Package 'smartsheetr'

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Title Access and Write 'Smartsheet' Data using the 'Smartsheet' API 2.0

Version 0.1.0

Description Interact with the 'Smartsheet' platform through the 'Smartsheet' API 2.0. <https://smartsheet.redoc.ly/>. API is an acronym for application programming interface; the 'Smartsheet' API allows users to interact with 'Smartsheet' sheets directly within R.

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R topics documented:

`random_sheet_name` *Get a random sheet name*

Description

Randomly selects letters for a Smartsheet sheet name

Usage

```
random_sheet_name(n = 10)
```

Arguments

`n`	The number of characters to generate

Value

A character vector

Examples

```
random_sheet_name()
```

ss_add_columns *Add columns to an existing sheet*

Description

Add columns to an existing sheet

Usage

```
ss_add_columns(ss_id, data, index = 0)
```

Arguments

ss_id	The sheetId, permalink, or name of the Smartsheet sheet to read
data	A data frame of columns to be added
index	The index location where the columns should be added

Value

A ss_addcolumns_resp object

Examples

```
## Not run:
ss_id = ss_sheetid(ss_write_sheet(paste0("smartsheetr-example-",random_sheet_name())))
ss_add_columns(ss_id, data.frame("FK"=character()), index=1)
ss_read_sheet(ss_id)
# clean up
ss_delete_sheet(ss_id)

## End(Not run)
```

ss_add_rows *Add rows to a sheet.*

Description

Add rows to a sheet.

Usage

```
ss_add_rows(ss_id, data, column_ids = NULL)
```

Arguments

ss_id	The sheetId, permalink, or name of the Smartsheet sheet to read
data	A data frame of rows to be added
column_ids	A vector of the columnIds of the smartsheets sheetId. If NULL, this will be obtained.

Value

A ss_addrows_resp object

Examples

```
## Not run:
ss_id = ss_sheetid(ss_write_sheet(paste0("smartsheetr-example-",random_sheet_name())))
ss_add_rows(ss_id, data.frame("PK"="1"))
ss_read_sheet(ss_id)
# clean up
ss_delete_sheet(ss_id)

## End(Not run)
```

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ss_api *The workhorse function that performs each call to the Smartsheet API*

Description

The workhorse function that performs each call to the Smartsheet API

Usage

```
ss_api(FUN, ...)
```

Arguments

FUN	An http verb function, typically from the httr package
...	Further parameters passed to the http verb function

ss_cols_to_dataframe *Helper function to take columns data and create a data frame.*

Description

Helper function to take columns data and create a data frame.

Usage

```
ss_cols_to_dataframe(ss_cols_data)
```

Arguments

ss_cols_data	A data frame

ss_column_ids *List column ids for a given sheet*

Description

Returns a vector of the Smartsheet internal column ids for a given sheet

Usage

```
ss_column_ids(ss_id)
```

Arguments

ss_id	The sheetId, permalink, or name of the Smartsheet sheet to read

Value

A numeric vector

Examples

```
## Not run:
ss_id = ss_sheetid(ss_write_sheet(paste0("smartsheetr-example-",random_sheet_name())))
col_names = colnames(ss_read_sheet(ss_id))
col_ids = ss_column_ids(ss_id)
setNames(col_ids, col_names)
# clean up
ss_delete_sheet(ss_id)

## End(Not run)
```

`ss_column_type` *Return the Smartsheet Column Type that aligns with the R class*

Description

Return the Smartsheet Column Type that aligns with the R class

Usage

```
ss_column_type(r_class)
```

Arguments

`r_class`	A character vector (returned from a call to `base::class()`)

Details

See https://smartsheet.redoc.ly/tag/columnsRelated/#section/Column-Types

Value

A character vector

`ss_column_type_to_class` *Return an empty vector of the correct class from the smartsheet Column Type*

Description

The opposite of `ss_column_type`

Usage

```
ss_column_type_to_class(ss_column_type)
```

Arguments

`ss_column_type`	A character vector

Details

See https://smartsheet.redoc.ly/tag/columnsRelated/#section/Column-Types

Value

A character vector

ss_delete_columns *Delete non-primary columns from a given sheet.*

Description

The primary column(s) cannot be deleted.

Usage

```
ss_delete_columns(ss_id, column_ids = NULL)
```

Arguments

ss_id	The sheetId, permalink, or name of the Smartsheet sheet to read
column_ids	A vector of the smartsheet rowIds, or NULL to delete all non-primary columns

Value

A list of ss_resp objects

Examples

```
## Not run:
df = data.frame(PK=c(1,2), FK=c("a","b"))
ss_id = ss_sheetid(ss_write_sheet(paste0("smartsheetr-example-",random_sheet_name()), data=df))
col_ids = ss_column_ids(ss_id)
ss_delete_columns(ss_id, col_ids[2])
ss_read_sheet(ss_id)
# clean up
ss_delete_sheet(ss_id)

## End(Not run)
```

ss_delete_rows *Delete rows from a given sheet*

Description

Delete rows from a given sheet

Usage

```
ss_delete_rows(ss_id, row_ids = NULL)
```

Arguments

ss_id	The sheetId, permalink, or name of the Smartsheet sheet to read
row_ids	A vector of the smartsheet rowIds, or NULL to delete all

Value

A list of ss_resp objects

Examples

```
## Not run:
df = data.frame(PK=c(1,2), FK=c("a","b"))
ss_id = ss_sheetid(ss_write_sheet(paste0("smartsheetr-example-",random_sheet_name()), data=df))
row_ids = ss_row_ids(ss_id)
ss_delete_rows(ss_id, row_ids[2])
ss_read_sheet(ss_id)
# clean up
ss_delete_sheet(ss_id)

## End(Not run)
```

---

ss_delete_sheet *Delete a smartsheet*

Description

Delete a smartsheet

Usage

```
ss_delete_sheet(ss_id)
```

Arguments

ss_id	The sheetId, permalink, or name of the Smartsheet sheet to read

Value

A ss_resp object

Examples

```
## Not run:
ss_id = ss_sheetid(ss_write_sheet(paste0("smartsheetr-example-",random_sheet_name())))
ss_read_sheet(ss_id)
ss_delete_sheet(ss_id)

## End(Not run)
```

ss_get *Execute curl commands for the Smartsheet API*

Description

`ss_get()` wraps the `httr::GET()` function `ss_post()` wraps the `httr::POST()` function `ss_put()` wraps the `httr::PUT()` function `ss_delete()` wraps the `httr::DELETE()` function

Usage

```
ss_get(path, ...)

ss_post(path, body, ...)

ss_delete(path, ...)

ss_put(path, ...)
```

Arguments

`path`	A character vector to add to the API url. See (https://smartsheet.redoc.ly/#section/Introduction) for more information.
`...`	Further arguments passed to `ss_api`
`body`	A list of objects

Details

Note that the environment variable SMARTSHEET_API_TOKEN should be defined in order to run this or any other `smarsheetr` functions.

Value

An httr::response object

ss_list_sheets *Get a data frame describing the smartsheets available*

Description

Get a data frame describing the smartsheets available

Usage

```
ss_list_sheets()
```

Details

Note that the environment variable SMARTSHEET_API_TOKEN should be defined in order to run this or any other `smarsheetr` functions.

Value

A dataframe

Examples

```
## Not run:
ss_list_sheets()

## End(Not run)
```

`ss_list_sheet_shares` *List share data for a given sheet*

Description

List share data for a given sheet

Usage

```
ss_list_sheet_shares(ss_id)
```

Arguments

`ss_id`	The sheetId, permalink, or name of the Smartsheet sheet to read

Value

A dataframe

Examples

```
## Not run:
ss_id = ss_sheetid(ss_write_sheet(paste0("smartsheetr-example-",random_sheet_name())))
ss_list_sheet_shares(ss_id)
# clean up
ss_delete_sheet(ss_id)

## End(Not run)
```

ss_list_users *List smartsheet users*

Description

List smartsheet users

Usage

```
ss_list_users()
```

Value

A dataframe

Examples

```
## Not run:
ss_list_users()

## End(Not run)
```

ss_read_sheet *Reads a Smartsheet sheet into an R data frame*

Description

Reads a Smartsheet sheet into an R data frame

Usage

```
ss_read_sheet(ss_id)
```

Arguments

ss_id	The sheetId, permalink, or name of the Smartsheet sheet to read

Value

A tibble::tbl_df object

Examples

```
## Not run:
df = mtcars
ss_id = ss_sheetid(ss_write_sheet(paste0("smartsheetr-example-",random_sheet_name()), data=df))
ss_read_sheet(ss_id)
# clean up
ss_delete_sheet(ss_id)

## End(Not run)
```

`ss_rename_columns` *Rename columns*

Description

Rename a set of columns. One of the following must be true:

- column_names is not NULL
- column_locs is not NULL, or
- new_names is the same length as the number of columns of the ss_id sheet

Usage

```
ss_rename_columns(ss_id, new_names, column_names = NULL, column_locs = NULL)
```

Arguments

`ss_id`	The sheetId, permalink, or name of the Smartsheet sheet to read
`new_names`	A character vector of new names for the chosen columns
`column_names`	A vector of names of columns within the sheet to be replaced
`column_locs`	A vector of locations of columns within the sheet to be replaced

Value

A list of ss_resp objects

Examples

```
## Not run:
df = data.frame("PK"=character(), "temp"=character())
ss_id = ss_sheetid(ss_write_sheet(paste0("smartsheetr-example-",random_sheet_name()), data=df))
ss_rename_columns(ss_id, new_names="FK", column_names="temp")
ss_read_sheet(ss_id)
# clean up
ss_delete_sheet(ss_id)

## End(Not run)
```

ss_replace_sheet *Replace the contents of a sheet with a new data frame*

Description

Replace the contents of a sheet with a new data frame

Usage

```
ss_replace_sheet(ss_id, data)
```

Arguments

ss_id	The sheetId, permalink, or name of the Smartsheet sheet to read
data	A data frame

Value

A named list of ss_resp objects

Examples

```
## Not run:
ss_id = ss_sheetid(ss_write_sheet(paste0("smartsheetr-example-",random_sheet_name())))
ss_replace_sheet(ss_id, data=mtcars)
ss_read_sheet(ss_id)
# clean up
ss_delete_sheet(ss_id)

## End(Not run)
```

ss_resp_data_to_dataframe *Helper to rbind lists in a list into a data frame*

Description

Helper to rbind lists in a list into a data frame

Usage

```
ss_resp_data_to_dataframe(resp_data)
```

Arguments

resp_data	A list of lists

ss_row_ids *List row ids for a given sheet*

Description

Returns a vector of the Smartsheet internal row ids for a given sheet

Usage

```
ss_row_ids(ss_id)
```

Arguments

ss_id	The sheetId, permalink, or name of the Smartsheet sheet to read

Value

A numeric vector

Examples

```
## Not run:
df = data.frame(PK=c(1,2), FK=c("a","b"))
ss_id = ss_sheetid(ss_write_sheet(paste0("smartsheetr-example-",random_sheet_name()), data=df))
ss_row_ids(ss_id)
# clean up
ss_delete_sheet(ss_id)

## End(Not run)
```

ss_sheetid *Get a smartsheet sheetId from a response*

Description

Get a smartsheet sheetId from a response

Usage

```
ss_sheetid(resp)
```

Arguments

resp	An ss_resp object

Value

A numeric sheetId

Examples

```
## Not run:
ss_id = ss_sheetid(ss_write_sheet(paste0("smartsheetr-example-",random_sheet_name())))

## End(Not run)
```

`ss_sheet_share` *Share a sheet with a user*

Description

Share a sheet with a user

Usage

```
ss_sheet_share(
  ss_id,
  email,
 access_level = c("VIEWER", "EDITOR", "COMMENTER", "EDITOR_SHARE", "OWNER", "ADMIN")
)
```

Arguments

`ss_id`	The sheetId (or permalink) of the table
`email`	The email address of the user to share to, i.e. a value in ss_list_users()$email
`access_level`	A character object. See https://smartsheet.redoc.ly/#section/Security/Access-Levels

Value

An ss_resp object

Examples

```
## Not run:
ss_id = ss_sheetid(ss_write_sheet(paste0("smartsheetr-example-",random_sheet_name())))
users = ss_list_users()
user = users[1,'email']
ss_sheet_share(ss_id, user)
# clean up
ss_delete_sheet(ss_id)

## End(Not run)
```

`ss_write_sheet` *Create a sheet*

Description

Creating a sheet requires either a template or a set of columns (see https://smartsheet.redoc.ly/tag/sheets#operation/create-sheet-in-sheets-folder). This function only allows for the columns option.

Usage

```
ss_write_sheet(
  sheet_name,
  data = data.frame(PK = character()),
  use_rownames = FALSE
)
```

Arguments

`sheet_name`	A character vector
`data`	A data frame
`use_rownames`	Logical; whether to use the rownames as the Primary Column

Details

The Smartsheet API 2.0 uses two calls for creating a sheet with data. The first is a call to create a sheet and populate the columns (analogous to ss_write_sheet_columns). The second is to add rows (analogous to ss_add_rows). ss_write_sheet accomplishes both of these steps.

Value

A smartsheetr response object

Examples

```
## Not run:
ss_id = ss_sheetid(ss_write_sheet(paste0("smartsheetr-example-",random_sheet_name()), data=mtcars))
ss_read_sheet(ss_id)
# clean up
ss_delete_sheet(ss_id)

## End(Not run)
```

ss_write_sheet_columns *Write the initial columns for the a sheet*

Description

Write the initial columns for the a sheet

Usage

```
ss_write_sheet_columns(sheet_name, data = data.frame(PK = character()))
```

Arguments

sheet_name	A character vector
data	A data frame of columns to be added

Details

The Smartsheet API 2.0 uses two calls for creating a sheet with data. The first is a call to create a sheet and populate the columns (analogous to ss_write_sheet_columns). The second is to add rows (analogous to ss_add_rows). ss_write_sheet accomplishes both of these steps.

Value

A ss_createsheet_resp object

Examples

```
## Not run:
temp_sheet_name = paste0("smartsheetr-example-",random_sheet_name())
ss_id = ss_sheetid(ss_write_sheet_columns(temp_sheet_name, data=mtcars))
ss_read_sheet(ss_id) # No rows. Use ss_write_sheet() to write the full data frame
# clean up
ss_delete_sheet(ss_id)

## End(Not run)
```

`unlist_and_replace_null` *Helper function to replace NULL values with NA, and unlist, which is useful in converting nested lists to data frames*

Description

Helper function to replace NULL values with NA, and unlist, which is useful in converting nested lists to data frames

Usage

```
unlist_and_replace_null(l)
```

Arguments

`l`	A list

`validate_ss_id` *Validate or get the sheetID from a numeric/character vector*

Description

This function validates a single ss_id is passed in and returns a smartsheets sheetId

Usage

```
validate_ss_id(ss_id)
```

Arguments

`ss_id`	A smartsheet sheet name, permalink, of sheetId

Value

A smartsheets sheetId

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