Package ‘productplots’

October 14, 2022

Title Product Plots for R

Description Framework for visualising tables of counts, proportions and probabilities. The framework is called product plots, alluding to the computation of area as a product of height and width, and the statistical concept of generating a joint distribution from the product of conditional and marginal distributions. The framework, with extensions, is sufficient to encompass over 20 visualisations previously described in fields of statistical graphics and 'infovis', including bar charts, mosaic plots, 'treemaps', equal area plots and fluctuation diagrams.

Version 0.1.1

Imports plyr, ggplot2

Suggests reshape2, testthat, covr

License GPL-2

LazyData true

RoxygenNote 5.0.1

URL https://github.com/hadley/productplots

BugReports https://github.com/hadley/productplots/issues

NeedsCompilation no

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Repository CRAN

Date/Publication 2016-07-02 07:38:04

R topics documented:

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Template for a double decker plot. A double decker plot is composed of a sequence of spines in the same direction, with the final spine in the opposite direction.

Usage

ddecker(direction = "h")

Arguments

direction direction of first split

Description

Returns NA if no columns at any level.

Usage

find_col_level(df)
Arguments

\[
\text{df} \quad \text{data frame of rectangle positions}
\]

**find_row_level**

*Find the first level which has rows.*

**Description**

Returns NA if no rows at any level.

**Usage**

\[
\text{find_row_level}(\text{df})
\]

**Arguments**

\[
\text{df} \quad \text{data frame of rectangle positions}
\]

**fluct**

*Fluctation partitioning.*

**Description**

Fluctation partitioning.

**Usage**

\[
\text{fluct}(\text{data}, \text{bounds}, \text{offset} = 0.05, \text{max} = \text{NULL})
\]

**Arguments**

\[
\begin{align*}
\text{data} & \quad \text{bounds data frame} \\
\text{bounds} & \quad \text{bounds of space to partition} \\
\text{offset} & \quad \text{space between spines} \\
\text{max} & \quad \text{maximum value}
\end{align*}
\]
flucts

Template for a fluctuation diagram.

Description

Template for a fluctuation diagram.

Usage

flucts(direction = "h")

Arguments

direction  direction of first split

happy

Data related to happiness from the general social survey.

Description

The data is a small sample of variables related to happiness from the general social survey (GSS). The GSS is a yearly cross-sectional survey of Americans, run from 1976. We combine data for 25 years to yield 51,020 observations, and of the over 5,000 variables, we select nine related to happiness:

Usage

data(happy)

Format

A data frame with 51020 rows and 10 variables

Details

• age. age in years: 18–89.
• degree. highest education: lt high school, high school, junior college, bachelor, graduate.
• finrela. relative financial status: far above, above average, average, below average, far below.
• happy. happiness: very happy, pretty happy, not too happy.
• health. health: excellent, good, fair, poor.
• marital. marital status: married, never married, divorced, widowed, separated.
• sex. sex: female, male.
• wtsall. probability weight. 0.43–6
**hbar**

*Horizontal bar partition: width constant, height varies.*

**Description**

Horizontal bar partition: width constant, height varies.

**Usage**

```r
hbar(data, bounds, offset = 0.02, max = NULL)
```

**Arguments**

- `data`: bounds data frame
- `bounds`: bounds of space to partition
- `offset`: space between spines
- `max`: maximum value

---

**hspine**

*Horizontal spine partition: height constant, width varies.*

**Description**

Horizontal spine partition: height constant, width varies.

**Usage**

```r
hspine(data, bounds, offset = 0.01, max = NULL)
```

**Arguments**

- `data`: bounds data frame
- `bounds`: bounds of space to partition
- `offset`: space between spines
- `max`: maximum value
**mosaic**

Template for a mosaic plot. A mosaic plot is composed of spines in alternating directions.

**Description**
Template for a mosaic plot. A mosaic plot is composed of spines in alternating directions.

**Usage**
mosaic(direction = "v")

**Arguments**
- **direction** direction of first split

**nested**
Template for a nested barchart. A nested bar is just a sequence of bars in the same direction.

**Description**
Template for a nested barchart. A nested bar is just a sequence of bars in the same direction.

**Usage**
nested(direction = "h")

**Arguments**
- **direction** direction of first split

**prodplot**
Create a product plot

**Description**
Create a product plot

**Usage**
prodplot(data, formula, divider = mosaic(), cascade = 0, scale_max = TRUE, na.rm = FALSE, levels = -1L, ...)
scale_x_product

Generate an x-scale for ggplot2 graphics.

Description

Generate an x-scale for ggplot2 graphics.

Usage

scale_x_product(df)

Arguments

df list of data frame produced by prodcalc, formula and divider
scale_y_product  
*Generate a y-scale for ggplot2 graphics.*

**Description**

Generate a y-scale for ggplot2 graphics.

**Usage**

scale_y_product(df)

**Arguments**

df  
list of data frame produced by `prodcalc`, formula and divider

---

spine  
*Spine partition: divide longest dimension.*

**Description**

Spine partition: divide longest dimension.

**Usage**

spine(data, bounds, offset = 0.01, max = NULL)

**Arguments**

data  
bounds data frame

bounds  
bounds of space to partition

offset  
space between spines

max  
maximum value
Template for a stacked bar chart. A stacked bar chart starts with a bar and then continues with spines in the opposite direction.

Usage
stacked(direction = "h")

Arguments
direction direction of first split

Tree map partitioning.

Description
Adapted from SquarifiedLayout in http://www.cs.umd.edu/hcil/treemap-history/Treemaps-Java-Algorithms.zip

Usage
tile(data, bounds, max = 1)

Arguments
data bounds data frame
bounds bounds of space to partition
max maximum value
vbar

Vertical bar partition: height constant, width varies.

Description
Vertical bar partition: height constant, width varies.

Usage
vbar(data, bounds, offset = 0.02, max = NULL)

Arguments
- data: bounds data frame
- bounds: bounds of space to partition
- offset: space between spines
- max: maximum value

vspine

Vertical spine partition: width constant, height varies.

Description
Vertical spine partition: width constant, height varies.

Usage
vspine(data, bounds, offset = 0.01, max = NULL)

Arguments
- data: bounds data frame
- bounds: bounds of space to partition
- offset: space between spines
- max: maximum value
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