Package ‘rAvis’

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Type Package
Title Interface to the bird-watching datasets at proyectoavis.com
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BugReports https://github.com/ropensci/rAvis/issues
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Description Interface to the proyectoavis.com bird observations records database. It provides means to download datasets 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
Depends R (>= 2.10)

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R topics documented:

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avisAllSpecies

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

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 Ornitológico Ciguena Negra
## Not run:
avisContributorAggregatedObservations (370)

## End(Not run)

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
avisHasSpecies

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  

Renders a map for the observations provided in 'obs' 

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 avisQueryXXX functions  
label label for the map. E.g. "Occurrences of Pica pica 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 = "Occurrences of Pica pica in Proyecto AVIS")  
avisMap(obs, label = "Occurrences of Pica pica in Proyecto AVIS", maptype = "phys")
## End(Not run) 

avisMapSpecies  

Renders a map for each of the species provided in names 

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 avisQuerySpecies

**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**

```r
## 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)

**Description**

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

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 settled 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

```r
# 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")
```
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

contributor_ids
must be either an integer or a list of contributors ids (integers)

args
A list of normalized parameters to add filters to the query. Currently in Spanish, but this might become outdated. See avisQuery.

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

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 avisQuery.

Value

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

Examples

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

avisSetup

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

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

## End(Not run)
```

avisSpeciesId    avisSpeciesId

Description

Returns the id of the selected species

Usage

```r
avisSpeciesId(nameraw)
```

Arguments

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

Value

an integer

Examples

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

## End(Not run)
```

avisSpeciesSummary    avisSpeciesSummary

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 UTMs (10x10km) with observations, number of birdwatchers that recorded the species

Usage

```r
avisSpeciesSummary()
```
Value

returns a dataframe

Note

This function does not allow arguments

Examples

```r
## 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$UTM.18x10, col = "red", border = FALSE, main = NULL)
hist(avis_summary$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: 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
Date: 2013-11-24
License: GPL-2
```

Author(s)

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References


See Also

http://proyectoavis.com

Examples

```r
## Not run:
avisSpeciesSummary()

avisMapSpecies("Pica pica", maptype="phys")

avisQuerySpecies(list("Bubo bubo", "Tyto alba"), args = list(year = 2012))

## End(Not run)
```
<table>
<thead>
<tr>
<th><strong>ravisUTMLatLong</strong></th>
<th><strong>UTM-Latlong</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>Geographic coordinates (lat-long) of the centroids of the Spanish UTM squares</td>
</tr>
<tr>
<td><strong>Format</strong></td>
<td>matrix</td>
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<table>
<thead>
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<th><strong>ravis_credentials</strong></th>
<th><strong>ravis_credentials</strong></th>
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<tr>
<td><strong>Description</strong></td>
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</tr>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>ravis_shape_spain</strong></th>
<th><strong>A Spanish administrative map</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>A shapefile downloaded from <a href="http://www.diva-gis.org/">http://www.diva-gis.org/</a></td>
</tr>
<tr>
<td><strong>Format</strong></td>
<td>shapefile</td>
</tr>
<tr>
<td><strong>Source</strong></td>
<td><a href="http://www.diva-gis.org/">http://www.diva-gis.org/</a></td>
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