Package ‘spnet’

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Description Facilitates the rendering of networks for which nodes have a specific position on a map (cities, participants in a political debate, etc.). Map data and network data are stored together in a single object which handles the match between network nodes and their respective position on the map. The plot method renders both the map and the network data. Several networks can be plot simultaneously. The graphic is highly customisable and the legend is automatically printed. Map data have to be supplied as 'SpatialPolygons' objects (from the 'sp' package) and network data as 'named matrix'.

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**Description**

This function converts color codes (given in hexadecimal format) to constrained gray levels. This is useful to enhance readability when printing in black and white. The conversion from color to gray levels is performed using the luminosity method \((0.21R + 0.72G + 0.07B)\), then levels are linearly scaled to \([\text{contrast.min};\text{contrast.max}]\).

**Usage**

```r
color2blackwhite(x, increase.contrast = TRUE, contrast.min = 0.02, contrast.max = 0.98)
```

**Arguments**

- `x`: a character, the vector of color codes given in hexadecimal format (ex "#21AD5C").
- `increase.contrast`: a logical, if `TRUE` the scaling is performed.
- `contrast.min`: the minimal gray value to use in the scaling (0 = white, 1 = black).
- `contrast.max`: the maximal gray value to use in the scaling (0 = white, 1 = black).
Examples

```r
mycols = c("#BA364E", "#32BA1", "#12AA91")
color2blackwhite(mycols)

barplot(1:3, axes=FALSE, col=mycols)
barplot(1:3, axes=FALSE, col=color2blackwhite(mycols, increase.contrast = FALSE))
barplot(1:3, axes=FALSE, col=color2blackwhite(mycols))
barplot(1:3, axes=FALSE, col=color2blackwhite(mycols, contrast.min = 0, contrast.max = 1))
```

Description

This generic method intends to extract the barplot background color of a SpatialNetwork object.

Usage

```r
graph.barplot.bgcolor(object)
```

## S4 method for signature 'SpatialNetwork'

```r
graph.barplot.bgcolor(object)
```

## S4 replacement method for signature 'SpatialNetwork,character'

```r
graph.barplot.bgcolor(object) <- value
```

Arguments

- **object**: a SpatialNetwork object.
- **value**: the new color.

Methods (by class)

graph.barplot.bgcolor <-

*Set the barplot background color of a SpatialNetwork object*

---

**Description**

This generic method intends to set or replace the barplot background color of a SpatialNetwork object.

**Usage**

```r
graph.barplot.bgcolor(object) <- value
```

**Arguments**

- `object` a SpatialNetwork object.
- `value` the new color.

---

graph.barplot.bound.lower

*Get the barplot lower bound position of a SpatialNetwork object*

---

**Description**

This generic method intends to extract the barplot lower bound position of a SpatialNetwork object.

**Usage**

```r
graph.barplot.bound.lower(object)
```

```r
## S4 method for signature 'SpatialNetwork'
graph.barplot.bound.lower(object)
```

```r
## S4 replacement method for signature 'SpatialNetwork,numeric'
graph.barplot.bound.lower(object) <- value
```

**Arguments**

- `object` a SpatialNetwork object.
- `value` a numeric vector of coordinates, c(x,y), specifying a shift from the center of each country.

**Methods (by class)**

graph.barplot.bound.lower<-

Set the barplot lower bound position of a SpatialNetwork object

Description

This generic method intends to set or replace the barplot lower bound position of a SpatialNetwork object.

Usage

graph.barplot.bound.lower(object) <- value

Arguments

- object: a SpatialNetwork object.
- value: a numeric vector of coordinates, c(x,y), specifying a shift from the center of each country.

graph.barplot.bound.upper

Get the barplot upper bound position of a SpatialNetwork object

Description

This generic method intends to extract the barplot upper bound position of a SpatialNetwork object.

Usage

graph.barplot.bound.upper(object)

## S4 method for signature 'SpatialNetwork'
graph.barplot.bound.upper(object)

## S4 replacement method for signature 'SpatialNetwork,numeric'
graph.barplot.bound.upper(object) <- value

Arguments

- object: a SpatialNetwork object.
- value: a numeric vector of coordinates, c(x,y), specifying a shift from the center of each country.
Methods (by class)


---

`graph.barplot.bound.upper<-`  
*Set the barplot upper bound position of a SpatialNetwork object*

---

**Description**

This generic method intends to set or replace the barplot upper bound position of a SpatialNetwork object.

**Usage**

```r
graph.barplot.bound.upper(object) <- value
```

**Arguments**

- `object`: a SpatialNetwork object.
- `value`: a numeric vector of coordinates, c(x,y), specifying a shift from the center of each country.

---

`graph.barplot.fgcolor`  
*Get the barplot foreground color of a SpatialNetwork object*

---

**Description**

This generic method intends to extract the barplot foreground color of a SpatialNetwork object.

**Usage**

```r
graph.barplot.fgcolor(object)
```

```r
## S4 method for signature 'SpatialNetwork'
graph.barplot.fgcolor(object)
```

```r
## S4 replacement method for signature 'SpatialNetwork,character'
graph.barplot.fgcolor(object) <- value
```

**Arguments**

- `object`: a SpatialNetwork object.
- `value`: the color.
Methods (by class)


---

**graph.barplot.fgcolor<-**

*Set the barplot foreground color of a SpatialNetwork object*

**Description**

This generic method intends to set or replace the barplot foreground color of a SpatialNetwork object.

**Usage**

```r
graph.barplot.fgcolor(object) <- value
```

**Arguments**

- `object`: a SpatialNetwork object.
- `value`: the color.

---

**graph.barplot.list**

*Get the list of all barplot parameters of a SpatialNetwork object*

**Description**

This generic method intends to extract barplot parameters of a SpatialNetwork object.

**Usage**

```r
graph.barplot.list(object)
```

```r
## S4 method for signature 'SpatialNetwork'
graph.barplot.list(object)
```

```r
## S4 replacement method for signature 'SpatialNetwork,list'
graph.barplot.list(object) <- value
```

**Arguments**

- `object`: the SpatialNetwork object for which we want to get parameters.
- `value`: a list of parameters.
Methods (by class)


---

**graph.barplot.list<-**  
Set the list of all barplot parameters of a SpatialNetwork object

**Description**  
This generic method intends to set or replace barplot parameters of a SpatialNetwork object.

**Usage**  
`graph.barplot.list<-`<br>`object <- value`

**Arguments**

- `object`: the SpatialNetwork object for which we want to set parameters.
- `value`: a list of parameters.

---

**graph.barplot.variable**  
Get the barplot variable of a SpatialNetwork object

**Description**  
This generic method intends to extract the barplot variable of a SpatialNetwork object.

**Usage**  
`graph.barplot.variable(object)`

---

```r
## S4 method for signature 'SpatialNetwork'
graph.barplot.variable(object)
```

```r
## S4 replacement method for signature 'SpatialNetwork,character'
graph.barplot.variable(object) <- value
```

**Arguments**

- `object`: a SpatialNetwork object.
- `value`: the name of the variable to use for plotting barplots.

Methods (by class)

**graph.barplot.variable<-**

*Set the barplot variable of a SpatialNetwork object*

**Description**

This generic method intends to set or replace the barplot variable of a SpatialNetwork object.

**Usage**

```r
graph.barplot.variable(object) <- value
```

**Arguments**

- **object**: a SpatialNetwork object.
- **value**: the name of the variable to use for plotting barplots.

**graph.barplot.width**

*Get the barplot width of a SpatialNetwork object*

**Description**

This generic method intends to extract the barplot width of a SpatialNetwork object.

**Usage**

```r
graph.barplot.width(object)
```

```r
## S4 method for signature 'SpatialNetwork'
graph.barplot.width(object)
```

```r
## S4 replacement method for signature 'SpatialNetwork,numeric'
graph.barplot.width(object) <- value
```

**Arguments**

- **object**: a SpatialNetwork object.
- **value**: a numeric.

**Methods (by class)**

graph.barplot.width<-  Set the barplot width of a SpatialNetwork object

Description
This generic method intends to set or replace the barplot width of a SpatialNetwork object.

Usage
graph.barplot.width(object) <- value

Arguments
object        a SpatialNetwork object.
value         a numeric.

graph.blackwhite.enable
Get the black and white mode status of a SpatialNetwork object

Description
This generic method intends to extract the black and white mode status of a SpatialNetwork object.

Usage
graph.blackwhite.enable(object)

## S4 method for signature 'SpatialNetwork'
graph.blackwhite.enable(object)

## S4 replacement method for signature 'SpatialNetwork,logical'
graph.blackwhite.enable(object) <- value

Arguments
object        a SpatialNetwork object.
value         a logical, the black and white mode status.

Methods (by class)
graph.blackwhite.enable<-  

Set the black and white mode status of a SpatialNetwork object

Description
This generic method intends to set or replace the black and white mode status of a SpatialNetwork object.

Usage
graph.blackwhite.enable(object) <- value

Arguments
object a SpatialNetwork object.
value a logical, the black and white mode status.

graph.blackwhite.list Get the list of all black and white mode parameters of a SpatialNetwork object

Description
This generic method intends to extract black and white mode parameters of a SpatialNetwork object.

Usage
graph.blackwhite.list(object)

## S4 method for signature 'SpatialNetwork'
graph.blackwhite.list(object)

## S4 replacement method for signature 'SpatialNetwork,list'
graph.blackwhite.list(object) <- value

Arguments
object the SpatialNetwork object for which we want to get parameters.
value a list of parameters.

Methods (by class)
**graph.blackwhite.list**

Set the list of all black and white mode parameters of a SpatialNetwork object

**Description**

This generic method intends to set or replace black and white mode parameters of a SpatialNetwork object.

**Usage**

\[
\text{graph.blackwhite.list}(\text{object}) \leftarrow \text{value}
\]

**Arguments**

- **object**: the SpatialNetwork object for which we want to set parameters.
- **value**: a list of parameters.

**graph.blackwhite.max**

Get the black and white mode maximal gray value of a SpatialNetwork object

**Description**

This generic method intends to extract the black and white mode maximal gray value (from 0 to 1) of a SpatialNetwork object.

**Usage**

\[
\text{graph.blackwhite.max}(\text{object})
\]

\[
\text{## S4 method for signature 'SpatialNetwork'}
\]

\[
\text{graph.blackwhite.max}(\text{object})
\]

\[
\text{## S4 replacement method for signature 'SpatialNetwork,numeric'}
\]

\[
\text{graph.blackwhite.max}(\text{object}) \leftarrow \text{value}
\]

**Arguments**

- **object**: a SpatialNetwork object.
- **value**: a logical, the black and white mode maximal gray value.

**Methods (by class)**

**Graph.blackwhite.max<-**

Set the black and white mode maximal gray value of a `SpatialNetwork` object.

**Description**

This generic method intends to set or replace the black and white mode maximal gray value (from 0 to 1) of a `SpatialNetwork` object.

**Usage**

```r
graph.blackwhite.max(object) <- value
```

**Arguments**

- `object` (a `SpatialNetwork` object).
- `value` (a numeric, the black and white mode maximal gray value).

**Graph.blackwhite.min**

Get the black and white mode minimal gray value of a `SpatialNetwork` object.

**Description**

This generic method intends to extract the black and white mode minimal gray value (from 0 to 1) of a `SpatialNetwork` object.

**Usage**

```r
graph.blackwhite.min(object)
```

```r
## S4 method for signature 'SpatialNetwork'
graph.blackwhite.min(object)
```

```r
## S4 replacement method for signature 'SpatialNetwork,numeric'
graph.blackwhite.min(object) <- value
```

**Arguments**

- `object` (a `SpatialNetwork` object).
- `value` (a logical, the black and white mode minimal gray value).

**Methods (by class)**

graph.blackwhite.min<- 

  Set the black and white mode minimal gray value of a 
  SpatialNetwork object

Description

This generic method intends to set or replace the black and white mode minimal gray value (from 0 
and 1) of a SpatialNetwork object.

Usage

  graph.blackwhite.min(object) <- value

Arguments

  object      a SpatialNetwork object.
  value       a numeric, the black and white mode minimal gray value.

graph.color.background

  Get the background color of a SpatialNetwork object

Description

This generic method intends to extract the background color of a SpatialNetwork object.

Usage

  graph.color.background(object)

  ## S4 method for signature 'SpatialNetwork'
  graph.color.background(object)

  ## S4 replacement method for signature 'SpatialNetwork,character'
  graph.color.background(object) <- value

Arguments

  object      a SpatialNetwork object.
  value       a character, the color.

Methods (by class)

**graph.color.background<-**

*Set the background color of a SpatialNetwork object*

**Description**

This generic method intends to set or replace the background color of a SpatialNetwork object.

**Usage**

```r
graph.color.background(object) <- value
```

**Arguments**

- `object` a SpatialNetwork object.
- `value` a character, the color.

---

**graph.color.border**

*Get the border color of a SpatialNetwork object*

**Description**

This generic method intends to extract the border color of a SpatialNetwork object.

**Usage**

```r
graph.color.border(object)
```

```r
## S4 method for signature 'SpatialNetwork'
graph.color.border(object)
```

```r
## S4 replacement method for signature 'SpatialNetwork,character'
graph.color.border(object) <- value
```

**Arguments**

- `object` a SpatialNetwork object.
- `value` a character, the color.

**Methods (by class)**

graph.color.border<-  Set the border color of a SpatialNetwork object

Description
This generic method intends to set or replace the border color of a SpatialNetwork object.

Usage
graph.color.border(object) <- value

Arguments
object  a SpatialNetwork object.
value  a character, the color.

graph.color.legend  Get the color legend of a SpatialNetwork object

Description
This generic method intends to extract the color legend of a SpatialNetwork object.

Usage
graph.color.legend(object)

## S4 method for signature 'SpatialNetwork'
graph.color.legend(object)

## S4 replacement method for signature 'SpatialNetwork, character'
graph.color.legend(object) <- value

Arguments
object  a SpatialNetwork object.
value  the color legend.

Methods (by class)
**graph.color.legend<-**  
*Set the color legend of a SpatialNetwork object*

**Description**

This generic method intends to set or replace the color legend of a SpatialNetwork object.

**Usage**

```
graph.color.legend(object) <- value
```

**Arguments**

- **object**  
  a SpatialNetwork object.
- **value**  
  the color legend.

---

**graph.color.list**  
*Get the list of all color parameters of a SpatialNetwork object*

**Description**

This generic method intends to extract color parameters of a SpatialNetwork object.

**Usage**

```
graph.color.list(object)
```

```
## S4 method for signature 'SpatialNetwork'
graph.color.list(object)

## S4 replacement method for signature 'SpatialNetwork,list'
graph.color.list(object) <- value
```

**Arguments**

- **object**  
  the SpatialNetwork object for which we want to get parameters.
- **value**  
  a list of parameters.

**Methods (by class)**

graph.color.list <- Set the list of all color parameters of a SpatialNetwork object

Description
This generic method intends to set or replace color parameters of a SpatialNetwork object.

Usage
graph.color.list(object) <- value

Arguments
- object: the SpatialNetwork object for which we want to set parameters.
- value: a list of parameters.

graph.color.node Get the default color of a node of a SpatialNetwork object

Description
This generic method intends to extract the default color of a node of a SpatialNetwork object.

Usage
graph.color.node(object)

## S4 method for signature 'SpatialNetwork'
graph.color.node(object)

## S4 replacement method for signature 'SpatialNetwork,character'
graph.color.node(object) <- value

Arguments
- object: a SpatialNetwork object.
- value: a character, the color.

Methods (by class)
graph.color.node<- 

Set the default color of a node of a SpatialNetwork object

Description

This generic method intends to set or replace the default color of a node of a SpatialNetwork object.

Usage

graph.color.node(object) <- value

Arguments

object a SpatialNetwork object.
value a character, the color.

graph.color.region 

Get the default color of a region of a SpatialNetwork object

Description

This generic method intends to extract the default color of a region of a SpatialNetwork object.

Usage

graph.color.region(object)

## S4 method for signature 'SpatialNetwork'
graph.color.region(object)

## S4 replacement method for signature 'SpatialNetwork,character'
graph.color.region(object) <- value

Arguments

object a SpatialNetwork object.
value a character, the color.

Methods (by class)

**graph.color.region**  
*Set the default color of a region of a SpatialNetwork object*

**Description**
This generic method intends to set or replace the default color of a region of a SpatialNetwork object.

**Usage**

```r
graph.color.region(object) <- value
```

**Arguments**
- **object**: a SpatialNetwork object.
- **value**: a character, the color.

**graph.color.variable**  
*Get the color variable of a SpatialNetwork object*

**Description**
This generic method intends to extract the color variable of a SpatialNetwork object.

**Usage**

```r
graph.color.variable(object)
```

```r
## S4 method for signature 'SpatialNetwork'
graph.color.variable(object)
```

```r
## S4 replacement method for signature 'SpatialNetwork,character'
graph.color.variable(object) <- value
```

**Arguments**
- **object**: a SpatialNetwork object.
- **value**: the new color, for example "#000000".

**Methods (by class)**
**graph.color.variable<-**

*Set the color variable of a SpatialNetwork object*

**Description**
This generic method intends to set or replace the color variable of a SpatialNetwork object.

**Usage**
```
graph.color.variable(object) <- value
```

**Arguments**
- `object` a SpatialNetwork object.
- `value` the new color, for example "#000000".

---

**graph.label.cex**

*Get the label cex of a SpatialNetwork object*

**Description**
This generic method intends to extract the label cex of a SpatialNetwork object.

**Usage**
```
graph.label.cex(object)
```

```r
## S4 method for signature 'SpatialNetwork'
graph.label.cex(object)
```

```r
## S4 replacement method for signature 'SpatialNetwork,numeric'
graph.label.cex(object) <- value
```

**Arguments**
- `object` a SpatialNetwork object.
- `value` numeric; the cex parameter.

**Methods (by class)**
graph.label.cex <- Set the cex of a SpatialNetwork object

Description
This generic method intends to set or replace the label cex of a SpatialNetwork object.

Usage
graph.label.cex(object) <- value

Arguments
object a SpatialNetwork object.
value numeric; the cex parameter.

graph.label.color Get the label color of a SpatialNetwork object

Description
This generic method intends to extract the label color of a SpatialNetwork object.

Usage
graph.label.color(object)

## S4 method for signature 'SpatialNetwork'
graph.label.color(object)

## S4 replacement method for signature 'SpatialNetwork,character'
graph.label.color(object) <- value

Arguments
object a SpatialNetwork object.
value the new label, for example "#000000".

Methods (by class)
graph.label.color<-  

Set the label color of a SpatialNetwork object

Description
This generic method intends to set or replace the label color of a SpatialNetwork object.

Usage
graph.label.color(object) <- value

Arguments
object  a SpatialNetwork object.
value  the new label, for example "#000000".

graph.label.list  

Get the list of all label parameters of a SpatialNetwork object

Description
This generic method intends to extract label parameters of a SpatialNetwork object.

Usage
graph.label.list(object)

## S4 method for signature 'SpatialNetwork'
graph.label.list(object)

## S4 replacement method for signature 'SpatialNetwork,list'
graph.label.list(object) <- value

Arguments
object  the SpatialNetwork object for which we want to get parameters.
value  a list of parameters.

Methods (by class)

• SpatialNetwork: method for SpatialNetwork objects.
• object = SpatialNetwork,value = list: method for SpatialNetwork objects.
**graph.label.list**

*Set the list of all label parameters of a SpatialNetwork object*

**Description**

This generic method intends to set or replace label parameters of a SpatialNetwork object.

**Usage**

```r
graph.label.list(object) <- value
```

**Arguments**

- `object`: the SpatialNetwork object for which we want to set parameters.
- `value`: a list of parameters.

---

**graph.label.variable**

*Get the label variable of a SpatialNetwork object*

**Description**

This generic method intends to extract the label variable of a SpatialNetwork object.

**Usage**

```r
graph.label.variable(object)
```

```r
# S4 method for signature 'SpatialNetwork'
graph.label.variable(object)
```

```r
# S4 replacement method for signature 'SpatialNetwork,character'
graph.label.variable(object) <- value
```

**Arguments**

- `object`: a SpatialNetwork object.
- `value`: the new label, for example "#000000".

**Methods (by class)**

graph.label.variable<-  

Set the label variable of a SpatialNetwork object

Description
This generic method intends to set or replace the label variable of a SpatialNetwork object.

Usage
graph.label.variable(object) <- value

Arguments
- object: a SpatialNetwork object.
- value: the new label, for example "#000000".

graph.layout.list  

Get the list of all layout parameters of a SpatialNetwork object

Description
This generic method intends to extract layout parameters of a SpatialNetwork object.

Usage
graph.layout.list(object)

### S4 method for signature 'SpatialNetwork'
graph.layout.list(object)

### S4 replacement method for signature 'SpatialNetwork,list'
graph.layout.list(object) <- value

Arguments
- object: the SpatialNetwork object for which we want to get parameters.
- value: a list of parameters.

Methods (by class)
graph.layout.list<-  Set the list of all layout parameters of a SpatialNetwork object

Description

This generic method intends to set or replace layout parameters of a SpatialNetwork object.

Usage

graph.layout.list(object) <- value

Arguments

object  the SpatialNetwork object for which we want to set parameters.
value  a list of parameters.

---

graph.legend.cex  Get the legend cex parameter of a SpatialNetwork object

Description

This generic method intends to extract the legend cex parameter of a SpatialNetwork object.

Usage

graph.legend.cex(object)

## S4 method for signature 'SpatialNetwork'
graph.legend.cex(object)

## S4 replacement method for signature 'SpatialNetwork,numeric'
graph.legend.cex(object) <- value

Arguments

object  a SpatialNetwork object.
value  a numeric.

Methods (by class)

graph.legend.cex<-  

Set the legend cex parameter of a SpatialNetwork object

Description
This generic method intends to set or replace the legend cex parameter of a SpatialNetwork object.

Usage
graph.legend.cex(object) <- value

Arguments
- object  a SpatialNetwork object.
- value    a numeric.

graph.legend.horiz  

Get the legend horizontal or vertical setting of a SpatialNetwork object

Description
This generic method intends to extract the legend horizontal or vertical setting of a SpatialNetwork object.

Usage
graph.legend.horiz(object)

## S4 method for signature 'SpatialNetwork'
graph.legend.horiz(object)

## S4 replacement method for signature 'SpatialNetwork,logical'
graph.legend.horiz(object) <- value

Arguments
- object  a SpatialNetwork object.
- value    a logical.

Methods (by class)
**graph.legend.horiz**

*Set the legend horizontal or vertical setting of a SpatialNetwork object*

**Description**

This generic method intends to set or replace the legend horizontal or vertical setting of a SpatialNetwork object.

**Usage**

```r
graph.legend.horiz(object) <- value
```

**Arguments**

- `object` a SpatialNetwork object.
- `value` a logical.

**graph.legend.line.width**

*Get the legend line width parameter of a SpatialNetwork object*

**Description**

This generic method intends to extract the legend line width parameter of a SpatialNetwork object.

**Usage**

```r
graph.legend.line.width(object)
```

```r
## S4 method for signature 'SpatialNetwork'
graph.legend.line.width(object)
```

```r
## S4 replacement method for signature 'SpatialNetwork,numeric'
graph.legend.line.width(object) <- value
```

**Arguments**

- `object` a SpatialNetwork object.
- `value` a logical.

**Methods (by class)**

Set the legend line width parameter of a SpatialNetwork object

Description

This generic method intends to set or replace the legend line width parameter of a SpatialNetwork object.

Usage

graph.legend.line.width(object) <- value

Arguments

- object: a SpatialNetwork object.
- value: a logical.

Get the list of all legend parameters of a SpatialNetwork object

Description

This generic method intends to extract legend parameters of a SpatialNetwork object.

Usage

graph.legend.list(object)

Arguments

- object: the SpatialNetwork object for which we want to get parameters.
- value: a list of parameters.

Methods (by class)

graph.legend.list<-  Set the list of all legend parameters of a SpatialNetwork object

**Description**
This generic method intends to set or replace legend parameters of a SpatialNetwork object.

**Usage**
```r
graph.legend.list(object) <- value
```

**Arguments**
- `object`: the SpatialNetwork object for which we want to set parameters.
- `value`: a list of parameters.

---

graph.legend.ncol  Get the legend number of columns of a SpatialNetwork object

**Description**
This generic method intends to extract the legend number of columns of a SpatialNetwork object.

**Usage**
```r
graph.legend.ncol(object)
```

```r
## S4 method for signature 'SpatialNetwork'
graph.legend.ncol(object)

## S4 replacement method for signature 'SpatialNetwork,numeric'
graph.legend.ncol(object) <- value
```

**Arguments**
- `object`: a SpatialNetwork object.
- `value`: a numeric.

**Methods (by class)**
**graph.legend.ncol**

**Set the legend number of columns of a SpatialNetwork object**

**Description**

This generic method intends to set or replace the legend number of columns of a SpatialNetwork object.

**Usage**

```r
graph.legend.ncol(object) <- value
```

**Arguments**

- `object` a SpatialNetwork object.
- `value` a numeric.

**graph.legend.print**

*Get the legend print (yes/no) status of a SpatialNetwork object*

**Description**

This generic method intends to extract the legend print (yes/no) status of a SpatialNetwork object.

**Usage**

```r
graph.legend.print(object)
```

```r
## S4 method for signature 'SpatialNetwork'
graph.legend.print(object)
```

```r
## S4 replacement method for signature 'SpatialNetwork,logical'
graph.legend.print(object) <- value
```

**Arguments**

- `object` a SpatialNetwork object.
- `value` a logical.

**Methods (by class)**

**graph.legend.print**

*Set the legend print (yes/no) status of a SpatialNetwork object*

**Description**

This generic method intends to set or replace the legend print (yes/no) status of a SpatialNetwork object.

**Usage**

```r
graph.legend.print(object) <- value
```

**Arguments**

- `object`: a SpatialNetwork object.
- `value`: a logical.

**graph.map**

*Get the map to a SpatialNetwork object*

**Description**

This generic method intends to extract the map object. Currently only SpatialPolygons from the sp package are supported.

**Usage**

```r
graph.map(object)
```

```r
## S4 method for signature 'SpatialNetwork'
graph.map(object)
```

```r
## S4 replacement method for signature 'SpatialNetwork,SpatialPolygons'
graph.map(object) <- value
```

**Arguments**

- `object`: the SpatialNetwork object for which we want to get the map.
- `value`: the map.

**Methods (by class)**

Description

The `graph.map.plot.position` function allows to plot maps defined as for example `SpatialNetwork` or `SpatialPolygons` objects, and render the ID numbering.

Usage

```r
graph.map.plot.position(x, label = "", ...)  
```

## S4 method for signature 'SpatialPolygons'

```r
graph.map.plot.position(x, label = "", ...)  
```

## S4 method for signature 'SpatialNetwork'

```r
graph.map.plot.position(x, label = "", ...)  
```

Arguments

- **x**: an object for which a `graph.map.plot.position` method is defined.
- **label**: a character of length 1 for prefixing seat numbering.
- **...**: other arguments to pass to the plot function. The main usage is setting the `cex` value.

Methods (by class)

- `SpatialPolygons`: method for `SpatialPolygons` objects.

See Also

Other res: `SpatialNetwork-class`

Examples

```r
## The world map
data(world.map.simplified, package = "spnet")

graph.map.plot.position(world.map.simplified)
graph.map.plot.position(world.map.simplified, cex = 0.4)
graph.map.plot.position(world.map.simplified, label = 'ID ', cex = 0.3)
```
**graph.map<-**

*Set the map to a SpatialNetwork object*

**Description**

This generic method intends to set or replace the map object. Currently only SpatialPolygons from the sp package are supported.

**Usage**

```r
graph.map(object) <- value
```

**Arguments**

- `object` the SpatialNetwork object for which we want to set the map.
- `value` the map.

---

**graph.network.arrow.color**

*Get the arrow color of a given network of a SpatialNetwork object*

**Description**

This generic method intends to extract the arrow color of a given network of a SpatialNetwork object.

**Usage**

```r
graph.network.arrow.color(object, network.name)
```

### S4 method for signature 'SpatialNetwork,character'

```r
graph.network.arrow.color(object, network.name)
```

### S4 replacement method for signature 'SpatialNetwork,character,character'

```r
graph.network.arrow.color(object, network.name) <- value
```

**Arguments**

- `object` a SpatialNetwork object.
- `network.name` character; the name of the network.
- `value` the arrow color.
Methods (by class)


Set the arrow color of a given network of a SpatialNetwork object

Description

This generic method intends to set or replace the arrow color of a given network of a SpatialNetwork object.

Usage

```r
graph.network.arrow.color<- (object, network.name) <- value
```

Arguments

- `object`: a SpatialNetwork object.
- `network.name`: character; the name of the network.
- `value`: the arrow color.

Get the arrow head length of a given network of a SpatialNetwork object

Description

This generic method intends to extract the arrow head length of a given network of a SpatialNetwork object.

Usage

```r
graph.network.arrow.head.lth(object, network.name)
```

### S4 method for signature 'SpatialNetwork,character'
```r
graph.network.arrow.head.lth(object, network.name)
```

### S4 replacement method for signature 'SpatialNetwork,character,numeric'
```r
graph.network.arrow.head.lth(object, network.name) <- value
```
Arguments

object a SpatialNetwork object.

network.name character; the name of the network.

value the arrow head length.

Methods (by class)

• object = SpatialNetwork, network.name = character: method for SpatialNetwork objects.

• object = SpatialNetwork, network.name = character, value = numeric: method for SpatialNetwork objects.

Description

This generic method intends to set or replace the arrow head length of a given network of a SpatialNetwork object.

Usage

graph.network.arrow.head.lth<- object, network.name) <- value

Arguments

object a SpatialNetwork object.

network.name character; the name of the network.

value the arrow head length.

Description

This generic method intends to extract the arrow head type of a given network of a SpatialNetwork object.
**Usage**

```r
graph.network.arrow.head.type(object, network.name)
```

```r
## S4 method for signature 'SpatialNetwork,character'
graph.network.arrow.head.type(object, network.name)
```

```r
## S4 replacement method for signature 'SpatialNetwork,character,character'
graph.network.arrow.head.type(object, network.name) <- value
```

**Arguments**

- `object`: a `SpatialNetwork` object.
- `network.name`: character; the name of the network.
- `value`: type of arrowhead to draw, one of "simple", "curved", "triangle", "circle", "ellipse" or "T". See `Arrows` for details.

**Methods (by class)**


---

**Description**

This generic method intends to set or replace the arrow head type of a given network of a `SpatialNetwork` object.

**Usage**

```r
graph.network.arrow.head.type(object, network.name) <- value
```

**Arguments**

- `object`: a `SpatialNetwork` object.
- `network.name`: character; the name of the network.
- `value`: type of arrowhead to draw, one of "simple", "curved", "triangle", "circle", "ellipse" or "T". See `Arrows` for details.
graph.network.arrow.line.type

Get the arrow line type of a given network of a SpatialNetwork object

Description

This generic method intends to extract the arrow line type of a given network of a SpatialNetwork object.

Usage

graph.network.arrow.line.type(object, network.name)

## S4 method for signature 'SpatialNetwork,character'
graph.network.arrow.line.type(object, network.name)

## S4 replacement method for signature 'SpatialNetwork,character,numeric'
graph.network.arrow.line.type(object, network.name) <- value

Arguments

- object: a SpatialNetwork object.
- network.name: character; the name of the network.
- value: a numeric; the arrow line type.

Methods (by class)


graph.network.arrow.line.type<-

Set the arrow line type of a given network of a SpatialNetwork object

Description

This generic method intends to set or replace the arrow line type of a given network of a SpatialNetwork object.
**Usage**

```r
graph.network.arrow.line.type(object, network.name) <- value
```

**Arguments**

- `object`: a `SpatialNetwork` object.
- `network.name`: character; the name of the network.
- `value`: a numeric; the arrow line type.

---

**Description**

This generic method intends to extract the arrow opacity of a given network of a `SpatialNetwork` object.

**Usage**

```r
graph.network.arrow.opacity(object, network.name)
```

### S4 method for signature 'SpatialNetwork,character'

```r
graph.network.arrow-opacity(object, network.name)
```

### S4 replacement method for signature 'SpatialNetwork,character,numeric'

```r
graph.network.arrow-opacity(object, network.name) <- value
```

**Arguments**

- `object`: a `SpatialNetwork` object.
- `network.name`: character; the name of the network.
- `value`: the arrow opacity.

**Methods (by class)**

graph.network.arrow.opacity<-  
Set the arrow opacity of a given network of a SpatialNetwork object  

Description  
This generic method intends to set or replace the arrow opacity of a given network of a SpatialNetwork object.

Usage  
graph.network.arrow.opacity(object, network.name) <- value

Arguments  
- object: a SpatialNetwork object.
- network.name: character; the name of the network.
- value: the arrow opacity.

graph.network.arrow.shift.x  
Get the arrow shift on the x axis of a given network of a SpatialNetwork object  

Description  
This generic method intends to extract the arrow shift on the x axis of a given network of a SpatialNetwork object.

Usage  
graph.network.arrow.shift.x(object, network.name)

## S4 method for signature 'SpatialNetwork,character'  
graph.network.arrow.shift.x(object, network.name)

## S4 replacement method for signature 'SpatialNetwork,character,numeric'  
graph.network.arrow.shift.x(object, network.name) <- value
Arguments

object       a SpatialNetwork object.
network.name character; the name of the network.
value        the arrow shift on the x axis.

Methods (by class)


_Example:_

```r
graph.network.arrow.shift.x <-
```

Set the arrow shift on the x axis of a given network of a SpatialNetwork object

Description

This generic method intends to set or replace the arrow shift on the x axis of a given network of a SpatialNetwork object.

Usage

```r
graph.network.arrow.shift.x(object, network.name) <- value
```

Arguments

object       a SpatialNetwork object.
network.name character; the name of the network.
value        the arrow shift on the x axis.

_Example:_

```r
graph.network.arrow.shift.y
```

Get the arrow shift on the y axis of a given network of a SpatialNetwork object

Description

This generic method intends to extract the arrow shift on the y axis of a given network of a SpatialNetwork object.
Usage

```
graph.network.arrow.shift.y(object, network.name)
```

```r
## S4 method for signature 'SpatialNetwork,character'
graph.network.arrow.shift.y(object, network.name)
```

```r
## S4 replacement method for signature 'SpatialNetwork,character,numeric'
graph.network.arrow.shift.y(object, network.name) <- value
```

Arguments

- `object`: a SpatialNetwork object.
- `network.name`: character; the name of the network.
- `value`: the arrow shift on the y axis.

Methods (by class)


Description

This generic method intends to set or replace the arrow shift on the y axis of a given network of a SpatialNetwork object.

Usage

```
graph.network.arrow.shift.y(object, network.name) <- value
```

Arguments

- `object`: a SpatialNetwork object.
- `network.name`: character; the name of the network.
- `value`: the arrow shift on the y axis.
graph.network.arrow.shorten

*Get the arrow shortening of a given network of a SpatialNetwork object*

**Description**

This generic method intends to extract the arrow shortening of a given network of a SpatialNetwork object.

**Usage**

```r
graph.network.arrow.shorten(object, network.name)
```

```r
## S4 method for signature 'SpatialNetwork,character'
graph.network.arrow.shorten(object, network.name)
```

```r
## S4 replacement method for signature 'SpatialNetwork,character,numeric'
graph.network.arrow.shorten(object, network.name) <- value
```

**Arguments**

- **object** a SpatialNetwork object.
- **network.name** character; the name of the network.
- **value** the arrow shortening.

**Methods (by class)**

- **object = SpatialNetwork, network.name = character**: method for SpatialNetwork objects.
- **object = SpatialNetwork, network.name = character, value = numeric**: method for SpatialNetwork objects.

---

graph.network.arrow.shorten<-  

*Set the arrow shortening of a given network of a SpatialNetwork object*

**Description**

This generic method intends to set or replace the arrow shortening of a given network of a SpatialNetwork object.
Usage

    graph.network.arrow.shorten(object, network.name) <- value

Arguments

    object a SpatialNetwork object.
    network.name character; the name of the network.
    value the arrow shortening.

graph.network.arrow.thickness

    Get the arrow thickness of a given network of a SpatialNetwork object

Description

This generic method intends to extract the arrow thickness of a given network of a SpatialNetwork object.

Usage

    graph.network.arrow.thickness(object, network.name)

    ## S4 method for signature 'SpatialNetwork,character'
    graph.network.arrow.thickness(object,
        network.name)

    ## S4 replacement method for signature 'SpatialNetwork,character,numeric'
    graph.network.arrow.thickness(object,
        network.name) <- value

Arguments

    object a SpatialNetwork object.
    network.name character; the name of the network.
    value the arrow thickness.

Methods (by class)

Description

This generic method intends to set or replace the arrow thickness of a given network of a SpatialNetwork object.

Usage

```r
graph.network.arrow.thickness<- (object, network.name) <- value
```

Arguments

- **object**: a SpatialNetwork object.
- **network.name**: character; the name of the network.
- **value**: the arrow thickness.

Description

This generic method intends to extract the data of a given network of a SpatialNetwork object.

Usage

```r
graph.network.data(object, network.name)
```

## S4 method for signature 'SpatialNetwork,character'
```r
graph.network.data(object, network.name)
```

## S4 replacement method for signature 'SpatialNetwork,character,matrix'
```r
graph.network.data(object, network.name) <- value
```

Arguments

- **object**: a SpatialNetwork object.
- **network.name**: character; the name of the network.
- **value**: the network data. Currently only support a matrix object.
Methods (by class)


---

`graph.network.data<-` *Set the data of a given network of a SpatialNetwork object*

**Description**

This generic method intends to set or replace the data of a given network of a SpatialNetwork object.

**Usage**

```r
graph.network.data(object, network.name) <- value
```

**Arguments**

- `object`: a SpatialNetwork object.
- `network.name`: character; the name of the network.
- `value`: the network data. Currently only support a matrix object.

---

`graph.network.exists` *Test if a network exist*

**Description**

This function tests if the network name given in parameter match the name of a network defined within a SpatialNetwork object.

**Usage**

```r
graph.network.exists(object, network.name)
```

**Arguments**

- `object`: a SpatialNetwork object.
- `network.name`: a character; the name of the network.
graph.network.label

Get the label of a given network of a SpatialNetwork object

Description

This generic method intends to extract the label of a given network of a SpatialNetwork object.

Usage

graph.network.label(object, network.name)

## S4 method for signature 'SpatialNetwork,character'
graph.network.label(object, network.name)

## S4 replacement method for signature 'SpatialNetwork,character,character'
graph.network.label(object, network.name) <- value

Arguments

object a SpatialNetwork object.

network.name character; the name of the network.

value the network label.

Methods (by class)


graph.network.label<-

Set the label of a given network of a SpatialNetwork object

Description

This generic method intends to set or replace the label of a given network of a SpatialNetwork object.

Usage

graph.network.label(object, network.name) <- value
graph.network.list

Get the list of all parameters of a given network of a SpatialNetwork object

Arguments

  object    a SpatialNetwork object.
  network.name  character; the name of the network.
  value        the network label.

Description

This generic method intends to extract all parameters of a given network of a SpatialNetwork object.

Usage

  graph.network.list(object, network.name)

  ## S4 method for signature 'SpatialNetwork,character'
  graph.network.list(object, network.name)

  ## S4 replacement method for signature 'SpatialNetwork,character,list'
  graph.network.list(object,
                     network.name) <- value

Arguments

  object    the SpatialNetwork object for which we want to get parameters.
  network.name  character; the name of the network.
  value        a list of parameters.

Methods (by class)

  • object = SpatialNetwork, network.name = character: method for SpatialNetwork objects.
  • object = SpatialNetwork, network.name = character, value = list: method for SpatialNetwork objects.
### graph.network.list<-

**Set the list of all parameters of a given network of a SpatialNetwork object**

**Description**

This generic method intends to set or replace all parameters of a given network of a SpatialNetwork object.

**Usage**

```r
graph.network.list(object, network.name) <- value
```

**Arguments**

- **object**: the SpatialNetwork object for which we want to set parameters.
- **network.name**: character; the name of the network.
- **value**: a list of parameters.

### graph.networks.add<-

**Add a network**

**Description**

This function defines a new network item in a SpatialNetwork object.

**Usage**

```r
graph.networks.add(object) <- value
```

```r
## S4 replacement method for signature 'SpatialNetwork,character'
graph.networks.add(object) <- value
```

**Arguments**

- **object**: a SpatialNetwork object.
- **value**: a character; the name of the network.
graph.networks.list<-  *Get the list of all networks parameters of a SpatialNetwork object*

**Description**

This generic method intends to extract networks parameters of a SpatialNetwork object.

**Usage**

```r
graph.networks.list(object)
```

```r
## S4 method for signature 'SpatialNetwork'
graph.networks.list(object)
```

```r
## S4 replacement method for signature 'SpatialNetwork,list'
graph.networks.list(object) <- value
```

```r
## S4 replacement method for signature 'SpatialNetwork,list'
graph.title.list(object) <- value
```

**Arguments**

- **object** the SpatialNetwork object for which we want to get parameters.
- **value** a list of parameters.

**Methods (by class)**


---

graph.networks.list<-  *Set the list of all networks parameters of a SpatialNetwork object*

**Description**

This generic method intends to set or replace networks parameters of a SpatialNetwork object.

**Usage**

```r
graph.networks.list(object) <- value
```

**Arguments**

- **object** the SpatialNetwork object for which we want to set parameters.
- **value** a list of parameters.
graph.networks.remove<-  

Remove a network

Description
This function remove a network item in a SpatialNetwork object.

Usage
graph.networks.remove(object) <- value

## S4 replacement method for signature 'SpatialNetwork,character'
graph.networks.remove(object) <- value

Arguments
- object: a SpatialNetwork object.
- value: a character; the name of the network.

graph.par.list  

Get the list of all par parameters of a SpatialNetwork object

Description
This generic method intends to extract par parameters of a SpatialNetwork object.

Usage
graph.par.list(object)

## S4 method for signature 'SpatialNetwork'
graph.par.list(object)

## S4 replacement method for signature 'SpatialNetwork,list'
graph.par.list(object) <- value

Arguments
- object: the SpatialNetwork object for which we want to get parameters.
- value: a list of parameters.

Methods (by class)
graph.par.list <- Set the list of all par parameters of a SpatialNetwork object

Description
This generic method intends to set or replace par parameters of a SpatialNetwork object.

Usage
graph.par.list(object) <- value

Arguments
- object: the SpatialNetwork object for which we want to set parameters.
- value: a list of parameters.

graph.symbol.cex Get the symbol cex parameter of a SpatialNetwork object

Description
This generic method intends to extract the symbol cex parameter of a SpatialNetwork object.

Usage
graph.symbol.cex(object)

## S4 method for signature 'SpatialNetwork'
graph.symbol.cex(object)

## S4 replacement method for signature 'SpatialNetwork,numeric'
graph.symbol.cex(object) <- value

Arguments
- object: a SpatialNetwork object.
- value: the new cex parameter.

Methods (by class)
**graph.symbol.cex**

Set the symbol cex parameter of a SpatialNetwork object

**Description**

This generic method intends to set or replace the symbol cex parameter of a SpatialNetwork object.

**Usage**

```r
graph.symbol.cex(object) <- value
```

**Arguments**

- `object` a SpatialNetwork object.
- `value` the new cex parameter.

**graph.symbol.color**

Get the symbol color of a SpatialNetwork object

**Description**

This generic method intends to extract the symbol color of a SpatialNetwork object.

**Usage**

```r
graph.symbol.color(object)
```

```r
## S4 method for signature 'SpatialNetwork'
graph.symbol.color(object)
```

```r
## S4 replacement method for signature 'SpatialNetwork,character'
graph.symbol.color(object) <- value
```

**Arguments**

- `object` a SpatialNetwork object.
- `value` the color.

**Methods (by class)**

**graph.symbol.color**

*Set the symbol color of a SpatialNetwork object*

**Description**

This generic method intends to set or replace the symbol color of a SpatialNetwork object.

**Usage**

```
graph.symbol.color(object) <- value
```

**Arguments**

- `object`: a SpatialNetwork object.
- `value`: the color.

**graph.symbol.legend**

*Get the symbol legend of a SpatialNetwork object*

**Description**

This generic method intends to extract the symbol legend of a SpatialNetwork object.

**Usage**

```
graph.symbol.legend(object)
```

```
## S4 method for signature 'SpatialNetwork'
graph.symbol.legend(object)
```

```
## S4 replacement method for signature 'SpatialNetwork,character'
graph.symbol.legend(object) <- value
```

**Arguments**

- `object`: a SpatialNetwork object.
- `value`: the new legend.

**Methods (by class)**


**graph.symbol.legend<-**

*Set the symbol legend of a SpatialNetwork object*

**Description**

This generic method intends to set or replace the symbol legend of a SpatialNetwork object.

**Usage**

```r
graph.symbol.legend(object) <- value
```

**Arguments**

- `object` a SpatialNetwork object.
- `value` the new legend.

**graph.symbol.list**

*Get the list of all symbol parameters of a SpatialNetwork object*

**Description**

This generic method intends to extract symbol parameters of a SpatialNetwork object.

**Usage**

```r
graph.symbol.list(object)
```

`## S4 method for signature 'SpatialNetwork'
graph.symbol.list(object)`

`## S4 replacement method for signature 'SpatialNetwork,list'
graph.symbol.list(object) <- value`

**Arguments**

- `object` the SpatialNetwork object for which we want to get parameters.
- `value` a list of parameters.

**Methods (by class)**

**graph.symbol.list**<-

Set the list of all symbol parameters of a SpatialNetwork object

**Description**

This generic method intends to set or replace symbol parameters of a SpatialNetwork object.

**Usage**

```r
graph.symbol.list(object) <- value
```

**Arguments**

- `object`: the SpatialNetwork object for which we want to set parameters.
- `value`: a list of parameters.

---

**graph.symbol.shift.x**

Get the symbol shift on the x axis of a SpatialNetwork object

**Description**

This generic method intends to extract the value of symbol shift on the x axis of a SpatialNetwork object.

**Usage**

```r
graph.symbol.shift.x(object)
```

```r
## S4 method for signature 'SpatialNetwork'
graph.symbol.shift.x(object)
```

```r
## S4 replacement method for signature 'SpatialNetwork,numeric'
graph.symbol.shift.x(object) <- value
```

**Arguments**

- `object`: a SpatialNetwork object.
- `value`: a numeric; the value of the shift.

**Methods (by class)**

**graph.symbol.shift.x<-**

*Set the symbol shift on the x axis of a SpatialNetwork object*

**Description**

This generic method intends to set or replace the value of symbol shift on the x axis of a SpatialNetwork object.

**Usage**

```r
graph.symbol.shift.x(object) <- value
```

**Arguments**

- **object**: a SpatialNetwork object.
- **value**: a numeric; the value of the shift.

**graph.symbol.shift.y**

*Get the symbol shift on the y axis of a SpatialNetwork object*

**Description**

This generic method intends to extract the value of the symbol shift on the y of a SpatialNetwork object.

**Usage**

```r
graph.symbol.shift.y(object)
```

```r
## S4 method for signature 'SpatialNetwork'
graph.symbol.shift.y(object)
```

```r
## S4 replacement method for signature 'SpatialNetwork,numeric'
graph.symbol.shift.y(object) <- value
```

**Arguments**

- **object**: a SpatialNetwork object.
- **value**: a numeric; the value of the shift.

**Methods (by class)**

graph.symbol.shift.y<-  

Set the symbol shift on the y axis of a SpatialNetwork object

Description

This generic method intends to set or replace the value of the symbol shift on the y axis of a SpatialNetwork object.

Usage

```
graph.symbol.shift.y(object) <- value
```

Arguments

- **object** a SpatialNetwork object.
- **value** a numeric; the value of the shift.

graph.symbol.variable  Get the symbol variable of a SpatialNetwork object

Description

This generic method intends to extract the symbol variable of a SpatialNetwork object.

Usage

```
graph.symbol.variable(object)
```

## S4 method for signature 'SpatialNetwork'
```r
graph.symbol.variable(object)
```

## S4 replacement method for signature 'SpatialNetwork,character'
```r
graph.symbol.variable(object) <- value
```

Arguments

- **object** a SpatialNetwork object.
- **value** the symbol variable.

Methods (by class)

**graph.symbol.variable<-**

*Set the symbol variable of a SpatialNetwork object*

**Description**

This generic method intends to set or replace the symbol variable of a SpatialNetwork object.

**Usage**

```r
graph.symbol.variable(object) <- value
```

**Arguments**

- **object**: a SpatialNetwork object.
- **value**: the symbol variable.

---

**graph.title.list**

*Get the list of all title parameters of a SpatialNetwork object*

**Description**

This generic method intends to extract title parameters of a SpatialNetwork object.

**Usage**

```r
graph.title.list(object)
```

```r
## S4 method for signature 'SpatialNetwork'
graph.title.list(object)
```

**Arguments**

- **object**: the SpatialNetwork object for which we want to get parameters.

**Methods (by class)**

---

**graph.title.list**

*Set the list of all title parameters of a SpatialNetwork object*

**Description**

This generic method intends to set or replace title parameters of a SpatialNetwork object.

**Usage**

```r
graph.title.list(object) <- value
```

**Arguments**

- `object`: the SpatialNetwork object for which we want to set parameters.
- `value`: a list of parameters.

---

**graph.title.main**

*Get the main title of a SpatialNetwork object*

**Description**

This generic method intends to extract the main title of a SpatialNetwork object.

**Usage**

```r
graph.title.main(object)
```

**Arguments**

- `object`: a SpatialNetwork object.
- `value`: the new title.

**Methods (by class)**

graph.title.main<-  

Set the main title of a SpatialNetwork object

Description
This generic method intends to set or replace the main title of a SpatialNetwork object.

Usage

graph.title.main(object) <- value

Arguments

object  a SpatialNetwork object.
value    the new title.

graph.title.sub  

Get the sub title of a SpatialNetwork object

Description
This generic method intends to extract the sub title of a SpatialNetwork object.

Usage

graph.title.sub(object)

## S4 method for signature 'SpatialNetwork'
graph.title.sub(object)

## S4 replacement method for signature 'SpatialNetwork,character'
graph.title.sub(object) <- value

Arguments

object  a SpatialNetwork object.
value    the new title.

Methods (by class)

graph.title.sub <-  
*Set the sub title of a SpatialNetwork object*

**Description**
This generic method intends to set or replace the sub title of a SpatialNetwork object.

**Usage**

```r
graph.title.sub(object) <- value
```

**Arguments**

- `object`  
a SpatialNetwork object.
- `value`  
the new title.

**SpatialNetwork-class  Class "SpatialNetwork"**

**Description**
Allow to store spatial networks, especially for rendering them

**Slots**

- `.Data` object of class "list"
- `map` object of class "SpatialPolygons"
- `networks` object of class "list"
- `plot.title` object of class "list"
- `plot.label` object of class "list"
- `plot.color` object of class "list"
- `plot.blackwhite` object of class "list"
- `plot.symbol` object of class "list"
- `plot.arrow` object of class "list"
- `plot.barplot` object of class "list"
- `plot.legend` object of class "list"
- `plot.layout` object of class "list"
- `plot.par` object of class "list"
- `infos` object of class "list"
- `meta` object of class "list"
- `warnings` object of class "list"
- `names` object of class "character"
- `row.names` object of class "data.frameRowLabels"
- `.S3Class` object of class "character"
Objects from the Class

Objects can be created with the `spnet` function (official class builder).

See Also

Other res: graph.map.plot.position, graph.map.plot.position, SpatialNetwork-method, graph.map.plot.position, SpatialPolygons-method

Examples

```r
people <- c("John", "Elsa", "Brian", "Kate")
position <- c(2,4,6,8)

net1.df <- data.frame(
  'NODE' = people,
  'POSITION' = position
)

net1 <- spnet.create(
  x = net1.df
)
net1

net2 <- spnet.create(
  x = people
)
net2
```

Description

The spnet package offers methods for dealing with spacial social networks. It allows to plot networks for which actors have a specific location on a map (participants in a political debate, cities, etc.). SpatialPolygons objects from the sp package are supported.

References

Create a SpatialNetwork object

Description

The `spnet.create` function is the official builder for creating SpatialNetwork objects.

Usage

```r
spnet.create(x, map, networks, plot.title = list(main = "Untitled SPNET object", sub = "", cex = 2, col = "#333333"), plot.label = list(cex = 1, col = "#333333"), plot.color, plot.blackwhite = list(enable = FALSE, min = 0.02, max = 0.98), plot.symbol, plot.barplot = list(variable = "", bound.lower = c(-0.5, -0.5), bound.upper = c(0.5, -0.5), fgcolor = "#666666", bgcolor = "#e6e6e6", width = 8), plot.arrow, plot.legend = list(print = TRUE, cex = 1, ncol = 1, horiz = FALSE, lwd = 1), plot.layout = list(ratios = c(title = 1/10, graphic = 7/10, legend = 2/10), mat = NULL, reset = TRUE), plot.par = list(mar = c(1, 1, 1, 1)), infos, quiet = FALSE)
```

Arguments

- `x`: a data.frame containing at least two columns: NODE and POSITION.
- `map`: a `SpatialPolygons` object.
- `networks`: a list of the networks to plot.
- `plot.title`: a list of parameters for setting the title.
- `plot.label`: a list of parameters to be passed to the `text` function for setting labels.
- `plot.color`: a list of parameters for setting colors.
- `plot.blackwhite`: a list of parameters for setting the black and white mode.
- `plot.symbol`: a list of parameters for setting symbols.
- `plot.barplot`: a list of parameters for setting barplots.
- `plot.arrow`: a list of parameters for setting arrows.
- `plot.legend`: a list of parameters for setting the legend.
- `plot.layout`: a list of parameters for setting the layout.
- `plot.par`: a list of graphical parameters.
- `infos`: a list of meta information about the instance of the object.
- `quiet` = FALSE: a logical, suppress all messages.

Author(s)

Emmanuel Rousseaux
spnet.example.basic

Examples
people <- c("John", "Elsa", "Brian", "Kate")
position <- c(2,4,6,8)

net1.df <- data.frame(
  'NODE' = people,
  'POSITION' = position
)

net1 <- spnet.create(
  x = net1.df
)
net1

net2 <- spnet.create(
  x = people
)
net2

spnet.example.basic  Spnet basic examples

Description
Create SpatialNetwork object examples for demonstration and testing purpose.

Usage
spnet.example.basic(map = TRUE, color = TRUE, symbol = TRUE,
  network1 = TRUE, network2 = TRUE, barplot = TRUE, title = TRUE)

spnet.example.basic.full()

spnet.example.basic.map()

Arguments
map  logical; if TRUE an example of map is provided.
color  logical; if TRUE an example of map colorization is provided.
symbol  logical; if TRUE an example of symbol use is provided.
network1  logical; if TRUE a first example of network is provided.
network2  logical; if TRUE a second example of network is provided.
barplot  logical; if TRUE a example of barplot rendering of a numeric variable is provided.
title  logical; if TRUE a example of title is provided.
Value

a SpatialNetwork object.

Examples

data(world.map.simplified, package = "spnet")
net1 <- spnet.example.basic()
plot(net1)

spnet.get.local.user.manual

Get the local copy of the spnet user manual

Description

This function copies the spnet user manual to a user defined directory.

Usage

spnet.get.local.user.manual(where = getwd(), overwrite = FALSE)

Arguments

where the location where to copy the user manual. Default is the working directory.
overwrite logical; should existing destination files be overwritten?

world.map.simplified

The TM_WORLD_BORDERS_SIMPL-0.3 world map.

Description

The simplified version of the world map provided by Bjorn Sandvik, thematicmapping.org.

Format

A SpatialPolygonsDataFrame.
Details

The map was imported in R as follows:

require(maptools)
world.map.simplified <- readShapeSpatial("~/TM_WORLD_BORDERS_SIMPL-0.3/TM_WORLD_BORDERS_SIMPL-0.3.shp")
slot(world.map.simplified, 'data')[['NAME']] <- iconv(slot(world.map.simplified, 'data')[['NAME']], "latin1", "utf-8")
save(world.map.simplified, file="data/world.map.simplified.rda")

The result is a SpatialPolygonsDataFrame object. Its data slot contains a data frame with 246 observations and 11 variable:

- **FIPS.** FIPS 10-4 Country Code
- **ISO2.** ISO 3166-1 Alpha-2 Country Code
- **ISO3.** ISO 3166-1 Alpha-3 Country Code
- **UN.** ISO 3166-1 Numeric-3 Country Code
- **NAME.** Name of country/area
- **AREA.** Land area, FAO Statistics (2002)
- **REGION.** Macro geographical (continental region), UN Statistics
- **SUBREGION.** Geographical sub-region, UN Statistics
- **LON.** Longitude
- **LAT.** Latitude

Note

Note from the TM_WORLD_BORDERS_SIMPL-0.3's README file:

- Use this dataset with care, as several of the borders are disputed.
- The original shapefile (world_borders.zip, 3.2 MB) was downloaded from the Mapping Hacks website: http://www.mappinghacks.com/data/. The dataset was derived by Schuyler Erle from public domain sources. Sean Gilles did some clean up and made some enhancements.

---

**Description**

Extract or replace parts of a SpatialNetwork object

set parts of SpatialNetwork
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