Package ‘canvasXpress’

November 30, 2021

Version  1.37.0-1
Title  Visualization Package for CanvasXpress in R
Description  Enables creation of visualizations using the CanvasXpress framework in R. CanvasXpress is a standalone JavaScript library for reproducible research with complete tracking of data and end-user modifications stored in a single PNG image that can be played back. See <https://www.canvasxpress.org> for more information.
Type  Package
License  GPL-3
Encoding  UTF-8
Language  en-US

URL  https://github.com/neuhausi/canvasXpress

BugReports  https://github.com/neuhausi/canvasXpress/issues

Depends  R (>= 3.5)
Imports  htmlwidgets (>= 1.0), htmltools, httr, jsonlite, stats
RoxygenNote  7.1.2
Suggests  shiny (>= 1.1.0), canvasXpress.data, dplyr, glue, grid, knitr, png, readr, rmarkdown, testthat, tidieR, limma

VignetteBuilder  knitr

NeedsCompilation  no
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Description

A package to assist in creating visualizations in CanvasXpress in R.

Details

CanvasXpress is a standalone JavaScript library for reproducible research with complete tracking of data and end-user modifications stored in a single PNG image that can be played back for an extensive set of visualizations.

More Information

https://www.canvasxpress.org
browseVignettes(package = "canvasXpress")

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See Also

Useful links:

• https://github.com/neuhausi/canvasXpress
• Report bugs at https://github.com/neuhausi/canvasXpress/issues
canvasXpress  HTML Widget Creation

Description

Custom HTML widget creation function based on widget YAML and JavaScript for use in any html-compatible context

Usage

canvasXpress(
  data = NULL,
  smpAnnot = NULL,
  varAnnot = NULL,
  graphType = "Scatter2D",
  events = NULL,
  afterRender = NULL,
  pretty = FALSE,
  digits = 4,
  width = 600,
  height = 400,
  destroy = FALSE,
  ...
)

Arguments

data         data.frame-, matrix-, or list- classed data object
smpAnnot     additional data that applies to samples (columns)
varAnnot     additional data that applies to variables (rows)
graphType     type of graph to be plotted - default = "Scatter2D"
events       user-defined events (e.g. mousemove, mouseout, click and dblclick)
afterRender  event triggered after rendering
pretty       print tagged code (JSON/HTML) nicely - default = FALSE
digits       display digits - default = 4
width         plot width (valid CSS units) - default = 600px
height        plot height (valid CSS units) - default = 400px
destroy      used to indicate removal of a plot - default = FALSE
...           additional parameters passed to canvasXpress

Value

htmlwidgets object
canvasXpress.json  HTML Widget Creation using JSON input

Description

Custom HTML widget creation function based on widget YAML and JavaScript for use in any html-compatible context using raw JSON input. Validation of data and configuration is deferred completely to the canvasXpress JavaScript library.

Usage

```r
canvasXpress.json(
  json,
  pretty = FALSE,
  digits = 4,
  width = 600,
  height = 400,
  destroy = FALSE
)
```

Arguments

- `json`: JSON string or object
- `pretty`: print tagged code (JSON/HTML) nicely - default = FALSE
- `digits`: display digits - default = 4
- `width`: plot width (valid CSS units) - default = 600px
- `height`: plot height (valid CSS units) - default = 400px
- `destroy`: used to indicate removal of a plot - default = FALSE

Details

For the formatting of the JSON input object see

**Note:** this function is intended for use by advanced users who are experimenting with or need to utilize the json-formatted input to canvasXpress and are comfortable debugging chart issues in a browser (JavaScript) context instead of in R.

Value

htmlwidgets object

More Information

https://www.canvasxpress.org
Examples

```r
my_json <- ' {
  "data": {
    "y": {
      "vars": ["Performance"],
      "smps": ["January"],
      "data": [[85]]
    }
  }
  "config": {
    "graphType": "Meter",
    "meterType": "gauge"
  }
}"

canvasXpress.json(my_json)
```

---

**canvasXpressOutput**

*Shiny UI function*

**Description**

Output creation function for canvasXpressOutput in Shiny applications and interactive Rmd documents

**Usage**

```r
canvasXpressOutput(outputId, width = "100\%", height = "400px")
```

**Arguments**

- `outputId` shiny unique ID
- `width` width of the element - default = 100%
- `height` height of the element - default = 400px

**Value**

Output function that enables the use of the widget in applications

**See Also**

- `renderCanvasXpress`
- `cxShinyExample`
cxHtmlPage

Stand-Alone HTML Page Creation

Description

This function creates and returns a stand-alone HTML page containing the given canvasXpress object. Width and height can be inferred from the canvasXpress object (default) or overridden for the page output.

Usage

cxHtmlPage(chartObject, width = NULL, height = NULL)

Arguments

chartObject  a canvasXpress plot object
width        plot width override for the HTML page (valid CSS units) - default = NULL
height       plot height override for the HTML page (valid CSS units) - default = NULL

Value

a character string containing a self-contained html page

Examples

## Not run:
my_chart <- canvasXpress(data = data.frame(Sample1 = c(33, 48),
                                         Sample2 = c(44, 59),
                                         Sample3 = c(55, 6)),
                          graphType = "Bar",
                          title = "Example Bar Chart",
                          width = "600px")

# create a page using the chart dimensions on my_chart
html_page <- cxHtmlPage(my_chart)

# or change the chart width/height for this page:
html_page <- cxHtmlPage(my_chart, width = "100%", height = "70vh")

# save page for viewing/sharing
writeLines(html_page, tempfile(fileext = ".html"))

## End(Not run)
cxShinyExample

Create Shiny Example Application

Description
This function runs one of the available shiny example applications. To see the list of available example applications run the function with no inputs.

Usage
cxShinyExample(example = NULL)

Arguments
example character name of a valid example application.

Value
Launches a running shiny example application

See Also
canvasXpressOutput
renderCanvasXpress

renderCanvasXpress Shiny Render function

Description
Render function for canvasXpressOutput in Shiny applications and interactive Rmd documents

Usage
renderCanvasXpress(expr, env = parent.frame(), quoted = FALSE)

Arguments
expr expression used to render the canvasXpressOutput
e

Value
Render function that enables the use of the widget in applications
Destroy

When there exists a need to visually remove a plot from a Shiny application when it is not being immediately replaced with a new plot use the destroy option as in:

```r
renderCanvasXpress(canvasXpress(destroy = TRUE))
```

See Also

- `canvasXpressOutput`
- `cxShinyExample`
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