Package ‘geonetwork’

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Type Package
Title Geographic Networks
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Description Provides classes and methods for handling networks or graphs whose nodes are geographical (i.e. locations in the globe). The functionality includes the creation of objects of class geonetwork as a graph with node coordinates, the computation of network measures, the support of spatial operations (projection to different Coordinate Reference Systems, handling of bounding boxes, etc.) and the plotting of the geonetwork object combined with supplementary cartography for spatial representation.
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License GPL-3 | file LICENSE
Language en-GB
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Imports geosphere, igraph, methods, rgdal, sp, sf
Suggests devtools, knitr, maps, mapview, rmarkdown, roxygen2, spData, testthat, tmaptools
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Description

A geonetwork object representing a full graph of 21 European cities with edges weighted by distance in km.

Usage

eurodist

Format

geonetwork.

Source

Distances (in km) between 21 European cities are taken from eurodist. Coordinates of the cities were obtained with geocode.

geonetwork(edges, nodes, directed = TRUE, CRS = sp::CRS("+proj=longlat"))

Arguments

edges data.frame. Edges list and attributes. See Details.
nodes data.frame. Nodes list and attributes. See Details.
directed logical. Default is to build a directed graph.
CRS CRS object. Coordinate Reference System, as built by function CRS.
Details

The first two columns in `edges` must be character or factor, and match the node names in the first column of the `nodes` data.frame. The third column, if any, will be used as edge weights. The remaining columns will be used as additional edge attributes.

The first column in `nodes` must be character or factor and provide node names or labels, not necessarily unique. Columns 2 and 3 must be numeric coordinates in the Coordinate Reference System specified in CRS.

Value

An object of class `geonetwork`, which also inherits from igraph.

Examples

```r
e <- data.frame(from = c("A", "A"), to = c("B", "C"))
n <- data.frame(id = LETTERS[1:3], x = c(0, 0, 1), y = c(0, 1, 0))
geonetwork(e, n)
```

plot.geonetwork  Plot a geonetwork

Description

Plot one or more attributes of a geonetwork on a map

Usage

```r
## S3 method for class 'geonetwork'
plot(x, y, ...)
```

Arguments

- `x` Object of class `geonetwork`.
- `y` Ignored.
- `...` Further specifications passed to `plot_sf`.

Examples

```r
plot(eurodist, axes = TRUE, type = "n")
plot(sf::st_geometry(spData::world), col = "lightgray", add = TRUE)
plot(eurodist, axes = TRUE, add = TRUE)
```
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