Package ‘rpnf’

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Type Package
Title Point and Figure Package
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Description A set of functions to analyze and print the development of a commodity using the Point and Figure (P&F) approach. A P&F processor can be used to calculate daily statistics for the time series. These statistics can be used for deeper investigations as well as to create plots. Plots can be generated as well known X/O Plots in plain text format, and additionally in a more graphical format.
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Description

rpnf is a tool set to create and analyze Point & Figure Charts for given time series or data frame objects.

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References

Project Home Page http://rpnf.r-forge.r-project.org


See Also

pnfprocessor
pnfplot
pnfplottxt
Examples

```r
# Load rpnf library
library(rpnf)
# Load free available sample data
data(DOW)
# Determine point and figure informations for a linear chart with boxsize of 1 point
pnfdata <- pnfprocessor(
  high=DOW$High,
  low=DOW$Low,
  date=DOW$Date,
  boxsize=1L,
  log=FALSE)
# Show the object obtained
str(pnfdata)
# Show the data obtained
pnfdata
# Create a TXT based plot with X and O's
pnfplottxt(pnfdata,boxsize=1L,log=FALSE)
# Create a more graphical plot
pnfplot(pnfdata)
## Not run:
### Second example: logarithmic example
# For most stocks and indices it is useful
# to do the analysis on a logarithmic scale.
# This can be done with pnfprocessor, too.
# Ensure to make use of the getLogBoxsize() function
# for an appropriate boxsize of a logarithmic chart.
# Determine point and figure informations for a logarithmic chart with boxsize 2
symbol.pnf <- pnfprocessor(
  high=DOW$High,
  low=DOW$Low,
  date=DOW$Date,
  boxsize=getLogBoxsize(2),
  log=TRUE)
# View the result
tail(symbol.pnf)
#View(symbol.pnf)

# or plot it as a modern chart
pnfplot(symbol.pnf,main="P&F Plot DOW (log)")
# Or in the old traditional TXT style
pnfplottxt(symbol.pnf,boxsize=getLogBoxsize(2),log=TRUE,main="P&F Plot DOW (log)")
### Additional examples
# Examples for additional uses cases like
# - relative strength vs index
# - bullish percent of an index
# - and many others
# can be found in your local package library directory.
# Search for rpnf-example1.R, rpnf-example2.R and so on.
```
box2lower  

*Returns the lower bound value for a given boxnumber*

**Description**

Returns the lower bound value for a given boxnumber

**Usage**

```r
box2lower(boxnumber, boxsize = 1, log = FALSE)
```

**Arguments**

- **boxnumber**: An integer boxnumber
- **boxsize**: single numeric value, used as the boxsize
- **log**: TRUE, if logarithmic scales should be used

box2upper  

*Returns the upper bound value for a given boxnumber*

**Description**

Returns the upper bound value for a given boxnumber

**Usage**

```r
box2upper(boxnumber, boxsize = 1, log = FALSE)
```

**Arguments**

- **boxnumber**: An integer boxnumber
- **boxsize**: single numeric value, used as the boxsize
- **log**: TRUE, if logarithmic scales should be used
bp.signalprocessor

This function identifies chart signals in an [0,100]-Points Bullish Percent Chart

Description

This function identifies chart signals in an [0,100]-Points Bullish Percent Chart

Usage

bp.signalprocessor(data)

Arguments

data Input data

currentVPOReversalMethod

Identify for a given P&F Table the current vertical price objective triggered by the last signal reversal.

Description

Identify for a given P&F Table the current vertical price objective triggered by the last signal reversal.

Usage

currentVPOReversalMethod(data, reversal, boxsize, log)

Arguments

data Input data
reversal Number of boxes for reversal
boxsize Size of one box
log Use logarithmic scale
currentVPOReversalMethod

Identifier for a given P&F Table the current vertical price objective triggered by the last signal reversal.

Description

Identify for a given P&F Table the current vertical price objective triggered by the last signal reversal.

Usage

currentVPOReversalMethod(data, reversal, boxsize, log)

Arguments

data                Input data
reversal            Number of boxes for reversal
boxsize             Size of one box
log                 Use logarithmic scale

doubleBottom

returns true if given column c matches exactly previous column of same type (this is always column c-2)

Description

returns true if given column c matches exactly previous column of same type (this is always column c-2)

Usage

doubleBottom(redData, column)

Arguments

redData                Data to consider
column                 Column to consider
**doubleTop**

Returns true if given column c matches exactly previous column of same type (this is always column c-2)

---

**Description**

Returns true if given column c matches exactly previous column of same type (this is always column c-2)

**Usage**

doubleTop(redData, column)

**Arguments**

- **redData**: Data to consider
- **column**: Column to consider

---

**DOW**

This is some free available quote data for the DOW Chemical Company.

---

**Description**

End of day open, high, low, close and volume, dividends and splits, and split/dividend adjusted open, high, low close and volume for Dow Chemical Company (The) (DOW). Data are freely available at https://www.quandl.com/data/WIKI/DOW, and may be copy, distribute, disseminate or include the data in other products for commercial and/or noncommercial purposes. This data is part of Quandl’s Wiki initiative to get financial data permanently into the public domain. Quandl relies on users like you to flag errors and provide data where data is wrong or missing. Get involved: connect@quandl.com

**Author(s)**

Sascha Herrmann <sascha.herrmann.consulting@gmail.com>

**References**

https://www.quandl.com/data/WIKI/DOW
fallingBottom

*Description*

Returns true if given column c drops below previous column of same type (this is always column c-2)

*Usage*

`fallingBottom(redData, column)`

*Arguments*

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>redData</td>
<td>Data to consider</td>
</tr>
<tr>
<td>column</td>
<td>Column to consider</td>
</tr>
</tbody>
</table>

fallingTop

*Description*

Returns true if given column c drops below previous column of same type (this is always column c-2)

*Usage*

`fallingTop(redData, column)`

*Arguments*

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>redData</td>
<td>Data to consider</td>
</tr>
<tr>
<td>column</td>
<td>Column to consider</td>
</tr>
</tbody>
</table>
getLogBoxsize

Determine an appropriate boxsize, if you want to use logarithmic scale.

**Description**

This function returns an appropriate boxsize if you want to do your point and figure analysis with an logarithmic scale.

**Usage**

getLogBoxsize(percent)

**Arguments**

percent a numeric value defining the percent

**Value**

a numeric value which is equivalent to the percental change given on a logarithmic scale

**Examples**

# apply it with pnfprocessor
library(rpnf) # Load rpnf library
data(DOW) # Load some example data

# return appropriate value for 1% boxsize
getLogBoxsize(percent=1)

pnfprocessor(
  high=DOW$High,
  low=DOW$Low,
  date=DOW$Date,
  boxsize=getLogBoxsize(percent=1),
  log=TRUE)

maxBox

Returns the maximum box number in given column

**Description**

Returns the maximum box number in given column

**Usage**

maxBox(redData, column)
Arguments

reddata  Data to consider
column  Column to consider

\[
\text{minBox}
\]

Returns the minimum box number in given column.

Description

Returns the minimum box number in given column.

Usage

\[
\text{minBox(reddata, column)}
\]

Arguments

reddata  Data to consider
column  Column to consider

\[
\text{nextBox}
\]

Determine the next box frontier for current quote(s) given a recent XO-status.

Description

Note: offset should only be used for reversal calculation.

Usage

\[
\text{nextBox(quote, status, boxsize = 1, log = FALSE)}
\]

Arguments

quote  A single quote or a vector of quotes.
status  A single character indicating the current XO-status.
boxsize  A single numeric value, indicating the boxsize to be considered.
log  TRUE, if logarithmic scales should be used.
**nextReversal**

Determine the next reversal frontier for current quote(s) given a recent XO-status.

**Usage**

```r
nextReversal(quote, status, reversal = 3L, boxsize = 1, log = FALSE)
```

**Arguments**

- **quote**: A single quote or a vector of quotes.
- **status**: A single character indicating the current XO-status.
- **reversal**: number of boxes needed to make a reversal
- **boxsize**: A single numeric value, indicating the boxsize to be considered.
- **log**: TRUE, if logarithmic scales should be used.

**pnfplot**

Generate a modern point and figure plot

**Description**

Generate a modern point and figure plot

**Usage**

```r
pnfplot(data, reversal = 3, boxsize = 1, log = FALSE, ...)
```

**Arguments**

- **data**: a data frame object containing point and figure informations to be plotted
- **reversal**: number of boxes used in pnfprocessor
- **boxsize**: the boxsize used in pnfprocessor
- **log**: are calculations done in logarithmic mode
- **...**: any additional options for the plot command

**References**

[http://rpnf.r-forge.r-project.org](http://rpnf.r-forge.r-project.org)
See Also

pnfprocessor
pnfplottxt

Examples

library(rpnf) # Load rpnf library
data(DOW) # (Offline) Load free available sample data from https://www.quandl.com/data/WIKI/DOW
pnfdata <- pnfprocessor(
  high=DOW$High,
  low=DOW$Low,
  date=DOW$Date,
  boxsize=1L,
  log=FALSE)
pnfplot(pnfdata,boxsize=1L,log=FALSE)

pnfplottxtGenerate a classical TXT point and figure plot.

Description

THIS FUNCTION IS STILL UNDER DEVELOPMENT, THEREFORE IT MIGHT BE SUBJECT TO CHANGE!

Usage

pnfplottxt(data, reversal = 3, boxsize = 1, log = FALSE, main = NULL, sub = NULL)

Arguments

data a data frame object containing point and figure informations to be plotted
reversal number of boxes used in pnfprocessor
boxsize the boxsize used in pnfprocessor
log are calculations done in logarithmic mode
main a string used as a main title of the chart
sub a string used as a sub title of the chart

References

http://rpnf.r-forge.r-project.org

See Also

pnfprocessor
pnfplot
pnfprocessor

Examples

library(rpnf) # Load rpnf library
data(DOW) # (Offline) Load free available sample data from https://www.quandl.com/data/WIKI/DOW
pnfdata <- pnfprocessor(
  high=DOW$High,
  low=DOW$Low,
  date=DOW$Date,
  boxsize=1L,
  log=FALSE)
pnfplottxt(pnfdata, boxsize=1L, log=FALSE)

pnfprocessor Generate all point and figure informations for a given time series.

Description

Please ensure that high, low and date are all ordered according to the Date column.

Usage

pnfprocessor(high, low = high, date, reversal = 3L, boxsize = 1L, 
log = FALSE, style = "xo")

Arguments

  high  a vector containing the high quotes
  low   a (optional) vector containing the low quotes
  date  a vector of dates the quotes belong
  reversal  number of boxes needed to make a reversal
  boxsize  the boxsize to be used
  log     should we do the calculations on a logarithmic scale
  style   the style the pnfprocessor is working with. Can be {xo,rs,bp}.

Value

returns a data table with all point and figure information in it

References

http://rpnf.r-forge.r-project.org

See Also

  pnfplot
  pnfplottxt
Examples

library(rpnf) # Load rpnf library
data(DOW) # (Offline) Load free available sample data from https://www.quandl.com/data/WIKI/DOW
pnfdata <- pnfprocessor(
  high=DOW$High,
  low=DOW$Low,
  date=DOW$Date,
  boxsize=1L,
  log=FALSE)
pnfdata

quote2box Converts a single or a vector of quotes into integer boxnumbers for P&F-Analysis.

Description

Converts a single or a vector of quotes into integer boxnumbers for P&F-Analysis.

Usage

quote2box(quote, boxsize = 1, log = FALSE)

Arguments

quote a single quote, or a vector of quotes
boxsize single numeric value, used as the boxsize
log TRUE, if logarithmic scales should be used

Value

a single or a vector of integer boxnumbers This function transforms a given quote into an unique integer box number

quoteToBoxnumber Determines the boxnumber for a given tuple of quotes, status, boxsize and log.

Description

Determines the boxnumber for a given tuple of quotes, status, boxsize and log.

Usage

quoteToBoxnumber(quote, status, boxsize, log)
quoteToScale

**Arguments**

- `quote` a numeric vector of quotes
- `status` current status, either "X" or "O"
- `boxsize` boxsize
- `log` use log scale, either TRUE or FALSE

**Value**

a vector of integer boxnumbers

---

`quoteToScale` *Scales a quote. In case log==TRUE this is logarithmic scale, original scale otherwise.*

**Description**

Scales a quote. In case log==TRUE this is logarithmic scale, original scale otherwise.

**Usage**

`quoteToScale(x, log)`

**Arguments**

- `x` a numeric vector of quotes
- `log` TRUE or FALSE

**Value**

scaled quote

---

`raisingBottom` *returns true if given column c exceeds previous column of same type (this is always column c-2)*

**Description**

returns true if given column c exceeds previous column of same type (this is always column c-2)

**Usage**

`raisingBottom(redData, column)`

**Arguments**

- `redData` Data to consider
- `column` Column to consider
### raisingTop

*Returns true if given column c exceeds previous column of same type (this is always column c-2)*

**Description**

Returns true if given column c exceeds previous column of same type (this is always column c-2)

**Usage**

```
raisingTop(redData, column)
```

**Arguments**

- **redData**: Data to consider
- **column**: Column to consider

---

### rs.signal.processor

*This function analyzes a (preliminary) P&F Chart for Bullish Support Line and Bearish Resistance Line*

**Description**


**Usage**

```
rs.signal.processor(data)
```

**Arguments**

- **data**: Input data

**See Also**

scaleToQuote

Rescales a scaled quote to original scale.

Description

Rescales a scaled quote to original scale.

Usage

scaleToQuote(x, log)

Arguments

x  a numeric vector of scaled quotes
log TRUE or FALSE

Value

scaled quote

signalanalyzer

analyze transitions of signal states

Description

analyze transitions of signal states

Usage

signalanalyzer(signal, probability = TRUE)

Arguments

signal Signal to identify
probability Report probability
xo.priceobjective.processor

*This function adds Vertical Price Objectives calculated with the Bullish Breakout and Bearish Breakdown Method (BM) to an P&F Table.*

**Description**

Finding the appropriate price objectives has been explained very good at http://stockcharts.com/school/doku.php?id=chart_school:chart_analysis:point_and_figure_priceobjectives, but this documentation is no longer available. The function adds columns vpo_bm_boxnumber and vpo_bm_price to the given P&F Table. vpo_bm_boxnumber contains the boxnumber of the price objective, while vpo_bm_price contains the real price objective.

**Usage**

`xo.priceobjective.processor(data, reversal, boxsize, log)`

**Arguments**

- **data**: Input data
- **reversal**: Number of boxes for reversal
- **boxsize**: Size of one box
- **log**: Use logarithmic scale

xo.signalprocessor

*Analyzes a given PNF time-series for Buy&Sell patterns*

**Description**

Analyzes a given PNF time-series for Buy&Sell patterns

**Usage**

`xo.signalprocessor(data, reversal = 3)`

**Arguments**

- **data**: Input data
- **reversal**: Number of boxes for reversal
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