Package ‘grapesAgril’

October 13, 2022

Type Package
Title Collection of Shiny Apps for Agricultural Research Data Analysis
Version 1.1.0
Description Allows user to have graphical user interface to perform analysis of Agricultural experimental data. On using the functions in this package a Interactive User Interface will pop up. Apps Works by simple upload of files in CSV format.
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URL https://github.com/pratheesh3780/grapesAgril
https://CRAN.R-project.org/package=grapesAgril
https://www.kaugrapes.com/
BugReports https://github.com/pratheesh3780/grapesAgril/issues
Imports shiny(>= 1.6.0), shinyWidgets(>= 0.6.0), rmarkdown(>= 2.7), knitr(>= 1.31), kableExtra(>= 1.3.4), magrittr(>= 2.0.1), summarytools(>= 0.9.9), dplyr(>= 1.0.4), pastecs(>= 1.3.21), ggpubr(>= 0.4.0), Hmisc(>= 4.5.0), corrplot(>= 0.84), ggplot2(>= 3.3.3), reshape2(>= 1.4.4), gridGraphics(>= 0.5.1), RColorBrewer(>= 1.1.2), desplot(>= 1.8), agricolae(>= 1.3.5), PairedData(>= 1.1.1), gtools(>= 3.9.2), Rdpack(>= 2.1.2)
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**Description**

corrApp() function opens up an interactive shiny app which will allow the user to easily calculate Simple correlation, Correlation Matrix and obtain plots like correlogram and scatterplot by uploading CSV file.

**Usage**

corrApp()

**Details**

This app uses cor.test to calculate correlation. Correlation matrix is calculated using rcorr function in Hmisc package. Correlogram is obtained using corrplot function in corrplot package.

**Value**

Nothing

**References**


Examples

```r
if (interactive()) {
  corrApp()
}
```

crdApp  

### Description

crdApp() function opens up an interactive shiny app which will allow the user to perform analysis of completely randomized design with equal or unequal replications. Multiple comparison tests like LSD, DMRT and Tukey can be performed. Box-pot and Bar-chart with confidence interval can be plotted. All these can be achieved by uploading CSV file.

### Usage

```r
crdApp()
```

### Details

This app uses `anova` function of stats package to obtain one-way ANOVA. `LSD.test`, `duncan.test` and `HSD.test` functions of agricolae package is used for multiple comparison test like LSD, DMRT and Tukey respectively. `ggboxplot` function of ggpubr package is used for boxplot. `ggplot` function of ggplot2 is used for barchart with confidence interval.

### Value

Nothing

### References

Kassambara A (2020). \textit{ggpubr: 'ggplot2' Based Publication Ready Plots}. R package version 0.4.0, \url{https://CRAN.R-project.org/package=ggpubr}.


Harrell Jr FE, with contributions from Charles Dupont, others. m (2021). \textit{Hmisc: Harrell Miscellaneous}. R package version 4.5-0, \url{https://CRAN.R-project.org/package=Hmisc}.


\begin{verbatim}
Examples
if (interactive()) {
  crdApp()
}
\end{verbatim}

\begin{verbatim}
descApp
\end{verbatim}

\textbf{Description}

descApp() function opens up an interactive shiny app which will allow the user to easily calculate Summary Statistics, Summary Statistics by Group, Box plot, Histogram, Q-Q plot and Shapiro-Wilk's test by uploading CSV file.

\textbf{Usage}

descApp()
Details

This app uses descr and stby functions of summarytools package (Dominic Comtois, 2021) to calculate summary statistics and summary statistics by group. knitr (Yihui Xie, 2021) and kableExtra (Hao Zhu, 2021) packages were used to produce HTML tables. shapiro.test, qnorm and qqline functions of stats package were used for Test of Homogeneity of variance and obtaining Q-Q plot. hist and boxplot of package graphics were used to obtain histogram and boxplot respectively. ggqplot of package ggpubr (Alboukadel Kassambara, 2020) is also used to plot Q-Q plot in the app.

Value

Nothing

References


Examples

```r
if (interactive()) {
  descApp()
}
```

**Description**

layoutApp() function opens up an interactive shiny app which will allow the user to create field layout of Completely Randomized Design (CRD), Randomized Complete Block Design (RCBD), Split-plot design, Strip-plot design and Augmented Randomized complete block design. Layout generated are random. Field layout in table format can also be prepared for recording observations from the field. Results can be downloaded in HTML format.

**Usage**

```r
layoutApp()
```

**Details**

This app uses design.crd, design.rcbd, design.dau, design.strip, design.split functions of package agricolae to generate random layout of designs. Field layout were plotted using desplot function in desplot package.

**Value**

Nothing

**References**


rbdApp


Examples

```r
if (interactive()) {
  layoutApp()
}
```

---

### Description

rbdApp() function opens up an interactive shiny app which will allow the user to perform analysis of randomized Block design. Multiple comparison tests like LSD, DMRT and Tukey can be performed. Boxplot and Bar-chart with confidence interval can be plotted. All these can be achieved by uploading CSV file.

### Usage

```r
rbdApp()
```

### Details

This app uses `anova` function of `stats` package to obtain two-way ANOVA. `LSD.test`, `duncan.test` and `HSD.test` functions of `agricolae` package is used for multiple comparison test like LSD, DMRT and Tukey respectively. `ggboxplot` function of `ggpubr` package is used for boxplot. `ggplot` function of `ggplot2` is used for barchart with confidence interval.

### Value

Nothing
References


Examples

```r
if (interactive()) {
  rbdApp()
}
```

ttApp

<table>
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<tr>
<th>t-test and Paired t-test</th>
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Description

`ttApp()` function opens up an interactive shiny app which will allow user to easily perform one sample t-test, unpaired two sample t-test, unpaired two sample Welch t-test, paired t-test, test for homogeneity of variance (F-test), and obtain plots like boxplot and paired plot by uploading CSV file.
Usage

ttApp()

Details

This app uses `t.test` function to calculate t statistic. Descriptive statistics were calculated using `stat.desc` function of `pastecs` package. `var.test` function is used for F-test. `ggboxplot` function of `ggpubr` package is used to draw boxplot. Paired plot is obtained using `paired` function of package `PairedData`.

Value

Nothing

References


Examples

```r
if (interactive()) {
  ttApp()
}
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