Package ‘tidyqwi’

October 14, 2022

Title  A Convenient API for Accessing United States Census Bureau's Quarterly Workforce Indicator

Version  0.1.2

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Description  The purpose of this package is to access the United States Census Bureau's Quarterly Workforce Indicator data. Additionally, the data will be retrieved in a tidy format for further manipulation with full variable descriptions added if desired. Information about the United States Census Bureau's Quarterly Workforce Indicator is available at <https://www.census.gov/data/developers/data-sets/qwi.html>.

Depends  R (>= 3.2), future (>= 1.6.2)

Imports  dplyr, httr, jsonlite, magrittr, xml2, stringr, purrr, stats, tidyr, labelled, furrr

License  MIT + file LICENSE

BugReports  https://github.com/medewitt/tidyqwi/issues

Encoding  UTF-8

LazyData  true

RoxygenNote  7.1.0

Suggests  testthat, covr, knitr, rmarkdown

VignetteBuilder  knitr

NeedsCompilation  no

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Repository  CRAN

Date/Publication  2020-05-04 10:30:02 UTC
Description
This function add labels to a `qwi` object

Usage
add_qwi_labels(df)

Arguments
df an object with a class of `qwi`

Value
a data.frame with formatted column names and types

Examples

```r
library(tidyqwi)

# Add labels
labelled_nc <- add_qwi_labels(nc_qwi)

# Check the label for the data
attr(labelled_nc[["Emp"]], "label")
```
check_census_api_call  A helper function to help parse API calls from the census

Description

The function verifies that API call was successful. If the call was not successful, this function passes the message received from the US Census API for further troubleshooting.

Usage

check_census_api_call(call)

Arguments

  call    a returned call from the US Census API

Value

  a string vector with the message from the US Census API

Examples

library(tidyqwi)
library(httr)
# A single call to the API without an API Key
url <- "api.census.gov/data/timeseries/qwi/sa?get=Emp&for=county:198&key=NOKEY"
single_call <- httr::GET(url)

# Because a non valid API key was specified an message will be returned

check_census_api_call(single_call)

converted_fips  A function to check if a valid state number or fips is passed

Description

The function verifies if a valid FIPS code was passed and converts it to a unified standard for internal use.

Usage

converted_fips(fips)
Arguments

- **fips**
  the state abbreviation or fips code vector

Value

States Abbreviations or FIPs as FIP character strings
a vector with the State FIPS code

Examples

```r
library(tidyqwi)

converted_fips(37)
converted_fips("37")
converted_fips("NC")
converted_fips("nc")
```

Description

The purpose of this function is to retrieve firm information from the US Census’ Quarterly Workforce Indicator API. These data can be retrieved with by specifying the states, the quarters, the years, and additional detail. This function can accept multiple states, years and quarters. This makes the data retrieval easier and stay inside of the US Census’ limits on the API.

Usage

```r
get_qwi(
  years,
  variables = NULL,
  quarters = c(1, 2, 3, 4),
  industry_level = 2,
  states,
  endpoint = "sa",
  all_groups = TRUE,
  owner_code = TRUE,
  geography = "cbsa",
  seasonadj = "U",
  apikey = NULL,
  processing = "sequential"
)
```
get_qwi

Arguments

years years to fetch (e.g. 2010, or c(2010, 2011))
variables the variables you wish to fetch. Default is all.
quarters The quarters to fetch (e.g. c(1,2,3,4)) Default is all
industry_level Industries to fetch. Default is all level 2
states state fips code to fetch
endpoint US Census endpoint designation. One of "sa" for Sex * Age, "se" for Sex by Education and "rh" for Race/Ethnicity
all_groups default to true
owner_code firm owner code
geography the US Census geography granularity (one of cbua or county)
seasonadj seasonal adjustment factor (one of "U" or "S")
apikey your US Census API Key
processing the processing strategy (default = "sequential")

Value

the desired data from the US Census’s Quaterly Workforce API as a tibble

Examples

```r
## Not run:
library(tidyqwi)

# One state, one year
nc_qwi <- get_qwi(years = "2010",
states = "11",
geography = "county",
apikey = census_key,
endpoint = "rh",
variables = c("sEmp", "Emp"), all_groups = FALSE,
industry_level = "2", processing = "sequential")

# Multiple states. multiple years
qwi_multi_year <- get_qwi(years = c("2010", "2011", "2012"),
states = c("NC", "SC"),
geography = "county",
apikey = census_key,
endpoint = "rh",
variables = c("sEmp", "Emp"), all_groups = FALSE,
industry_level = "2", processing = "sequential")

## End(Not run)
```
industry_labels  

**Description**

These data are the industry labels specified by the United States Census Bureau.

**Usage**

industry_labels

**Format**

a dataframe with 433 rows and 3 columns:

- **industry**  Industry Numeric Code
- **label**    Description of Industry Level
- **ind_level**  Industry Level ...

**Source**

https://lehd.ces.census.gov/data/schema/latest/label_industry.csv

---

nc_qwi  

**Example Data Set**

**Description**

These data represent an example returned query for NC for 2010.

**Usage**

nc_qwi

**Format**

a dataframe with 3244 rows and 44 columns:
**owner_codes**

<table>
<thead>
<tr>
<th>owner_codes</th>
<th>Owner Codes</th>
</tr>
</thead>
</table>

**Description**

Owner Codes

**Usage**

owner_codes

**Format**

A dataframe with 3 rows and 2 columns:

- **ownercode** ownercode
- **label** label ...

**Source**

https://lehd.ces.census.gov/data/schema/latest/label_ownercode.csv

---

**parse_qwi_message**  

<table>
<thead>
<tr>
<th>parse_qwi_message</th>
<th>parse_qwi</th>
</tr>
</thead>
</table>

**Description**

An internally used function to parse the returned API call.

**Usage**

parse_qwi_message(x)

**Arguments**

- x a returned call response from the US Census QWI API
### qwi_var_names

#### QWI Variable Names

| Description | These data represent the different variable types available from the QWI API. |
| Usage       | qwi_var_names |
| Format      | a dataframe with 83 rows and 9 columns: |
|             | name  | state name |
|             | label | state fips code |
|             | concept | state abbreviation |
|             | required | requirements |
|             | attributes | details of attributes |
|             | limit | limit |
|             | predicate type | predicate type |
|             | group | group level |
|             | values | values ... |

#### Source

https://api.census.gov/data/timeseries/qwi/se/variables.html

### show_condition

<p>| show_condition | show_condition |
| Description    | show_condition |
| Usage          | show_condition(code) |
| Arguments      | code: the code whose message you wish to interpret |</p>
<table>
<thead>
<tr>
<th>Description</th>
<th>State Data (FIPS, Abbreviations, etc)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usage</td>
<td>state_info</td>
</tr>
<tr>
<td>Format</td>
<td>a dataframe with 51 rows and 3 columns:</td>
</tr>
<tr>
<td></td>
<td>name  state name</td>
</tr>
<tr>
<td></td>
<td>state_fips  state fips code</td>
</tr>
<tr>
<td></td>
<td>state_abbreviation  state abbreviation ...</td>
</tr>
</tbody>
</table>
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