Package ‘c3’

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Type Package

Title 'C3.js' Chart Library

Description Create interactive charts with the 'C3.js' <http://c3js.org/> charting library. All plot types in 'C3.js' are available and include line, bar, scatter, and mixed geometry plots. Plot annotations, labels and axis are highly adjustable. Interactive web based charts can be embedded in R Markdown documents or Shiny web applications.

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Depends R (>= 3.2.2)

Imports jsonlite, data.table, lazyeval, htmlwidgets, dplyr, viridis

URL https://github.com/mrjoh3/c3

BugReports https://github.com/mrjoh3/c3/issues

License GPL (>= 3)

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VignetteBuilder knitr

NeedsCompilation no

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Repository CRAN

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Contents

`c3` *C3*

Description

An 'R' wrapper, or htmlwidget, for the c3 javascript charting library by Masayuki Tanaka.

Usage

```
c3(data, x = NULL, y = NULL, group = NULL, width = NULL,
  height = NULL, axes = NULL, labels = NULL, hide = NULL,
  onclick = NULL, onmouseover = NULL, onmouseout = NULL, ...)
```

Arguments

`data`	data.frame or tibble
`x`	character column name
`y`	character column name
`group`	character column name
`width`	integer htmlwidget width (separate from plot width)
`height`	integer htmlwidget height (separate from plot height)

axes	list, use to assign plot elements to secondary y axis
labels	character or list with options: • format: list format functions for each parameter label (see c3 data-labels)
hide	boolean or character vector of parameters to hide
onclick	character js function, wrap character or character vector in JS()
onmouseover	character js function, wrap character or character vector in JS()
onmouseout	character js function, wrap character or character vector in JS()
...	addition options passed to the data object

See Also

Other c3: RColorBrewer, grid, legend, region, subchart, tooltip, xAxis, zoom

Examples

```
data <- data.frame(a = c(1,2,3,2), b = c(2,3,1,5))

data %>%
  c3(onclick = htmlwidgets::JS("function(d, element){console.log(d)}"))

data %>%
  c3(axes = list(a = 'y',
                 b = 'y2')) %>%
  y2Axis()

data.frame(sugar = 20, fat = 45, salt = 10) %>%
  c3(onclick = htmlwidgets::JS("function(d, element){dp = d}")) %>%
  c3_pie()
```

---

c3-shiny *Shiny bindings for c3*

Description

Output and render functions for using c3 within Shiny applications and interactive Rmd documents.

Usage

```
c3Output(outputId, width = "100%", height = "100%")

renderC3(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 c3
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.

---

c3_bar *Bar Plot*

Description

Add bars to a C3 plot

Usage

```
c3_bar(c3, stacked = FALSE, rotated = FALSE, bar_width = 0.6,
  zerobased = TRUE)
```

Arguments

c3	c3 htmlwidget object
stacked	boolean place bars on top of each other
rotated	boolean use to make x-axis vertical
bar_width	numeric pixel width of bars
zerobased	boolean

Value

c3

Examples

```
data.frame(a=c(1,2,3,2),b=c(2,3,1,5)) %>%
  c3() %>%
  c3_bar(stacked = TRUE)
```

c3_chart_size *Chart Size*

Description

Modify the size of the chart within the htmlwidget area. Generally charts size to the div in which they are placed. These options enable finer scale sizing with the div

Usage

```
c3_chart_size(c3, left = NULL, right = NULL, top = NULL,
  bottom = NULL, width = NULL, height = NULL, ...)
```

Arguments

c3	c3 htmlwidget object
left	integer padding pixels
right	integer padding pixels
top	integer padding pixels
bottom	integer padding pixels
width	integer pixels
height	integer pixels
...	additional options passed to the padding and size objects

Value

c3

Examples

```
data.frame(a = c(1,2,3,2), b = c(2,4,1,5)) %>%
  c3() %>%
  c3_chart_size(width = 600, height = 200)
```

c3_color *Color Palette*

Description

Manually assign colors

Usage

```
c3_color(c3, colors)
```

Arguments

c3	c3 htmlwidget object
colors	character vector of colors

Value

c3

Examples

```
data.frame(a = c(1,2,3,2), b = c(2,4,1,5)) %>%
  c3() %>%
  c3_color(c('red','black'))
```

c3_colour *Colour Palette*

Description

Manually assign colours

Usage

```
c3_colour(c3, colours)
```

Arguments

c3	c3 htmlwidget object
colours	character vector of colours

Value

c3

Examples

```
data.frame(a = c(1,2,3,2), b = c(2,4,1,5)) %>%
  c3() %>%
  c3_colour(c('red','black'))
```

`c3_donut` *Donut Charts*

Description

Create simple Donut charts

Usage

```
c3_donut(c3, expand = TRUE, title = NULL, width = NULL,
  show = TRUE, threshold = NULL, format = NULL, ...)
```

Arguments

`c3`	c3 htmlwidget object
`expand`	boolean expand segment on hover
`title`	character
`width`	integer pixels width of donut
`show`	boolean show labels
`threshold`	numeric proportion of segment to hide label
`format`	character label js function, wrap character or character vector in JS()
`...`	additional values passed to the donut label object

Value

c3

Examples

```
data.frame(red=20,green=45,blue=10) %>%
  c3() %>%
  c3_donut(title = 'Colors')
```

c3_gauge *Gauge Charts*

Description

Create simple Gauge Charts

Usage

```
c3_gauge(c3, label = NULL, min = 0, max = 100, units = NULL,
  width = NULL, pattern = c("#FF0000", "#F97600", "#F6C600",
  "#60B044"), threshold = list(unit = "value", max = 100, values = c(30,
  60, 90, 100)), height = NULL, ...)
```

Arguments

c3	c3 htmlwidget object
label	list with options: • show: boolean • format: function, wrap in JS()
min	numeric
max	numeric
units	character appended to numeric value
width	integer pixel width of the arc
pattern	character vector or palette of colors
threshold	list with options: • unit: character one of 'percent', 'value' • max: numeric • values: numeric vector of threshold values for color change
height	integer pixel height of the chart. Proportion of gauge never changes so height scales with width despite this setting.
...	additional values passed to the gauge, color and size objects

Value

c3

Examples

```
data.frame(data=10) %>%
  c3() %>%
  c3_gauge(title = 'Colors')
```

c3_line *Line Plot*

Description

Add lines to a C3 plot

Usage

```
c3_line(c3, type, stacked = FALSE, connectNull = FALSE,
  step_type = NULL)
```

Arguments

c3	c3 htmlwidget object
type	character type of line plot. Must be one of: • line • spline • step • area • area-step
stacked	boolean
connectNull	boolean connect null (missing) data points
step_type	character, one of: • step • step-after • step-before

Value

c3

Examples

```
data.frame(a=c(1,2,3,2),b=c(2,3,1,5)) %>%
  c3() %>%
  c3_line('spline')
```

c3_mixedGeom *Mixed Geometry Plots*

Description

Use multiple geometry types in a single plot

Usage

```
c3_mixedGeom(c3, types, type = "line", stacked = NULL)
```

Arguments

c3	c3 htmlwidget object
types	list containing key value pairs of column header and plot type
type	character default plot type where not defined
stacked	character vector of column headers to stack

Value

c3

Examples

```
data <- data.frame(a = abs(rnorm(20) *10),
                   b = abs(rnorm(20) *10),
                   c = abs(rnorm(20) *10),
                   d = abs(rnorm(20) *10))
data %>%
  c3() %>%
  c3_mixedGeom(type = 'bar',
               stacked = c('b','d'),
               types = list(a='area',
                            c='spline'))
```

c3_pie *Pie Charts*

Description

C3 Pie Charts

Usage

```
c3_pie(c3, show = TRUE, threshold = NULL, format = NULL,
  expand = TRUE, ...)
```

Arguments

c3	c3 htmlwidget object
show	boolean show labels
threshold	numeric proportion of segment to hide label
format	character label js function, wrap character or character vector in JS()
expand	boolean expand segment on hover
...	additional values passed to the pie label object

Value

c3

Examples

```
data.frame(red = 20, green = 45, blue = 10) %>%
  c3() %>%
  c3_pie()
```

---

c3_scatter *Scatter Plots*

Description

For scatter plots options are defined in the ‘c3‘ function. Options are limited to x, y and groups

Usage

```
c3_scatter(c3)
```

Arguments

c3	c3 htmlwidget object

Value

c3

Examples

```
iris %>%
  c3(x = 'Sepal_Length',
     y = 'Sepal_Width',
     group = 'Species') %>%
  c3_scatter()
```

c3_selection *Data Select*

Description

Define options for selecting data within the plot area

Usage

```
c3_selection(c3, enabled = FALSE, grouped = FALSE, multiple = FALSE,
  draggable = FALSE, isselectable = JS("function () { return true; }"),
  ...)
```

Arguments

c3	c3 htmlwidget object
enabled	boolean
grouped	boolean
multiple	boolean
draggable	boolean
isselectable	character js function, wrap character or character vector in JS()
...	additional options passed to data selection object

Value

c3

Examples

```
data.frame(a = c(1,2,3,2), b = c(2,3,1,5)) %>%
  c3() %>%
  c3_selection(enabled = TRUE,
               multiple = TRUE)
```

c3_viridis *Viridis Palette*

Description

Use Viridis palette options

Usage

```
c3_viridis(c3, pal = "D")
```

Arguments

c3	c3 htmlwidget object
pal	character palette options

Value

c3

Examples

```
data.frame(a = c(1,2,3,2), b = c(2,4,1,5)) %>%
  c3() %>%
  c3_viridis()
```

---

check_stacked *Check groups for stacked plots*

Description

For plots where stacking is required this function will define the columns to be stacked based on column headers.

Usage

```
check_stacked(c3, stacked)
```

Arguments

c3	c3 htmlwidget object
stacked	boolean

Value

c3 object

grid *C3 Grid*

Description

Modify grid and line elements on both x and y axis

Usage

```
grid(c3, axis, show = TRUE, lines = NULL, ticks = NULL, ...)

## S3 method for class 'c3'
grid(c3, axis, show = TRUE, lines = NULL, ticks = NULL,
  ...)
```

Arguments

c3	c3 htmlwidget object
axis	character 'x' or 'y'
show	boolean
lines	dataframe with options: • value: numeric, character or date depending on axis • text: character (optional) • class: character css class (optional) • position: character one of 'start', 'middle', 'end' (optional)
ticks	boolean placeholder. Not yet implemented in C3.js
...	additional options passed to the grid object

Value

c3

See Also

Other c3: RColorBrewer, c3, legend, region, subchart, tooltip, xAxis, zoom

Examples

```
iris %>%
 c3(x = 'Sepal_Length', y = 'Sepal_Width', group = 'Species') %>%
 c3_scatter() %>%
 grid('y') %>%
 grid('x', show = FALSE, lines = data.frame(value=c(5, 6),
                                            text= c('Line 1', 'Line 2')))
```

`legend` *C3 Legend Options*

Description

Modify plot elements that relate to the legend. The c3 legend is on by default, this function allows the legend to be removed, or other legend attributes to be set.

Usage

```
legend(c3, hide = FALSE, position = NULL, inset = NULL,
  item = NULL, ...)

## S3 method for class 'c3'
legend(c3, hide = FALSE, position = NULL, inset = NULL,
  item = NULL, ...)
```

Arguments

`c3`	c3 htmlwidget object
`hide`	boolean or character of parameters to hide
`position`	character one of 'bottom', 'right', 'inset'
`inset`	list with options: • anchor: character one of 'top-left', 'top-right', 'bottom-left', 'bottom-right' • x: integer pixels • y: integer pixels • step: numeric
`item`	list with options: • onclick: character js function, wrap character or character vector in JS() • onmouseover: character js function, wrap character or character vector in JS() • onmouseout: character js function, wrap character or character vector in JS()
`...`	additional options passed to the legend object

Value

c3

See Also

Other c3: `RColorBrewer`, `c3`, `grid`, `region`, `subchart`, `tooltip`, `xAxis`, `zoom`

Examples

```
iris %>%
 c3(x='Sepal_Length', y='Sepal_Width', group = 'Species') %>%
 c3_scatter() %>%
 legend(position = 'right')
```

`point_options` *Point Options*

Description

Modify point options

Usage

```
point_options(c3, show = TRUE, r = 2.5, expand = TRUE,
  expand.r = 1.75, select.r = 4)
```

Arguments

`c3`	c3 htmlwidget object
`show`	boolean
`r`	numeric radius of point
`expand`	boolean
`expand.r`	numeric multiplier for radius expansion
`select.r`	numeric multiplier for radius expansion

Value

c3

Examples

```
data.frame(a = c(1,2,3,2), b = c(2,4,1,5)) %>%
  c3() %>%
  point_options(r = 5, expand.r = 2)
```

RColorBrewer *RColorBrewer Palette*

Description

Use RColorBrewer palettes

Usage

```
RColorBrewer(c3, pal = "Spectral")

## S3 method for class 'c3'
RColorBrewer(c3, pal = "Spectral")
```

Arguments

c3	c3 htmlwidget object
pal	character palette must match 'RColorBrewer::brewer.pal.info'

Value

c3

See Also

Other c3: c3, grid, legend, region, subchart, tooltip, xAxis, zoom

Examples

```
data.frame(a = c(1,2,3,2), b = c(2,4,1,5), c = c(5,3,4,1)) %>%
  c3() %>%
  RColorBrewer()
```

region *Modify region elements on both x and y axis*

Description

Regions are defined in multiple axis by passing a single 'data.frame'

Usage

```
region(c3, regions)

## S3 method for class 'c3'
region(c3, regions)
```

Arguments

c3	c3 htmlwidget object
regions	data.frame with columns listed below. Any columns can be missing but results may be unexpected. • axis: character one of 'x', 'y', 'y2' • start: numeric but must match defined axis type • end: numeric but must match defined axis type • class: character css class

Value

c3

See Also

Other c3: RColorBrewer, c3, grid, legend, subchart, tooltip, xAxis, zoom

Examples

```
iris %>%
 c3(x = 'Sepal_Length', y = 'Sepal_Width', group = 'Species') %>%
 c3_scatter() %>%
 region(data.frame(axis = 'x',
                   start = 5,
                   end = 6))
```

---

subchart *Add Subchart*

Description

Subcharts are defined in multiple axis by passing a single 'data.frame'. Subcharts are listed as an experimental feature in the C3 documentation).

Usage

```
subchart(c3, height = 20, onbrush = NULL)

## S3 method for class 'c3'
subchart(c3, height = 20, onbrush = NULL)
```

Arguments

c3	c3 htmlwidget object
height	integer pixels
onbrush	character js function, wrap character or character vector in JS()

Value

c3

See Also

Other c3: RColorBrewer, c3, grid, legend, region, tooltip, xAxis, zoom

Examples

```
data.frame(a = abs(rnorm(20) * 10),
           b = abs(rnorm(20) * 10),
           date = seq(as.Date("2014-01-01"), by = "month", length.out = 20)) %>%
    c3(x = 'date') %>%
    subchart(height = 20, onbrush = 'function (domain) { console.log(domain) }')
```

---

tickAxis *Axis Tick Options*

Description

Modify axis tick formatting options

Usage

```
tickAxis(c3, axis, centered = TRUE, format = NULL, culling = NULL,
  count = NULL, fit = TRUE, values = NULL, rotate = 0,
  outer = TRUE, ...)
```

Arguments

c3	c3 htmlwidget object
axis	character 'x', 'y' or 'y2' axis
centered	boolean (x-axis only)
format	character js function, wrap character or character vector in JS()
culling	boolean or list defining number of ticks 'list(max = 5)' this option effects tick labels (x-axis only)
count	integer number of ticks to display. This effects tick lines and labels
fit	boolean position ticks evenly or set to values (x-axis only)
values	vector. Must match axis format type
rotate	integer degrees to rotate labels (x-axis only)
outer	boolean show axis outer tick
...	additional options passed to axis tick object

Value

c3

Examples

```
data.frame(a = c(1,2,3,2), b = c(2,4,1,5)) %>%
  c3() %>%
  tickAxis('y', values = c(1,3))
```

`tooltip` *C3 Tooltips*

Description

Modify plot elements that relate to tooltips. C3.js documentation contains an extended example.

Usage

```
tooltip(c3, show = TRUE, grouped = TRUE, format = NULL,
  position = NULL, contents = NULL, ...)

## S3 method for class 'c3'
tooltip(c3, show = TRUE, grouped = TRUE, format = NULL,
  position = NULL, contents = NULL, ...)
```

Arguments

`c3`	c3 htmlwidget object
`show`	boolean show or hide tooltips
`grouped`	boolean
`format`	list with options: • title: character js function, wrap character or character vector in JS() • name: character js function, wrap character or character vector in JS() • value: character js function, wrap character or character vector in JS()
`position`	character js function, wrap character or character vector in JS()
`contents`	character js function, wrap character or character vector in JS()
`...`	addition options passed to the tooltip object

Value

c3

See Also

Other c3: `RColorBrewer`, `c3`, `grid`, `legend`, `region`, `subchart`, `xAxis`, `zoom`

Examples

```
data <- data.frame(a = abs(rnorm(20) *10),
                   b = abs(rnorm(20) *10),
                   c = abs(rnorm(20) *10),
                   d = abs(rnorm(20) *10))
data %>%
  c3() %>%
  tooltip(format = list(title = htmlwidgets::JS("function (x) { return 'Data ' + x; }"),
                        name = htmlwidgets::JS('function (name, ratio, id, index)',
                                               ' { return name; }'),
                        value = htmlwidgets::JS('function (value, ratio, id, index)',
                                                ' { return ratio; }')))
```

---

xAxis *C3 Axis*

Description

Modify plot elements that relate to the axis.

Usage

```
xAxis(c3, show = TRUE, type = "indexed", localtime = NULL,
  categories = NULL, max = NULL, min = NULL, padding = list(),
  height = NULL, extent = NULL, label = NULL, ...)

## S3 method for class 'c3'
xAxis(c3, show = TRUE, type = "indexed",
  localtime = NULL, categories = NULL, max = NULL, min = NULL,
  padding = list(), height = NULL, extent = NULL, label = NULL,
  ...)

yAxis(c3, show = TRUE, inner = NULL, max = NULL, min = NULL,
  padding = NULL, inverted = NULL, center = NULL, label = NULL,
  ...)

## S3 method for class 'c3'
yAxis(c3, show = TRUE, inner = NULL, max = NULL,
  min = NULL, padding = NULL, inverted = NULL, center = NULL,
  label = NULL, ...)

y2Axis(c3, show = TRUE, inner = NULL, max = NULL, min = NULL,
  padding = NULL, inverted = NULL, center = NULL, label = NULL,
  ...)

## S3 method for class 'c3'
y2Axis(c3, show = TRUE, inner = NULL, max = NULL,
```

```
min = NULL, padding = NULL, inverted = NULL, center = NULL,
label = NULL, ...)
```

Arguments

c3	c3 htmlwidget object
show	boolean
type	character on of 'indexed', timeseries' or 'category'
localtime	boolean
categories	character vector. Can be used to modify axis labels. Not needed if already defined in data
max	numeric set value of axis range
min	numeric set value of axis range
padding	list with options: • left: numeric pixels • right: numeric pixels
height	integer pixels to set height of axis
extent	vector or character function (wrapped in JS()) that returns a vector of values
label	can be character or list with options (see c3 axis-x-label): • text: character • position: character label position options for horizontal axis are: • inner-right • inner-center • inner-left • outer-right • outer-center • outer-left label position options for vertical axis are: • inner-top • inner-middle • inner-bottom • outer-top • outer-middle • outer-bottom
...	additional options passed to the axis object
inner	boolean show axis inside chart (Y and Y2 axis only)
inverted	boolean TRUE will reverse the direction of the axis (Y and Y2 axis only)
center	integer or numeric value for center line (Y and Y2 axis only)

Value

c3

See Also

Other c3: RColorBrewer, c3, grid, legend, region, subchart, tooltip, zoom

Examples

```
data.frame(a=c(1,2,3,2),b=c(2,3,1,5)) %>%
  c3(axes = list(a = 'y',
                 b = 'y2')) %>%
   xAxis(label = list(text = 'testing',
                      position = 'inner-center')) %>%
   y2Axis()
```

---

zoom *Add C3 Zoom*

Description

Enable chart Zoom.

Usage

```
zoom(c3, enabled = TRUE, rescale = NULL, extent = NULL,
  onzoom = NULL, onzoomstart = NULL, onzoomend = NULL, ...)

## S3 method for class 'c3'
zoom(c3, enabled = TRUE, rescale = NULL, extent = NULL,
  onzoom = NULL, onzoomstart = NULL, onzoomend = NULL, ...)
```

Arguments

c3	c3 htmlwidget object
enabled	boolean default is TRUE
rescale	boolean rescale axis when zooming
extent	numeric vector
onzoom	character js function, wrap character or character vector in JS()
onzoomstart	character js function, wrap character or character vector in JS()
onzoomend	character js function, wrap character or character vector in JS()
...	additional options passed to the zoom object

Value

c3

See Also

Other c3: RColorBrewer, c3, grid, legend, region, subchart, tooltip, xAxis

Examples

```
data.frame(a = abs(rnorm(20) * 10),
           b = abs(rnorm(20) * 10)) %>%
    c3() %>%
    zoom()
```

`%>%` *Pipe operator*

Description

Imports the pipe operator from magrittr.

Usage

```
lhs %>% rhs
```

Arguments

lhs	a c3 object
rhs	a pie settings function

Examples

```
data.frame(a=c(1,2,3,2),b=c(2,3,1,5)) %>%
  c3()
```

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