Package ‘sloop’

October 14, 2022

Title     Helpers for 'OOP' in R
Version   1.0.1
Description A collection of helper functions designed to help
             you to better understand object oriented programming in R,
             particularly using 'S3'.
License   GPL-3
BugReports https://github.com/r-lib/sloop/issues
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### ftype

**Determine function type.**

**Description**

This function figures out whether the input function is a regular/primitive/internal function, an internal/S3/S4 generic, or a S3/S4/RC method. This function is slightly simplified as it's possible for a method from one class to be a generic for another class, but that seems like such a bad idea that hopefully no one has done it.

**Usage**

```r
ftype(f)
```

**Arguments**

- `f` unquoted function name

**Value**

a character of vector of length 1 or 2.

**Examples**

```r
ftype(`%in%`)  
ftype(sum)  
ftype(t.data.frame)  
ftype(t.test)  # Tricky!  
ftype(writelines)  
ftype(unlist)
```

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### is_s3_generic

**Determine if a function is an S3 generic or S3 method.**

**Description**

`is_s3_generic()` compares name checks for both internal and regular generics. `is_s3_method()` builds names of all possible generics for that function and then checks if any of them actually is a generic.

**Usage**

```r
is_s3_generic(fname, env = parent.frame())  
is_s3_method(fname, env = parent.frame())
```
Determine the type of an object

Tells you if you’re dealing with an base, S3, S4, RC, or R6 object.

otype(x)

An object

otype(1:10)
otype(mtcars)
s3_class

Compute the S3 class of an object

Description

Compared to \texttt{class()}, this always returns the class vector that is used for dispatch. This is most important for objects where the class attribute has not been set.

Usage

\texttt{s3\_class(x)}

Arguments

\texttt{x} \hspace{0.5cm} A primitive type

Examples

\begin{verbatim}
s3_class(NULL)
s3_class(logical())
s3_class(integer())
s3_class(numeric())
s3_class(character())
s3_class(matrix())
s3_class(matrix(1))
s3_class(array())
s3_class(array(1))
\end{verbatim}

s3_dispatch

Illustrate S3 dispatch

Description

\texttt{s3\_dispatch()} prints a list of all possible function names that will be considered for method dispatch. There are four possible states:

\begin{itemize}
  \item => method exists and is found by \texttt{UseMethod()}.  
  \item -> method exists and is used by \texttt{NextMethod()}.  
  \item * method exists but is not used.  
  \item Nothing (and greyed out in console): method does not exist.  
\end{itemize}

Learn more at \url{https://adv-r.hadley.nz/s3.html}.  

s3_get_method

Usage

s3_get_method(name)

Arguments

name A string or unquoted symbol

Value

A function, or an error stating why the method could not be found
Examples

s3_get_method(mean.Date)
s3_get_method(weighted.mean.Date)

\---

s3_methods_class List methods for a S3 or S4 generic (or class)

Description

Returns information about all methods belong to a generic or a class. In S3 and S4, methods belong to a generic, but it is often useful to see what generics have been provided methods for a given class. These are wrappers around `utils::methods()`, which returns a lot of useful information in an attribute.

Usage

s3_methods_class(x)
s3_methods_generic(x)
s4_methods_class(x)
s4_methods_generic(x)

Arguments

x Name of class or generic

Value

A tibble with columns generic, visible, class, visible, and source.

Examples

s3_methods_class("Date")
s3_methods_generic("anova")
s4_methods_class("Date")
s4_methods_generic("anova")
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