

Package ‘funchir’

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Title Convenience Functions by Michael Chirico

Depends R (>= 3.2.2)

Description YACFP (Yet Another Convenience Function Package). `get_age()` is a fast & accurate tool for measuring fractional years between two dates. `stale_package_check()` tries to identify any `library()` calls to unused packages.

Imports data.table

Suggests testthat (>= 3.0.0)

Config/testthat/edition 3

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URL <https://github.com/MichaelChirico/funchir>

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Author Michael Chirico [aut, cre]

Maintainer Michael Chirico <MichaelChirico4@gmail.com>

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`funchir-infix`*Convenient Infix Operators*

Description

An infix operator as convenient shorthand for set modulation ($A \setminus B$)

Usage

```
A %% B
```

Arguments

A, B Objects which can be treated as sets.

Value

This is just a wrapper for [setdiff](#)

Examples

```
set1 <- 1:5
set2 <- 4:6

set1 %% set2 # c(1,2,3)
```

`funchir-plot`*Convenience Functions for Plotting*

Description

`tile.axes` is used in for loops to generate axes in a multi-panel plot with shared x & y axes (within row and column).

`xdev2in` is the inverse of `graphics::xinch`; namely, it converts from plotting device units into inches.

Usage

```
tile.axes(n, M, N, params = list(x = list(), y = list()),
          use.x = TRUE, use.y = TRUE)
xdev2in(x = 1)
ydev2in(y = 1)
xydev2in(xy = 1)
```

Arguments

n	Integer. Cell in mfrow to which to apply the axes; fills by <i>row</i> , following base functionality.
M	Integer. Number of rows specified in mfrow.
N	Integer. Number of columns specified in mfrow.
params	A length-2 list. params\$x is a list of parameters to be passed to the x-axis. params\$y is a list of parameters to be passed to the y-axis.
use.x	logical. Should the x-axis be printed?
use.y	logical. Should the y-axis be printed?
x	numeric value to convert into inches (along the horizontal axis).
y	numeric value to convert into inches (along the vertical axis).
xy	numeric value to convert into inches (along both axes simultaneously).

Details

`tile.axes` provides a simple way to incorporate the plotting of axes into a loop which creates the plots in a matrix of plots (e.g., by using `par(mfrow=c(2, 2))`) *when the axes are shared by all plots*. x axes are only printed on the bottom row of plots, and y axes are only printed on the first column of plots—this saves potentially wasted / white space by eliminating redundant axes, yet can still be done in a loop.

Some graphics functions specify some arguments with units in inches (namely, `graphics::arrows'` length argument). `graphics::xinch` provides the inverse functionality enabling conversion from inches into plotting units; up to numerical accuracy, then, `graphics::xinch(xdev2in(x)) == x`.

See Also

[xinch](#)

Examples

```
smp1 <- rnorm(100)

par(mfrow = c(2, 1), mar = c(0, 0, 0, 0), oma=c(5, 4, 4, 2) + .1)
for (ii in 1:2){
  hist(smp1[sample(length(smp1), 100, rep = TRUE)], xaxt = "n", yaxt = "n")
  tile.axes(ii, 2, 1)
}
```

Description

Several odds-and-ends functions for data manipulation & representation, etc. See details and examples.

Usage

```
stale_package_check(con)
embed.mat(mat, M = nrow(mat), N = ncol(mat), m = 1L, n = 1L, fill = 0L)
quick_year(dates)
quick_mday(dates)
quick_yday(dates)
```

Arguments

con	A file/connection where output should be written.
mat	A matrix.
M	An integer specifying the number of rows in the enclosing matrix.
N	An integer specifying the number of columns in the enclosing matrix.
m	An integer specifying the row at which to insert mat.
n	An integer specifying the column at which to insert mat.
fill	An atomic vector specifying how to fill the enclosing matrix.
dates	A vector of Dates.

Value

`stale_package_check` (DEPRECATED in favor of `lintr::unused_import_linter`) reads a file (with [readLines](#)) and checks which functions are actually used from each loaded package. Currently only checks for `library` (i.e., not `require`) calls.

`embed.mat` inserts a supplied matrix into a (weakly) larger enclosing matrix, typically filled with 0s, at a specified position.

`quick_year` converts a Date object into its year efficiently; also ignores concerns of leap centuries. `quick_mday` returns the day of the month. `quick_yday` returns the day of the year. Returns as an integer.

Examples

```
inmat <- matrix(1:9, ncol = 3L)
embed.mat(inmat, M = 4L, N = 4L)
embed.mat(inmat, N = 6L, n = 4L, fill = NA)

d1 = as.Date('1987-05-02')
```

```
d2 = as.Date('2016-02-23')
quick_year(d1)
quick_mday(d1)
```

`get_age`*Calculate an exact age in fractional years*

Description

For someone born May 1, 1990, what is their age on May 2, 2000? 10 years, but what if we want more precision? They are 1 day older, and May 1, 2001 is in 364 days, so they are $10 + 1/365$ years old.

Things get more complicated when we include consideration of leap years, when the next birthday might be 366 days away.

`get_age()` solves this problem.

Note that it assumes there are no leap centuries (and hence may will be incorrect for dates before March 1, 1900 or after February 28, 2100). It also takes the stance that leap babies (those born February 29) increment their age on March 1 in non-leap years.

Usage

```
get_age(birthdays, ref_dates)
```

Arguments

<code>birthdays</code>	A vector of Dates (or input coercible with <code>as.Date()</code>). Each entry is someone's birthday.
<code>ref_dates</code>	A vector of Dates (or input coercible with <code>as.Date()</code>). Each entry is a "current date" at which to calculate the corresponding age.

Value

Numeric vector of years (including fractional parts) between each `ref_dates` and `birthdays` entry.

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