Package 'odataR'

January 2, 2018

Type Package

Title Read access to OData information

Version 0.1.0

Author Han Oostdijk

Maintainer Han Oostdijk <han.oostdijk@xs4all.nl>

Description (Read) access to OData information
Reading table and catalog information.

License MIT + file LICENSE

Encoding UTF-8

LazyData true

Imports httr,
jsonlite,
dplyr,
rlang

RoxygenNote 6.0.1

Suggests knitr,
rmarkdown

VignetteBuilder knitr

R topics documented:

---

odataR   *odataR: A package for reading OData information.*

Description

The odataR package contains some functions to obtain information from databases with the OData interface.

Details

Located under the root of an OData database are some tables. To obtain the information one should specify the correct root and the name of the table. Because this package was created to access the information of the CBS (Statistics Netherlands) the default root is appropriate for this information. The name of a table (here called table_id) can be found in the documentation of the database. For the CBS you can use the catalog https://opendata.cbs.nl/dataportaal/portal.html to see the available tables and their metadata. It is also possible to get the catalog information in a data.frame by using the function odataR_get_cat.

Setting a different root can be done by using the function odataR_set_root and querying the root by executing odataR_get_root.

The other functions in the package are related to actually obtain information from the database. In the CBS database a table name (table_id) points to a set of sub tables that together provide the information. One 'main' sub table contains the topic data and dimensions in coded form indicating where the topic data relates to. The other sub tables convey the meaning of the coded dimensions. E.g. a topic field could be the number of unemployed workers and the dimensions could be gender, age-class, province and year.

The main function is odataR_get_table that extracts the information from the database and decodes the dimensions. This function can also be used to get metadata about the table. It is possible to use the OData query language.

Currently version 3 is used for the CBS data but a conversion to version 4 is taking place at the moment (January 2018)

v3 : http://www.odata.org/documentation/odata-version-3-0/odata-version-3-0-core-protocol/

v4 : http://docs.oasis-open.org/odata/odata/v4.0/odata-v4.0-part1-protocol.html

For examples of the query language see odataR_get_table

The description of the function odataR_get_cat contains examples to retrieve catalog information. The same query language can be used when that is useful.

---

odataR_get_cat   *Get catalog information*

Description

This function can be used to get information from an OData catalog.

Usage

```
odataR_get_cat(type = "Tables", query = NULL)
```

Arguments

type   Type of catalog information. This type can be one of:

  - `NULL` : a `tibble` with the various types in this catalog

  - `'Tables'` or empty : a `tibble` with the Tables in this catalog

  - `'Featured'` : a `tibble` with the Features in this catalog

  - `'Table_Featured'` : a `tibble` with the Table_Featured in this catalog

  - `'Themes'` : a `tibble` with the Themes in this catalog

  - `'Tables_Themes'` : a `tibble` with the Tables_Themes in this catalog

query   OData query to restrict data returned from the catalog

Value

A `tibble` (`data_frame`) when successful otherwise an empty `tibble` or a message

Remarks

See <http://www.odata.org/documentation/odata-version-3-0/odata-version-3-0-core-protocol/> or <http://docs.oasis-open.org/odata/odata/v4.0/odata-v4.0-part1-protocol.html> (depending on the version of the OData protocol that is used) for details about the query possibilities.

`$format=json` is forced by the code so do not specify `$format=atom` because this will not work

Examples

```
## Not run:
# all types in catalog:
df = odataR_get_cat(type=NULL)
# all Tables in catalog:
df = odataR_get_cat()
# all tables that have a Title starting with 'Vacature':
df = odataR_get_cat(query="?$filter=startswith(Title,'Vacature')")
# all tables that have a Title containing 'vacature' regardless of case:
df = odataR_get_cat(query="?$filter=substringof('vacature',tolower(Title))")
# all active tables that have a Title containing 'vacature' regardless of case:
df = odataR_get_cat(query="?$filter=substringof('vacature',tolower(Title)) and Frequency ne 'Stopgezet' ")
# all Featured entries in catalog:
df = odataR_get_cat(type='Featured')
# all Featured tables (?) in catalog:
df = odataR_get_cat(type='Table_Featured')
# all Themes in catalog:
df = odataR_get_cat(type='Themes')
# all Tables_Themes (?) in catalog:
df = odataR_get_cat(type='Tables_Themes')

## End(Not run)
```

---

odataR_get_meta   *Get meta data about table*

Description

This function can be used to get information about an OData table.

Usage

```
odataR_get_meta(root = odataR_get_root_data(), table_id = NULL,
  metatype = NULL, query = NULL)
```

Arguments

root	Root of data structure
table_id	Identification of table
metatype	indicates the type of metadata that will be retrieved. Possible values are:

- NULL or empty : a `tibble` with the urls of the subtables will be retrieved

- `'TableInfos'` : a `tibble` with one row is retrieved with (background) information about the table

- `'CategoryGroups'` : a `tibble` with one row is retrieved with information about the category tables for this table

- `'DataProperties'` : a `tibble` is retrieved with information about the columns of the table

- a dimension name : a `tibble` is retrieved with the code information of the dimension (e.g. `Gemeenten` in the examples below.

query	OData query to restrict data returned from the meta table

Value

A `tibble` (`data_frame`) when successful otherwise an empty `tibble` or a message

Remarks

See <http://www.odata.org/documentation/odata-version-3-0/odata-version-3-0-core-protocol/> or <http://docs.oasis-open.org/odata/odata/v4.0/odata-v4.0-part1-protocol.html> (depending on the version of the OData protocol that is used) for details about the query possibilities.

`$format=json` is forced by the code so do not specify `$format=atom` because this will not work

Examples

```
## Not run:
odataR_set_root('http://dataderden.cbs.nl') ;
df = odataR_get_meta(table_id='45042NED')
df = odataR_get_meta(table_id='45042NED',metatype='TableInfos')
df = odataR_get_meta(table_id='45042NED',metatype='CategoryGroups')
df = odataR_get_meta(table_id='45042NED',metatype='DataProperties')
df = odataR_get_meta(table_id='45042NED',metatype='Gemeenten')
df = odataR_get_meta(table_id='45042NED',metatype='Verslagsoort')
df = odataR_get_meta(table_id='45042NED',metatype='Gemeenten',
        query="?$filter=substringof('amstelveen',tolower(Title))")

## End(Not run)
```

---

odataR_get_root   *Gets the root for OData data and catalog structure*

Description

Determines from which structure data and catalog information will be extracted. If the function odataR_set_root is not called yet this will be done first with the default `https://opendata.cbs.nl` (the root for the CBS Statistics Netherlands structures).

Usage

```
odataR_get_root()
```

See Also

[odataR_set_root](#)

Examples

```
odataR_get_root()
```

---

odataR_get_root_catalog
                Gets the root for OData catalog structure

Description

Determines from which structure the catalog information will be extracted. Derived from the common OData data and catalog root: `paste0(odataR_get_root(), '/ODataCatalog/Tables')`.

Usage

```
odataR_get_root_catalog(type = "Tables")
```

Details

Types of catalog entries available are `Featured`, `Table_Featured`, `Tables`, `Themes`, `Tables_Themes`

See Also

odataR_get_root and odataR_get_root_data

---

odataR_get_root_data   *Gets the root for OData data structure*

Description

Determines from which structure the data will be extracted. Derived from the common OData data and catalog root: paste0(odataR_get_root(), '/ODataFeed/OData')

Usage

```
odataR_get_root_data()
```

See Also

odataR_get_root and odataR_get_root_catalog

---

odataR_get_table   *Get table data*

Description

This is the main function of this package. It retrieves a data table from the data base and all dimensions are decoded. An (optional) query is executed in the database

Usage

```
odataR_get_table(root = odataR_get_root_data(), table_id = NULL,
  query = NULL, typed = T, keepcode = c())
```

Arguments

root	Root of data structure
table_id	Identification of table
query	OData query to restrict data returned from structure
typed	Boolean indicating 'TypedDataSet' when T or 'UntypedDataSet' when F'
keepcode	Character string with dimension(s) for which the coded values are kept

Value

A tibble (data_frame) when successful otherwise an empty tibble or a message

Remarks

See http://www.odata.org/documentation/odata-version-3-0/odata-version-3-0-core-protocol/ or http://docs.oasis-open.org/odata/odata/v4.0/odata-v4.0-part1-protocol.html (depending on the version of the OData protocol that is used) for details about the query possibilities.

$format=json is forced by the code so do not specify $format=atom because this will not work

Examples

```
## Not run:
df      = odataR_get_table(table_id="82935NED")
df      = odataR_get_table(table_id="82935NED",keepcode = "RegioS")
df      = odataR_get_table(table_id="82935NED",keepcode = c("RegioS","Perioden"))
df      = odataR_get_table(table_id="82935NED",
  query  = paste0("?$filter=startswith(RegioS,'NL01')",
                  "&$select=RegioS,Perioden,TotaleInvesteringen_1",
                  "&$skip=2&$top=3") )

## End(Not run)
```

---

odataR_set_root   *Sets the root for OData data and catalog structure*

Description

Determines from which structure data and catalog information will be extracted. If this function is not called the default `https://opendata.cbs.nl` (the root for the CBS Statistics Netherlands structures) will be used

Usage

```
odataR_set_root(root = NULL)
```

Arguments

root   NULL for the default or the url of the root structure otherwise

See Also

odataR_get_root

Examples

```
odataR_set_root()
odataR_set_root('https://opendata.cbs.nl')
```

Index