Package 'd3po'

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Title D3 Popular Outputs

Version 0.0.1

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

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Depends R (>= 4.0.0)

Imports jsonlite (>= 1.6.1),
    r2d3 (>= 0.2.3),
    webshot (>= 0.5.2)

Suggests dplyr (>= 1.0.0),
    knitr (>= 1.20),
    rcorpora (>= 2.0.0),
    Rdpack (>= 0.10.1),
    rmarkdown (>= 1.10)

VignetteBuilder knitr

License GPL-3

Encoding UTF-8

LazyData true

RoxygenNote 7.1.1

R topics documented:

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chord   *Chord diagram*

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   *County level choropleth*

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

df	data.frame containing value data by county.
id.column	Name of column containing identifiers for states/counties. Defaults to "id". All values in this column must match d3po::us.counties$id.
value.column	Name of column containing values by county. Defaults to "value".
legend.title	Title of legend, e.g., units. Defaults to "".
legend.text.size	
	Size of text (in points) for legend title. Defaults to 20.

scale.text.size

        Size of text (in points) for the scale values. Defaults to 16.

color.domain   Range of values for the color scale. Defaults to `c(min(df[,value.column]),max(df[,value.colu` 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   *State level choropleth*

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

df	data.frame containing value data by state.
state.column	Name of column containing state names. Defaults to "state". All values in this column must match c(datasets::state.name,"District of Columbia").
value.column	Name of column containing values by state. Defaults to "value".
legend.title	Title of legend, e.g., units. Defaults to "".
legend.text.size	
	Size of text (in points) for legend. Defaults to 20.
scale.text.size	
	Size of text (in points) for the scale values. Defaults to 16.
color.domain	Range of values for the color scale. Defaults to c(min(df[,value.column]),max(df[,value.colu 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/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

df	data.frame containing text, value, and group data.
text.column	Name of column containing text. Defaults to "text".
value.column	Name of column containing edge values. Defaults to "value".
group.column	Name of column containing group data. Defaults to "group". If group.column is not found in df, a new column with a single group will be created.
text.color	How to color text; "group" (default) colors by group, "word" colors by word, and "none" colors all words black.
color.scheme	Color scheme to use in visualization. See color.schemes for more details.
legend.font.size	
	Size of font in legend in points. Defaults to 20.
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/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

df	data.frame containing edge 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".

Value

A list with two components:

matrix	Adjacency matrix
labels	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 *Conversion from data.frame to hierarchy*

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 toJSON.

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

df	data.frame containing horizontal category, vertical category, and value data.
x.column	Name of column containing horizontal category data. Defaults to "x".
y.column	Name of column containing vertical category data. Defaults to "y".
value.column	Name of column containing value data. Defaults to "value".
min.opacity	Minimum opacity value for area colors, between 0 and 1. Defaults to 0.25.
max.opacity	Maximum opacity value for area colors, between 0 and 1. Defaults to 0.9.
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/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   *Synthetic Sales Data*

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   *Sankey diagram*

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

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".
sort.nodes	Boolean indicating whether to let sankey.js to sort nodes. Defaults to TRUE. If FALSE, nodes will be ordered as they appear in df.

text.align   Alignment of node labels. Defaults to "outside".

margin.proportion

        Proportion of image to devote to margins on both left and right side. Only effective when text.align is "outside". Defaults to 0.2, must be between 0 and 0.5.

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/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

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".
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/sunburst` adapted to work with r2d3.

Value

A d3 object as returned by r2d3.

Examples

```
data(flare)

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

---

unemployment.county   *County Unemployment*

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   *State Unemployment*

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   *Counties in the U.S.*

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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