Package 'specieshindex'

July 28, 2020

Type Package

Title How (scientifically) popular is a given species?

Version 0.0.1

Date 2020-07-10

Author Jessica Tam

Maintainer Jessica Tam <tamtinying@gmail.com>

Description Finds the h-index of a species.

Depends R (>= 3.1.0)

LazyData true

Imports rscopus,
taxize,
tidyverse

Suggests testthat,
knitr,
roxygen2,
devtools,
rmarkdown

License MIT + file LICENSE

URL https://github.com/jessicatytam/Honours

RoxygenNote 7.1.1

VignetteBuilder knitr

R topics documented:

`Allindices` *Index summary*

Description

This function returns a dataframe of the summary of all of the indices.

Usage

```
Allindices(data, genus, species)
```

Arguments

`data`	The dataframe generated from `FetchSpT` or `FetchSpTAK`.
`genus`	Genus classification from the binomial name.
`species`	Species classification from the binomial name.

Value

A datarame of all of the indices in the package.

Examples

```
Allindices(data, genus = "genus_name", species = "species_name")
```

ARRatio *Article:Review ratio*

Description

This function calculates the percentage ratio of article:rerview.

Usage

```
ARRatio(data)
```

Arguments

data	The dataframe generated from FetchSpT or FetchSpTAK.

Value

A character value of the percentage ratio of the number of articles and reviews.

Examples

```
ARRatio(data)
```

CountSpT *Search count - title only*

Description

This function counts the total number of search results. It counts only the publications with the binomial name in their title. A check will be conducted via taxize to validify the genus and species names.

Usage

```
CountSpT(genus, species, APIkey, datatype = "application/xml")
```

Arguments

genus	Genus classification from the binomial name.
species	Species classification from the binomial name.
APIkey	Scopus API key needed to access and download data from their database.
datatype	Formats the URL to be sent to the API. The default is "application/xml".

Value

Search count of the species with the given genus and species.

References

Scott Chamberlain, Eduard Szocs (2013). "taxize - taxonomic search and retrieval in R." F1000Research. http://f1000research.com/articles/2-191/v2.

CountSpTAK *Search count - title, abstract and keywords*

Description

This function counts the total number of search results. It counts the publications with the binomial name in the title, abstract and keywords. A check will be conducted via `taxize` to validify the genus and species names.

Usage

```
CountSpTAK(genus, species, APIkey, datatype = "application/xml")
```

Arguments

`genus`	Genus classification from the binomial name.
`species`	Species classification from the binomial name.
`APIkey`	Scopus API key needed to access and download data from their database.
`datatype`	Formats the URL to be sent to the API. The default is "application/xml".

Value

Search count of the species with the given `genus` and `species`.

References

Scott Chamberlain, Eduard Szocs (2013). "taxize - taxonomic search and retrieval in R." F1000Research. http://f1000research.com/articles/2-191/v2.

Examples

```
CountSpTAK("Bettongia", "penicillata", "442b9048417ef20cf680a0ae26ee4d86")

#lower case letter in genus is also accepted and will return identical results

CountSpTAK("bettongia", "penicillata", "442b9048417ef20cf680a0ae26ee4d86")
```

FetchSpT *Fetch data - title only*

Description

This function fetches citation information from Scopus using genus and species name found in the title of the publications. Duplicates are removed after fetching the data.

Usage

```
FetchSpT(genus, species, APIkey)
```

Arguments

genus	Genus classification from the binomial name.
species	Species classification from the binomial name.
APIkey	Scopus API key needed to access and download data from their database.

Value

A dataframe of the species' citation records with the given genus and species.

Examples

```
FetchSpT("Bettongia", "penicillata", "442b9048417ef20cf680a0ae26ee4d86")

#lower case letter in genus is also accepted and will return identical results

FetchSpT("bettongia", "penicillata", "442b9048417ef20cf680a0ae26ee4d86")
```

FetchSpTAK *Fetch data - title, abstract and keywords*

Description

This function fetches citation information from Scopus using genus and species name found in the title, abstract and keywords of the publications. Duplicates are removed after fetching the data.

Usage

```
FetchSpTAK(genus, species, APIkey)
```

Arguments

genus	Genus classification from the binomial name.
species	Species classification from the binomial name.
APIkey	Scopus API key needed to access and download data from their database.

Value

A dataframe of the species' citation records with the given genus and species.

Examples

```
FetchSpT("Bettongia", "penicillata", "442b9048417ef20cf680a0ae26ee4d86")

#lower case letter in genus is also accepted and will return identical results

FetchSpT("bettongia", "penicillata", "442b9048417ef20cf680a0ae26ee4d86")
```

`Koala`	*Citation records of koala (Phascolarctos cinereus) from Scopus. Data was retrieved on 10 July 2020.*

Description

Citation records of koala (Phascolarctos cinereus) from Scopus. Data was retrieved on 10 July 2020.

Usage

```
Koala
```

Format

A data frame with 773 rows and 20 variables

Source

http://api.elsevier.com/content/search/scopus

`Platypus`	*Citation records of platypus (Ornithorhynchus anatinus) from Scopus. Data was retrieved on 10 July 2020.*

Description

Citation records of platypus (Ornithorhynchus anatinus) from Scopus. Data was retrieved on 10 July 2020.

Usage

```
Platypus
```

Format

A data frame with 321 rows and 20 variables

Source

http://api.elsevier.com/content/search/scopus

Quokka *Citation records of quokka (Setonix brachyurus) from Scopus. Data was retrieved on 10 July 2020.*

Description

Citation records of quokka (Setonix brachyurus) from Scopus. Data was retrieved on 10 July 2020.

Usage

```
Quokka
```

Format

A data frame with 242 rows and 20 variables

Source

http://api.elsevier.com/content/search/scopus

SpH5 *Species h5 index*

Description

This function calculates the h-index of a species in the past 5 years.

Usage

```
SpH5(data)
```

Arguments

data	The dataframe generated from FetchSpT or FetchSpTAK.

Value

H5 index.

Examples

```
SpH5(data)
```

SpHAfterdate *Species h-index with a given time frame*

Description

This function calculates the h-index using a given date up till the newest record.

Usage

```
SpHAfterdate(data, date)
```

Arguments

data	The dataframe generated from FetchSpT or FetchSpTAK.
date	The lower limit of the timeframe.

Value

H-index of the given time period.

Examples

```
HAfterdate(data, "2000-01-01")
```

SpHGrowth *H-index growth*

Description

This function calculates the cumulative h-index overtime by year.

Usage

```
SpHGrowth(data)
```

Arguments

data	The dataframe generated from FetchSpT or FetchSpTAK.

Value

A dataframe of the cumulative h-index.

Examples

```
SpHGrowth(data)
```

SpHindex *Species h-index*

Description

This function calculates the h-index of a species.

Usage

```
SpHindex(data)
```

Arguments

data	The dataframe generated from FetchSpT or FetchSpTAK.

Value

H-index.

References

Bertoli-Barsotti, L., & Lando, T. (2015). On a formula for the h-index. Journal of Informetrics, 9(4), 762-776. Hirsch, J. (2005). An index to quantify an individual's scientific research output. Proceedings of the National Academy of Sciences of the United States of America, 102(46), 16569-16572.

Examples

```
SpHindex(data)
```

SpHYear *H-index by year*

Description

This function calculates the h-index by year.

Usage

```
SpHYear(data)
```

Arguments

data	The dataframe generated from FetchSpT or FetchSpTAK.

Examples

```
SpHGrowth(data)
```

Spi10 *Species i10 index*

Description

This function calculates the i10 index of a species. i10 index counts all of the publications with 10 or more citations.

Usage

```
Spi10(data)
```

Arguments

data	The dataframe generated from FetchSpT or FetchSpTAK.

Value

i10 index.

Examples

```
Spi10(data)
```

SpMindex *Species m-index*

Description

This function calculates the m-index of species. M-index uses the h-index and divides it by the number of years of activity.

Usage

```
SpMindex(data)
```

Arguments

data	The dataframe generated from FetchSpT or FetchSpTAK.

Value

M-index.

References

Hirsch, J. (2005). An index to quantify an individual's scientific research output. Proceedings of the National Academy of Sciences of the United States of America, 102(46), 16569-16572.

Examples

```
SpMindex(data)
```

`TotalArt` *Total Article*

Description

This function calculates the total number of articles.

Usage

```
TotalArt(data)
```

Arguments

`data`	The dataframe generated from `FetchSpT` or `FetchSpTAK`.

Value

An integer of the total number of articles.

Examples

```
TotalArt(data)
```

`TotalCite` *Total citations*

Description

This function calculates the total number of citations.

Usage

```
TotalCite(data)
```

Arguments

`data`	The dataframe generated from `FetchSpT` or `FetchSpTAK`.

Value

A numerical value of the total number of citations.

Examples

```
TotalCite(data)
```

TotalJournals *Total journals*

Description

This function calculates the total number of journals.

Usage

```
TotalJournals(data)
```

Arguments

data	The dataframe generated from FetchSpT or FetchSpTAK.

Value

An integer of the total number of journals.

Examples

```
TotalJournals(data)
```

TotalPub *Total publications*

Description

This function calculates the total number of publications.

Usage

```
TotalPub(data)
```

Arguments

data	The dataframe generated from FetchSpT or FetchSpTAK.

Value

An integer of the total number of publications.

Examples

```
TotalPub(data)
```

`TotalRev` *Total reviews*

Description

This function calculates the total number of reviews.

Usage

```
TotalRev(data)
```

Arguments

`data`	The dataframe generated from `FetchSpT` or `FetchSpTAK`.

Value

An integer of the total number of reviews.

Examples

```
TotalRev(data)
```

`Woylie` *Citation records of woylie (Bettongia penicillata) from Scopus. Data was retrieved on 10 July 2020.*

Description

Citation records of woylie (Bettongia penicillata) from Scopus. Data was retrieved on 10 July 2020.

Usage

```
Woylie
```

Format

A data frame with 113 rows and 20 variables

Source

http://api.elsevier.com/content/search/scopus

`YearsPublishing` *Years since first publication*

Description

The number of years since the first publication in relation to the species.

Usage

```
YearsPublishing(data)
```

Arguments

`data`	The dataframe generated from `FetchSpT` or `FetchSpTAK`.

Value

Number of years.

Examples

```
YearsPublishing(data)
```

Index