

# 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.

**License** MIT + file LICENSE

**Encoding** UTF-8

**RoxygenNote** 7.1.1

**Imports** dplyr, grid, ggplot2, tikzDevice

**Suggests** rmarkdown, knitr, testthat (>= 3.0.0), covr, magick

**Config/testthat/edition** 3

**VignetteBuilder** knitr

**NeedsCompilation** no

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**Repository** CRAN

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`ggtikz`*Create a canvas and add a TikZ annotation.*

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## 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

<code>gg_plot</code>	A <code>ggplot</code> object on which annotations should be made.
<code>...</code>	Passed to <code>ggtikzAnnotation</code> .
<code>draw</code>	TRUE or FALSE. Should <code>gg_plot</code> and the resulting annotation be drawn immediately? A <code>tikz</code> 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

```
## Not run:
library(ggplot2)
library(tikzDevice)
library(ggtikz)
p <- ggplot(mtcars, aes(displ, 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,  
  pany = 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.
pany	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 <a href="#">viewport</a>

## 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 ggplot 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.

**See Also**

[grid.tikzAnnotate](#) for annotation of base graphics  
[ggtikz](#) for a helper function for quick one-step annotations.  
[ggtikzCanvas](#) for information about initiating the annotation process.

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`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(displ, 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, pannely = 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

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

## Arguments

self	a <code>ggtikzCanvas</code> object
coord	A numeric vector of length 2, with the x coordinate to convert at <code>coord[1]</code> and the y coordinate to convert at <code>coord[2]</code>
panelx	X position (column) of the panel holding the data
pannely	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 `pannely`, and (1,1) corresponds to the upper right corner.

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