Package ‘ClimMobTools’

March 16, 2020

Type Package

Title API Client for the 'ClimMob' Platform

Version 0.3.2

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/climmob3/>. 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.

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Encoding UTF-8

LazyData true

Depends R (>= 3.5.0)

Imports climatrends, httr, jsonlite, Matrix, methods, RSpectra, tibble, utils

Suggests knitr, PlackettLuce (>= 0.2-8), rmarkdown, testthat (>= 2.1.0)

Language en-GB

RoxygenNote 7.0.2

VignetteBuilder knitr

NeedsCompilation no

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**Description**

API client for 'ClimMob', an open source software for crowdsourcing citizen science in agriculture under the 'tricot' method [https://climmob.net/climmob3/]. 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](https://github.com/agrobioinfoservices/ClimMobTools)
- Static documentation: [https://agrobioinfoservices.github.io/ClimMobTools/](https://agrobioinfoservices.github.io/ClimMobTools/)

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**getDataCM**

*Get ClimMob data*

**Description**

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

**Usage**

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

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

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

Value

An object of class ‘CM_list’ or a data.frame 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

See Also

generateProjectsCM

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/climmob3/

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
Get ClimMob projects using an application programming interface (API) key

Usage
getProjectsCM(key = NULL)

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

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
https://climmob.net/climmob3/

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/climmob3/

my_key <- "add_your_key"
randomise

getProjectsCM(key = my_key)

## End(Not run)

randomise  

**Randomised group of items**

**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**

```r
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

seed_need(nobservers = 100, ncomp = 3, nitems = 10, nseeds = 0.15, unit = "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
seed_need(nobservers = 500, 
             ncomp = 3, 
             nitems = 14, 
             nseeds = 0.2)

# allocate 100 seedlings per variety in a project with 400 participants, 8 varieties and 3 comparisons between varieties
seed_need(nobservers = 400, 
             ncomp = 3, 
             nitems = 9, 
             nseeds = 100, 
             unit = "unit")
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