Package: PostcodesioR (via r-universe)

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Type Package

Title API Wrapper Around 'Postcodes.io'

Version 0.3.1

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Description Free UK geocoding using data from Office for National
Statistics. It is using several functions to get information
about post codes, outward codes, reverse geocoding, nearest
post codes/outward codes, validation, or randomly generate a
post code. API wrapper around <https://postcodes.io>.

License GPL-3

URL <https://docs.ropensci.org/PostcodesioR/>

Depends R (>= 3.1)

Imports httr

RoxygenNote 7.1.2

Suggests knitr, dplyr, rmarkdown, testthat, covr, purrr

VignetteBuilder knitr

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

Config/pak/sysreqs libssl-dev

Repository https://ropensci.r-universe.dev

RemoteUrl https://github.com/ropensci/PostcodesioR

RemoteRef master

RemoteSha f52a9df76d8d3c64019f53c1bf2b5e5d9965f246

Contents

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bulk_postcode_lookup   *Bulk postcode lookup*

Description

Returns a list of matching postcodes and respective available data.

Usage

```
bulk_postcode_lookup(postcodes)
```

Arguments

postcodes   Accepts a list of postcodes. Accepts up to 100 postcodes. For only one postcode
                use postcode_lookup.

Value

A list of length one.

See Also

postcode_lookup for documentation.

Examples

```
pc_list <- list(
postcodes = c("PR3 0SG", "M45 6GN", "EX165BL")) # spaces are ignored
bulk_postcode_lookup(pc_list)
# The function needs a list of length one. This won't work:
bulk_postcode_lookup(list("PR3 0SG", "M45 6GN", "EX165BL"))
```

bulk_reverse_geocoding

Bulk reverse geocoding

Description

Returns nearest postcodes for a given longitude and latitude. Accepts up to 100 geolocations.

Usage

```
bulk_reverse_geocoding(geolocations)
```

Arguments

geolocations   A list containing an array of objects to geolocate. At least two elements needed.

Details

This method requires a JSON object containing an array of geolocation objects to be POSTed. Each geolocation object accepts an optional radius (meters) and limit argument. Both default to 100m and 10 respectively. It also accepts a wideSearch argument.

Value

A list with the geocoded data.

See Also

postcode_lookup for documentation.

Examples

```
geolocations_list <- structure(
list(
geolocations = structure(
list(
longitude = c(-3.15807731271522, -1.12935802905177),
latitude = c(51.4799900627036, 50.7186356978817),
limit = c(NA, 100L),
radius = c(NA, 500L)),
.Names = c("longitude", "latitude", "limit", "radius"),
class = "data.frame",
row.names = 1:2)),
.Names = "geolocations")

bulk_reverse_geocoding(geolocations_list)
```

---

nearest_outcode   *Nearest outcode*

Description

Returns nearest outcodes for a given outcode. The search is based on the relative distance of the outcode centroid.

Usage

```
nearest_outcode(outcode, limit = 10, radius = 5000)
```

Arguments

outcode	A string with a UK postcode.
limit	An integer. Optional parameter. Limits number of postcodes matches to return. Defaults to 10. Needs to be less than 100.
radius	An integer. Optional parameter. Limits number of postcodes matches to return. Defaults to 5,000m. Needs to be less than 25,000m.

Value

A list of geographical properties.

See Also

[postcode_lookup](#) for documentation.

Examples

```
nearest_outcode("EC1Y")
nearest_outcode("EC1Y", limit = 11)
nearest_outcode("EC1Y", limit = 11, radius = 6000)
```

---

nearest_outcode_lonlat

Nearest outcodes given longitude and latitude

Description

Returns nearest outward codes for a given longitude and latitude. The search is based on the relative distance of the outcode centroid.

Usage

```
nearest_outcode_lonlat(longitude, latitude)
```

Arguments

longitude	A string or numeric. Needs to have at least three decimal points.
latitude	A string or numeric. Needs to have at least three decimal points.

Value

A list with available data.

See Also

[postcode_lookup](#) for documentation.

Examples

```
nearest_outcode_lonlat(0.127, 51.507)
```

---

nearest_postcode	*Nearest postcode*

Description

Returns nearest postcodes for a given postcode. The search is based on the relative distance of the postcode centroid.

Usage

```
nearest_postcode(postcode, limit = 10, radius = 100)
```

Arguments

postcode	A string. Valid UK postcode.
limit	A string or integer. Limits number of postcodes matches to return. Defaults to 10. Needs to be lower than 100.
radius	Limits number of postcodes matches to return. Defaults to 100m. Needs to be less than 2,000m.

Value

A list of geographic properties of the nearest postcode.

Examples

```
nearest_postcode("EC1Y 8LX")
nearest_postcode("EC1Y 8LX", limit = 11)
nearest_postcode("EC1Y 8LX", limit = 12, radius = 200)
```

---

outcode_reverse_geocoding

Outcode reverse geocoding

Description

Returns nearest outcodes for a given longitude and latitude.

Usage

```
outcode_reverse_geocoding(longitude, latitude, limit = 10, radius = 5000)
```

Arguments

longitude	A string, integer or float. Needs to have at least two decimal points.
latitude	A string, integer or float. Needs to have at least two decimal points.
limit	A string, integer or float. Limits number of postcodes matches to return. Defaults to 10. Needs to be less than 100.
radius	A string, integer or float. Limits number of postcodes matches to return. Defaults to 5,000m. Needs to be less than 25,000m.

Value

A list of geographical properties.

See Also

[postcode_lookup](#) for documentation.

Examples

```
outcode_reverse_geocoding("-3.15", "51.47")
outcode_reverse_geocoding(-3.15, 51.47)
outcode_reverse_geocoding("-3.15807731271522", "51.4799900627036")
outcode_reverse_geocoding(-3.15, 51.47, limit = 11, radius = 20000)
```

`outward_code_lookup`   *Outward code lookup*

Description

Geolocation data for the centroid of the outward code specified.

Usage

```
outward_code_lookup(outcode)
```

Arguments

outcode   A string. The outward code representing the first half of any postcode (separated by a space).

Value

The list of geographical properties.

See Also

[postcode_lookup](#) for documentation.

Examples

```
outward_code_lookup("E1")
```

`place_lookup`   *Place lookup*

Description

Lookup a place by code. Returns all available data if found. Returns 404 if a place does not exist.

Usage

```
place_lookup(code)
```

Arguments

code   A string. The unique identifier for places - Ordnance Survey (OSGB) code.

Value

A list with available places.

- `code` A unique identifier that enables records to be identified easily. The identifier will be persistent for all LocalTypes except Section of Named Road and Section of Numbered Road.

- `name_1` Name. The proper noun that applies to the real world entity. Names that are prefixed by the definite article are not formatted for alphabetical sorting, that is, 'The Pennines' not 'Pennines, The'.

- `name_1_lang` Language of Name. The language type is only set where more than one name exists E.g. cym (Welsh), eng (English), gla (Scottish Gaelic).

- `name_2` Name (in case of multiple languages). The proper noun that applies to the real world entity. Names that are prefixed by the definite article are not formatted for alphabetical sorting, that is, 'The Pennines' not 'Pennines, The'.

- `name_2_lang` Language of Name. The language type is only set where more than one name exists E.g. cym (Welsh), eng (English), gla (Scottish Gaelic).

- `local_type` The Ordnance Survey classification for the named place being represented by the specific feature. E.g. City, Town, Village, Hamlet, Other Settlement, Suburban Area

- `outcode` The postcode district, for example, SO15.

- `county_unitary` Administrative Area. The name of the County (non-metropolitan or Metropolitan), Unitary Authority or Greater London Authority administrative area that the point geometry for feature is within or nearest to.

- `county_unitary_type` Administrative Area Type. Classifies the type of administrative unit.

- `district_borough` District or Borough. The name of the District, Metropolitan District or London Borough administrative unit that the point geometry for the feature is within.

- `district_borough_type` Borough Type. Classifies the type of administrative unit.

- `region` The name of the European Region (was Government O ice Region) that the point geometry for the feature is within or nearest to.

- `country` The country (i.e. one of the four constituent countries of the United Kingdom or the Channel Islands or the Isle of Man) to which each place is assigned.

- `longitude` The WGS84 longitude given the Place's national grid reference.

- `latitude` The WGS84 latitude given the Place's national grid reference.

- `eastings` The Ordnance Survey postcode grid reference Easting to 1 metre resolution; blank for postcodes in the Channel Islands and the Isle of Man.

- `northings` The Ordnance Survey postcode grid reference Northing to 1 metre resolution; blank for postcodes in the Channel Islands and the Isle of Man.

- `min/max northings/eastings` Minimum and Maximum, Northings and Eastings. Bounding box or Minimum Bounding Rectangle (MBR) for roads and settlements. For Settlements and Sections of Named and Numbered Roads, the MBR gives a representation of the extent of these features and is not snapped to the real world extent.

See <https://postcodes.io/docs> for more details.

Examples

```
place_lookup("osgb4000000074544700")
```

---

place_query   *Place query*

Description

Submit a place query and receive a complete list of places matches and associated data. This function is similar to `place_lookup` but it returns a list and allows limiting the results.

Usage

```
place_query(place, limit = 10)
```

Arguments

place   A string. Name of a place to search for.

limit   An integer. Limits the number of matches to return. Defaults to 10. Needs to be
               less than 100.

Value

A list with available places.

See Also

`place_lookup` for documentation.

Examples

```
place_query("Hills")
place_query("Hills", limit = 12)
```

---

postcode_autocomplete   *Postcode autocomplete*

Description

Returns a data frame of matching postcodes.

Usage

```
postcode_autocomplete(postcode, limit = 10)
```

Arguments

postcode   A string. Valid UK postcode.

limit   An integer. Limits number of postcodes matches to return. Defaults to 10.
                   Needs to be less than 100.

Value

A data frame with suggested postcodes.

Examples

```
postcode_autocomplete("E1")
postcode_autocomplete("E1", limit = 11)
```

---

postcode_lookup   *Postcode lookup*

Description

Lookup a postcode.

Usage

```
postcode_lookup(postcode)
```

Arguments

postcode   A string. One valid UK postcode. This function is case- and space-insensitive.
                   For more than one postcode use bulk_postcode_lookup. For Scottish post-
                   codes use scottish_postcode_lookup.

Value

A data frame. Returns all available data if found. Returns NAs if postcode does not exist (404).

- postcode Postcode. All current ('live') postcodes within the United Kingdom, the Channel Islands and the Isle of Man, received monthly from Royal Mail. 2, 3 or 4-character outward code, single space and 3-character inward code.

- quality Positional Quality. Shows the status of the assigned grid reference.
  - 1 - within the building of the matched address closest to the postcode mean
  - 2 - as for status value 1, except by visual inspection of Landline maps (Scotland only)
  - 3 - approximate to within 50m
  - 4 - postcode unit mean (mean of matched addresses with the same postcode, but not snapped to a building)
  - 5 - imputed by ONS, by reference to surrounding postcode grid references
  - 6 - postcode sector mean, (mainly PO Boxes)
  - 8 - postcode terminated prior to Gridlink(R) initiative, last known ONS postcode grid reference1
  - 9 - no grid reference available

- eastings Eastings. The Ordnance Survey postcode grid reference Easting to 1 metre resolution; blank for postcodes in the Channel Islands and the Isle of Man. Grid references for postcodes in Northern Ireland relate to the Irish Grid system.

- northings Northings. The Ordnance Survey postcode grid reference Easting to 1 metre resolution; blank for postcodes in the Channel Islands and the Isle of Man. Grid references for postcodes in Northern Ireland relate to the Irish Grid system.

- country Country. The country (i.e. one of the four constituent countries of the United Kingdom or the Channel Islands or the Isle of Man) to which each postcode is assigned.

- nhs_ha Strategic Health Authority. The health area code for the postcode.

- longitude Longitude. The WGS84 longitude given the Postcode's national grid reference.

- latitude Latitude. The WGS84 latitude given the Postcode's national grid reference.

- european_electoral_region European Electoral Region (EER). The European Electoral Region code for each postcode.

- primary_care_trust Primary Care Trust (PCT). The code for the Primary Care areas in England, LHBs in Wales, CHPs in Scotland, LCG in Northern Ireland and PHD in the Isle of Man; there are no equivalent areas in the Channel Islands. Care Trust/ Care Trust Plus (CT) / local health board (LHB) / community health partnership (CHP) / local commissioning group (LCG) / primary healthcare directorate (PHD).

- region Region (formerly GOR). The Region code for each postcode. The nine GORs were abolished on 1 April 2011 and are now known as 'Regions'. They were the primary statistical subdivisions of England and also the areas in which the Government Offices for the Regions fulfilled their role. Each GOR covered a number of local authorities.

- lsoa 2011 Census lower layer super output area (LSOA). The 2011 Census lower layer SOA code for England and Wales, SOA code for Northern Ireland and data zone code for Scotland.

- msoa 2011 Census middle layer super output area (MSOA). The 2011 Census middle layer SOA (MSOA) code for England and Wales and intermediate zone for Scotland.

- `incode` Incode. 3-character inward code that is following the space in the full postcode.
- `outcode` Outcode. 2, 3 or 4-character outward code. The part of postcode before the space.
- `parliamentary_constituency` Westminster Parliamentary Constituency. The Westminster Parliamentary Constituency code for each postcode.
- `admin_district` District. The current district/unitary authority to which the postcode has been assigned.
- `parish` Parish (England)/ community (Wales). The smallest type of administrative area in England is the parish (also known as 'civil parish'); the equivalent units in Wales are communities.
- `admin_county` County. The current county to which the postcode has been assigned.
- `admin_ward` Ward. The current administrative/electoral area to which the postcode has been assigned.
- `ccg` Clinical Commissioning Group. Clinical commissioning groups (CCGs) are NHS organisations set up by the Health and Social Care Act 2012 to organise the delivery of NHS services in England.
- `nuts` Nomenclature of Units for Territorial Statistics (NUTS) / Local Administrative Units (LAU) areas. The LAU2 code for each postcode. NUTS is a hierarchical classification of spatial units that provides a breakdown of the European Union's territory for producing regional statistics which are comparable across the Union. The NUTS area classification in the United Kingdom comprises current national administrative and electoral areas, except in Scotland where some NUTS areas comprise whole and/or part Local Enterprise Regions. NUTS levels 1-3 are frozen for a minimum of three years and NUTS levels 4 and 5 are now Local Administrative Units (LAU) levels 1 and 2 respectively.
- `_code` Returns an ID or Code associated with the postcode. Typically these are a 9 character code known as an ONS Code or GSS Code. This is currently only available for districts, parishes, counties, CCGs, NUTS and wards.

See https://postcodes.io/docs for more details.

Examples

```
postcode_lookup("EC1Y8LX")
postcode_lookup("EC1Y 8LX") # spaces are ignored
postcode_lookup("DE3 5LF") # terminated postcode returns NAs
```

---

postcode_query   *Postcode query*

Description

Submit a postcode query and receive a complete list of postcode matches and all associated postcode data.

Usage

```
postcode_query(postcode, limit = 10)
```

Arguments

postcode   A string. Valid UK postcode.

limit   An integer. Limits the number of matches to return. Defaults to 10. Needs to be less than 100.

Value

A list of geographic properties. To return a data frame use postcode_lookup.

Examples

```
postcode_query("EC1Y8LX")
postcode_query("EC1", limit = 11)
```

---

postcode_validation   *Postcode validation*

Description

Convenience method to validate a postcode.

Usage

```
postcode_validation(postcode)
```

Arguments

postcode   A string. Valid UK postcode.

Value

A logical vector: True or False (meaning respectively valid or invalid postcode).

Examples

```
postcode_validation("EC1Y 8LX") # returns TRUE
postcode_validation("XYZ") # returns FALSE
```

---

random_place   *Random place*

Description

Returns a random place and all associated data

Usage

```
random_place()
```

Value

A data frame describing a random place and all associated data.

See Also

place_lookup for documentation.

Examples

```
random_place()
```

---

random_postcode   *Random postcode*

Description

Returns a random postcode and all available data for that postcode.

Usage

```
random_postcode(outcode = NULL)
```

Arguments

outcode   A string. Filters random postcodes by outcode. Returns null if invalid outcode.
               Optional.

Value

A list with a random postcode with corresponding characteristics.

See Also

postcode_lookup for documentation.

Examples

```
random_postcode()
random_postcode("N1")
```

---

reverse_geocoding   *Reverse geocoding*

Description

Returns nearest postcodes for a given longitude and latitude.

Usage

```
reverse_geocoding(
  longitude,
  latitude,
  limit = 10,
  radius = 100,
  wideSearch = NULL
)
```

Arguments

longitude	A string or numeric. Needs to have at least three decimal points.
latitude	A string or numeric. Needs to have at least three decimal points.
limit	An integer. Limits number of postcodes matches to return. Defaults to 10. Needs to be less than 100.
radius	An integer. Limits number of postcodes matches to return. Defaults to 100m. Needs to be less than 2,000m.
wideSearch	TRUE or FALSE. Search up to 20km radius, but subject to a maximum of 10 results. Since lookups over a wide area can be very expensive, we've created this method to allow you choose to make the trade off between search radius and number of results. Defaults to false. When enabled, radius and limits over 10 are ignored.

Value

A list with available data.

See Also

[postcode_lookup](#) for documentation.

Examples

```
reverse_geocoding(0.127, 51.507)
reverse_geocoding("0.1275", "51.5073", limit = 3)
reverse_geocoding("0.1275", "51.5073", limit = 11, radius = 200)
```

---

scottish_postcode_lookup

Scottish postcode lookup

Description

Lookup a Scottish postcode.

Usage

```
scottish_postcode_lookup(postcode)
```

Arguments

postcode   A string. One valid Scottish postcode. This function is case- and space-insensitive.
                For non-Scottish postcodes use [postcode_lookup](#). For more than one non-
                Scottish postcode use [bulk_postcode_lookup](#).

Value

A data frame. Returns all available data if found. Returns NAs if postcode does not exist (404).

- postcode Postcode. Royal Mail postcode.

- scottish_parliamentary_constituency Scottish Parliamentary Constituency 2014 Scot-
  tish Parliamentary Constituency.

- scottish_parliamentary_constituency Scottish Parliamentary Constituency GSS Code.
  A code that identifies a 2014 Scottish Parliamentary Constituency.

See <https://postcodes.io/docs> for more details.

Examples

```
scottish_postcode_lookup("EH12NG")
```

terminated_postcode *Terminated postcode lookup*

Description

Returns month and year if a postcode was terminated or is no longer active.

Usage

```
terminated_postcode(postcode)
```

Arguments

postcode   A string. Terminated UK postcode.

Value

A data frame with data about terminated postcode. NULL if postcode is active.

- postcode Postcode. All currently terminated postcodes within the United Kingdom, the Channel Islands and the Isle of Man, received every 3 months from Royal Mail. 2, 3 or 4-character outward code, single space and 3-character inward code.
- year_terminated Termination year. Year of termination of a postcode.
- month_terminated Termination month. Month of termination of a postcode. 1-January, 2-February, ..., 12-December.
- longitude Longitude. The WGS84 longitude given the Postcode's national grid reference.
- latitude Latitude. The WGS84 latitude given the Postcode's national grid reference.

See https://postcodes.io/docs for more details.

Examples

```
terminated_postcode("EC1Y 8LX") # existing postcode
terminated_postcode("E1W 1UU") # terminated postcode
```

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