Package 'rD3plot'

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Description
Creates interactive analytic graphs with 'R'. It joins the data analysis power of R and the visualization libraries of JavaScript in one package. The package provides interactive networks, timelines, barplots, image galleries and evolving networks. Graphs are represented as 'D3.js' graphs embedded in a web page ready for its interactive analysis and exploration.

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Depends R (>= 3.5.0)

Imports igraph (>= 1.0.1)

Suggests knitr, rmarkdown, shiny, evolMap

VignetteBuilder knitr

NeedsCompilation no

Maintainer Modesto Escobar <modesto@usal.es>

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Author Modesto Escobar [aut, cph, cre] (ORCID: <https://orcid.org/0000-0003-2072-6071>), Carlos Prieto [aut] (ORCID: <https://orcid.org/0000-0001-8178-9768>), David Barrios [aut]

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Contents

rD3plot-package . . . 2
add_tutorial_rd3 . . . 3
barplot_rd3 . . . 4
crannetworkdata . . . 5
evolNetwork_rd3 . . . 6
finches . . . 8
galapagos . . . 8
gallery2_rd3 . . . 9
gallery3_rd3 . . . 11
gallery_rd3 . . . 13
miserables . . . 15
network_rd3 . . . 15
pie_rd3 . . . 19
rd3_addDescription . . . 20
rd3_addImage . . . 21
rd3_fromIgraph . . . 22
rd3_layoutCircle . . . 23
rd3_layoutGrid . . . 24
rd3_multigraph . . . 25
rd3_multiPages . . . 26
rd3_toIgraph . . . 27
shiny_rd3 . . . 28
sociologists . . . 28
timeline_rd3 . . . 29
treeGallery2_rd3 . . . 30
treeGallery_rd3 . . . 31

Index **34**

`rD3plot-package` *The rD3plot package.*

Description

Creates interactive analytic graphs with 'R'. It joins the data analysis power of R and the visualization libraries of JavaScript in one package. The package provides interactive networks, timelines, barplots, image galleries and evolving networks. Graphs are represented as D3 graphs embedded in a web page ready for its interactive analysis and exploration

add_tutorial_rd3 *Adds a tutorial for the gallery.*

Description

add_tutorial_rd3 adds a tutorial for a gallery.

Usage

```
add_tutorial_rd3(x, image = NULL, description = NULL, help = FALSE)
```

Arguments

x	object of class gallery_rd3.
image	character vector indicating the image path, header for the tutorial.
description	a character string indicating a desription text to insert in the tutorial.
help	Should you press the help button to show the tutorial? ('FALSE' by default)

Value

Object of class gallery_rd3.

Author(s)

Modesto Escobar, Department of Sociology and Communication, University of Salamanca.

Examples

```
data("finches")
finches$species <- system.file("extdata", finches$species,
        package="rD3plot") # copy path to the species field
gallery <- gallery_rd3(finches, image="species", main="Species in Galapagos Islands",
        note="Data source: Sanderson (2000)")

gallery <- add_tutorial_rd3(gallery,
  description="Here you can see different finches species in Galapagos islands.")

## Not run:
plot(gallery)

## End(Not run)
```

barplot_rd3 *Networked barplot.*

Description

barplot_rd3 produces an interactive barplot of coincidences between events.

Usage

```
barplot_rd3(events, links, name = NULL, select = NULL,
        source = NULL, target = NULL,
        label = NULL, text = NULL, color = NULL,
        incidences = NULL, coincidences = NULL,
        expected = NULL, confidence = NULL, level = .95, significance = NULL,
        sort = NULL, decreasing = FALSE,
        scalebar = FALSE, defaultColor = "#1f77b4", note = NULL, cex = 1,
        language = c("en","es","ca"), dir = NULL)
```

Arguments

events	a data frame with at least two columns of event names (by default 1st column) and incidences (2nd column). Columns for each variable can be specified at name and incidences parameters.
links	a data frame with at least three columns indicating source event, target event and number of coincidences (in that order). Columns assigned to each variable can be specified at source, target and concidences parameters.
name	column name with event names in the events data frame.
source	column name with source names in the links data frame.
target	column name with target names in the links data frame.
select	event name to start the visualization.
label	column name with labels in the events data frame.
text	column name with html text in the events data frame.
color	column name with color variable in the events data frame.
coincidences	column nane with coincidences in the links data frame.
incidences	column name with incidences in the events data frame.
expected	column name with expected coincidences in the links data frame.
confidence	column name with confidence interval in the links data frame.
level	confidence level
significance	column name with significance in the links data frame.
sort	column name in the events data frame to order the bars in the graph.
decreasing	order the events in a decreasing order.
scalebar	bars are represented filling all the screen height.

defaultColor	a string giving a valid html color.
note	the lower title of the graph.
cex	a number giving the amount by which plotting text should be scaled relative to the default.
language	a character string indicating the language of the graph (en=english (default); es=spanish; ca=catalan).
dir	a character string representing the directory where the web files will be saved.

Value

Object of class barplot_rd3.

Author(s)

Modesto Escobar, Department of Sociology and Communication, University of Salamanca.

Examples

```
data(finches)
data(galapagos)
barplot <- barplot_rd3(finches, galapagos, select="Certhidea olivacea",
            note="Data source: Sanderson (2000)")
## Not run:
plot(barplot)

## End(Not run)
```

---

crannetworkdata *Dependency network of packages in CRAN*

Description

A list of two datasets, vertices and edges, containing data on packages and their dependencies in CRAN.

Usage

```
data("crannetworkdata")
```

Format

A list of two data frames:

- the links data set consists of 4 variables of length 2882:
  - Source: Package 1
  - Target: Package 2
  - Type: type of dependency (Depends or Imports)

  - Year: year of onset of the dependency
- the nodes data set consists of 7 variables with information on 1098 packages:
  - Package: Package name
  - downloads: Package downloads
  - Title: Package totle
  - Description: Package description
  - Year: Package year
  - downloadsyear: Package downloads per year
  - info: Package info in html format

References

https://github.com/BioinfoUSAL/VisualAnalyticsWorkshop/blob/main/DataGenerationScripts/CRANNetworkDataGeneration.R

Examples

```
data(crannetworkdata)
head(crannetworkdata,10)
```

`evolNetwork_rd3` *Create evolving networks.*

Description

`evolNetwork_rd3` produce an evolving network.

Usage

```
evolNetwork_rd3(..., timelinks = NULL, timenodes = NULL,
    timestart = NULL, timeend = NULL,
    frame = 0, speed = 50, loop = FALSE, lineplots = NULL, dir = NULL)
```

Arguments

`...`	`network_rd3` objects (or a list of `network_rd3` objects) that will be integrated as temporal frames in the evolving network. If `timestart` is provided, any `network_rd3` argument.
`timelinks`	a data frame with at least three columns with source, target and timestart to especify evolutive relations. Only used if `timestart` is provided.
`timenodes`	a data frame with at least two columns with node names and timestart to especify evolutive values in nodes. Only used if `timestart` is provided.
`timestart`	name of the column with the start time of a link in the timelinks data frame.
`timeend`	name of the column with the end time of a link in the timelinks data frame.
`frame`	a frame ordinal position where the playback will start.

speed	a percentage value for the playback speed of network frames.
loop	allowing continuous repetition.
lineplots	a character vector giving the node attributes to show as lineplots.
dir	a "character" string representing the directory where the graph will be saved.

Value

This function returns a network_rd3 object.

Author(s)

Modesto Escobar, Department of Sociology and Communication, University of Salamanca.

Examples

```
nets <- list()
N <- data.frame(name="node1")
E <- data.frame()

for(i in 2:100){
  N <- rbind(N,data.frame(name=paste0("node",i)))
  E <- rbind(E,data.frame(Source=paste0("node",i-1),Target=paste0("node",i)))
  nets[[paste0("net",i-1)]] <- network_rd3(N, E, repulsion=100-i, label=FALSE)
}

net <- evolNetwork_rd3(nets, speed=100)

## Not run:
plot(net)

## End(Not run)

links <- data.frame()
repulsion <- numeric()
for(i in 2:100){
  links <- rbind(links, data.frame(Source=paste0("node",i-1),
      Target=paste0("node",i), time=paste0("stage_",i-1)))
  repulsion <- c(repulsion, 100-i)
}

net2 <- evolNetwork_rd3(timelinks=links, timestart="time",
  speed=100, repulsion=repulsion, label=FALSE)

## Not run:
plot(net2)

## End(Not run)
```

finches *Data: Finches' attributes in Galapagos islands.*

Description

Data frame with events as result.

Usage

```
data("finches")
```

Format

A data frame with 13 observations (pinches) and 4 variables (name and characteristics):

`name` : Genus and species of the finche

`frequency` : number of islands where the finche can be found

`type` : Genus of the finche

`species` : name of the file containing the picture of the finche

References

Sanderson, James (2000). Testing Ecological Patterns: A Well-known Algorithm from Computer Science Aids the Evaluation of Species Distributions. American Scientist, 88, pp. 332-339.

Examples

```
data(finches)
head(finches,10)
```

galapagos *Data: Finches' presence in Galapagos Islands.*

Description

Data frame containing data of finches coapperance in the Galagos Islands.

Usage

```
data("galapagos")
```

Format

This links data set consists of three variables of length 60:

`Source` : Finche 1

`Target` : Finche 2

`coincidences` : number of islands they share

References

Sanderson, James (2000). Testing Ecological Patterns: A Well-known Algorithm from Computer Science Aids the Evaluation of Species Distributions. American Scientist, 88, pp. 332-339.

Examples

```
data(galapagos)
head(galapagos,10)
```

---

gallery2_rd3 *Images in a grid gallery.*

Description

`gallery2_rd3` produces an interactive image gallery (alternative display).

Usage

```
gallery2_rd3(nodes, name = NULL, label = NULL, subtitle = NULL, order = NULL,
    decreasing = FALSE, ntext = NULL,
    mainframeHeight = NULL, mainframeWidth = NULL, mainframeImage = 0,
    image = NULL, imageCopy = NULL, noFilterCols = NULL,
    zoom = NULL, scale = NULL, main = NULL, note = NULL,
   logo = TRUE, pages = c("bottom","dynamic","top"), mainposition = c("dynamic","fixed"),
    frequencies = FALSE, tutorial = FALSE, tableButton = FALSE, export = FALSE,
    search = TRUE, colorScheme = 0,  language = c("en", "es", "ca"), dir = NULL)
```

Arguments

`nodes`	a data frame with at least one column with the names of the gallery's elements.
`name`	name of the vector with names in the nodes data frame.
`label`	column name with image labels in the nodes data frame.
`subtitle`	column name with image subtitles in the nodes data frame.
`order`	name of the column with node order in the nodes data frame.
`decreasing`	decreasing or increasing sort of the nodes.
`ntext`	column name with html text in the nodes data frame.

mainframeHeight	a number to proportionally change mainframe height.
mainframeWidth	a number to proportionally change mainframe width.
mainframeImage	a number to display image in mainframe. 0 = auto (default), 1 = before text, 2 = top right
image	column name which indicates the image paths in the nodes data frame.
imageCopy	column name which indicates the image copyright and attribution in the nodes data frame.
noFilterCols	disable filtering by especified column names.
zoom	Deprecated. Replaced by argument 'scale'.
scale	a number between 0.1 and 1 as initial displaying scale.
main	upper title of the graph.
note	lower title of the graph.
logo	switch to FALSE if you want to hide netCoin logo.
pages	position of pagination info. In the header (top), footer (bottom), or depending on the scroll (dynamic).
mainposition	If 'fixed', the upper title will always be visible in the header, by default ('dynamic'), it will be hidden when scrolling.
frequencies	a logical value true if barplots representing node attributes frequencies will be added to the final graph.
tutorial	Should tutorial be displayed?
tableButton	A button will appear to show the data as a table.
export	A button will appear to export gallery as excel.
search	Should gallery search be displayed? (default: TRUE)
colorScheme	Select a color theme for display (0-11).
language	a character string indicating the language of the graph (en=english (default); es=spanish; ca=catalan).
dir	a character string representing the directory where the web files will be saved.

Value

Object of class `gallery_rd3`.

Author(s)

Modesto Escobar, Department of Sociology and Communication, University of Salamanca.

Examples

```
data("finches")
finches$species <- system.file("extdata", finches$species,
        package="rD3plot") # copy path to the species field
finches$attribution <- c(
  "2009 - Peter Wilton",
```

```
  "2007 - putneymark",
  "2007 - putneymark",
  "2012 - Joseph C Boone",
  "2007 - putneymark",
  "2007 - putneymark",
  "2013 - Simon J. Tonge",
  "2009 - Paul McFarling, Charles Darwin Foundation",
  "2009 - Mike Comber",
  "2014 - Lip Kee",
  "2006 - User:BBODO on english wikipedia",
  "2010 - Michael Dvorak",
  "2000 - Paul McFarling, Charles Darwin Foundation"
)
gallery <- gallery2_rd3(finches, image="species",imageCopy="attribution")
## Not run:
plot(gallery)

## End(Not run)
```

`gallery3_rd3` *Images in a grid gallery.*

Description

`gallery3_rd3` produces an interactive image gallery (alternative display).

Usage

```
gallery3_rd3(nodes, name = NULL, label = NULL, subtitle = NULL, order = NULL,
    decreasing = FALSE, ntext = NULL,
    mainframeHeight = NULL, mainframeWidth = NULL, mainframeImage = 0,
    image = NULL, imageCopy = NULL, imageRatio = NULL, noFilterCols = NULL,
    zoom = NULL, scale = NULL, main = NULL, note = NULL,
    tableButton = FALSE, export = FALSE,
    search = TRUE, cex = 1, language = c("en", "es", "ca"), dir = NULL)
```

Arguments

`nodes`	a data frame with at least one column with the names of the gallery's elements.
`name`	name of the vector with names in the nodes data frame.
`label`	column name with image labels in the nodes data frame.
`subtitle`	column name with image subtitles in the nodes data frame.
`order`	name of the column with node order in the nodes data frame.
`decreasing`	decreasing or increasing sort of the nodes.
`ntext`	column name with html text in the nodes data frame.
`mainframeHeight`	a number to proportionally change mainframe height.

mainframeWidth	a number to proportionally change mainframe width.
mainframeImage	a number to display image in mainframe. 0 = auto (default), 1 = before text, 2 = top right
image	column name which indicates the image paths in the nodes data frame.
imageCopy	column name which indicates the image copyright and attribution in the nodes data frame.
imageRatio	the aspect ratio of the images. Is the ratio of its width to its height. 3/4 by default.
noFilterCols	disable filtering by especified column names.
zoom	Deprecated. Replaced by argument 'scale'.
scale	a number between 0.1 and 1 as initial displaying scale.
main	upper title of the graph.
note	lower title of the graph.
tableButton	A button will appear to show the data as a table.
export	A button will appear to export gallery as excel.
search	Should gallery search be displayed? (default: TRUE)
cex	number indicating the amount by which plotting text should be scaled relative to the default.
language	a character string indicating the language of the graph (en=english (default); es=spanish; ca=catalan).
dir	a character string representing the directory where the web files will be saved.

Value

Object of class `gallery_rd3`.

Author(s)

Modesto Escobar, Department of Sociology and Communication, University of Salamanca.

Examples

```
data("finches")
finches$species <- system.file("extdata", finches$species,
        package="rD3plot") # copy path to the species field
gallery <- gallery3_rd3(finches, image="species")
## Not run:
plot(gallery)

## End(Not run)
```

gallery_rd3 *Images in a grid gallery.*

Description

gallery_rd3 produces an interactive image gallery.

Usage

```
gallery_rd3(nodes, name = NULL, label = NULL, color = NULL,
    border = NULL, ntext = NULL, info = NULL, infoFrame = c("right","left"),
    image = NULL, imageCopy = NULL, noFilterCols = NULL, zoom = NULL,
    scale = 1, itemsPerRow = NULL, main = NULL, note = NULL,
    showLegend = TRUE, frequencies = FALSE, labelTooltip = TRUE,
    cexTooltip = 1, help = NULL, helpOn = FALSE, tutorial = FALSE,
    description = NULL, descriptionWidth = NULL, roundedItems = FALSE,
    ntextctrl = FALSE, controls = 1:5, cex = 1, defaultColor = "#1f77b4",
    language = c("en", "es", "ca"), dir = NULL)
```

Arguments

nodes	a data frame with at least one column with the names of the gallery's elements.
name	name of the vector with names in the nodes data frame.
label	column name with image labels in the nodes data frame.
color	column name with image background color variable in the nodes data frame.
border	column name with image border width variable in the nodes data frame or a numeric vector.
ntext	column name with html text in the nodes data frame.
info	column name with information to display in a panel in the nodes data frame.
infoFrame	In which panel should the information be displayed? The left panel is only available if frequencies are not showing.
image	column name which indicates the image paths in the nodes data frame.
imageCopy	column name which indicates the image copyright and attribution in the nodes data frame.
noFilterCols	disable filtering by especified column names.
zoom	Deprecated. Replaced by argument 'scale'.
scale	a number between 0.1 and 10 as initial displaying scale.
itemsPerRow	number of items in each row.
main	upper title of the graph.
note	lower title of the graph.
frequencies	a logical value true if barplots representing node attributes frequencies will be added to the final graph.

labelTooltip	show label on mouseover.
cexTooltip	number indicating the amount by which plotting text should be scaled relative to the default in the label tooltip.
showLegend	a logical value true if the legend is to be shown.
help	a character string indicating a help text of the graph.
helpOn	Should the help be shown at the beginning?
tutorial	Should tutorial be displayed?
description	a character string indicating a desription text for the graph.
descriptionWidth	a percentage indicating a width for the description panel (25 by default).
roundedItems	Display items with rounded borders.
ntextctrl	Previous tooltips will be closed unless you hold down the control key (FALSE by default).
controls	a numeric vector indicating which controls will be shown. 1 = topbar, 2 = xlsx exportation, 3 = table, 4 = netCoin logo, 5 = topbar buttons. NULL hide all controls, negative values deny each control and 0 deny all.
cex	number indicating the amount by which plotting text should be scaled relative to the default.
defaultColor	a character vector giving a valid html color for node representation.
language	a character string indicating the language of the graph (en=english (default); es=spanish; ca=catalan).
dir	a character string representing the directory where the web files will be saved.

Value

Object of class `gallery_rd3`.

Author(s)

Modesto Escobar, Department of Sociology and Communication, University of Salamanca.

Examples

```
data("finches")
finches$species <- system.file("extdata", finches$species,
        package="rD3plot") # copy path to the species field
gallery <- gallery_rd3(finches, image="species", main="Species in Galapagos Islands",
        note="Data source: Sanderson (2000)")
## Not run:
plot(gallery)

## End(Not run)
```

miserables *Coappearance network of characters in Les Miserables (undirected)*

Description

A list of two datasets, vertices and edges, containing data on characters and their coapperance in chapters in Victor Hugo's Les Miserables.

Usage

```
data("miserables")
```

Format

A list of two data frames:

- the links data set consists of three variables of length 254:
  - Source: Character 1
  - Target: Character 2
  - value: number of times they appear together in a chapter of Les Miserables
- the nodes data set consists of two variables with information on 77 characters:
  - name: Character name
  - group: Character group

References

D. E. Knuth, The Stanford GraphBase: A Platform for Combinatorial Computing, Addison-Wesley, Reading, MA (1993).

Examples

```
data(miserables)
head(miserables,10)
```

network_rd3 *Interactive network.*

Description

`network_rd3` produces a `network_rd3` object ready for its representation as an interactive network in a web browser. Its input has to be two data.frames: one of attributes of events or nodes, and the other of attributes of the edges or links.

Usage

```
network_rd3(nodes = NULL, links = NULL, tree = NULL,
        community = NULL, layout = NULL,
        name = NULL, label = NULL, group = NULL, groupText = FALSE,
        labelSize = NULL, size = NULL, color = NULL, shape = NULL,
        border = NULL, legend = NULL, sort = NULL, decreasing = FALSE,
        ntext = NULL, info = NULL, image = NULL, imageNames = NULL,
        nodeBipolar = FALSE, nodeScaleLimits = NULL, nodeFilter = NULL,
        degreeFilter = NULL,
        source = NULL, target = NULL, lwidth = NULL, lweight = NULL,
        lcolor = NULL, ltext = NULL, intensity = NULL,
        linkBipolar = FALSE, linkScaleLimits = NULL, linkFilter = NULL,
        repulsion = 25, distance = 10, zoom = 1,
        fixed = showCoordinates, limits = NULL,
        main = NULL, note = NULL, showCoordinates = FALSE, showArrows = FALSE,
        showLegend = TRUE, frequencies = FALSE, statistics = FALSE,
        showAxes = FALSE, axesLabels = NULL,
        nodesLabel = NULL, linksLabel = NULL, scenarios = NULL, help = NULL,
        helpOn = FALSE, mode = c("network","heatmap"), roundedItems = FALSE,
        controls = 1:8, cex = 1, background = NULL, defaultColor = "#1f77b4",
        language = c("en","es","ca"), dir = NULL)
```

Arguments

nodes	a data frame with at least one column of node names.
links	a data frame with at least two columns with source and target node names.
tree	a data frame with two columns: source and target, describing relationships between nodes. It indicates a hierarchy between nodes which can be dynamically explored.
name	name of the column with names in the nodes data frame.
source	name of the column with source names in the links data frame.
target	name of the column with target names in the links data frame.
label	name of the column with labels in the nodes data frame.
group	name of the column with groups in the nodes data frame.
groupText	show names of the groups.
community	algorithm to make communities: edge_betweenness("ed"), fast_greedy("fa"), label_prop("la"), leiden_eigen("le"), louvain("lo"), optimal("op"), spinglass("sp"), walktrap("wa")
labelSize	name of the column with label size in the nodes data frame.
size	name of the column with size in the nodes data frame.
color	name of the column with color variable in the nodes data frame.
shape	name of the column with shape variable in the nodes data frame.
legend	name of the column with the variable to represent as a legend in the nodes data frame.

ntext	name of the column with html text in the nodes data frame.
info	name of the column with information to display in a panel in the nodes data frame.
border	name of the column with border width in the nodes data frame.
sort	name of the column with node order in the nodes data frame (only for heatmap).
decreasing	decreasing or increasing sort of the nodes (only for heatmap).
intensity	name of the column with intensity variable in the links data frame (only for heatmap).
lwidth	name of the column with width variable in the links data frame.
lweight	name of the column with weight variable in the links data frame.
lcolor	name of the column with color variable in the links data frame.
ltext	name of the column with labels in the links data frame.
nodeFilter	a character string with a condition for filtering nodes.
linkFilter	a character string with a condition for filtering links.
degreeFilter	numeric vector to filter the resulting network by degree. Input can be a number which specifies the minimum degree or two numbers which specify the lower and upper limits of the filter.
nodeBipolar	a logical value that polarizes negative and positive node values in the graphical representation. Indicates whether the color key should be made symmetric about 0.
nodeScaleLimits	vector indicating the node scale limits, must be a numeric vector of length 2 or 3.
linkBipolar	a logical value that polarizes negative and positive link values in the graphical representation. Indicates whether the color key should be made symmetric about 0.
linkScaleLimits	vector indicating the link scale limits, must be a numeric vector of length 2 or 3.
defaultColor	a character vector giving a valid html color for node representation.
repulsion	a percentage for repulsion between nodes.
distance	a percentage for distance of links.
zoom	a number between 0.1 and 10 to start displaying zoom.
fixed	prevent nodes from being dragged.
scenarios	a note showing number of scenarios.
main	upper title of the graph.
note	lower title of the graph.
frequencies	a logical value true if barplots representing node attributes frequencies will be added to the final graph.
statistics	a logical value true if the possibility of calculating statistics with the nodes will be added to the final graph.
help	help text of the graph.

helpOn	Should the help be shown at the beginning?
background	background color or image path of the graph.
layout	a matrix with two columns with x/y coordinates or an algorithm to calculate the static layout of the network: davidson.harel drl("da"), circle("ci"), Force-Atlas-2("fo"), fruchterman.reingold("fr"), gem("ge"), grid("gr"), kamada.kawai("ka"), lgl("lg"), mds("md"), random("ra"), reingold.tilford("re"), star("sta"), sugiyama("sug")
limits	vector indicating the layout limits, must be a numeric vector of length 4 on this order: x_min, y_min, x_max, y_max.
cex	number indicating the amount by which plotting text should be scaled relative to the default.
roundedItems	Display images with rounded borders.
controls	a numeric vector indicating which controls will be shown. 1 = sidebar, 2 = selection buttons, 3 = export buttons, 4 = nodes table, 5 = links table, 6 = search, 7 = zoom, 8 = legend. NULL hide all controls, negative values deny each control and 0 deny all.
mode	a character vector indicating the graph mode allowed: network, heatmap or both (both by default).
showCoordinates	a logical value true if the coordinates are to be shown in tables and axes. Default = FALSE.
showArrows	a logical value true if the directional arrows are to be shown. Default = FALSE.
showLegend	a logical value true if the legend is to be shown.
showAxes	a logical value true if the axes are to be shown.
axesLabels	a character vector giving the axes names.
language	a character string indicating the language of the graph (en=english (default); es=spanish; ca=catalan).
nodesLabel	How should the nodes in this network be named?
linksLabel	How should the links in this network be named?
image	name of the column with the path to node image files in the nodes data frame.
imageNames	name of the column with names for image files in the nodes data frame which will be shown in the legend.
dir	a "character" string representing the directory where the resulting web files will be saved.

Value

This function returns a network_rd3 object. If the 'dir' attribute is specified, the function creates a folder in the computer with an HTML document named index.html which contains the produced graph. This file can be directly opened with your browser and sent to a web server to work properly.

Note

nodes and links arguments can be substituted by a network_rd3 object to add or change options to it.

Author(s)

Modesto Escobar, Department of Sociology and Communication, University of Salamanca.

Examples

```
data(miserables)
net <- network_rd3(miserables$nodes, miserables$links,
         size="degree", color="group", lwidth="value")
## Not run:
plot(net)

## End(Not run)
```

---

pie_rd3 *Networked barplot.*

Description

pie_rd3 produces an interactive barplot of coincidences between events.

Usage

```
pie_rd3(v, w = NULL, labels = NULL, colors = NULL, nodes = NULL, links = NULL,
  name = NULL, source = NULL, target = NULL, lcolor = NULL,
  ablineX = NULL, ablineY = NULL, hideUpper = FALSE, main = NULL, note = NULL,
  showLegend = TRUE, help = NULL, helpOn = FALSE,
  cex = 1, language = c("en", "es", "ca"), dir = NULL)
```

Arguments

v	a vector or array of non-negative numerical quantities. The values are displayed as the areas of pie slices.
w	an array of non-negative numerical quantities. The first value is displayed as a pie slice bordered red.
labels	character strings giving names for the slices.
colors	a vector of colors to be used in filling the slices.
nodes	a data frame with information for rows and columns.
links	a data frame with information for each pie.
name	name of the column with rownames and colnames in the nodes data frame.
source	name of the column with rownames in the links data frame.
target	name of the column with colnames in the links data frame.
lcolor	name of the column with color variable in the links data frame.
ablineX	adds one or more straight vertical lines between pies.
ablineY	adds one or more straight horizontal lines between pies.

hideUpper	should hide the upper triangle?
main	upper title of the graph.
note	lower title of the graph.
showLegend	a logical value true if the legend is to be shown.
help	a character string indicating a help text of the graph.
helpOn	Should the help be shown at the beginning?
cex	number indicating the amount by which plotting text should be scaled relative to the default.
language	a character vector (es=spanish; en=english; ca=catalan).
dir	a character string representing the directory where the web files will be saved.

Value

Object of class pie_rd3.

Author(s)

Modesto Escobar, Department of Sociology and Communication, University of Salamanca.

Examples

```
pie <- pie_rd3(1:4, labels = c("XY","X","","Y"),
  colors = c("black","cadetblue2", "white","cadetblue3"))
## Not run:
plot(pie)

## End(Not run)
```

---

rd3_addDescription *Adds a description to a 'rD3plot' object.*

Description

rd3_addDescription adds a description to a 'rD3plot' object.

Usage

```
rd3_addDescription(x, description)
```

Arguments

x	A 'rD3plot' object.
description	the description text.

Value

A 'rD3plot' object.

Author(s)

Modesto Escobar, Department of Sociology and Communication, University of Salamanca.

Examples

```
data(finches)
data(galapagos)
bar <- barplot_rd3(finches, galapagos, select="Certhidea olivacea")
img <- system.file("extdata", "p.Crassirostris.png",
        package="rD3plot")
bar <- rd3_addDescription(bar,"Species coincidences in Galapagos Islands")
multi <- rd3_multigraph(barplot=bar)
## Not run:
rd3_multiPages(multi,"Graph image example",show=TRUE)

## End(Not run)
```

---

rd3_addImage *Adds an image to a 'rD3plot' object.*

Description

rd3_addImage adds an image to a 'rD3plot' object.

Usage

```
rd3_addImage(x, img)
```

Arguments

x	A 'rD3plot' object.
img	character vector indicating the image path.

Value

A 'rD3plot' object.

Author(s)

Modesto Escobar, Department of Sociology and Communication, University of Salamanca.

Examples

```
data(finches)
data(galapagos)
bar <- barplot_rd3(finches, galapagos, select="Certhidea olivacea")
img <- system.file("extdata", "p.Crassirostris.png",
       package="rD3plot")
bar <- rd3_addImage(bar,img)
multi <- rd3_multigraph(barplot=bar)
## Not run:
rd3_multiPages(multi,"Graph image example",show=TRUE)

## End(Not run)
```

`rd3_fromIgraph` *Produce interactive networks from 'igraph' objects.*

Description

`rd3_fromIgraph` produce an interactive network from an 'igraph' object.

Usage

```
rd3_fromIgraph(G, ...)
```

Arguments

`G`	an igraph object.
`...`	Any network_rd3 argument.

Value

This function returns a `network_rd3` object.

Author(s)

Modesto Escobar, Department of Sociology and Communication, University of Salamanca.

Examples

```
g <- igraph::make_ring(10)
rd3_fromIgraph(g)
```

rd3_layoutCircle *Produce a circle layout of any number of nodes.*

Description

rd3_layoutCircle produces a circle layout of any number of nodes.

Usage

```
rd3_layoutCircle(N,nodes=seq_len(nrow(N)),deg=0,name=NULL)
```

Arguments

N	a data frame of nodes.
nodes	a vector specifing the node names inclued in the layout calculation.
deg	rotation degrees.
name	column name with node names in the N data frame.

Value

'rd3_layoutCircle' produces a circle layout of any number of nodes.

Author(s)

Modesto Escobar, Department of Sociology and Communication, University of Salamanca.

Examples

```
A <- data.frame(name=letters)
L <- rd3_layoutCircle(A,name="name")
net <- network_rd3(A,layout=L)
## Not run:
plot(net)

## End(Not run)
```

rd3_layoutGrid *Produce a grid layout of any number of nodes.*

Description

rd3_layoutGrid produces a grid layout of any number of nodes.

Usage

```
rd3_layoutGrid(N,string,name=NULL,byrow=FALSE)
```

Arguments

N	a data frame of nodes.
string	a character vector specifing grouped nodes.
name	column name with node names in the N data frame.
byrow	order nodes by row (default) or by columns (FALSE)

Value

'rd3_layoutGrid' produces a grid layout of any number of nodes.

Author(s)

Modesto Escobar, Department of Sociology and Communication, University of Salamanca.

Examples

```
A <- data.frame(name=letters)
L <- rd3_layoutGrid(A,"a,b,c,d,e.f,g,h,i,j.k,l,m,n,o,p.q,r,s,t,u.v,w,x,y,z","name")
net <- network_rd3(A,layout=L)
## Not run:
plot(net)

## End(Not run)
```

rd3_multigraph *Integrates interactive 'rD3plot' graphs.*

Description

rd3_multigraph produce an interactive multi graph with the integration of 'rD3plot' graphs in the final result.

Usage

```
rd3_multigraph(..., mfrow = NULL, dir = NULL)
```

Arguments

...	rD3plot graphs (network_rd3, barplot_rd3, timeplot_rd3) objects or string paths to html "directories".
mfrow	a vector of the form 'c(nr, nc)'. Subsequent graphs will be drawn in an 'nr'-by-'nc' array on the device by rows.
dir	a "character" string representing the directory where the graph will be saved.

Value

This function returns a multi_rd3 object.

Author(s)

Modesto Escobar, Department of Sociology and Communication, University of Salamanca.

Examples

```
data(miserables)
net <- network_rd3(miserables$nodes, miserables$links,
         size="degree", color="group", lwidth="value")

data(finches)
data(galapagos)
bar <- barplot_rd3(finches, galapagos, select="Certhidea olivacea")

data(sociologists)
time <- timeline_rd3(sociologists,"name","birth","death","birthcountry")

multi <- rd3_multigraph(network=net, barplot=bar, timeline=time)
## Not run:
plot(multi)

## End(Not run)
```

rd3_multiPages *Produces a gallery of 'rD3plot' graphs.*

Description

rd3_multiPages produces a gallery page to explore multiple 'rD3plot' graphs.

Usage

```
rd3_multiPages(x, title = NULL, columns = NULL, imageSize = NULL,
  description = NULL, note = NULL,
  cex = 1, dir = tempDir(), show = FALSE)
```

Arguments

x	is a multi_rd3 object. See rd3_multigraph
title	the text for a main title.
columns	a numeric vector giving the number of columns to display items in gallery. Default = 3.
imageSize	a numeric vector giving the size of images in gallery. Default = 75.
description	a description text for the gallery.
note	a footer text for the gallery.
cex	number indicating the amount by which plotting text should be scaled relative to the default. Default = 1.
dir	a "character" string representing the directory where the graph will be saved.
show	a logical value true if the graph is to be shown. Default = FALSE.

Value

The function creates a folder in your computer with an HTML document named index.html which contains the graph. This file can be directly opened with your browser.

Author(s)

Modesto Escobar, Department of Sociology and Communication, University of Salamanca.

Examples

```
data(miserables)
net <- network_rd3(miserables$nodes, miserables$links,
         size="degree", color="group", lwidth="value")

data(finches)
data(galapagos)
bar <- barplot_rd3(finches, galapagos, select="Certhidea olivacea")
```

```
data(sociologists)
time <- timeline_rd3(sociologists,"name","birth","death","birthcountry")

multi <- rd3_multigraph(network=net, barplot=bar, timeline=time)
## Not run:
rd3_multiPages(multi,"Some graphs",show=TRUE)

## End(Not run)
```

`rd3_toIgraph` *'igraph' object.*

Description

creates an `igraph` object from a `network_rd3` object.

Usage

```
rd3_toIgraph(net)
```

Arguments

`net`	is a `network_rd3` object. See `network_rd3`

Value

An `igraph` object.

Author(s)

Modesto Escobar, Department of Sociology and Communication, University of Salamanca.

Examples

```
# A character column (with separator)
data(miserables)
net <- network_rd3(miserables$nodes, miserables$links,
  size="degree", color="group", lwidth="value")
rd3_toIgraph(net) # conversion into a igraph object
```

shiny_rd3 *Include rD3plot graphs in 'Shiny'.*

Description

Load a rD3plot graph to display in 'Shiny'.

Usage

```
shiny_rd3(x)
```

Arguments

x	is a network_rd3, barplot_rd3 or timeplot_rd3 object.

Value

This function returns a shiny.tag object.

Author(s)

Modesto Escobar, Department of Sociology and Communication, University of Salamanca.

sociologists *Data: Sociologists born in the 19th century.*

Description

Data frame with names, birth and death year data, birth country and movement.

Usage

```
data("sociologists")
```

Format

A data frame with 33 observations and the following 4 variables (events) to study coincidences in time:

name : name and last name of the sociologist

birth : birth year

death : death year

birthcountry : birth country

movements : movement or school of thought

Source

Own elaboration from manuals of sociology.

Examples

```
data(sociologists)
head(sociologists, 10)
tail(sociologists, 10)
```

`timeline_rd3` *Interactive time-bar plot.*

Description

`timeline_rd3` produces a `timeline_rd3` object ready for its representation as an interactive time line in a web browser.

Usage

```
timeline_rd3(periods, name = "name", start = "start", end = "end", group = NULL,
             text = NULL, main = NULL, note = NULL, info = NULL,
             events = NULL, eventNames = "name", eventPeriod = "period",
             eventTime = "date", eventColor = NULL, eventShape = NULL,
             cex = 1, language = c("en","es","ca"), dir = NULL)
```

Arguments

`periods`	a data frame with at least three columns describing period names, start and end.
`name`	name of the column with names in the periods data frame.
`start`	name of the column with starts in the periods data frame.
`end`	name of the column with ends in the periods data frame.
`group`	name of the column with a grouping criteria in the periods data frame.
`text`	name of the column with a descriptive text of periods (html format) in the periods data frame.
`main`	upper title of the graph.
`note`	lower title of the graph.
`info`	name of the column in the periods data frame with information to display on the information panel.
`events`	a data frame of events related to periods (shown as dots) with three columns: interval name, event name and event date
`eventNames`	name of the column with event identifiers in the events data frame.
`eventPeriod`	name of the column with interval identifiers in the events data frame.
`eventTime`	name of the column with time points in the events data frame.

eventColor	name of the column with the color criteria in the events data frame.
eventShape	name of the column with the shape criteria in the events data frame.
cex	number indicating the amount by which plotting text should be scaled relative to the default.
language	a character string indicating the language of the graph (en=english (default); es=spanish; ca=catalan).
dir	a "character" string representing the directory where the web files will be saved.

Value

Object of class timeline_rd3.

Author(s)

Modesto Escobar, Department of Sociology and Communication, University of Salamanca.

Examples

```
# Database of 19th century sociologists
data(sociologists)
timeline <- timeline_rd3(sociologists,"name","birth","death","birthcountry")
## Not run:
plot(timeline)

## End(Not run)
```

---

treeGallery2_rd3 *Images in a grid gallery.*

Description

treeGallery2_rd3 produces an interactive image gallery (alternative display).

Usage

```
treeGallery2_rd3(tree, initialType = NULL, tableformat = FALSE, ...)
```

Arguments

tree	a data frame with two columns: source and target, describing relationships between nodes. It indicates a hierarchy between nodes which can be dynamically explored. Optionally, another two columns describing types can be passed.
initialType	A character vector indicating which node type will be shown at start.
tableformat	If the tree is especified as a table, one column per level.
...	Any gallery_rd3 argument.

Value

Object of class treeGallery_rd3.

Author(s)

Modesto Escobar, Department of Sociology and Communication, University of Salamanca.

Examples

```
# Create some film data
tree <- data.frame(
 film = c("The Shawshank Redemption", "The Godfather", "The Dark Knight", "The Godfather Part II",
    "12 Angry Men", "Schindler's List", "The Lord of the Rings: The Return of the King",
    "Pulp Fiction", "The Lord of the Rings: The Fellowship of the Ring",
    "The Good, the Bad and the Ugly"),
  director = c("Frank Darabont", "Francis Ford Coppola", "Christopher Nolan",
    "Francis Ford Coppola", "Sidney Lumet", "Steven Spielberg", "Peter Jackson",
    "Quentin Tarantino", "Peter Jackson", "Sergio Leone"),
 actor = c("Tim Robbins|Morgan Freeman|Bob Gunton", "Marlon Brando|Al Pacino|James Caan",
   "Christian Bale|Heath Ledger|Aaron Eckhart", "Al Pacino|Robert De Niro|Robert Duvall",
    "Henry Fonda|Lee J. Cobb|Martin Balsam", "Liam Neeson|Ralph Fiennes|Ben Kingsley",
  "Elijah Wood|Viggo Mortensen|Ian McKellen", "John Travolta|Uma Thurman|Samuel L. Jackson",
   "Elijah Wood|Viggo Mortensen|Ian McKellen", "Clint Eastwood|Eli Wallach|Lee Van Cleef")
)

gallery <- treeGallery2_rd3(tree, initialType="film", tableformat=TRUE)

## Not run:
plot(gallery)

## End(Not run)
```

---

treeGallery_rd3 *Images in a grid gallery.*

Description

treeGallery_rd3 produces an interactive image gallery.

Usage

```
treeGallery_rd3(tree, deep = FALSE, initialType = NULL, tableformat = FALSE, ...)
```

Arguments

tree	a data frame with two columns: source and target, describing relationships between nodes. It indicates a hierarchy between nodes which can be dynamically explored. Optionally, another two columns describing types can be passed.

deep	The tree is especified in a structure that preserves paths. Each column will be a tree level, colnames as node types.
initialType	A character vector indicating which node type will be shown at start. No effects in 'deep' mode.
tableformat	If the tree is especified as a table, one column per level. No effects in 'deep' mode.
...	Any gallery_rd3 argument.

Value

Object of class `treeGallery_rd3`.

Author(s)

Modesto Escobar, Department of Sociology and Communication, University of Salamanca.

Examples

```
# simply linked tree
tree <- data.frame(
  parent=c("a","a","b","b","b","ab","ab","ab","ab","ba","ba","baa","ba"),
  child=c("aa","ab","ba","bb","bc","aba","abb","abc","abd","baa","bab","baaa","aba")
)

gallery <- treeGallery_rd3(tree)

## Not run:
plot(gallery)

## End(Not run)


# Create some film data
tree <- data.frame(
 film = c("The Shawshank Redemption", "The Godfather", "The Dark Knight", "The Godfather Part II",
    "12 Angry Men", "Schindler's List", "The Lord of the Rings: The Return of the King",
    "Pulp Fiction", "The Lord of the Rings: The Fellowship of the Ring",
    "The Good, the Bad and the Ugly"),
  director = c("Frank Darabont", "Francis Ford Coppola", "Christopher Nolan",
    "Francis Ford Coppola", "Sidney Lumet", "Steven Spielberg", "Peter Jackson",
    "Quentin Tarantino", "Peter Jackson", "Sergio Leone"),
 actor = c("Tim Robbins|Morgan Freeman|Bob Gunton", "Marlon Brando|Al Pacino|James Caan",
   "Christian Bale|Heath Ledger|Aaron Eckhart", "Al Pacino|Robert De Niro|Robert Duvall",
    "Henry Fonda|Lee J. Cobb|Martin Balsam", "Liam Neeson|Ralph Fiennes|Ben Kingsley",
  "Elijah Wood|Viggo Mortensen|Ian McKellen", "John Travolta|Uma Thurman|Samuel L. Jackson",
   "Elijah Wood|Viggo Mortensen|Ian McKellen", "Clint Eastwood|Eli Wallach|Lee Van Cleef")
)

gallery <- treeGallery_rd3(tree, initialType="film", tableformat=TRUE, color="type", zoom=2)

## Not run:
```

```
plot(gallery)

## End(Not run)


# example with path preservation
tree <- rbind(
c("a1","b1","c1|c2"),
c("a2","b2","c3|c4"),
c("a3","b2","c4|c5"),
c("a4","b3|b4","c6|c7|c8")
)

colnames(tree) <- c("a","b","c")

gallery <- treeGallery_rd3(tree, deep=TRUE, color="type")
## Not run:
plot(gallery)

## End(Not run)
```

Index

∗ **datasets**
crannetworkdata, 5
finches, 8
galapagos, 8
miserables, 15
sociologists, 28

add_tutorial_rd3, 3

barplot_rd3, 4

crannetworkdata, 5

evolNetwork_rd3, 6

finches, 8

galapagos, 8
gallery2_rd3, 9
gallery3_rd3, 11
gallery_rd3, 13, *30*, *32*

miserables, 15

network_rd3, 15, *22*, *27*

pie_rd3, 19

rd3_addDescription, 20
rd3_addImage, 21
rd3_fromIgraph, 22
rd3_layoutCircle, 23
rd3_layoutGrid, 24
rd3_multigraph, 25, *26*
rd3_multiPages, 26
rd3_toIgraph, 27
rD3plot-package, 2

shiny_rd3, 28
sociologists, 28

timeline_rd3, 29
treeGallery2_rd3, 30
treeGallery_rd3, 31