Package ‘tawny.types’

February 20, 2015

Type Package

Title Common types for tawny

Version 1.1.3

Depends R (>= 3.0.0)

Imports lambda.r (>= 1.1.0), lambda.tools, futile.logger (>= 1.3.0), futile.options, zoo, xts, quantmod

Suggests RUnit

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Author Brian Lee Yung Rowe

Maintainer Brian Lee Yung Rowe <r@zatonovo.com>

Description Base library of types for tawny and related packages

License GPL-3

LazyLoad yes

Collate 'init.R' 'portfolio.R' 'matrix.R'

NeedsCompilation no

Repository CRAN

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R topics documented:

`tawny.types-package` *Common types for tawny*

Description

Base types used throughout tawny

Details

Package:	tawny.types
Type:	Package
Version:	1.1.3
Date:	2014-05-06
License:	What license is it under?
LazyLoad:	yes

Create portfolio objects from these types

Author(s)

Brian Lee Yung Rowe

Maintainer: Brian Lee Yung Rowe <r@zatonovo.com>

See Also

`tawny-package`

Examples

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

## End(Not run)
```

`AssetReturns` *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)
```

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()
```

TawnyPortfolio *Create a TawnyPortfolio object*

Description

Represents a portfolio. Contains information about the portfolio composition, returns, window, etc.

Usage

```
TawnyPortfolio(...)
BenchmarkPortfolio(...)

## S3 method for class 'TawnyPortfolio'
start(x, ...)

## S3 method for class 'TawnyPortfolio'
end(x, ...)

## S3 method for class 'TawnyPortfolio'
rollapply(x, fun, ...)

window_at(...)
```

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

```
## 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)
```

Index