

Package ‘censusxy’

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Title Access the U.S. Census Bureau's Geocoding API System

Version 1.1.1

Description Provides access to the U.S. Census Bureau's API for matching American street addresses with their longitude and latitude. This includes both single address matching as well as batch functionality for multiple addresses. Census geographies can be appended to addresses if desired, and reverse geocoding of point locations to census geographies is also supported.

Depends R (>= 3.4)

License GPL-3

URL <https://chris-prener.github.io/censusxy/>

BugReports <https://github.com/chris-prener/censusxy/issues>

Encoding UTF-8

LazyData true

RoxygenNote 7.2.0

Imports doParallel, foreach, httr, parallel, utils

Suggests covr, knitr, rmarkdown, sf, testthat

VignetteBuilder knitr

NeedsCompilation no

Author Christopher Prener [aut, cre] (<<https://orcid.org/0000-0002-4310-9888>>),
Branson Fox [aut] (<<https://orcid.org/0000-0002-4361-2811>>),
Christopher Kenny [ctb] (<<https://orcid.org/0000-0002-9386-6860>>)

Maintainer Christopher Prener <chris.prener@gmail.com>

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| | |
|----------------|-------------------------------------|
| cxy_benchmarks | <i>Get Current Valid Benchmarks</i> |
|----------------|-------------------------------------|

Description

Get Current Valid Benchmarks

Usage

```
cxy_benchmarks()
```

Value

A data.frame containing valid Census Benchmarks

Examples

```
cxy_benchmarks()
```

| | |
|-------------|---------------------------------------|
| cxy_geocode | <i>Batch Geocode Parsed Addresses</i> |
|-------------|---------------------------------------|

Description

Provides access to the US Census Bureau batch endpoints for locations and geographies. The function implements iteration and optional parallelization in order to geocode datasets larger than the API limit of 1,000 and more efficiently than sending 10,000 per request. It also supports multiple outputs, including (optionally, if sf is installed,) sf class objects.

Usage

```

cxy_geocode(
  .data,
  id = NULL,
  street,
  city = NULL,
  state = NULL,
  zip = NULL,
  return = "locations",
  benchmark = "Public_AR_Current",
  vintage = NULL,
  timeout = 30,
  parallel = 1,
  class = "dataframe",
  output = "simple"
)

```

Arguments

| | |
|------------------------|---|
| <code>.data</code> | data.frame containing columns with structured address data |
| <code>id</code> | Optional String - Name of column containing unique ID |
| <code>street</code> | String - Name of column containing street address |
| <code>city</code> | Optional String - Name of column containing city |
| <code>state</code> | Optional String - Name of column containing state |
| <code>zip</code> | Optional String - Name of column containing zip code |
| <code>return</code> | One of 'locations' or 'geographies' denoting returned information from the API. If you would like Census geography data, you must specify a valid vintage for your benchmark. |
| <code>benchmark</code> | Optional Census benchmark to geocode against. To obtain current valid benchmarks, use the <code>cxy_benchmarks()</code> function. |
| <code>vintage</code> | Optional Census vintage to geocode against. You may use the <code>cxy_vintages()</code> function to obtain valid vintages. |
| <code>timeout</code> | Numeric, in minutes, how long until request times out |
| <code>parallel</code> | Integer, number of cores greater than one if parallel requests are desired. All operating systems now use a SOCK cluster, and the dependencies are not longer suggested packages. Instead, they are installed by default. Note that this value may not represent more cores than the system reports are available. If it is larger, the maximum number of available cores will be used. |
| <code>class</code> | One of 'dataframe' or 'sf' denoting the output class. 'sf' will only return matched addresses. |
| <code>output</code> | One of 'simple' or 'full' denoting the returned columns. Simple returns just coordinates. |

Details

Parallel requests are supported across platforms. If supported (POSIX platforms) the process is forked, otherwise a SOCK cluster is used (Windows). You may not specify more cores than the system reports are available

Value

A data.frame or sf object containing geocoded results

Examples

```
# load data
x <- stl_homicides[1:10,]

# geocode
cxy_geocode(x, street = 'street_address', city = 'city', state = 'state', zip = 'postal_code',
            return = 'locations', class = 'dataframe', output = 'simple')
```

cxy_geography

Geocode Single Coordinate Pair

Description

Provides access to the GeoLookup API of the US Census Bureau. Returns census geographies for a single geographic point.

Usage

```
cxy_geography(
  lon,
  lat,
  benchmark = "Public_AR_Current",
  vintage = "Current_Current"
)
```

Arguments

| | |
|-----------|---|
| lon | Numeric or String Containing Longitude (x) of Point |
| lat | Numeric or String Containing Latitude (y) of Point |
| benchmark | Optional ID or Name of Census Benchmark. See Details. |
| vintage | Optional ID or Name of Census Vintage. See Details. |

Details

This function can be used to locate geographic information given a geographic point. It does not provide an address like a reverse-geocoder

To obtain current valid benchmarks, use the `cxy_benchmarks()` function

To use this function, you must specify a valid vintage for your benchmark. You may use the `cxy_vintages()` function to obtain valid Vintages for a given benchmark. See `vignette('censusxy')` for a full walkthrough.

Value

A data.frame containing matched address or NULL if not matches

Examples

```
cxy_geography(lon = -90.23324, lat = 38.63593)
```

| | |
|------------|--|
| cxy_online | <i>Geocode Single One Line Address</i> |
|------------|--|

Description

Provides access to the online single address geocoding API from the US Census Bureau. This can be used with an address that is not parsed.

Usage

```
cxy_online(  
  address,  
  return = "locations",  
  benchmark = "Public_AR_Current",  
  vintage = NULL  
)
```

Arguments

| | |
|-----------|---|
| address | String containing a single line address |
| return | One of 'locations' or 'geographies' See Details. |
| benchmark | Optional ID or Name of Census Benchmark. See Details. |
| vintage | Optional ID or Name of Census Vintage. See Details. |

Details

To obtain current valid benchmarks, use the `cxy_benchmarks()` function.

If you want to append census geographies, you must specify a valid vintage for your benchmark. You may use the `cxy_vintages()` function to obtain valid Vintages. See `vignette('censusxy')` for a full walkthrough.

Value

A data.frame containing matched address or NULL if not matches

Examples

```
cxy_online(address = "20 N Grand Blvd, St Louis, MO 63108", return = "locations")
```

| | |
|------------|--------------------------------------|
| cxy_single | <i>Geocode Single Parsed Address</i> |
|------------|--------------------------------------|

Description

Provides access to the structured single address geocoding API from the US Census Bureau.

Usage

```
cxy_single(
  street,
  city = NULL,
  state = NULL,
  zip = NULL,
  return = "locations",
  benchmark = "Public_AR_Current",
  vintage = NULL
)
```

Arguments

| | |
|-----------|--|
| street | String containing street address |
| city | Optional String containing city |
| state | Optional String containing state |
| zip | Optional String or Integer containing 5-digit Zip Code |
| return | One of 'locations' or 'geographies' See Details. |
| benchmark | Optional ID or Name of Census Benchmark. See Details. |
| vintage | Optional ID or Name of Census Vintage. See Details. |

Details

To obtain current valid benchmarks, use the `cxy_benchmarks()` function.

If you want to append census geographies, you must specify a valid vintage for your benchmark. You may use the `cxy_vintages()` function to obtain valid Vintages. See `vignette('censusxy')` for a full walkthrough.

Value

A data.frame containing matched address or NULL if not matches

Examples

```
cxy_single(street = "20 N Grand Blvd", city = "St Louis", state = "MO", zip = "63108",  
return = "locations")
```

| | |
|--------------|-----------------------------------|
| cxy_vintages | <i>Get Current Valid Vintages</i> |
|--------------|-----------------------------------|

Description

Get Current Valid Vintages

Usage

```
cxy_vintages(benchmark)
```

Arguments

benchmark Name or ID of Census Benchmark

Value

A data.frame containing valid Census Vintages for a given benchmark

Examples

```
cxy_vintages("Public_AR_Current")
```

| | |
|---------------|--|
| stl_homicides | <i>Homicides in the City of St. Louis, 2008 - 2018</i> |
|---------------|--|

Description

An example data set containing the addresses for homicides reported by the Saint Louis Metropolitan Police Department

Usage

```
data(stl_homicides)
```

Format

A tibble with 1822 rows and 6 variables:

street_address number, street and street suffix where homicide occurred

year year homicide occurred

date data homicide occurred

state state abbreviation of location, in these data, all "MO"

postal_code zipcode/postal code of location, in these data all NA

city city of location, in these data all "St. Louis"

Source

[St. Louis Metropolitan Police Department](#)

Examples

```
str(stl_homicides)
head(stl_homicides)
```

stl_homicides_small *Homicides in the City of St. Louis July, 2018*

Description

An example data set containing the addresses for homicides reported by the Saint Louis Metropolitan Police Department

Usage

```
data(stl_homicides_small)
```

Format

A tibble with 24 rows and 6 variables:

street_address number, street and street suffix where homicide occurred

year year homicide occurred

date data homicide occurred

state state abbreviation of location, in these data, all "MO"

postal_code zipcode/postal code of location, in these data all NA

city city of location, in these data all "St. Louis"

Source

[St. Louis Metropolitan Police Department](#)

Examples

```
str(stl_homicides_small)
head(stl_homicides_small)
```

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