Package 'ggghost'

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Title Capture the Spirit of Your 'ggplot2' Calls

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Description Creates a reproducible 'ggplot2' object by storing the data and calls.

Depends R (>= 3.2.0), ggplot2, animation

License GPL (>= 3)

Encoding UTF-8

URL https://github.com/jonocarroll/ggghost

BugReports https://github.com/jonocarroll/ggghost/issues

RoxygenNote 7.3.2

Suggests testthat

NeedsCompilation no

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Contents

+.gg *Add a New ggplot Component to a ggghost Object*

Description

This operator allows you to add objects to a ggghost object in the style of @hrbrmstr.

Usage

```
## S3 method for class 'gg'
e1 + e2
```

Arguments

e1	An object of class ggghost
e2	A component to add to e1

Value

Appends the e2 call to the ggghost structure

Examples

```
#' ## create a ggghost object
tmpdata <- data.frame(x = 1:100, y = rnorm(100))

z %g<% ggplot(tmpdata, aes(x,y))
z <- z + geom_point(col = "steelblue")
z <- z + theme_bw()
z <- z + labs(title = "My cool ggplot")
z <- z + labs(x = "x axis", y = "y axis")
z <- z + geom_smooth()
```

-.gg *Remove a call from a ggghost object*

Description

Calls can be removed from the ggghost object via regex matching of the function name. All matching calls will be removed based on the match to the string up to the first bracket, so any arguments are irrelevant.

Usage

```
## S3 method for class 'gg'
e1 - e2
```

Arguments

e1	An object of class ggghost
e2	A component to remove from e1 as either a string or a language object

Details

For example, subtracting geom_line() will remove all calls matching geom_line regardless of their arguments.

labs() has been identified as a special case, as it requires an argument in order to be recognised as a valid function. Thus, trying to remove it with an empty argument will fail. That said, the argument doesn't need to match, so it can be populated with a dummy string or anything that evaluates in scope. See examples.

Value

A ggghost structure with calls (text) matching e2 removed, otherwise the same as e1

Examples

```
## create a ggghost object
tmpdata <- data.frame(x = 1:100, y = rnorm(100))

z %g<% ggplot(tmpdata, aes(x,y))
z <- z + geom_point(col = "steelblue")
z <- z + theme_bw()
z <- z + labs(title = "My cool ggplot")
z <- z + labs(x = "x axis", y = "y axis")
z <- z + geom_smooth()

z - "labs"        # removes all labs
z - "title"       # removes just the title
z - "axis"        # removes the axis labels
z - geom_point()  # removes points
z - theme_bw()    # removes theme_bw()
```

---

is.ggghost *Reports whether x is a ggghost object*

Description

Reports whether x is a ggghost object

Usage

```
is.ggghost(x)
```

Arguments

x	An object to test

Value

logical; TRUE if x inherits class ggghost

---

print.ggghost *Collect ggghost calls and produce the ggplot output*

Description

Collect ggghost calls and produce the ggplot output

Usage

```
## S3 method for class 'ggghost'
print(x, ...)
```

Arguments

x	A ggghost object to be made into a ggplot grob
...	Not used, provided for print.default generic consistency.

Value

The ggplot plot data (invisibly). Used for the side-effect of producing a ggplot plot.

---

reanimate *Bring a ggplot to life (re-animate)*

Description

Creates an animation showing the stepwise process of building up a ggplot. Successively adds calls from a ggghost object and then combines these into an animated GIF.

Usage

```
reanimate(
  object,
  gifname = "ggghost.gif",
  interval = 1,
  ani.width = 600,
  ani.height = 600
)

lazarus(
  object,
  gifname = "ggghost.gif",
```

```
  interval = 1,
  ani.width = 600,
  ani.height = 600
)
```

Arguments

object	A ggghost object to animate
gifname	Output filename to save the .gif to (not including any path, will be saved to current directory)
interval	A positive number to set the time interval of the animation (unit in seconds); see animation::ani.options
ani.width	width of image frames (unit in px); see animation::ani.options
ani.height	height of image frames (unit in px); see animation::ani.options

Value

TRUE if it gets that far

Examples

```
## Not run:
## create an animation showing the process of building up a plot
reanimate(z, "mycoolplot.gif")

## End(Not run)
```

---

recover_data *Recover data Stored in a ggghost object*

Description

The data used to generate a plot is an essential requirement for a reproducible graphic. This is somewhat available from a ggplot grob (in raw form) but it it not easily accessible, and isn't named the same way as the original call.

Usage

```
recover_data(x, supp = TRUE)
```

Arguments

x	A ggghost object from which to extract the data.
supp	(logical) Should the supplementary data be extracted also?

Details

This function retrieves the data from the ggghost object as it was when it was originally called.

If supplementary data has also been attached using `supp_data` then this will also be recovered (if requested).

When used interactively, a warning will be produced if the data to be extracted exists in the workspace but not identical to the captured version.

Value

A `data.frame` of the original data, named as it was when used in `ggplot(data)`

`subset.ggghost` *Extract a subset of a ggghost object*

Description

Alternative to subtracting calls using `-.gg`, this method allows one to select the desired components of the available calls and have those evaluated.

Usage

```
## S3 method for class 'ggghost'
subset(x, ...)
```

Arguments

`x`	A ggghost object to subset
`...`	A logical expression indicating which elements to select. Typically a vector of list numbers, but potentially a vector of logicals or logical expressions.

Value

Another ggghost object containing only the calls selected.

Examples

```
## create a ggghost object
tmpdata <- data.frame(x = 1:100, y = rnorm(100))

z %g<% ggplot(tmpdata, aes(x,y))
z <- z + geom_point(col = "steelblue")
z <- z + theme_bw()
z <- z + labs(title = "My cool ggplot")
z <- z + labs(x = "x axis", y = "y axis")
z <- z + geom_smooth()

## remove the labels and theme
```

```
subset(z, c(1,2,6))
## or
subset(z, c(TRUE,TRUE,FALSE,FALSE,FALSE,TRUE))
```

---

summary.ggghost *List the calls contained in a ggghost object*

Description

Summarises a ggghost object by presenting the contained calls in the order they were added. Optionally concatenates these into a single ggplot call.

Usage

```
## S3 method for class 'ggghost'
summary(object, ...)
```

Arguments

object	A ggghost object to present
...	Mainly provided for summary.default generic consistency. When combine is passed as an argument (arbitrary value) the list of calls is concatenated into a single string as one might write the ggplot call.

Details

The data is also included in ggghost objects. If this is also desired in the output, use str. See example.

Value

Either a list of ggplot calls or a string of such concatenated with " + "

Examples

```
## present the ggghost object as a list
tmpdata <- data.frame(x = 1:100, y = rnorm(100))

z %g<% ggplot(tmpdata, aes(x,y))
z <- z + geom_point(col = "steelblue")
summary(z)

## present the ggghost object as a string
summary(z, combine = TRUE) # Note, value of 'combine' is arbitrary

## to inspect the data structure also captured, use str()
str(z)
```

supp_data *Inspect the supplementary data attached to a ggghost object*

Description

Inspect the supplementary data attached to a ggghost object

Usage

```
supp_data(x)
```

Arguments

x	A ggghost object

Value

A list with two elements: the name of the supplementary data, and the supplementary data itself

supp_data<- *Attach supplementary data to a ggghost object*

Description

Attach supplementary data to a ggghost object

Usage

```
supp_data(x) <- value
```

Arguments

x	A ggghost object to which the supplementary data should be attached
value	Supplementary data to attach to the ggghost object, probably used as an additional data input to a `scale_*` or `geom_*` call

Value

The original object with `suppdata` attribute

`%g<%` *Begin constructing a ggghost cache*

Description

The data and initial `ggpot()` call are stored as a list (call) with attribute (data).

Usage

```
lhs %g<% rhs
```

Arguments

`lhs`	LHS of call
`rhs`	RHS of call

Details

The data must be passed into the `ggplot` call directly. Passing this in via a magrittr pipe remains as a future improvement. The newly created `ggghost` object is a list of length 1 containing the `ggplot` call, with attribute `data`; another list, containing the `data_name` and `data` itself.

Value

Assigns the `ggghost` structure to the `lhs` symbol.

Examples

```
## create a ggghost object
tmpdata <- data.frame(x = 1:100, y = rnorm(100))

z %g<% ggplot(tmpdata, aes(x,y))
```

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