

Package ‘fingertipsR’

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Type Package

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Title Fingertips Data for Public Health

Description Fingertips (<<http://fingertips.phe.org.uk/>>) contains data for many indicators of public health in England. The underlying data is now more easily accessible by making use of the API.

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Depends R (>= 3.4.0)

URL <https://fingertips.phe.org.uk>,
<https://github.com/ropensci/fingertipsR>

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

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add_timestamp	<i>Add timestamp onto end of api url to prevent caching issues</i>
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Description

Add timestamp onto end of api url to prevent caching issues

Usage

```
add_timestamp(api_path)
```

Arguments

api_path	string; the API url to retrieve data from
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area_types	<i>Area types</i>
------------	-------------------

Description

Outputs a data frame of area type ids, their descriptions, and how they map to parent area types. To understand more on mappings of areas, see the Where to start section of the Life Expectancy vignette.

Usage

```
area_types(AreaTypeName = NULL, AreaTypeID = NULL, ProfileID = NULL,  
           path)
```

Arguments

AreaTypeName	Character vector, description of the area type; default is NULL
AreaTypeID	Numeric vector, the Fingertips ID for the area type; default is NULL
ProfileID	Numeric vector, id of profiles of interest
path	String; Fingertips API address. Function will default to the correct address

Value

A data frame of area type ids and their descriptions

See Also

[indicators](#) for indicator lookups, [profiles](#) for profile lookups, [deprivation_decile](#) for deprivation decile lookups, [category_types](#) for category lookups, [indicator_areatypes](#) for indicators by area types lookups, [indicators_unique](#) for unique indicatorids and their names, [nearest_neighbours](#) for a vector of nearest neighbours for an area and [indicator_order](#) for the order indicators are presented on the Fingertips website within a Domain

Other lookup functions: [category_types](#), [deprivation_decile](#), [indicator_areatypes](#), [indicator_metadata](#), [indicator_order](#), [indicators_unique](#), [indicators](#), [nearest_neighbours](#), [profiles](#)

Examples

```
# Returns a data frame with all levels of area and how they map to one another  
area_types()  
  
# Returns a data frame of county and unitary authority mappings  
area_types("counties")  
  
# Returns a data frame of both counties, district  
# and unitary authorities and their respective mappings  
areas <- c("counties", "district")  
area_types(areas)
```

```
# Uses AreaTypeID to filter area types
area_types(AreaTypeID = 152)
```

category_types	<i>Category types</i>
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Description

Outputs a data frame of category type ids, their name (along with a short name)

Usage

```
category_types(path)
```

Arguments

path String; Fingertips API address. Function will default to the correct address

Value

A data frame of category type ids and their descriptions

See Also

[indicators](#) for indicator lookups, [profiles](#) for profile lookups, [deprivation_decile](#) for deprivation decile lookups, [area_types](#) for area type lookups, [indicator_areatypes](#) for indicators by area types lookups, [indicators_unique](#) for unique indicatorids and their names, [nearest_neighbours](#) for a vector of nearest neighbours for an area and [indicator_order](#) for the order indicators are presented on the Fingertips website within a Domain

Other lookup functions: [area_types](#), [deprivation_decile](#), [indicator_areatypes](#), [indicator_metadata](#), [indicator_order](#), [indicators_unique](#), [indicators](#), [nearest_neighbours](#), [profiles](#)

Examples

```
# Returns the deprivation category types
cats <- category_types()
cats[cats$CategoryId == 1,]
```

deprivation_decile *Deprivation deciles*

Description

Outputs a data frame allocating deprivation decile to area code based on the Indices of Multiple Deprivation (IMD) produced by Department of Communities and Local Government

Usage

```
deprivation_decile(AreaTypeID = 102, Year = 2015, path)
```

Arguments

AreaTypeID	Integer value, limited to either 102 (counties and unitary authorities), 101 (local authority districts and unitary authorities), 7 (General Practice) or 3 (Middle Super Output Layer); default is 102
Year	Integer value, representing the year of IMD release to be applied, limited to either 2010 or 2015; default is 2015
path	String; Fingertips API address. Function will default to the correct address

Details

This function uses the `fingertips_data` function to filter for the Index of multiple deprivation score for the year and area supplied, and returns the area code, along with the score and the deprivation decile, which is calculated using the `ntile` function from `dplyr`

Value

A lookup table providing deprivation decile and area code

See Also

[indicators](#) for indicator lookups, [profiles](#) for profile lookups, [indicator_metadata](#) for the metadata for each indicator, [area_types](#) for area types and their parent mappings, [category_types](#) for category lookups, [indicator_areatypes](#) for indicators by area types lookups, [indicators_unique](#) for unique indicatorids and their names, [nearest_neighbours](#) for a vector of nearest neighbours for an area and [indicator_order](#) for the order indicators are presented on the Fingertips website within a Domain

Other lookup functions: [area_types](#), [category_types](#), [indicator_areatypes](#), [indicator_metadata](#), [indicator_order](#), [indicators_unique](#), [indicators](#), [nearest_neighbours](#), [profiles](#)

Examples

```
# Return 2015 deciles for counties and unitary authorities
deprivation_decile(102, 2015)
```

fingertipsR	<i>fingertipsR: A package for extracting the data behind the Fingertips website (https://fingertips.phe.org.uk/)</i>
-------------	---

Description

The fingertipsR package provides two categories of important functions: lookup and data extract.

Lookup functions

The lookup functions are to provide users the ability to understand the ID inputs for the data extract functions.

Data extract functions

Using ID codes as inputs, the data extract functions allow the user to extract data from the Fingertips API.

fingertips_data	<i>Fingertips data</i>
-----------------	------------------------

Description

Outputs a data frame of data from **Fingertips**. Note, this function can take up to a few minutes to run (depending on internet connection speeds and parameter selection).

Usage

```
fingertips_data(IndicatorID = NULL, AreaCode = NULL, DomainID = NULL,
  ProfileID = NULL, AreaTypeID = 102, ParentAreaTypeID = NULL,
  categorytype = FALSE, rank = FALSE, path)
```

Arguments

IndicatorID	Numeric vector, id of the indicator of interest
AreaCode	Character vector, ONS area code of area of interest
DomainID	Numeric vector, id of domains of interest
ProfileID	Numeric vector, id of profiles of interest. Indicator polarity can vary between profiles therefore if using one of the comparison fields it is recommended to complete this field as well as IndicatorID. If IndicatorID is populated, ProfileID can be ignored or must be the same length as IndicatorID (but can contain NAs).
AreaTypeID	Numeric vector, the Fingertips ID for the area type; default is 102 (Counties and Unitary Authorities). This argument also accepts "All", which returns data for all available area types for the indicator(s)

ParentAreaTypeID	Numeric vector, the comparator area type for the data extracted; if NULL the function will use the first record for the specified 'AreaTypeID' from the area_types() function
categorytype	TRUE or FALSE, determines whether the final table includes categorytype data where it exists. Default to FALSE
rank	TRUE or FALSE, the rank of the area compared to other areas for that combination of indicator, sex, age, categorytype and category along with the indicator's polarity. 1 is lowest NAs will be bottom and ties will return the average position. The total count of areas with a non-NA value are returned also in AreaValuesCount
path	String; Fingertips API address. Function will default to the correct address

Details

Note, polarity of an indicator is not automatically returned (eg, whether a low value is good, bad or neither). Use the rank field for this to be returned (though it adds a lot of time to the query)

Value

A data frame of data extracted from the Fingertips API

See Also

Other data extract functions: [fingertips_redred](#)

Examples

```
## Not run:
# Returns data for the two selected domains at county and unitary authority geography
doms <- c(1000049,1938132983)
fingdata <- fingertips_data(DomainID = doms)

# Returns data at local authority district geography (AreaTypeID = 101)
# for the indicator with the id 22401
fingdata <- fingertips_data(22401, AreaTypeID = 101)

# Returns same indicator with different comparisons due to indicator polarity
# differences between profiles on the website
# It is recommended to check the website to ensure consistency between your
# data extract here and the polarity required
fingdata <- fingertips_data(rep(90282,2), ProfileID = c(19,93), AreaCode = "E06000008")
fingdata <- fingdata[order(fingdata$TimeperiodSortable, fingdata$Sex),]

# Returns data for all available area types for an indicator
fingdata <- fingertips_data(10101, AreaTypeID = "All")
## End(Not run)
```

fingertips_endpoint *Get the default fingertips API endpoint*

Description

Get the default fingertips API endpoint

Usage

```
fingertips_endpoint()
```

Value

A character string with the HTTP URL of the Fingertips API

fingertips_ensure_api_available
Check if the given Fingertips API endpoint is available

Description

Check if the given Fingertips API endpoint is available

Usage

```
fingertips_ensure_api_available(endpoint = fingertips_endpoint())
```

Arguments

endpoint string, the API base URL to check

Value

TRUE if the API is available, otherwise stop() is called.

fingertips_redred	<i>Red significance and red trend</i>
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Description

Filters data returned by the `fingertips_data` function for values for areas that are trending statistically significantly worse and the spot value is significantly worse than the comparator (England or Parent) value in the latest year of that indicator

Usage

```
fingertips_redred(Comparator = "England", ...)
```

Arguments

Comparator	String, either "England" or "Parent" to determine which field to compare the spot value significance to
...	Parameters provided to <code>fingertips_data()</code>

Value

A data frame of data extracted from the Fingertips API

See Also

Other data extract functions: [fingertips_data](#)

Examples

```
## Not run:  
# Returns data for the two selected domains at county and unitary authority geography  
reddata <- fingertips_redred(ProfileID = 26, AreaTypeID = 102)  
## End(Not run)
```

fingertips_stats	<i>High level statistics on Fingertips data</i>
------------------	---

Description

A sentence that summarises the number of indicators, unique indicators and profiles

Usage

```
fingertips_stats()
```

Value

A string that summarises the high level statistics of indicators and profiles in Fingertips

Examples

```
## Not run:
# Returns a sentence describing number of indicators and profiles in Fingertips
fingertips_stats()
## End(Not run)
```

get_fingertips_api	<i>Retrieve data from a given Fingertips API url</i>
--------------------	--

Description

Retrieve data from a given Fingertips API url

Usage

```
get_fingertips_api(api_path)
```

Arguments

api_path	string; the API url to retrieve data from
----------	---

indicators	<i>Live indicators and the profiles and domains they belong to</i>
------------	--

Description

Outputs a data frame of indicators within a profile or domain

Usage

```
indicators(ProfileID = NULL, DomainID = NULL, path)
```

Arguments

ProfileID	Numeric vector, id of profiles of interest
DomainID	Numeric vector, id of domains of interest
path	String; Fingertips API address. Function will default to the correct address

Value

A data frame of indicators within a profile or domain.

See Also

[area_types](#) for area type and their parent mappings, [indicator_metadata](#) for indicator metadata, [profiles](#) for profile lookups, [deprivation_decile](#) for deprivation decile lookups, [category_types](#) for category lookups, [indicator_areatypes](#) for indicators by area types lookups, [indicators_unique](#) for unique indicatorids and their names, [nearest_neighbours](#) for a vector of nearest neighbours for an area and [indicator_order](#) for the order indicators are presented on the Fingertips website within a Domain

Other lookup functions: [area_types](#), [category_types](#), [deprivation_decile](#), [indicator_areatypes](#), [indicator_metadata](#), [indicator_order](#), [indicators_unique](#), [nearest_neighbours](#), [profiles](#)

Examples

```
## Not run:
# Returns a complete data frame of indicators and their domains and profiles
indicators()

# Returns a data frame of all of the indicators in the Public Health Outcomes Framework
indicators(ProfileID = 19)
## End(Not run)
```

indicators_unique	<i>Live indicators</i>
-------------------	------------------------

Description

Outputs a data frame of indicators (their id and name only). Note, this function can take up to a few minutes to run (depending on internet connection speeds)

Usage

```
indicators_unique(ProfileID = NULL, DomainID = NULL, path)
```

Arguments

ProfileID	Numeric vector, id of profiles of interest
DomainID	Numeric vector, id of domains of interest
path	String; Fingertips API address. Function will default to the correct address

Value

A data frame of indicator ids and names

See Also

[indicators](#) for indicators and their parent domains and profiles, [area_types](#) for area type and their parent mappings, [indicator_metadata](#) for indicator metadata and [profiles](#) for profile lookups and [deprivation_decile](#) for deprivation decile lookups and [category_types](#) for category lookups, [indicator_areatypes](#) for indicators by area types lookups and [indicator_order](#) for the order indicators are presented on the Fingertips website within a Domain

Other lookup functions: [area_types](#), [category_types](#), [deprivation_decile](#), [indicator_areatypes](#), [indicator_metadata](#), [indicator_order](#), [indicators](#), [nearest_neighbours](#), [profiles](#)

Examples

```
indicators_unique(ProfileID = 21)
```

```
indicator_areatypes    Area types by indicator
```

Description

Outputs a data frame of indicator ids and the area type ids that exist for that indicator

Usage

```
indicator_areatypes(IndicatorID, AreaTypeID, path)
```

Arguments

IndicatorID	integer; the Indicator ID (can be ignored or of length 1). Takes priority over AreaTypeID if both are entered
AreaTypeID	integer; the Area Type ID (can be ignored or of length 1)
path	String; Fingertips API address. Function will default to the correct address

Value

A data frame of indicator ids and area type ids

See Also

[indicators](#) for indicator lookups, [profiles](#) for profile lookups, [deprivation_decile](#) for deprivation decile lookups, [area_types](#) for area type lookups, [category_types](#) for category type lookups, [indicators_unique](#) for unique indicatorids and their names, [nearest_neighbours](#) for a vector of nearest neighbours for an area and [indicator_order](#) for the order indicators are presented on the Fingertips website within a Domain

Other lookup functions: [area_types](#), [category_types](#), [deprivation_decile](#), [indicator_metadata](#), [indicator_order](#), [indicators_unique](#), [indicators](#), [nearest_neighbours](#), [profiles](#)

Examples

```
indicator_areatypes(IndicatorID = 10101)
```

indicator_metadata *Indicator metadata*

Description

Outputs a data frame containing the metadata for selected indicators. Note, this function can take up to a few minutes to run (depending on internet connection speeds)

Usage

```
indicator_metadata(IndicatorID = NULL, DomainID = NULL,
  ProfileID = NULL, path)
```

Arguments

IndicatorID	Numeric vector, id of the indicator of interest
DomainID	Numeric vector, id of domains of interest
ProfileID	Numeric vector, id of profiles of interest. Indicator polarity can vary between profiles therefore if using one of the comparison fields it is recommended to complete this field as well as IndicatorID. If IndicatorID is populated, ProfileID can be ignored or must be the same length as IndicatorID (but can contain NAs).
path	String; Fingertips API address. Function will default to the correct address

Value

The metadata associated with each indicator/domain/profile identified

See Also

[indicators](#) for indicator lookups, [profiles](#) for profile lookups, [deprivation_decile](#) for deprivation lookups, [area_types](#) for area types and their parent mappings, [category_types](#) for category lookups, [indicator_areatypes](#) for indicators by area types lookups, [indicators_unique](#) for unique indicatorids and their names, [nearest_neighbours](#) for a vector of nearest neighbours for an area and [indicator_order](#) for the order indicators are presented on the Fingertips website within a Domain

Other lookup functions: [area_types](#), [category_types](#), [deprivation_decile](#), [indicator_areatypes](#), [indicator_order](#), [indicators_unique](#), [indicators](#), [nearest_neighbours](#), [profiles](#)

Examples

```
## Not run:
# Returns metadata for indicator ID 90362 and 1107
indicatorIDs <- c(90362, 1107)
indicator_metadata(indicatorIDs)

# Returns metadata for the indicators within the domain 1000101
indicator_metadata(DomainID = 1000101)
```

```
# Returns metadata for the indicators within the profile with the ID 129
indicator_metadata(ProfileID = 129)
## End(Not run)
```

indicator_order	<i>Indicator order number</i>
-----------------	-------------------------------

Description

Outputs a tibble of indicator ids and their sequence number for the provided domain and area type. This enables the user to order the indicators as they are ordered on the Fingertips website.

Usage

```
indicator_order(DomainID, AreaTypeID, ParentAreaTypeID, path)
```

Arguments

DomainID	Numeric vector, id of domains of interest
AreaTypeID	Numeric vector, the Fingertips ID for the area type; default is 102 (Counties and Unitary Authorities). This argument also accepts "All", which returns data for all available area types for the indicator(s)
ParentAreaTypeID	Numeric vector, the comparator area type for the data extracted; if NULL the function will use the first record for the specified 'AreaTypeID' from the area_types() function
path	String; Fingertips API address. Function will default to the correct address

Value

A data frame of indicator ids and sequence number

See Also

[indicators](#) for indicators and their parent domains and profiles, [area_types](#) for area type and their parent mappings, [indicator_metadata](#) for indicator metadata, [profiles](#) for profile lookups, [deprivation_decile](#) for deprivation decile lookups, [category_types](#) for category lookups, [indicator_areatypes](#) for indicators by area types lookups and [nearest_neighbours](#) for a vector of nearest neighbours for an area

Other lookup functions: [area_types](#), [category_types](#), [deprivation_decile](#), [indicator_areatypes](#), [indicator_metadata](#), [indicators_unique](#), [indicators](#), [nearest_neighbours](#), [profiles](#)

Examples

```
## Not run:
indicator_order(DomainID = 1938133161, AreaTypeID = 102, ParentAreaTypeID = 6)
## End(Not run)
```

nearest_neighbours	<i>Nearest neighbours</i>
--------------------	---------------------------

Description

Outputs a character vector of similar areas for given area. Currently returns similar areas for Clinical Commissioning Groups (old and new) based on [NHS England's similar CCG explorer tool](#) or lower and upper tier local authorities based on [CIPFA's Nearest Neighbours Model](#) or upper tier local authorities based on [Children's services statistical neighbour benchmarking tool](#)

Usage

```
nearest_neighbours(AreaCode, AreaTypeID = 101, measure, path)
```

Arguments

AreaCode	Character vector, ONS area code of area of interest
AreaTypeID	AreaTypeID of the nearest neighbours (see area_types) for IDs. Only returns information on AreaTypeIDs 101, 102, 152, and 154
measure	string; when AreaTypeID = 102 measure must be either "CIPFA" for CIPFA local authority nearest neighbours or "CSSN" for Children's services statistical neighbours
path	String; Fingertips API address. Function will default to the correct address

Details

Use AreaTypeID = 102 for the AreaTypeID related to Children's services statistical neighbours

Value

A character vector of area codes

See Also

[indicators](#) for indicator lookups, [profiles](#) for profile lookups, [deprivation_decile](#) for deprivation decile lookups, [area_types](#) for area type lookups, [category_types](#) for category type lookups, [indicators_unique](#) for unique indicatorids and their names, [indicator_areatypes](#) for indicators by area types lookups and [indicator_order](#) for the order indicators are presented on the Fingertips website within a Domain

Other lookup functions: [area_types](#), [category_types](#), [deprivation_decile](#), [indicator_areatypes](#), [indicator_metadata](#), [indicator_order](#), [indicators_unique](#), [indicators](#), [profiles](#)

Examples

```
nearest_neighbours(AreaCode = "E38000002", AreaTypeID = 154)
```

 profiles

Live profiles

Description

Outputs a data frame of live profiles that data are available for in Fingertips <http://fingertips.phe.org.uk/>

Usage

```
profiles(ProfileID = NULL, ProfileName = NULL, path)
```

Arguments

ProfileID	Numeric vector, id of profiles of interest
ProfileName	Character vector, full name of profile(s)
path	String; Fingertips API address. Function will default to the correct address

Value

A data frame of live profile ids and names along with their domain names and ids.

See Also

[area_types](#) for area type and their parent mappings, [indicators](#) for indicator lookups, [indicator_metadata](#) for indicator metadata, [deprivation_decile](#) for deprivation decile lookups, [category_types](#) for category lookups, [indicator_areatypes](#) for indicators by area types lookups, [indicators_unique](#) for unique indicatorids and their names, [nearest_neighbours](#) for a vector of nearest neighbours for an area and [indicator_order](#) for the order indicators are presented on the Fingertips website within a Domain

Other lookup functions: [area_types](#), [category_types](#), [deprivation_decile](#), [indicator_areatypes](#), [indicator_metadata](#), [indicator_order](#), [indicators_unique](#), [indicators](#), [nearest_neighbours](#)

Examples

```
## Not run:
# Returns a complete data frame of domains and their profiles
profiles()
## End(Not run)

# Returns a data frame of all of the domains in the Public Health Outcomes Framework
profiles(ProfileName = "Public Health Outcomes Framework")
```

select_indicators	<i>Select indicator</i>
-------------------	-------------------------

Description

Point and click method of selecting indicators and assigning them to object. Note, this function can take up to a few minutes to run (depending on internet connection speeds).

Usage

```
select_indicators()
```

Value

A numeric vector of indicator IDs

Examples

```
## Not run:  
# Opens a browser window allowing the user to select indicators by their name, domain and profile  
inds <- select_indicators()  
## End(Not run)
```

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