Package ‘tawny.types’

April 20, 2018

Type Package
Title Common Types for Tawny
Version 1.1.5
Depends R (>= 3.0.0)
Imports lambda.r (>= 1.1.0), lambda.tools, futile.logger (>= 1.3.0), futile.options, zoo, xts, quantmod
Suggests testit
Date 2018-04-20
Author Brian Lee Yung Rowe
Maintainer Brian Lee Yung Rowe <r@zatonovo.com>
Description Base library of types for tawny and related packages. This is meant to be a common library and has no functionality aside from defining types.
License GPL-3
LazyLoad yes
Collate 'init.R' 'portfolio.R' 'matrix.R'
NeedsCompilation no
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Common types for tawny

Description

Base types used throughout tawny

Details

Package: tawny.types
Type: Package
Version: 1.1.5
Date: 2018-04-20
License: What license is it under?
LazyLoad: yes

Create portfolio objects from these types

Author(s)

Brian Lee Yung Rowe
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See Also

tawny-package

Examples

```r
## Not run:
p <- TawnyPortfolio(c('AAPL','GOOG','IBM'), 150,200)
m <- BenchmarkPortfolio('^GSPC', 150,200)

## End(Not run)
```

Create an AssetReturns object

Description

AssetReturns contains some meta-data for asset returns objects.
Usage

AssetReturns(...)

Arguments

... Used by lambda.r

Details

This is a thin wrapper around a zoo object containing portfolio returns. It is used to type the zoo object based on the business domain, as opposed to the programming mechanics.

AssetReturns(symbols, obs = NULL, start = NULL, end = Sys.Date(), fun = function(x) Delt(Cl(x)), reload = FALSE, na.value = NA, ...)

Value

An AssetReturns object

Additional Usage

symbols - A vector of symbols to load
obs - Number of total observations to load
start - Start date of data to load
end - End date of data to load
fun - Function to apply to calculate returns
reload - Should existing downloaded data be reloaded?
na.value - Value to use for NAs
... - Additional arguments

Author(s)

Brian Lee Yung Rowe

Examples

## Not run: returns <- AssetReturns(c('BAC','JPM','C','GS','MS'), 90)

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EquityIndex Create an EquityIndex object

Description

A wrapper around equity indices.

Usage

EquityIndex(...)
Arguments

... Used by lambda.r

Value

An EquityIndex object

TODO: Consolidate with BenchmarkPortfolio

Additional Usage

This type takes an index and will download all constituent returns (assuming the index composition exists). This uses quantmod as a back-end.

EquityIndex(ticker = "^GSPC", hint = NA, src = "yahoo")

ticker - The ticker representing the index

hint - Used to determine number of elements in index for paging

src - Placeholder for data source. Currently only supports yahoo

Author(s)

Brian Lee Yung Rowe

Examples

### Not run: index <- EquityIndex()
Arguments

- `x`: A TawnyPortfolio
- `fun`: A function to apply against the TawnyPortfolio
- `...`: Arguments to the constructor. See below for details

Details

This type is governed by futile.paradigm. Below are the supported function variants.

- `TawnyPortfolio(returns, window = 90)`
- `TawnyPortfolio(symbols, window = 90, obs = 150)`

Creates a benchmark portfolio to compare with the actual portfolio.

- `BenchmarkPortfolio(symbol, window = 90, obs = 150, end = Sys.Date(), ...)`

Calculates portfolio returns based on the weights calculated.

- `PortfolioReturns(p, weights), p is a TawnyPortfolio`
- `PortfolioReturns(h, weights), h is an AssetReturns object or zoo`

'start' and 'end' operate on a TawnyPortfolio to return the start and end dates, respectively, of the portfolio.

'rollapply' is the implementation of the zoo function for a TawnyPortfolio. The 'window_at' function supports this by providing a window of the portfolio for the given index.

Value

The type constructor returns a TawnyPortfolio.

The 'start' and 'end' functions return dates.

'window_at' returns a modified TawnyPortfolio that only contains returns for the given window. All other data is the same, and the original object is unchanged.

Author(s)

Brian Lee Yung Rowe

Examples

```r
## Not run:
p <- TawnyPortfolio(c('BAC','JPM','C','GS','MS'))

start(p)
end(p)

window_at(p, 2)
rollapply(p, function(x) colSums(x$returns))

## End(Not run)```
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