Package 'StepRegShiny'

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Version 1.6.1

Title Graphical User Interface for 'StepReg'

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Description A web-based 'shiny' interface for the 'StepReg' package enables stepwise regression analysis across linear, generalized linear (including logistic, Poisson, Gamma, and negative binomial), and Cox models. It supports forward, backward, bidirectional, and best-subset selection under a range of criteria. The package also supports stepwise regression to multivariate settings, allowing multiple dependent variables to be modeled simultaneously. Users can explore and combine multiple selection strategies and criteria to optimize model selection. For enhanced robustness, the package offers optional randomized forward selection to reduce overfitting, and a data-splitting workflow for more reliable post-selection inference. Additional features include logging and visualization of the selection process, as well as the ability to export results in common formats.

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BugReports <https://github.com/JunhuiLi1017/StepRegShiny/issues>

VignetteBuilder knitr

Suggests knitr, testthat, BiocStyle, survival

Imports StepReg, shiny, DT, shinythemes, shinycssloaders, dplyr, ggplot2, stringr, flextable, cowplot, ggcorrplot, tidyr, summarytools, rmarkdown

Encoding UTF-8

RoxygenNote 7.3.2

NeedsCompilation no

Repository CRAN

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Contents

StepRegShiny-package   *StepRegShiny: shiny Application for StepReg Package*

Description

A shiny application package that provides an interactive web interface for the StepReg package. This package contains the Shiny application components that were previously part of the main StepReg package, allowing for better separation of concerns and independent development of the web interface.

Details

The StepRegShiny package provides a comprehensive web-based interface for performing stepwise regression analysis. It includes:

- Interactive data upload and preparation tools
- Support for multiple regression types (linear, logistic, Cox, Poisson, Gamma, negative binomial)
- Multiple stepwise selection strategies (forward, backward, bidirectional, subset)
- Comprehensive visualization tools
- Report generation capabilities
- Model performance evaluation across different strategies and metrics

The package is designed to work seamlessly with the StepReg package, providing an intuitive graphical interface for users who prefer web-based analysis tools.

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See Also

Useful links:

- <https://github.com/JunhuiLi1017/StepReg>
- <https://CRAN.R-project.org/package=StepReg>
- Report bugs at <https://github.com/JunhuiLi1017/StepReg/issues>

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createPlot	*Create Plot Function*

Description

Creates various types of plots for data visualization in the StepReg Shiny application.

Usage

```
createPlot(plot_type_value, var_plot_value, data_value)
```

Arguments

plot_type_value

> Character string specifying the type of plot to create. Options include: "Bar plot", "Box plot", "Correlation plot", "Density plot", "Dot plot", "Histogram", "QQ plot", "Scatter and Line plot".

var_plot_value   Character vector of variable names to plot.

data_value   Data frame containing the data to plot.

Value

A list of ggplot objects or a single ggplot object depending on the plot type.

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server   *Server function for StepReg Shiny Application*

Description

Defines the server logic for the StepReg Shiny application. This function handles data processing, stepwise regression analysis, and result visualization.

Usage

```
server(input, output, session)
```

Arguments

input	Shiny input object
output	Shiny output object
session	Shiny session object

StepRegGUI   *Launch StepReg GUI*

Description

Launches an interactive Shiny application for performing stepwise regression analysis. The application provides a user-friendly interface for data analysis, model selection, and visualization of results.

Usage

```
StepRegGUI()
```

Details

The application consists of two main steps:

Step 1: Data Preparation

- Upload custom datasets or select from built-in examples
- Configure data import settings (headers, separators, quotes)
- View and modify variable types (numeric, factor, integer, character)
- Generate exploratory data visualizations

Step 2: Model Analysis

- Select regression type:

- **–** Linear regression
- **–** Logistic regression
- **–** Cox proportional hazards
- **–** Poisson regression
- **–** Gamma regression
- **–** Negative binomial regression
- Choose dependent and independent variables
- Specify stepwise selection strategy:
  - **–** Forward selection
  - **–** Backward elimination
  - **–** Bidirectional elimination
  - **–** Best subset selection
- Set model selection criteria (AIC, BIC, etc.)
- Configure significance levels for variable entry/removal
- Generate comprehensive reports and visualizations

Value

Launches the Shiny application in the user's default web browser.

See Also

[stepwise](#) for the core stepwise regression function

[report](#) for generating analysis reports

[plot.StepReg](#) for visualization functions

Examples

```
if(interactive()){
  StepRegGUI()
}
```

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ui   *UI function for StepReg Shiny Application*

Description

Creates the user interface for the StepReg Shiny application. This function defines the complete UI
structure including data upload, stepwise regression configuration, and results visualization.

Usage

```
ui()
```

Value

A Shiny UI object

Index