arguments**

- `categories`  
a vector of categories to match

- `all_features`  
a dataframe of all available geodata features. (default: downloaded from Crunch servers)

**Value**

gedatum to associate with the variable that produced categories

---

**me**  
*My user entity*

**Description**

Get the user entity of the currently authenticated user.

**Usage**

```r
me()
```

**Value**

A UserEntity
**Description**

These methods allow you to work with teams.

**Usage**

```r
members(x)
members(x) <- value
permissions(x)
```

```r
## S4 method for signature 'ProjectFolder'
members(x)

## S4 replacement method for signature 'ProjectFolder,MemberCatalog'
members(x) <- value

## S4 method for signature 'CrunchTeam'
members(x)

## S4 replacement method for signature 'ProjectFolder,character'
members(x) <- value

## S4 replacement method for signature 'CrunchTeam,MemberCatalog'
members(x) <- value

## S4 replacement method for signature 'CrunchTeam,character'
members(x) <- value
```

**Arguments**

- `x` CrunchDataset, ProjectFolder, or CrunchTeam
- `value` for `members<-`, a character vector of emails or URLs of users to add to the team.

**Value**

`members()` returns a MemberCatalog, which has references to the users that are members of the team. `members<-` returns `x` with the given users added to the members catalog. `permissions()` returns a PermissionCatalog with similar semantics.

**See Also**

`users()`
merge

Merge a CrunchDataFrame

Description

Merging a CrunchDataFrame with a local dataframe is useful in situations where you have new information in your local R session that you want to connect with Crunch data. For example, for making plots with Crunch and non-Crunch data. It produces a hybrid CrunchDataFrame that has the local data attached to it, but like normal CrunchDataFrames it is still judicious about downloading data from the server only when it is needed.

Usage

```r
## S3 method for class 'CrunchDataFrame'
merge(x, y, by = intersect(names(x), names(y)),
      by.x = by, by.y = by, sort = c("x", "y"), ...)  
```

Arguments

- `x` a CrunchDataFrame
- `y` a standard data.frame
- `by` name of the variable to match in both data sources (default: the intersection of the names of x and y)
- `by.x` name of the variable to match in x
- `by.y` name of the variable to match in y
- `sort` character, either "x" or "y" (default: "x"). Which of the inputs should be used for the output order. Unlike merge.data.frame, merge.CrunchDataFrame will not re-sort the order of the output. It will use the order of either x or y.
- `...` ignored

Details

Merging a CrunchDataFrame with a local dataframe does not allow specifying all rows from both sources. Instead, the resulting CrunchDataFrame will include all of the rows in whichever source is used for sorting (x or y). So if you specify `sort="x"` (the default) all rows of x will be present but rows in y that do not match with rows in x will not be present.

Merging a CrunchDataFrame with a local dataframe is experimental and might result in unexpected results. One known issue is that using `merge` on a CrunchDataFrame will change the both the CrunchDataFrame used as input as well as create a new CrunchDataFrame.

Value

a CrunchDataFrame with columns from both x and y
mergeFork

Merge changes to a dataset from a fork

Description
Crunch datasets include information about the dataset's revision history. This function takes the changes made on a dataset fork and adds them to the revision history of the parent dataset, like a merge of branches in a version control system.

Usage
mergeFork(dataset, fork, autorollback = TRUE, force = FALSE)

Arguments
dataset The CrunchDataset to merge to
dataset
fork The CrunchDataset, which must be a fork from dataset, that is to be merged in.
fork
autorollback logical If the merge fails, should dataset be restored to its state prior to the merge, or should it be left in its partially merged state for debugging and manual fixing? Default is TRUE.
autorollback
force logical Attempt to push through merge conflicts by dropping all changes to dataset that occurred after fork diverged from and take only the changes from fork? Default is FALSE. You should only use force=TRUE after first attempting and failing to merge without forcing.
force

Details
All modifications of a dataset record actions in its revision history. For example, if you add a variable to the dataset, that action is recorded. The sum of these records is a dataset's revision history, and it is possible to merge in the revision history of a dataset that has been forked.

This function is most often used in conjunction with forkDataset() to create a copy of a dataset, make some changes to that copy, and then merge the changes back into the original dataset. For more on this workflow, see vignette("fork-and-merge", package = "crunch").

Value
dataset with changes from fork merged to it.

See Also
forkDataset()
Examples

```r
## Not run:
ds <- loadDataset("My survey")
fork <- forkDataset(ds)
# Do stuff to fork
ds <- mergeFork(ds, fork)
# Now the changes you did to fork are also on ds

## End(Not run)
```

modifyWeightVariables  
*Change which variables can be set as a dataset's weight.*

Description

modifyWeightVariables allows you to change the variables which are eligible to be used as a dataset's weight. You can also add variables to the weight variables catalog by assignment with `weightVariables(ds) <- "weight"` or `is.weightVariable(ds$weight) <- TRUE`.

Usage

```r
modifyWeightVariables(x, vars, type = "append")
```

## S4 replacement method for signature 'CrunchDataset'

```r
weightVariables(x) <- value
is.weightVariable(x)
```

## S4 replacement method for signature 'NumericVariable'

```r
is.weightVariable(x) <- value
```

Arguments

- `x` a CrunchDataset
- `vars` Variables to add or remove this can be a numeric Crunch variable, list of numeric Crunch variables or a character vector with the aliases of numeric Crunch variables. Setting vars to NULL clears a datasets weightVariables
- `type` a character string determining how the weightVariables will be modified:
  - "append": add vars to the current weight variables
  - "remove": remove vars from the current list of weight variables
  - "replace": replace the current weight variables with vars
- `value` For the `weightVariables()` and `is.weightVariable` setters the variables to append to a dataset's weightVariables.
Details

Editors can change which variables can be set as the weighting variable for a dataset. For instance if several weights have been calculated they can let the user choose which of those variables to use as a weight, but prevent the user from choosing other variables as weight. This function allows you to change the weightVariables of a dataset.

Value

a CrunchDataset

Examples

```r
## Not run:
modifyWeightVariables(ds, "weight", "append")
weightVariables(ds) <- list(ds$weight, ds$weight2)
weightVariables(ds) <- NULL
weightVariables(ds) <- c("weight", "weight2")
is.weightVariables(ds$weight) <- TRUE

## End(Not run)
```

multitable-catalog    Multitable entities for a dataset

Description

Multitable entities for a dataset

Usage

```r
## S4 method for signature 'CrunchDataset'
multitables(x)

## S4 replacement method for signature 'CrunchDataset'
multitables(x) <- value
```

Arguments

- `x` a CrunchDataset
- `value` for the assignment method, a MultitableCatalog

Value

an object of class MultitableCatalog containing references to Multitable entities. (Setter returns the Dataset.)
mv

Functions to manipulate variables’ or project’s folder structure

Description

Variables in Crunch datasets are organized into folders, like in a file system. Datasets are similarly organized into hierarchical Projects. These functions allow you to create new folders and move objects into folders. Their names, `mv` and `mkdir`, suggest their Unix file utility inspiration.

Usage

`mv(x, what, path)`

`mkdir(x, path)`

Arguments

- `x`: A CrunchDataset or Folder (VariableFolder or ProjectFolder)
- `what`: A Variable, selection of variables from dataset, or any other object that can be moved to a folder (e.g., a dataset when organizing projects).
- `path`: A character "path" to the folder: either a vector of nested folder names or a single string with nested folders separated by a delimiter ("/") default, configurable via `options(crunch.delimiter)`). The path is interpreted as relative to the location of the folder `x` (when `x` is a dataset, that means the root, top-level folder). `path` may also be a `Folder` object.

Details

The functions have some differences from the strict behavior of their Unix ancestors. For one, they work recursively, without additional arguments: `mkdir` will make every directory necessary to construct the requested path, even if all parent directories didn’t already exist; and `mv` doesn’t require that the directory to move to already exist—it will effectively call `mkdir` along the way.

Value

`x`, with the folder at `path` guaranteed to be created, and for `mv`, containing `what` moved into it.

See Also

cd() to select a folder by path; rmdir() to delete a folder; folder() to identify and set an object’s parent folder; base::dir.create() if you literally want to create a directory in your local file system, which `mkdir()` does not do
Examples

```r
## Not run:
ds <- loadDataset("Example survey")
ds <- mv(ds, c("gender", "age", "educ"), "Demographics")
ds <- mkdir(ds, "Key Performance Indicators/Brand X")
# These can also be chained together
require(magrittr)
ds <- ds %>%
  mv(c("aware_x", "nps_x"), "Key Performance Indicators/Brand X") %>%
  mv(c("aware_y", "nps_y"), "Key Performance Indicators/Brand Y")
# Can combine with cd() and move things with relative paths
ds %>%
  cd("Key Performance Indicators/Brand X") %>%
  mv("nps_x", "../Net Promoters")
# Can combine with folder() to move objects to the same place as something else
ds %>% mv("nps_y", folder(ds$nps_x))
# Now let's put ds in a Project
projects() %>%
  mv(ds, "Brand Tracking Studies")

## End(Not run)
```

### Description

Omit missing categories

### Usage

```r
## S4 method for signature 'Categories'
na.omit(object, ...)
```

### Arguments

- `object`: Categories
- `...`: additional arguments, ignored

### Value

object with any categories that have missing: TRUE excluded
newDataset  

Upload data to Crunch to make a new dataset

Description

This function creates a new dataset on the Crunch server with either a data.frame or similar object in your R session, a file, or a URL to a file. It captures available metadata from your R object and translates it into Crunch types.

Usage

newDataset(x, name = NULL, ...)

Arguments

x  
a data.frame or other rectangular R data object, or a string file name or URL to upload to create a dataset. The file may be a compressed Zip file containing a single file in CSV or SPSS format.

name  
character name to give the new Crunch dataset. By default the function uses the name of the R object, or, if passing a file, the file name.

...  
additional arguments passed to createDataset(), or schema if you’re upload Triple-S

Details

If you have an SPSS file, it is better specify the file name directly rather than first reading it into R. Uploading SPSS files directly to Crunch will preserve metadata that is stripped by the R import, regardless of the library used to read it into R.

If you have Triple-S files, you can import those directly to Crunch like you can with SPSS files. You should use the filename to the data file (ending in .asc or .dat) as the x argument and use the metadata file (ending in .sss or .xml) as the schema argument.

Value

If successful, an object of class CrunchDataset.

See Also

newDatasetFromFile(); newDatasetByColumn() for an alternate upload method.

Examples

## Not run:
ds <- newDataset(mtcars, "cars")
ds <- newDataset("mysurvey.sav")

## End(Not run)
newDeck
---

Create an empty Crunch Deck

**Description**

Create an empty Crunch Deck

**Usage**

newDeck(dataset, name, ...)

**Arguments**

- **dataset**: A Crunch Dataset
- **name**: The name of the Deck
- **...**: Further attributes of the deck such as the description, see API docs for options.

**Value**

The CrunchDeck that was created.

newExampleDataset
---

Import a fixture dataset for testing

**Description**

The crunch package includes some data for you to explore the features of the platform. Use this function to upload one to create a demo dataset.

**Usage**

newExampleDataset(name = "pets")

**Arguments**

- **name**: string name of the fixture dataset. Currently "pets" is the only one available.

**Value**

A new CrunchDataset entity.
newFilter Create a new filter

Description

This function creates a new filter for a CrunchDataset. You can achieve the same results by assigning into a dataset’s filters catalog using filters(), but this may be a more natural way to think of the action, particularly when you want to do something with the filter entity after you create it.

Usage

newFilter(name, expression, catalog = NULL, ...)

Arguments

- name: character name for the filter
- expression: CrunchLogicalExpr with which to make a filter entity
- catalog: FilterCatalog in which to create the new filter. May also provide a dataset entity. If omitted, the function will attempt to infer the dataset (and thus its FilterCatalog) from the contents of expression.
- ...: Additional filter attributes to set, such as is_public.

Value

A CrunchFilter object.

newMultitable Create a new Multitable

Description

Multitables, or "banners" or "crossbreaks", define a set of variables or or query expressions to crosstab with as a unit. They are used in the Crunch web app to display tables side by side, as well as to define one dimension of a tab book.

Usage

newMultitable(formula, data, name, ...)

Arguments

formula: an object of class 'formula' object with the cross-classifying variables separated by '+' on the right-hand side. Following how stats::formula() works in R, it should start with "~". Variables on left-hand side of the formula have no meaning in this function.

data: an object of class CrunchDataset in which to create the multitable, and to which the variables referenced in formula belong.

name: character name to give the new multitable object. If omitted, a default name will be derived from formula.

... Additional multitable attributes to set. Options include is_public.

Value

An object of class Multitable

See Also

stats::formula

Examples

## Not run:
m <- newMultitable(~ gender + age4 + marstat, data = ds)
name(m) # [1] "gender + age4 + marstat"

## End(Not run)
Value

A ProjectFolder object.

See Also

mkdir()

Examples

```r
## Not run:
proj <- newProject("A project name")
# That is equivalent to doing:
p <- projects()
p["A project name"] <- list()
proj <- p["A project name"]

proj2 <- newProject("Another project", members = "you@yourco.com")
# That is equivalent to doing:
p["Another project"] <- list(members = "you@yourco.com")
proj <- p["Another project"]

## End(Not run)
```

---

**newSlide** Append a new slide to a Crunch Deck

**Description**

Append a new slide to a Crunch Deck

**Usage**

```r
newSlide(deck, query, display_settings = list(), title = "", subtitle = "", ...)
```

**Arguments**

- **deck** A Crunch Deck
- **query** A formula definition of a query to be used by the slide. This is similar to CrunchCube query
- **display_settings** (optional) A list of display settings, if om
- **title** The slide’s title
- **subtitle** The slide’s subtitle
- **...** Further options to be passed on to the API
Value

CrunchSlide object

Examples

```r
## Not run:
newSlide(
    main_deck,
    ~ cyl + wt,
    title = "Cyl and Weight",
    subtitle = "2017 Data"
)

## End(Not run)
```

---

**Description**

Remove transformations from a CrunchCube

**Usage**

```r
noTransforms(cube)
```

**Arguments**

cube a CrunchCube

**Value**

the CrunchCube with no transformations

**Removing transforms**

`noTransforms()` is useful if you don’t want to see or use any transformations like Subtotals and Headings. This action only applies to the CrunchCube object in R: it doesn’t actually change the variables on Crunch servers or the query that generated the CrunchCube.

**Examples**

```r
## Not run:
# A CrunchCube with a heading and subtotals
crtabs(~opinion, ds)
  # All opinions
  # Strongly Agree 23
  # Somewhat Agree 24
  # Agree 47
```
owners  See who owns these datasets

Description
See who owns these datasets

Usage
owners(x)

ownerNames(x)

Arguments
x  DatasetCatalog

Value
For owners, the URLs of the users or projects that own these datasets. For ownerNames, their names.

pendingStream  Get the pending streams for a dataset

Description
Retrieves the number of pending messages. Use `appendStream()` to append all pending streamed rows to the dataset.

Usage
pendingStream(ds)
pk

Arguments

ds  a CrunchDataset

Value

number of pending messages in the stream for the dataset

pk

Get and set the primary key for a Crunch dataset

Description

A primary key is a variable in a dataset that has a unique value for every row. A variable must be either numeric or text type and have no duplicate or missing values. A primary key on a dataset causes appends to that dataset that have the rows with the same primary key value(s) as the first dataset to update the existing rows rather than inserting new ones.

Usage

pk(x)

pk(x) <- value

Arguments

x  a Dataset
value  For the setter, a single Variable to use as the primary key or NULL to remove the primary key.

Value

Getter returns the Variable object that is used as the primary key (NULL if there is no primary key); setter returns x duly modified.

pollProgress

Check a Crunch progress URL until it finishes

Description

You'll probably only call this function if progress polling times out and its error message tells you to call pollProgress to resume.

Usage

pollProgress(progress_url, wait = 0.5)
population

Arguments

progress_url A Crunch progress URL
wait Number of seconds to wait between polling. This time is increased 20 percent on each poll.

Value

The percent completed of the progress. Assuming the options(crunch.timeout) (default: 15 minutes) hasn’t been reached, this will be 100. If the timeout is reached, it will be the last reported progress value.

population Get and set the market size for Crunch datasets

Description

Crunch Datasets allow you to set a target population size in order to extrapolate population estimates from survey percentages. These functions let you work with the population size and magnitude.

Usage

```r
## S4 method for signature 'CrunchDataset'
popSize(x)

## S4 replacement method for signature 'CrunchDataset'
popSize(x) <- value

## S4 method for signature 'CrunchDataset'
popMagnitude(x)

## S4 replacement method for signature 'CrunchDataset'
popMagnitude(x) <- value

## S4 method for signature 'CrunchDataset'
setPopulation(x, size, magnitude)
```

Arguments

x a Crunch Dataset
value For the setters, the size or magnitude to be set
size the target population size, to remove a population set to NULL
magnitude the order of magnitude with which to display the population size. Must be either 3, 6, or 9 for thousands, millions, and billions respectively.
**preCrunchBoxCheck**

**Value**

popSize and popMagnitude return the population size or magnitude. setPopulation returns the modified dataset.

**Description**

preCrunchBoxCheck checks if a dataset will make a good CrunchBox. CrunchBoxes allows you to share data with the world in a simple, easy to embed format. However, not all datasets naturally translate to the CrunchBox format. This function checks your dataset to see if it.

**Usage**

preCrunchBoxCheck(dataset)

**Arguments**

dataset - CrunchDataset, potentially subsetted on variables

**Value**

Invisibly, the dataset. Called for side-effect of printing things.

**See Also**

CrunchBox

---

**prepareDataForCrunch**

**Translate a data.frame to Crunch format**

**Description**

prepareDataForCrunch is called within newDataset to extract the Crunch metadata from the data and to transform the data to match the extracted metadata. You can call this directly in order to tailor the data import flow more finely.

**Usage**

prepareDataForCrunch(data, ...)

**Arguments**

data - A data.frame or other rectangular R object

... - additional arguments passed to createDataset. "name" will be required by the Crunch server but is not required by this function.
Value

A data.frame that is a transformation of data suitable for uploading to Crunch, also containing a "metadata" attribute that is the associated Crunch metadata.

See Also

createWithPreparedData writePreparedData

project-icon

Get or set a project’s icon

Description

This function allows you to change a project’s icon. Note that you must first upload the icon to a website, as this function does not allow you to upload a local file.

Usage

iconHx

icon(x) <- value

Arguments

x a ProjectFolder
value character file path of the icon image file to set

Value

The URL of the project’s icon. The setter returns the project after having uploaded the specified file as the new icon.

projects

Get the project catalog

Description

Get the project catalog

Usage

projects(x = getAPIRoot())
Arguments  

x  a ShojiObject that has an associated project catalog. If omitted, the default value for x means that you will load the user’s primary project catalog. (Currently, there are no other project catalogs to load.)

Value  

An object of class ProjectFolder.

Examples  

```r  
## Not run:  
myprojects <- projects()  
proj <- myprojects[["Project name"]]
## End(Not run)
```

Description  

Crunch objects generally keep themselves in sync with the server when you manipulate them, but some operations cause the local version to diverge from the version on the server. For instance, someone else may have modified the dataset you’re working on, or maybe you have modified a variable outside of the context of its dataset. refresh() allows you to get back in sync.

Usage  

```r  
refresh(x)
```

```
## S4 method for signature 'CrunchDataset'  
refresh(x)
```

```
## S4 method for signature 'ShojiObject'  
refresh(x)
```

```
## S4 method for signature 'CrunchVariable'  
refresh(x)
```

Arguments  

x  pretty much any Crunch object

Value  

a new version of x
**reorderSlides**  
*Reorder slides in a CrunchDeck*

**Description**  
Reorder slides in a CrunchDeck

**Usage**  
reorderSlides(x, order)

**Arguments**
- x  
  A SlideCatalog
- order  
  The numeric order for slides to be reordered to.

**Value**  
A SlideCatalog

---

**resetPassword**  
*Reset your password*

**Description**  
Trigger the password reset process. Password reset instructions will be emailed to you.

**Usage**  
resetPassword(email)

**Arguments**
- email  
  Your email

**Value**  
NULL, invisibly. Called for its side effects.

**Examples**
```plaintext
## Not run:
resetPassword("me@example.com")

## End(Not run)
```
Description

Datetime data has a "resolution", the units of the values. resolution() exposes that property and resolution<- lets you set it. "Rollups" are a way of binning datetime data into meaningful units. rollup() lets you create an expression that you can query with. Datetime variables also have a rollupResolution() attribute that is the default resolution they will roll-up to, if not specified in rollup(); rollupResolution<- lets you set that.

Usage

resolution(x)

resolution(x) <- value

rollup(x, resolution = rollupResolution(x))

rollupResolution(x)

rollupResolution(x) <- value

Arguments

x a Datetime variable

value a resolution string. Valid resolutions in Crunch are c("Y", "Q", "M", "W", "D", "h", "m", "s", "ms", "us", "ns"). NULL is also valid for rollupResolution<- but not for resolution<-.

resolution Same as value, in rollup(). This may be NULL, in which case the server will determine an appropriate resolution based on the range of the data.

Details

Note that resolution is a property of the data while rollupResolution is metadata. Setting resolution alters the column data, and if setting a more coarse resolution (e.g. going from "s" to "m"), it cannot be reversed. Setting rollupResolution is non-destructive.

Value

resolution() and rollupResolution() return the resolution string for datetime variables, NULL otherwise. The setters return the variable entity after modifying the state on the server. rollup() returns a CrunchExpr expression.
Examples

```r
## Not run:
resolution(ds$starttime)
## [1] "ms"
resolution(ds$starttime) <- "s"
rollup(ds$starttime)
rollup(ds$starttime, "D")
rollupResolution(ds$starttime) <- "D"
crtabs(~ rollup(starttime), data = ds)

## End(Not run)
```

---

**restoreVersion**  
*Restore a dataset to a previously saved version*

**Description**

You can save a version of a dataset using `saveVersion()`. Savepoints are also created automatically by certain Crunch functions that make major changes to the dataset. You can get the list of saved versions with the `versions()` function.

**Usage**

```r
restoreVersion(dataset, version)
```

**Arguments**

- `dataset`: a CrunchDataset
- `version`: either the name ("description") of the version to restore to or the integer index of the version, as given by `versions(dataset)`

**Value**

- `dataset`, rolled back to version.

**See Also**

- `versions`  
- `saveVersion`
**rmdir**

**Delete a folder**

**Description**

Like `rmdir` in a file system, this function removes a folder. Unlike the file-system version, it does not require the folders to be empty.

**Usage**

```
rmdir(x, path)
```

**Arguments**

- `x`  
  A CrunchDataset or Folder (VariableFolder or ProjectFolder)

- `path`  
  A character "path" to the folder: either a vector of nested folder names or a single string with nested folders separated by a delimiter ("/") default, configurable via `options(crunch.delimiter)`). The path is interpreted as relative to the location of the folder `x` (when `x` is a dataset, that means the root, top-level folder). `path` may also be a `Folder` object.

**Value**

`NULL`

**See Also**

`mv()` to move entities to a folder; `cd()` to select a folder; `base::file.remove()` if you literally want to delete a directory from your local file system, which `rmdir()` does not do

**Examples**

```r
## Not run:
ds <- loadDataset("Example survey")
rmdir(ds, "Demographics")
# Or with %>%
require(magrittr)
ds <- ds %>%
  rmdir("Demographics")

## End(Not run)
```
saveVersion  

Create a new saved version

Description
Crunch datasets can be saved and restored using saveVersion and restoreVersion(). Some Crunch functions, such as appendDataset() create new savepoints automatically. To see the list of savepoints use versions().

Usage
saveVersion(dataset, description = paste("Version", length(versions(dataset)) + 1))

Arguments
- dataset: a CrunchDataset
- description: character name to give the saved version, as in a commit message. You are encouraged, though not strictly required, to give versions unique descriptions.

Value
invisibly, the URL of the newly created version

See Also
versions restoreVersion

scoreCatToFeat  

Score similarity between a feature dataframe and categories

Description
Implemented using the Jaccard index, where a number closer to 1 is more similar.

Usage
scoreCatToFeat(features, categories)

Arguments
- features: a vector of features to match (usually from a subset of the output [availableGeodataFeatures]) with a single property for a single geodatum.
- categories: a vector of categories to match

Value
the Jaccard index for the values of the property given in feat_df and the vector of categories
searchDatasets

*Search Crunch for datasets.*

**Description**

`searchDatasets` searches datasets’ metadata for matches to the `query` argument. This search will include variable names, aliases, categories, but not the content of text variables. See the API Documentation for more information about searching Crunch.

**Usage**

`searchDatasets(query, ...)`

**Arguments**

- `query` the text to search for in datasets and their variables (note: only alpha characters will be used, numbers and other characters will be discarded.)
- `...` additional options provided to the search endpoint.

**Value**

If successful, an object of class `SearchResults`

---

`self`

*Get the URL of this object*

**Description**

Get the URL of this object

**Usage**

```r
## S4 method for signature 'ShojiObject'
self(x)

## S4 method for signature 'CrunchVariable'
self(x)
```

**Arguments**

- `x` a Crunch object

**Value**

the URL for `x`
setNames

Change the name of the entities in a catalog

Description

This is an alternative to assigning names(catalog) <- something, suitable for inclusion in a pipeline.

Usage

setNames(object, nm)

## S4 method for signature 'ShojiCatalog'
setNames(object, nm)

Examples

```r
## Not run:
ds <- ds %>%
  cd("Demographics") %>%
  setName("Key Demos.")

## End(Not run)
```
Arguments

object  A catalog object, such as VariableFolder

Value

object, with the names of its children duly changed

See Also

cd() and mv()

Examples

```r
## Not run:
ds <- ds %>%
  cd("Demographics") %>%
  setNames(c("Gender (4 category)", "Birth year", "Race (5 category)"))

## End(Not run)
```

setOrder  

Description

Change the order of entities in folder

Usage

```r
setOrder(folder, ord)
```

Arguments

folder  A VariableFolder or other *Folder object

ord  A vector of integer indices or character references to objects contained in the folder

Value

folder with the order dictated by ord. The function also persists that order on the server.
Description

These methods allow access and control over dataset settings. Currently supported settings include:

- User Authorizations for view-only users (‘viewers_can_export’, ‘viewers_can_share’, and ‘viewers_can_change_weight’); and
- ‘weight’, which determines the default weighting variable for the dataset. Additional settings will be added in the future. See http://docs.crunch.io/#fragments, under ‘Settings’, for an up-to-date list of settings supported throughout the Crunch system. Clients may also provide and use custom settings if they choose.

Usage

```r
settings(x)
settings(x) <- value
```

Arguments

- `x` : CrunchDataset
- `value` : A settings object (ShojiEntity), for the setter

Value

The getter returns a settings object (ShojiEntity). The setter returns the dataset (`x`), duly modified.

Examples

```r
## Not run:
settings(ds)
settings(ds)$viewers_can_export <- TRUE
settings(ds)$weight <- ds$myWeightVariable

## End(Not run)
```
share

Share a dataset

Description
Share a dataset

Usage
share(dataset, users, edit = FALSE, notify = TRUE, message = NULL)

Arguments
dataset a CrunchDataset
users character: email address(es) or URLs of the users or teams with whom to share the dataset. If there is no Crunch user associated with an email, an invitation will be sent.
edit logical: should the specified user(s) be given edit privileges on the dataset? Default is FALSE. edit can be a single value or, if inviting multiple users, a vector of logical values of equal length of the number of emails given.
notify logical: should users who are getting new privileges on this dataset be sent an email informing them of this fact? Default is TRUE.
message character: a message to send to the users who are receiving new privileges.

Value
Invisibly, the dataset.

See Also
unshare

shoji-index

Get the body of a Catalog

Description
The core of Catalog data is in its "index". These methods get and set that slot.

Usage
## S4 method for signature 'ShojiCatalog'
index(x)

## S4 replacement method for signature 'ShojiCatalog'
index(x) <- value
Arguments

- **x**: a Catalog (VariableCatalog, Subvariables, or similar object)
- **value**: For the setters, an appropriate-length list to assign

Value

Getters return the list object in the "index" slot; setters return \(x\) duly modified.

---

**ShojiObject-class**

Mix-in class for multiple inheritance of variables and datasets.

---

**Description**

Exists for common methods in interacting with Crunch API only. Has no Extract methods declared so as not to conflict with the vector/list/data.frame methods jointly inherited in CrunchVariable and CrunchDataset.

---

**show**

Show methods for Crunch objects

---

**Description**

Show methods for Crunch objects

**Usage**

```r
show(object)
```

## S4 method for signature 'ShojiObject'
show(object)

## S4 method for signature 'CrunchVariable'
show(object)

## S4 method for signature 'Category'
show(object)

## S4 method for signature 'Categories'
show(object)

## S4 method for signature 'Insertion'
show(object)

## S4 method for signature 'Insertions'
show(object)

## S4 method for signature 'CrunchExpr'
show(object)

## S4 method for signature 'CrunchLogicalExpr'
show(object)

## S4 method for signature 'CrunchCube'
show(object)

## S4 method for signature 'OrderGroup'
show(object)

## S4 method for signature 'CrunchGeography'
show(object)

## S4 method for signature 'DeckCatalog'
show(object)

## S4 method for signature 'CrunchDeck'
show(object)

## S4 method for signature 'CrunchSlide'
show(object)

## S4 method for signature 'MultitableResult'
show(object)

## S4 method for signature 'ShojiFolder'
show(object)

Arguments

object the object

Value

invisibly

See Also

methods::show
**showTransforms**

*Show transformations on a Crunch object*

**Description**

`showTransforms([variable])` shows a summary of a categorical variable that has transforms with the transforms calculated and applied. This is useful to see what kind transforms exist before including the variable in a CrunchCube.

**Usage**

```r
showTransforms(x)
```

```r
## S4 method for signature 'CategoricalVariable'
showTransforms(x)
```

```r
## S4 method for signature 'CrunchCube'
showTransforms(x)
```

**Arguments**

- `x`: a Categorical variable or CrunchCube

**Details**

`showTransforms([CrunchCube])` shows the CrunchCube with all transforms calculated and applied. This is the default display method for cubes, so should not be frequently needed.

In both cases, an array is returned that includes the values of both the underlying data (either category counts or CrunchCube cell values) as well as the transformations applied.

**Value**

- summary of the variable, or the full CrunchCube with transforms applied

**Examples**

```r
## Not run:
showTransforms(ds$variable)
```

```r
## End(Not run)
```
**Description**

Return a SlideCatalog from a CrunchDeck. All slide catalog methods should be available for CrunchDecks, but this function is used internally to model the API.

**Usage**

`slides(x)`

**Arguments**

- `x` : a CrunchDeck

**Value**

a Slide Catalog

---

**S0_schema**

*Schema for the 2017 Stack Overflow developer survey*

**Description**

Survey questions and variable names for the 2017 Stack Overflow Developers Survey #`

**Usage**

`S0_schema`

**Format**

A data frame with 23 rows and 2 variables.

- **Column**: The column name of the survey data frame
- **Question**: Question asked of respondents
Description

A slightly modified version of the 2017 Stack Overflow developer survey. The dataset is filtered to only include respondents who have used R before, and to include illustrative variable types.

Usage

so_survey

Format

A data frame with 1634 rows and 25 variables.

Respondent  Respondent ID number
Professional  Which of the following best describes you?
Country  In which country do you currently live?
CompanySize  In terms of the number of employees, how large is the company or organization you work for?
CareerSatisfaction  Career satisfaction rating
JobSatisfaction  Job satisfaction rating
ImportantHiringAlgorithms  Congratulations! You've just been put in charge of technical recruiting at Globex, a multinational high-tech firm. This job comes with a corner office, and you have an experienced staff of recruiters at your disposal. They want to know what they should prioritize when recruiting software developers. How important should each of the following be in Globex's hiring process? Knowledge of algorithms and data structures
ImportantHiringTechExp  Congratulations! You've just been put in charge of technical recruiting at Globex, a multinational high-tech firm. This job comes with a corner office, and you have an experienced staff of recruiters at your disposal. They want to know what they should prioritize when recruiting software developers. How important should each of the following be in Globex's hiring process? Experience with specific tools (libraries, frameworks, etc.) used by the employer
ImportantHiringCommunication  Congratulations! You've just been put in charge of technical recruiting at Globex, a multinational high-tech firm. This job comes with a corner office, and you have an experienced staff of recruiters at your disposal. They want to know what they should prioritize when recruiting software developers. How important should each of the following be in Globex's hiring process? Communication skills
ImportantHiringOpenSource  Congratulations! You've just been put in charge of technical recruiting at Globex, a multinational high-tech firm. This job comes with a corner office, and you have an experienced staff of recruiters at your disposal. They want to know what they should prioritize when recruiting software developers. How important should each of the following be in Globex's hiring process? Contributions to open source projects
Congratulations! You’ve just been put in charge of technical recruiting at Globex, a multinational high-tech firm. This job comes with a corner office, and you have an experienced staff of recruiters at your disposal. They want to know what they should prioritize when recruiting software developers. How important should each of the following be in Globex’s hiring process? Experience with specific project management tools & techniques

ImportantHiringCompanies Congratulations! You’ve just been put in charge of technical recruiting at Globex, a multinational high-tech firm. This job comes with a corner office, and you have an experienced staff of recruiters at your disposal. They want to know what they should prioritize when recruiting software developers. How important should each of the following be in Globex’s hiring process? Previous companies worked at

ImportantHiringTitles Congratulations! You’ve just been put in charge of technical recruiting at Globex, a multinational high-tech firm. This job comes with a corner office, and you have an experienced staff of recruiters at your disposal. They want to know what they should prioritize when recruiting software developers. How important should each of the following be in Globex’s hiring process? Previous job titles held

ImportantHiringEducation Congratulations! You’ve just been put in charge of technical recruiting at Globex, a multinational high-tech firm. This job comes with a corner office, and you have an experienced staff of recruiters at your disposal. They want to know what they should prioritize when recruiting software developers. How important should each of the following be in Globex’s hiring process? Educational credentials (e.g. schools attended, specific field of study, grades earned)

ImportantHiringRep Congratulations! You’ve just been put in charge of technical recruiting at Globex, a multinational high-tech firm. This job comes with a corner office, and you have an experienced staff of recruiters at your disposal. They want to know what they should prioritize when recruiting software developers. How important should each of the following be in Globex’s hiring process? Stack Overflow reputation

ImportantHiringGettingThingsDone Congratulations! You’ve just been put in charge of technical recruiting at Globex, a multinational high-tech firm. This job comes with a corner office, and you have an experienced staff of recruiters at your disposal. They want to know what they should prioritize when recruiting software developers. How important should each of the following be in Globex’s hiring process? Track record of getting things done

Gender Which of the following do you currently identify as?

Race Which of the following do you identify as?

Salary What is your current annual base salary, before taxes, and excluding bonuses, grants, or other compensation?

ExpectedSalary You said before that you are currently learning how to program. When you have completed your studies, what annual salary do you expect to earn in your first job after graduation?

TabsSpaces Tabs or spaces?

WantWorkLanguage Which of the following languages have you done extensive development work in over the past year, and which do you want to work in over the next year?

HaveWorkedLanguage Which of the following languages have you done extensive development work in over the past year, and which do you want to work in over the next year?
**streaming**

*Set the streaming property of a dataset*

**Description**

Only datasets that have their streaming property set to "streaming" can have rows streamed to them. Before attempting to streaming rows (with `streamRows` for example), the dataset has to be set up to stream rows. Use `streaming(ds)` to get the streaming status, and `streaming(ds) <- "streaming"` to set the streaming status.

**Usage**

```
streaming(x)
streaming(x) <- value
```

**Arguments**

- `x` : a CrunchDataset
- `value` : for setting only (values can be: "no", "streaming", or "finished")

**Value**

the streaming status

---

**Subtotal-class**

*Subtotals and headings*

**Description**

Subtotals and headings for categorical Variables and CrunchCubes. These are especially useful for making aggregates across multiple categories (sometimes referred to as *nets, top box, or top 2 box*).
**Usage**

Subtotal(name, categories, position = c("relative", "top", "bottom"), after = NULL)

Heading(name, position = c("relative", "top", "bottom"), after = NULL)

Subtotal(name, categories, position = c("relative", "top", "bottom"), after = NULL)

is.Subtotal(x)

is.Heading(x)

are.Subtotals(x)

are.Heading(x)

Heading(name, position = c("relative", "top", "bottom"), after = NULL)

## S4 method for signature 'CrunchVariable'
subtotals(x)

## S4 method for signature 'VariableTuple'
subtotals(x)

## S4 replacement method for signature 'CrunchVariable,ANY'
subtotals(x) <- value

## S4 replacement method for signature 'CrunchVariable,\'NULL\''
subtotals(x) <- value

**Arguments**

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>character the name of the subtotal or heading</td>
</tr>
<tr>
<td>categories</td>
<td>character or numeric the category names or ids for subtotal only</td>
</tr>
<tr>
<td>position</td>
<td>character one of &quot;relative&quot;, &quot;top&quot;, or &quot;bottom&quot;. Determines the position of the subtotal or heading, either at the top, bottom, or relative to another category in the cube (default).</td>
</tr>
<tr>
<td>after</td>
<td>character or numeric if position is &quot;relative&quot;, then the category name or id to position the subtotal or heading after. If not supplied this defaults to the last of the categories supplied to Subtotal.</td>
</tr>
<tr>
<td>x</td>
<td>either a variable or CrunchCube object to add or get subtotal transforms for, for is.Subtotal() and is.Heading() an object to test if it is either a Subtotal or Heading</td>
</tr>
<tr>
<td>value</td>
<td>For <code>&lt;</code>, the replacement Subtotal to insert</td>
</tr>
<tr>
<td>...</td>
<td>additional arguments to `, ignored</td>
</tr>
</tbody>
</table>
Details

To see the subtotals or headings set for a variable, use `subtotals(variable)`

Adding Subtotals and Headings

Subtotals and headings can be added either by passing a list of Subtotals or Headings, or they can be added one at a time by passing Subtotal or Heading to `subtotals(variable)` alone.

Adding subtotals or headings is additive; meaning that subtotals or headings that are already set on the variable are not removed when new subtotals or headings are added. To remove all subtotals and headings, set `subtotals(variable)` to NULL.

To get an array of just the subtotal rows from a CrunchCube, use the function `subtotalArray(CrunchCube)`.

Working with Subtotals and headings

When interacting programmatically with Subtotals and Headings, it can be useful to be able to tell if something is a Subtotal or a Heading. The `is.*` family of methods are useful here: the singular versions (`is.Subtotal` and `is.Heading`) take a single object and returns `TRUE` if the object is either a Subtotal or a Heading and `FALSE` if not; the plural versions (`are.Subtotals` and `are.Headings`) take a list of objects (including an `Insertions` object) and returns a vector of `TRUE/FALSE`es.

Removing transforms

`noTransforms()` is useful if you don’t want to see or use any transformations like Subtotals and Headings. This action only applies to the CrunchCube object in R: it doesn’t actually change the variables on Crunch servers or the query that generated the CrunchCube.

Examples

```r
## Not run:
# given a variable ds$opinion, with categories: Strongly Agree, Somewhat Agree, Neither Agree nor Disagree, Somewhat Disagree, and Strongly Disagree,
# to make two subtotals for Agree and Disagree:
subtotals(ds$opinion) <- list(
  Subtotal(
    name = "Agree",
    categories = c("Strongly Agree", "Somewhat Agree"),
    after = "Somewhat Agree"
  ),
  Subtotal(
    name = "Disagree",
    categories = c("Strongly Disagree", "Somewhat Disagree"),
    after = "Strongly Disagree"
  )
)

# headings can also be added:
subtotals(ds$opinion) <- Heading(name = "All opinions", position = "top")

# to see the subtotals and headings associated with a variable
subtotals(ds$opinion)
```
subtotalArray,CrunchCube-method

<table>
<thead>
<tr>
<th>anchor</th>
<th>name</th>
<th>func</th>
<th>args</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Agree</td>
<td>subtotal 1 and 2</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Disagree</td>
<td>subtotal 4 and 5</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>All opinions</td>
<td>&lt;NA&gt;</td>
<td>NA</td>
</tr>
</tbody>
</table>

# when you use a variable with subtotals and headings in a cube, you see them by default

```
opinion_cube <- crtabs(~opinion, ds)

opinion_cube
```

# all opinions
# Strongly Agree 23
# Somewhat Agree 24
# Agree 47
# Neither Agree nor Disagree 18
# Somewhat Disagree 16
# Strongly Disagree 19
# Disagree 35

# to get just the subtotals,
subtotalArray(opinion_cube)

```#
# Agree Disagree
# 47 35
```

# to remove all subtotals and headings

```
subtotals(ds$opinion) <- NULL
crtabs(~opinion, ds)
```

# Strongly Agree 23
# Somewhat Agree 24
# Neither Agree nor Disagree 18
# Somewhat Disagree 16
# Strongly Disagree 19

# if you want to temporarily remove subtotals and headings, you can with `noTransforms`

```
noTransforms(crtabs(~opinion, ds))
```

# Strongly Agree Somewhat Agree Neither Agree nor Disagree
# 23 24 18
# Somewhat Disagree Strongly Disagree
# 16 19

## End(Not run)

---

**subtotalArray,CrunchCube-method**

*Calculate the transforms from a CrunchCube*

**Description**

applyTransforms calculates transforms (e.g. Subtotals) on a CrunchCube. Currently only the row
transforms are supported. This is useful if you want to use the values from the subtotals of the CrunchCube in an analysis.

Usage

```r
## S4 method for signature 'CrunchCube'
subtotalArray(x, headings = FALSE)

applyTransforms(x, array = cubeToArray(x),
    transforms_list = transforms(x), dims_list = dimensions(x),
    useNA = x@useNA, ...)
```

Arguments

- `x`: a CrunchCube
- `headings`: for subtotalArray: a logical indicating if the headings should be included with the subtotals (default: FALSE)
- `array`: an array to use, if not using the default array from the cube itself. (Default: not used, pulls an array from the cube directly)
- `transforms_list`: list of transforms to be applied (default: transforms(x))
- `dims_list`: list of dimensions that correspond to array (default: dimensions(x))
- `useNA`: useNA parameter from the CrunchCube to use (default: x@useNA)
- `...`: arguments to pass to calcTransforms, for example include

Details

Including the `include` argument allows you to specify which parts of the CrunchCube to return. The options can be any of the following: "cube_cells" for the untransformed values from the cube itself, "subtotals" for the subtotal insertions, and "headings" for any additional headings. Any combination of these can be given, by default all will be given.

`subtotalArray(cube)` is a convenience function that is equivalent to `applyTransforms(cube, include = c("subtotals"))`.

Value

an array with any transformations applied

Examples

```r
## Not run:
# to get an array of just the subtotals
subtotalArray(crtabs(~opinion, ds))
#   Agree Disagree
#     47     35

# to get the full array with the subtotals but not headings
applyTransforms(crtabs(~opinion, ds), include = c("cube_cells", "subtotals"))
#  Strongly Agree Somewhat Agree Agree
```
Subvariables-class

Subvariables in Array Variables

Description

Multiple-response and categorical-array variables are higher order variables which are made up of sets of subvariables. These methods allow you to retrieve and change the subvariables of a multiple-response or categorical-array variable.

Usage

subvariables(x)

subvariables(x) <- value

## S4 method for signature 'CategoricalArrayVariable'
subvariables(x)

## S4 method for signature 'CrunchVariable'
subvariables(x)

## S4 method for signature 'VariableTuple'
subvariables(x)

## S4 replacement method for signature 'CategoricalArrayVariable,ANY'
subvariables(x) <- value

## S4 replacement method for signature 'CategoricalArrayVariable,Subvariables'
subvariables(x) <- value
Arguments

- **x**: A Variable or Subvariables object
- **value**: For the setters, the appropriate values to set

Details

Subvariables can be accessed from array variables (including multiple response) with the subvariables method. They can be assigned back with the subvariables<- setter, but there are limitations to what is supported. Specifically, you can reorder subvariables, but you cannot add or remove subvariables by subvariables<- assignment. See `deleteSubvariable` to remove subvariables from an array.

Subvariables have a names attribute that can be accessed, showing the display names of the subvariables. These can be set with the names<- method.

Finally, subvariables can be accessed as regular (categorical) variables with the $ and [[ extract methods.

See the vignette on array variables for further details and examples.

See Also

`describe-catalog deleteSubvariable vignette("array-variables", package="crunch")`

SummaryStat-class  Summary insertions

Description

Just like subtotals(), summary statistics can be inserted into cubes. `SummaryStat()` makes an object of type SummaryStat which can be added on to a CrunchCube's insertions to add the specified summary statistic. Currently only mean and median are supported; both use weighted algorithms to go from counts and numeric values of categories to the expected statistic. Although `SummaryStat` objects can be made by hand, it is recommended instead to use the `addSummaryStat()` function which is much quicker and easier to simply add a summary statistic to an existing CrunchCube.

Usage

```r
SummaryStat(name, stat, categories = NULL, position = c("relative", "top", "bottom"), after = NULL, includeNA = FALSE)

SummaryStat(name, stat, categories = NULL, position = c("relative", "top", "bottom"), after = NULL, includeNA = FALSE)

is.SummaryStat(x)

are.SummaryStats(x)
```
Arguments

- **name**: character the name of the summary statistic
- **stat**: a function to calculate the summary (e.g. mean or median)
- **categories**: character or numeric the category names or ids to be included in the summary statistic, if empty all categories
- **position**: character one of "relative", "top", or "bottom". Determines the position of the subtotal or heading, either at the top, bottom, or relative to another category in the cube (default)
- **after**: character or numeric if position is "relative", then the category name or id to position the subtotal or heading after
- **includeNA**: should missing categories be included in the summary?
- **x**: for is.SummaryStat() only, an object to test if it is a SummaryStat object

Details

Summary statistics are intended only for CrunchCube objects, and are not able to be set on Crunch variables.

Removing transforms

`noTransforms()` is useful if you don’t want to see or use any transformations like Subtotals and Headings. This action only applies to the CrunchCube object in R: it doesn’t actually change the variables on Crunch servers or the query that generated the CrunchCube.

---

**tabBook**  
*Compute a Tab Book*

Description

This function allows you to generate a tab book from a multitable and data. As with other functions, you can select the rows and columns you want to work with by subsetting the dataset you pass into the function.

Usage

```r
tabBook(multitable, dataset, weight = crunch::weight(dataset),
        format = c("json", "xlsx"), file, ...)
```

Arguments

- **multitable**: a Multitable object
- **dataset**: CrunchDataset, which may have been subsetted with a filter expression on the rows and a selection of variables on the columns.
- **weight**: a CrunchVariable that has been designated as a potential weight variable for dataset, or NULL for unweighted results. Default is the currently applied `weight`.
format character export format: currently supported values are "json" (default) and "xlsx".

file character local filename to write to. A default filename will be generated from the multitable's name if one is not supplied and the "xlsx" format is requested. Not required for "json" format export.

... Additional "options" passed to the tab book POST request.

Details

By specifying a "json" format, instead of generating an Excel workbook, you'll get a TabBookResult object, containing nested CrunchCube results. You can then further format these and construct custom tab reports.

Value

If "json" format is requested, the function returns an object of class TabBookResult, containing a list of MultitableResult objects, which themselves contain CrunchCubes. If "xlsx" is requested, the function invisibly returns the filename (file, if specified, or the the autogenerated file name). If you request "json" and wish to access the JSON data underlying the TabBookResult, pass in a path for file and you will get a JSON file written there as well.

Examples

```r
## Not run:
m <- newMultitable(~ gender + age4 + marstat, data = ds)
tagBook(m, ds[ds$income > 1000000L], format = "xlsx", file = "wealthy-tab-book.xlsx")
book <- tagBook(m, ds) # Returns a TabBookResult
tables <- prop.table(book, 2)
## End(Not run)
```

Description

TabBookResult and MultitableResult dimension

Usage

```r
## S4 method for signature 'TabBookResult'
dim(x)
```

Arguments

x a TabBookResult or MultitableResult
**table**

*Table function for Crunch objects*

**Description**

Table function for Crunch objects

**Usage**

```r
table(..., exclude, useNA = c("no", "ifany", "always"), dnn, deparse.level)
```

**Arguments**

- `...`: CrunchVariables to tabulate
- `exclude`: see `base::table`
- `useNA`: see `base::table`
- `dnn`: see `base::table`
- `deparse.level`: see `base::table`

**Value**

a table object

**See Also**

`base::table`

---

**team**

*Share Crunch assets with a team*

**Description**

You can share filters and multitable with a team that you are on. This will give all team members access to view and edit these filters. Use `getTeams()` to see what teams you are on.
temp.options

Usage

team(x)

## S4 method for signature 'CrunchFilter'
team(x)

## S4 method for signature 'Multitable'
team(x)

## S4 method for signature 'CrunchDeck'
team(x)

team(x) <- value

## S4 replacement method for signature 'CrunchFilter'
team(x) <- value

## S4 replacement method for signature 'Multitable'
team(x) <- value

## S4 replacement method for signature 'CrunchDeck'
team(x) <- value

Arguments

x a CrunchFilter or Multitable
value a CrunchTeam or url for a Crunch team

Value

a CrunchTeam that the asset is shared with.

---

temp.options Set some global options temporarily

Description

Set some global options temporarily

Usage

temp.options(...)
temp.option(...)
Arguments

... named options to set

Value

an S3 class "contextManager" object

See Also

with-context-manager ContextManager

titles Manipulate deck titles

Description

Crunch slides have titles and subtitles. You can change these features at either the deck level by assigning a character vector which is the same length as the deck to the CrunchDeck, or by assigning character strings to the the slide.

Usage

titles(x)
titles(x) <- value
title(x)
title(x) <- value
subtitles(x, value)
subtitles(x) <- value
subtitle(x, value)
subtitle(x) <- value

## S4 method for signature 'CrunchDeck'
titles(x)

## S4 replacement method for signature 'CrunchDeck'
titles(x) <- value

## S4 method for signature 'CrunchDeck'
subtitles(x)
## S4 replacement method for signature 'CrunchDeck'

```r
titles(x) <- value
```

## S4 method for signature 'SlideCatalog'

```r
titles(x)
```

## S4 replacement method for signature 'SlideCatalog'

```r
titles(x) <- value
```

## S4 method for signature 'SlideCatalog'

```r
subtitles(x)
```

## S4 replacement method for signature 'SlideCatalog'

```r
subtitles(x) <- value
```

## S4 method for signature 'CrunchSlide'

```r
title(x)
```

## S4 replacement method for signature 'CrunchSlide'

```r
title(x) <- value
```

## S4 method for signature 'CrunchSlide'

```r
subtitle(x)
```

## S4 replacement method for signature 'CrunchSlide'

```r
subtitle(x) <- value
```

### Arguments

- `x` a CrunchDeck or CrunchSlide
- `value` character, the new title or subtitle

### Value

`x`, modified

### Examples

```r
## Not run:
titles(deck)
titles(deck) <- c(new_title1, new_title2)
slide <- deck[[1]]
title(slide) <- "new title"
subtitle(slide) <- "new subtitle"
subtitles(deck)
```

## End(Not run)
Description

`crunch` uses the `jsonlite` package for JSON serialization and deserialization. Unfortunately, `jsonlite::toJSON()` does not allow for defining S4 methods for other object types. So, `crunch::toJSON()` wraps `jsonprep`, which exists to translate objects to base R objects, which `jsonlite::toJSON` can handle. `jsonprep` is defined as an S4 generic, and it is exported, so you can define methods for it if you have other objects that you want to successfully serialize to JSON.

Usage

```r
jsonprep(x, ...)

## S4 method for signature 'AbstractCategories'
jsonprep(x, ...)

## S4 method for signature 'ANY'
jsonprep(x, ...)

## S4 method for signature 'ShojiOrder'
jsonprep(x, ...)

## S4 method for signature 'OrderGroup'
jsonprep(x, ...)

toJSON(x, ...)
```

Arguments

`x` the object

`...` additional arguments

Value

`jsonprep` returns a base R object that `jsonlite::toJSON` can handle. `toJSON` returns the JSON-serialized character object.

See Also

`jsonlite::toJSON()`
toVariable

Generic method for converting objects to Crunch representations

Description

R objects are converted to Crunch objects using the following rules:

Usage

toVariable(x, ...)

## S4 method for signature 'CrunchExpr'
toVariable(x, ...)

## S4 method for signature 'character'
toVariable(x, ...)

## S4 method for signature 'numeric'
toVariable(x, ...)

## S4 method for signature 'factor'
toVariable(x, ...)

## S4 method for signature 'Date'
toVariable(x, ...)

## S4 method for signature 'POSIXt'
toVariable(x, ...)

## S4 method for signature 'AsIs'
toVariable(x, ...)

## S4 method for signature 'VariableDefinition'
toVariable(x, ...)

## S4 method for signature 'logical'
toVariable(x, ...)

## S4 method for signature 'labelled'
toVariable(x, ...)

## S4 method for signature 'haven_labelled'
toVariable(x, ...)

## S4 method for signature 'labelled_spss'
toVariable(x, ...)
## S4 method for signature 'haven_labelled_spss'

toVariable(x, ...)

### Arguments

- **x**: An R vector you want to turn into a Crunch variable
- **...**: Additional metadata fields for the variable, such as "name" and "description". See the API documentation for a complete list of valid attributes.

### Details

- Character vectors are converted into Crunch text variables
- Numeric vectors are converted into Crunch numeric variables
- Factors are converted to categorical variables
- Date and POSIXt vectors are converted into Crunch datetime variables
- Logical vectors are converted to Crunch categorical variables
- `VariableDefinition()`s are not converted, but the function can still append additional metadata

If you have other object types you wish to convert to Crunch variables, you can declare methods for `toVariable`.

### Value

A `VariableDefinition` object. To add this to a dataset, either assign it into the dataset (like `ds$newvar <- toVariable(...)`) or call `addVariables()`. If you're adding a column of data to a dataset, it must be as long as the number of rows in the dataset, or it may be a single value to be recycled for all rows.

### See Also

`VariableDefinition()`, `addVariables()`

### Examples

```r
var1 <- rnorm(10)
toVariable(var1)
toVariable(var1, name = "Random", description = "Generated in R")

# Not run:
ds$random <- toVariable(var1, name = "Random")
# Or, this way:
ds <- addVariables(ds, toVariable(var1, name = "Random"))

# End(Not run)
```
Description

Transformations allow you to change how a variable or cube is displayed without changing the underlying data.

Usage

Transforms(..., data = NULL)

transformsList(..., data = NULL)

transforms(x)

transforms(x) <- value

## S4 method for signature 'CrunchVariable'
transforms(x)

## S4 method for signature 'VariableTuple'
transforms(x)

## S4 replacement method for signature 'CrunchVariable,Transforms'
transforms(x) <- value

## S4 replacement method for signature 'CrunchVariable,`NULL``'
transforms(x) <- value

## S4 method for signature 'CrunchCube'
transforms(x)

## S4 method for signature 'VariableCatalog'
transforms(x)

## S4 replacement method for signature 'CrunchCube,ANY'
transforms(x) <- value

## S4 replacement method for signature 'CrunchCube,TransformsList'
transforms(x) <- value

## S4 replacement method for signature 'CrunchCube,`NULL``'
transforms(x) <- value

Arguments

... For the constructor function Transforms you can pass in attributes via ...
For the constructor function `Transforms` you can either pass in attributes via
... or you can create the objects with a fully defined `list` representation of the
objects via the `data` argument. See the examples.

For the attribute getters and setters, an object of class `Transforms`

For the setter, the replacement `Transforms` to insert

**Getting transformations**

The `transforms(x)` methods can be used with Variables and CrunchCubes to get what transfor-
mations are currently set. For variables, they return a single `Transforms` object that includes all
transformations for the variable. For CrunchCubes, it returns a named list with the same length as
the number of dimensions of the cube with each dimension’s transformations.

Currently, Insertions (e.g. `Subtotal()` and `Heading()`) are the only type of transformations that are
supported.

**Setting transformations on a variable**

The `transforms(x) <- value` methods can be used to assign transformations for a specific vari-
able. `value` must be a `Transforms` object. This allows you to set transformations on categorical
variables. These transformations will automatically show up in any new CrunchCubes that contain
this variable.

**Setting transformations on a CrunchCube**

The `transforms(x) <- value` methods can also be used to assign transformations to a CrunchCube
that has already been calculated. `value` must be a named list of `Transforms` objects. The names of
this list must correspond to dimensions in the cube (those dimensions correspondences are matched
based on variable aliases). You don’t have to provide an entry for each dimension, but any dimen-
sion you do provide will be overwritten fully.

**Removing transformations**

To remove transformations from a variable or CrunchCube, use `transforms(x) <- NULL`.

---

**type**

*Change Crunch variable types*

**Description**

Numeric, text, and categorical variables can be cast to one another by assigning them a new "type".
This modifies the storage of the data on the server and should only be done in narrow circumstances,
as in when importing data from a different file format has resulted in incorrect types being specified.
Usage

```r
## S4 method for signature 'CrunchVariable'
type(x)

## S4 method for signature 'VariableEntity'
type(x)

## S4 replacement method for signature 'CrunchVariable'
type(x) <- value
```

Arguments

- `x`: a Variable
- `value`: For the setter, a character value in c("numeric", "text", "categorical")

Value

Getter returns character; setter returns `x` duly modified.

---

**unbind**

`Split an array or multiple-response variable into its CategoricalVariables`

Description

Split an array or multiple-response variable into its CategoricalVariables

Usage

`unbind(x)`

Arguments

- `x`: a CategoricalArrayVariable or MultipleResponseVariable

Value

invisibly, the API response from DELETEing the array variable definition. If you `refresh()` the corresponding dataset after unbinding, you should see the array variable removed and its subvariables promoted to regular variables.
unshare

Revoke a user's access to a dataset

Description
Revoke a user's access to a dataset

Usage
unshare(dataset, users)

Arguments
- dataset: a CrunchDataset
- users: character: email address(es) or URLs of the users or teams to unshare with.

Value
Invisibly, the dataset.

See Also
share

users
Get information about users who have access to a dataset

Description
Get user metadata about all of the users that have access to a particular Crunch object like a dataset or project. Returns a UserCatalog object which can be translated into a data.frame with catalogToDataFrame() if information needs to be extracted, queried, transformed, etc.

Usage
users(x)

### S4 method for signature 'CrunchDataset'
users(x)

### S4 method for signature 'DatasetTuple'
users(x)

### S4 method for signature 'ProjectFolder'
users(x)
Arguments

x  a CrunchDataset, DatasetTuple, or ProjectFolder object to get users from

Value

a UserCatalog with information about users who have access to the dataset

---

var-categories  Get and set Categories on Variables

Description

Get and set Categories on Variables

Usage

categories(x)

categories(x) <- value

## S4 method for signature 'VariableTuple'
categories(x)

## S4 method for signature 'CrunchVariable'
categories(x)

## S4 method for signature 'CategoricalVariable'
categories(x)

## S4 method for signature 'CategoricalArrayVariable'
categories(x)

## S4 method for signature 'VariableEntity'
categories(x)

## S4 replacement method for signature 'CategoricalVariable,Categories'
categories(x) <- value

## S4 replacement method for signature 'CategoricalArrayVariable,Categories'
categories(x) <- value

## S4 replacement method for signature 'CategoricalVariable,numeric'
categories(x) <- value

## S4 replacement method for signature 'CategoricalVariable,character'
categories(x) <- value
## variable-as-methods

```r
## S4 replacement method for signature 'CategoricalVariable,ANY'
categories(x) <- value
```

```r
## S4 replacement method for signature 'CategoricalArrayVariable,numeric'
categories(x) <- value
```

```r
## S4 replacement method for signature 'CategoricalArrayVariable,character'
categories(x) <- value
```

```r
## S4 replacement method for signature 'CategoricalArrayVariable,ANY'
categories(x) <- value
```

```r
## S4 replacement method for signature 'CrunchVariable,ANY'
categories(x) <- value
```

### Arguments

- `x` a Variable
- `value` for the setters, an object of class Categories to set.

### Value

Getters return Categories; setters return `x` duly modified.

---

---

### Description

Use the `as.*` family of functions to make a derived copy of a variable that has been converted into a new type.

### Usage

```r
## S4 method for signature 'CrunchVariable'
as.Numeric(x)
```

```r
## S4 method for signature 'CrunchVariable'
as.Text(x, format)
```

```r
## S4 method for signature 'CrunchVariable'
as.Categorical(x, format)
```

```r
## S4 method for signature 'CrunchVariable'
as.Datetime(x,
  format = "%Y-%m-%d %H:%M:%S", resolution, offset)
```
## S3 method for class 'CrunchVariable'

as.double(x, ...)

## S3 method for class 'CrunchVariable'

as.character(x, ...)

### Arguments

- **x**: a Crunch variable to derive and convert to a new type
- **format**: for as.Datetime, when the variable in x is a text or categorical variable, format is the typographical format that the datetime is already formatted in that needs to be parse from (default: "%Y-%m-%d %H:%M:%S"); for as.Text and as.Categorical, is the typographical format that the datetime is to be formatted as (e.g. "%Y-%m-%d %H:%M:%S" for "2018-01-08 12:39:57", the default if no rollup resolution is specified on the source variable. If a rollup resolution is specified, a reasonable default will be used.).
- **resolution**: for as.Datetime, when the variable in x is a numeric variable, the resolution of the number (e.g. "ms" for milliseconds, "s" for seconds, etc. see expressions for more information about valid values.)
- **offset**: for as.Datetime, when the variable in x is a numeric the, a character of the offset to count from in the shape "2018-01-08 12:39:57". If not supplied, Crunch's default of 1970-01-01 00:00:00 will be used.
- **...**: additional arguments for as.character and as.numeric, ignored when used with Crunch variables

### Details

Each type of Crunch variable (text, numeric, categorical, etc.) has an as.* function (as.Text, as.Numeric, and as.Categorical respectively) that takes the input given as x, and makes a new derived variable that is now of the type specified. See below for detailed examples.

For as.Text and as.Numeric, aliases to the R-native functions as.character and as.numeric are provided for convenience.

### Value

a VariableDefinition to be used as the derivation

### Examples

```
## Not run:
# ds$v1 is of type Text
is.Text(ds$v1)
# [1] TRUE

# that has strings of numbers
as.vector(ds$v1)
# [1] "32" "8" "4096" "1024"

# convert this to a numeric variable with the alias 'v1_numeric'
```
ds$v1_numeric <- as.Numeric(ds$v1)

# the values are the same, but are now numerics and the type is Numeric
as.vector(ds$v1_numeric)
# [1] 32 8 4096 1024
is.Numeric(ds$v1_numeric)
# [1] TRUE

# this new variable is derived, so if new data is appended or streamed, the
# new rows of data will be updated.
is.derived(ds$v1_numeric)
# [1] TRUE

## End(Not run)

### VariableCatalog-class Collection of Variables within a Dataset

**Description**

A VariableCatalog contains references to all variables in a dataset, plus some descriptive metadata about each. Each VariableCatalog also contains a `variableorder` that governs how variables within it are organized.

### VariableDefinition Construct a variable definition

**Description**

Crunch variables are created by posting a VariableDefinition to the Crunch server. The VariableDefinition contains the information the server requires to calculate the variable. This can information can either be in the form of the actual data which you would like to include in the variable, or a derivation which tells the server how to derive the new variable from existing ones. This function converts an R vector or set of attributes into a variable definition which can be posted to the server.

**Usage**

```r
VariableDefinition(data, ...)
VarDef(data, ...)
```

**Arguments**

- `data` an R vector of data to convert to the Crunch payload format. See `toVariable` for how R data types are converted. This function can also be used to construct a VariableDefinition directly by passing attributes to `VarDef`. This is only recommended for advanced users who are familiar with the Crunch API.
- `...` additional attributes to be included in the VariableDefinition
variableMetadata

Value

a VariableDefinition object, ready to POST to Crunch.

See Also

toVariable

Examples

VariableDefinition(rnorm(5),
    name = "Some numbers",
    description = "Generated pseudorandomly from the normal distribution"
)

VarDef(
    name = "Integers", values = 1:5, type = "numeric",
    description = "When creating variable definitions with 'values', you must specify 'type', and categorical variables will require 'categories'."
)

variableMetadata (Get all variable metadata for a dataset)

Description

Crunch stores variable information in several catalogs containing information about the variable class, its missingness and subvariables. This function allows you to access that information.

Usage

variableMetadata(dataset)

Arguments

dataset CrunchDataset

Value

A VariableCatalog with all variable properties, including categories and subvariables. 
**VariableOrder-class**  
Organize Variables within a Dataset

### Description

Variables in the Crunch web application can be viewed in an ordered, hierarchical list. These objects and methods allow you to modify that order from R.

### Details

A VariableOrder object is a subclass of `list` that contains VariableGroups. VariableGroup objects contain a group name and an set of "entities", which can be variable references or other nested VariableGroups.

### Slots

- `group` character, the name of the VariableGroup. In the constructor and more generally, this field can be referenced as "name" as well.
- `entities` a character vector of variable URLs, or a list containing a combination of variable URLs and VariableGroup objects.
- `duplicates` logical: should duplicate variable references be allowed in this object? Deprecated field: duplicates are never allowed.
- `vars` either `NULL` or a `VariableCatalog()`. If not `NULL`, it will be used to look up variable names from the URLs.

### variables

Access a catalog of variables

### Description

Datasets contain collections of variables. For some purposes, such as editing variables’ metadata, it is helpful to access these variable catalogs more directly. Other objects, such as cubes and folders, also define `variables()` methods that expose variable metadata.

### Usage

```
variables(x)
variables(x) <- value
allVariables(x)
allVariables(x) <- value
```
Arguments

x       a Dataset
value   For the setters, a VariableCatalog to assign.

Details

For datasets, variables() returns only the active variables in the dataset, while allVariables() returns all variables, including hidden variables. allVariables() is not defined for other objects.

Value

All methods return a VariableCatalog except the VariableFolder method, which returns a subset of x containing only variable references. Assignment functions return x with the changes made.

Description

This function allows you to see a dataset’s savepoints. These can then be passed to restoreVersion() to load the previously saved version of a dataset.
webApp

Usage

versions(x)

Arguments

x a CrunchDataset

Value

an object of class VersionCatalog. Supported methods on the catalog include "names" and "times-tamps".

See Also

saveVersion restoreVersion

---

webApp View a Crunch Object in the Web Application

Description

Convenience function that will use your system’s "open" command to open a Crunch object in our web application in your default browser.

Usage

webApp(x)

Arguments

x a Crunch Dataset or Variable

Value

Nothing; called for side effect of opening your web browser.
weight

**Dataset weights**

**Description**
weight lets you view and set your user’s currently applied weight on the server. weightVariables lets you view all of the variables that have been designated as valid to use as weights.

**Usage**
weight(x)

weight(x) <- value

is.weight(x)

```r
## S4 replacement method for signature 'NumericVariable'
is.weight(x) <- value
```

**Arguments**

- **x**
  - a Dataset

- **value**
  - a Variable, VariableDefinition, or NULL. If a VariableDefinition is passed, the variable will first be created and then set as the datasets weight. Set to NULL to remove existing weights from the dataset.

**Value**
For the weight getter, a Variable if there is a weight, else NULL. For the setter, x, modified accordingly. weightVariables returns the aliases (or names, according to options(crunch.namekey.dataset)), of the variables designated as weights.

**See Also**

- weightVariables()
- makeWeight()

---

**weightVariables**

Get a dataset’s weightVariables

**Description**
Get a dataset’s weightVariables
Usage

```r
## S4 method for signature 'CrunchDataset'
weightVariables(x)
```

```r
## S4 method for signature 'VariableCatalog'
weightVariables(x)
```

Arguments

- `x` a CrunchDataset

Value

weightVariables returns a character vector of the aliases of the variables that are eligible to be used as weights.

See Also

- `weight()` `makeWeight()` `modifyWeightVariables()`

---

### which

"which" method for CrunchLogicalExpr

Usage

```r
## S4 method for signature 'CrunchLogicalExpr'
which(x, arr.ind = FALSE,
     useNames = TRUE)
```

Arguments

- `x` CrunchLogicalExpr
- `arr.ind` Ignored
- `useNames` Ignored

Value

Integer row indices where `x` is true. Note that this does not return a Crunch expression. Use this when you need to translate to R values. For filtering a Crunch expression by `x`, don’t use which.
with-context-manager  
**Context manager’s “with” method**

**Description**
Context manager’s “with” method

**Usage**
```r
## S3 method for class 'contextManager'
with(data, expr, ...)
```

**Arguments**
- `data`  
  `contextManager`
- `expr`  
  code to evaluate within that context
- `...`  
  additional arguments. One additional supported argument is "as", which lets you assign the return of your "enter" function to an object you can access.

**Value**
Nothing.

**See Also**
- `contextManager`

---

write.csv.gz  
**Write CSV to a compressed file**

**Description**
Write CSV to a compressed file

**Usage**
```r
write.csv.gz(x, file, na = "", row.names = FALSE, ...)
```

**Arguments**
- `x`  
  A data.frame or similar CSV-writable object
- `file`  
  character destination to write the gzipped CSV to
- `na`  
  See `utils::write.csv`. This just changes the default to a Crunch-friendly empty string.
- `row.names`  
  logical: write out row names? See `utils::write.csv`.
- `...`  
  Additional arguments passed to `write.csv`.
write.csv.gz

Value
- A csv file written to dist
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