

Package ‘osmdata’

February 22, 2018

Version 0.0.6

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Title Import 'OpenStreetMap' Data as Simple Features or Spatial Objects

Description Download and import of 'OpenStreetMap' ('OSM') data as 'sf' or 'sp' objects. 'OSM' data are extracted from the 'Overpass' web server and processed with very fast 'C++' routines for return to 'R'.

Depends R (>= 3.2.4)

License GPL-3

SystemRequirements C++11

NeedsCompilation yes

LazyData true

Imports curl, httr, lubridate, magrittr, methods, Rcpp (>= 0.12.4), rvest, jsonlite, sp, utils, xml2

Suggests devtools, knitr, rmarkdown, roxygen2, sf, testthat

LinkingTo Rcpp

URL <https://github.com/ropensci/osmdata>

BugReports <https://github.com/ropensci/osmdata/issues>

Encoding UTF-8

RoxygenNote 6.0.1

VignetteBuilder knitr

X-schema.org-applicationCategory Data Access

X-schema.org-keywords open0street0map, openstreetmap, overpass0API, OSM

X-schema.org-isPartOf <https://ropensci.org>

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Repository CRAN

Date/Publication 2018-02-22 17:34:31 UTC

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add_osm_feature	<i>Add a feature to an Overpass query</i>
-----------------	---

Description

Add a feature to an Overpass query

Usage

```
add_osm_feature(opq, key, value, key_exact = TRUE, value_exact = TRUE,
               match_case = TRUE, bbox = NULL)
```

```
add_feature(opq, key, value, key_exact = TRUE, value_exact = TRUE,
            match_case = TRUE, bbox = NULL)
```

Arguments

opq	An overpass_query object
key	feature key
value	value for feature key; can be negated with an initial exclamation mark, value = "!this".
key_exact	If FALSE, key is not interpreted exactly; see https://wiki.openstreetmap.org/wiki/Overpass_API
value_exact	If FALSE, value is not interpreted exactly
match_case	If FALSE, matching for both key and value is not sensitive to case
bbox	optional bounding box for the feature query; must be set if no opq query bbox has been set

Value

opq object

Note

key_exact should generally be TRUE, because OSM uses a reasonably well defined set of possible keys, as returned by available_features. Setting key_exact = FALSE allows matching of regular expressions on OSM keys, as described in Section 6.1.5 of http://wiki.openstreetmap.org/wiki/Overpass_API/Overpass_QL. The actual query submitted to the overpass API can be obtained from [opq_string](#).

add_feature is deprecated; please use add_osm_feature.

References

http://wiki.openstreetmap.org/wiki/Map_Features

Examples

```
## Not run:
q <- getbb ("portsmouth", display_name_contains = "United States") %>%
  opq () %>%
  add_osm_feature("amenity", "restaurant") %>%
  add_osm_feature("amenity", "pub")
osmdata_sf (q) # all objects that are restaurants AND pubs (there are none!)
q1 <- getbb ("portsmouth", display_name_contains = "United States") %>%
  opq () %>%
  add_osm_feature("amenity", "restaurant")
q2 <- getbb ("portsmouth", display_name_contains = "United States") %>%
```

```
      opq () %>%
        add_osm_feature("amenity", "pub")
c (osmdata_sf (q1), osmdata_sf (q2)) # all objects that are restaurants OR pubs
# Use of negation to extract all non-primary highways
q <- opq ("portsmouth uk") %>%
  add_osm_feature (key="highway", value = "!primary")

## End(Not run)
```

available_features *List recognized features in OSM*

Description

List recognized features in OSM

Usage

```
available_features()
```

Value

character vector of all known features

Note

requires internet access

References

http://wiki.openstreetmap.org/wiki/Map_Features

Examples

```
## Not run:
available_features()

## End(Not run)
```

available_tags	<i>List tags associated with a feature</i>
----------------	--

Description

List tags associated with a feature

Usage

```
available_tags(feature)
```

Arguments

feature	feature to retrieve
---------	---------------------

Value

character vector of all known tags for a feature

Note

requires internet access

References

http://wiki.openstreetmap.org/wiki/Map_Features

Examples

```
## Not run:  
available_tags("aerialway")  
  
## End(Not run)
```

bbox_to_string	<i>Convert a named matrix or a named vector (or an unnamed vector) return a string</i>
----------------	--

Description

This function converts a bounding box into a string for use in web apis

Usage

```
bbox_to_string(bbox)
```

Arguments

`bbox` bounding box as character, matrix or vector. If character, numeric `bbox` will be extracted with `getbb`. Unnamed vectors will be sorted appropriately and must merely be in the order (x, y, x, y).

Examples

```
## Not run:
bbox_to_string(getbb("hampi india"))

## End(Not run)
```

<code>getbb</code>	<i>Get bounding box for a given place name</i>
--------------------	--

Description

This function uses the free Nominatim API provided by OpenStreetMap to find the bounding box (bb) associated with place names.

Usage

```
getbb(place_name, display_name_contains = NULL, viewbox = NULL,
      format_out = "matrix", base_url = "https://nominatim.openstreetmap.org",
      featuretype = "settlement", limit = 10, key = NULL, silent = TRUE,
      poly_num = c(1, 1))
```

Arguments

<code>place_name</code>	The name of the place you're searching for
<code>display_name_contains</code>	Text string to match with <code>display_name</code> field returned by http://wiki.openstreetmap.org/wiki/Nominatim
<code>viewbox</code>	The bounds in which you're searching
<code>format_out</code>	Character string indicating output format: <code>matrix</code> (default), <code>string</code> (see bbox_to_string), <code>data.frame</code> (all 'hits' returned by Nominatim), <code>sf_polygon</code> (for polygons that work with the <code>sf</code> package) or <code>polygon</code> (full polygonal bounding boxes for each match).
<code>base_url</code>	Base website from where data is queried
<code>featuretype</code>	The type of OSM feature (<code>settlement</code> is default; see Note)
<code>limit</code>	How many results should the API return?
<code>key</code>	The API key to use for services that require it
<code>silent</code>	Should the API be printed to screen? TRUE by default
<code>poly_num</code>	Which of matching polygons should be used? The first polygon in the first match is the default (<code>c(1, 1)</code>).

Details

It was inspired by the functions `bbox` from the `sp` package, `bb` from the `tmertools` package and `bb_lookup` from the github package `nominatim` package, which can be found at <https://github.com/hrbrmstr/nominatim>.

See <http://wiki.openstreetmap.org/wiki/Nominatim> for details.

Value

Unless `format_out = "polygon"`, a numeric bounding box as min and max of latitude and longitude. If `format_out = "polygon"`, one or more two-columns matrices of polygonal longitude-latitude points. Where multiple `place_name` occurrences are found within `nominatim`, each item of the list of coordinates may itself contain multiple coordinate matrices where multiple exact matches exist. If one one exact match exists with potentially multiple polygonal boundaries (for example, "london uk" is an exact match, but can mean either greater London or the City of London), only the first is returned. See examples below for illustration.

Note

Specific values of `featuretype` include "street", "city", <http://wiki.openstreetmap.org/wiki/Nominatim> for details). The default `featuretype = "settlement"` combines results from all intermediate levels below "country" and above "streets". If the bounding box or polygon of a city is desired, better results will usually be obtained with `featuretype = "city"`.

Examples

```
## Not run:
getbb("Salzburg")
# select based on display_name, print query url
getbb("Hereford", display_name_contains = "United States", silent = FALSE)
# top 3 matches as data frame
getbb("Hereford", format_out = "data.frame", limit = 3)
# Examples of polygonal boundaries
bb <- getbb ("london uk", format_out = "polygon") # single match
dim(bb[[1]]) # matrix of longitude/latitude pairs
bb_sf = getbb("kathmandu", format_out = "sf_polygon")
# sf::plot.sf(bb_sf) # can be plotted if sf is installed
getbb("london", format_out = "sf_polygon") # only selects 1st of multipolygons
getbb("accra", format_out = "sf_polygon") # rectangular bb
# Using an alternative service (locationiq requires an API key)
key <- Sys.getenv("LOCATIONIQ") # add LOCATIONIQ=type_your_api_key_here to .Renviron
if(nchar(key) == 32) {
  getbb(place_name, base_url = "http://locationiq.org/v1/search.php", key = key)
}

## End(Not run)
```

get_overpass_url	<i>get_overpass_url</i>
------------------	-------------------------

Description

Return the URL of the specified overpass API. Default is <http://overpass-api.de/api/interpreter>.

Usage

```
get_overpass_url()
```

Value

The overpass API URL

See Also

[set_overpass_url](#)

opq	<i>Build an Overpass query</i>
-----	--------------------------------

Description

Build an Overpass query

Usage

```
opq(bbox = NULL, timeout = 25, memsize)
```

Arguments

bbox	Either (i) four numeric values specifying the maximal and minimal longitudes and latitudes; (ii) a character string passed to getbb to be converted to a numerical bounding box; or (iii) a matrix representing a bounding polygon as returned from <code>getbb(..., format_out = "polygon")</code> .
timeout	It may be necessary to ncrease this value for large queries, because the server may time out before all data are delivered.
memsize	The default memory size for the 'overpass' server; may need to be increased in order to handle large queries.

Value

An overpass_query object

Note

See https://wiki.openstreetmap.org/wiki/Overpass_API#Resource_management_options_.28osm-script.29 for explanation of timeout and memsize (or maxsize in overpass terms).

Examples

```
## Not run:
q <- getbb ("portsmouth", display_name_contains = "United States") %>%
  opq () %>%
  add_osm_feature("amenity", "restaurant") %>%
  add_osm_feature("amenity", "pub")
osmdata_sf (q) # all objects that are restaurants AND pubs (there are none!)
q1 <- getbb ("portsmouth", display_name_contains = "United States") %>%
  opq () %>%
  add_osm_feature("amenity", "restaurant")
q2 <- getbb ("portsmouth", display_name_contains = "United States") %>%
  opq () %>%
  add_osm_feature("amenity", "pub")
c (osmdata_sf (q1), osmdata_sf (q2)) # all objects that are restaurants OR pubs

## End(Not run)
```

opq_osm_id

Add a feature specified by OSM ID to an Overpass query

Description

Add a feature specified by OSM ID to an Overpass query

Usage

```
opq_osm_id(id = NULL, type = NULL)
```

Arguments

id	One or more official OSM identifiers (long-form integers)
type	Type of object; must be either 'node', 'way', or 'relation'

Value

opq object

Note

Extracting elements by ID requires explicitly specifying the type of element. Only elements of one of the three given types can be extracted in a single query, but the results of multiple types can nevertheless be combined with the c operation of osmdata.

References

https://wiki.openstreetmap.org/wiki/Overpass_API/Overpass_QL#By_element_id

Examples

```
## Not run:
id <- c (1489221200, 1489221321, 1489221491)
dat1 <- opq_osm_id (type = "node", id = id) %>%
  opq_string () %>%
  osmdata_sf ()
dat1$osm_points # the desired nodes
id <- c (136190595, 136190596)
dat2 <- opq_osm_id (type = "way", id = id) %>%
  opq_string () %>%
  osmdata_sf ()
dat2$osm_lines # the desired ways
dat <- c (dat1, dat2) # The node and way data combined

## End(Not run)
```

opq_string

Convert an overpass query into a text string

Description

Convert an osmdata query of class opq to a character string query to be submitted to the overpass API.

Usage

```
opq_string(opq)
```

Arguments

opq An overpass_query object

Value

Character string to be submitted to the overpass API

Examples

```
q <- opq ("hampi india")
opq_string (q)
```

osmdata	<i>osmdata class def</i>
---------	--------------------------

Description

osmdata class def

Imports OpenStreetMap (OSM) data into R as either 'sf' or 'sp' objects. OSM data are extracted from the overpass API and processed with very fast C++ routines for return to R. The package enables simple overpass queries to be constructed without the user necessarily understanding the syntax of the overpass query language, while retaining the ability to handle arbitrarily complex queries. Functions are also provided to enable recursive searching between different kinds of OSM data (for example, to find all lines which intersect a given point).

Usage

```
osmdata(bbox = NULL, overpass_call = NULL, osm_points = NULL,
        osm_lines = NULL, osm_polygons = NULL, osm_multilines = NULL,
        osm_multipolygons = NULL, timestamp = NULL)
```

Arguments

bbox	bounding box
overpass_call	overpass_call
osm_points	OSM nodes as sf Simple Features Collection of points or sp SpatialPoints-DataFrame
osm_lines	OSM ways sf Simple Features Collection of linestrings or sp SpatialLines-DataFrame
osm_polygons	OSM ways as sf Simple Features Collection of polygons or sp SpatialPolygonsDataFrame
osm_multilines	OSM relations as sf Simple Features Collection of multilinestrings or sp SpatialLinesDataFrame
osm_multipolygons	OSM relations as sf Simple Features Collection of multipolygons or sp SpatialPolygonsDataFrame
timestamp	timestamp of OSM query
...	other options ignored

Functions to Prepare Queries

- [getbb](#): Get bounding box for a given place name
- [bbox_to_string](#): Convert a named matrix or a named vector (or an unnamed vector) return a string
- [overpass_status](#): Retrieve status of the overpass API
- [opq](#): Build an overpass query

- `add_osm_feature`: Add a feature to an overpass query
- `opq_string`: Convert an osmdata query to overpass API string

Functions to Get Additional OSM Information

- `available_features`: List recognised features in OSM
- `available_tags`: List tags associated with a feature

Functions to Extract OSM Data

- `osmdata_sf`: Return OSM data in sf format
- `osmdata_sp`: Return OSM data in sp format
- `osmdata_xml`: Return OSM data in XML format

Functions to Search Data

- `osm_points`: Extract all `osm_points` objects
- `osm_lines`: Extract all `osm_lines` objects
- `osm_polygons`: Extract all `osm_polygons` objects
- `osm_multilines`: Extract all `osm_multilines` objects
- `osm_multipolygons`: Extract all `osm_multipolygons` objects

Note

Class constructor should never be used directly, and is only exported to provide access to the print method

Author(s)

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osmdata_pbf

Return an OSM Overpass query in PBF (Protocol Buffer Format).

Description

Return an OSM Overpass query in PBF (Protocol Buffer Format).

Usage

```
osmdata_pbf(q, filename, quiet = TRUE)
```

Arguments

<code>q</code>	An object of class 'overpass_query' constructed with <code>opq</code> and <code>add_osm_feature</code> .
<code>filename</code>	If given, OSM data are saved to the named file
<code>quiet</code>	suppress status messages.

Value

An binary Protocol Buffer Format (PBF) object.

Note

This function is experimental, and osmdata can currently NOT do anything with PBF files.

Examples

```
## Not run:
q <- opq ("hampi india")
q <- add_osm_feature (q, key="historic", value="ruins")
osmdata_pdf (q, filename="hampi.pbf")

## End(Not run)
```

osmdata_sf

Return an OSM Overpass query as an osmdata object in sf format.

Description

Return an OSM Overpass query as an osmdata object in sf format.

Usage

```
osmdata_sf(q, doc, quiet = TRUE, encoding)
```

Arguments

q	An object of class ‘overpass_query’ constructed with opq and add_osm_feature. May be omitted, in which case the osmdata object will not include the query.
doc	If missing, doc is obtained by issuing the overpass query, q, otherwise either the name of a file from which to read data, or an object of class XML returned from osmdata_xml.
quiet	suppress status messages.
encoding	Unless otherwise specified XML documents are assumed to be encoded as UTF-8 or UTF-16. If the document is not UTF-8/16, and lacks an explicit encoding directive, this allows you to supply a default.

Value

An object of class ‘osmdata’ with the OSM components (points, lines, and polygons) represented in sf format.

Examples

```
## Not run:
hampi_sf <- opq ("hampi india") %>%
  add_osm_feature (key="historic", value="ruins") %>%
  osmdata_sf ()

## End(Not run)
```

osmdata_sp

Return an OSM Overpass query as an osmdata object in sp format.

Description

Return an OSM Overpass query as an osmdata object in sp format.

Usage

```
osmdata_sp(q, doc, quiet = TRUE, encoding = "UTF-8")
```

Arguments

q	An object of class ‘overpass_query’ constructed with opq and add_osm_feature. May be omitted, in which case the osmdata object will not include the query.
doc	If missing, doc is obtained by issuing the overpass query, q, otherwise either the name of a file from which to read data, or an object of class XML returned from osmdata_xml.
quiet	suppress status messages.
encoding	Unless otherwise specified XML documents are assumed to be encoded as UTF-8 or UTF-16. If the document is not UTF-8/16, and lacks an explicit encoding directive, this allows you to supply a default.

Value

An object of class ‘osmdata’ with the OSM components (points, lines, and polygons) represented in sp format.

Examples

```
## Not run:
hampi_sp <- opq ("hampi india") %>%
  add_osm_feature (key="historic", value="ruins") %>%
  osmdata_sp ()

## End(Not run)
```

osmdata_xml	<i>Return an OSM Overpass query in XML format Read an (XML format) OSM Overpass response from a string, a connection, or a raw vector.</i>
-------------	--

Description

Return an OSM Overpass query in XML format Read an (XML format) OSM Overpass response from a string, a connection, or a raw vector.

Usage

```
osmdata_xml(q, filename, quiet = TRUE, encoding)
```

Arguments

q	An object of class ‘overpass_query’ constructed with opq and add_osm_feature.
filename	If given, OSM data are saved to the named file
quiet	suppress status messages.
encoding	Unless otherwise specified XML documents are assumed to be encoded as UTF-8 or UTF-16. If the document is not UTF-8/16, and lacks an explicit encoding directive, this allows you to supply a default.

Value

An object of class ‘XML::xml_document’ containing the result of the overpass API query.

Note

Objects of class xml_document can be saved as .xml or .osm files with codexml2::write_xml.

Examples

```
## Not run:
q <- opq ("hampi india")
q <- add_osm_feature (q, key="historic", value="ruins")
osmdata_xml (q, filename="hampi.osm")

## End(Not run)
```

osm_lines	<i>Extract all osm_lines from an osmdata object</i>
-----------	---

Description

If `id` is of a point object, `osm_lines` will return all lines containing that point. If `id` is of a line or polygon object, `osm_lines` will return all lines which intersect the given line or polygon.

Usage

```
osm_lines(dat, id)
```

Arguments

<code>dat</code>	An object of class <code>osmdata</code>
<code>id</code>	OSM identification of one or more objects for which lines are to be extracted

Value

An `sf` Simple Features Collection of linestrings

Examples

```
## Not run:
dat <- opq ("hengelo nl") %>% add_osm_feature (key="highway") %>%
  osmdata_sf ()
bus <- dat$osm_points [which (dat$osm_points$highway == 'bus_stop'),] %>%
  rownames () # all OSM IDs of bus stops
osm_lines (dat, bus) # all highways containing bus stops

# All lines which intersect with Piccadilly Circus in London, UK
dat <- opq ("Fitzrovia London") %>% add_osm_feature (key="highway") %>%
  osmdata_sf ()
i <- which (dat$osm_polygons$name == "Piccadilly Circus")
id <- rownames (dat$osm_polygons [i,])
osm_lines (dat, id)

## End(Not run)
```

osm_multilines	<i>Extract all osm_multilines from an osmdata object</i>
----------------	--

Description

id must be of an osm_point or osm_line object (and can not be the id of an osm_polygon object because multilines by definition contain no polygons. osm_multilines returns any multiline object(s) which contain the object specified by id.

Usage

```
osm_multilines(dat, id)
```

Arguments

dat	An object of class osmdata
id	OSM identification of one of more objects for which multilines are to be extracted

Value

An sf Simple Features Collection of multilines

Examples

```
## Not run:
dat <- opq ("London UK") %>%
  add_osm_feature (key="name", value="Thames", exact=FALSE) %>% osmdata_sf ()
# Get ids of lines called "The Thames":
id <- rownames (dat$osm_lines [which (dat$osm_lines$name == "The Thames"),])
# and find all multilinestring objects which include those lines:
osm_multilines (dat, id)
# Now note that
nrow (dat$osm_multilines) # = 24 multiline objects
nrow (osm_multilines (dat, id)) # = 1 - the recursive search selects the
                                # single multiline containing "The Thames"

## End(Not run)
```

osm_multipolygons *Extract all osm_multipolygons from an osmdata object*

Description

id must be of an osm_point, osm_line, or osm_polygon object. osm_multipolygons returns any multipolygon object(s) which contain the object specified by id.

Usage

```
osm_multipolygons(dat, id)
```

Arguments

dat	An object of class osmdata
id	OSM identification of one or more objects for which multipolygons are to be extracted

Value

An sf Simple Features Collection of multipolygons

Examples

```
## Not run:
# find all multipolygons which contain the single polygon called
# "Chiswick Eyot" (which is an island).
dat <- opq ("London UK") %>%
  add_osm_feature (key="name", value="Thames", exact=FALSE) %>% osmdata_sf ()
id <- rownames (dat$osm_polygons [which (dat$osm_polygons$name == "Chiswick Eyot"),])
osm_multipolygons (dat, id)
# That multipolygon is the Thames itself, but note that
nrow (dat$osm_multipolygons) # = 14 multipolygon objects
nrow (osm_multipolygons (dat, id)) # = 1 - the main Thames multipolygon

## End(Not run)
```

osm_points *Extract all osm_points from an osmdata object*

Description

Extract all osm_points from an osmdata object

Usage

```
osm_points(dat, id)
```

Arguments

`dat` An object of class `osmdata`
`id` OSM identification of one or more objects for which points are to be extracted

Value

An `sf` Simple Features Collection of points

Examples

```
## Not run:
tr <- opq ("trentham australia") %>% osmdata_sf ()
coliban <- tr$osm_lines [which (tr$osm_lines$name == 'Coliban River'),]
pts <- osm_points (tr, rownames (coliban)) # all points of river
waterfall <- pts [which (pts$waterway == 'waterfall'),] # the waterfall point

## End(Not run)
```

`osm_poly2line` *Convert osmdata polygons into lines*

Description

Street networks downloaded with `add_osm_object(key = "highway")` will store any circular highways in `$osm_polygons`. this function combines those with the `$osm_lines` component to yield a single `sf` data.frame of all highways, whether polygonal or not.

Usage

```
osm_poly2line(osmdat)
```

Arguments

`osmdat` An `osmdata` object.

Value

Modified version of same object with all `$osm_polygons` objects merged into `$osm_lines`.

Note

The `$osm_polygons` field is retained, with those features also repeated as `LINestring` objects in `$osm_lines`.

Examples

```
## Not run:
dat <- opq ("colchester uk") %>%
  add_osm_feature (key="highway") %>%
  osmdata_sf ()
# colchester has lots of roundabouts, and these are stored in 'osm_polygons'
# rather than 'osm_lines'. The former can be merged with the latter by:
dat2 <- osm_poly2line (dat)
# 'dat2' will have more lines than 'dat', but the same number of polygons (they
# are left unchanged.)

## End(Not run)
```

osm_polygons

Extract all osm_polygons from an osmdata object

Description

If `id` is of a point object, `osm_polygons` will return all polygons containing that point. If `id` is of a line or polygon object, `osm_polygons` will return all polygons which intersect the given line or polygon.

Usage

```
osm_polygons(dat, id)
```

Arguments

<code>dat</code>	An object of class <code>osmdata</code>
<code>id</code>	OSM identification of one or more objects for which polygons are to be extracted

Value

An `sf` Simple Features Collection of polygons

Examples

```
## Not run:
Extract polygons which intersect Conway Street in London
dat <- opq ("Marylebone London") %>% add_osm_feature (key="highway") %>%
  osmdata_sf ()
conway <- which (dat$osm_lines$name == "Conway Street")
id <- rownames (dat$osm_lines [conway,])
osm_polygons (dat, id)

## End(Not run)
```

overpass_status	<i>Retrieve status of the Overpass API</i>
-----------------	--

Description

Retrieve status of the Overpass API

Usage

```
overpass_status(quiet = FALSE, wait = 10)
```

Arguments

quiet	if FALSE display a status message
wait	If status is unavailable, wait this long (in s)

Value

an invisible list of whether the API is available along with the text of the message from Overpass and the timestamp of the next available slot

set_overpass_url	<i>set_overpass_url</i>
------------------	-------------------------

Description

Set the URL of the specified overpass API. Possible APIs with global coverage are:

- 'http://overpass-api.de/api/interpreter' (default)
- 'http://overpass.osm.rambler.ru/cgi/interpreter'
- 'http://api.openstreetmap.fr/oapi/interpreter'
- 'https://overpass.osm.vi-di.fr/api/interpreter'

Additional APIs with limited local coverage include:

- 'http://overpass.osm.ch/api/interpreter' (Switzerland)
- 'http://overpass.openstreetmap.ie/api/interpreter' (Ireland)

Usage

```
set_overpass_url(overpass_url)
```

Arguments

overpass_url	The desired overpass API URL
--------------	------------------------------

Details

For further details, see http://wiki.openstreetmap.org/wiki/Overpass_API

Value

The overpass API URL

See Also

[get_overpass_url](#)

trim_osmdata	<i>trim_osmdata</i>
--------------	---------------------

Description

Trim an osmdata object to within a bounding polygon

Usage

```
trim_osmdata(dat, bb_poly, exclude = TRUE)
```

Arguments

dat	An osmdata object returned from <code>osmdata_sf()</code> or <code>osmdata_sp()</code> .
bb_poly	A matrix representing a bounding polygon obtained with <code>getbb(..., format_out = "polygon")</code> (and possibly selected from resultant list where multiple polygons are returned).
exclude	If TRUE, objects are trimmed exclusively, only retaining those strictly within the bounding polygon; otherwise all objects which partly extend within the bounding polygon are retained.

Value

A trimmed version of `dat`, reduced only to those components lying within the bounding polygon.

unique_osmdata	<i>unique_osmdata</i>
----------------	-----------------------

Description

Reduce the components of an `osmdata` object to only unique items of each type. That is, reduce `$osm_points` to only those points not present in other objects (lines, polygons, etc.); reduce `$osm_lines` to only those lines not present in multiline objects; and reduce `$osm_polygons` to only those polygons not present in multipolygon objects. This renders an `osmdata` object more directly compatible with typical output of `sf`.

Usage

```
unique_osmdata(dat)
```

Arguments

`dat` An `osmdata` object

Value

Equivalent object reduced to only unique objects of each type

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