

# Package ‘d3po’

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**Title** D3 Prototype Options

**Version** 0.0.1

**Description** A collection of scripts to create common d3 diagrams 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** 7.1.0

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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", 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 <a href="#">color.schemes</a> 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,
  state.column = "state",
  county.column = "county",
  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", d3po::color.schemes),
  width = NULL,
  height = NULL,
  viewer = c("internal", "external", "browser")
)
```

**Arguments**

df	data.frame containing value data by county.
state.column	Name of column containing state names. Defaults to "state". All values in this column must match <code>d3po::us.counties\$state</code> .
county.column	Name of column containing county names. Defaults to "county". All values in this column must match <code>d3po::us.counties\$county</code> .
id.column	Name of column containing identifiers for states/counties. Defaults to "id". All values in this column must match <code>d3po::us.counties\$id</code> .
value.column	Name of column containing values by county. Defaults to "value".
legend.title	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.
<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 <a href="#">color.schemes</a> 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/choropleth> adapted to work with `r2d3`.

## Value

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

## Examples

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

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

## End(Not run)
```

---

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

## 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", 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 <a href="#">color.schemes</a> 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	<i>Word cloud diagram</i>
-------	---------------------------

---

## 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("Spectral", d3po::color.schemes),
  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 <a href="#">color.schemes</a> 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/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 = c(0.5, 10, 1, 10),
                group = c("Not Python", "Not Python", "Python", "Python"))

cloud(df)
```

---

color.schemes

*Compatible D3 Color Schemes*


---

**Description**

Vector of color schemes available. Most/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 character 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:

<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)
```

---

energy	<i>Energy Sources and Sinks</i>
--------	---------------------------------

---

**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](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.

---

marimekko	<i>Marimekko diagram</i>
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---

**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", 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 <a href="#">color.schemes</a> 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	<i>Synthetic Sales Data</i>
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---

**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",
  text.align = c("outside", "inside"),
  margin.proportion = 0.2,
  edge.color = c("path", "input", "output", "none"),
  color.scheme = c("Spectral", 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>text.align</code>	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 <a href="#">color.schemes</a> 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	<i>Save d3 diagram as png</i>
---------	-------------------------------

---

## 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.
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 = tempfile()  
save.d3(d3, f)  
  
## End(Not run)
```

---

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

---

**Description**

Unemployment rate by county, August 2016. Data: 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>
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---

**Description**

Unemployment rate by state, July 2019. Data: 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>
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---

**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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