

Package ‘distillery’

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Title Method Functions for Confidence Intervals and to Distill Information from an Object

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Depends R (>= 2.10.0)

Description Some very simple method functions for confidence interval calculation and to distill pertinent information from a potentially complex object; primarily used in common with packages extRemes and SpatialVx.

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R topics documented:

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distillery-package *distillery: Methods to Distill Information from R Objects*

Description

distillery contains primarily method functions to distill out pertinent information from R objects, as well as to compute confidence intervals.

Details

Primary functions include:

distill: Typically, to distill pertinent information from a complicated (usually a list) object and return a named vector.

ci: Calculate confidence intervals. This is a method function for calculating confidence intervals. Includes methods for numeric vectors and matrices, whereby the mean is taken (column-wise for matrices) and normal approximation confidence intervals for the mean are calculated and returned.

Author(s)

Eric Gilleland

Examples

```
## See help files for above named functions and datasets
## for specific examples.
```

ci *Find Confidence Intervals*

Description

Method function for finding confidence intervals.

Usage

```
ci(x, alpha = 0.05, ...)
```

S3 method for class 'matrix'

```
ci(x, alpha = 0.05, ...)
```

S3 method for class 'numeric'

```
ci(x, alpha = 0.05, ...)
```

S3 method for class 'ci'

```
print(x, ...)
```

Arguments

| | |
|-------|--|
| x | ci: an R object that has a ci method function for it. print: output from ci. |
| alpha | number between zero and one giving the 1 - alpha confidence level. |
| ... | Optional arguments depending on the specific method function. In the case of those for ci.matrix and ci.numeric, these are any optional arguments to mean and var. Not used by print method function. |

Details

ci.numeric: Calculates the mean and normal approximation CIs for the mean.

ci.matrix: Does the same as ci.numeric, but applies to each column of x.

Value

ci.numeric: a numeric vector giving the CI bounds and mean value.

ci.matrix: a matrix giving the mean and CI bounds for each column of x.

Author(s)

Eric Gilleland

Examples

```
ci(rnorm(100, mean=10, sd=2))
```

```
ci(matrix(rnorm(10000, mean=40, sd=10), 100, 100))
```

datagrabber

Get Original Data from an R Object

Description

Get the original data set used to obtain the resulting R object for which a method function exists.

Usage

```
datagrabber(x, ...)
```

Arguments

| | |
|-----|---|
| x | An R object that has a method function for datagrabber. |
| ... | Not used. |

Details

Often when applying functions to data, it is handy to be able to grab the original data for subsequent routines (e.g., plotting, etc.). In some cases, information about where to obtain the original data might be available (more difficult) and in other cases, the data may simply be contained within a fitted object. This method function is generic, but some packages (e.g., **extRemes** \geq 2.0, **SpatialVx** \geq 1.0) have datagrabber functions specific to particular object types.

Value

The original pertinent data in whatever form it takes.

Author(s)

Eric Gilleland

Examples

```
## Not run:
## From the extRems ( $\geq$  2.0) package.
y <- rnorm(100, mean=40, sd=20)
y <- apply(cbind(y[1:99], y[2:100]), 1, max)
bl <- rep(1:3, each=33)

ydc <- decluster(y, quantile(y, probs=c(0.95)), r=1, blocks=bl)

yorig <- datagrabber(ydc)
all(y - yorig == 0)

## End(Not run)
```

distill

Distill An Object

Description

Distill a complex object to something easier to manage, like a numeric vector.

Usage

```
distill(x, ...)

## S3 method for class 'list'
distill(x, ...)

## S3 method for class 'matrix'
distill(x, ...)
```

```
## S3 method for class 'data.frame'  
distill(x, ...)
```

Arguments

| | |
|-----|--|
| x | A list, vector, matrix or data frame, or other object that has a <code>distill</code> method, e.g., <code>fevd</code> objects. |
| ... | Not used. |

Details

Perhaps a fine line exists between functions such as `c`, `print`, `str`, `summary`, etc. The idea behind the `distill` method is to have a function that “distills” out the most pertinent information from a more complex object. This can be useful, for example, when fitting a model to a number of spatial locations. With many models, it might not be feasible to store (or analyze) large complicated data objects. In such a case, it may be useful to keep only a vector with the most pertinent information (e.g., parameter estimates, their standard errors, the likelihood value, AIC, BIC, etc.). For example, this is used within `extRemes >= 2.0` on the “`fevd`” class objects with the aim at fitting models to numerous locations within an `apply` call so that something easily handled is returned, but with enough information as to be useful.

The data frame and matrix methods attempt to name each component of the vector. The list method simply does `c(unlist(x))`.

Value

numeric vector, possibly named.

Author(s)

Eric Gilleland

See Also

[c](#), [unlist](#), [print](#), [summary](#), [str](#), [args](#)

Examples

```
x <- cbind(1:3, 4:6, 7:9)  
distill(x)  
  
x <- data.frame(x=1:3, y=4:6, z=7:9)  
distill(x)
```

`is.formula`*Is the R Object a Formula*

Description

Tests to see if an object is a formula or not.

Usage

```
is.formula(x)
```

Arguments

`x` An R object.

Details

This is a very simple function that simplifies checking that the class of an object is a formula or not.

Value

single logical

Author(s)

Eric Gilleland

Examples

```
is.formula(~1)
is.formula(1:3)
```

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