

Package ‘gfunctions’

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Type Package

Title G-Functions

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Description Modified versions of the lag() and summary() functions: glag() and gsummary(). The prefix 'g' is a reminder of who to blame if things do not work as they should.

License GPL (>= 2)

Depends R (>= 3.0.0), zoo, sandwich

Imports methods, stats

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gfunctions-package	glag() and gsummary(): Modified versions of lag() and summary()
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Description

`glag()` and `gsummary()` are modifications of the `lag()` and `summary()` functions from the **stats** package in that they return different information.

Details

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Author(s)

Genaro Sucarrat: <https://www.sucarrat.net/>

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See Also

`lag()`, `summary()`

glag	Lag a vector or a matrix, with special treatment of <code>zoo</code> and <code>ts</code> objects
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Description

The `glag()` function is similar to the `lag()` function from the **stats** package, but `glag()` actually *lags* (the default in `lag()` is to lead). The function `glag()` also enables padding (for example NAs or 0s) of the lost entries. Contrary to the `lag()` function, however, the default in `glag()` is to pad (with NAs). The `glag()` is particularly suited for `zoo` objects, since their indexing is retained. The prefix `g` is a reminder of who to blame if things do not work properly.

Usage

```
## generic:
glag(x, ...)
## Default S3 method:
glag(x, k = 1, pad = TRUE, pad.value = NA, ...)
```

Arguments

x	a numeric vector or matrix, or objects of class <code>zoo</code> or <code>ts</code> .
k	integer equal to the lag (the default is 1). Negative values (that is, 'leading') is not possible.
pad	logical. If TRUE (default), then the lost entries are padded with <code>pad.value</code> . If FALSE, then no padding is undertaken.
pad.value	the padding value.
...	additional arguments

Value

A vector or matrix, or objects of class `zoo` or `ts`, with the lagged values.

Author(s)

Genaro Sucarrat, <https://www.sucarrat.net/>

See Also

`lag()`, `lag.zoo()`

Examples

```
##generate some data:
x <- rnorm(5)

##lag series with NAs on missing entries:
glag(x)

##lag series with no padding:
x <- rnorm(5)
glag(x, pad = FALSE)

##lag series and retain the original zoo-index ordering:
x <- as.zoo(rnorm(5))
glag(x)

##lag two periods:
glag(x, k = 2)
```

Description

The `gsummary()` function provides an alternative to the `summary()` function by returning different information. The prefix `g` is a reminder of who to blame if things do not work properly.

Usage

```
## generic:
gsummary(object, ...)
## Default S3 method:
gsummary(object, ...)
## S3 method for class 'data.frame'
gsummary(object, ...)
## S3 method for class 'lm'
gsummary(object, vcov.type = c("ordinary", "robust", "hac"), confint.level = 0.95, ...)
## S3 method for class 'glm'
gsummary(object, confint.level = 0.95, ...)
```

Arguments

<code>object</code>	an object of suitable class, for example <code>data.frame</code> , <code>lm</code> or <code>glm</code> .
<code>vcov.type</code>	a character string that determines the variance-covariance estimator. If "ordinary" (default), then the ordinary estimator is used (<code>vcov.lm()</code>). If "robust", then the heteroscedasticity robust estimator of White (1980) (<code>vcovHC()</code> with <code>type = "HC"</code>) is used. If "hac", then the heteroscedasticity and autocorrelation robust estimator of Newey and West (1987) (<code>NeweyWest()</code>) is used.
<code>confint.level</code>	a number between 0 and 1 (the default is 0.95), or NULL. If a number, then confidence intervals are printed (the default is 95 percent). If NULL, then confidence intervals are not printed.
<code>...</code>	additional arguments

Value

No value is returned, the function only prints. The content of the print depends on the class of its main argument object.

Author(s)

Genaro Sucarrat, <https://www.sucarrat.net/>

References

Halbert White (1980): 'A Heteroskedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroskedasticity', *Econometrica* 48, pp. 817-838.

Whitney K. Newey and Kenned D. West (1987): 'A Simple, Positive Semi-Definite, Heteroskedasticity and Autocorrelation Consistent Covariance Matrix', *Econometrica* 55, pp. 703-708.

See Also

[summary\(\)](#)

Examples

```
##simulate some data, store them in y, x and z:
set.seed(123)
y <- rnorm(20); x <- rnorm(20); z <- rnorm(20)
```

```
##illustrate gsummary.data.frame():
mydataframe <- as.data.frame(cbind(y,x,z))
gsummary(mydataframe)
```

```
##illustrate gsummary.lm():
mymodel <- lm(y ~ x + z)
gsummary(mymodel)
gsummary(mymodel, vcov.type="robust")
gsummary(mymodel, vcov.type="hac")
gsummary(mymodel, confint.level=0.90)
gsummary(mymodel, confint.level=0.99)
gsummary(mymodel, confint.level=NULL)
```

```
##illustrate gsummary.glm():
y <- as.numeric( y > 0 )
mymodel <- glm(y ~ x + z, family=binomial)
gsummary(mymodel)
```

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