Package ‘canvasXpress’

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Version 1.46.9-1

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 (>= 3.6)

Imports htmlwidgets (>= 1.0), htmltools, httr, jsonlite, stats

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NeedsCompilation no

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Repository CRAN

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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

```r
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-, list-, or ggplot- classed 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
Piping Support

Piping is supported (both the magrittr `canvasXpress` object into data parameter. Any new parameters will be added to the original configuration of the object, any parameters with data that existed before will be replaced, and any parameters set to null will be removed. It is important to note that primary data changes are not allowed in this construct - which means that anything specified by using the data, varAnnot, or smpAnnot parameters cannot be changed from the original values.

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**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
canvasXpressOutput

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**

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**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**

```r
cxShinyExample(example = NULL)
```

**Arguments**

- `example` character name of a valid example application.

**Value**

Launches a running shiny example application.

**See Also**

- `canvasXpressOutput`
- `renderCanvasXpress`

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ggplot.as.list

**Converts a ggplot object to a list that can be used by CanvasXpress.**

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**Description**

Converts a ggplot object to a list that can be used by CanvasXpress.

**Usage**

```r
ggplot.as.list(o, ...)```

**Arguments**

- `o` the ggplot object
- `...` additional parameters to the function
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
env   environment to use - default = parent.frame()
quoted whether the expression is quoted - default = FALSE

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:

renderCanvasXpress({canvasXpress(destroy = TRUE)})

See Also

canvasXpressOutput
cxShinyExample
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