

Package ‘cancensus’

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Type Package

Title Access, Retrieve, and Work with Canadian Census Data and Geography

Version 0.2.0

Description Integrated, convenient, and uniform access to Canadian Census data and geography retrieved using the 'CensusMapper' API. This package produces analysis-ready tidy data frames and spatial data in multiple formats, as well as convenience functions for working with Census variables, variable hierarchies, and region selection. API keys are freely available with free registration at <<https://censusmapper.ca/api>>. Census data and boundary geometries are reproduced and distributed on an "as is" basis with the permission of Statistics Canada (Statistics Canada 2006; 2011; 2016).

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Encoding UTF-8

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ByteCompile yes

NeedsCompilation no

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Suggests knitr, ggplot2, leaflet, rmarkdown, readr, rgdal, rgeos, scales, sf, sp, tidyr

VignetteBuilder knitr

URL <https://github.com/mountainMath/cancensus>,
<https://mountainmath.github.io/cancensus/>,
<https://censusmapper.ca/api>

BugReports <https://github.com/mountainMath/cancensus/issues>

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as_census_region_list

*Convert a (suitably filtered) data frame from
 list_census_regions to a list suitable for passing to
 get_census.*

Description

Convert a (suitably filtered) data frame from `list_census_regions` to a list suitable for passing to `get_census`.

Usage

```
as_census_region_list(tbl)
```

Arguments

`tbl` A data frame, suitably filtered, as returned by `list_census_regions`.

Examples

```
## Not run:
library(dplyr, warn.conflicts = FALSE)

# Query the CensusMapper API for the total occupied dwellings
# of 20 random Census Subdivisions, in Census 2016.
regions <- list_census_regions("CA16") %>%
  filter(level == "CSD") %>%
  sample_n(20) %>%
  as_census_region_list()

occupied <- get_census("CA16", regions = regions,
                      vectors = c("v_CA16_408"),
                      level = "Regions")

## End(Not run)
```

census_vectors	<i>Return Census variable names and labels as a tidy data frame (Deprecated)</i>
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Description

Return Census variable names and labels as a tidy data frame (Deprecated)

Usage

```
census_vectors(x)
```

Arguments

x A data frame, sp or sf object returned from `get_census` or similar.

Value

A data frame with a column `variable` containing the truncated variable name, and a column `label` describing it.

Examples

```
## Not run:
# Query census data with truncated labels:
census_data <- get_census(dataset='CA16', regions=list(CMA="59933"),
                        vectors=c("v_CA16_408", "v_CA16_409", "v_CA16_410"),
                        level='CSD', geo_format = "sf", labels="short")

# Get details for truncated vectors:
census_vectors(census_data)

## End(Not run)
```

```
child_census_vectors
```

List all child variables from vector hierarchical based on a (sub-)list of census variables returned by list_census_vectors or search_census_vectors.

Description

List all child variables from vector hierarchical based on a (sub-)list of census variables returned by list_census_vectors or search_census_vectors.

Usage

```
child_census_vectors(vector_list, leaves_only = FALSE, max_level = NA)
```

Arguments

`vector_list` The list of vectors to be used

`leaves_only` Boolean flag to indicate if only leaf vectors should be returned, i.e. vectors that don't have children

`max_level` optional, maximum depth to look for child vectors. Default is NA will return all child census vectors..

Examples

```
library(dplyr, warn.conflicts = FALSE)

list_census_vectors("CA16") %>%
  filter(vector == "v_CA16_4092") %>%
  child_census_vectors(TRUE)
```

```
label_vectors
```

Return Census variable names and labels as a tidy data frame

Description

Return Census variable names and labels as a tidy data frame

Usage

```
label_vectors(x)
```

Arguments

`x` A data frame, sp or sf object returned from get_census or similar.

Value

A data frame with a column variable containing the truncated variable name, and a column label describing it.

Examples

```
## Not run:
# Query census data with truncated labels:
label_data <- get_census(dataset='CA16', regions=list(CMA="59933"),
                        vectors=c("v_CA16_408", "v_CA16_409", "v_CA16_410"),
                        level='CSD', geo_format = "sf", labels="short")

# Get details for truncated vectors:
label_vectors(label_data)

## End(Not run)
```

```
list_census_datasets
```

Query the CensusMapper API for available datasets.

Description

Query the CensusMapper API for available datasets.

Usage

```
list_census_datasets(use_cache = FALSE, quiet = FALSE)
```

Arguments

use_cache	If set to TRUE, data will be read from a local cache, if available. If set to FALSE (the default), query the API for the data, and refresh the local cache with the result.
quiet	When TRUE, suppress messages and warnings.

Value

Returns a data frame with a column `dataset` containing the code for the dataset, and a column `description` describing it.

Examples

```
# List available datasets in CensusMapper
list_census_datasets()
```

```
list_census_regions
```

Query the CensusMapper API for available regions in a given dataset.

Description

Query the CensusMapper API for available regions in a given dataset.

Usage

```
list_census_regions(dataset, use_cache = FALSE, quiet = FALSE)
```

Arguments

<code>dataset</code>	The dataset to query for available regions, e.g. "CA16".
<code>use_cache</code>	If set to TRUE, data will be read from a local cache, if available. If set to FALSE (the default), query the API for the data, and refresh the local cache with the result.
<code>quiet</code>	When TRUE, suppress messages and warnings.

Value

Returns a data frame with the following columns:

<code>region</code>	The region identifier.
<code>name</code>	The name of that region.
<code>level</code>	The census aggregation level of that region.
<code>pop</code>	The population of that region.
<code>municipal_status</code>	Additional identifiers to distinguish the municipal status of census subdivisions.
<code>CMA_UID</code>	The identifier for the Census Metropolitan Area the region is in (if any).
<code>CD_UID</code>	The identifier for the Census District the region is in (if any).
<code>PR_UID</code>	The identifier for the Province the region is in (if unique).

Examples

```
list_census_regions('CA16')
```

```
list_census_vectors
```

Query the CensusMapper API for available vectors for a given dataset.

Description

Query the CensusMapper API for available vectors for a given dataset.

Usage

```
list_census_vectors(dataset, use_cache = FALSE, quiet = TRUE)
```

Arguments

dataset	The dataset to query for available vectors, e.g. "CA16".
use_cache	If set to TRUE, data will be read from a local cache, if available. If set to FALSE (the default), query the API for the data, and refresh the local cache with the result.
quiet	When FALSE, shows messages and warnings. Set to TRUE by default.

Value

Returns a data frame detailing the available Census vectors (i.e. variables) for a given Census dataset. This data frame has columns `vector` containing the short code for the variable, `type` describing whether it's a female, male, or total aggregate, `label` indicating the name of the variable, `units` indicating whether the value represents a numeric integer, percentage, dollar figure, or ratio, `parent_vector` to show hierarchical relationship, `aggregation` indicating whether the value is additive or a transformation, and a column `details` with a detailed description of the variable generated by traversing all labels within its hierarchical structure.

Examples

```
# List all vectors for a given Census dataset in CensusMapper
list_census_vectors('CA16')
```

```
parent_census_vectors
```

List all parent variables from vector hierarchical based on a (sub-)list of census variables returned by `list_census_vectors` or `search_census_vectors`.

Description

List all parent variables from vector hierarchical based on a (sub-)list of census variables returned by `list_census_vectors` or `search_census_vectors`.

Usage

```
parent_census_vectors(vector_list)
```

Arguments

`vector_list` The list of vectors to be used

Examples

```
library(dplyr, warn.conflicts = FALSE)

list_census_vectors("CA16") %>%
  filter(vector == "v_CA16_4092") %>%
  parent_census_vectors()
```

```
search_census_regions
```

Query the CensusMapper API for regions with names matching a searchterm.

Description

Query the CensusMapper API for regions with names matching a searchterm.

Usage

```
search_census_regions(searchterm, dataset, level = NA, ...)
```

Arguments

<code>searchterm</code>	The term to search for e.g. "Victoria". Search terms are case insensitive. If unable to find a given search term, this function will suggest the correct spelling to use when possible.
<code>dataset</code>	The dataset to query for available regions, e.g. "CA16".
<code>level</code>	One of NA, 'C', 'PR', 'CMA', 'CD', or 'CSD'. If specified, only return variables of specified 'level'.
<code>...</code>	Further arguments passed on to <code>list_census_regions</code> .

Examples

```

search_census_regions('Victoria', 'CA16')

## Not run:
# This will return a warning that no match was found, but will suggest similar named regions
search_census_regions('Victorea', 'CA16')

# This will limit region results to only include CMA level regions
search_census_regions('Victoria', 'CA16', level = "CMA")

## End(Not run)

```

```

search_census_vectors

```

Query the CensusMapper API for vectors with descriptions matching a searchterm.

Description

Query the CensusMapper API for vectors with descriptions matching a searchterm.

Usage

```

search_census_vectors(searchterm, dataset, type = NA, ...)

```

Arguments

searchterm	The term to search for e.g. "Ojibway". Search terms are case insensitive. If unable to find a given search term, this function will suggest the correct spelling to use when possible.
dataset	The dataset to query for available vectors, e.g. "CA16".
type	One of NA, 'Total', 'Male' or 'Female'. If specified, only return variables of specified 'type'.
...	Further arguments passed on to list_census_vectors.

Examples

```

search_census_vectors('Ojibway', 'CA16')
## Not run:
# This will return a warning that no match was found, but will suggest similar terms.
search_census_vectors('Ojibwe', 'CA16', 'Total')

## End(Not run)

```