Package 'wheatmap'

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Type Package

Title WHeatmap

Version 0.1.0

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Maintainer Who to complain to <zhouwanding@gmail.com>

Description Plot heatmap in a sequential manner.

License MIT license

LazyData TRUE

RoxygenNote 5.0.1

R topics documented:

Beneath *Beneath*

Description

Generate dimension beneath another object

Usage

```
Beneath(x, height, pad = 0.01)
```

Arguments

x	an object with dimension

Value

a dimension beneath x

both.cluster *row- and column-cluster a matrix*

Description

row- and column-cluster a matrix

Usage

```
both.cluster(mat, hc.method = "ward.D2")
```

Arguments

hc.method	method to use in hclust
at	input matrix

Value

a list of clustered row, column and matrix

CalcTextRanges *Calculate Text Ranges*

Description

Calculate dimensions accounting for texts.

Usage

```
CalcTextRanges(x)
```

Arguments

x	object

Examples

```
x <- WHeatmap(matrix(rnorm(16),nrow=4))
CalcTextRanges(x)
```

CalcTextRanges.WDendrogram *Calculate Text Ranges*

Description

Calculate Text Ranges

Usage

```
## S3 method for class 'WDendrogram'
CalcTextRanges(dd)
```

CalcTextRanges.WHeatmap *Calculate Text Ranges*

Description

Calculate dimension of object with text

Usage

```
## S3 method for class 'WHeatmap'
CalcTextRanges(hm)
```

CMPar *Color Map Parameters*

Description

Create color map parameters

Usage

```
CMPar(cm = NULL, dmin = NULL, dmax = NULL, brewer.name = "Accent",
  brewer.n = 3, colorspace.name = "rainbow_hcl", colorspace.n = 2,
  cmap = "jet", stop.points = NULL, grey.scale = FALSE)
```

Arguments

cm	existing color maps
dmin	minimum for continuous color map
dmax	maximum for continuous color map
brewer.name	palette name for RColorbrewer
brewer.n	number of stop points in RColorbrewer for continuous color map
colorspace.name	colorspace name
colorspace.n	number of stops in colorspace palettes
cmap	customized colormap name
stop.points	custome stop points
grey.scale	whether to use grey scale

Value

an object of class CMPar

ColorMap *Constructor for ColoMap object*

Description

Create color maps

Usage

```
ColorMap(discrete = FALSE, colors = NULL, dmin = NULL, dmax = NULL,
  scaler = NULL, mapper = NULL)
```

Arguments

discrete	whether colormap is discrete
colors	colors for each data point
dmin	miminum in continuous color map
dmax	maximum in continuous color map
scaler	scaler function from data range to 0-1
mapper	function that maps data to color

Value

an object of class ColorMap

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column.cluster *column cluster a matrix*

Description

column cluster a matrix

Usage

```
column.cluster(mat, hc.method = "ward.D2")
```

Arguments

mat	input matrix
hc.method	method to use in hclust

Value

a list of clustered row, column and matrix

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grid.dendrogram *Draw dendrogram under grid system*

Description

The dendrogram can be renderred. A viewport is created which contains the dendrogram.

Usage

```
grid.dendrogram(dend, facing = c("bottom", "top", "left", "right"),
  max_height = NULL, order = c("normal", "reverse"), ...)
```

Arguments

dend	a stats::dendrogram object.
facing	facing of the dendrogram.
max_height	maximum height of the dendrogram.

Details

-order should leaves of dendrogram be put in the normal order (1, ..., n) or reverse order (n, ..., 1)? -... pass to ‘grid::viewport‘ which contains the dendrogram.

This function only plots the dendrogram without adding labels. The leaves of the dendrogram locates at unit(c(0.5, 1.5, ...(n-0.5))/n, "npc").

Source

adapted from the ComplexHeatmap package authored by Zuguang Gu <z.gu@dkfz.de>

LeftOf *LeftOf*

Description

Generate dimension to the left of another object

Usage

```
LeftOf(x, width, pad = 0.01)
```

Arguments

x	an object with dimension

Value

a dimension to the left of x

MapToContinuousColors *map data to continuous color*

Description

map data to continuous color

Usage

```
MapToContinuousColors(data, cmp = CMPar())
```

Arguments

data	numeric vector
cmp	an color map parameter object of class CMPar

Value

an object of ColorMap

MapToDiscreteColors *map data to discrete color*

Description

map data to discrete color

Usage

```
MapToDiscreteColors(data, cmp = CMPar())
```

Arguments

data	numeric vector
cmp	an color map parameter object of class CMPar

Value

an object of ColorMap

RightOf *RightOf*

Description

Generate dimension to the right of another object

Usage

```
RightOf(x, width, pad = 0.01)
```

Arguments

x	an object with dimension

Value

a dimension to the right of x

row.cluster *row cluster a matrix*

Description

row cluster a matrix

Usage

```
row.cluster(mat, hc.method = "ward.D2")
```

Arguments

mat	input matrix
hc.method	method to use in hclust

Value

a list of clustered row, column and matrix

text.width *font width and scale to specified font size*

Description

font width and scale to specified font size

Usage

```
## S3 method for class 'width'
text(txt, fontsize = NULL)
```

TopOf *Top of*

Description

Generate dimension top of another object

Usage

```
TopOf(x, height, pad = 0.01)
```

Arguments

x	an object with dimension

Value

a dimension on top of x

WCbar *WCbar*

Description

a color bar

Usage

```
WCbar(data, orientation = "h", ...)
```

Arguments

data	numeric vector
orientation	horizontal ('h') or vertical ('v') color bar

Value

an object of class WCbar

WDendrogram *WDendrogram class*

Description

WDendrogram class

Usage

```
WDendrogram(clust, dim = c(0, 0, 1, 1), facing = c("bottom", "top", "left",
  "right"), name = NULL)
```

Arguments

clust	hclust object
dim	plotting dimension
facing	direction of the dendrogram plot
name	name of the dendrogram plot

Value

an object of class WDendrogram

WHeatmap *WHeatmap object*

Description

Create a heatmap

Usage

```
WHeatmap(data = NULL, dim = c(0, 0, 1, 1), name = NULL,
  continuous = TRUE, cmp = CMPar(), title = NULL, title.fontsize = 16,
  title.pad = 0.005, title.side = "l", xticklabels = NULL,
  xticklabel.side = "bottom", xticklabel.fontsize = 16,
  xticklabel.rotat = 90, xticklabel.pad = 0.005, yticklabels = NULL,
  yticklabel.side = "l", yticklabel.fontsize = 16, yticklabel.pad = 0.005,
  alpha = 1, gp = NULL)
```

Arguments

data	data matrix
dim	plotting dimension c(left, bottom, width, height)
name	name of the plot
continuous	whether the data is on continuous scale
cmp	an object of CMPar class

WLegend *WLegend*

Description

a legend

Usage

```
WLegend(x, orientation = "v", label.fontsize = 16, n.stops = 8, ...)
```

Arguments

x	WHeatmap object
orientation	horizontal ('h') or vertical ('v') legend
label.fontsize	label fontsize
n.stops	number of stops in computing continuous legend

Value

an object of class WLegend

WPlot *WPlot*

Description

WPlot

Usage

```
WPlot(x, ...)
```

Arguments

hm	an object of class WHeatmap

Value

NULL

WPlot.list *WPlot*

Description

WPlot

Usage

```
## S3 method for class 'list'
WPlot(obs, mar = c(0.03, 0.03, 0.03, 0.03))
```

WPlot.WDendrogram *WPlot*

Description

WPlot

Usage

```
## S3 method for class 'WDendrogram'
WPlot(dend)
```

WPlot.WHeatmap *WPlot WHeatmap*

Description

WPlot WHeatmap

Usage

```
## S3 method for class 'WHeatmap'
WPlot(hm)
```

Arguments

hm	an object of class WHeatmap

Value

NULL

Index