Package ‘ggtikz’

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Title Post-Process 'ggplot2' Plots with 'TikZ' Code Using Plot Coordinates

Version 0.0.1

Description Annotation of 'ggplot2' plots with arbitrary 'TikZ' code, using absolute data or relative plot coordinates.

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Imports dplyr, grid, ggplot2, tikzDevice

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R topics documented:

ggtikz ................................................................. 2
ggtikzAnnotation .................................................. 3
ggtikzCanvas ....................................................... 4

gg_to_npc.ggtikzCanvas ......................................... 5

Index 6
Create a canvas and add a TikZ annotation.

Description

This is a helper function for quick one-step annotations. It creates a ggtikzCanvas from a ggplot, adds one annotation to it, and optionally draws the plot and the annotations.

Usage

ggtikz(gg_plot, ..., draw = TRUE)

Arguments

- **gg_plot**: A ggplot object on which annotations should be made.
- **...**: Passed to ggtikzAnnotation.
- **draw**: TRUE or FALSE. Should gg_plot and the resulting annotation be drawn immediately? A tikz device needs to be open.

Details

For finer control, see ggtikzCanvas() and ggtikzAnnotation().

Value

A ggtikzCanvas object with one ggtikzAnnotation (specified in ...) already added. If draw = TRUE, the gg_plot and the annotations are drawn to the currently active device. This must be a tikzDevice, or an error will be raised.

See Also

- ggtikzCanvas for creating a canvas which can store multiple annotations.
- ggtikzAnnotation for creating an annotation, which can then be added to a canvas.

Examples

```r
## Not run:
library(ggplot2)
library(tikzDevice)
library(ggtikz)
p <- ggplot(mtcars, aes(disp, mpg)) + geom_point()
out <- tempfile(fileext = ".tikz")
tikz(out)
# Add a red circle in the middle of the plot.
ggtikz(p, \"\fill[red] (0.5,0.5) circle (2mm);\", xy="plot")
dev.off()
## End(Not run)
```
ggtikzAnnotation

Prepare a TikZ annotation for a ggplot.

Description

ggtikzAnnotation objects are meant to be added to a ggtikzCanvas object.

Usage

ggtikzAnnotation(
  tikz_code,
  x = c("data", "panel"),
  y = c("data", "panel"),
  xy = NULL,
  panelx = NULL,
  panely = NULL,
  clip = "inherit"
)

Arguments

tikz_code The tikz code to use for annotation. Backslashes must be escaped!
x Reference frame for the x coordinates. Either "data" or "panel".
y Reference frame for the y coordinates. Either "data" or "panel".
xy Reference frame for both x and y coordinates. Trumps x and y. Either "data" or "panel" or "plot".
panelx x position of the panel to use as coordinate reference, starting from the left, 1-based.
panely y position of the panel to use as coordinate reference, starting from the top, 1-based.
clip Should annotations be clipped to the panel boundaries? See the clip argument to viewport

Details

This function prepares TikZ annotations in a form understandable to a ggtikzCanvas object. An annotation can be added to multiple ggtikzCanvas objects, provided that each underlying geplot object has the necessary panels to know what to do with this information.

Value

A ggtikzAnnotation object, which can be added to a ggtikzCanvas object.
ggtikzCanvas

Create a canvas to store TikZ annotations to a ggplot.

Description
Annotations can be made relative to the whole plot, to a panel, or to data coordinates (of individual panels).

Usage
ggtikzCanvas(gg_plot)

Arguments

  gg_plot A ggplot object on which annotations should be made.

Details
This function provides a canvas for TikZ annotations, and does not draw anything by itself. Its purpose is to provide information about the underlying ggplot object for coordinate calculations.

Value
A ggtikzCanvas object, to which annotations can be added.

See Also

  grid.tikzAnnotate for annotation of base graphics.
  ggtikz for a helper function for quick one-step annotations.
  ggtikzAnnotation for more information about creating and adding ggtikz annotations.

Examples

## Not run:
library(ggplot2)
library(tikzDevice)
library(ggtikz)
p <- ggplot(mtcars, aes(disp, mpg)) + geom_point()

# Create a TikZ canvas on the plot
canvas <- ggtikzCanvas(p)
# Create annotations to add to the canvas

# Circle in the center of the plot
annotation1 <- ggtikzAnnotation(
  "\fill[red] (0.5,0.5) circle (2mm);",
  xy = "plot"
)

# Arrow to data coordinate (400,20)
annotation2 <- ggtikzAnnotation(
  "\draw[<->] (400,20) -- ++(0,2.5);",
  xy = "data", panelx = 1, panely = 1)

out <- tempfile(fileext = ".tikz")
tikz(out)
# First, draw the original plot
p
# Then, add the annotations to the canvas and draw it
canvas + annotation1 + annotation2
dev.off()

## End(Not run)

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**gg_to_npc.ggtikzCanvas**

*Convert data coordinates to npc coordinates.*

### Description

Convert data coordinates to npc coordinates.

### Usage

```r
## S3 method for class 'ggtikzCanvas'
gg_to_npc(self, coord, panelx, panely)
```

### Arguments

- **self**
  a `ggtikzCanvas` object
- **coord**
  A numeric vector of length 2, with the x coordinate to convert at `coord[1]` and the y coordinate to convert at `coord[2]`
- **panelx**
  X position (column) of the panel holding the data
- **panely**
  X position (row) of the panel holding the data

### Value

The input coordinates from `coord` converted to npc coordinates in the form of a numeric vector of length 2. (0,0) corresponds to the lower left corner of the viewport containing the `ggplot` panel specified by `panelx` and `panely`, and (1,1) corresponds to the upper right corner.
Index

gg_to_npc.ggtikzCanvas, 5
ggtikz, 2, 4
ggtikzAnnotation, 2, 3, 4
ggtikzCanvas, 2, 4, 4, 5
grid.tikzAnnotate, 4

viewport, 3