Package ‘corrplot’

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       It also contains some algorithms to do matrix reordering. In addition,
corrplot is good at details, including choosing color, text labels,
       color labels, layout, etc.
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The `corrplot` package is a graphical display of a correlation matrix, confidence interval or general matrix. It also contains some algorithms to do matrix reordering. In addition, `corrplot` is good at details, including choosing color, text labels, color labels, layout, etc.

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**References**


**See Also**

The `plotcorr` function in the `ellipse` package and `corrgram` function in the `corrgram` package has some similarities.

**Description**

Draw color legend.

**Usage**

```
colorlegend(colbar, labels, at = NULL, xlim = c(0, 1), ylim = c(0, 1),
    vertical = TRUE, ratio.colbar = 0.4, lim.segment = "auto",
    align = c("c", "l", "r"), addlabels = TRUE, ...)
```
Arguments

colbar  Vector, color of colbar.
labels  Vector, numeric or character to be written.
at      Numeric vector (quantile), the position to put labels. See examples for details.
xlim    See in plot
ylim    See in plot
vertical Logical, whether the colorlegend is vertical or horizon.
ratio.colbar  The width ratio of colorbar to the total colorlegend (including colorbar, segments and labels).
lim.segment Vector (quantile) of length 2, the elements should be in [0,1], giving segments coordinates ranges. If the value is NULL or "auto", then the ranges are derived automatically.
align    Character, alignment type of labels, "l" means left, "c" means center and "r" right.
addlabels Logical, whether add text label or not.
...     Additional arguments, passed to plot

Author(s)

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Examples

par(mar = rep(0,4))
plot(0,xlim = c(0,6), ylim = c(-0.5,1.2), type = "n")
colorlegend(rainbow(100), 0:9)
colorlegend(heat.colors(100), LETTERS[1:12], xlim = c(1,2))
colorlegend(terrain.colors(100), 0:9, ratio.colbar = 0.6, 
lim.segment = c(0,0.6), xlim = c(2,3), align = "l")
colorlegend(topo.colors(100), 0:9, lim.segment = c(0,0.6), 
xlim = c(3,4), align = "l", offset = 0)
colorlegend(cm.colors(100),1:5, xlim = c(4,5))
colorlegend(sample(rainbow(12)), labels = LETTERS[1:12], 
at = seq(0.05, 0.95, len = 12), xlim = c(5,6), align = "r")
colorlegend(colbar = grey(1:100 / 100), 1:10, col = "red", align = "l", 
xlim = c(0, 6), ylim = c(-0.5,-0.1), vertical = FALSE)
colorlegend(sample(rainbow(12)), 
    labels = LETTERS[1:12], at = seq(0.05, 0.95, len = 12), 
xlim = c(0, 6), ylim = c(1.1, 1.2), vertical = FALSE)
cor.mtest

Significance test which produces p-values and confidence intervals for each pair of input features.

Description

Significance test which produces p-values and confidence intervals for each pair of input features.

Usage

cor.mtest(mat, ...)

Arguments

mat  
Input matrix of size FxS, with F columns that represent features and S rows that represent samples. 

...  
Additional arguments passed to function cor.test, e.g. conf.level = 0.95.

Value

Return a list containing:

p  
Square matrix of size FxF with p-values as cells

lowCI  
Square matrix of size FxF, each cell represents the lower part of a confidence interval

uppCI  
Square matrix of size FxF, each cell represents the upper part of a confidence interval

See Also

Function cor.test

corrMatOrder

Reorder a correlation matrix.

Description

Draw rectangle(s) around the chart of correlation matrix based on the number of each cluster’s members.

Usage

corrMatOrder(corr, order = c("AOE", "FPC", "hclust", "alphabet"),
hclust.method = c("complete", "ward", "ward.D", "ward.D2", "single",
"average", "mcquitty", "median", "centroid"))
**Arguments**

- **corr**: Correlation matrix to reorder.
- **order**: Character, the ordering method for the correlation matrix.
  - "AOE" for the angular order of the eigenvectors. It is calculated from the order of the angles, $a_i$:
    
    $a_i = \tan(e_{i2}/e_{i1}), \text{if } e_{i1} > 0$
    
    $a_i = \tan(e_{i2}/e_{i1}) + \pi, \text{otherwise.}$

  where $e_1$ and $e_2$ are the largest two eigenvalues of matrix corr. See Michael Friendly (2002) for details.
  - "FPC" for the first principal component order.
  - "hclust" for hierarchical clustering order.
  - "alphabet" for alphabetical order.
- **hclust.method**: Character, the agglomeration method to be used when order is hclust. This should be one of "ward", "ward.D", "ward.D2", "single", "complete", "average", "mcquitty", "median" or "centroid".

**Value**

Returns a single permutation vector.

**Author(s)**

Taiyun Wei

**See Also**

Package seriation offers more methods to reorder matrices, such as ARSA, BBURCG, BB-WRCG, MDS, TSP, Chen and so forth.

**Examples**

```r
M <- cor(mtcars)

(order.AOE <- corMatOrder(M, order = "AOE"))
(order.FPC <- corMatOrder(M, order = "FPC"))
(order.hc <- corMatOrder(M, order = "hclust"))
(order.hc2 <- corMatOrder(M, order = "hclust", hclust.method = "ward"))

M.AOE <- M[order.AOE, order.AOE]
M.FPC <- M[order.FPC, order.FPC]
M.hc <- M[order.hc, order.hc]
M.hc2 <- M[order.hc2, order.hc2]

par(ask = TRUE)
corrplot(M)
```
corplot(M.AOE)
corplot(M.FPC)
corplot(M.hc)
corplot(M.hc)
corrRect.hclust(corr = M.hc, k = 2)
corplot(M.hc)
corrRect.hclust(corr = M.hc, k = 3)
corplot(M.hc2)
corrRect.hclust(M.hc2, k = 2, method = "ward")

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**corplot**

* A visualization of a correlation matrix.

**Description**

A graphical display of a correlation matrix, confidence interval. The details are paid great attention to. It can also visualize a general matrix by setting `is.corr = FALSE`.

**Usage**

```r
corplot(corr, method = c("circle", "square", "ellipse", "number", "shade", "color", "pie"), type = c("full", "lower", "upper"), add = FALSE, col = NULL, bg = "white", title = "", is.corr = TRUE, diag = TRUE, outline = FALSE, mar = c(0, 0, 0, 0), addgrid.col = NULL, addCoef.col = NULL, addCoefasPercent = FALSE, order = c("original", "AOE", "FPC", "hclust", "alphabet"), hclust.method = c("complete", "ward", "ward.D", "ward.D2", "single", "average", "mcquitty", "median", "centroid"), addrect = NULL, rect.col = "black", rect.lwd = 2, tl.pos = NULL, tl.cex = 1, tl.col = "red", tl.offset = 0.4, tl.srt = 90, cl.pos = NULL, cl.lim = NULL, cl.length = NULL, cl.cex = 0.8, cl.ratio = 0.15, cl.align.text = "c", cl.offset = 0.5, number.cex = 1, number.font = 2, number.digits = NULL, addshade = c("negative", "positive", "all"), shade.lwd = 1, shade.col = "white", p.mat = NULL, sig.level = 0.05, insig = c("pch", "p-value", "blank", "n", "label_sig"), pch = 4, pch.col = "black", pch.cex = 3, plotCI = c("n", "square", "circle", "rect"), lowCI.mat = NULL, uppCI.mat = NULL, na.label = "?", na.label.col = "black", win.asp = 1, ...)
```

**Arguments**

- `corr` The correlation matrix to visualize, must be square if order is not "original". For general matrix, please using `is.corr = FALSE` to convert.

- `method` Character, the visualization method of correlation matrix to be used. Currently, it supports seven methods, named "circle" (default), "square", "ellipse", "number", "pie", "shade" and "color". See examples for details.
The areas of circles or squares show the absolute value of corresponding correlation coefficients. Method "pie" and "shade" came from Michael Friendly's job (with some adjustment about the shade added on), and "ellipse" came from D.J. Murdoch and E.D. Chow's job, see in section References.

type
Character, "full" (default), "upper" or "lower", display full matrix, lower triangular or upper triangular matrix.

add
Logical, if TRUE, the graph is added to an existing plot, otherwise a new plot is created.

col
Vector, the color of glyphs. It is distributed uniformly in clNlim. If NULL, col will be colorRampPalette(col2)(200), see example about col2.

bg
The background color.

title
Character, title of the graph.

is.corr
Logical, whether the input matrix is a correlation matrix or not. We can visualize the non-correlation matrix by setting is.corr = FALSE.

diag
Logical, whether display the correlation coefficients on the principal diagonal.

outline
Logical or character, whether plot outline of circles, square and ellipse, or the color of these glyphs. For pie, this represents the color of the circle outlining the pie. If outline is TRUE, the default value is "black".

mar
See par.

addgrid.col
The color of the grid. If NA, don’t add grid. If NULL the default value is chosen. The default value depends on method, if method is color or shade, the color of the grid is NA, that is, not draw grid; otherwise "grey".

addCoef.col
Color of coefficients added on the graph. If NULL (default), add no coefficients.

addCoefasPercent
Logic, whether translate coefficients into percentage style for spacesaving.

order
Character, the ordering method of the correlation matrix.

• "original" for original order (default).
• "AOE" for the angular order of the eigenvectors.
• "FPC" for the first principal component order.
• "hclust" for the hierarchical clustering order.
• "alphabet" for alphabetical order.

See function corrMatOrder for details.

hclust.method
Character, the agglomeration method to be used when order is hclust. This should be one of "ward", "ward.D", "ward.D2", "single", "complete", "average", "mcquitty", "median" or "centroid".

addrect
Integer, the number of rectangles draws on the graph according to the hierarchical cluster, only valid when order is hclust. If NULL (default), then add no rectangles.

rect.col
Color for rectangle border(s), only valid when addrect is equal or greater than 1.

rect.lwd
Numeric, line width for borders for rectangle border(s), only valid when addrect is equal or greater than 1.
tl.pos Character or logical, position of text labels. If character, it must be one of "lt", "ld", "td", "d" or "n". "lt" (default if type="full") means left and top, "ld" (default if type="lower") means left and diagonal, "td" (default if type="upper") means top and diagonal (near), "d" means diagonal, "n" means don’t add textlabel.

tl.cex Numeric, for the size of text label (variable names).

tl.col The color of text label.

tl.offset Numeric, for text label, see text.

tl.srt Numeric, for text label string rotation in degrees, see text.

cl.pos Character or logical, position of color labels; If character, it must be one of "r" (default if type="upper" or "full"), "b" (default if type="lower") or "n", "n" means don’t draw colorlabel.

cl.lim The limits (x1, x2) in the colorlabel.

cl.length Integer, the number of number-text in colorlabel, passed to colorlegend. If NULL, cl.length is length(col) + 1 when length(col) <= 20; cl.length is 11 when length(col) > 20

cl.cex Numeric, cex of number-label in colorlabel, passed to colorlegend.

cl.ratio Numeric, to justify the width of colorlabel, 0.1~0.2 is suggested.

cl.align.text Character, "l", "c" (default) or "r", for number-label in colorlabel, "l" means left, "c" means center, and "r" means right.

cl.offset Numeric, for number-label in colorlabel, see text.

number.cex The cex parameter to send to the call to text when writing the correlation coefficients into the plot.

number.font the font parameter to send to the call to text when writing the correlation coefficients into the plot.

number.digits indicating the number of decimal digits to be added into the plot. Non-negative integer or NULL, default NULL.

addshade Character for shade style, "negative", "positive" or "all", only valid when method is "shade". If "all", all correlation coefficients’ glyph will be shaded; if "positive", only the positive will be shaded; if "negative", only the negative will be shaded. Note: the angle of shade line is different, 45 degrees for positive and 135 degrees for negative.

shade.lwd Numeric, the line width of shade.

shade.col The color of shade line.

p.mat Matrix of p-value, if NULL, arguments sig.level, insig, pch, pch.col, pch.cex is invalid.

sig.level Significant level, if the p-value in p.mat is bigger than sig.level, then the corresponding correlation coefficient is regarded as insignificant. If insig is "label_sig", this may be an increasing vector of significance levels, in which case pch will be used once for the highest p-value interval and multiple times (e.g. "*", "**", "***") for each lower p-value interval.
insig
Character, specialized insignificant correlation coefficients, "pch" (default), "p-value", "blank", "n", or "label_sig". If "blank", wipe away the corresponding glyphs; if "p-value", add p-values the corresponding glyphs; if "pch", add characters (see pch for details) on corresponding glyphs; if "n", don’t take any measures; if "label_sig", mark significant correlations with pch (see sig.level).

pch
Add character on the glyphs of insignificant correlation coefficients (only valid when insig is "pch"). See par.

pch.col
The color of pch (only valid when insig is "pch").

pch.cex
The cex of pch (only valid when insig is "pch").

plotCI
Character, method of plotting confidence interval. If "n", don’t plot confidence interval. If "rect", plot rectangles whose upper side means upper bound and lower side means lower bound, respectively, and meanwhile correlation coefficients are also added on the rectangles. If "circle", first plot a circle with the bigger absolute bound, and then plot the smaller. Warning: if the two bounds are the same sign, the smaller circle will be wiped away, thus forming a ring. Method "square" is similar to "circle".

lowCI.mat
Matrix of the lower bound of confidence interval.

upCI.mat
Matrix of the upper bound of confidence interval.

na.label
Label to be used for rendering NA cells. Default is "?". If "square", then the cell is rendered as a square with the na.label.col color.

na.label.col
Color used for rendering NA cells. Default is "black".

win.asp
Aspect ratio for the whole plot. Value other than 1 is currently compatible only with methods "circle" and "square".

Details
The corrplot function offers flexible ways to visualize correlation matrix, lower and upper bound of confidence interval matrix.

Value
(Invisibly) returns a reordered correlation matrix.

Note
Cairo and cairoDevice packages is strongly recommended to produce high-quality PNG, JPEG, TIFF bitmap files, especially for that method circle, ellipse.

Row- and column names of the input matrix are used as labels rendered in the corrplot. Plothmath expressions will be used if the name is prefixed by one of the following characters: :, = or $. For example "alpha + beta".

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References


See Also

Function plotcorr in the ellipse package and corrgram in the corrgram package have some similarities.

Package seriation offered more methods to reorder matrices, such as ARSA, BBURCG, BB-WRCG, MDS, TSP, Chen and so forth.

Examples

data(mtcars)
M <- cor(mtcars)
set.seed(0)

## different color series
col1 <- colorRampPalette(c("#F00000", "red", "#FF7F00", "yellow", "white", 
                           "cyan", "#007FFF", "blue","#00007F"))
col2 <- colorRampPalette(c("#600000", "#B2182B", "#D6604D", "#4A5822", 
                           "#F1B5BF", "#FFFF00", "#D1E5F0", 
                           "#92C5E0", "#4393C3", "#2166AC", "#0534A7"))
col3 <- colorRampPalette(c("red", "white", "blue"))
col4 <- colorRampPalette(c("#F00000", "red", "#FF7F00", "yellow", "#FFFF00", 
                           "cyan", "#007FFF", "blue", "#00007F"))
wb <- c("white", "black")

par(ask = TRUE)

## different color scale and methods to display corr-matrix
corrplot(M, method = "number", col = "black", cl.pos = "n")
corrplot(M, method = "number")
corrplot(M)
corrplot(M, order = "AOE")
corrplot(M, order = "AOE", addCoef.col = "grey")
corrplot(M, order = "AOE", col = col1(20), cl.length = 21, addCoef.col = "grey")
corrplot(M, order = "AOE", col = col1(10), addCoef.col = "grey")
corrplot(M, order = "AOE", col = col2(20), cl.length = 21, addCoef.col = "grey")
corrplot(M, order = "AOE", col = col2(10), addCoef.col = "grey")
corrplot(M, order = "AOE", col = col3(100))
corrplot(M, order = "AOE", col = col3(10))
corrplot(M, method = "color", col = col1(20), cl.length = 21, order = "AOE",
        addCoef.col = "grey")
corrplot(M, method = "square", col = col2(200), order = "AOE")
corrplot(M, method = "ellipse", col = col1(200), order = "AOE")
corrplot(M, method = "shade", col = col3(20), order = "AOE")
corrplot(M, method = "pie", order = "AOE")

## col = wb
corrplot(M, col = wb, order = "AOE", outline = TRUE, cl.pos = "n")

## like Chinese wiqi, suit for either on screen or white-black print.
corrplot(M, col = wb, bg = "gold2", order = "AOE", cl.pos = "n")

## mixed methods: It's more efficient if using function "corrplot.mixed"
## circle + ellipse
corrplot(M, order = "AOE", type = "upper", tl.pos = "d")
corrplot(M, add = TRUE, type = "lower", method = "ellipse", order = "AOE",
         diag = FALSE, tl.pos = "n", cl.pos = "n")

## circle + square
corrplot(M, order = "AOE", type = "upper", tl.pos = "d")
corrplot(M, add = TRUE, type = "lower", method = "square", order = "AOE",
         diag = FALSE, tl.pos = "n", cl.pos = "n")

## circle + colorful number
corrplot(M, order = "AOE", type = "upper", tl.pos = "d")
corrplot(M, add = TRUE, type = "lower", method = "number", order = "AOE",
         diag = FALSE, tl.pos = "n", cl.pos = "n")

## circle + black number
corrplot(M, order = "AOE", type = "upper", tl.pos = "tp")
corrplot(M, add = TRUE, type = "lower", method = "number", order = "AOE",
         col = "black", diag = FALSE, tl.pos = "n", cl.pos = "n")

## order is hclust and draw rectangles
corrplot(M, order = "hclust")
corrplot(M, order = "hclust", addrect = 2)
corrplot(M, order = "hclust", addrect = 3, rect.col = "red")
corrplot(M, order = "hclust", addrect = 4, rect.col = "blue")
corrplot(M, order = "hclust", hclust.method = "ward.D2", addrect = 4)

## visualize a matrix in [0, 1]
corrplot(abs(M), order = "AOE", cl.lim = c(0,1))
corrplot(abs(M), order = "AOE", col = col1(20), cl.lim = c(0,1))
corrplot(abs(M), order = "AOE", col = col3(200), cl.lim = c(0,1))

## visualize a matrix in [-100, 100]
r <- round(matrix(r uniform(225, -100, 100), 15))

```r
# Correlation plot

corrplot(ran, is.corr = FALSE)
corrplot(ran, is.corr = FALSE, cl.lim = c(-100, 100))

d## Text-labeled and plot type
corrplot(M, order = "AOE", tl.srt = 45)
corrplot(M, order = "AOE", tl.srt = 60)
corrplot(M, order = "AOE", tl.pos = "d", cl.pos = "n")
corrplot(M, order = "AOE", diag = FALSE, tl.pos = "d")
corrplot(M, order = "AOE", type = "upper")
corrplot(M, order = "AOE", type = "upper", diag = FALSE)
corrplot(M, order = "AOE", type = "lower", cl.pos = "b")
corrplot(M, order = "AOE", type = "lower", cl.pos = "b", diag = FALSE)

### Color-legend

corrplot(M, order = "AOE", cl.ratio = .2, cl.align = "l")
corrplot(M, order = "AOE", cl.ratio = .2, cl.align = "c")
corrplot(M, order = "AOE", cl.ratio = .2, cl.align = "r")
corrplot(M, order = "AOE", cl.pos = "b")
corrplot(M, order = "AOE", cl.pos = "b", tl.pos = "d")
corrplot(M, order = "AOE", cl.pos = "n")

## Deal with missing values
M2 <- M
diag(M2) = NA
corrplot(M2)
corrplot(M2, na.label = "o")
corrplot(M2, na.label = "NA")

## The input matrix is not square

corrplot(M[1:8,])
corrplot(M[1:8,])

res1 <- cor.mtest(mtcars, conf.level = 0.95)
res2 <- cor.mtest(mtcars, conf.level = 0.99)

## Specialized the insignificant value according to the significant level

corrplot(M, p.mat = res1$p, sig.level = 0.2)
corrplot(M, p.mat = res1$p, sig.level = 0.05)
corrplot(M, p.mat = res1$p, sig.level = 0.01)
corrplot(M, p.mat = res1$p, insig = "blank")
corrplot(M, p.mat = res1$p, insig = "p-value")
corrplot(M, p.mat = res1$p, insignificant.value = "false")  # add all p-values

corrplot(M, p.mat = res1$p, order = "hclust", insig = "blank", addrect = 3)
corrplot(M, p.mat = res1$p, order = "hclust", insig = "pch", addrect = 3)
```

## Description

Using mixed methods to visualize a correlation matrix.
Usage

corrplot.mixed(corr, lower = "number", upper = "circle", tl.pos = c("d", "lt", "n"), diag = c("n", "l", "u"), bg = "white", addgrid.col = "grey", lower.col = NULL, upper.col = NULL, plotCI = c("n", "square", "circle", "rect"), mar = c(0, 0, 0, 0), ...)

Arguments

corr   Matrix, the correlation matrix to visualize.
lower  Character, the visualization method for the lower triangular correlation matrix.
upper  Character, the visualization method for the upper triangular correlation matrix.
tl.pos Character, "lt", "d" or "n", giving position of text labels, "lt" means left and top, "d" means diagonal. If "n", add no textlabel.
diag   Character, for specifying the glyph on the principal diagonal. It is one of "n" (default, draw nothing), "l" (draw the glyphs of lower triangular) or "u" (draw the glyphs of upper triangular).
bg     The background color.
addgrid.col See the addgrid.col parameter in the function corrplot
lower.col Passed as col parameter to the lower matrix.
upper.col Passed as col parameter to the upper matrix.
plotCI  See the plotCI parameter in the function corrplot
mar     See par.
...     Additional arguments for corrplot’s wrappers

Author(s)

Taiyun Wei

Examples

M <- cor(mtcars)
ord <- corrMatOrder(M, order = "AOE")
M2 <- M[ord, ord]

corrplot.mixed(M2)
corrplot.mixed(M2, lower = "ellipse", upper = "circle")
corrplot.mixed(M2, lower = "square", upper = "circle")
corrplot.mixed(M2, lower = "shade", upper = "circle")
corrplot.mixed(M2, tl.pos = "lt")
corrplot.mixed(M2, tl.pos = "lt", diag = "u")
corrplot.mixed(M2, tl.pos = "lt", diag = "l")
corrplot.mixed(M2, tl.pos = "n")
**corrRect**

*Draw rectangle(s) on the correlation matrix graph.*

**Description**

Draw rectangle(s) around the chart of correlation matrix.

**Usage**

```r
corrRect(clus, col = "black", lwd = 2)
```

**Arguments**

- **clus**: Vector, the number of each cluster's members.
- **col**: Color of rectangles.
- **lwd**: Line width of rectangles.

**Details**

corrRect needs the number (parameter clus) of each cluster's members, while corrRect.hclust can get the members in each cluster based on hierarchical clustering (hclust).

**Author(s)**

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**Examples**

```r
data(mtcars)
M <- cor(mtcars)
corrplot(M, method = "circle", order = "FPC")
corrRect(c(5, 6))

(order.hc <- corrMatOrder(M, order = "hclust"))
(order.hc2 <- corrMatOrder(M, order = "hclust", hclust.method = "ward"))
M.hc <- M[order.hc, order.hc]
M.hc2 <- M[order.hc2, order.hc2]
par(ask = TRUE)

# same as: corrplot(M, order = "hclust", addrect = 2)
corrplot(M.hc)
corrRect.hclust(corr = M.hc, k = 2)

# same as: corrplot(M, order = "hclust", addrect = 3)
corrplot(M.hc)
corrRect.hclust(corr = M.hc, k = 3)

# same as: corrplot(M, order = "hclust", hclust.method = "ward", addrect = 2)
```
corrplot(M.hc2)
corrRect.hclust(M.hc2, k = 2, method = "ward")

# same as: corrplot(M, order = "hclust", hclust.method = "ward", addrect = 3)
corrplot(M.hc2)
corrRect.hclust(M.hc2, k = 3, method = "ward")

# same as: corrplot(M, order = "hclust", hclust.method = "ward", addrect = 4)
corrplot(M.hc2)
corrRect.hclust(M.hc2, k = 4, method = "ward")

corrRect.hclust Draw rectangles on the correlation matrix graph.

Description

Draw rectangles on the correlation matrix graph based on hierarchical cluster (hclust).

Usage

corrRect.hclust(corr, k = 2, col = "black", lwd = 2,
method = c("complete", "ward", "ward.D", "ward.D2", "single", "average",
"mcquitty", "median", "centroid"))

Arguments

corr  Correlation matrix for function corrRect.hclust. It use 1-cor as dist in hierarchy clustering (hclust).
k    Integer, the number of rectangles drawn on the graph according to the hierarchical cluster, for function corrRect.hclust.
col   Color of rectangles.
lwd   Line width of rectangles.
method Character, the agglomeration method to be used for hierarchical clustering (hclust). This should be (an unambiguous abbreviation of) one of "ward", "ward.D", "ward.D2", "single", "complete", "average", "mcquitty", "median" or "centroid".

Author(s)

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Examples

data(mtcars)
M <- cor(mtcars)
corrplot(M, method = "circle", order = "FPC")
corrRect(c(5,6))

(order.hc <- corrMatOrder(M, order = "hclust"))
(order.hc2 <- corrMatOrder(M, order = "hclust", hclust.method = "ward"))
M.hc <- M[order.hc, order.hc]
M.hc2 <- M[order.hc2, order.hc2]

par(ask = TRUE)

# same as: corrplot(M, order = "hclust", addrect = 2)
corrplot(M.hc)
corrRect.hclust(corr = M.hc, k = 2)

# same as: corrplot(M, order = "hclust", addrect = 3)
corrplot(M.hc)
corrRect.hclust(corr = M.hc, k = 3)

# same as: corrplot(M, order = "hclust", hclust.method = "ward", addrect = 2)
corrplot(M.hc2)
corrRect.hclust(M.hc2, k = 2, method = "ward")

# same as: corrplot(M, order = "hclust", hclust.method = "ward", addrect = 3)
corrplot(M.hc2)
corrRect.hclust(M.hc2, k = 3, method = "ward")

# same as: corrplot(M, order = "hclust", hclust.method = "ward", addrect = 4)
corrplot(M.hc2)
corrRect.hclust(M.hc2, k = 4, method = "ward")
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