Package 'VisCount'

October 13, 2014

Type Package

Title R package for training and evaluating visual count estimates

Version 1.1

Date 2014-10-13

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Description VisCount allows you to train rapid visual estimates of the number of individuals (symbols) in the plotting window, enter your estimates, and get a series of insightful statistics on your performance and how it evolves along different training sessions. It can also be a practical and economical tool for the training and calibration of field teams collecting information on the sizes of flocks or populations.

License GPL-3

R topics documented:

VisCount-package *R package for training and evaluating visual count estimates*

Description

The VisCount package allows you to train rapid visual estimates of the number of individuals (symbols) in the plotting window, enter your estimates, and get a series of insightful statistics on your performance and how it evolves along different training sessions. It can also be a practical and economical tool for the training and calibration of field teams collecting information on the sizes of flocks or populations.

Details

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Version:	1.1
Date:	2014-10-13
License:	GPL-3

Author(s)

A. Marcia Barbosa Maintainer: A. Marcia Barbosa <barbosa@uevora.pt>

References

Barbosa A.M. (submitted) VisCount: a free software tool to train and evaluate visual count estimates.

Examples

```
# load previous VisCount results
# (if you've used VisCount before on this computer):

getSavedResults()


# practise VisCount and enter your estimates as prompted:

VisCount()  # repeat until bored


# practise also with different shapes, sizes, colours and backgrounds:

VisCount(shape = "^", bg = "white")
VisCount(shape = "~", size = 1.3)
```

```
VisCount(shape = "x", size = 2, col = "brown")
VisCount(shape = "Y", bg = "wheat")


# practise with different number limits
# (you can combine with any of the arguments above):

VisCount(Nmax = 500, Nmin = 100)


# you can also use animal and/or background pictures in PNG format
# (you need to have the png R package installed for this);
# here are some examples with downloaded public domain images:

download.file(url = "http://viscount.r-forge.r-project.org/flamingo_flying.png", destfile = "flamingo_flying.png")
download.file(url = "http://viscount.r-forge.r-project.org/clouds.png", destfile = "clouds.png")
VisCount(shape = "flamingo_flying.png", size = 0.1, bg = "lightblue")
VisCount(shape = "flamingo_flying.png", size = 0.1, bg = "clouds.png")

download.file(url = "http://viscount.r-forge.r-project.org/gull_standing.png", destfile = "gull_standing.png")
download.file(url = "http://viscount.r-forge.r-project.org/water.png", destfile = "water.png")
VisCount(shape = "gull_standing.png", size = 0.1, bg = "grey")
VisCount(shape = "gull_standing.png", size = 0.1, bg = "water.png")


# if your last estimate was a mistake, remove it from record:

removeTypo()


# check out your performance statistics:

VisCountStats()


# remove particular trials (e.g. 3 and 7) from records and stats:

removeTypo(c(3, 7))


# check performance stats for particular sessions:

VisCountStats(c(1, 3:7))


# before quitting R, save results on disk for future use:

saveResults()
```

---

getSavedResults *Get previously saved VisCount estimates*

Description

This function imports the VisCountSessions table saved in a previous R session to the current workspace.

Usage

```
getSavedResults(path = "VisCountSessions.csv")
```

Arguments

path	complete folder path to the .csv file containing your VisCountSessions data. The default is 'VisCountSessions.csv' in your current working directory. You will only have this file if you have previously used VisCount(), provided some estimates and used the saveResults function to save your results to disk before quitting R.

Value

The function returns a message informing either that the .csv file was not available, or that it was correctly loaded in the workspace.

Author(s)

A. Marcia Barbosa

See Also

saveResults

Examples

```
getSavedResults()
getSavedResults(path = "/user/joey/myVisCount/VisCountSessions.csv")
```

---

removeTypo *Remove mistaken estimate(s) from record*

Description

This function removes one or more records that may have originated from mistyped estimates in the VisCountSessions data.

Usage

```
removeTypo(trial = max(VisCountSessions$Trial))
```

Arguments

trial	Trial(s) of VisCountSessions to remove from record. The default (if no trial is specified) is the last one.

Value

This function invisibly returns the new VisCountSessions table after removal of the specified trial(s).

Author(s)

A. Marcia Barbosa

Examples

```
removeTypo()
removeTypo(3)
removeTypo(3:5)
removeTypo(c(3,5))
```

---

saveResults *Save VisCountSessions results to disk*

Description

This function saves the VisCountSessions table as a .csv file on disk, either in the working directory (the default) or in a specified folder path.

Usage

```
saveResults(path = "VisCountSessions.csv")
```

Arguments

path	folder path to the location and file name where you want the data to be recorded. The default is '"VisCountSessions.csv' in the working directory.

Author(s)

A. Marcia Barbosa

See Also

getSavedResults

Examples

```
saveResults()
saveResults("/user/joey/myVisCount/VisCountSessions.csv")
```

VisCount *Train visual count estimates*

Description

This functions plots a random number of symbols (within user-defined limits) at random positions in the plotting window, asks you to type in your estimate, and then shows you exactly how many symbols there were and the extent of your estimate error. It also stores these data in a VisCountSessions table which you can retrieve later and which can be used by the VisCountStats function to provide performance statistics.

Usage

```
VisCount(Nmax = 100, Nmin = 5, shape = 20, size = 1, col = "black", bg = "lightblue")
```

Arguments

Nmax	maximum number of symbols to plot
Nmin	minimum number of symbols to plot
shape	plotting items to use. Can be one of the plotting symbols available in R (see 'pch' values in points), such as the default 20 for a black dot, or the complete folder path (in quotes and including file name and extension) to a .png image, preferably with transparent background (see examples).
size	size for the plotting symbols (see 'cex' in points)
col	colour for the plotting symbols (see 'col' in points). The default is "black". Ignored if 'shape' is a .png image.
bg	colour for the plot background (see 'bg' in par). The default is "lightblue".

Author(s)

A. Marcia Barbosa

Examples

```
# VisCount()
# VisCount(shape = "^")
# VisCount(shape = "~", size = 1.3)
# VisCount(shape = "x", size = 1, col = "pink")
# VisCount(shape = "#", Nmax = 500, Nmin = 100)
```

VisCountStats *VisCount statistics on user performance*

Description

This function provides the user with several statistics on their count estimate performance over different trials and training sessions.

Usage

```
VisCountStats(sessions = unique(VisCountSessions$Session),
VCSessions = VisCountSessions, plot = TRUE)
```

Arguments

sessions	numeric integer vector specifying the training sessions to calculate performace statistics for. The default is all the sessions recorded in the VisCountSessions results table.
VCSessions	name of the table containing the VisCountSessions results. VisCountSessions is the default.
plot	logical, whether to provide the graphical results as well. Deafaults to TRUE.

Value

If there are no VisCountSessions results available, the function returns a message telling you so. If there are, it returns a list with the following components:

TrialStats	a data frame showing data and user performance over the VisCount trials included in the specified sessions.
SessionStats	a data frame summarizing user performance in each of specified sessions.
OverallAccuracy	a numerical value of the overall user performance, measured by the coefficient of determination (R-squared) of the equality line (where estimates = true numbers; Poole 1974, Romdal et al. 2005).

If plot = TRUE, the function also produces a set of 4 plots depicting these statistics.

Author(s)

A. Marcia Barbosa

References

Poole R.W. (1974) An Introduction to Quantitative Ecology. McGraw-Hill, NY.

Romdal T.S., Colwell R.K. & Rahbek C. (2005) The influence of band sum area, domain extent, and range sizes on the latitudinal mid-domain effect. Ecology 86:235-244.

Examples

```
VisCountStats()
VisCountStats(1:3)
```

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