Package ‘ClimMobTools’

May 8, 2020

Type Package
Title API Client for the ‘ClimMob’ Platform
Version 0.3.5
URL https://agrobioinfoservices.github.io/ClimMobTools/
BugReports https://github.com/agrobioinfoservices/ClimMobTools/issues
Description API client for ‘ClimMob’, an open source software for crowdsourcing citizen science in agriculture under the ‘tricot’ method <https://climmob.net/>.

Developed by van Etten et al. (2019) <doi:10.1017/S0014479716000739>, it turns the research paradigm on its head; instead of a few researchers designing complicated trials to compare several technologies in search of the best solutions, it enables many farmers to carry out reasonably simple experiments that taken together can offer even more information. ‘ClimMobTools’ enables project managers to deep explore and analyse their ‘ClimMob’ data in R.

License MIT + file LICENSE
Encoding UTF-8
LazyData true
Depends R (>= 3.5.0), climatrends, PlackettLuce
Imports httr, jsonlite, Matrix, methods, RSpectra
Suggests knitr, rmarkdown, testthat (>= 2.1.0)
Language en-GB
RoxygenNote 7.1.0
VignetteBuilder knitr
NeedsCompilation no
Author Kaue de Sousa [aut, cre] (<https://orcid.org/0000-0002-7571-7845>),
Jacob van Etten [aut] (<https://orcid.org/0000-0001-7554-2558>),
Brandon Madriz [ctb] (API Client implementation),
Carlos F. Quiros [ctb] (API Client implementation)
Maintainer Kaue de Sousa <kaue.desousa@inn.no>
Repository CRAN
Date/Publication 2020-05-08 14:30:02 UTC
ClimMobTools

Description

API client for 'ClimMob', an open source software for crowdsourcing citizen science in agriculture under the 'tricot' method <https://climmob.net/>. Developed by van Etten et al. (2019) <doi:10.1017/S0014479716000739>, it turns the research paradigm on its head; instead of a few researchers designing complicated trials to compare several technologies in search of the best solutions, it enables many farmers to carry out reasonably simple experiments that taken together can offer even more information. 'ClimMobTools' enables project managers to deep explore and analyse their 'ClimMob' data in R.

Author(s)

Kauê de Sousa and Jacob van Etten and Brandon Madriz

See Also

Useful links:

- Development repository: https://github.com/agrobioinfoservices/ClimMobTools
- Static documentation: https://agrobioinfoservices.github.io/ClimMobTools/
- ClimMob Platform: https://climmob.net/climmob3/
**getDataCM**

*Get ClimMob data*

---

**Description**

Fetch the data from a ClimMob project using an application programming interface (API) key

**Usage**

```r
dataGetCM(key = NULL, project = NULL, as.data.frame = TRUE, ...)
```

```r
## S3 method for class 'CM_list'
as.data.frame(x, ..., tidynames = TRUE, pivot.wider = FALSE)
```

**Arguments**

- `key`: a character for the user's application programming interface (API) key
- `project`: a character for the project id
- `as.data.frame`: logical, to return a data frame
- `...`: additional arguments passed to methods
- `x`: an object of class `CM_list`
- `tidynames`: logical, if TRUE suppress ODK strings
- `pivot.wider`: logical, if TRUE return a wider object where each observer is a row

**Details**

Additional arguments:

- `server`: a character to select from which server the data will be retrieved, either "production" (the default) or "testing"

**Value**

An object of class 'CM_list' or a data.frame with class "CM_df" with the variables:

- `id`: the participant's package id
- `moment`: the data collection moment
- `variable`: the variable name
- `value`: the value for each variable

**Author(s)**

Kauê de Sousa
getProjectsCM

See Also

ClimMob website https://climmob.net/
Other GET functions: getProjectsCM()

Examples

## Not run:

# This function will not work without an API key
# the user API key can be obtained once a free ClimMob account
# is created via https://climmob.net/

my_key <- "add_your_key"
my_project <- "my_climmob_project"

data <- getDataCM(key = my_key, project = my_project)

## End(Not run)

---

getProjectsCM Get ClimMob projects

Description

Fetch the status of ClimMob projects

Usage

getProjectsCM(key = NULL, ...)

Arguments

key a character for the user’s application programming interface (API) key

... additional arguments passed to methods. See details

Details

Additional arguments:

server: a character to select from which server the data will be retrieved, either "prodution" (the default) or "testing"
**Value**

A data frame with the ClimMob projects

- **project_id**: the project unique id
- **name**: the project name
- **status**: the current status
- **creation_date**: the project's creation date
- **intended_participants**: the number of participants the project intended to register
- **registration_progress**: the percentage of intended participants which were registered
- **last_registration_activity**: number of days since the submission of the last registration

**Author(s)**

Kauê de Sousa

**See Also**

ClimMob website [https://climmob.net/](https://climmob.net/)

Other GET functions: `getDataCM()`

**Examples**

```r
## Not run:
# This function will not work without an API key
# the user API key can be obtained once a free ClimMob account
# is created via https://climmob.net/

my_key <- "add_your_key"

getProjectsCM(key = my_key)

## End(Not run)
```

---

**randomise**  
*Randomised group of items*
randomise

Description

Set a randomised group of items for crowdsourcing citizen science. Generate designs for ranking of options. It is designed for tricot trials specifically (comparing 3 options), but it will also work with comparisons of any other number of options. The design strives for approximate A optimality, this means that it is robust to missing observations. It also strives for balance for positions of each option. Options are equally divided between first, second, third, etc. position. The strategy is to create a “pool” of combinations that does not repeat combinations and is A-optimal. Then this pool is ordered to make subsets of consecutive combinations also relatively balanced and A-optimal

Usage

randomise(ncomp = 3, nobservers = NULL, nitems = NULL, itemnames = NULL)

Arguments

ncomp an integer for the number of items each observer compares
nobservers an integer for the number of observers
nitems an integer for the number of items tested in the project
itemnames a character for the name of items tested in the project

Value

A dataframe with the randomised design

Author(s)

Jacob van Etten

Examples

ni <- 3
no <- 10
nv <- 4
inames <- c("mango","banana","grape","apple")

randomise(ncomp = ni,
           nobservers = no,
           nitems = nv,
           itemnames = inames)
seed_need

Required seed amount in a tricot project

Description

Calculate the required amount of seeds (or other technology) required for a triadic comparison of technologies (tricot) project.

Usage

\[
\text{seed\_need}(\text{nobservers} = 100, \text{ncomp} = 3, \text{nitems} = 10, \text{nseeds} = 0.15, \text{unit} = \text{"kg"})
\]

Arguments

- `nobservers`: an integer for the number of observers
- `ncomp`: an integer for the number of items each observer compares
- `nitems`: an integer for the number of items tested in the project
- `nseeds`: an integer for the metric of seeds each bag receives
- `unit`: optional, a character specifying the metric unit used

Value

A dataframe with required number of seeds

Author(s)

Kauê de Sousa

Examples

# allocate 0.2 kg of seeds per variety in a project with 500 participants and 14 varieties
\[
\text{seed\_need}(\text{nobservers} = 500, \\
\hspace{1em} \text{ncomp} = 3, \\
\hspace{2em} \text{nitems} = 14, \\
\hspace{3em} \text{nseeds} = 0.2)
\]

# allocate 100 seedlings per variety in a project with 400 participants, 8 varieties and 3 comparisons between varieties
\[
\text{seed\_need}(\text{nobservers} = 400, \\
\hspace{1em} \text{ncomp} = 3, \\
\hspace{2em} \text{nitems} = 9, \\
\hspace{3em} \text{nseeds} = 100, \\
\hspace{4em} \text{unit} = \text{"unit"})
\]
Index

as.data.frame.CM_list(getDataCM), 3

ClimMobTools, 2
ClimMobTools-package (ClimMobTools), 2

getDataCM, 3, 5
getProjectsCM, 4, 4

randomise, 5
randomize (randomise), 5

seed_need, 7