Package 'barcode'

March 20, 2025

Version 1.4.0

Date 2025-03-20

Title Render Barcode Distribution Plots

Depends grid, lattice

Enhances gpairs

Description The function \code{barcode()}
produces a histogram-like plot of a distribution that shows
granularity in the data.

License GPL (>= 2)

Repository CRAN

NeedsCompilation no

Author John W. Emerson [aut, cre],
Walton A. Green [aut],
John A. Hartigan [aut],
Liya Xiang [ctb]

Maintainer John W. Emerson <john.emerson@yale.edu>

Date/Publication 2025-03-20 15:50:11 UTC

Contents

barcode *Barcode plots*

Description

Produce barcode plot(s) of the given (grouped) values.

Usage

```
barcode(x, outer.margins = list(bottom = unit(2, "lines"),
                                left = unit(2, "lines"),
                                top = unit(2, "lines"),
                                right = unit(2, "lines")),
        horizontal = TRUE, xlim = NULL, nint = 0, main = "", xlab = "",
        labelloc = TRUE, axisloc = TRUE, labelouter = FALSE,
        newpage = TRUE, fontsize = 9, ptsize = unit(0.25, "char"),
        ptpch = 1, bcspace = NULL, use.points = FALSE, buffer = 0.02,
        log = FALSE, outerbox = TRUE)

barcode.panel(x, horizontal = TRUE, xlim = NULL, labelloc = TRUE, axisloc = TRUE,
              labelouter = FALSE, nint = 0, fontsize = 9,
              ptsize = unit(0.25, "char"), ptpch = 1, bcspace = NULL,
              xlab = "", xlaboffset = unit(2.5, "lines"),
              use.points = FALSE, buffer = 0.02, log = FALSE)
```

Arguments

x	a vector of values for which the barcode is desired, or a list of such vectors for "side-by-side" barcodes. Matrices are coerced to data frames and treated as lists NA's are allowed in the data.
outer.margins	a list of length 4 with units as components named bottom, left, top, and right, giving the outer margins. Defaults to two lines of text.
horizontal	logical indicating the barcode orientation; the default, TRUE, produces horizontal barcodes.
xlim	the x limits (xmin, xmax) of the plot; the default, NULL, uses the range of the full data, range(unlist(x)), plus the multiplicative buffer.
nint	default, 0, uses no "binning"— i.e., the barcode presents the exact measurements, to the precision of the data set; nint=100 uses roughly 100 "bins" in constructing the barcode; fewer bins give a more histogram-like plot.
main	the plot title.
xlab	the axis label for the quantitative measurements.
labelloc	for the location of the factor labels of the barcodes; default TRUE may also be specified as 'left' or 'top' (having similar results but relating to the horizontal alignment); values 'right' or 'bottom' are available as alternatives to FALSE.

axisloc	for the location of the quantitative axis labels; default, TRUE, may also be specified as 'left' or 'top' (having similar results but relating to the horizontal alignment); values 'right' or 'bottom' are available as alternatives to FALSE.
labelouter	default, FALSE, positions all labels within the viewport; TRUE forces the barcodes to the edge of the viewport, with the labels outside the viewport. May be of use to advanced users.
newpage	default, TRUE, creates the barcodes in a new graphics device instead of adding the plot to the current viewport.
fontsize	for the size of the axis and factor labels.
ptsize	for the size of the plotted points.
ptpch	for the type of plotted points.
bcspace	indicates the proportion of total available space occupied by the barcode part of the displays. Can range from 0 to 1; reasonable values seem to be between 0.1 and 0.5.
use.points	default FALSE uses segments instead of points in the histogram-style display.
xlaboffset	used for tuning the position of the label of the quantitative variable; needs to be a unit.
buffer	an additional proportion of empty space added to the right and left of the barcode, to avoid having the maximum and minimum on the frame of the plot.
log	if TRUE, use the log scale for the y-axis of the histogram-like part of the barcodes.
outerbox	if TRUE, plot a box around the display.

Details

The barcode plot aids in comparing distributions. It shares some of the characteristics of side-by-side histograms or boxplots, and of rugs or stripplots. We have found it particularly useful with clumped data, when other methods obscure detail.

Note

John Hartigan designed and implemented an early version of the barcode plot. The implementation provided here uses grid graphics, adds some useful options, and is better suited for general distribution. Improvements in September of 2024 were made by contributor Liya Xiang.

Author(s)

John W. Emerson and Walton A. Green and John A. Hartigan

References

Chambers, J. M. and Hastie, T. J. (1992) *Statistical Models in S*. Wadsworth and Brooks/Cole.

See Also

YaleToolkit, gpairs, rug, stripplot

Examples

```
# Simulate some data:
x <- list(Rounded.2=round(rnorm(500, 2, 1),2),
          SmallerLevel=c(rnorm(100), rnorm(100,4,1)),
          LargerBivariateRounded.4=round(c(rnorm(500), rnorm(500,3,1)),4))

barcode(x)
barcode(x, main="Different orientatation", horizontal=FALSE)

data(NewHavenResidential)
barcode(split(NewHavenResidential$dep, NewHavenResidential$zone),
        xlab="Percent Depreciation",
        main=paste("New Haven Residential Depreciation by Residential Zone",
             "RS = Single Family, RM = Mixed Residential", sep = "\n"))
```

NewHavenResidential *New Haven, CT Residential Property Data*

Description

Selected characteristics of a set of small residential properties in New Haven, CT (excluding larger multi-family properties and apartment buildings).

Usage

```
data(NewHavenResidential)
```

Format

A data frame with 18221 observations on the following 8 variables.

`totalCurrVal` the 2006 assessed value of the property

`livingArea` the living area in square feet

`dep` the amount of depreciation, as a percent

`size` the size of the land, in acres

`zone` the residential zone, a factor with levels `Other` `RM` `RS`

`acType` whether the property has central air conditioning: a factor with levels `AC` `No AC`

`bedrms` the number of bedrooms

`bathrms` the number of bathrooms

Details

The data have been cleaned somewhat, with emphasis on somewhat. For example,there is a property (a very nice one), which has an extremely low assessed value, given its characteristics. It happens to straddle the border between New Haven and Hamden, and so it pays only a proportion of it's property taxes to the City of New Haven.

Source

John W. Emerson, from the City of New Haven's property database, which contains more than 27,000 property records (including, for example, the New Haven Airport) and many more variables than included here.

Examples

```
# This example is excluded from running automatically in the checks
# because it takes a little while to produce.

## Not run:
  data(NewHavenResidential)
  gpairs(NewHavenResidential)

## End(Not run)
```

Index