Package ‘projects’

September 5, 2019

Title  A Project Infrastructure for Researchers
Version  2.0.0
Description  Provides a project infrastructure with a focus on manuscript creation. Creates a project folder with a single command, containing subdirectories for specific components, templates for manuscripts, and so on.
License  MIT + file LICENSE
URL  https://www.github.com/NikKrieger/projects
Depends  R (>= 3.4.0)
Imports  dplyr (>= 0.8.0.1), fs (>= 1.2.6), lubridate (>= 1.7.4), magrittr (>= 1.5), methods, purrr (>= 0.2.5), readr (>= 1.1.1), rlang (>= 0.3.4), rStudioapi (>= 0.7), sessioninfo (>= 1.1.1), stringr (>= 1.3.1), tibble (>= 2.0.1), zip (>= 2.0.2)
Suggests  forcats, here (>= 0.1), testthat (>= 2.1.0), tidyverse (>= 1.2.1)
Encoding  UTF-8
LazyData  true
RoxygenNote  6.1.1.9000
Collate  'set_generics.R' 'class-projects_author.R'
        'class-projects_stage.R' 'new.R' 'edit.R' 'email_authors.R'
        'file_management.R' 'getters.R' 'header.R'
        'metadata_manipulation.R' 'projects.R' 'reproducibility.R'
        'setup.R' 'update.R' 'utilities.R' 'utils-pipe.R'
        'validation.R' 'zzz.R'
NeedsCompilation  no
Author  Nik Krieger [aut, cre],
        Adam Perzynski [aut],
        Jarrod Dalton [aut]
Maintainer  Nik Krieger <nk@case.edu>
Repository  CRAN
Date/Publication  2019-09-05 16:10:03 UTC
Description

The `projects` package provides a project infrastructure with a focus on manuscript creation. It creates a project folder with a single command, containing subdirectories for specific components, templates for manuscripts, and so on.

Knitting

There are several functions that require interactive user confirmation via the console. Since interactive console input is incompatible with knitting via R Markdown files, the `projects` package was coded such that user confirmation is bypassed when `isTRUE(getOption('knitr.in.progress')) == TRUE`. Therefore, all `projects` package functions are usable when knitting. **Knit with caution!**

Acknowledgements

The authors of this package acknowledge the support provided by members of the Northeast Ohio Cohort for Atherosclerotic Risk Estimation (NEOCARE) investigative team: Claudia Coulton, Douglas Gunzler, Darcy Freedman, Neal Dawson, Michael Rothberg, David Zidar, David Kaelber, Douglas Einstadter, Alex Milinovich, Monica Webb Hooper, Kristen Hassmiller-Lich, Ye Tian (Devin), Kristen Berg, and Sandy Andrukat.

Funding

This work was supported by The National Institute on Aging of the National Institutes of Health under award number R01AG055480. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.
See Also

`setup_projects()` for getting started.

affiliations View the projects(), authors(), and affiliations() tables

Description

Returns a table of the projects/authors/affiliations, filtered and joined according to the entirely optional arguments.

Usage

affiliations(affiliation, authors = FALSE)

authors(author, affiliations = FALSE, projects = FALSE)

projects(project, all_stages = FALSE, exclude = c(0L, 6L),
          archived = FALSE, verbose = FALSE, authors = FALSE)

ideas(project, archived = FALSE, verbose = FALSE, authors = FALSE)

manuscripts(project, archived = FALSE, verbose = FALSE,
             authors = FALSE)

Arguments

projects, authors, affiliations
  Logical values indicating whether or not to perform a left join with another metadata tibble. All FALSE by default.

project, author, affiliation
  An optional unique vector of ids and/or names. Only rows matching one or more entries will be returned. This is the one setting in which the package does not return throw an error if user input matches multiple projects.

all_stages
  Logical, indicating whether or not to include projects of all stages, overriding the exclude argument.

exclude
  A vector of numbers or character strings that can be validated against the list of project stages:
  0: idea
  1: design
  2: data collection
  3: analysis
  4: manuscript
  5: under review
  6: accepted
  Ignored if all_stages = TRUE
archived Logical, indicating whether or not to include projects that have been archived using `archive_project()`. FALSE by default.

verbose Logical, indicating whether or not to return all columns of the `projects()`: if FALSE, only the id, current_owner, status, and stage columns are returned. Defaults to FALSE.

Details

`ideas()` is a shortcut for `projects(exclude = 1:6)` (including only projects of stage 0: idea).

`manuscripts()` is a shortcut for `projects(exclude = c(0:3,6))` (yielding only projects of stage 4: manuscript and 5: under review).

If one or more of the `projects`, `authors`, or `affiliations` arguments is set to TRUE, a dplyr::left_join() is performed, with the "left" table being the one sharing the name of the function being used. As such, rows that don’t have matches in any other tables will still show up in the output, and rows that have multiple matches in other tables will yield multiple rows in the output. The "right" table’s id column will be renamed.

Value

A tibble.

Examples

```r
# SETUP
old_home <- Sys.getenv("HOME")
old_ppath <- Sys.getenv("PROJECTS_FOLDER_PATH")
temp_dir <- tempfile("dir")
dir.create(temp_dir)
Sys.unsetenv("PROJECTS_FOLDER_PATH")
Sys.setenv(HOME = temp_dir)
setup_projects(path = temp_dir)
new_affiliation(department_name = "Math Dept.",
    institution_name = "Springfield College",
    address = "123 College St, Springfield, AB")
new_affiliation(department_name = "Art Department",
    institution_name = "Springfield College",
    address = "321 University Boulevard, Springfield, AB",
    id = 42)
new_affiliation(department_name = "Central Intelligence Agency",
    institution_name = "United States Government",
    address = "888 Classified Dr, Washington DC")
new_affiliation(department_name = "Pyrotechnics",
    institution_name = "ACME")
new_author(given_names = "Spiro", last_name = "Agnew", degree = "LLB",
    affiliations = "Art D", id = 13)
new_author(given_names = "Plato", id = 303)
new_author(given_names = "Condoleezza", last_name = "Rice",
    affiliations = c(1, 42, "Agency", "ACME"))
new_project(title = "Test project 1", current_owner = "Plato", stage = 1)
new_project(title = "Test project 2", current_owner = "eezza", stage = 2)
```
new_project(title = "Test project 3", current_owner = "Plato", stage = 3)
new_project(title = "Fun project 4", current_owner = "Rice", stage = 4)
new_project(title = "Fun project 5", current_owner = "Rice", stage = 5)
new_project(title = "Fun project 6", current_owner = "Rice", stage = 6)
new_project(title = "Good idea", current_owner = "Rice", stage = 0)

# View entire affiliations table
affiliations()

# View authors table joined to affiliations table
# Notice that multiple rows are created for each affiliation-author combination
authors(affiliations = TRUE)

# View only active projects with "Fun" in their title.
projects("Fun")

# View all projects with "Rice" as the current_owner
projects(all_stages = TRUE) %>% dplyr::filter(current_owner == "Rice")

# View manuscripts
manuscripts()

# View ideas
ideas()

# Wrapped in if (interactive()) because it requires interactive console input
# and fails automated testing.
if (interactive()) {
  # Archive Fun project 5
  archive_project("Fun project 5")

  # Default behavior is to not include archived projects in projects() table
  projects("Fun")
  projects("Fun", archived = TRUE)
}

# CLEANUP
# (or, the user can just restart R)
Sys.setenv(HOME = old_home, PROJECTS_FOLDER_PATH = old_ppath)

---

**email_authors**

**Write an email to project authors**

**Description**

Invokes utils::browseURL("mailto://[author emails]") for a specified project, or for the currently open project if project is left as NULL.
Usage

email_authors(project = NULL, browser = getOption("browser"),
               encodeIfNeeded = FALSE)

Arguments

project Project id or unambiguous substring of the project name from the projects() table. Defaults to NULL (see Details).

browser, encodeIfNeeded
See utils::browseURL().

Details

The success of this function depends on the platform and the specified browser. See the Details and URL schemes sections of utils::browseURL().

If project = NULL, the function selects the project in the projects() table whose path is equal to rstudioapi::getActiveProject().

See Also

utils::browseURL(); rstudioapi::getActiveProject() for information on browser and encodeIfNeeded arguments.

Examples

# Wrapped in if (interactive()) because this function is interactive by nature.
if (interactive()) {

    # If you have a projects() project open, just run it:
    email_authors()

    # Otherwise, specify a project:

    # Setup
    old_home <- Sys.getenv("HOME")
    old_ppath <- Sys.getenv("PROJECTS_FOLDER_PATH")
    temp_dir <- tempfile("dir")
    dir.create(temp_dir)
    Sys.unsetenv("PROJECTS_FOLDER_PATH")
    Sys.setenv(HOME = temp_dir)
    setup_projects(path = temp_dir)
    new_author("Rhonda", "Rondale", email = "ronda.rondale@co.uk")
    new_author("Betty", "Betts", email = "betty@co.uk")
    new_project("Inventing the Ring of Power", authors = c("Betty", "Ron"))

    email_authors("Ring of Power")

    # Restore the environment
    Sys.setenv(HOME = old_home)
    Sys.setenv(PROJECTS_FOLDER_PATH = old_ppath)

}
export_project

# Cleanup (or just restart R)
Sys.setenv(HOME = old_home, PROJECTS_FOLDER_PATH = old_ppath)
}

---

export_project  Compress a project folder

### Description

Creates a compressed file out of a user-specified project folder for sharing.

### Usage

```r
export_project(project, zipfile, include_hidden = FALSE, exclude = NULL)
```

### Arguments

- **project**: Project id or unambiguous substring of the project name from the `projects()` table.
- **zipfile**: Desired file path of the resulting compressed folder file, including the file’s desired name and file extension. See the `zipfile` argument for the `zip::zipr()` function.
- **include_hidden**: Logical indicating whether or not to include hidden folders and files (e.g., those with names that begin with a period). Defaults to FALSE.
- **exclude**: Character vector of exact names of first-level subdirectories of the project folder to exclude from the resulting compressed folder file.

### Details

Currently, this function uses `zip::zipr()`.

### Value

The name of the created zip file, invisibly.
Description

Tools for Organizing and Managing Project Files

Usage

new_project_group(path)

rename_folder(project, new_folder_name, change_short_title = TRUE, archived = FALSE)

move_project(project, path, make_directories = FALSE, archived = FALSE)

copy_project(project_to_copy, path, new_id = NA,
new_folder_name = paste0("p", stringr::str_pad(new_id, 4, pad = "0")),
new_short_title = NA, make_directories = FALSE, archived = FALSE)

archive_project(project)

open_project(project, new_session = FALSE, archived = FALSE)

Arguments

path
A valid path string.
For copy_project() only, if left blank, the preexisting project's directory is used. All other functions here require a valid path.
See the path argument in new_project() for details on valid paths.

project
Project id or unambiguous substring of the project name from the projects() table

new_folder_name
Character string of new name for project folder. Always processed with fs::path_sanitize().

change_short_title
Logical indicating whether or not the project's short_title should be changed to the value of new_folder_name. Defaults to TRUE.

archived
Logical indicating whether or not the function should consider archived projects when determining which project the user is referring to in the project/project_to_copy argument. FALSE by default. See Details.

make_directories
Logical. If the path represented by the path parameter does not exist, should the needed directories be created?

project_to_copy
Project id or unambiguous substring of the project name corresponding to the project that is to be copied.
new_id  Optional integer, ranging from 1 to 9999, used as the newly-created project id. Must not already exist in `projects()`$id. If left blank, the lowest available id will be automatically used.

new_short_title  Optional character string that becomes the short_title of the project copy. It also becomes the project copy’s folder name under normal circumstances (see Details).

new_session  Same as the newSession argument in `rstudioapi::openProject()`.

Details

Projects can be moved (move_project()), copied (copy_project()), or archived (archive_project()).

The difference between delete_project() and archive_project() is that the latter will just move the project to a directory called archive, located in the same parent directory as the project. This directory gets created if it doesn’t yet exist. Most functions that perform actions on projects will exclude archived projects by default in order to make it easier for the user to enter a nonambiguous string that will match an active (i.e., non-archived) project.

Projects can also be organized into groups. By default, all projects are created within the main projects folder. To create a project group, which is essentially a subfolder of the main projects folder, use new_project_group().

open_project() is a wrapper around `rstudioapi::openProject()`, but the user only needs to know the project’s id, title, or short_title instead of the file path of the project’s .Rproj file. If there is no .Rproj file in the project’s folder, the user has the option to restore a default .Rproj file. If there are multiple .Rproj files, an error is thrown.

See Also

new_project() and delete_project() for other functions that write and delete files.

Examples

```r
# SETUP
old_home <- Sys.getenv("HOME")
old_ppath <- Sys.getenv("PROJECTS_FOLDER_PATH")
temp_dir <- tempfile("dir")
dir.create(temp_dir)
Sys.unsetenv("PROJECTS_FOLDER_PATH")
Sys.setenv(HOME = temp_dir)
setup_projects(path = temp_dir)

# setting up a simple project directory tree
new_project_group("kidney/clinical")
new_project_group("kidney/genomics")
new_project_group("prostate/clinical")
new_project_group("prostate/genomics")

# Wrapped in if (interactive()) because it requires interactive console input
```
# and fails automated package checking and testing.
if (interactive()){
  new_project(title = "Sample Authorless Project", parent_directory = "kidney")

  # Moving the project folder, then moving it again.
  move_project(project = 1, "kidney/genomics")
  move_project(project = "Sample Authorless Project", "prostate/clinical")

  # Copying the project
  copy_project(project_to_copy = 1, "kidney/clinical")

  # Renaming the folder of the copy of the project
  rename_folder(project = 2, "copy")

  # Archiving the copy of the project
  archive_project(2)

  # Opens the project in same session
  open_project("Sample")

  # Opens the project in a new session
  open_project(1, new_session = TRUE)
}

#############################################################################
# CLEANUP
Sys.setenv(HOME = old_home, PROJECTS_FOLDER_PATH = old_ppath)

header

---

Print project header to console

---

Description

Prints a header to the console to be copied and pasted into the YAML of a project protocol or manuscript R Markdown file. These lines essentially produce a title page when the R Markdown file is knitted.

Usage

header(project, archived = FALSE)

Arguments

- **project**: Project id or unambiguous substring of the project name from the `projects()` table.
- **archived**: Logical, indicating whether or not the function should consider archived projects when determining which project the user is referring to in the `project` argument. FALSE by default.

See the **Details** section of `archive_project()` for more information on the "archived" status of a project.
Details

The project header consists of:

1. the project title
2. the author list
3. the list of author affiliations
4. corresponding author information

Examples

#############################################################################
# SETUP
old_home <- Sys.getenv("HOME")
old_ppath <- Sys.getenv("PROJECTS_FOLDER_PATH")
temp_dir <- tempfile("dir")
dir.create(temp_dir)
Sys.unsetenv("PROJECTS_FOLDER_PATH")
Sys.setenv(HOME = temp_dir)
setup_projects(path = temp_dir)
new_affiliation(department_name = "Math Dept.",
                institution_name = "Springfield College",
                address = "123 College St, Springfield, AB")
new_affiliation(department_name = "Art Department",
                institution_name = "Springfield College",
                address = "321 University Boulevard, Springfield, AB",
                id = 42)
new_affiliation(department_name = "Central Intelligence Agency",
                institution_name = "United States Government",
                address = "888 Classified Dr, Washington DC")
new_affiliation(department_name = "Pyrotechnics",
                institution_name = "ACME")
new_author(given_names = "Rosetta", last_name = "Stone",
            affiliations = c(42, "Math"), degree = "PhD",
            email = "slab@rock.net", phone = "867-555-5309", id = 8888)
new_author(given_names = "Spiro", last_name = "Agnew", degree = "LLB",
            affiliations = "Art D", id = 13)
new_author(given_names = "Plato", id = 303)
new_project(title = "Test Project 1", authors = c(13, "303", "Stone"),
             corresp_auth = "Stone")
#############################################################################

header(1)

#############################################################################
# CLEANUP
Sys.setenv(HOME = old_home, PROJECTS_FOLDER_PATH = old_ppath)
Description

These functions create, edit, or delete rows in the `projects()`, `authors()`, and `affiliations()` tables, which are stored in the `.metadata` subdirectory of the main `projects` folder.

Usage

```r
new_project(title = NA, current_owner = NA, stage = c("1: design", "2: data collection", "3: analysis", "4: manuscript", "5: under review", "6: accepted", "0: idea"), status = "just created", short_title = NA, authors = NULL, corresp_auth = NA, creator = NA, deadline_type = NA, deadline = NA, id = NA, folder_name = paste0("p", stringr::str_pad(id, 4, pad = "0")), parent_directory = projects_folder(), make_directories = FALSE, template_folder = "default_folder")

new_idea(title, status = "just an idea", ...)

new_author(given_names = NA, last_name = NA, title = NA, affiliations = NULL, degree = NA, email = NA, phone = NA, id = NA)

new_affiliation(department_name = NA, institution_name = NA, address = NA, id = NA)

edit_project(project, title = NULL, short_title = NULL, authors = NULL, current_owner = NULL, status = NULL, deadline_type = NULL, deadline = NULL, stage = NULL, corresp_auth = NULL, creator = NULL, archived = FALSE)

edit_author(author, given_names = NULL, last_name = NULL, affiliations = NULL, title = NULL, degree = NULL, email = NULL, phone = NULL)

edit_affiliation(affiliation, department_name = NULL, institution_name = NULL, address = NULL)

delete_project(project, archived = FALSE)

delete_author(author)

delete_affiliation(affiliation)
```
new_edit_delete

Arguments

title
For new_project(), new_idea(), and edit_project(), the title of the project.
For the new_author() and edit_author(), the job title of the author.

current_owner, corresp_auth, creator
An id or unambiguous last_name/given_names of one of the authors in the
authors() table, which will be coerced into a projects_author-class object.
If corresp_auth is specified, this author’s contact information will be espe-
cially included in the output of header().
If creator is left blank, the numeric portion of the resulting projects_author-
class object will be 0., followed by the value of Sys.info()["user"] (e.g., 0:
user_j_smith).

stage
A number or string that will partially match exactly one of c("1: design","2:
data collection","3: analysis","4: manuscript","5: under review","6:
accepted","7: ideas"), communicating the stage the project is in. This will
be coerced to be a character vector of class projects_stage.
For new_project(), defaults to "1: design".
See projects_stage-class.

status
A free text field, intended to communicate the most current condition the project
is in.
For new_project(), default is "just created". For new_idea(), default is
"just an idea".

short_title
A nickname for the project. Can be used in other projects package functions
whenever needing to specify a project.

authors, affiliations
For new_project()/new_author(), a vector of ids or unambiguous given_names/last_name
or department_name/institution_name of authors/affiliations. Order will be
preserved.
For edit_project()/edit_author(), a formula specifying authors/affiliations
to add or remove from the project/author. Formulas must have no left-hand side
(i.e., begin with ~) and use + to add and - to remove (see formula).
Authors and affiliations may be specified by id or name. Each element must
match an existing row in the authors()/affiliations() table.

deadline_type
A free text field, intended to communicate the meaning of the next field, deadline.

deadline
A POSIXct object or something coercible to one (via lubridate::as_datetime()).

id
An integer that will become the item’s permanent identification number. Must
be in the range 1-9999 or left blank. If left blank, the lowest available integer in
the aforementioned range will be selected.

folder_name
A character string that can serve as a valid directory name. By default, it is "p"
followed by the project id number left-filled with "0" until the number is four
digits long.

parent_directory
A character string that can be read as a file path. Can be either:

1. the absolute path of the projects folder (i.e., the value of projects_folder(),
   which is the default)
2. an absolute path pointing to a subfolder within the projects folder
3. a relative path (leading "." optional) that will be appended onto the end of
   the value of projects_folder().

In any case, the result is that the new project folder will be a subdirectory of the
main projects folder. See also setup_projects().

make_directories
Logical, indicating whether or not new_project() should create subdirectories
specified in the path argument that do not already exist. Ignored if path is left
as the default or if all directories in path already exist.

template_folder
A character string naming a folder in the .templates folder that will be copied
into the projects folder as the new project folder, renamed according to the value
of the folder_name argument. See also Details below.

Additional arguments to be passed to new_project()

given_names, last_name, department_name, institution_name
Each a single character string. Can be used whenever needing to specify a spe-
cific author/affiliation.

degree
A character string (preferably an abbreviation) denoting the author’s academic
degree(s). Will be written next to author names when header() is run.

e-mail, phone
A character string denoting the email/phone of the author. Email will be coerced
to lowercase. When a project is given a corresp_auth, email will be included
in "Corresponding author:" section written by header().

address
A character string indicating the address of the affiliation.

project, author, affiliation
The id or unambiguous name(s) of a project/author/affiliation to edit_*() or
to delete_*().

archived
Logical indicating whether or not the function should consider archived projects
when determining which project the user is referring to in the project argu-
ment. FALSE by default.

See the Details section of archive_project() for more information on the
"archived" status of a project.

Details

new_project() copies the folder in the .templates folder named by the template_name argument
into the projects folder, giving it the name specified by the folder_name argument. It then creates a
line in the projects() table for the newly created project, filling many of its fields with the contents
of corresponding arguments of this function. See setup_projects() for more information on the
.templates folder.

delete_project() deletes project folders and removes their line from the projects() table.

The edit_*() functions and the other new_*() and delete_*() functions only create or edit rows
in the .metadata tables.

new_idea() is a convenience function for quickly creating projects in the "0: idea" stage.
Value

new_affiliation() and edit_affiliation() simply return the new or edited row of the affiliations() tibble.

new_project(), new_author(), edit_project(), edit_author(), and the delete_*() functions invisibly return the row of the corresponding metadata tibble that was added/edited/deleted, although the contents of this row are printed as a side-effect along with the other relevant information where applicable (e.g., project authors, author affiliations, project file paths).

new_idea() returns the id, title, and status columns of the newly created row of the projects() tibble.

Examples

#############################################################################
# SETUP
old_home <- Sys.getenv("HOME")
old_ppath <- Sys.getenv("PROJECTS_FOLDER_PATH")
temp_dir <- tempfile("dir")
dir.create(temp_dir)
Sys.unsetenv("PROJECTS_FOLDER_PATH")
Sys.setenv(HOME = temp_dir)
setup_projects(path = temp_dir)
#############################################################################
# Creating affiliations
new_affiliation(department_name = "Math Dept.",
    institution_name = "Springfield College",
    address = "123 College St, Springfield, AB")
new_affiliation(department_name = "Art Department",
    institution_name = "Springfield College",
    address = "321 University Boulevard, Springfield, AB",
    id = 42)

# Editing an affiliation
edit_affiliation("Math Dept", department_name = "Mathematics Department")

# Creating authors
new_author(
    given_names = "Rosetta",
    last_name = "Stone",
    affiliations = c(42, "Math"),
    degree = "PhD",
    email = "slab@rock.net",
    phone = "867-555-5309",
    id = 8888
)
new_author(
    given_names = "Spiro",
    last_name = "Agnew",
    degree = "LLB",
    affiliations = "Art D", id = 13
)
new_author(last_name = "Plato", id = 303)

# Editing an author, showcasing the removal of a text element (last_name)
edit_author(author = 303, given_names = "Plato", last_name = NA)

# Editing an author, showcasing the addition and removal of affiliations
edit_author("Spiro", affiliations = ~ -"Art D" + Math)

# Creating a project
new_project(
  title = "Understanding the Construction of the United States",
  short_title = "USA",
  authors = c(13, "Stone"),
  stage = 4,
  deadline = "2055-02-28",
  deadline_type = "submission",
  parent_directory = "famous_studied/philosophers/rocks",
  corresp_auth = "Stone",
  current_owner = "agnew",
  make_directories = TRUE,
  status = "waiting on IRB"
)

# Editing a project, showcasing the addition and removal of authors
edit_project(
  "Understanding",
  short_title = "usa1",
  authors = ~ + "303" - 13 - Stone
)

new_idea(title = "Boiling the Ocean")

# Wrapped in if (interactive()) because it requires interactive console input
# and fails automated package checking and testing.
if (interactive()) {
  delete_project("usa1")
  delete_author(303)
  delete_affiliation("Math")
}

########################################################################
# CLEANUP
Sys.setenv(HOME = old_home, PROJECTS_FOLDER_PATH = old_ppath)

---

projects_author-class  projects_author  class and its methods

Description

Objects of this class contain both the id and the last_name of an author so that the package and the user, respectively, can easily identify the author.
Usage

new_projects_author(x = character())

## S3 method for class 'projects_author'
as.integer(x, ...)

## S3 method for class 'projects_author'
as.double(x, ...)

## S3 method for class 'projects_author'
as.numeric(x, ...)

match.projects_author(x, table, nomatch = NA_integer_,
    incomparables = NULL)

## S4 method for signature 'projects_author,ANY'
match(x, table, nomatch = NA_integer_,
    incomparables = NULL)

## S4 method for signature 'ANY,projects_author'
match(x, table, nomatch = NA_integer_,
    incomparables = NULL)

"%in%projects_author"(x, table)

## S4 method for signature 'projects_author,ANY'
x %in% table

## S4 method for signature 'ANY,projects_author'
x %in% table

Arguments

x For new_projects_author(), any object. For
    For the as.*() methods, a projects_author object.
    For match() and %in%, an integer, a character string, or a projects_author
    object. See match() and Equality and value matching methods below.

... further arguments passed to or from other methods.

table An integer number, a character string, or a projects_author object. See match()
    and Equality and value matching methods below.

nomatch See match().

incomparables An integer number, a character string, or a projects_author object. See match().

Details

Essentially, this is a character string of the form:

id: last_name
new_projects_author() merely coerces the object’s class attribute to projects_author.

**Numeric coercion methods**

as.integer(), as.double(), and as.numeric() return the id portion of the projects_author object as an integer/double. The methods for the equality and value matching functions described below make use of these numeric coercion methods. Users desiring to apply value matching functions other than the ones described below may similarly take advantage of these.

**Equality and value matching methods**

Methods for ==, !=, match(), and %in% enable users to test equality and to value match among projects_author objects and as well as between projects_author objects and unclassed numbers/characters. When testing or matching against a numeric vector, the projects_author object is first coerced to an integer with the as.integer() method described above. When testing or matching against a character vector, the character vector is validated against the authors() table.

**c() method**

A method for c() was also written so that the class attribute is not lost.

**See Also**

Ops, Methods_for_Nongenerics. For other S3 class-retention strategies, see Extract and [.data.frame.

**Examples**

```r
# SETUP
old_home <- Sys.getenv("HOME")
old_ppath <- Sys.getenv("PROJECTS_FOLDER_PATH")
temp_dir <- tempfile("dir")
dir.create(temp_dir)
Sys.unsetenv("PROJECTS_FOLDER_PATH")
Sys.setenv(HOME = temp_dir)
setup_projects(path = temp_dir)
new_author("jonesman", "chuck", id = 33)
new_author("Hattie", "Hatsman", id = 45)

jones <- new_projects_author("33: Jones")

jones

as.integer(jones) # 33

jones == 33 # TRUE
jones == 10 # FALSE
jones != 33 # FALSE

jones %in% c(20:40) # TRUE
match(jones, c(31:40)) # 3
```
# Comparing a projects_author object to a character vector results in the character strings being validated against the authors() table. Then, the id numbers are compared.
jones == c("jOnES", "hat")  # TRUE FALSE

x <- structure("32: Clinton", class = "dummyclass")
class(c(x))  # Does not retain class
class(c(jones))  # Retains class

# Cleanup (or just restart R)
Sys.setenv(HOME = old_home, PROJECTS_FOLDER_PATH = old_ppath)

projects_folder

Description
Returns the file path of the main projects folder if it has been established via setup_projects().

Usage
projects_folder()

Details
The file path is returned as a simple character string. It simply returns the value of Sys.getenv("PROJECTS_FOLDER_PATH"), provided that its value is a file path of a directory that actually exists (i.e., setup_projects() has been successfully run).
If it can’t find a directory with that path, it returns this string:
projects folder not found. Please run setup_projects()

See Also
setup_projects() for setting up the projects folder.

Examples
projects_folder()
Description

Objects of this class are merely a character string containing a number and a name of one of seven project development stages.

Usage

new_projects_stage(x = character())

## S3 method for class 'projects_stage'
as.integer(x, ...)

## S3 method for class 'projects_stage'
as.double(x, ...)

## S3 method for class 'projects_stage'
as.numeric(x, ...)

match.projects_stage(x, table, nomatch = NA_integer_, incomparables = NULL)

## S4 method for signature 'projects_stage,ANY'
match(x, table, nomatch = NA_integer_, incomparables = NULL)

## S4 method for signature 'ANY,projects_stage'
m%in%m.projects_stage"(x, table)

x %in% table

Arguments

x          For new_projects_stage(), any object. For
For the as.*() methods, a projects_stage object.
For match() and %in%, an integer, a character string, or a projects_author
object. See match() and Comparison and value matching methods below.
... further arguments passed to or from other methods.

table An integer number, a character string, or a `projects_author` object. See `match()` and **Comparison and value matching methods** below.

nomatch See `match()`.

incomparables An integer number, a character string, or a `projects_author` object. See `match()`.

Details

A `projects_stage` object is either a missing value (NA) or one of:

0: idea
1: design
2: data collection
3: analysis
4: manuscript
5: under review
6: accepted

`new_projects_stage()` merely coerces the object’s class attribute to `projects_stage`.

Numeric coercion methods

`as.integer()`, `as.double()`, and `as.numeric()` return the stage number of the `projects_author` object as an integer/double. The methods for the comparison and value matching functions described below make use of these numeric coercion methods. Users desiring to apply value matching functions other than the ones described below may similarly take advantage of these.

Comparison and value matching methods

Methods for the Comparison operators as well as `match()` and `%in%` enable users to test equality and to value match among `projects_stage` objects and as well as between `projects_stage` objects and unclassed numbers/characters. When comparing or value matching against a numeric vector, the `projects_stage` object is first coerced to an integer with the `as.integer()` method described above. When testing or value matching against a character vector, the character vector is validated against the list of project stages enumerated above.

c() method

A method for `c()` was also written so that the class attribute is not lost.

See Also

`Ops`, `Methods_for_Nongenerics`. For other S3 class-retention strategies, see `Extract` and `[.data.frame`.

Examples

```r
stage <- new_projects_stage("4: manuscript")

as.integer(stage) # 4

stage == 4       # TRUE
```
reordering

Reordering authors and affiliations

Description

These functions allow the user to reorder a project’s authors or an author’s affiliations.

Usage

reorder_authors(project, ..., after = 0L, archived = FALSE)

reorder_affiliations(author, ..., after = 0L)

Arguments

project, author
  The id or unambiguous names of a project/author whose authors/affiliations you want to reorder.

...  The ids or names of authors/affiliations you want to reorder, optionally with their new ranks explicitly stated. See Details.

after  If not specifying explicit ranks in ..., the position you want the elements to come after. Works like the after argument in append or forcats::fct_relevel(). Ignored if ranks are explicitly provided in ....

archived  Logical indicating whether or not the function should consider archived projects when determining which project the user is referring to in the project argument. FALSE by default.
  See the Details section of archive_project() for more information on the "archived" status of a project.
Details

The order of authors and affiliations affects the order in which these items appear in the output of `header()`.

When specifying explicit ranks, enter ... as name-value pairs (e.g., Johnson = 2, "Baron Cohen" = 4). You can even enumerate authors/affiliations by their corresponding (quoted) id numbers (e.g., '7' = 2, ACME = 4, '22' = 6). If entering an integer greater than the total number of authors/affiliations, the element will be put at the end. The after argument will be ignored in this case.

When not specifying explicit ranks, simply enter author/affiliations ids or names in the order you want them, and the ones you entered will be inserted after the position specified by the after argument. By default (after = 0), the authors/affiliations in ... will be moved to the front. This behavior corresponds to that of `append()` or `forcats::fct_relevel()`.

Examples

```r
# SETUP
old_home <- Sys.getenv("HOME")
old_ppath <- Sys.getenv("PROJECTS_FOLDER_PATH")
temp_dir <- tempfile("dir")
dir.create(temp_dir)
Sys.unsetenv("PROJECTS_FOLDER_PATH")
Sys.setenv(HOME = temp_dir)
setup_projects(path = temp_dir)

new_affiliation(department_name = "Math Dept.",
  institution_name = "Springfield College",
  address = "123 College St, Springfield, AB")
new_affiliation(department_name = "Art Department",
  institution_name = "Springfield College",
  address = "321 University Boulevard, Springfield, AB",
  id = 42)
new_affiliation(department_name = "Central Intelligence Agency",
  institution_name = "United States Government",
  address = "888 Classified Dr, Washington DC")
new_affiliation(department_name = "Pyrotechnics",
  institution_name = "ACME")
new_author(given_names = "Rosetta", last_name = "Stone",
  affiliations = c(42, "Math"), degree = "PhD",
  email = "slab@rock.net", phone = "867-555-5309", id = 8888)
new_author(given_names = "Spiro", last_name = "Agnew", degree = "LLB",
  affiliations = "Art D", id = 13)
new_author(given_names = "Plato", id = 303)
new_author(given_names = "Condoleezza", last_name = "Rice", degree = "PhD",
  affiliations = c(1, 42, "Agency", "ACME"), phone = "555-555-5555",
  email = "condoleeza@ri.ce")
new_author(given_names = "Jane", last_name = "Goodall", degree = "PhD",
  affiliations = 3, id = 5)
new_project(title = "Understanding the Construction of the United States",
  short_title = "USA",
  authors = c(13, "Stone", "zz", "303", "Jane Goodall"),
  stage = 4, deadline = "2055-02-28", deadline_type = "submission",
```

save_session_info

Description

Creates a dated text file (.txt) containing the contents of sessioninfo::session_info().

Usage

save_session_info(path_dir = here::here("progs", "session_info"))

Arguments

path_dir The full path of the directory where the session information text file shall be written. If it doesn’t exist, it is written with fs::dir_create().

Details

The date and time when this function was run is included in the resulting .txt file’s name and first line. This date and time is obtained from Sys.time().

For the file name, hyphens (-) are removed from the date, spaces are replaced with underscores (_), and colons (:) are replaced with a modifier letter colon (U+A789).
setup_projects

Description

Create or restores the projects folder at the user-specified path.

Usage

```r
setup_projects(path, folder_name = "projects", overwrite = FALSE,
               make_directories = FALSE,
               .Renviron_path = file.path(Sys.getenv("HOME"), ".Renviron"))
```

Arguments

- **path**
  - The file path of the directory inside of which the user would like the projects folder to be created. Do not include the name of the projects folder itself (i.e., the value of the argument `folder_name` below).
- **folder_name**
  - The name of the projects folder that will be created in the directory specified by the argument `path` above. Defaults to "projects".
- **overwrite**
  - Logical indicating whether or not to abandon any previously stored projects folders stored in the system.
- **make_directories**
  - Logical indicating whether or not the function should write any directories specified in the `path` argument that don’t already exist.
- **.Renviron_path**
  - The full file path of the .Renviron file where the user would like to store the `projects_folder()` path. Default is the home .Renviron file. If the file doesn’t exist it will be created.

Details

The `projects` package remembers where the project folder is located by storing its file path in a .Renviron file (the home .Renviron file by default). The entry is named PROJECTS_FOLDER_PATH.

Note that changing the `.Renviron_path` argument may create an .Renviron file that R will not notice or use. See Startup for more details.

Value

The project folder’s path, invisibly.
Default contents

The projects folder automatically contains the subdirectories .metadata and .templates, which are hidden by default on some operating systems.

The .metadata folder and its contents should **never** be manually moved or modified.

The .templates folder is where template project files and folders should be stored. When this function is successfully run, the default projects folder template is created (as "default_folder") alongside a few other template files. When a new project is created, new_project() looks here for the folder named by its template_folder argument ("default_folder" by default), and this folder is copied into the projects folder (with name specified by the folder_name argument) as the new project folder. Users are able and encouraged to customize the default_folder to suit their research needs, and may even create multiple project folder templates for different situations.

Behavior when projects folder already exists

If overwrite = TRUE, the function will run no matter what. Use with caution.

If the user has a pre-existing projects folder and runs this command with the pre-existing projects folder's path, nothing will be deleted.

**Therefore**, if the user "broke" the projects folder (e.g., by deleting metadata; by changing the "PROJECTS_FOLDER_PATH" line in the .Renviron file), the user can "fix" the projects folder to some degree by running this function with the folder’s actual file path (e.g., restore all default templates; restore missing metadata files).

See Also

new_project() for information on templates

Startup for more information on how .Renviron files work.

Examples

```r
#############################################################################
# Setup
# Any existing "projects" folder is left totally untouched,
# and the user's home directory and .Renviron file are also left untouched.
old_home <- Sys.getenv("HOME")
old_ppath <- Sys.getenv("PROJECTS_FOLDER_PATH")
temp_dir <- tempfile("dir")
dir.create(temp_dir)
Sys.setenv(HOME = temp_dir)
Sys.unsetenv("PROJECTS_FOLDER_PATH")
Sys.unsetenv("PROJECTS_FOLDER_PATH")
#############################################################################

# Creating the projects folder
setup_projects(path = temp_dir)

# Viewing the projects folder path:
path1 <- projects_folder()

# Viewing the contents of the projects folder:
list.files(path1, full.names = TRUE, recursive = TRUE, all.files = TRUE)
```
# Create an arbitrary subfolder in temp_dir:
subfolder_path <- file.path(temp_dir, "test")
dir.create(subfolder_path)

# Wrapped in if (interactive()) because it requires user input
if (interactive()) {
  # The function won't let the user abandon the old projects folder...
  setup_projects(path = subfolder_path)
  # ...unless overwrite = TRUE
  setup_projects(path = file.path(temp_dir, "test"), overwrite = TRUE)
  # Even then, only the stored location of the projects folder is overwritten.
  # The old projects folder still exists:
  list.files(path, full.names = TRUE, recursive = TRUE, all.files = TRUE)
  # Giving the "projects" folder a different name:
  setup_projects(path = temp_dir, folder_name = "studies", overwrite = TRUE)
}

#############################################################################
# Cleanup
# (or, the user can just restart R)
Sys.setenv(HOME = old_home, PROJECTS_FOLDER_PATH = old_ppath)
#############################################################################

---

**update_metadata**

**Update the project metadata**

---

**Description**

Safely updates existing project metadata to be compatible with *projects 1.X.X*.

**Usage**

```r
update_metadata(ask = TRUE)
```

**Arguments**

- `ask` Logical, indicating whether or not the user would be asked at the command line whether or not to proceed. Defaults to *TRUE*.

**Details**

Prior to *projects 1.X.X*, the stage, current_owner, corresp_auth, and creator columns of the `projects()` table were different.

The stage column was a *factor*, and users had to type stage names exactly, down to the integer, colon, and space. Now, this column is of class *projects_stage-class*. 
The latter three columns were integers corresponding to ids in the authors() table, so users would have to query that table if they did not remember which author was denoted by the integer id.

See Also

projects_stage-class; projects_author-class.
Index

.Renviron, 25
==, 18
[.data.frame, 18, 21
%in%, ANY, projects_author-method
  (projects_author-class), 16
%in%, ANY, projects_stage-method
  (projects_stage-class), 20
%in%, projects_author, ANY-method
  (projects_author-class), 16
%in%, projects_stage, ANY-method
  (projects_stage-class), 20
%in%, projects_author
  (projects_author-class), 16
%in%, projects_stage
  (projects_stage-class), 20
%in%, 17, 18, 20, 21
~, 13

affiliations, 3, 12, 13, 15
append, 22, 23
archive_project, 4, 10, 14, 22
archive_project (file_management), 8
as.double, 18, 21
as.double.projects_author
  (projects_author-class), 16
as.double.projects_stage
  (projects_stage-class), 20
as.integer, 18, 21
as.integer.projects_author
  (projects_author-class), 16
as.integer.projects_stage
  (projects_stage-class), 20
as.numeric, 18, 21
as.numeric.projects_author
  (projects_author-class), 16
as.numeric.projects_stage
  (projects_stage-class), 20
as_datetime, 13
authors, 12, 13, 18, 28
authors (affiliations), 3

browseURL, 5, 6
c, 18, 21
Comparison, 21
copy_project (file_management), 8
delete_affiliation (new_edit_delete), 12
delete_author (new_edit_delete), 12
delete_project, 9
delete_project (new_edit_delete), 12
dir_create, 24
display_metadata (affiliations), 3
display_affiliation (new_edit_delete), 12
display_author (new_edit_delete), 12
display_project (new_edit_delete), 12
email_authors, 5
export_project, 7
Extract, 18, 21

factor, 27
fct_relevel, 22, 23
file_management, 8
formula, 13
getActiveProject, 6
header, 10, 13, 14, 23
ideas (affiliations), 3
invisibly, 15
left_join, 4

manuscripts (affiliations), 3
match, 17, 18, 20, 21
match, ANY, projects_author-method
  (projects_author-class), 16
match, ANY, projects_stage-method
  (projects_stage-class), 20
match, projects_author, ANY-method
  (projects_author-class), 16
match, projects.stage, ANY-method
  (projects.stage-class), 20
match.projects.author
  (projects.author-class), 16
match.projects.stage
  (projects.stage-class), 20
Methods_for_Nongenerics, 18, 21
move_project (file_management), 8

new_affiliation (new_edit_delete), 12
new_author (new_edit_delete), 12
new_edit_delete, 12
new_idea (new_edit_delete), 12
new_project, 8, 9, 26
new_project (new_edit_delete), 12
new_project_group (file_management), 8
new_projects.author
  (projects.author-class), 16
new_projects.stage
  (projects.stage-class), 20

open_project (file_management), 8
openProject, 9
Ops, 18, 21

path.sanitize, 8
POSIXct, 13
projects, 4, 6–10, 12, 14, 15, 25, 27
projects (affiliations), 3
projects folder, 9, 12–14, 25, 26
projects-package, 2
projects_author-class, 13, 16
projects_folder, 13, 14, 19, 25
projects_stage-class, 13, 20

rename_folder (file_management), 8
reorder_affiliations (reordering), 22
reorder_authors (reordering), 22
reordering, 22

save_session_info, 24
session_info, 24, 25
setup_projects, 3, 14, 19, 25
Startup, 25, 26
Sys.getenv, 19
Sys.info, 13
Sys.time, 24, 25

tibble, 4