

Package: nettskjemar (via r-universe)

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Type Package

Title Connect to the 'nettskjema.no' API of the University of Oslo

Version 0.1.4.008

Description Enables users to retrieve data, meta-data, and codebooks from [<https://nettskjema.no/>](https://nettskjema.no/). The data from the API is richer than from the online data portal. Mowinckel (2021) [<doi:10.5281/zenodo.4745481>](https://doi.org/10.5281/zenodo.4745481).

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Encoding UTF-8

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Imports dplyr, tidyr, httr, jsonlite, purrr, pbapply, tools, base64enc

Suggests knitr, rmarkdown, usethis, skimr, visdat, testthat (>= 2.1.0), covr, spelling, vcr (>= 0.6.0)

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<https://zenodo.org/badge/latestdoi/206264675>

BugReports <https://github.com/LCBC-UiO/nettskjemar/issues>

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codebook	<i>Constructor for nettskjema codebook</i>
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Description

Function works on meta-data downloaded from a form. It will return a data.frame in long format with meta-data information from a specific nettskjema form.

Usage

```
codebook(meta_data, form_id)
```

Arguments

meta_data	form meta-data from nettskjema_get_meta
form_id	integer. Number of the form to retrieve

Value

long format tibble with meta-data for a specific nettskjema

Examples

```
## Not run:
meta_110000 <- nettskjema_get_meta(110000)
codebook(meta_110000)

## End(Not run)
```

get_raw_codebook	<i>Get the raw codebook</i>
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Description

The raw codebook is a list of answers and questions with unique ids for both, and the text associated with them. This information can be retrieved from the raw nettskjema data. This can be useful if the nettskjema submission data has been returned with `as_is = TRUE`.

Usage

```
get_raw_codebook(form_id, token_name = "NETTSKJEMA_API_TOKEN", ...)
```

Arguments

form_id	integer. Number of the form to retrieve
token_name	character. Name to give the token, defaults to 'NETTSKJEMA_API_TOKEN'
...	other arguments to GET

Value

long format tibble with meta-data for a specific nettskjema

Examples

```
## Not run:  
form_id <- 100000  
get_raw_codebook(form_id)  
  
Or if the token is saved in a non-standard name  
get_raw_codebook(form_id, token_name = "MY_NETTSKJEMA_TOKEN_NAME")  
  
## End(Not run)
```

has_codebook	<i>Check if form has codebook</i>
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Description

Codebook is by default turned off in Nettskjema, but best practices in handling data is to have it on. This function checks if the codebook of a form has been activated or not

Usage

```
has_codebook(form_id, token_name = "NETTSKJEMA_API_TOKEN")
```

Arguments

form_id integer. Number of the form to retrieve
token_name character. Name to give the token, defaults to 'NETTSKJEMA_API_TOKEN'

Value

logical is codebook is turned on

Examples

```
## Not run:  
has_codebook(110000)  
  
## End(Not run)
```

nettskjema_find_ip *Find your current IP*

Description

The Nettskjema v2 API requires a token to be registered with IP addresses. This function returns the current IP address.

Usage

```
nettskjema_find_ip(version = c("v4", "v6"))
```

Arguments

version string. ip version to check. one of either "v4" or "v6".

Details

If you are working through a VPN, the IP address will not be returned as the Nettskjema API sees it. We are looking for solutions to this.

Examples

```
nettskjema_find_ip()
```

nettskjema_get_codebook
Get codebook for a form

Description

With the given API token, will retrieve a list of all the forms you have access to

Usage

```
nettskjema_get_codebook(  
  form_id,  
  as_is = FALSE,  
  token_name = "NETTSKJEMA_API_TOKEN",  
  ...  
)
```

Arguments

form_id	integer. Number of the form to retrieve
as_is	logical. Whether to return the raw content from nettskjema. Default is FALSE.
token_name	character. Name to give the token, defaults to 'NETTSKJEMA_API_TOKEN'
...	arguments passed to GET

Value

list of class nettskjema_meta_data

Examples

```
## Not run:  
codebook_110000 <- nettskjema_get_codebook(110000)  
  
## End(Not run)
```

nettskjema_get_data *Get data from a form*

Description

This function connects to a specific form and fetches all answers. The responses are placed in a data.frame for easy use. For large data sets, toggle the `incremental` option, which while slow, will be better able to retrieve all responses. For retrieving responses only from a specific date on, or all responses after a certain submission, use the `from_date` and `from_submission` arguments. Forms that are anonymous and do not collect personal information do not record date, and as such the `from_date` will not work on those and an error will be thrown.

Usage

```
nettskjema_get_data(
  form_id,
  information = NULL,
  token_name = "NETTSKJEMA_API_TOKEN",
  use_codebook = has_codebook(form_id, token_name),
  checkbox_type = c("string", "list", "columns"),
  checkbox_delim = ";",
  as_is = FALSE,
  from_date = "",
  from_submission = "",
  incremental = FALSE,
  ...
)
```

Arguments

<code>form_id</code>	integer. Number of the form to retrieve
<code>information</code>	character or list vector of additional answer information to add (One or more of "order", "option", "correct" "preselected"). If the list is named, the additional information suffixes will be changed to the list names. If NULL (default) nothing is added. Currently not possible to combine with <code>use_codebook = TRUE</code> .
<code>token_name</code>	character. Name to give the token, defaults to 'NETTSKJEMA_API_TOKEN'
<code>use_codebook</code>	logical. Use codebook for retrieving answers (default TRUE). If you have not set up the codebook in nettskjema, then turning this off will return the data as is.
<code>checkbox_type</code>	string of either "string" (default), "list" or "columns" for how to handle checkbox answers
<code>checkbox_delim</code>	delimiter string if <code>checkbox_type</code> is "string". Ignored else.
<code>as_is</code>	logical. Whether to return the raw content from nettskjema. Default is FALSE.
<code>from_date</code>	date. From which date on should data be fetched for
<code>from_submission</code>	integer. From which SubmissionId should data be collected from.
<code>incremental</code>	logical. False fetches all at once, TRUE fetches each submission individually. Slower but more stable for larger datasets.
<code>...</code>	arguments passed to GET

Details**Checkbox types**

- "string" - returns a delimited character value per submission, where `checkbox_delim` denotes the options that the respondent has chosen
- "list" - returns a list column, where each submission has a character vector with all the chosen options as separate elements in the list
- "columns" - returns checkbox answers as separate binarized columns (column names are appended with response names), where 1 means the option was selected and 0 it was not.

Value

tibble data.frame

Examples

```
## Not run:

# Retrieve all data
data_110000 <- nettskjema_get_data(110000)
# Retrieve all data, and add answer order and option text
data_110000 <- nettskjema_get_data(110000, information = list(dummy = "order", text = "option"))

# Retrieve all data after a certain date
data_110000 <- nettskjema_get_data(110000, from_date = "2019-01-01")

# Retrieve all submissions after a specific submission id
data_110000 <- nettskjema_get_data(110000, from_submission = "12000000")

# For large data
data_110000 <- nettskjema_get_data(110000, incremental = TRUE)

## End(Not run)
```

nettskjema_get_extra *Add additional answer data*

Description

The answers in the nettskjema forms have some extra information attached that is not returned by default. This is for instance information on the order of the answer options, the true text, whether the answer is correct or if it is preselected. This function makes it possible to retrieve and add this information to the nettskjema data, using the codebook.

Usage

```
nettskjema_get_extra(data, codebook, information, use_codebook = TRUE, ...)
```

Arguments

data	tibble. Data retrieved from nettskjema
codebook	codebook object retrieved by nettskjema_get_codebook
information	character vector of information to add. One or more of "order", "option", "correct" "preselected".
use_codebook	logical. Use codebook for retrieving answers (default TRUE). If you have not set up the codebook in nettskjema, then turning this off will return the data as is.
...	arguments passed to GET

Value

tibble with added columns

Examples

```
## Not run:
form_id <- 100000

my_data <- nettskjema_get_data(form_id)
cb <- nettskjema_get_codebook(form_id)

my_data <- nettskjema_get_extra(my_data, cb, "order")

## End(Not run)
```

nettskjema_get_form_attachments

Retrieve attachments associated with a Nettskjema

Description

Some Nettskjema have fields for attachments. These can be downloaded through this function. There are two naming convention that may be used for the saved files' names. See output of [nettskjema_list_attachments](#) for idea of the names used.

Usage

```
nettskjema_get_form_attachments(
  form_id,
  filenames = c("standardized", "original"),
  output_dir = ".",
  token_name = "NETTSKJEMA_API_TOKEN",
  from_date = "",
  from_submission = "",
  ...
)
```

Arguments

form_id	integer. Number of the form to retrieve
filenames	string of either 'standardized' (default) or 'original' indicating which file names to use.
output_dir	directory to output the files to
token_name	character. Name to give the token, defaults to 'NETTSKJEMA_API_TOKEN'
from_date	date. From which date on should data be fetched for

from_submission
integer. From which SubmissionId should data be collected from.
... arguments passed to [GET](#)

Details

'filenames types

- "original" - uses file names as they were uploaded to Nettskjema
- "standardized" - creates file names based on the submission id and a counter number to uniquely create file names for each submission (in case there are more than one attachment)

Value

invisible named logical if the file was saved successfully

Examples

```
## Not run:  
form_id <- 1100000  
nettskjema_get_form_attachments(form_id)  
  
# save files to specific folder  
nettskjema_get_form_attachments(form_id, output_dir = "~/Desktop")  
  
# save using original file names  
nettskjema_get_form_attachments(form_id, filenames = "original")  
  
## End(Not run)
```

nettskjema_get_meta *Get metadata for a form*

Description

With the given API token, will retrieve the meta-data connected to a form.

Usage

```
nettskjema_get_meta(  
  form_id,  
  as_is = FALSE,  
  token_name = "NETTSKJEMA_API_TOKEN",  
  ...  
)
```

Arguments

form_id integer. Number of the form to retrieve
 as_is logical. Whether to return the raw content from nettskjema. Default is FALSE.
 token_name character. Name to give the token, defaults to 'NETTSKJEMA_API_TOKEN'
 ... arguments passed to [GET](#)

Value

list of class nettskjema_meta_data

Examples

```
## Not run:
meta_110000 <- nettskjema_get_meta(110000)

## End(Not run)
```

nettskjema_list_attachments
List Nettskjema attachments

Description

Each unique submission ID in Nettskjema may have some attachments. These can be listed using this function, which will provide the information on where in the Nettskjema API the files are located, their original file names, and a suggested standardized file names for tidier data output.

Usage

```
nettskjema_list_attachments(  
  submission_id,  
  token_name = "NETTSKJEMA_API_TOKEN",  
  ...  
)
```

Arguments

submission_id integer. Unique identifier of a specific Nettskjema submission.
 token_name character. Name to give the token, defaults to 'NETTSKJEMA_API_TOKEN'
 ... arguments passed to [GET](#)

Value

a tibble with information on attachments available.

Examples

```
## Not run:
submission_id <- c(22222, 1232, 21555)
nettskjema_list_attachments(submission_id)

## End(Not run)
```

nettskjema_save_attachment

Save Nettskjema attachments to file

Description

The Nettskjema forms has an option to upload attachments with forms. These can be retrieved by this function. Recommended workflow is to first call `nettskjema_list_attachments`, and use the output of this to pass along to the function. This function is called by `nettskjema_get_form_attachments`, but you can use it to define your own output file names.

Usage

```
nettskjema_save_attachment(path, output, token_name, ...)
```

Arguments

path	Nettskjema API path where the attachment is
output	output file name
token_name	character. Name to give the token, defaults to 'NETTSKJEMA_API_TOKEN'
...	arguments passed to GET

Value

nothing. saves attachments to file.

Examples

```
## Not run:
submission_id <- c(22222, 1232, 21555)
attach_dt <- nettskjema_list_attachments(submission_id)
nettskjema_save_attachment(path = attach_dt$path, output = attach_dt$standardized)

## End(Not run)
```

nettskjema_token_expiry

Check nettskjema API token expiry date

Description

Given an API token, will retrieve the expiry date of the said token.

Usage

```
nettskjema_token_expiry(token_name = "NETTSKJEMA_API_TOKEN")
```

Arguments

token_name character. Name to give the token, defaults to 'NETTSKJEMA_API_TOKEN'

Value

character date string

nettskjema_user_create

Create Nettskjema API user

Description

Opens OS browser to create API user.

Usage

```
nettskjema_user_create(ip_version = c("v4", "v6"))
```

Arguments

ip_version IP version to look up. Either "v4" (default) or "v6".

Value

No return value, opens a browser for creating a API user.

Examples

```
## Not run:
nettskjema_user_create()

# Turn off ip detection
nettskjema_user_create(ip = FALSE)

## End(Not run)
```

```
nettskjema_write_codebook
      Write codebook to file
```

Description

Save codebook information to a file for safe keeping. Depending on the type of codebook (raw or tidy) the file will either be stored as a json-file through [write_json](#) or a text table through [write.table](#).

Usage

```
nettskjema_write_codebook(codebook, file, ...)

## Default S3 method:
nettskjema_write_codebook(codebook, file, ...)

## S3 method for class 'nettskjema_codebook_raw'
nettskjema_write_codebook(codebook, file, pretty = TRUE, ...)

## S3 method for class 'nettskjema_codebook'
nettskjema_write_codebook(codebook, file, sep = "\t", ...)
```

Arguments

codebook	object of class <code>nettskjema_codebook</code>
file	filename or path
...	arguments to write_json or write.table
pretty	logical. If writing json-file, make it pretty
sep	character. If writing text table, column delimiter.

Details

Given the two types of codebooks, writes different types of files.

- `codebook` - writes a tab-separated table
- `codebook_raw` - writes a json-file

Value

no return value. Writes a file to path.

Examples

```
## Not run:
form_id <- 1100000
my_cb <- nettskjema_get_codebook(form_id)
nettskjema_write_codebook(my_cb, "my/path/codebook_110000.txt")

## End(Not run)
```

nettskjema_write_meta *Write meta-data to file*

Description

Save meta-data information to a file for safe keeping. The function saves the data in json-format, which best preserves the information.

Usage

```
nettskjema_write_meta(meta, file, pretty = TRUE, ...)

## Default S3 method:
nettskjema_write_meta(meta, file, pretty = TRUE, ...)

## S3 method for class 'nettskjema_meta_raw'
nettskjema_write_meta(meta, file, pretty = TRUE, ...)

## S3 method for class 'nettskjema_meta_data'
nettskjema_write_meta(meta, file, pretty = TRUE, ...)
```

Arguments

meta	object of class nettskjema_meta class
file	file name or path
pretty	logical. If json-file should be made "pretty"
...	other arguments to write_json

Value

no return value. Writes a file to path.

Examples

```
## Not run:  
form_id <- 1100000  
my_meta <- nettskjema_get_meta(form_id)  
nettskjema_write_meta(my_meta, "my/path/meta_110000.json")  
  
## End(Not run)
```

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