Package ‘ustfd’

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Tests if an endpoint is known

Description

See `ustfd_tables()` for known endpoints.

Usage

```r
endpoint_exists(endpoint)
```

Arguments

- `endpoint` character vector

Value

logical matching input size

See Also

Other `ustfd_user`: `ustfd_all_pages()`, `ustfd_datasets()`, `ustfd_query()`, `ustfd_simple()`, `ustfd_table_columns()`, `ustfd_tables()`

Examples

```r
library(ustfd)
endpoint_exists('v2/accounting/od/debt_to_penny')
```
Description

Fiscal Data API allows for the filtering of results on the server side, leading to a smaller payload. The combinations of fields and operators supported are not currently defined, so it is suggested you test the desired combinations before relying on them.

Syntax

A filter should be a named list of key-value pairs where the name corresponds to the field that should be filtered and the value is a character vector or a list where the name of an item corresponds to the operator and the value corresponds to the operand. One field may have more than one filter.

Operators

- `>`, `<` Greater-than and lesser-than
- `>=`, `<=` Greater-/lesser-than or equal-to
- `=` Equal to
- `in` Subset-of

Examples

```r
## Not run:
#records with a record_date no older than 10 days ago
list(record_date = c(">=" = lubridate::today()-10))

#records with a record_date between two dates
list(
  record_date = c(">=" = '2022-01-01'),
  record_date = c("<=" = '2022-12-31')
)

#records with a specific record_date
list(record_date = c("=" = lubridate::today()-2))

#records where record_date is any of a set of specific dates
list(
  record_date = list('in' = c('2022-06-13','2022-06-15','2022-06-17'))
)

## End(Not run)
```
ustfd_all_pages

Retrieve multiple pages of Fiscal Data API in a single call

Description

ustfd_all_pages() is similar to ustfd_simple() with the difference that, for requests that generate multiple pages of results, it will request all pages and merge them into a single result.

While care has been taken to optimize ustfd_all_pages(), for requests spanning more than 10 pages you should consider breaking up the call further if memory use is a concern, especially if you are writing the results to disk or a database with atomic transactions.

Usage

```r
ustfd_all_pages(
  endpoint,
  filter = NULL,
  fields = NULL,
  sort = NULL,
  page_size = 10000L,
  slowly = FALSE,
  pause = 0.25,
  quiet = TRUE,
  user_agent = "http://github.com/groditi/ustfd"
)
```

Arguments

- **endpoint**: required string representing an API endpoint
- **filter**: optional list used to subset the data. See filter-syntax for more information.
- **fields**: optional character vector of the fields to be retrieved
- **sort**: optional string or character vector. Ordering defaults to ascending, to specify descending order precede the field name with `-`
- **page_size**: optional integer for pagination
- **slowly**: pause between http requests when set to TRUE
- **pause**: length, in seconds, to pause
- **quiet**: when set to FALSE updates will be output via a message
- **user_agent**: string, optional

Value

A list containing the following items:

- **meta**: the metadata returned by the API
- **data**: the payload returned by the API in table form. See ustfd_response_payload()
See Also

Other ustfd_user: endpoint_exists(), ustfd_datasets(), ustfd_query(), ustfd_simple(), ustfd_table_columns(), ustfd_tables()

Examples

```r
## Not run:
library(ustfd)

exchange_rates <- ustfd_all_pages('vi/accounting/od/rates_of_exchange',
  fields = c('country_currency_desc', 'exchange_rate', 'record_date', 'effective_date'),
  filter = list(record_date = c('>= 2020-01-01'),
               country_currency_desc = list('in' = c('Canada-Dollar', 'Mexico-Peso')))
)

## End(Not run)
```

### ustfd_datasets

Return a table of supported and known datasets

#### Description

**ustfd_datasets** provides details about 34 known datasets for Fiscal Data. A data frame with 34 rows and the following 7 columns:

- **dataset** - ID of the source dataset (natural key)
- **name** - name of the source dataset
- **summary_text** - description of the data set and the data it covers
- **earliest_date** - the date of the earliest record available for this table
- **data_start_year** - first year in the data set
- **notes_and_known_limitations** - notes about

#### Usage

```
ustfd_datasets()
```

#### Value

*tibble*
ustfd_json_response

Description

ustfd_json_response() will process the response to a successful request from Fiscal Data API and translate a JSON object into a R data structure.

Usage

ustfd_json_response(response, ...)

Arguments

response an httr response returned by ustfd_request()

Value

a list

See Also

Other ustfd_user: endpoint_exists(), ustfd_all_pages(), ustfd_query(), ustfd_simple(), ustfd_table_columns(), ustfd_tables()
Examples

## Not run:
library(ustfd)
query <- ustfd_query('v1/accounting/dts/dts_table_2', sort = c('-record_date'))
response <- ustfd_request(query)
payload_table <- ustfd_response_payload(response)
payload_meta <- ustfd_response_meta_object(response)

## End(Not run)

### ustfd_query

**Form a Query**

`ustfd_query()` will verify the endpoint is valid and return a list suitable for passing to `ustfd_url()` and `ustfd_request()`.

**Usage**

```r
ustfd_query(
  endpoint,
  filter = NULL,
  fields = NULL,
  sort = NULL,
  page_size = NULL,
  page_number = NULL
)
```

**Arguments**

- **endpoint**
  - required string representing an API endpoint
- **filter**
  - optional list used to subset the data. See filter-syntax for more information.
- **fields**
  - optional character vector of the fields to be retrieved
- **sort**
  - optional string or character vector. Ordering defaults to ascending, to specify descending order precede the field name with '-'
- **page_size**
  - optional integer for pagination
- **page_number**
  - optional integer for pagination

**Value**

a list

**See Also**

Other `ustfd_user`: `endpoint_exists()`, `ustfd_all_pages()`, `ustfd_datasets()`, `ustfd_simple()`, `ustfd_table_columns()`, `ustfd_tables()`
Examples

library(ustfd)
ustfd_query(
  'v2/accounting/od/utf_qtr_yields',
  filter = list(record_date = c('>=' = lubridate::today()-10))
)
ustfd_query(
  'v2/accounting/od/utf_qtr_yields',
  filter = list(record_date = list('in' = c('2020-03-15','2020-03-16','2020-03-17')))
)
ustfd_query(
  'v2/accounting/od/utf_qtr_yields',
  filter = list(record_date = c('>' = '2020-03-15'))
)

ustfd_request

Retrieve Data From the U.S. Bureau Of the Fiscal Service API

Description

ustfd_request() will execute queries against the Fiscal Data API. Queries can generated using ustfd_query().

Usage

ustfd_request(
  query,
  user_agent = "http://github.com/groditi/ustfd",
  process_response = ustfd_json_response,
  ...
)

Arguments

- **query**: list generated by one of the query generating functions
- **user_agent**: string, optional
- **process_response**: function, optional. processes the http response object. Defaults to ustfd_json_response() which will return the JSON payload parsed into a list

Value

a http response object
See Also

Other ustfd_low_level: \texttt{ustfd\_json\_response()}, \texttt{ustfd\_response\_meta\_object()}, \texttt{ustfd\_response\_payload()}, \texttt{ustfd\_url()}

Examples

```r
## Not run:
library(ustfd)
query <- ustfd_query("/quotesingle.Varv1\/accounting\/dts/dts_table_2\", sort =c(\'-record_date\'))
response <- ustfd_request(query)
payload_table <- ustfd_response_payload(response)
payload_meta <- ustfd_response_meta_object(response)
## End(Not run)
```

Examples

```r
## Not run:
library(ustfd)
query <- ustfd_query('v1/accounting/dts/dts_table_2', sort =c('-record_date'))
response <- ustfd_request(query)
payload_table <- ustfd_response_payload(response)
payload_meta <- ustfd_response_meta_object(response)

## End(Not run)
```

---

**ustfd_response_payload**

*Extract Payload as Table From Parsed API Response*

**Description**

`ustfd_response_payload()` will return the results of the query in tabular format in the form of a tibble with one column for each field returned and one row for every record returned in the same order they were returned.

**Usage**

```r
ustfd_response_payload(response)
```

**Arguments**

- `response`: a parsed response returned by `ustfd_json_response()`

**Value**

- a tibble

**See Also**

Other `ustfd_low_level`: `ustfd_json_response()`, `ustfd_request()`, `ustfd_response_meta_object()`, `ustfd_url()`

**Examples**

```r
## Not run:
library(ustfd)
query <- ustfd_query('v1/accounting/dts/dts_table_2', sort =c('-record_date'))
response <- ustfd_request(query)
payload_table <- ustfd_response_payload(response)
payload_meta <- ustfd_response_meta_object(response)

## End(Not run)
```
Retrieve Fiscal Data API in a single call

**Description**

`ustfd_simple()` aggregates the workflow for retrieving data from the API into a single call.

**Usage**

```r
ustfd_simple(
  endpoint,
  filter = NULL,
  fields = NULL,
  sort = NULL,
  page_size = NULL,
  page_number = NULL,
  user_agent = "http://github.com/groditi/ustfd"
)
```

**Arguments**

- `endpoint` required string representing an API endpoint
- `filter` optional list used to subset the data. See `filter-syntax` for more information.
- `fields` optional character vector of the fields to be retrieved
- `sort` optional string or character vector. Ordering defaults to ascending, to specify descending order precede the field name with `'-'`
- `page_size` optional integer for pagination
- `page_number` optional integer for pagination
- `user_agent` optional string

**Value**

A list containing the following items:

- `meta` - the metadata returned by the API
- `data` - the payload returned by the API in table form. See `ustfd_response_payload()`

**See Also**

Other `ustfd_user`: `endpoint_exists()`, `ustfd_all_pages()`, `ustfd_datasets()`, `ustfd_query()`, `ustfd_table_columns()`, `ustfd_tables()`
Examples

```r
## Not run:
library(ustfd)

exchange_rates <- ustfd_simple(
  'v1/accounting/od/rates_of_exchange',
  fields = c(
    'country_currency_desc', 'exchange_rate','record_date','effective_date'
  ),
  filter = list(
    record_date = c('>= ' = '2020-01-01'),
    country_currency_desc = list('in' = c('Canada-Dollar','Mexico-Peso'))
  )
)

## End(Not run)
```

### ustfd_tables

Return a table of supported and known tables including the API endpoints for the specified dataset(s). See `ustfd_datasets()` for known datasets.

#### Description

`ustfd_tables` provides details about 85 known endpoints for Fiscal Data. A data frame with 85 rows and the following 9 columns:

- dataset - ID of the source dataset
- endpoint - the table’s API endpoint (natural key)
- table_name - Name of the table within the data set
- table_description - a description for the data in the endpoint
- row_definition - a description of what each row in the table describes
- path_name - API path name
- date_column - the name of the table column that holds the record’s date
- earliest_date - the date of the earliest record available for this table

### Usage

```r
ustfd_tables(datasets = NULL)
```

### Arguments

- **datasets** one or more strings representing a valid dataset ID. If present, only endpoints belonging to matching datasets will be returned
# ustfd_table_columns

**Value**

- tibble

**Source**

- [https://fiscaldata.treasury.gov/api-documentation/#list-of-endpoints](https://fiscaldata.treasury.gov/api-documentation/#list-of-endpoints)

**See Also**

- Other `ustfd_user`: `endpoint_exists()`, `ustfd_all_pages()`, `ustfd_datasets()`, `ustfd_query()`, `ustfd_simple()`, `ustfd_table_columns()`

**Examples**

```r
library(ustfd)
ustfd_tables(ustfd_datasets()$dataset[2])$endpoint
```

---

## ustfd_table_columns

*Return a table of known fields for known endpoints*

**Description**

`ustfd_table_columns` returns the column dictionaries for the specified endpoint(s). See `ustfd_tables()` for known endpoints.

**Usage**

```r
ustfd_table_columns(endpoints = NULL)
```

**Arguments**

- **endpoints**
  - one or more strings representing a valid endpoint

**Details**

The format of a dictionary is a tibble with one row for every table column and the following columns:

- **endpoint** - the ID of the table this column belongs to
- **column_name** - the field name recognizable to the API interface
- **data_type** - one of: "DATE", "STRING", "CURRENCY", "NUMBER", "PERCENTAGE", "YEAR", "QUARTER", "MONTH", "DAY"
- **pretty_name** - a descriptive label
- **definition** - definition of the column’s value
- **is_required** - logical value
**Value**

tibble

**Source**

https://fiscaldata.treasury.gov/api-documentation/#fields-by-endpoint

**See Also**

Other ustfd_user: `endpoint_exists()`, `ustfd_all_pages()`, `ustfd_datasets()`, `ustfd_query()`, `ustfd_simple()`, `ustfd_tables()`

**Examples**

```r
library(ustfd)
ustfd_table_columns(ustfd_tables(ustfd_datasets()$dataset[2])$endpoint)
```

---

**ustfd_url**

Generate URL To Access US Treasury Fiscal Data API

**Description**

`ustfd_url()` will generate a URL suitable for querying the Fiscal Data API.

**Usage**

`ustfd_url(query)`

**Arguments**

- `query` required list

**Value**

- a httr url object

**See Also**

Other ustfd_low_level: `ustfd_json_response()`, `ustfd_request()`, `ustfd_response_meta_object()`, `ustfd_response_payload()`
Examples

```r
calling
library(ustfd)
ustfd_url(ustfd_query('v1/accounting/dts/dts_table_4'))
```
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