

Package ‘d3po’

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Title D3 Popular Outputs

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Description A collection of scripts to create common d3 visualizations using r2d3.

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chord	<i>Chord diagram</i>
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Description

Creates chord diagram from edgelist data.frame.

Usage

```
chord(  
  df,  
  source.column = "source",  
  target.column = "target",  
  value.column = "value",  
  adjacency.matrix = NULL,  
  labels = NULL,  
  edge.color = c("path", "input", "output", "none"),  
  color.scheme = c("Spectral", names(d3po::color.schemes)),  
  width = NULL,  
  height = NULL,  
  viewer = c("internal", "external", "browser")  
)
```

Arguments

df	data.frame containing edgelist data.
source.column	Name of column containing source nodes. Defaults to "source".
target.column	Name of column containing target nodes. Defaults to "target".
value.column	Name of column containing edge values. Defaults to "value".
adjacency.matrix	Adjacency matrix of edge weights, as an alternative to edge list.
labels	Node names corresponding to rows/columns of adjacency.matrix.
edge.color	Method of coloring edges. The value "path" will create a gradient between two nodes. Defaults to "path".
color.scheme	Color scheme to use in visualization. See color.schemes for more details.
width	Desired width for output widget.
height	Desired height for output widget.
viewer	"internal" to use the RStudio internal viewer pane for output; "external" to display in an external RStudio window; "browser" to display in an external browser.

Details

Utilizes a script similar to <https://observablehq.com/@d3/chord-diagram> adapted to work with r2d3.

Value

A d3 object as returned by [r2d3](#).

Examples

```
labels = c("spam", "eggs", "foo", "bar")

df = data.frame(source = rep(labels, each = 4),
                target = rep(labels, times = 4),
                value = c(11975, 5871, 8916, 2868,
                          1951, 10048, 2060, 6171,
                          8010, 16145, 8090, 8045,
                          1013, 990, 940, 6907))

chord(df)
```

choropleth.county	<i>County level choropleth</i>
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Description

Creates choropleth at the U.S. county level.

Usage

```
choropleth.county(
  df,
  id.column = "id",
  value.column = "value",
  legend.title = "",
  legend.text.size = 20,
  scale.text.size = 16,
  color.domain = NULL,
  num.legend.ticks = 5,
  color.scheme = c("Blues", names(d3po::color.schemes)),
  width = NULL,
  height = NULL,
  viewer = c("internal", "external", "browser")
)
```

Arguments

<code>df</code>	data.frame containing value data by county.
<code>id.column</code>	Name of column containing identifiers for states/counties. Defaults to "id". All values in this column must match <code>d3po::us.counties\$id</code> .
<code>value.column</code>	Name of column containing values by county. Defaults to "value".
<code>legend.title</code>	Title of legend, e.g., units. Defaults to "".
<code>legend.text.size</code>	Size of text (in points) for legend title. Defaults to 20.
<code>scale.text.size</code>	Size of text (in points) for the scale values. Defaults to 16.
<code>color.domain</code>	Range of values for the color scale. Defaults to <code>c(min(df[,value.column]),max(df[,value.column]))</code> . Length greater than two results in a multi-point gradient.

`num.legend.ticks` Number of breaks in legend scale. Defaults to 5.
`color.scheme` Color scheme to use in visualization. See [color.schemes](#) for more details.
`width` Desired width for output widget.
`height` Desired height for output widget.
`viewer` "internal" to use the RStudio internal viewer pane for output; "external" to display in an external RStudio window; "browser" to display in an external browser.

Details

Utilizes a script similar to <https://observablehq.com/@d3/choropleth> adapted to work with r2d3.

Value

A d3 object as returned by [r2d3](#).

Examples

```
## Not run:
data(unemployment.county)

choropleth.county(unemployment.county,
  id.column = "id",
  value.column = "rate",
  legend.title = "Unemployment rate (%)")

## End(Not run)
```

choropleth.state	<i>State level choropleth</i>
------------------	-------------------------------

Description

Creates choropleth at the U.S. state level.

Usage

```
choropleth.state(
  df,
  state.column = "state",
  value.column = "value",
  legend.title = "",
  legend.text.size = 20,
  scale.text.size = 16,
  color.domain = NULL,
  num.legend.ticks = 5,
  color.scheme = c("Blues", names(d3po::color.schemes)),
  width = NULL,
  height = NULL,
  viewer = c("internal", "external", "browser")
)
```

Arguments

<code>df</code>	data.frame containing value data by state.
<code>state.column</code>	Name of column containing state names. Defaults to "state". All values in this column must match <code>c(datasets::state.name, "District of Columbia")</code> .
<code>value.column</code>	Name of column containing values by state. Defaults to "value".
<code>legend.title</code>	Title of legend, e.g., units. Defaults to "".
<code>legend.text.size</code>	Size of text (in points) for legend. Defaults to 20.
<code>scale.text.size</code>	Size of text (in points) for the scale values. Defaults to 16.
<code>color.domain</code>	Range of values for the color scale. Defaults to <code>c(min(df[,value.column]),max(df[,value.column]))</code> . Length greater than two results in a multi-point gradient.
<code>num.legend.ticks</code>	Number of breaks in legend scale. Defaults to 5.
<code>color.scheme</code>	Color scheme to use in visualization. See color.schemes for more details.
<code>width</code>	Desired width for output widget.
<code>height</code>	Desired height for output widget.
<code>viewer</code>	"internal" to use the RStudio internal viewer pane for output; "external" to display in an external RStudio window; "browser" to display in an external browser.

Details

Utilizes a script similar to <https://observablehq.com/@d3/state-choropleth> adapted to work with r2d3.

Value

A d3 object as returned by [r2d3](#).

Examples

```
data(unemployment.state)

choropleth.state(unemployment.state,
  state.column = "name",
  value.column = "rate",
  legend.title = "Unemployment rate (%)")
```

cloud

Word cloud diagram

Description

Creates word cloud diagram text and value data.frame.

Usage

```
cloud(
  df,
  text.column = "text",
  value.column = "value",
  group.column = "group",
  text.color = c("group", "word", "none"),
  color.scheme = c("Rainbow", names(d3po::color.schemes)),
  legend.font.size = 20,
  width = NULL,
  height = NULL,
  viewer = c("internal", "external", "browser")
)
```

Arguments

<code>df</code>	data.frame containing text, value, and group data.
<code>text.column</code>	Name of column containing text. Defaults to "text".
<code>value.column</code>	Name of column containing edge values. Defaults to "value".
<code>group.column</code>	Name of column containing group data. Defaults to "group". If <code>group.column</code> is not found in <code>df</code> , a new column with a single group will be created.
<code>text.color</code>	How to color text; "group" (default) colors by group, "word" colors by word, and "none" colors all words black.
<code>color.scheme</code>	Color scheme to use in visualization. See color.schemes for more details.
<code>legend.font.size</code>	Size of font in legend in points. Defaults to 20.
<code>width</code>	Desired width for output widget.
<code>height</code>	Desired height for output widget.
<code>viewer</code>	"internal" to use the RStudio internal viewer pane for output; "external" to display in an external RStudio window; "browser" to display in an external browser.

Details

Utilizes a script similar to <https://observablehq.com/@d3/word-cloud> adapted to work with `r2d3`.

Value

A d3 object as returned by [r2d3](#).

Examples

```
df = data.frame(text = c("foo", "bar", "spam", "eggs"),
  value = 2 * c(0.5, 10, 1, 10),
  group = c("Not Python", "Not Python", "Python", "Python"))

cloud(df)
```

`color.schemes`*Compatible D3 Color Schemes*

Description

List of color schemes available and indicators of whether schemes are divergent. All d3po functions use `d3.interpolate<scheme>`. See <https://github.com/d3/d3-scale-chromatic> for more details on scales.

Usage

`color.schemes`

Format

An object of class `list` of length 38.

`df.to.adjacency`*Conversion from data.frame to adjacency matrix*

Description

Creates an adjacency matrix from an edge list data.frame.

Usage

```
df.to.adjacency(  
  df,  
  source.column = "source",  
  target.column = "target",  
  value.column = "value"  
)
```

Arguments

<code>df</code>	data.frame containing edge data
<code>source.column</code>	Name of column containing source nodes. Defaults to "source".
<code>target.column</code>	Name of column containing target nodes. Defaults to "target".
<code>value.column</code>	Name of column containing edge values. Defaults to "value".

Value

A list with two components:

<code>matrix</code>	Adjacency matrix
<code>labels</code>	Names of nodes, in same order as rows/columns of adjacency matrix

Examples

```
labels = c("spam", "eggs", "foo", "bar")

df = data.frame(source = rep(labels, each = 4),
                target = rep(labels, times = 4),
                value = c(11975, 5871, 8916, 2868,
                        1951, 10048, 2060, 6171,
                        8010, 16145, 8090, 8045,
                        1013, 990, 940, 6907))

df.to.adjacency(df)
```

df.to.hierarchy	<i>Conversion from data.frame to hierarchy</i>
-----------------	--

Description

Creates a hierarchy in list format from an edge list data.frame.

Usage

```
df.to.hierarchy(
  ancestry.df,
  leaf.df,
  parent.column = "parent",
  child.column = "child",
  id.column = "id",
  value.column = "value"
)
```

Arguments

ancestry.df	data.frame containing edge data for all parents/children.
leaf.df	data.frame containing values for nodes without children.
parent.column	Name of column in ancestry.df containing parent nodes. Defaults to "parent".
child.column	Name of column in ancestry.df containing child nodes. Defaults to "child".
id.column	Name of column in leaf.df containing node names. Defaults to "id".
value.column	Name of column in leaf.df containing leaf values. Defaults to "value".

Value

A list representation of the hierarchy, which can be converted to JSON representation with [json-lite](#) to JSON.

Examples

```
data(flare)

df.to.hierarchy(flare$ancestry.df, flare$leaf.df)
```

energy

Energy Sources and Sinks

Description

Dataset describing energy generation and consumption as a directed network. Data come from the Department of Energy & Climate Change via Tom Counsell. See http://www.decc.gov.uk/en/content/cms/tackling/2050/calculator_on/calculator_on.aspx.

Usage

energy

Format

An object of class `data.frame` with 68 rows and 3 columns.

flare

Flare Class Hierarchy

Description

Dataset describing the hierarchy of the Flare Javascript class. The data object is a list of two `data.frames`. The first (`ancestry.df`) describes the hierarchy as a list of parent and child nodes. The second (`leaf.df`) gives values for leaves of the hierarchy that can be used for sizing. Taken from <https://observablehq.com/@d3/sunburst>.

Usage

flare

Format

An object of class `list` of length 2.

marimekko

Marimekko diagram

Description

Creates Marimekko diagram from `data.frame`.

Usage

```
marimekko(  
  df,  
  x.column = "x",  
  y.column = "y",  
  value.column = "value",  
  min.opacity = 0.25,  
  max.opacity = 0.9,  
  color.scheme = c("Spectral", names(d3po::color.schemes)),  
  width = NULL,  
  height = NULL,  
  viewer = c("internal", "external", "browser")  
)
```

Arguments

<code>df</code>	data.frame containing horizontal category, vertical category, and value data.
<code>x.column</code>	Name of column containing horizontal category data. Defaults to "x".
<code>y.column</code>	Name of column containing vertical category data. Defaults to "y".
<code>value.column</code>	Name of column containing value data. Defaults to "value".
<code>min.opacity</code>	Minimum opacity value for area colors, between 0 and 1. Defaults to 0.25.
<code>max.opacity</code>	Maximum opacity value for area colors, between 0 and 1. Defaults to 0.9.
<code>color.scheme</code>	Color scheme to use in visualization. See color.schemes for more details.
<code>width</code>	Desired width for output widget.
<code>height</code>	Desired height for output widget.
<code>viewer</code>	"internal" to use the RStudio internal viewer pane for output; "external" to display in an external RStudio window; "browser" to display in an external browser.

Details

Utilizes a script similar to <https://observablehq.com/@d3/marimekko-chart> adapted to work with r2d3.

Value

A d3 object as returned by [r2d3](#).

Examples

```
data(sales)  
  
marimekko(sales, x.column = "market", y.column = "segment")
```

sales	<i>Synthetic Sales Data</i>
-------	-----------------------------

Description

Fictitious dataset describing sales of various products in various locales. Taken from <https://observablehq.com/@d3/marimekko-chart>.

Usage

```
sales
```

Format

An object of class `data.frame` with 16 rows and 3 columns.

sankey	<i>Sankey diagram</i>
--------	-----------------------

Description

Creates Sankey diagram from edgelist `data.frame`.

Usage

```
sankey(
  df,
  source.column = "source",
  target.column = "target",
  value.column = "value",
  sort.nodes = c(TRUE, FALSE),
  text.align = c("outside", "inside"),
  margin.proportion = 0.2,
  edge.color = c("path", "input", "output", "none"),
  color.scheme = c("Spectral", names(d3po::color.schemes)),
  width = NULL,
  height = NULL,
  viewer = c("internal", "external", "browser")
)
```

Arguments

<code>df</code>	data.frame containing edgelist data.
<code>source.column</code>	Name of column containing source nodes. Defaults to "source".
<code>target.column</code>	Name of column containing target nodes. Defaults to "target".
<code>value.column</code>	Name of column containing edge values. Defaults to "value".
<code>sort.nodes</code>	Boolean indicating whether to let sankey.js to sort nodes. Defaults to TRUE. If FALSE, nodes will be ordered as they appear in df.

<code>text.align</code>	Alignment of node labels. Defaults to "outside".
<code>margin.proportion</code>	Proportion of image to devote to margins on both left and right side. Only effective when <code>text.align</code> is "outside". Defaults to 0.2, must be between 0 and 0.5.
<code>edge.color</code>	Method of coloring edges. The value "path" will create a gradient between two nodes. Defaults to "path".
<code>color.scheme</code>	Color scheme to use in visualization. See color.schemes for more details.
<code>width</code>	Desired width for output widget.
<code>height</code>	Desired height for output widget.
<code>viewer</code>	"internal" to use the RStudio internal viewer pane for output; "external" to display in an external RStudio window; "browser" to display in an external browser.

Details

Utilizes a script similar to <https://observablehq.com/@d3/sankey-diagram> adapted to work with r2d3.

Value

A d3 object as returned by [r2d3](#).

Examples

```
data(energy)
```

```
sankey(energy)
```

save.d3

Save d3 diagram as png

Description

Saves d3 diagram as a png image using webshot.

Usage

```
save.d3(
  d3,
  file,
  width = 1000,
  height = 750,
  delay = 0.2,
  zoom = 1,
  background = "white",
  title = "D3 Visualization"
)
```

Arguments

d3	A d3 object.
file	Location to save image. Must have extension ".png" or ".html".
width	Width of image.
height	Height of image.
delay	Time to wait before taking screenshot, in seconds. Sometimes a longer delay is needed for all assets to display properly.
zoom	Zoom before screenshot.
background	Background color of diagram.
title	Title for HTML diagram.

Examples

```
## Not run:
data(energy)

d3 = sankey(energy)
f = paste0(tempfile(), ".html")
save.d3(d3, f)

## End(Not run)
```

sunburst

Sunburst diagram

Description

Creates sunburst diagram from hierarchy and value data.

Usage

```
sunburst(
  ancestry.df,
  leaf.df,
  parent.column = "parent",
  child.column = "child",
  id.column = "id",
  value.column = "value",
  color.scheme = c("Spectral", names(d3po::color.schemes)),
  width = NULL,
  height = NULL,
  viewer = c("internal", "external", "browser")
)
```

Arguments

<code>ancestry.df</code>	data.frame containing edge data for all parents/children.
<code>leaf.df</code>	data.frame containing values for nodes without children.
<code>parent.column</code>	Name of column in <code>ancestry.df</code> containing parent nodes. Defaults to "parent".
<code>child.column</code>	Name of column in <code>ancestry.df</code> containing child nodes. Defaults to "child".
<code>id.column</code>	Name of column in <code>leaf.df</code> containing node names. Defaults to "id".
<code>value.column</code>	Name of column in <code>leaf.df</code> containing leaf values. Defaults to "value".
<code>color.scheme</code>	Color scheme to use in visualization. See color.schemes for more details.
<code>width</code>	Desired width for output widget.
<code>height</code>	Desired height for output widget.
<code>viewer</code>	"internal" to use the RStudio internal viewer pane for output; "external" to display in an external RStudio window; "browser" to display in an external browser.

Details

Utilizes a script similar to <https://observablehq.com/@d3/sunburst> adapted to work with `r2d3`.

Value

A d3 object as returned by `r2d3`.

Examples

```
data(flare)

sunburst(flare$ancestry.df, flare$leaf.df)
```

<code>unemployment.county</code>	<i>County Unemployment</i>
----------------------------------	----------------------------

Description

Unemployment rate by county, August 2016. Source: Bureau of Labor Statistics.

Usage

```
unemployment.county
```

Format

An object of class `data.frame` with 3219 rows and 4 columns.

unemployment.state	<i>State Unemployment</i>
--------------------	---------------------------

Description

Unemployment rate by state, July 2019. Source: Bureau of Labor Statistics.

Usage

```
unemployment.state
```

Format

An object of class `data.frame` with 51 rows and 3 columns.

us.counties	<i>Counties in the U.S.</i>
-------------	-----------------------------

Description

Contains a `data.frame` of all counties, their respective states, and an identifier that can be used with `d3po::choropleth.county`.

Usage

```
us.counties
```

Format

An object of class `data.frame` with 3219 rows and 3 columns.

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