

Package ‘rAvis’

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Type Package

Title Interface to the Bird-Watching Dataset Proyecto AVIS

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BugReports <https://github.com/ropensci/rAvis/issues>

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Description Interface to <<http://proyectoavis.com>> database.
It provides means to download data filtered by species, order,
family, and several other criteria. Provides also basic functionality to
plot exploratory maps of the datasets.

License GPL-2

URL <https://github.com/ropensci/rAvis>

LazyData true

Imports stringr, XML, RCurl, scrapeR, gdata, scales, rgdal, maptools,
raster, sp, tools

Suggests testthat, roxygen2

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NeedsCompilation no

Repository CRAN

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avisAllSpecies	<i>avisAllSpecies</i>
----------------	-----------------------

Description

Returns a vector with the ids of the species in Proyecto AVIS

Usage

```
avisAllSpecies()
```

Value

returns a vector

Note

This functions does not allow arguments

Examples

```
## Not run:
avisAllSpecies()

## End(Not run)
```

```
avisContributorAggregatedObservations
  avisContributorAggregatedObservations
```

Description

A function to download the information about the observations of a birdwatcher.

Usage

```
avisContributorAggregatedObservations(contributor_id)
```

Arguments

contributor_id a number setting the id of the birdwatcher (see avisContributorSummary)

Value

This function returns a dataframe

Examples

```
# Explore the contributions of Colectivo Ornitologico Ciguena Negra
## Not run:
avisContributorAggregatedObservations (370)

## End(Not run)
```

```
avisContributorsSummary
  avisContributorsSummary
```

Description

Returns a table with the observations aggregated by birdwatcher.

Usage

```
avisContributorsSummary()
```

Value

This function returns a matrix

Note

This function does not allow arguments

Examples

```
## Not run:
birdwatchers<- avisContributorsSummary()
par (mfrow =c(2,2))
plot (birdwatchers[,2],birdwatchers[,3], xlab=colnames (birdwatchers)[2],
ylab=colnames (birdwatchers)[3], pch=19)
plot (birdwatchers[,2],birdwatchers[,4], xlab=colnames (birdwatchers)[2],
ylab=colnames (birdwatchers)[4], pch=19)
plot (birdwatchers[,2],birdwatchers[,5], xlab=colnames (birdwatchers)[2],
ylab=colnames (birdwatchers)[5], pch=19)
plot (birdwatchers[,2],birdwatchers[,6], xlab=colnames (birdwatchers)[2],
ylab=colnames (birdwatchers)[6], pch=19)

## End(Not run)
```

avisHasSpecies	<i>avisHasSpecies</i>
----------------	-----------------------

Description

check if a species name exists in Proyecto AVIS.

Usage

```
avisHasSpecies(nameraw)
```

Arguments

nameraw scientific name of the species (e.g. "Pica pica")

Value

Logical: returns TRUE for species with observations in the database and FALSE otherwise

Examples

```
## Not run:
avisHasSpecies("Pica pica")
avisHasSpecies("Pica pic")

## End(Not run)
```

avisMap	<i>Renders a map for the observations provided in 'obs'</i>
---------	---

Description

This function should be used with `avisQuerySpecies`, to set a particular query (with or without filters) and get the observations that we want to map. It just allow to map one species. See `avisMapSpecies` for multiple maps.

Usage

```
avisMap(obs, label = "", maptype = "admin")
```

Arguments

obs	set of observations returned by any of the <code>avisQueryXXX</code> functions
label	label for the map. E.g. "Occurrences of <i>Pica pica</i> in Proyecto AVIS"
maptype	Available types of map are 'admin', administrative provinces of Spain (by default) or 'phys', physical map of Spain.

Value

a plot with the occurrences of the species in the Iberian Peninsula. Maps have high resolution, so they could be printed.

Examples

```
## Not run:  
obs<- avisQuerySpecies ("Pica pica", args = list(habitat = "bosque"))  
avisMap(obs, label = "Pica pica")  
avisMap(obs, label = "Pica pica", maptype = "phys")  
  
## End(Not run)
```

avisMapSpecies	<i>Renders a map for each of the species provided in names</i>
----------------	--

Description

This function map the species occurrences in the Iberian Peninsula.

Usage

```
avisMapSpecies(names, maptype = "admin", ...)
```

Arguments

names	scientific name of the species (it could be a list of scientific names). E.g. "Pica pica"
maptype	Available types of map are 'admin', administrative provinces of Spain (by default) or 'phys', physical map of Spain.
...	other filters passed to the observations query with <code>avisQuerySpecies</code>

Details

For constructing these maps we used free online map repositories. We downloaded the Spanish administrative map from <http://www.diva-gis.org/> and the Spanish physical map of <http://www.openstreetmap.org/> using the R- library `OpenStreetMap`.

Value

a plot with the occurrences of the species in the Iberian Peninsula. Maps have high resolution, so they could be printed.

Examples

```
## Not run:

avisMapSpecies("Bubo bubo", "phys")

# if interested in several species, you can explore the database using avisMapSpecies
avisMapSpecies (list("Tyto alba", "Athene noctua", "Bubo bubo", "Strix aluco"),
                maptype="phys")

# and you can save those maps individually using the tiff function

directory<- "C:/your_directory"
species<- list("Tyto alba", "Athene noctua", "Bubo bubo", "Strix aluco")
for (x in species){
  tiff (file.path (directory, paste ("/", x, ".tiff", sep="")))
  avisMapSpecies (x)
  dev.off()
}

## End(Not run)
```

 avisQuery

avisQuery

Description

General function for querying the database using several filters, like order, family, species, age, sex, habitat, etc.

Usage

```
avisQuery(id_species = "", species = "", family = "", order = "",
age = "", sex = "", breeding = "", habitat = "", month = "", year = "",
args = list())
```

Arguments

id_species	a number setting the id of the species according to proyectoavis.com database. You may get the id of a species with avisSpeciesId
species	scientific name of the species (one single species): e.g. "Passer domesticus"
family	To filter the data by family: e.g. "Passeridae", "Falconidae", etc.
order	To filter the data by Order: e.g. "Passeriformes", "Falconiformes", etc.
age	To filter the data by age: "pollo", "juvenil", "adulto", "indeterminado".
sex	To filter the data by sex: "macho", "hembra", "indeterminado", "pareja", "machos y hembras"
breeding	To filter the data by breeding-migratory status: "reproducción posible", "reproducción probable", "reproducción segura", "migración", "invernada"
habitat	Filter by habitat: "bosque", "matorral", "pastizales", "terrenos agrícolas", "zonas humanizadas", "zonas húmedas interiores", "roquedos de interior", "costas", "otros"
month	Filter by month: 1 to 12
year	Filter by year: e.g. 2001
args	List of arguments accepted by www.proyectoavis.com endpoint. You may use this list to set the arguments of the function (species, sex, breeding...), or you may also set all the parameters supported by the endpoint, but not normalized for its use in this package. These arguments are: id_ca, id_provincia, dia_ini, mes_ini, ano_ini, dia_fin, mes_fin, ano_fin, usu, plazo, hora_ini, minuto_ini, hora_fin, minuto_fin, codigo_habitat, gr, cf, utm_10, utm_1 (see www.proyectoavis.com)

Details

In case you set a query parameter by its name (eg: `avisQuery (species="Bubo bubo")`) and also you set it inside the 'args' parameter (eg: `avisQuery (species="Bubo bubo", args=list(species="Tyto alba"))`), the value setted by its name will prevail (in the example, "Bubo bubo" will apply).

Value

a dataframe with the results of your specific query to Proyecto AVIS database.

Examples

```
## Not run:
# get all the observations of the species of the Order Falconiformes
avisQuery (order = "Falconiformes")
# get all the observations of the species of the Family Falconidae
avisQuery(family = "Falconidae")
```

```
# get the observations of immatures of Iberian Imperial Eagle
avisQuery (species= "Aquila adalberti", age = "juvenil")

## End(Not run)
```

`avisQueryContributor` *avisQueryContributor*

Description

Is a wrapper for `avisQuery` that allows you to perform a query for more than one contributor at once.

Usage

```
avisQueryContributor(contributor_ids, args = list())
```

Arguments

<code>contributor_ids</code>	must be either an integer or a list of contributors ids (integers)
<code>args</code>	A list of normalized parameters to add filters to the query. Currently in Spanish, but this might become outdated. See <code>avisQuery</code> .

Value

a dataframe with the results of your specific query to Proyecto AVIS database

See Also

`avisContributorsSummary`

Examples

```
## Not run:
avisQueryContributor(370)
avisQueryContributor(list(370, 399), args = list(year = 2002))

## End(Not run)
```

avisQuerySpecies	<i>avisQuerySpecies</i>
------------------	-------------------------

Description

Is a wrapper for `avisQuery` that allows you to perform a query for more than one species at once. 'names' must be either a string or a list of species names, 'args' is a list of query parameters (see `avisQuery`) that adds further filters to the query.

Usage

```
avisQuerySpecies(names, args = list())
```

Arguments

names	Must be either a string or a list of scientific names
args	A list of normalized parameters to add filters to the query. Currently in Spanish, but this might become outdated. See <code>avisQuery</code> .

Value

a dataframe with the results of your specific query to Proyecto AVIS database

Examples

```
## Not run:  
avisQuerySpecies("Bubo bubo")  
avisQuerySpecies(list("Bubo bubo", "Tyto alba"), args = list(year = 2012))  
  
## End(Not run)
```

avisSetup	<i>avisSetup</i>
-----------	------------------

Description

Sets up settings that apply to the behaviour of the package. Allow users to turn off the information messages of the functions.

Usage

```
avisSetup (...)
```

Arguments

... Package settings parameters. Available params: `verbose = TRUE/FALSE`

Examples

```
## Not run:
avisSetup(verbose=FALSE)

## End(Not run)
```

avisSpeciesId	<i>avisSpeciesId</i>
---------------	----------------------

Description

Returns the id of the selected species

Usage

```
avisSpeciesId(nameraw)
```

Arguments

nameraw scientific name of the species (e.g. "Pica pica")

Value

an integer

Examples

```
## Not run:
avisSpeciesId("Pica pica")

## End(Not run)
```

avisSpeciesSummary	<i>avisSpeciesSummary</i>
--------------------	---------------------------

Description

Download a table with a summary of the records stored in Proyecto AVIS (<http://proyectoavis.com>) aggregated by species; number of observations of each species, number of individuals recorded, number of different UTM's (10x10km) with observations, number of birdwatchers that recorded the species

Usage

```
avisSpeciesSummary()
```

Value

returns a dataframe

Note

This functions does not allow arguments

Examples

```
## Not run:
avis_summary<- avisSpeciesSummary()
# general overview of the data aggregated by species
par (mfrow =c(2,2))
hist (avis_summary$Observations, col="red", border=FALSE, main=NULL)
hist (avis_summary$Individuals, col="red", border=FALSE, main=NULL)
hist (avis_summary$UTM.10x10, col="red", border=FALSE, main=NULL)
hist (avis_summary$Birdwatchers, col="red", border=FALSE, main=NULL)

## End(Not run)
```

canarias

A physical map of the Canary Islands

Description

A tif image downloaded from <http://www.openstreetmap.org/> using the R- library OpenStreetMap

Format

tif image

Source

<http://www.openstreetmap.org/>

peninsula

A physical map of the Iberian Peninsula

Description

A tif image downloaded from <http://www.openstreetmap.org/> using the R- library OpenStreetMap

Format

tif image

Source

<http://www.openstreetmap.org/>

rAvis

rAvis: An R-package to download the information stored in Proyecto AVIS, a citizen science bird project.

Description

We developed several functions to explore and download the information stored in ProyectoAVIS database (www.proyectoavis.com), in an easy and visual way.

Details

We programmed two main functions to set flexible queries about the species occurrences and the birdwatcher observations: `avisQuerySpecies` and `avisQueryContributor`. Besides, there are also general functions to explore the database, like `avisMapSpecies`.

Package: rAvis
Type: Package
Version: 0.1.3
Date: 2013-11-24
License: GPL-2

Author(s)

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References

Varela S, Gonzalez-Hernandez J, Casabella E, Barrientos R (2014) rAvis: An R-Package for Downloading Information Stored in Proyecto AVIS, a Citizen Science Bird Project. PLoS ONE 9(3): e91650. doi: 10.1371/journal.pone.0091650

See Also

<http://proyectoavis.com>

Examples

```
## Not run:  
avisSpeciesSummary()  
  
avisMapSpecies ("Pica pica", matype="phys")  
  
avisQuerySpecies(list("Bubo bubo", "Tyto alba"), args = list(year = 2012))  
  
## End(Not run)
```

ravisUTMLatLong	<i>UTM-Latlong</i>
-----------------	--------------------

Description

Geographic coordinates (lat-long) of the centroids of the Spanish UTM squares

Format

matrix

ravis_credentials	<i>ravis_credentials</i>
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Description

Credentials for API

Format

string

ravis_shape_spain	<i>A Spanish administrative map</i>
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Description

A shapefile downloaded from <http://www.diva-gis.org/>

Format

shapefile

Source

<http://www.diva-gis.org/>

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