Package: nominatimlite (via r-universe)

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Type Package

Title Interface with 'Nominatim' API Service

Version 0.4.1

Description Lite interface for getting data from 'OSM' service 'Nominatim' <https://nominatim.org/release-docs/latest/>. Extract coordinates from addresses, find places near a set of coordinates and return spatial objects on 'sf' format.

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BugReports https://github.com/dieghernan/nominatimlite/issues

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Contents

`bbox_to_poly` *Coerce a bounding box to a* `sfc` `POLYGON` *object*

Description

Create a `sfc` object from the coordinates of a bounding box.

Usage

```
bbox_to_poly(bbox = NA, xmin = NA, ymin = NA, xmax = NA, ymax = NA, crs = 4326)
```

Arguments

`bbox`	Numeric vector of 4 elements representing the coordinates of the bounding box. Values should be `c(xmin, ymin, xmax, ymax)`.
`xmin, ymin, xmax, ymax`	Alternatively, you can use these named parameters instead of `bbox`.
`crs`	coordinate reference system, something suitable as input to st_crs

Details

Bounding boxes can be located using different online tools, as Bounding Box Tool.

Value

A sfc object of class POLYGON.

See Also

sf::st_as_sfc() and sf::st_sfc().

Get sf objects: geo_address_lookup_sf(), geo_amenity_sf(), geo_lite_sf(), geo_lite_struct_sf(), reverse_geo_lite_sf()

Examples

```
# bounding box of Germany
bbox_GER <- c(5.86631529, 47.27011137, 15.04193189, 55.09916098)

bbox_GER_sf <- bbox_to_poly(bbox_GER)


library(ggplot2)

ggplot(bbox_GER_sf) +
  geom_sf()

# Extract the bounding box of a sf object
sfobj <- geo_lite_sf("seychelles", points_only = FALSE)

sfobj

# Need at least one non-empty object
if (any(!sf::st_is_empty(sfobj))) {
  bbox <- sf::st_bbox(sfobj)

  bbox

  bbox_sfobj <- bbox_to_poly(bbox)

  ggplot(bbox_sfobj) +
    geom_sf(fill = "lightblue", alpha = 0.5) +
    geom_sf(data = sfobj, fill = "wheat")
}
```

geo_address_lookup *Address lookup API*

Description

The lookup API allows to query the address and other details of one or multiple OSM objects like node, way or relation. This function returns the `tibble` associated with the query, see `geo_address_lookup_sf()` for retrieving the data as a spatial object (`sf` format).

Usage

```
geo_address_lookup(
  osm_ids,
  type = c("N", "W", "R"),
  lat = "lat",
  long = "lon",
  full_results = FALSE,
  return_addresses = TRUE,
  verbose = FALSE,
  nominatim_server = "https://nominatim.openstreetmap.org/",
  custom_query = list()
)
```

Arguments

`osm_ids`	Vector of OSM identifiers as **numeric** (`c(00000, 11111, 22222)`).
`type`	Vector character of the type of the OSM type associated to each `osm_ids`. Possible values are node (`"N"`), way (`"W"`) or relation (`"R"`). If a single value is provided it would be recycled.
`lat`	Latitude column name in the output data (default `"lat"`).
`long`	Longitude column name in the output data (default `"long"`).
`full_results`	Returns all available data from the API service. If `FALSE` (default) only latitude, longitude and address columns are returned. See also `return_addresses`.
`return_addresses`	Return input addresses with results if `TRUE`.
`verbose`	If `TRUE` then detailed logs are output to the console.
`nominatim_server`	The URL of the Nominatim server to use. Defaults to `"https://nominatim.openstreetmap.org/"`.
`custom_query`	A named list with API-specific parameters to be used (i.e. `list(countrycodes = "US")`). See **Details**.

Details

See https://nominatim.org/release-docs/develop/api/Lookup/ for additional parameters to be passed to `custom_query`.

Value

A tibble with the results found by the query.

See Also

geo_address_lookup_sf().

Address Lookup API: geo_address_lookup_sf()

Geocoding: geo_address_lookup_sf(), geo_amenity(), geo_amenity_sf(), geo_lite(), geo_lite_sf(), geo_lite_struct(), geo_lite_struct_sf()

Examples

```
ids <- geo_address_lookup(osm_ids = c(46240148, 34633854), type = "W")

ids

several <- geo_address_lookup(c(146656, 240109189), type = c("R", "N"))
several
```

---

geo_address_lookup_sf *Address lookup API in* R*hrefhttps://CRAN.R-project.org/package=sf*sf *format*

Description

The lookup API allows to query the address and other details of one or multiple OSM objects like node, way or relation. This function returns the spatial object associated with the query using sf, see geo_address_lookup() for retrieving the data in tibble format.

Usage

```
geo_address_lookup_sf(
  osm_ids,
  type = c("N", "W", "R"),
  full_results = FALSE,
  return_addresses = TRUE,
  verbose = FALSE,
  nominatim_server = "https://nominatim.openstreetmap.org/",
  custom_query = list(),
  points_only = TRUE
)
```

Arguments

osm_ids	Vector of OSM identifiers as **numeric** (c(00000, 11111, 22222)).
type	Vector character of the type of the OSM type associated to each osm_ids. Possible values are node ("N"), way ("W") or relation ("R"). If a single value is provided it would be recycled.
full_results	Returns all available data from the API service. If FALSE (default) only address columns are returned. See also return_addresses.
return_addresses	Return input addresses with results if TRUE.
verbose	If TRUE then detailed logs are output to the console.
nominatim_server	The URL of the Nominatim server to use. Defaults to "https://nominatim.openstreetmap.org/".
custom_query	A named list with API-specific parameters to be used (i.e. list(countrycodes = "US")). See **Details**.
points_only	Logical TRUE/FALSE. Whether to return only spatial points (TRUE, which is the default) or potentially other shapes as provided by the Nominatim API (FALSE). See **About Geometry Types**.

Details

See https://nominatim.org/release-docs/latest/api/Lookup/ for additional parameters to be passed to custom_query.

Value

A sf object with the results.

About Geometry Types

The parameter points_only specifies whether the function results will be points (all Nominatim results are guaranteed to have at least point geometry) or possibly other spatial objects.

Note that the type of geometry returned in case of points_only = FALSE will depend on the object being geocoded:

- Administrative areas, major buildings and the like will be returned as polygons.
- Rivers, roads and their like as lines.
- Amenities may be points even in case of a points_only = FALSE call.

The function is vectorized, allowing for multiple addresses to be geocoded; in case of points_only = FALSE multiple geometry types may be returned.

See Also

geo_address_lookup().

Address Lookup API: geo_address_lookup()

Geocoding: geo_address_lookup(), geo_amenity(), geo_amenity_sf(), geo_lite(), geo_lite_sf(), geo_lite_struct(), geo_lite_struct_sf()

Get sf objects: bbox_to_poly(), geo_amenity_sf(), geo_lite_sf(), geo_lite_struct_sf(), reverse_geo_lite_sf()

Examples

```
# Notre Dame Cathedral, Paris

NotreDame <- geo_address_lookup_sf(osm_ids = 201611261, type = "W")

# Need at least one non-empty object
if (any(!sf::st_is_empty(NotreDame))) {
  library(ggplot2)

  ggplot(NotreDame) +
    geom_sf()
}

NotreDame_poly <- geo_address_lookup_sf(201611261,
  type = "W",
  points_only = FALSE
)


if (any(!sf::st_is_empty(NotreDame_poly))) {
  ggplot(NotreDame_poly) +
    geom_sf()
}

# It is vectorized

several <- geo_address_lookup_sf(c(146656, 240109189), type = c("R", "N"))
several
```

`geo_amenity` *Geocode amenities*

Description

This function search amenities as defined by OpenStreetMap on a restricted area defined by a bounding box in the form (<xmin>, <ymin>, <xmax>, <ymax>). This function returns the tibble associated with the query, see geo_amenity_sf() for retrieving the data as a spatial object (sf format).

Usage

```
geo_amenity(
  bbox,
  amenity,
  lat = "lat",
  long = "lon",
  limit = 1,
  full_results = FALSE,
  return_addresses = TRUE,
  verbose = FALSE,
  nominatim_server = "https://nominatim.openstreetmap.org/",
  progressbar = TRUE,
  custom_query = list(),
  strict = FALSE
)
```

Arguments

bbox	The bounding box (viewbox) used to limit the search. It could be: • A numeric vector of **longitude** (x) and **latitude** (y) (xmin, ymin, xmax, ymax). See **Details**. • A sf or sfc object.
amenity	A character (or a vector of characters) with the amenities to be geolocated (i.e. c("pub", "restaurant")). See osm_amenities.
lat	Latitude column name in the output data (default "lat").
long	Longitude column name in the output data (default "long").
limit	Maximum number of results to return per input address. Note that each query returns a maximum of 50 results.
full_results	Returns all available data from the API service. If FALSE (default) only latitude, longitude and address columns are returned. See also return_addresses.
return_addresses	Return input addresses with results if TRUE.
verbose	If TRUE then detailed logs are output to the console.
nominatim_server	The URL of the Nominatim server to use. Defaults to "https://nominatim.openstreetmap.org/".
progressbar	Logical. If TRUE displays a progress bar to indicate the progress of the function.
custom_query	A named list with API-specific parameters to be used (i.e. list(countrycodes = "US")). See **Details**.
strict	Logical TRUE/FALSE. Force the results to be included inside the bbox. Note that Nominatim default behavior may return results located outside the provided bounding box.

Details

Bounding boxes can be located using different online tools, as Bounding Box Tool.

For a full list of valid amenities see https://wiki.openstreetmap.org/wiki/Key:amenity and osm_amenities.

See https://nominatim.org/release-docs/latest/api/Search/ for additional parameters to be passed to `custom_query`.

Value

A `tibble` with the results found by the query.

See Also

Other amenity: `geo_amenity_sf()`, `osm_amenities`

Geocoding: `geo_address_lookup()`, `geo_address_lookup_sf()`, `geo_amenity_sf()`, `geo_lite()`, `geo_lite_sf()`, `geo_lite_struct()`, `geo_lite_struct_sf()`

Examples

```
# Times Square, NY, USA
bbox <- c(
  -73.9894467311, 40.75573629,
  -73.9830630737, 40.75789245
)

geo_amenity(
  bbox = bbox,
  amenity = "restaurant"
)

# Several amenities
geo_amenity(
  bbox = bbox,
  amenity = c("restaurant", "pub")
)

# Increase limit and use with strict
geo_amenity(
  bbox = bbox,
  amenity = c("restaurant", "pub"),
  limit = 10,
  strict = TRUE
)
```

geo_amenity_sf *Geocode amenities in* R*hrefhttps://CRAN.R-project.org/package=sf***sf** *format*

Description

This function search amenities as defined by OpenStreetMap on a restricted area defined by a bounding box in the form (<xmin>, <ymin>, <xmax>, <ymax>). This function returns the spatial object associated with the query using **sf**, see `geo_amenity()` for retrieving the data in `tibble` format.

Usage

```
geo_amenity_sf(
  bbox,
  amenity,
  limit = 1,
  full_results = FALSE,
  return_addresses = TRUE,
  verbose = FALSE,
  nominatim_server = "https://nominatim.openstreetmap.org/",
  progressbar = TRUE,
  custom_query = list(),
  strict = FALSE,
  points_only = TRUE
)
```

Arguments

bbox	The bounding box (viewbox) used to limit the search. It could be: • A numeric vector of **longitude** (x) and **latitude** (y) (xmin, ymin, xmax, ymax). See **Details**. • A `sf` or `sfc` object.
amenity	A character (or a vector of characters) with the amenities to be geolocated (i.e. c("pub", "restaurant")). See osm_amenities.
limit	Maximum number of results to return per input address. Note that each query returns a maximum of 50 results.
full_results	Returns all available data from the API service. If FALSE (default) only latitude, longitude and address columns are returned. See also return_addresses.
return_addresses	Return input addresses with results if TRUE.
verbose	If TRUE then detailed logs are output to the console.
nominatim_server	The URL of the Nominatim server to use. Defaults to "https://nominatim.openstreetmap.org/".
progressbar	Logical. If TRUE displays a progress bar to indicate the progress of the function.

custom_query — A named list with API-specific parameters to be used (i.e. `list(countrycodes = "US")`). See **Details**.

strict — Logical `TRUE/FALSE`. Force the results to be included inside the `bbox`. Note that Nominatim default behavior may return results located outside the provided bounding box.

points_only — Logical `TRUE/FALSE`. Whether to return only spatial points (`TRUE`, which is the default) or potentially other shapes as provided by the Nominatim API (`FALSE`). See **About Geometry Types**.

Details

Bounding boxes can be located using different online tools, as Bounding Box Tool.

For a full list of valid amenities see https://wiki.openstreetmap.org/wiki/Key:amenity and osm_amenities.

See https://nominatim.org/release-docs/latest/api/Search/ for additional parameters to be passed to `custom_query`.

Value

A `sf` object with the results.

About Geometry Types

The parameter `points_only` specifies whether the function results will be points (all Nominatim results are guaranteed to have at least point geometry) or possibly other spatial objects.

Note that the type of geometry returned in case of `points_only = FALSE` will depend on the object being geocoded:

- Administrative areas, major buildings and the like will be returned as polygons.
- Rivers, roads and their like as lines.
- Amenities may be points even in case of a `points_only = FALSE` call.

The function is vectorized, allowing for multiple addresses to be geocoded; in case of `points_only = FALSE` multiple geometry types may be returned.

See Also

Other amenity: `geo_amenity()`, `osm_amenities`

Geocoding: `geo_address_lookup()`, `geo_address_lookup_sf()`, `geo_amenity()`, `geo_lite()`, `geo_lite_sf()`, `geo_lite_struct()`, `geo_lite_struct_sf()`

Get `sf` objects: `bbox_to_poly()`, `geo_address_lookup_sf()`, `geo_lite_sf()`, `geo_lite_struct_sf()`, `reverse_geo_lite_sf()`

Examples

```
# Usera, Madrid

library(ggplot2)
mad <- geo_lite_sf("Usera, Madrid, Spain", points_only = FALSE)


# Restaurants, pubs and schools

rest_pub <- geo_amenity_sf(mad, c("restaurant", "pub", "school"),
  limit = 50
)

if (any(!sf::st_is_empty(rest_pub))) {
  ggplot(mad) +
    geom_sf() +
    geom_sf(data = rest_pub, aes(color = query, shape = query))
}
```

`geo_lite` *Address search API (free-form query)*

Description

Geocodes addresses given as character values. This function returns the `tibble` associated with the query, see `geo_lite_sf()` for retrieving the data as a spatial object (`sf` format).

This function correspond to the **free-form query** search described in the API endpoint.

Usage

```
geo_lite(
  address,
  lat = "lat",
  long = "lon",
  limit = 1,
  full_results = FALSE,
  return_addresses = TRUE,
  verbose = FALSE,
  nominatim_server = "https://nominatim.openstreetmap.org/",
  progressbar = TRUE,
  custom_query = list()
)
```

Arguments

address	character with single line address, e.g. ("1600 Pennsylvania Ave NW, Washington") or a vector of addresses (c("Madrid", "Barcelona")).
lat	Latitude column name in the output data (default "lat").
long	Longitude column name in the output data (default "long").
limit	Maximum number of results to return per input address. Note that each query returns a maximum of 50 results.
full_results	Returns all available data from the API service. If FALSE (default) only latitude, longitude and address columns are returned. See also return_addresses.
return_addresses	Return input addresses with results if TRUE.
verbose	If TRUE then detailed logs are output to the console.
nominatim_server	The URL of the Nominatim server to use. Defaults to "https://nominatim.openstreetmap.org/".
progressbar	Logical. If TRUE displays a progress bar to indicate the progress of the function.
custom_query	A named list with API-specific parameters to be used (i.e. list(countrycodes = "US")). See **Details**.

Details

See https://nominatim.org/release-docs/latest/api/Search/ for additional parameters to be passed to custom_query.

Value

A tibble with the results found by the query.

See Also

geo_lite_sf(), tidygeocoder::geo().

Geocoding: geo_address_lookup(), geo_address_lookup_sf(), geo_amenity(), geo_amenity_sf(), geo_lite_sf(), geo_lite_struct(), geo_lite_struct_sf()

Examples

```
geo_lite("Madrid, Spain")

# Several addresses
geo_lite(c("Madrid", "Barcelona"))

# With options: restrict search to USA
geo_lite(c("Madrid", "Barcelona"),
  custom_query = list(countrycodes = "US"),
  full_results = TRUE
)
```

geo_lite_sf *Address search API in* R*hrefhttps://CRAN.R-project.org/package=sf***sf** *format (free-form query)*

Description

This function allows you to geocode addresses and returns the corresponding spatial object. This function returns the spatial object associated with the query using **sf**, see `geo_lite()` for retrieving the data in `tibble` format.

This function correspond to the **free-form query** search described in the API endpoint.

Usage

```
geo_lite_sf(
  address,
  limit = 1,
  return_addresses = TRUE,
  full_results = FALSE,
  verbose = FALSE,
  progressbar = TRUE,
  nominatim_server = "https://nominatim.openstreetmap.org/",
  custom_query = list(),
  points_only = TRUE
)
```

Arguments

`address`	`character` with single line address, e.g. (`"1600 Pennsylvania Ave NW, Washington"`) or a vector of addresses (`c("Madrid", "Barcelona")`).
`limit`	Maximum number of results to return per input address. Note that each query returns a maximum of 50 results.
`return_addresses`	Return input addresses with results if `TRUE`.
`full_results`	Returns all available data from the API service. If `FALSE` (default) only address columns are returned. See also `return_addresses`.
`verbose`	If `TRUE` then detailed logs are output to the console.
`progressbar`	Logical. If `TRUE` displays a progress bar to indicate the progress of the function.
`nominatim_server`	The URL of the Nominatim server to use. Defaults to `"https://nominatim.openstreetmap.org/"`.
`custom_query`	A named list with API-specific parameters to be used (i.e. `list(countrycodes = "US")`). See **Details**.
`points_only`	Logical `TRUE/FALSE`. Whether to return only spatial points (`TRUE`, which is the default) or potentially other shapes as provided by the Nominatim API (`FALSE`). See **About Geometry Types**.

Details

See https://nominatim.org/release-docs/latest/api/Search/ for additional parameters to be passed to custom_query.

Value

A sf object with the results.

About Geometry Types

The parameter points_only specifies whether the function results will be points (all Nominatim results are guaranteed to have at least point geometry) or possibly other spatial objects.

Note that the type of geometry returned in case of points_only = FALSE will depend on the object being geocoded:

- Administrative areas, major buildings and the like will be returned as polygons.
- Rivers, roads and their like as lines.
- Amenities may be points even in case of a points_only = FALSE call.

The function is vectorized, allowing for multiple addresses to be geocoded; in case of points_only = FALSE multiple geometry types may be returned.

See Also

geo_lite().

Geocoding: geo_address_lookup(), geo_address_lookup_sf(), geo_amenity(), geo_amenity_sf(), geo_lite(), geo_lite_struct(), geo_lite_struct_sf()

Get sf objects: bbox_to_poly(), geo_address_lookup_sf(), geo_amenity_sf(), geo_lite_struct_sf(), reverse_geo_lite_sf()

Examples

```
# Map - Points
library(ggplot2)

string <- "Statue of Liberty, NY, USA"
sol <- geo_lite_sf(string)

if (any(!sf::st_is_empty(sol))) {
  ggplot(sol) +
    geom_sf()
}

sol_poly <- geo_lite_sf(string, points_only = FALSE)

if (any(!sf::st_is_empty(sol_poly))) {
  ggplot(sol_poly) +
    geom_sf() +
```

```
    geom_sf(data = sol, color = "red")
}
# Several results

madrid <- geo_lite_sf("Comunidad de Madrid, Spain",
  limit = 2,
  points_only = FALSE, full_results = TRUE
)

if (any(!sf::st_is_empty(madrid))) {
  ggplot(madrid) +
    geom_sf(fill = NA)
}
```

`geo_lite_struct` *Address search API (structured query)*

Description

Geocodes addresses already split into components. This function returns the `tibble` associated with the query, see `geo_lite_struct_sf()` for retrieving the data as a spatial object (`sf` format).

This function correspond to the **structured query** search described in the API endpoint. For performing a free-form search use `geo_lite()`.

Usage

```
geo_lite_struct(
  amenity = NULL,
  street = NULL,
  city = NULL,
  county = NULL,
  state = NULL,
  country = NULL,
  postalcode = NULL,
  lat = "lat",
  long = "lon",
  limit = 1,
  full_results = FALSE,
  return_addresses = TRUE,
  verbose = FALSE,
  nominatim_server = "https://nominatim.openstreetmap.org/",
  custom_query = list()
)
```

Arguments

amenity	Name and/or type of POI, see also geo_amenity.
street	House number and street name.
city	City.
county	County.
state	State.
country	Country.
postalcode	Postal Code.
lat	Latitude column name in the output data (default "lat").
long	Longitude column name in the output data (default "long").
limit	Maximum number of results to return per input address. Note that each query returns a maximum of 50 results.
full_results	Returns all available data from the API service. If FALSE (default) only latitude, longitude and address columns are returned. See also return_addresses.
return_addresses	Return input addresses with results if TRUE.
verbose	If TRUE then detailed logs are output to the console.
nominatim_server	The URL of the Nominatim server to use. Defaults to "https://nominatim.openstreetmap.org/".
custom_query	A named list with API-specific parameters to be used (i.e. list(countrycodes = "US")). See **Details**.

Details

The structured form of the search query allows to look up up an address that is already split into its components. Each parameter represents a field of the address. All parameters are optional. You should only use the ones that are relevant for the address you want to geocode.

See https://nominatim.org/release-docs/latest/api/Search/ for additional parameters to be passed to custom_query.

Value

A tibble with the results found by the query.

See Also

geo_lite_struct_sf(), tidygeocoder::geo().

Geocoding: geo_address_lookup(), geo_address_lookup_sf(), geo_amenity(), geo_amenity_sf(), geo_lite(), geo_lite_sf(), geo_lite_struct_sf()

Examples

```
pl_mayor <- geo_lite_struct(
  street = "Plaza Mayor", country = "Spain",
  limit = 50, full_results = TRUE
)


dplyr::glimpse(pl_mayor)
```

`geo_lite_struct_sf` *Address search API in* R*hrefhttps://CRAN.R-project.org/package=sf***sf** *format (structured query)*

Description

Geocodes addresses already split into components and return the corresponding spatial object. This function returns the spatial object associated with the query using **sf**, see `geo_lite_struct()` for retrieving the data in `tibble` format.

This function correspond to the **structured query** search described in the API endpoint. For performing a free-form search use `geo_lite_sf()`.

Usage

```
geo_lite_struct_sf(
  amenity = NULL,
  street = NULL,
  city = NULL,
  county = NULL,
  state = NULL,
  country = NULL,
  postalcode = NULL,
  limit = 1,
  full_results = FALSE,
  return_addresses = TRUE,
  verbose = FALSE,
  nominatim_server = "https://nominatim.openstreetmap.org/",
  custom_query = list(),
  points_only = TRUE
)
```

Arguments

`amenity`	Name and/or type of POI, see also geo_amenity.
`street`	House number and street name.

city	City.
county	County.
state	State.
country	Country.
postalcode	Postal Code.
limit	Maximum number of results to return per input address. Note that each query returns a maximum of 50 results.
full_results	Returns all available data from the API service. If FALSE (default) only latitude, longitude and address columns are returned. See also return_addresses.
return_addresses	Return input addresses with results if TRUE.
verbose	If TRUE then detailed logs are output to the console.
nominatim_server	The URL of the Nominatim server to use. Defaults to "https://nominatim.openstreetmap.org/".
custom_query	A named list with API-specific parameters to be used (i.e. list(countrycodes = "US")). See **Details**.
points_only	Logical TRUE/FALSE. Whether to return only spatial points (TRUE, which is the default) or potentially other shapes as provided by the Nominatim API (FALSE). See **About Geometry Types**.

Details

The structured form of the search query allows to look up up an address that is already split into its components. Each parameter represents a field of the address. All parameters are optional. You should only use the ones that are relevant for the address you want to geocode.

See https://nominatim.org/release-docs/latest/api/Search/ for additional parameters to be passed to custom_query.

Value

A sf object with the results.

About Geometry Types

The parameter points_only specifies whether the function results will be points (all Nominatim results are guaranteed to have at least point geometry) or possibly other spatial objects.

Note that the type of geometry returned in case of points_only = FALSE will depend on the object being geocoded:

- Administrative areas, major buildings and the like will be returned as polygons.
- Rivers, roads and their like as lines.
- Amenities may be points even in case of a points_only = FALSE call.

The function is vectorized, allowing for multiple addresses to be geocoded; in case of points_only = FALSE multiple geometry types may be returned.

See Also

geo_lite_struct().

Geocoding: geo_address_lookup(), geo_address_lookup_sf(), geo_amenity(), geo_amenity_sf(), geo_lite(), geo_lite_sf(), geo_lite_struct()

Get sf objects: bbox_to_poly(), geo_address_lookup_sf(), geo_amenity_sf(), geo_lite_sf(), reverse_geo_lite_sf()

Examples

```
# Map

pl_mayor <- geo_lite_struct_sf(
  street = "Plaza Mayor",
  county = "Comunidad de Madrid",
  country = "Spain", limit = 50,
  full_results = TRUE, verbose = TRUE
)

# Outline
ccaa <- geo_lite_sf("Comunidad de Madrid, Spain", points_only = FALSE)

library(ggplot2)

if (any(!sf::st_is_empty(pl_mayor), !sf::st_is_empty(ccaa))) {
  ggplot(ccaa) +
    geom_sf() +
    geom_sf(data = pl_mayor, aes(shape = addresstype, color = addresstype))
}
```

---

osm_amenities *OpenStreetMap amenity database*

Description

Database with the list of amenities available on OpenStreetMap.

Format

A tibble with with 136 rows and fields:

category The category of the amenity.

amenity The value of the amenity.

comment A brief description of the type of amenity.

Note

Data extracted on **03 April 2024**.

Source

https://wiki.openstreetmap.org/wiki/Key:amenity

See Also

Other amenity: `geo_amenity()`, `geo_amenity_sf()`

Examples

```
data("osm_amenities")

osm_amenities
```

---

reverse_geo_lite *Reverse geocoding API*

Description

Generates an address from a latitude and longitude. Latitudes must be between $[-90, 90]$ and longitudes between $[-180, 180]$. This function returns the `tibble` associated with the query, see `reverse_geo_lite_sf()` for retrieving the data as a spatial object (`sf` format).

Usage

```
reverse_geo_lite(
  lat,
  long,
  address = "address",
  full_results = FALSE,
  return_coords = TRUE,
  verbose = FALSE,
  nominatim_server = "https://nominatim.openstreetmap.org/",
  progressbar = TRUE,
  custom_query = list()
)
```

Arguments

`lat`	Latitude values in numeric format. Must be in the range $[-90, 90]$.
`long`	Longitude values in numeric format. Must be in the range $[-180, 180]$.
`address`	Address column name in the output data (default `"address"`).
`full_results`	Returns all available data from the API service. If `FALSE` (default) only latitude, longitude and address columns are returned. See also `return_addresses`.

return_coords	Return input coordinates with results if TRUE.
verbose	If TRUE then detailed logs are output to the console.
nominatim_server	The URL of the Nominatim server to use. Defaults to "https://nominatim.openstreetmap.org/".
progressbar	Logical. If TRUE displays a progress bar to indicate the progress of the function.
custom_query	API-specific parameters to be used, passed as a named list (ie. list(zoom = 3)). See **Details**.

Details

See https://nominatim.org/release-docs/develop/api/Reverse/ for additional parameters to be passed to custom_query.

Value

A tibble with the results found by the query.

About Zooming

Use the option custom_query = list(zoom = 3) to adjust the output. Some equivalences on terms of zoom:

zoom	address_detail
3	country
5	state
8	county
10	city
14	suburb
16	major streets
17	major and minor streets
18	building

See Also

reverse_geo_lite_sf(), tidygeocoder::reverse_geo().

Reverse geocoding coordinates: reverse_geo_lite_sf()

Examples

```
reverse_geo_lite(lat = 40.75728, long = -73.98586)

# Several coordinates
reverse_geo_lite(lat = c(40.75728, 55.95335), long = c(-73.98586, -3.188375))

# With options: zoom to country level
sev <- reverse_geo_lite(
```

```
  lat = c(40.75728, 55.95335), long = c(-73.98586, -3.188375),
  custom_query = list(zoom = 0, extratags = TRUE),
  verbose = TRUE, full_results = TRUE
)

dplyr::glimpse(sev)
```

---

reverse_geo_lite_sf *Reverse geocoding API in* R*hrefhttps://CRAN.R-project.org/package=sf***sf** *format*

Description

Generates an address from a latitude and longitude. Latitudes must be between $[-90, 90]$ and longitudes between $[-180, 180]$. This function returns the spatial object associated with the query using **sf**, see `reverse_geo_lite()` for retrieving the data in `tibble` format.

Usage

```
reverse_geo_lite_sf(
  lat,
  long,
  address = "address",
  full_results = FALSE,
  return_coords = TRUE,
  verbose = FALSE,
  nominatim_server = "https://nominatim.openstreetmap.org/",
  progressbar = TRUE,
  custom_query = list(),
  points_only = TRUE
)
```

Arguments

`lat`	Latitude values in numeric format. Must be in the range $[-90, 90]$.
`long`	Longitude values in numeric format. Must be in the range $[-180, 180]$.
`address`	Address column name in the output data (default `"address"`).
`full_results`	Returns all available data from the API service. If `FALSE` (default) only latitude, longitude and address columns are returned. See also `return_addresses`.
`return_coords`	Return input coordinates with results if `TRUE`.
`verbose`	If `TRUE` then detailed logs are output to the console.
`nominatim_server`	The URL of the Nominatim server to use. Defaults to `"https://nominatim.openstreetmap.org/"`.
`progressbar`	Logical. If `TRUE` displays a progress bar to indicate the progress of the function.

custom_query — API-specific parameters to be used, passed as a named list (ie. `list(zoom = 3)`). See **Details**.

points_only — Logical `TRUE/FALSE`. Whether to return only spatial points (`TRUE`, which is the default) or potentially other shapes as provided by the Nominatim API (`FALSE`). See **About Geometry Types**.

Details

See https://nominatim.org/release-docs/develop/api/Reverse/ for additional parameters to be passed to `custom_query`.

Value

A `sf` object with the results.

About Zooming

Use the option `custom_query = list(zoom = 3)` to adjust the output. Some equivalences on terms of zoom:

zoom	address_detail
3	country
5	state
8	county
10	city
14	suburb
16	major streets
17	major and minor streets
18	building

About Geometry Types

The parameter `points_only` specifies whether the function results will be points (all Nominatim results are guaranteed to have at least point geometry) or possibly other spatial objects.

Note that the type of geometry returned in case of `points_only = FALSE` will depend on the object being geocoded:

- Administrative areas, major buildings and the like will be returned as polygons.
- Rivers, roads and their like as lines.
- Amenities may be points even in case of a `points_only = FALSE` call.

The function is vectorized, allowing for multiple addresses to be geocoded; in case of `points_only = FALSE` multiple geometry types may be returned.

See Also

reverse_geo_lite().

Reverse geocoding coordinates: reverse_geo_lite()

Get sf objects: bbox_to_poly(), geo_address_lookup_sf(), geo_amenity_sf(), geo_lite_sf(), geo_lite_struct_sf()

Examples

```
library(ggplot2)

# Coliseum coords
col_lon <- 12.49309
col_lat <- 41.89026

# Coliseum as polygon
col_sf <- reverse_geo_lite_sf(
  lat = col_lat,
  lon = col_lon,
  points_only = FALSE
)

dplyr::glimpse(col_sf)

if (any(!sf::st_is_empty(col_sf))) {
  ggplot(col_sf) +
    geom_sf()
}

# City of Rome - same coords with zoom 10

rome_sf <- reverse_geo_lite_sf(
  lat = col_lat,
  lon = col_lon,
  custom_query = list(zoom = 10),
  points_only = FALSE
)

dplyr::glimpse(rome_sf)

if (any(!sf::st_is_empty(rome_sf))) {
  ggplot(rome_sf) +
    geom_sf()
}
```

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