Package ‘scatterD3’

March 10, 2018

Type Package
Title D3 JavaScript Scatterplot from R
Version 0.8.2
Date 2018-03-09
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Description Creates 'D3' 'JavaScript' scatterplots from 'R' with interactive features: panning, zooming, tooltips, etc.
License GPL (>= 3)
VignetteBuilder knitr
URL https://github.com/juba/scatterD3
LazyData TRUE
Enhances shiny
Imports htmlwidgets, digest, ellipse
Suggests knitr, rmarkdown
RoxygenNote 6.0.1
NeedsCompilation no
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https://github.com/skokenes/D3-Lasso-Plugin)
Repository CRAN
Date/Publication 2018-03-10 17:01:24 UTC

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Description

Generates an interactive scatter plot based on d3.js. Interactive features include zooming, panning, text labels moving, tooltips, fading effects in legend. Additional handlers are provided to change label size, point opacity or export the figure as an SVG file via HTML form controls.

Usage

```r
scatterD3(x, y, data = NULL, lab = NULL, x_log = FALSE, y_log = FALSE,
point_size = 64, labels_size = 10, labels_positions = NULL,
point_opacity = 1, hover_size = 1, hover_opacity = NULL,
fixed = FALSE, col_var = NULL, col_continuous = NULL, colors = NULL,
ellipses = FALSE, ellipses_level = 0.95, symbol_var = NULL,
size_var = NULL, size_range = c(10, 300), col_lab = NULL,
symbol_lab = NULL, size_lab = NULL, key_var = NULL, type_var = NULL,
opacity_var = NULL, unit_circle = FALSE, url_var = NULL,
tooltips = TRUE, tooltip_text = NULL, xlab = NULL, ylab = NULL,
html_id = NULL, width = NULL, height = NULL, legend_width = 150,
left_margin = 30, xlim = NULL, ylim = NULL,
dom_id_reset_zoom = "scatterD3-reset-zoom",
dom_id_svg_export = "scatterD3-svg-export",
dom_id_lasso_toggle = "scatterD3-lasso-toggle", transitions = FALSE,
menu = TRUE, lasso = FALSE, lasso_callback = NULL,
click_callback = NULL, zoom_callback = NULL, lines = data.frame(slope =
c(0, Inf), intercept = c(0, 0), stroke_dasharray = c(5, 5)),
axes_font_size = "100%", legend_font_size = "100%", caption = NULL)
```

Arguments

- **x**: numerical vector of x values, or variable name if data is not NULL
- **y**: numerical vector of y values, or variable name if data is not NULL
- **data**: default dataset to use for plot.
- **lab**: optional character vector of text labels, or variable name if data is not NULL
- **x_log**: if TRUE, set x scale as logarithmic
- **y_log**: if TRUE, set y scale as logarithmic
- **point_size**: points size. Ignored if size_var is not NULL.
- **labels_size**: text labels size
- **labels_positions**: A data frame, as created by the "Export labels positions" menu entry, giving each label x and y position.
point_opacity
point_opacity, as an integer (same opacity for all points) or a vector of integers,
or variable name if data is not NULL

hover_size
factor for changing size when hovering points

hover_opacity
points opacity when hovering

fixed
force a 1:1 aspect ratio

col_var
optional vector for points color mapping, or variable name if data is not NULL

col_continuous
specify if the color scale must be continuous. By default, if col_var is numeric,
not a factor, and has more than 6 unique values, it is considered as continuous.

colors
vector of custom points colors. Colors must be defined as an hexadecimal string
(eg "#FF0000"). If colors is a named list or a named vector, then the colors will
be associated with their name within col_var. Ignored for a continuous color
scale.

ellipses
draw confidence ellipses for points or the different color mapping groups

ellipses_level
confidence level for ellipses (0.95 by default)

symbol_var
optional vector for points symbol mapping, or variable name if data is not NULL

size_var
optional vector for points size mapping, or variable name if data is not NULL

size_range
numeric vector of length 2, giving the minimum and maximum point sizes when
mapping with size_var

col_lab
color legend title

symbol_lab
symbols legend title

size_lab
size legend title

key_var
optional vector of rows ids, or variable name if data is not NULL. This is passed
as a key to d3, and is only added in shiny apps where displayed rows are filtered
interactively.

type_var
optional vector of points type : "point" for adot (default), "arrow" for an arrow
starting from the origin.

opacity_var
optional vector of points opacity (values between 0 and 1)

unit_circle
set tot TRUE to draw a unit circle

url_var
optional vector of URLs to be opened when a point is clicked

tooltips
logical value to display tooltips when hovering points

tooltip_text
optional character vector of tooltips text

xlab
x axis label

ylab
y axis label.

html_id
manually specify an HTML id for the svg root node. A random one is generated
by default.

width
figure width, computed when displayed

height
figure height, computed when displayed

legend_width
legend area width, in pixels. Set to 0 to disable legend completely.

left_margin
margin on the left of the plot, in pixels

xlim
numeric vector of length 2, manual x axis limits
ylim numeric vector of length 2, manual y axis limits

dom_id_reset_zoom HTML DOM id of the element to bind the "reset zoom" control to.

dom_id_svg_export HTML DOM id of the element to bind the "svg export" control to.

dom_id_lasso_toggle HTML DOM id of the element to bind the "toggle lasso" control to.

transitions if TRUE, data updates are displayed with smooth transitions, if FALSE the whole chart is redrawn. Only used within shiny apps.

menu wether to display the tools menu (gear icon)

lasso logical value to add https://github.com/skokenes/D3-Lasso-Plugind3-lasso-plugin feature

lasso_callback the body of a JavaScript callback function with the argument sel to be applied to a lasso plugin selection

click_callback the body of a JavaScript callback function whose inputs are html_id, and the index of the clicked element.

zoom_callback the body of a JavaScript callback function whose inputs are the new xmin, xmax, ymin and ymax after a zoom action is triggered.

lines a data frame with at least the slope and intercept columns, and as many rows as lines to add to scatterplot. Style can be added with stroke, stroke_width and stroke_dasharray columns. To draw a vertical line, pass Inf as slope value.

axes_font_size font size for axes text (any CSS compatible value)

legend_font_size font size for legend text (any CSS compatible value)

caption caption to be displayed when clicking on the corresponding icon. Either a character string, or a list with title, subtitle and text elements.

Details

Interactive scatter plots based on htmlwidgets and d3.js

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Source

D3.js was created by Michael Bostock. See http://d3js.org/

Examples

scatterD3(x = mtcars$wt, y = mtcars$mpg, data=NA, lab = rownames(mtcars),
           col_var = mtcars$cyl, symbol_var = mtcars$am,
           xlab = "Weight", ylab = "Mpg", col_lab = "Cylinders",
           symbol_lab = "Manual transmission", html_id = NA)
Description
Output and render functions for using scatterD3 widgets within Shiny applications and interactive Rmd documents.

Usage

```r
scatterD3Output(outputId, width = "100\%", height = "600px")
```

```r
renderScatterD3(expr, env = parent.frame(), quoted = FALSE)
```

Arguments

- `outputId` 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 scatterD3 scatter plot.
- `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.
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