

Package ‘barplot3d’

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Type Package

Title Create 3D Barplots

Version 1.0.1

Description Creates 3D barplots. Includes a function for sequence context plots used in DNA sequencing analysis.

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Encoding UTF-8

LazyData true

Imports rgl

RoxygenNote 6.1.1

Suggests knitr, rmarkdown

VignetteBuilder knitr

NeedsCompilation no

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bar3d *Adds a single 3D bar to the current scene*

Description

Adds a single 3D bar to the current scene

Usage

```
bar3d(x = c(0, 1), y = c(0, 1), z, alpha = 1, topcol = "#078E53",
      sidecol = "#aaaaaa", linecol = "#000000")
```

Arguments

x	The x dimensions of the bar, a vector of length 2 e.g. c(0,1).
y	The y dimensions of the bar, a vector of length 2 e.g. c(0,1).
z	The height of the bar, a single number, e.g 3.
alpha	The alpha channel (transparency) of the sides of the bar. Range 0-1.
topcol	The color of the top of the bar. Text description or hexadecimal RGB color, like that returned by rgb() e.g. "red" or "#078E53"
sidecol	The color of the sides of the bar. Text description or a hexadecimal RGB color, like that returned by rgb() e.g. "gray" or "#aaaaaa"
linecol	The color of the edges of the bar. Text description or be a hexadecimal RGB color, like that returned by rgb() e.g. "black" or "#000000"

Value

Nothing is returned (invisibly returns NULL).

Examples

```
bar3d(c(0,1),c(0,1),3,alpha=0.6,topcol="#078E53",sidecol="#aaaaaa",linecol="#000000")
```

barplot3d *Adds a 3D bar plot to the current RGL scene*

Description

Adds a 3D bar plot to the current RGL scene

Usage

```
barplot3d(rows, cols, x, y, z, alpha = 1, scalexy = 1, gap = 0.2,
  topcolors = c("#000000"), sidecolors = c("#aaaaaa"),
  linecolors = c("#000000"), theta = 50, phi = 40,
  gridlines = TRUE, xlabels = FALSE, ylabels = FALSE,
  zlabels = TRUE, xsub = FALSE, ysub = FALSE, zsub = FALSE)
```

Arguments

rows	How many rows the plotting area should have, an integer, e.g. 5.
cols	How many columns the plotting area should have, an integer, e.g. 5.
x	The x dimensions of each 3D bar, a vector of length 2 e.g. c(0,1).
y	The y dimensions of each 3D bar, a vector of length 2 e.g. c(0,1).
z	The height of each 3D bar, a numeric vector, e.g c(2,3,5,2,9).
alpha	The alpha channel (transparency) of the sides of 3D bars. Range 0-1.
scalexy	Scaling factor for x and y coordinates; this constant can be used to make the plot "skinnier" or "fatter".
gap	Gap between 3D bars (recommended values are 0 or 0.2).
topcolors	The color of the top of each 3D bar. Numeric vector of hexadecimal RGB colors, like those returned by rgb() e.g. "#078E53".
sidecolors	The color of the top of the bar. Should be a hexadecimal RGB color, like that returned by rgb() e.g. "#aaaaaa".
linecolors	The color of the edges of the bar. Should be a hexadecimal RGB color, like that returned by rgb() e.g. "#aaaaaa".
theta	Polar coordinate for viewing the 3D barplot; range 0 to 360 (rotates the plot).
phi	Polar coordinate for viewing the 3D barplot; range -90 to 90 (-90 is directly below, 90 directly above).
gridlines	Draw gridlines on the plot (TRUE or FALSE).
xlabels	Labels for the x axis (must be a vector of names the same length as "cols" parameter).
ylabels	Labels for the y axis (must be a vector of names the same length as "rows" parameter).
zlabels	Labels for the z axis; add numeric scale to the vertical dimension of the plot (TRUE or FALSE).
xsub	Descriptive label for the x axis.
ysub	Descriptive label for the y axis.
zsub	Descriptive label for the z axis.

Value

Nothing is returned (invisibly returns NULL).

Examples

```
barplot3d(rows=3,cols=5,z=1:12,topcolors=rainbow(12),alpha=0.7,scalexy=10,
xlabels=c("One","Two","Three","Four","Five"),ylabels=LETTERS[1:3])
```

legoplot3d

A wrapper function to create a sequence context "legoplot"

Description

A wrapper function to create a sequence context "legoplot"

Usage

```
legoplot3d(contextdata, alpha = 1, scalexy = 1, gap = 0.2,
  sixcolors = "broad", theta = 50, phi = 40, gridlines = TRUE,
  labels = FALSE, zlabels = TRUE, zsub = FALSE)
```

Arguments

contextdata	A numeric vector of counts or frequencies of the 96 possible somatic mutations and trinucleotide contexts. These MUST be in the same order as in the example (see example and/or vignette).
alpha	The alpha channel (transparency) of the sides of 3D bars. Range 0-1.
scalexy	Scaling factor for x and y coordinates; this constant can be used to make the plot "skinnier" or "fatter".
gap	Gap between 3D bars.
sixcolors	The color scheme. "broad" for Broad Institute colors, "sanger" for Sanger Institute colors or a vector of six hexadecimal RGB colors.
theta	Polar coordinate for viewing the 3D barplot; range 0 to 360 (rotates the plot).
phi	Polar coordinate for viewing the 3D barplot; range -90 to 90 (-90 is directly below, 90 directly above).
gridlines	Draw gridlines on the plot (TRUE or FALSE).
labels	Include the default axis labels (TRUE or FALSE).
zlabels	Labels for the z axis; add numeric scale to the vertical dimension of the plot (TRUE or FALSE).
zsub	Descriptive label for the z axis.

Value

Nothing is returned (invisibly returns NULL).

Examples

```
# Read in COSMIC signature probabilities
x=system.file("extdata", "signature_probabilities.txt", package = "barplot3d")
sigdata=read.table(x,header=TRUE,stringsAsFactors = FALSE)
# Plot signature 2 with Sanger colors and some transparency so we can see all bars
legoplot3d(contextdata=sigdata$Signature_2,labels=TRUE,scalexy=0.05,sixcolors="sanger",
alpha=0.4,zsub="Probability")
```

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