

# Package ‘canvasXpress’

December 1, 2022

**Version** 1.40.6-2

**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** 7.2.1

**Suggests** shiny (>= 1.1.0), canvasXpress.data, dplyr, glue, grid, knitr, png, readr, rlang, rmarkdown, stringr, testthat, tibble, tidy, limma, ggplot2

**VignetteBuilder** knitr

**NeedsCompilation** no

**Author** Isaac Neuhaus [aut],  
Connie Brett [aut, cre]

**Maintainer** Connie Brett <[connie@aggregate-genius.com](mailto:connie@aggregate-genius.com)>

**Repository** CRAN

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canvasXpress-package *CanvasXpress Visualization Package*

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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")`

### Author(s)

**Maintainer:** Connie Brett <connie@aggregate-genius.com>

Authors:

- Isaac Neuhaus <imnphd@gmail.com>

### See Also

Useful links:

- <https://github.com/neuhausi/canvasXpress>
- Report bugs at <https://github.com/neuhausi/canvasXpress/issues>

**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

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canvasXpress.json      *HTML Widget Creation using JSON input*

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### 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

```
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

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

```
canvasXpress.json(my_json)
```

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canvasXpressOutput      *Shiny UI function*

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## Description

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

## Usage

```
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](#)

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`cxHtmlPage`*Stand-Alone HTML Page Creation*

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### 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

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

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cxShinyExample	<i>Create Shiny Example Application</i>
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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**

```
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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renderCanvasXpress	<i>Shiny Render function</i>
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**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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