R documentation

of 'colorbar.Rd'

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colorbar *Add Colorbars to Plots*

Description

This function adds a colorbar to a plot.

Usage

```
colorbar(x, y = NULL, col = palette(), labels = TRUE,
         tick = !any(is.na(c(minlabel, maxlabel))) ||
         !is.logical(labels),
         horiz = "auto", minlabel = NA, maxlabel = NA,
         nticks = 2, tickat = NULL, margin = rep(0.03, 4),
         longside = -0.6, shortside = -0.05,
         axisloc = c("in", "out"), reverse = "auto",
         xjust = 0.5, yjust = 0.5, labeljust = TRUE,
         noaxissize = FALSE, totalsize = FALSE, ...)
```

Arguments

x	The x coordinate(s) or other location specifier used to position the colorbar. See 'Details'.
y	The y coordinate(s) used to position the colorbar.
col	The colors used in the colorbar
labels	A vector of labels to draw. See *tickat* for help on setting the location of the labels (each marked with a tick). Can also be FALSE for no labels or TRUE for automatic labels and locations when *minlabel* and *maxlabel* are specified. Mathematical annotation is supported, see plotmath.
tick	A logical flag. If TRUE, draw ticks (and labels). If FALSE, just the colorbar is drawn with no extras.
horiz	A logical flag or "auto" indicating if the colorbar will be drawn horizontally (TRUE) or vertically (FALSE). If "auto", the orientation will be determined automatically in some situations, i.e. when x is "top" or "bottom" (horizontal orientation is assumed) or when two (x, y) points are given (the direction with the longer distance between the points determines the orientation).

`minlabel` A `numeric` value giving the label corresponding to the first color. If `NA`, manual *labels* are used if available.

`maxlabel` A `numeric` value giving the label corresponding to the last color.

`nticks` The desired number of ticks and labels. Used when a linear number range is indicated by giving values for *minlabel* and *maxlabel* or when only ticks and no labels are used. In the first case, the number will not necessarily match the actual number of ticks and labels that are drawn.

`tickat` A vector giving the tick locations on the annotation axis. Values between `i - 0.5` and `i + 0.5` cover the i:th color. When *minlabel* and *maxlabel* are specified, automatic tick locations are used instead, guided by *nticks*.

`margin` A `numeric` vector of length 4 giving the margins on the bottom, left, top, right sides (in this order). The numbers are proportions of the size of the plot. Used when *x* is a `character` string. If the colorbar is placed in a corner, two of the margin values are used. When *x* is `"standalone"`, all four values are used. Otherwise, only one margin is relevant.

`longside` The size of the "long" side of the colorbar. Given either as a proportion of the relevant dimension of the plotting region (absolute value of a negative value) or as inches (positive value). Long side means the side along which the colors change. Ignored if two (x, y) coordinates are supplied.

`shortside` The size of the "short" side of the colorbar. See *longside*. Ignored if two (x, y) coordinates are supplied. See argument *totalsize*.

`axisloc` Location of annotation axis relative to colorbar. Either `"in"` (closer to the center of the plotting region) or `"out"` (closer to the border). When a horizontal / vertical colorbar is drawn in the middle / center, `"out"` means the bottom / right side of the colorbar.

`reverse` A `logical` flag. If `TRUE`, the drawing order of the colors is reversed (right to left or up to down).

`xjust` A `numeric` value indicating the horizontal justification of the colorbar when its position is given with a single (x, y) coordinate. A value of 0 means left justified, 0.5 is centered and 1 right justified.

`yjust` A `numeric` value indicating the vertical justification. 0 means bottom justified, 0.5 is centered and 1 top justified.

`labeljust` A `logical` flag. If `TRUE`, some adjustments are made so that the labels are justified next to the colorbar.

`noaxissize` A `logical` flag. If `TRUE`, the size of the axis is not taken into account when positioning the colorbar. When two (x, y) coordinates are given, `TRUE` means that the colorbar itself fills the whole space, and `FALSE` means that the annotation axis and its labels (if drawn) consume some of the space.

`totalsize` A `logical` flag. If `TRUE`, *shortside* must be large enough to accommodate the possible annotation axis and labels. If `FALSE` (the default), the axis consumes space additional to *shortside*.

`...` Arguments passed to `axis`

Details

The values of *x* and *y* are interpreted using `xy.coords`. This allows giving one coordinate point, two points (the corners of the colorbar) and a number of other possibilities. For example, *x* can be a call to `locator`. Alternatively, *x* can be one of the preset locations `"bottomright"`, `"bottom"`,

"bottomleft", "left", "topleft", "top", "topright", "right", "center". When *x* is given the special value "standalone", a standalone colorbar occupies the whole device except *margin*.

Additional arguments can be given to axis. For example, *las* controls the orientation of axis labels and *cex.axis* adjusts text size.

Value

An invisible named numeric vector containing the approximate coordinates defining the bounding box of the colorbar and its axis, with components (in this order)

xleft	x coordinate, left side
ybottom	y coordinate, bottom side
xright	x coordinate, right side
ytop	y coordinate, top side

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See Also

par for how to specify colors

Examples

```
pal <- cm.colors(128)
agricol <- round(swiss$Agriculture / 100 * 127 + 1)
plot(swiss$Education, swiss$Fertility, bg = pal[agricol], pch=21, cex=2,
     xlab = "Education", ylab = "Fertility")
coord <- colorbar("right", col = pal, minlabel = 0, maxlabel = 100,
                  nticks=6, las=1, axisloc="out", cex.axis=0.75, xjust=0)
text(coord[1] - 2, mean(coord[c(2, 4)]), "Agriculture",
     srt = 90, adj=c(0.5,0))
```

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