Package 'd3po'

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Type Package

Title Fast and Beautiful Interactive Visualization for 'Markdown' and 'Shiny'

Version 0.5.5

Description Apache licensed alternative to 'Highcharter' which provides functions for both fast and beautiful interactive visualization for 'Markdown' and 'Shiny'.

Depends htmlwidgets, magrittr, R (>= 2.10)

URL https://pacha.dev/d3po/

BugReports https://github.com/pachadotdev/d3po/issues

License Apache License (>= 2.0)

Encoding UTF-8

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Suggests knitr, igraph, rmarkdown, shiny, golem

VignetteBuilder knitr

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R topics documented:

`d3po` *An* `htmlwidget` *interface to the d3po javascript chart library*

Description

This function provides 'd3po' methods from R console

Usage

```
d3po(data = NULL, ..., width = NULL, height = NULL, elementId = NULL)
```

Arguments

`data`	d3po need explicit specified data objects formatted as JSON, and this parameter passed it from R.
`...`	Aesthetics to pass, see `daes()`
`width`	Must be a valid CSS unit (like `'100%'`, `'400px'`, `'auto'`) or a number, which will be coerced to a string and have `'px'` appended.

height	Same as width parameter.
elementId	Dummy string parameter. Useful when you have two or more charts on the same page.

Value

Creates a basic 'htmlwidget' object for simple visualization

Author(s)

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`d3po-exports` *D3po (re)exported methods*

Description

D3po (re)exported methods

`d3po-shiny` *Shiny bindings for 'd3po'*

Description

Output and render functions for using d3po within Shiny applications and interactive Rmd documents.

Usage

```
d3po_output(output_id, width = "100%", height = "400px")

render_d3po(expr, env = parent.frame(), quoted = FALSE)

d3po_proxy(id, session = shiny::getDefaultReactiveDomain())
```

Arguments

output_id	output variable to read from
width, height	Must be a valid CSS unit (like `'100%'`, `'400px'`, `'auto'`) or a number, which will be coerced to a string and have `'px'` appended.
expr	An expression that generates a d3po object
env	The environment in which to evaluate `expr`.
quoted	Is `expr` a quoted expression (with `quote()`)? This is useful if you want to save an expression in a variable.
id	Id of plot to create a proxy of.
session	A valid shiny session.

Value

Creates a basic 'htmlwidget' object for 'Shiny' and interactive documents

---

d3po_template *Create a new d3po templated project*

Description

Create a new d3po templated project

Usage

```
d3po_template(path)
```

Arguments

path	The path to create the new project in

---

daes *Aesthetics*

Description

Aesthetics of the chart.

Usage

```
daes(x, y, ...)
```

Arguments

x, y, ...	List of name value pairs giving aesthetics to map to variables. The names for x and y aesthetics are typically omitted because they are so common; all other aspects must be named.

Value

Aesthetics for the plots such as axis (x,y), group, color and/or size

Aesthetics

Valid aesthetics (depending on the geom)

- x, y: cartesian coordinates.
- group: grouping data.
- color: color of geom.
- size: size of geom.
- layout: layout of geom (nicely, fr, kk, graphopt, drl, lgl, mds, sugiyama), in quotes.

maps *maps*

Description

World, continent and country maps. These maps are provided as R lists structured by following the 'topojson' standard. The maps are organized in sub-lists by continent and here I provide maps for both the continents and the countries. There are missing states or regions because those could not be found in the original maps.

Usage

```
maps
```

Format

A `list` object with 6 elements (one per continent). The Americas are separated in North America and South America.

Details

Missing in Asia: 'Siachen Glacier (JK)', 'Scarborough Reef (SH)', and 'Spratly Islands (SP)'. Missing in Europe: 'Vatican City (VA)'.

Missing in North America: 'Bajo Nuevo Bank (BU)', 'Serranilla Bank (SW)', and 'United States Minor Outlying Islands (UM)'.

Missing in Oceania: 'Federated States of Micronesia (FM)', 'Marshall Islands (MH)', and 'Tuvalu (TV)'.

Consider all these maps as referential and unofficial.

Source

Adapted from Natural Earth.

---

map_ids *Extract the IDs from a Map*

Description

Extract the IDs from a Map

Usage

```
map_ids(map)
```

Arguments

map	A map object

Value

A tibble containing IDs and names

Examples

```
map <- map_ids(maps$south_america$continent)
```

---

pokemon *pokemon*

Description

Statistical information about 151 Pokemon from Nintendo RPG series.

Usage

```
pokemon
```

Format

A `data frame` with 151 observations and 15 variables.

Variables

- `id`: Pokedex number.
- `name`: Pokedex name.
- `height`: Height in meters.
- `weight`: Weight in kilograms.
- `base_experience`: How much the Pokemon has battled.
- `type_1`: Primary Pokemon type (i.e. Grass, Fire and Water)
- `type_2`: Secondary Pokemon type (i.e. Poison, Dragon and Ice)
- `attack`: How much damage a Pokemon deals when using a technique.
- `defense`: How much damage a Pokemon receives when it is hit by a technique.
- `hp`: How much damage a Pokemon can receive before fainting.
- `special_attack`: How much damage a Pokemon deals when using a special technique.
- `special_defense`: How much damage a Pokemon receives when it is hit by a special technique.
- `speed`: Determines the order of Pokemon that can act in battle, if the speed is tied then the 1st move is assigned at random.
- `color_1`: Hex color code for Type 1.
- `color_2`: Hex color code for Type 2.

Source

Adapted from highcharter package.

---

pokemon_network *pokemon_network*

Description

Connections between Pokemon types based on Type 1 and 2.

Usage

```
pokemon_network
```

Format

A igraph object with 17 vertices (nodes) and 26 edges (arcs).

Source

Adapted from the highcharter package.

---

po_area *Area*

Description

Plot an area chart.

Usage

```
po_area(d3po, ..., data = NULL, inherit_daes = TRUE, stack = FALSE)
```

Arguments

d3po	Either the output of d3po() or d3po_proxy().
...	Aesthetics, see daes().
data	Any dataset to use for plot, overrides data passed to d3po().
inherit_daes	Whether to inherit aesthetics previous specified.
stack	Whether to stack the series.

Value

an 'htmlwidgets' object with the desired interactive plot

Examples

```
# library(dplyr)
# dout <- pokemon %>%
#  filter(
#   type_1 == "water"
#  ) %>%
#  group_by(type_1, color_1) %>%
#  reframe(
#   probability = c(0, 0.25, 0.5, 0.75, 1),
#   quantile = quantile(speed, probability)
#  )

dout <- data.frame(
  type_1 = rep("water", 5),
  color_1 = rep("#6890F0", 5),
  probability = c(0, 0.25, 0.5, 0.75, 1),
  quantile = c(15, 57.25, 70, 82, 115)
)

d3po(dout) %>%
  po_area(daes(
    x = probability, y = quantile, group = type_1,
    color = color_1
  )) %>%
  po_title("Sample Quantiles for Water Pokemon Speed")
```

---

po_background *Background*

Description

Add a background to a chart.

Usage

```
po_background(d3po, background = "#fff")
```

Arguments

d3po	Either the output of d3po() or d3po_proxy().
background	background to add (hex code).

Value

Appends custom background to an 'htmlwidgets' object

po_bar *Bar*

Description

Draw a bar chart.

Usage

```
po_bar(d3po, ..., data = NULL, inherit_daes = TRUE)
```

Arguments

d3po	Either the output of d3po() or d3po_proxy().
...	Aesthetics, see daes().
data	Any dataset to use for plot, overrides data passed to d3po().
inherit_daes	Whether to inherit aesthetics previous specified.

Value

an 'htmlwidgets' object with the desired interactive plot

Examples

```
# library(dplyr)
# dout <- pokemon %>%
#  group_by(type_1, color_1) %>%
#  count()

dout <- data.frame(
  type_1 = c(
    "bug", "dragon", "electric", "fairy", "fighting",
    "fire", "ghost", "grass", "ground", "ice",
    "normal", "poison", "psychic", "rock", "water"
  ),
  color_1 = c(
    "#A8B820", "#7038F8", "#F8D030", "#EE99AC", "#C03028",
    "#F08030", "#705898", "#78C850", "#E0C068", "#98D8D8",
    "#A8A878", "#A040A0", "#F85888", "#B8A038", "#6890F0"
  ),
  n = c(
    12, 3, 9, 2, 7,
    12, 3, 12, 8, 2,
    22, 14, 8, 9, 28
  )
)

d3po(dout) %>%
  po_bar(daes(x = type_1, y = n, color = color_1)) %>%
  po_title("Share of Pokemon by main type")
```

po_box *Boxplot*

Description

Draw a boxplot.

Usage

```
po_box(d3po, ..., data = NULL, inherit_daes = TRUE)
```

Arguments

d3po	Either the output of d3po() or d3po_proxy().
...	Aesthetics, see daes().
data	Any dataset to use for plot, overrides data passed to d3po().
inherit_daes	Whether to inherit aesthetics previous specified.

Value

an 'htmlwidgets' object with the desired interactive plot

Examples

```
d3po(pokemon) %>%
  po_box(daes(x = type_1, y = speed, color = color_1)) %>%
  po_title("Distribution of Pokemon speed by main type")
```

po_donut *Donut*

Description

Plot a donut

Usage

```
po_donut(d3po, ..., data = NULL, inherit_daes = TRUE)
```

Arguments

d3po	Either the output of d3po() or d3po_proxy().
...	Aesthetics, see daes().
data	Any dataset to use for plot, overrides data passed to d3po().
inherit_daes	Whether to inherit aesthetics previous specified.

Value

an 'htmlwidgets' object with the desired interactive plot

Examples

```
# library(dplyr)
# dout <- pokemon %>%
#  group_by(type_1, color_1) %>%
#  count()

dout <- data.frame(
  type_1 = c(
    "bug", "dragon", "electric", "fairy", "fighting",
    "fire", "ghost", "grass", "ground", "ice",
    "normal", "poison", "psychic", "rock", "water"
  ),
  color_1 = c(
    "#A8B820", "#7038F8", "#F8D030", "#EE99AC", "#C03028",
    "#F08030", "#705898", "#78C850", "#E0C068", "#98D8D8",
    "#A8A878", "#A040A0", "#F85888", "#B8A038", "#6890F0"
  ),
  n = c(
    12, 3, 9, 2, 7,
    12, 3, 12, 8, 2,
    22, 14, 8, 9, 28
  )
)

d3po(dout) %>%
  po_donut(daes(size = n, group = type_1, color = color_1)) %>%
  po_title("Share of Pokemon by main type")
```

---

po_font *Font*

Description

Edit the font used in a chart.

Usage

```
po_font(d3po, family = "Fira Sans", size = 16, transform = "none")
```

Arguments

d3po	Either the output of d3po() or d3po_proxy().
family	family font to use ("Roboto", "Merriweather", etc.).
size	size to use (10, 11, 12, etc. overrides auto-sizing).
transform	transformation to use for the title ("lowercase", "uppercase", "capitalize", "none").

Value

Appends custom font to an 'htmlwidgets' object

`po_geomap` *Geomap*

Description

Plot a geomap

Usage

```
po_geomap(d3po, ..., data = NULL, map = NULL, inherit_daes = TRUE)
```

Arguments

`d3po`	Either the output of `d3po()` or `d3po_proxy()`.
`...`	Aesthetics, see `daes()`.
`data`	Any dataset to use for plot, overrides data passed to `d3po()`.
`map`	map to use (i.e., any valid list or topojson file such as `maps$south_america` or `jsonlite::fromJSON("south_america.topojson", simplifyVector = F)`)
`inherit_daes`	Whether to inherit aesthetics previous specified.

Value

an 'htmlwidgets' object with the desired interactive plot

Examples

```
dout <- map_ids(d3po::maps$asia$japan)
dout$value <- ifelse(dout$id == "TK", 1L, NA)
dout$color <- ifelse(dout$id == "TK", "#bd0029", NA)

d3po(dout) %>%
  po_geomap(
    daes(
      group = id, color = color, size = value,
      tooltip = name
    ),
    map = d3po::maps$asia$japan
  ) %>%
  po_title("Pokemon was created in the Japanese city of Tokyo")
```

po_labels *Labels*

Description

Edit labels positioning in a chart.

Usage

```
po_labels(d3po, align = "center", valign = "middle", resize = TRUE)
```

Arguments

d3po	Either the output of d3po() or d3po_proxy().
align	horizontal alignment ("left", "center", "right", "start", "middle", "end").
valign	vertical alignment ("top", "middle", "botton").
resize	resize labels text (TRUE or FALSE).

Value

Appends custom labels to an 'htmlwidgets' object

po_legend *Legend*

Description

Add a legend to a chart.

Usage

```
po_legend(d3po, legend)
```

Arguments

d3po	Either the output of d3po() or d3po_proxy().
legend	legend to add.

Value

Appends custom legend to an 'htmlwidgets' object

po_line *Line*

Description

Plot an line chart.

Usage

```
po_line(d3po, ..., data = NULL, inherit_daes = TRUE)
```

Arguments

d3po	Either the output of d3po() or d3po_proxy().
...	Aesthetics, see daes().
data	Any dataset to use for plot, overrides data passed to d3po().
inherit_daes	Whether to inherit aesthetics previous specified.

Value

an 'htmlwidgets' object with the desired interactive plot

Examples

```
# library(dplyr)
# dout <- pokemon %>%
#  filter(
#   type_1 == "water"
#  ) %>%
#  group_by(type_1, color_1) %>%
#  reframe(
#   probability = c(0, 0.25, 0.5, 0.75, 1),
#   quantile = quantile(speed, probability)
#  )

dout <- data.frame(
  type_1 = rep("water", 5),
  color_1 = rep("#6890F0", 5),
  probability = c(0, 0.25, 0.5, 0.75, 1),
  quantile = c(15, 57.25, 70, 82, 115)
)

d3po(dout) %>%
  po_line(daes(
    x = probability, y = quantile, group = type_1,
    color = color_1
  )) %>%
  po_title("Sample Quantiles for Water Pokemon Speed")
```

po_network *Network*

Description

Draw a network.

Usage

```
po_network(d3po, ..., data = NULL, inherit_daes = TRUE)
```

Arguments

d3po	Either the output of d3po() or d3po_proxy().
...	Aesthetics, see daes().
data	Any dataset to use for plot, overrides data passed to d3po().
inherit_daes	Whether to inherit aesthetics previous specified.

Value

Appends nodes arguments to a network-specific 'htmlwidgets' object

Examples

```
d3po(pokemon_network) %>%
  po_network(daes(size = size, color = color, layout = "kk")) %>%
  po_title("Connections Between Pokemon Types")
```

po_pie *Pie*

Description

Plot a pie

Usage

```
po_pie(d3po, ..., data = NULL, inherit_daes = TRUE)
```

Arguments

d3po	Either the output of d3po() or d3po_proxy().
...	Aesthetics, see daes().
data	Any dataset to use for plot, overrides data passed to d3po().
inherit_daes	Whether to inherit aesthetics previous specified.

Value

an 'htmlwidgets' object with the desired interactive plot

Examples

```
# library(dplyr)
# dout <- pokemon %>%
#  group_by(type_1, color_1) %>%
#  count()

dout <- data.frame(
  type_1 = c(
    "bug", "dragon", "electric", "fairy", "fighting",
    "fire", "ghost", "grass", "ground", "ice",
    "normal", "poison", "psychic", "rock", "water"
  ),
  color_1 = c(
    "#A8B820", "#7038F8", "#F8D030", "#EE99AC", "#C03028",
    "#F08030", "#705898", "#78C850", "#E0C068", "#98D8D8",
    "#A8A878", "#A040A0", "#F85888", "#B8A038", "#6890F0"
  ),
  n = c(
    12, 3, 9, 2, 7,
    12, 3, 12, 8, 2,
    22, 14, 8, 9, 28
  )
)

d3po(dout) %>%
  po_pie(daes(size = n, group = type_1, color = color_1)) %>%
  po_title("Share of Pokemon by main type")
```

---

po_scatter *scatter*

Description

Plot an scatter chart.

Usage

```
po_scatter(d3po, ..., data = NULL, inherit_daes = TRUE)
```

Arguments

d3po	Either the output of d3po() or d3po_proxy().
...	Aesthetics, see daes().
data	Any dataset to use for plot, overrides data passed to d3po().
inherit_daes	Whether to inherit aesthetics previous specified.

Value

an 'htmlwidgets' object with the desired interactive plot

Examples

```
# library(dplyr)
# dout <- pokemon %>%
#  group_by(type_1, color_1) %>%
#  summarise(
#   attack = mean(attack),
#   defense = mean(defense)
#  ) %>%
#  mutate(log_attack_x_defense = log(attack * defense))

dout <- data.frame(
  type_1 = c(
    "bug", "dragon", "electric", "fairy", "fighting",
    "fire", "ghost", "grass", "ground", "ice",
    "normal", "poison", "psychic", "rock", "water"
  ),
  color_1 = c(
    "#A8B820", "#7038F8", "#F8D030", "#EE99AC", "#C03028",
    "#F08030", "#705898", "#78C850", "#E0C068", "#98D8D8",
    "#A8A878", "#A040A0", "#F85888", "#B8A038", "#6890F0"
  ),
  attack = c(
    63.7, 94, 62, 57.5, 102.8,
    83.9, 50, 70.6, 81.8, 67.5,
    67.7, 74.4, 60.1, 82.2, 70.2
  ),
  defense = c(
    57, 68.3, 64.6, 60.5, 61,
    62.5, 45, 69.5, 86.2, 67.5,
    53.5, 67, 57.5, 110, 77.5
  ),
  log_attack_x_defense = c(
    8.1, 8.7, 8.2, 8.1, 8.7,
    8.5, 7.7, 8.5, 8.8, 8.4,
    8.1, 8.5, 8.1, 9.1, 8.6
  )
)

d3po(dout) %>%
  po_scatter(daes(
    x = defense, y = attack,
    size = log_attack_x_defense, group = type_1, color = color_1
  )) %>%
  po_title("Pokemon Mean Attack vs Mean Defense by Main Type")
```

po_title *Title*

Description

Add a title to a chart.

Usage

```
po_title(d3po, title)
```

Arguments

d3po	Either the output of d3po() or d3po_proxy().
title	Title to add.

Value

Appends a title to an 'htmlwidgets' object

po_treemap *Treemap*

Description

Plot a treemap

Usage

```
po_treemap(d3po, ..., data = NULL, inherit_daes = TRUE)
```

Arguments

d3po	Either the output of d3po() or d3po_proxy().
...	Aesthetics, see daes().
data	Any dataset to use for plot, overrides data passed to d3po().
inherit_daes	Whether to inherit aesthetics previous specified.

Value

an 'htmlwidgets' object with the desired interactive plot

Examples

```
# library(dplyr)
# dout <- pokemon %>%
#  group_by(type_1, color_1) %>%
#  count()

dout <- data.frame(
  type_1 = c(
    "bug", "dragon", "electric", "fairy", "fighting",
    "fire", "ghost", "grass", "ground", "ice",
    "normal", "poison", "psychic", "rock", "water"
  ),
  color_1 = c(
    "#A8B820", "#7038F8", "#F8D030", "#EE99AC", "#C03028",
    "#F08030", "#705898", "#78C850", "#E0C068", "#98D8D8",
    "#A8A878", "#A040A0", "#F85888", "#B8A038", "#6890F0"
  ),
  n = c(
    12, 3, 9, 2, 7,
    12, 3, 12, 8, 2,
    22, 14, 8, 9, 28
  )
)

d3po(dout) %>%
  po_treemap(daes(size = n, group = type_1, color = color_1)) %>%
  po_title("Share of Pokemon by main type")
```

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