Package ‘blscrapeR’

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Type Package
Title An API Wrapper for the Bureau of Labor Statistics (BLS)
Version 3.2.0
Description Scrapes various data from <https://www.bls.gov/>. The U.S. Bureau of Labor Statistics is the statistical branch of the United States Department of Labor. The package has additional functions to help parse, analyze and visualize the data.
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bls_api  Basic Request Mechanism for BLS Tables

Description

Return data frame from one or more requests via the US Bureau of Labor Statistics API. Provided arguments are in the form of BLS series ids.

Usage

bls_api(
    seriesid,
    startyear = NULL,
    endyear = NULL,
    registrationKey = NULL,
    catalog = FALSE,
    calculations = FALSE,
    annualaverage = FALSE,
    ...
)

Arguments

seriesid The BLS id of the series your trying to load. A common format would be 'LAUCN040010000000005'. WARNING: All seriesIDs must contain the same time resolution. For example, monthly data sets can not be combined with annual or semi-annual data. If you need help finding seriesIDs, check the BLS website or the BLS Data Finder–links below.

startyear The first year in your data set.
endyear The last year in your data set.
registrationKey The API key issued to you from the BLS website.
catalog Series description information available only for certain data sets.
calculations Returns year-over-year calculations if set to TRUE.
anualaverage Returns an annual average if set to TRUE.
... additional arguments

See Also

https://www.bls.gov/data/
https://beta.bls.gov/dataQuery/search

Examples

## API Version 1.0 R Script Sample Code
## Single Series request
df <- bls_api("LAUCN040010000000005")

## Not run:
## API Version 1.0 R Script Sample Code
## Multiple Series request with date params.
df <- bls_api(c("LAUCN040010000000005", "LAUCN040010000000006"),
startyear = "2010", endyear = "2012")

## API Version 1.0 R Script Sample Code
## Multiple Series request with date params.
df <- bls_api(c("LAUCN040010000000005", "LAUCN040010000000006"),
startyear = "2010", endyear = "2012")

## API Version 2.0 R Script Sample Code
## Multiple Series request with full params allowed by v2.
df <- bls_api(c("LAUCN040010000000005", "LAUCN040010000000006"),
startyear = "2010", endyear = "2012",
registrationKey = "BLS_KEY",
calculations = TRUE, annualaverage = TRUE, catalog = TRUE)

## End(Not run)
**bls_map_county**  
*choropleth mapping of BLS data*

**Description**

Return a ggplot object to render a choropleth map with county outlines. The map files contain 2015 FIPS codes and can be used with any data set containing county and state FIPS codes. They can not be used with the leaflet package but the shape files can be downloaded from the Census website or with the tigris package. See the "Mapping BLS Data" vignette for this package.

**Usage**

```r
bls_map_county(
  map_data,
  fill_rate = NULL,
  labtitle = NULL,
  stateName = NULL,
  projection = NULL,
  lowFill = "green",
  highFill = "red"
)
```

**Arguments**

- `map_data`  
  Dataframe to be used as the map’s measures. Usually a result of calls to the `get_bls_county()` or `get_bls_state()` functions, but other dataframes, which include FIPS codes may be used as well.

- `fill_rate`  
  Column name from the dataframe that you want to use as a fill value, in quotes. NOTE: This argument is mandatory!

- `labtitle`  
  The main title label for your map passed as a string. The default is no title.

- `stateName`  
  Optional argument if you only want to map a single state or a group of selected states. The argument accepts state full state names in quotes.

- `projection`  
  Choices of map projection are "lambert" or "mercator". By default, the function selects Mercator for single states and Lambert for nationwide views.

- `lowFill`  
  The fill color of the lower values being mapped. The default color is green, but can be changed to any color accepted by `ggplot2::scale_fill_gradient`.

- `highFill`  
  The fill color of the higher values being mapped. The default color is green, but can be changed to any color accepted by `ggplot2::scale_fill_gradient`.

**See Also**

[https://cran.r-project.org/package=tigris](https://cran.r-project.org/package=tigris)
Examples

```r
## Not run:
# Download the most current month unemployment statistics on a county level.
df <- get_bls_county()

# Map the unemployment rate by county.
bll_gg <- bls_map_county(map_data = df, fill_rate = "unemployed_rate",
                         labtitle = "Unemployment Rate")
bll_gg

# Map the unemployment rate for Florida and Alabama.

df <- get_bls_county(stateName = c("Florida", "Alabama"))

bll_gg <- bls_map_county(map_data = df, fill_rate = "unemployed_rate",
                         stateName = c("Florida", "Alabama"))
bll_gg

## End(Not run)
```

---

### bls_map_state

**choropleth mapping of BLS data**

**Description**

Return a ggplot object to render a choropleth map with state outlines. The map files contain 2015 FIPS codes and can be used with any data set containing state FIPS codes. They can not be used with the leaflet package but the shape files can be downloaded from the Census website or with the tigris package. See the "Mapping BLS Data" vignette for this package.

**Usage**

```r
bls_map_state(
  map_data,
  fill_rate = NULL,
  labtitle = NULL,
  lowFill = "green",
  highFill = "red"
)
```

**Arguments**

- `map_data` Dataframe to be used as the map’s measures. Usually a result of calls to the `get_bls_state()` function but other dataframes, which include FIPS codes may be used as well.
fill_rate  Column name from the dataframe that you want to use as a fill value.
labtitle  The main title label for your map passed as a string. The default is no title.
lowFill  The fill color of the lower values being mapped. The default color is green, but can be changed to any color accepted by `ggplot2::scale_fill_gradient`.
highFill  The fill color of the higher values being mapped. The default color is green, but can be changed to any color accepted by `ggplot2::scale_fill_gradient`.

See Also

https://cran.r-project.org/package=tigris

Examples

```r
## Not run:
# Download employment statistics for April 2016.
df <- get_bls_state("April 2016", seasonality = TRUE)

# Map the unemployment rate from data set.
bls_gg <- bls_map_state(map_data = df, fill_rate = "unemployed_rate",
                        labtitle = "Unemployment Rate")
bls_gg
## End(Not run)
```

---

**county_map_data**

*Dataset for mapping U.S. counties with a Mercator projection*

**Description**

A fortified data set that includes U.S. counties and is suitable for making maps with `ggplot2`. The county FIPS codes and boundary lines from the most recent TIGER release from the U.S. Census Bureau.

- long: County longitude
- lat: County latitude
- order: Polygon order
- hole: hole
- piece: Polygon piece
- id: FIPS Code
- group: group

A fortified data set that includes U.S. counties and is suitable for making maps with `ggplot2`. The county FIPS codes and boundary lines from the most recent TIGER release from the U.S. Census Bureau.
• long: County longitude
• lat: County latitude
• order: Polygon order
• hole: hole
• piece: Polygon piece
• id: FIPS Code
• group: group

Usage

data(county_map_merc)

data(county_map_data)

Format

A data frame with 55,413 rows and 7 variables

Details

Dataset with the lat. / long. of county FIPS codes used for mapping.
Built-in dataset for use with the `bls_map_county()` function. To access the data directly, issue the command `data(county_map_merc)`. Dataset with the lat. / long. of county FIPS codes used for mapping.
Built-in dataset for use with the `bls_map_county()` function. To access the data directly, issue the command `data(county_map_data)`. Note

Last updated 2017-01-26
Last updated 2017-01-26

dateCast

Cast a date column to data frame returned by the `bls_api()` function

Description

A helper function to create a continuous date from Year and Period columns.

Usage

dateCast(api_df = NULL, dt_format = NULL)
get_bls_county

Arguments

- **api_df**: The data frame you wish to cast a date column to. Be sure the data frame contains 'year' and 'period' columns as returned by the `bls_api()` function.

- **dt_format**: A character string containing a valid date format. The default will return the ISO 8601 date format.

Examples

```r
## Cast a date column to data frame returned by the bls_api() function.
df <- bls_api("LAUCN040010000000005") %>%
dateCast()
```

get_bls_county

*A function that returns county-level labor statistics*

Description

A function to download and format state employment data. Due to limitations in the data source, the function can only return data from the last 12 months. NOTE: Unlike many other BLS data sets, these data are never estimated, meaning the most current data may be as much as 60 days behind the current data. The county data are also never seasonally adjusted.

Usage

```r
get_bls_county(date_mth = NULL, stateName = NULL, ...)
```

Arguments

- **date_mth**: The month you would like data for. Accepts full month names and four-digit year. If NULL, it will return the most recent month in the database.

- **stateName**: is an optional argument if you only want data for certain state(s). The argument is NULL by default and will return data for all 50 states.

- **...**: additional arguments

Examples

```r
## Not run:
# Most recent month in the data set.
get_bls_county()

# A specific month
df <- get_bls_county("May 2017")

# Multiple months
```
get_bls_state

A function that returns county-level labor statistics

Description
A function to download and format state employment data. These data begin on January 1976 to current. NOTE: The most current data will always be at least 30 days behind the current date, and depending on the day of your query, those numbers may be estimates.

Usage
get_bls_state(date_mth = NULL, seasonality = TRUE, ...)

Arguments
date_mth The month or months you would like data for. Accepts full month names and four-digit year.
seasonality TRUE or FALSE. The default value is TRUE.
...
additional arguments

Examples
## Not run:
# Single series
get_bls_state(date_mth = "May 2016", seasonality = TRUE)

# Multiple series
get_bls_state(date_mth = c("April 2016", "May 2016"), seasonality = FALSE)

## End(Not run)
inflation_adjust  Convert the Value of a US Dollar to a Given Year

Description

Returns a data frame that uses data from the Consumer Price Index (All Goods) to convert the value of a US Dollar [$1.00 USD] over time.

Usage

inflation_adjust(base_year = NA, ...)

Arguments

base_year = A string or integer argument to represent the base year that you would like dollar values converted to. For example, if you want to see the value of a 2007 dollar in 2015, you would select 2015 as a base year and find 2007 in the table.

... additional arguments

Examples

## Get historical USD values based on a 2010 dollar.
values <- inflation_adjust(base_year = 2015)

map_bls  choropleth mapping of BLS data

Description

Return a ggplot object to render a choropleth map with state and/or county outlines. The map files contain 2016 FIPS codes and can be used with any data set containing county and state FIPS codes. They can not be used with the leaflet package but the shape files can be downloaded from the Census website or with the tigris package. See the "Mapping BLS Data" vignette for this package.

Usage

map_bls(
  map_data, 
  fill_rate = NULL, 
  labtitle = NULL, 
  stateName = NULL, 
  projection = NULL, 
  lowFill = "green", 
  ...)
map_bls

        highFill = "red",
...
)

Arguments

map_data
    Dataframe to be used as the map's measures. Usually a result of calls to the
get_bls_county() or get_bls_state() functions, but other dataframes, which
include FIPS codes may be used as well.

fill_rate
    Column name from the dataframe that you want to use as a fill value, in quotes.
NOTE: This argument is mandatory!

labtitle
    The main title label for your map passed as a string. The default is no title.

stateName
    Optional argument if you only want to map a single state or a group of selected
states. The argument accepts state full state names in quotes.

projection
    Choices of map projection are "lambert" or "mercator". By default, the function
selects Lambert for county data and Mercator for single states. and Lambert for
nationwide views.

lowFill
    The fill color of the lower values being mapped. The default color is green, but
can be changed to any color accepted by ggplot2::scale_fill_gradient.

highFill
    The fill color of the higher values being mapped. The default color is green, but
can be changed to any color accepted by ggplot2::scale_fill_gradient.

... additional arguments

See Also

https://cran.r-project.org/package=tigris

Examples

## Not run:
# Download the most current month unemployment statistics on a county level.
df <- get_bls_county()

# Map the unemployment rate by county.
bls_gg <- map_bls(map_data = df, fill_rate = "unemployed_rate",
                  labtitle = "Unemployment Rate")
bls_gg

# Map the unemployment rate for Florida and Alabama.

df <- get_bls_county(stateName = c("Florida", "Alabama"))

bls_gg <- map_bls(map_data = df, fill_rate = "unemployed_rate",
                  stateName = c("Florida", "Alabama"))

bls_gg

# Download state employment statistics for April 2016.
df <- get_bls_state("April 2016", seasonality = TRUE)

# Map the unemployment rate from data set.
bls_gg <- map_bls(map_data = df, fill_rate = "unemployed_rate",
                  labtitle = "Unemployment Rate")
bls_gg

## End(Not run)

---

qcew_api

Request data from the Quarterly Census of Employment and Wages.

Description

Return data from the QCEW API. This is separate from the main BLS API and returns quarterly data sliced by industry, area or size. Industry is identified by NIACS code and area is identified by FIPS code. A key is not required for the QCEW API.

Usage

qcew_api(year = 2018, qtr = "a", slice = NULL, sliceCode = NULL, ...)

Arguments

year
These data begin in 2012 and go to the most recent complete quarter. The argument can be entered as an integer or a character. The default is 2012.

qtr
Quarter: This can be any integer between 1 and 4, or "A" for annual. The argument can be entered as an integer or a character. The default is 1, which returns the first quarter.

slice
The slice should be one of the three data slices offered by the API; "industry", "area", or "size."

sliceCode
The slice codes depend on what slice you select. For example, if you select the "area" slice, your sliceCode should be a FIPS code. If you select "industry," your sliceCode should be a NIACS code. There are three internal data sets containing acceptable slice codes to help with selections; blscrapeR::niacs contains industry codes and descriptions, blscrapeR::area_titles contains FIPS codes and area descriptions, and blscrapeR::size_titles contains industry size codes. These codes can be used for the sliceCode argument.

...

additional arguments

See Also

https://data.bls.gov/cew/doc/access/csv_data_slices.htm
quick_employed_level

Examples

# A request for the employment levels and wages for NIACS 5112: Software Publishers.
dat <- qcew_api(year=2017, qtr="a", slice="industry", sliceCode=5112)

quick_employed_level  Quick employed level

Description

Returns the employment level. SeriesID: LNS12000000 If you installed a BLS_KEY with the set_bls_key() function, it will detect it and use your key. This counts against your daily query limit.

Usage

quick_employed_level()

Examples

## Not run:
df <- quick_employed_level()

## End(Not run)

quick_employed_rate  Quick employed rate

Description

Returns the "employment to population ratio." SeriesID: LNS12300000 If you installed a BLS_KEY with the set_bls_key() function, it will detect it and use your key. This counts against your daily query limit.

Usage

quick_employed_rate()

Examples

## Not run:
df <- quick_employed_rate()

## End(Not run)
quick_laborForce_level

Quick Civilian Labor Force Level

Description
Returns the civilian labor force level. SeriesID: LNS11000000. If you installed a BLS_KEY with the set_bls_key() function, it will detect it and use your key. This counts against your daily query limit.

Usage
quick_laborForce_level()

Examples
## Not run:
df <- quick_laborForce_level()

## End(Not run)

quick_laborForce_rate

Quick Civilian Labor Force Rate

Description
Returns the civilian labor force participation rate. SeriesID: LNS11300000. If you installed a BLS_KEY with the set_bls_key() function, it will detect it and use your key. This counts against your daily query limit.

Usage
quick_laborForce_rate()

Examples
## Not run:
df <- quick_laborForce_rate()

## End(Not run)
quick_nonfarm_employed

Quick total nonfarm employment

Description

Returns the Total Nonfarm Payroll Employment, seasonally adjusted. BLS id CES0000000001. If you installed a BLS_KEY with the set_bls_key() function, it will detect it and use your key. This counts against your daily query limit.

Usage

quick_nonfarm_employed()

Examples

## Not run:
df <- quick_nonfarm_employed()

## End(Not run)

quick_unemp_level

Quick unemployment level function

Description

Returns the unemployment level. SeriesID: LNS13000000. If you installed a BLS_KEY with the set_bls_key() function, it will detect it and use your key. This counts against your daily query limit.

Usage

quick_unemp_level()

Examples

## Not run:
df <- quick_unemp_level()

## End(Not run)
quick_unemp_rate  Quick unemployment rate function

Description

Returns the "official" unemployment rate. That is, seasonally adjusted, 16 year and over, or the "U-3" rate. SeriesID: LNS14000000. If you installed a BLS_KEY with the set_bls_key() function, it will detect it and use your key. This counts against your daily query limit.

Usage

quick_unemp_rate()

Examples

## Not run:
df <- quick_unemp_rate()

## End(Not run)

search_ids  Search the internal series_id data set.

Description

Search the internal series_id data set.

Usage

search_ids(keyword = NULL, periodicity_code = NULL, ...)

Arguments

keyword  The keyword you want to search. This can be a fuzzy search of multiple keywords. For example "unemployment women".

periodicity_code  The period of time of the surveys you are interested in. This is usually monthly, quarterly or annually. You can type full words or beginning letters. For example, periodicity_code = "m" or periodicity_code = "monthly".

...  additional arguments

Examples

# Search for monthly Unemployment Rates for Women
ids <- search_ids(keyword = c("Unemployment Rate", "Women"), periodicity_code = "M")
set_bls_key

__Install a BLS API Key in Your .Renviron File for Repeated Use__

**Description**

This function will add your BLS API key to your .Renviron file so it can be called securely without being stored in your code. After you have installed your key, it can be called any time by typing `Sys.getenv("BLS_KEY")` and can be used in package functions by simply typing `BLS_KEY`. If you do not have an .Renviron file, the function will create one for you. If you already have an .Renviron file, the function will append the key to your existing file, while making a backup of your original file for disaster recovery purposes.

**Usage**

```r
set_bls_key(key = NA, overwrite = NA)
```

**Arguments**

- **key**: The API key provided to you from the BLS formatted in quotes. A key can be acquired at [https://data.bls.gov/registrationEngine/](https://data.bls.gov/registrationEngine/)
- **overwrite**: If this is set to TRUE, it will overwrite an existing BLS_KEY that you already have in your .Renviron file.

**Examples**

```r
defualt_set_bls_key:
    set_bls_key("111111abc")
    # First time, relead your enviornment so you can use the key without restarting R.
    readRenviron("~/.Renviron")
    # You can check it with:
    Sys.getenv("BLS_KEY")

defualt_set_bls_key:
    set_bls_key("111111abc", overwrite = TRUE)
    # First time, relead your enviornment so you can use the key without restarting R.
    readRenviron("~/.Renviron")
    # You can check it with:
    Sys.getenv("BLS_KEY")
```

## Not run:

```r
# First time, relead your enviornment so you can use the key without restarting R.
readRenviron("~/.Renviron")
# You can check it with:
Sys.getenv("BLS_KEY")
```

## End(Not run)
state_map_data  
Dataset for mapping U.S. states

Description

A fortified data set that includes U.S. states and is suitable for making maps with ggplot2. The county FIPS codes and boundary lines from the most recent TIGER release from the U.S. Census Bureau.

- long: State longitude
- lat: State latitude
- order: Polygon order
- hole: hole
- piece: Polygon piece
- id: FIPS Code
- group: group

Usage

data(state_map_data)

Format

A data frame with 13,660 rows and 7 variables

Details

Dataset with the lat. / long. of county FIPS codes used for mapping.

Built-in dataset for use with the b1s_map_state() function. To access the data directly, issue the command data(state_map_data)

Note

Last updated 2017-01-26
Description
A utility function to run a tryCatch on a URL.

Usage
urlExists(target)

Arguments
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