Package 'qqvases'

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Type Package

Title Animated Normal Quantile-Quantile Plots

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Description Presents an explanatory animation of normal quantile-quantile plots based on a water-filling analogy. The animation presents a normal QQ plot as the parametric plot of the water levels in vases defined by two distributions. The distributions decorate the axes in the normal QQ plot and are optionally shown as vases adjacent to the plot. The package draws QQ plots for several distributions, either as samples or continuous functions.

Imports shiny,shinythemes,stats,graphics

Suggests MASS

License GPL-2

RoxygenNote 5.0.1.9000

NeedsCompilation no

Repository CRAN

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R topics documented:

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make_df_list   *Make a named list of distribution functions*

Description

Constructs the default nested list of distribution functions used to animated normal QQ plots. By default, the list contains Normal Student t_3 Student t_6 Gamma(3) Beta(0.6,0.6) Exotic Each member of the list has 3 named elements [d = density function (eg, dnorm) q = quantile function (eg, qnorm) r = random generator (eg, rnorm)] Each of these functions must take a single argument; others must be bound externally. For examples, see the function make.normal.dist or make.t.dist.

Usage

```
make_df_list()
```

Value

Named list of (density, quantile, generator) triples for distributions

Examples

```
make_df_list()
```

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qqvases   *qqvases: A package for illustrating the construction of QQ plots.*

Description

This package displays an animation of a normal QQ plot. The animation links points in the plot to 'water levels' in vases whose shape is defined by probability distributions. Probability distributions placed along the plot axes gradually fill (become shaded) as a slider locates larger quantiles of the probability distributions. The reference distribution along the x-axis is the normal distribution. See the function qq_vase_plot for further information.

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qq_plot   *Interactive QQ Plot*

Description

This function uses Shiny to open the default web browser. Graphical controls manipulate the construction of an interactive normal QQ plot.

Usage

```
qq_plot(data, step = 0.05, breaks = "FD")
```

Arguments

data	Numerical data vector.
step	Stepsize used for Shiny slider (use larger values if animating with play button)
breaks	Passed to histogram for empirical distribution (default = "FD")

Value

None

Examples

```
## Not run:
qq_plot(rnorm(50))

qq_plot(rnorm(50), step=0.05, breaks="Sturges")

if(require("MASS", quietly=TRUE)){ qq_plot(geyser$waiting) }

## End(Not run)
```

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qq_vase_plot   *Interactive QQ Vase Plot*

Description

This function displays animated normal quantile-quantile plots. The software uses Shiny to open a window in the default installed web browser. Graphical controls in that window manipulate the construction of normal quantile plots. The display shows QQ plots for comparing either population distributions or samples of a chosen size. When samples are shown, the plot includes approximate 95

Usage

```
qq_vase_plot(draw.samples = TRUE, dists = make_df_list(), step = 0.05,
  breaks = "FD")
```

Arguments

draw.samples	Set to true to allow optional samples from distributions
dists	Named list of (d=density, q=quantile, r=sample) distributions (see make_df_list())
step	Stepsize used for animated slider (use larger values if animating with play button)
breaks	Passed to R histogram program to control number of bins in empirical distribution

Value

None

Examples

```
## Not run:
# default
qq_vase_plot()

# suppress sampling option
qq_vase_plot(FALSE)

# add uniform distribution to dialog
dists <- make_df_list()
dists[["uniform"]] <- list(d=dunif, q=qunif, r=runif)
qq_vase_plot(TRUE, dists)

# smaller increments, change the method that determines breaks in histogram
qq_vase_plot(TRUE, step=0.01, breaks=function(x) 2*sqrt(length(x)))

## End(Not run)
```

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side_by_side_slider *Side-by-side Slider*

Description

Opens the default web browser with a display of two continuous distributions shown side-by-side and reflected to suggest a closed container. Interactive options control the display of water levels and the choice of the shapes of the underlying distributions.

Usage

```
side_by_side_slider(name, dists = make_df_list())
```

Arguments

name	Name of distribution to contrast with normal
dists	Named list of (d=density, q=quantile, r=sample) distributions (see make_df_list())

Value

None

Examples

```
## Not run:
side_by_side_slider("Gamma")

dists <- make_df_list()
dists[["uniform"]] <- list(d=dunif, q=qunif, r=runif);
side_by_side_slider("uniform", dists)

## End(Not run)
```

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