Package: cshapes (via r-universe)

September 11, 2024

Type Package

Title The CShapes 2.0 Dataset and Utilities

Version 2.0

Imports sf, rmapshaper, sp

Suggests testthat (>= 2.0.0)

Description Package for CShapes 2.0, a GIS dataset of country borders
(1886-today). Includes functions for data extraction and the
computation of distance matrices and -lists.

License GPL (>= 2)

Encoding UTF-8

RoxygenNote 7.1.1

NeedsCompilation no

Author Nils B. Weidmann [aut], Guy Schvitz [aut], Luc Girardin [aut,
cre]

Maintainer Luc Girardin <luc.girardin@ethz.ch>

Date/Publication 2021-06-05 13:20:05 UTC

Repository https://lucgirardin.r-universe.dev

RemoteUrl https://github.com/cran/cshapes

RemoteRef HEAD

RemoteSha 54840534d9a82cfd01caf1021f85933e701e8318

Contents

---

cshp   *Access the CShapes dataset in R*

Description

Access the CShapes dataset in R

Usage

```
cshp(date = NA, useGW = TRUE, dependencies = FALSE)
```

Arguments

date	The date for which the cshapes polygons should be extracted. This argument must be of type Date and must be in the range 1/1/1886 - end of the dataset. If omitted, the complete dataset is returned.
useGW	Boolean argument specifying the system membership coding. TRUE: Gleditsch and Ward (GW, default). FALSE: Correlates of War (COW).
dependencies	Boolean argument specifying whether dependent territories must be included. TRUE: Returns polygons for both independent states and dependent units. FALSE: Returns polygons for indepdendent states only (default).

Value

A `sf` dataframe containing the complete CShapes dataset, or the CShapes snapshot for the specified date.

---

distlist   *Compute distance lists on the CShapes dataset*

Description

This function returns between-country distances in km for the given date. Output format is a dataframe that lists distances between each pair of countries. The function can compute different types of distance lists, specified by the `type` parameter:

1. Capital distances
2. Centroid distances
3. Minimum distances between polygons

The latter computation is very expensive if polygons consist of many points. For that reason, the function simplifies the country polygons according to the Douglas-Peucker algorithm (http://en.wikipedia.org/wiki/Ramer-Douglas-Peucker_algorithm), which eliminates points from the polygons and speeds up computation. The keep parameter specifies the proportion of points to retain in the simplified country polygons. Note that the function returns directed dyads. For example, if there is a country with code 1 and a country with code 2, the resulting data frame contains the dyads (1,2), (2,1), (1,1) and (2,2).

Usage

```
distlist(
  date,
  type = "mindist",
  keep = 0.1,
  useGW = TRUE,
  dependencies = FALSE
)
```

Arguments

date	The date for which the distance list should be computed. This argument must be of type Date and must be in the range 1/1/1886 - end of the dataset.
type	Specifies the type of distance list: "capdist" for capital distances, "centdist" for centroid distances, and "mindist" for minimum distances.
keep	Proportion of points to retain following polygon simplification using Douglas-Peucker algorithm. Default: 0.1. See package `rmapshaper`.
useGW	Boolean argument specifying the system membership coding. TRUE: Gleditsch and Ward (GW, default). FALSE: Correlates of War (COW).
dependencies	Boolean argument specifying whether dependent territories must be included. TRUE: Returns polygons for both independent states and dependent units. FALSE: Returns polygons for indepdendent states only (default).

Value

A datafarame with the columns ccode1 and ccode2 containing the country identifiers in the specified coding system (COW or GW).

---

distmatrix	*Generate between-country distance matrix on the CShapes dataset*

Description

This function returns between-country distances in km for the given date. Output format is a distance matrix that lists distances between each pair of countries. The function can compute different types of distance lists, specified by the type parameter:

1. Capital distances
2. Centroid distances
3. Minimum distances between polygons

The latter computation is very expensive if polygons consist of many points. For that reason, the function simplifies the country polygons according to the Douglas-Peucker algorithm (http://en.wikipedia.org/wiki/Ramer-Douglas-Peucker_algorithm), which eliminates points from the polygons and speeds up computation. The keep parameter specifies the proportion of points to retain in the simplified country polygons.

Usage

```
distmatrix(
  date,
  type = "mindist",
  keep = 0.1,
  useGW = TRUE,
  dependencies = FALSE
)
```

Arguments

date	The date for which the distance matrix should be computed. This argument must be of type Date and must be in the range 1/1/1886 - end of the dataset.
type	Specifies the type of distance matrix: "capdist" for capital distances, "centdist" for centroid distances, and "mindist" for minimum distances.
keep	Proportion of points to retain following polygon simplification using Douglas-Peucker algorithm. Default: 0.1. See package `rmapshaper`.
useGW	Boolean argument specifying the system membership coding. TRUE: Gleditsch and Ward (GW, default). FALSE: Correlates of War (COW).
dependencies	Boolean argument specifying whether dependent territories must be included. TRUE: Returns polygons for both independent states and dependent units. FALSE: Returns polygons for indepdendent states only (default).

Value

A quadratic weights matrix, with the row and column labels containing the country identifiers in the specified coding system (COW or GW).

Index