

Package ‘radiant.basics’

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Type Package

Title Basics Menu for Radiant: Business Analytics using R and Shiny

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Description The Radiant Basics menu includes interfaces for probability calculation, central limit theorem simulation, comparing means and proportions, goodness-of-fit testing, cross-tabs, and correlation. The application extends the functionality in radiant.data.

Depends R (>= 3.3.0),
radiant.data (>= 0.8.7.3)

Imports ggplot2 (>= 2.1.0),
gridExtra (>= 2.0.0),
scales (>= 0.4.0),
dplyr (>= 0.7.2),
tidyr (>= 0.7),
magrittr (>= 1.5),
shiny (>= 1.0.5),
psych (>= 1.6.6),
import (>= 1.1.0),
methods

Suggests testthat (>= 1.0.0)

URL <https://github.com/radiant-rstats/radiant.basics>, <https://radiant-rstats.github.io/docs>

BugReports <https://github.com/radiant-rstats/radiant.basics/issues>

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| | |
|---------------|--|
| compare_means | <i>Compare means for two or more variables</i> |
|---------------|--|

Description

Compare means for two or more variables

Usage

```
compare_means(dataset, var1, var2, samples = "independent",
  alternative = "two.sided", conf_lev = 0.95, comb = "",
  adjust = "none", test = "t", data_filter = "")
```

Arguments

| | |
|-------------|--|
| dataset | Dataset name (string). This can be a dataframe in the global environment or an element in an <code>r_data</code> list from Radiant |
| var1 | A numeric variable or factor selected for comparison |
| var2 | One or more numeric variables for comparison. If var1 is a factor only one variable can be selected and the mean of this variable is compared across (factor) levels of var1 |
| samples | Are samples independent ("independent") or not ("paired") |
| alternative | The alternative hypothesis ("two.sided", "greater" or "less") |
| conf_lev | Span of the confidence interval |
| comb | Combinations to evaluate |
| adjust | Adjustment for multiple comparisons ("none" or "bonf" for Bonferroni) |
| test | t-test ("t") or Wilcoxon ("wilcox") |
| data_filter | Expression entered in, e.g., Data > View to filter the dataset in Radiant. The expression should be a string (e.g., "price > 10000") |

Details

See https://radiant-rstats.github.io/docs/basics/compare_means.html for an example in Radiant

Value

A list of all variables defined in the function as an object of class `compare_means`

See Also

`summary.compare_means` to summarize results
`plot.compare_means` to plot results

Examples

```
result <- compare_means("diamonds", "cut", "price")
result <- diamonds %>% compare_means("cut", "price")
```

| | |
|---------------|--|
| compare_props | <i>Compare proportions across groups</i> |
|---------------|--|

Description

Compare proportions across groups

Usage

```
compare_props(dataset, var1, var2, lev = "", alternative = "two.sided",  
  conf_lev = 0.95, comb = "", adjust = "none", data_filter = "")
```

Arguments

| | |
|-------------|--|
| dataset | Dataset name (string). This can be a dataframe in the global environment or an element in an <code>r_data</code> list from Radiant |
| var1 | A grouping variable to split the data for comparisons |
| var2 | The variable to calculate proportions for |
| levs | The factor level selected for the proportion comparison |
| alternative | The alternative hypothesis ("two.sided", "greater" or "less") |
| conf_lev | Span of the confidence interval |
| comb | Combinations to evaluate |
| adjust | Adjustment for multiple comparisons ("none" or "bonf" for Bonferroni) |
| data_filter | Expression entered in, e.g., Data > View to filter the dataset in Radiant. The expression should be a string (e.g., "price > 10000") |

Details

See https://radiant-rstats.github.io/docs/basics/compare_props.html for an example in Radiant

Value

A list of all variables defined in the function as an object of class `compare_props`

See Also

[summary.compare_props](#) to summarize results

[plot.compare_props](#) to plot results

Examples

```
result <- compare_props("titanic", "pclass", "survived")  
result <- titanic %>% compare_props("pclass", "survived")
```

| | |
|----------|--------------------------------|
| consider | <i>Car brand consideration</i> |
|----------|--------------------------------|

Description

Car brand consideration

Usage

```
data(consider)
```

Format

A data frame with 1000 rows and 2 variables

Details

Survey data of consumer purchase intentions. Description provided in `attr(consider,"description")`

| | |
|-------------|---|
| correlation | <i>Calculate correlations for two or more variables</i> |
|-------------|---|

Description

Calculate correlations for two or more variables

Usage

```
correlation(dataset, vars = "", method = "pearson", data_filter = "")
```

Arguments

| | |
|-------------|--|
| dataset | Dataset name (string). This can be a dataframe in the global environment or an element in an <code>r_data</code> list from Radiant |
| vars | Variables to include in the analysis. Default is all but character and factor variables with more than two unique values are removed |
| method | Type of correlations to calculate. Options are "pearson", "spearman", and "kendall". "pearson" is the default |
| data_filter | Expression entered in, e.g., <code>Data > View</code> to filter the dataset in Radiant. The expression should be a string (e.g., "price > 10000") |

Details

See <https://radiant-rstats.github.io/docs/basics/correlation.html> for an example in Radiant

Value

A list with all variables defined in the function as an object of class `compare_means`

See Also

[summary.correlation](#) to summarize results

[plot.correlation](#) to plot results

Examples

```
result <- correlation("diamonds", c("price","carat"))
result <- correlation("diamonds", c("price","carat","table"))
result <- correlation("diamonds", "price:carat")
result <- diamonds %>% correlation("price:carat")
```

cross_tabs

Evaluate associations between categorical variables

Description

Evaluate associations between categorical variables

Usage

```
cross_tabs(dataset, var1, var2, tab = NULL, data_filter = "")
```

Arguments

| | |
|-------------|--|
| dataset | Dataset name (string). This can be a dataframe in the global environment or an element in an <code>r_data</code> list from Radiant |
| var1 | A categorical variable |
| var2 | Another categorical variable |
| tab | Table with frequencies as alternative to dataset |
| data_filter | Expression entered in, e.g., Data > View to filter the dataset in Radiant. The expression should be a string (e.g., "price > 10000") |

Details

See https://radiant-rstats.github.io/docs/basics/cross_tabs.html for an example in Radiant

Value

A list of all variables used in `cross_tabs` as an object of class `cross_tabs`

See Also

[summary.cross_tabs](#) to summarize results

[plot.cross_tabs](#) to plot results

Examples

```
result <- cross_tabs("newspaper", "Income", "Newspaper")
result <- newspaper %>% cross_tabs("Income", "Newspaper")
```

| | |
|-----------|-------------------------|
| demand_uk | <i>Demand in the UK</i> |
|-----------|-------------------------|

Description

Demand in the UK

Usage

```
data(demand_uk)
```

Format

A data frame with 1000 rows and 2 variables

Details

Survey data of consumer purchase intentions. Description provided in `attr(demand_uk,"description")`

| | |
|----------|--|
| goodness | <i>Evaluate if sample data for a categorical variable is consistent with a hypothesized distribution</i> |
|----------|--|

Description

Evaluate if sample data for a categorical variable is consistent with a hypothesized distribution

Usage

```
goodness(dataset, var, p = NULL, tab = NULL, data_filter = "")
```

Arguments

| | |
|-------------|---|
| dataset | Dataset name (string). This can be a dataframe in the global environment or an element in an <code>r_data</code> list from Radiant |
| var | A categorical variable |
| p | Hypothesized distribution as a number, fraction, or numeric vector. If unspecified, defaults to an even distribution |
| tab | Table with frequencies as alternative to dataset |
| data_filter | Expression entered in, e.g., <code>Data > View</code> to filter the dataset in Radiant. The expression should be a string (e.g., <code>"price > 10000"</code>) |

Details

See <https://radiant-rstats.github.io/docs/basics/goodness.html> for an example in Radiant

Value

A list of all variables used in `goodness` as an object of class `goodness`

See Also

[summary.goodness](#) to summarize results
[plot.goodness](#) to plot results

Examples

```
result <- goodness("newspaper", "Income")
```

| | |
|-----------|-----------------------------|
| newspaper | <i>Newspaper readership</i> |
|-----------|-----------------------------|

Description

Newspaper readership

Usage

```
data(newspaper)
```

Format

A data frame with 580 rows and 2 variables

Details

Newspaper readership data for 580 consumers. Description provided in attr(newspaper,"description")

| | |
|--------------------|---|
| plot.compare_means | <i>Plot method for the compare_means function</i> |
|--------------------|---|

Description

Plot method for the compare_means function

Usage

```
## S3 method for class 'compare_means'  
plot(x, plots = "scatter", shiny = FALSE,  
      custom = FALSE, ...)
```

Arguments

- | | |
|--------|---|
| x | Return value from compare_means |
| plots | One or more plots ("bar", "density", "box", or "scatter") |
| shiny | Did the function call originate inside a shiny app |
| custom | Logical (TRUE, FALSE) to indicate if ggplot object (or list of ggplot objects) should be returned. This option can be used to customize plots (e.g., add a title, change x and y labels, etc.). See examples and http://docs.ggplot2.org/ for options. |
| ... | further arguments passed to or from other methods |

Details

See https://radiant-rstats.github.io/docs/basics/compare_means.html for an example in Radiant

See Also

[compare_means](#) to calculate results

[summary.compare_means](#) to summarize results

Examples

```
result <- compare_means("diamonds", "cut", "price")
plot(result, plots = c("bar", "density"))
```

| | |
|--------------------|---|
| plot.compare_props | <i>Plot method for the compare_props function</i> |
|--------------------|---|

Description

Plot method for the compare_props function

Usage

```
## S3 method for class 'compare_props'
plot(x, plots = "bar", shiny = FALSE,
     custom = FALSE, ...)
```

Arguments

| | |
|--------|---|
| x | Return value from compare_props |
| plots | One or more plots of proportions ("bar" or "dodge") |
| shiny | Did the function call originate inside a shiny app |
| custom | Logical (TRUE, FALSE) to indicate if ggplot object (or list of ggplot objects) should be returned. This option can be used to customize plots (e.g., add a title, change x and y labels, etc.). See examples and http://docs.ggplot2.org/ for options. |
| ... | further arguments passed to or from other methods |

Details

See https://radiant-rstats.github.io/docs/basics/compare_props.html for an example in Radiant

See Also

[compare_props](#) to calculate results

[summary.compare_props](#) to summarize results

Examples

```
result <- compare_props("titanic", "pclass", "survived")
plot(result, plots = c("bar", "dodge"))
```

| | |
|------------------|---|
| plot.correlation | <i>Plot method for the correlation function</i> |
|------------------|---|

Description

Plot method for the correlation function

Usage

```
## S3 method for class 'correlation'
plot(x, n = 1000, jit = 0.3, ...)
```

Arguments

| | |
|-----|---|
| x | Return value from correlation |
| n | Number of datapoints to use in the plot (1,000 is default). Use -1 for all observations |
| jit | Level of jittering to apply to scatter plot. Default is .3. Use 0 for no jittering |
| ... | further arguments passed to or from other methods. |

Details

See <https://radiant-rstats.github.io/docs/basics/correlation.html> for an example in Radiant

See Also

[correlation](#) to calculate results
[summary.correlation](#) to summarize results

Examples

```
result <- correlation("diamonds", c("price", "carat", "table"))
plot(result)
diamonds %>% correlation("price:carat") %>% plot
```

| | |
|-----------------|--|
| plot.cross_tabs | <i>Plot method for the cross_tabs function</i> |
|-----------------|--|

Description

Plot method for the cross_tabs function

Usage

```
## S3 method for class 'cross_tabs'
plot(x, check = "", shiny = FALSE, custom = FALSE,
     ...)
```

Arguments

| | |
|--------|---|
| x | Return value from cross_tabs |
| check | Show plots for variables var1 and var2. "observed" for the observed frequencies table, "expected" for the expected frequencies table (i.e., frequencies that would be expected if the null hypothesis holds), "chi_sq" for the contribution to the overall chi-squared statistic for each cell (i.e., $(o - e)^2 / e$), "dev_std" for the standardized differences between the observed and expected frequencies (i.e., $(o - e) / \sqrt{e}$), and "row_perc", "col_perc", and "perc" for row, column, and table percentages respectively |
| shiny | Did the function call originate inside a shiny app |
| custom | Logical (TRUE, FALSE) to indicate if ggplot object (or list of ggplot objects) should be returned. This option can be used to customize plots (e.g., add a title, change x and y labels, etc.). See examples and http://docs.ggplot2.org/ for options. |
| ... | further arguments passed to or from other methods |

Details

See https://radiant-rstats.github.io/docs/basics/cross_tabs.html for an example in Radiant

See Also

[cross_tabs](#) to calculate results
[summary.cross_tabs](#) to summarize results

Examples

```
result <- cross_tabs("newspaper", "Income", "Newspaper")
plot(result, check = c("observed", "expected", "chi_sq"))
newspaper %>% cross_tabs("Income", "Newspaper") %>% plot(c("observed", "expected"))
```

| | |
|---------------|--|
| plot.goodness | <i>Plot method for the goodness function</i> |
|---------------|--|

Description

Plot method for the goodness function

Usage

```
## S3 method for class 'goodness'
plot(x, check = "", fillcol = "blue", shiny = FALSE,
     custom = FALSE, ...)
```

Arguments

| | |
|---------|--|
| x | Return value from goodness |
| check | Show plots for variable var. "observed" for the observed frequencies table, "expected" for the expected frequencies table (i.e., frequencies that would be expected if the null hypothesis holds), "chi_sq" for the contribution to the overall chi-squared statistic for each cell (i.e., $(o - e)^2 / e$), and "dev_std" for the standardized differences between the observed and expected frequencies (i.e., $(o - e) / \sqrt{e}$) |
| fillcol | Color used for bar plots |
| shiny | Did the function call originate inside a shiny app |
| custom | Logical (TRUE, FALSE) to indicate if ggplot object (or list of ggplot objects) should be returned. This option can be used to customize plots (e.g., add a title, change x and y labels, etc.). See examples and http://docs.ggplot2.org/ for options. |
| ... | further arguments passed to or from other methods |

Details

See <https://radiant-rstats.github.io/docs/basics/goodness> for an example in Radiant

See Also

[goodness](#) to calculate results
[summary.goodness](#) to summarize results

Examples

```
result <- goodness("newspaper", "Income")
plot(result, check = c("observed", "expected", "chi_sq"))
newspaper %>% goodness("Income") %>% plot(c("observed", "expected"))
```

| | |
|-----------------|---|
| plot.prob_binom | <i>Plot method for the probability calculator function (binomial)</i> |
|-----------------|---|

Description

Plot method for the probability calculator function (binomial)

Usage

```
## S3 method for class 'prob_binom'  
plot(x, type = "values", ...)
```

Arguments

| | |
|------|---|
| x | Return value from prob_binom |
| type | Probabilities or values |
| ... | further arguments passed to or from other methods |

Details

See https://radiant-rstats.github.io/docs/basics/prob_calc.html for an example in Radiant

| | |
|-----------------|--|
| plot.prob_chisq | <i>Plot method for the probability calculator (Chi-squared distribution)</i> |
|-----------------|--|

Description

Plot method for the probability calculator (Chi-squared distribution)

Usage

```
## S3 method for class 'prob_chisq'  
plot(x, type = "values", ...)
```

Arguments

| | |
|------|---|
| x | Return value from prob_chisq |
| type | Probabilities or values |
| ... | further arguments passed to or from other methods |

Details

See https://radiant-rstats.github.io/docs/basics/prob_calc.html for an example in Radiant

| | |
|----------------|---|
| plot.prob_disc | <i>Plot method for the probability calculator function (discrete)</i> |
|----------------|---|

Description

Plot method for the probability calculator function (discrete)

Usage

```
## S3 method for class 'prob_disc'
plot(x, type = "values", ...)
```

Arguments

| | |
|------|---|
| x | Return value from prob_disc |
| type | Probabilities or values |
| ... | further arguments passed to or from other methods |

Details

See https://radiant-rstats.github.io/docs/basics/prob_calc.html for an example in Radian

Examples

```
result <- prob_disc(v = "5 6 7 8 9 10 11 ", p = ".1 .2 .3 .15 .1 .1 .05", prob = 0.95)
plot(result, type = "probs")
```

| | |
|----------------|--|
| plot.prob_expo | <i>Plot method for the probability calculator (Exponential distribution)</i> |
|----------------|--|

Description

Plot method for the probability calculator (Exponential distribution)

Usage

```
## S3 method for class 'prob_expo'
plot(x, type = "values", ...)
```

Arguments

| | |
|------|---|
| x | Return value from prob_expo |
| type | Probabilities or values |
| ... | further arguments passed to or from other methods |

Details

See https://radiant-rstats.github.io/docs/basics/prob_calc.html for an example in Radian

| | |
|-----------------|--|
| plot.prob_fdist | <i>Plot method for the probability calculator (F-distribution)</i> |
|-----------------|--|

Description

Plot method for the probability calculator (F-distribution)

Usage

```
## S3 method for class 'prob_fdist'  
plot(x, type = "values", ...)
```

Arguments

| | |
|------|---|
| x | Return value from prob_fdist |
| type | Probabilities or values |
| ... | further arguments passed to or from other methods |

Details

See https://radiant-rstats.github.io/docs/basics/prob_calc.html for an example in Radiant

| | |
|----------------|--|
| plot.prob_norm | <i>Plot method for the probability calculator (normal)</i> |
|----------------|--|

Description

Plot method for the probability calculator (normal)

Usage

```
## S3 method for class 'prob_norm'  
plot(x, type = "values", ...)
```

Arguments

| | |
|------|---|
| x | Return value from prob_norm |
| type | Probabilities or values |
| ... | further arguments passed to or from other methods |

Details

See https://radiant-rstats.github.io/docs/basics/prob_calc.html for an example in Radiant

| | |
|----------------|---|
| plot.prob_pois | <i>Plot method for the probability calculator function (Poisson distribution)</i> |
|----------------|---|

Description

Plot method for the probability calculator function (Poisson distribution)

Usage

```
## S3 method for class 'prob_pois'
plot(x, type = "values", ...)
```

Arguments

| | |
|------|---|
| x | Return value from prob_pois |
| type | Probabilities or values |
| ... | further arguments passed to or from other methods |

Details

See https://radiant-rstats.github.io/docs/basics/prob_calc.html for an example in Radian

| | |
|-----------------|--|
| plot.prob_tdist | <i>Plot method for the probability calculator (t-distribution)</i> |
|-----------------|--|

Description

Plot method for the probability calculator (t-distribution)

Usage

```
## S3 method for class 'prob_tdist'
plot(x, type = "values", ...)
```

Arguments

| | |
|------|---|
| x | Return value from prob_tdist |
| type | Probabilities or values |
| ... | further arguments passed to or from other methods |

Details

See https://radiant-rstats.github.io/docs/basics/prob_calc.html for an example in Radian

| | |
|----------------|---|
| plot.prob_unif | <i>Plot method for the probability calculator (uniform)</i> |
|----------------|---|

Description

Plot method for the probability calculator (uniform)

Usage

```
## S3 method for class 'prob_unif'
plot(x, type = "values", ...)
```

Arguments

| | |
|------|---|
| x | Return value from prob_unif |
| type | Probabilities or values |
| ... | further arguments passed to or from other methods |

Details

See https://radiant-rstats.github.io/docs/basics/prob_calc.html for an example in Radiant

| | |
|------------------|---|
| plot.single_mean | <i>Plot method for the single_mean function</i> |
|------------------|---|

Description

Plot method for the single_mean function

Usage

```
## S3 method for class 'single_mean'
plot(x, plots = "hist", shiny = FALSE,
     custom = FALSE, ...)
```

Arguments

| | |
|--------|---|
| x | Return value from single_mean |
| plots | Plots to generate. "hist" shows a histogram of the data along with vertical lines that indicate the sample mean and the confidence interval. "simulate" shows the location of the sample mean and the comparison value (comp_value). Simulation is used to demonstrate the sampling variability in the data under the null-hypothesis |
| shiny | Did the function call originate inside a shiny app |
| custom | Logical (TRUE, FALSE) to indicate if ggplot object (or list of ggplot objects) should be returned. This option can be used to customize plots (e.g., add a title, change x and y labels, etc.). See examples and http://docs.ggplot2.org/ for options. |
| ... | further arguments passed to or from other methods |

Details

See https://radiant-rstats.github.io/docs/basics/single_mean.html for an example in Radiant

See Also

[single_mean](#) to generate the result
[summary.single_mean](#) to summarize results

Examples

```
result <- single_mean("diamonds", "price", comp_value = 3500)
plot(result, plots = c("hist", "simulate"))
```

| | |
|------------------|---|
| plot.single_prop | <i>Plot method for the single_prop function</i> |
|------------------|---|

Description

Plot method for the single_prop function

Usage

```
## S3 method for class 'single_prop'
plot(x, plots = "bar", shiny = FALSE,
     custom = FALSE, ...)
```

Arguments

| | |
|--------|---|
| x | Return value from single_prop |
| plots | Plots to generate. "bar" shows a bar chart of the data. The "simulate" chart shows the location of the sample proportion and the comparison value (comp_value). Simulation is used to demonstrate the sampling variability in the data under the null-hypothesis |
| shiny | Did the function call originate inside a shiny app |
| custom | Logical (TRUE, FALSE) to indicate if ggplot object (or list of ggplot objects) should be returned. This option can be used to customize plots (e.g., add a title, change x and y labels, etc.). See examples and http://docs.ggplot2.org/ for options. |
| ... | further arguments passed to or from other methods |

Details

See https://radiant-rstats.github.io/docs/basics/single_prop.html for an example in Radiant

See Also

[single_prop](#) to generate the result
[summary.single_prop](#) to summarize the results

Examples

```
result <- single_prop("diamonds", "clarity", lev = "IF", comp_value = 0.05)
plot(result, plots = c("hist", "simulate"))
result <- single_prop("titanic", "pclass", lev = "1st")
plot(result, plots = c("hist", "simulate"))
```

prob_binom

Probability calculator for the binomial distribution (binomial)

Description

Probability calculator for the binomial distribution (binomial)

Usage

```
prob_binom(n, p, lb = NA, ub = NA, plb = NA, pub = NA, dec = 3)
```

Arguments

| | |
|-----|--|
| n | Number of trials |
| p | Probability |
| lb | Lower bound on the number of successes |
| ub | Upper bound on the number of successes |
| plb | Lower probability bound |
| pub | Upper probability bound |
| dec | Number of decimals to show |

Details

See https://radiant-rstats.github.io/docs/basics/prob_calc.html for an example in Radiant

prob_chisq

Probability calculator for the chi-squared distribution

Description

Probability calculator for the chi-squared distribution

Usage

```
prob_chisq(df, lb = NA, ub = NA, plb = NA, pub = NA, dec = 3)
```

Arguments

| | |
|-----|------------------------------|
| df | Degrees of freedom |
| lb | Lower bound (default is 0) |
| ub | Upper bound (default is Inf) |
| plb | Lower probability bound |
| pub | Upper probability bound |
| dec | Number of decimals to show |

Details

See https://radiant-rstats.github.io/docs/basics/prob_calc.html for an example in Radian

| | |
|-----------|--|
| prob_disc | <i>Probability calculator for the discrete distribution (discrete)</i> |
|-----------|--|

Description

Probability calculator for the discrete distribution (discrete)

Usage

```
prob_disc(v, p, lb = NA, ub = NA, plb = NA, pub = NA, dec = 3)
```

Arguments

| | |
|-----|--|
| v | Values |
| p | Probabilities |
| lb | Lower bound on the number of successes |
| ub | Upper bound on the number of successes |
| plb | Lower probability bound |
| pub | Upper probability bound |
| dec | Number of decimals to show |

Details

See https://radiant-rstats.github.io/docs/basics/prob_calc.html for an example in Radian

| | |
|-----------|--|
| prob_expo | <i>Probability calculator for the exponential distribution</i> |
|-----------|--|

Description

Probability calculator for the exponential distribution

Usage

```
prob_expo(rate, lb = NA, ub = NA, plb = NA, pub = NA, dec = 3)
```

Arguments

| | |
|------|------------------------------|
| rate | Rate |
| lb | Lower bound (default is 0) |
| ub | Upper bound (default is Inf) |
| plb | Lower probability bound |
| pub | Upper probability bound |
| dec | Number of decimals to show |

Details

See https://radiant-rstats.github.io/docs/basics/prob_calc.html for an example in Radian

| | |
|------------|--|
| prob_fdist | <i>Probability calculator for the F-distribution</i> |
|------------|--|

Description

Probability calculator for the F-distribution

Usage

```
prob_fdist(df1, df2, lb = NA, ub = NA, plb = NA, pub = NA, dec = 3)
```

Arguments

| | |
|-----|------------------------------|
| df1 | Degrees of freedom |
| df2 | Degrees of freedom |
| lb | Lower bound (default is 0) |
| ub | Upper bound (default is Inf) |
| plb | Lower probability bound |
| pub | Upper probability bound |
| dec | Number of decimals to show |

Details

See https://radiant-rstats.github.io/docs/basics/prob_calc.html for an example in Radian

| | |
|-----------|---|
| prob_norm | <i>Probability calculator for the normal distribution</i> |
|-----------|---|

Description

Probability calculator for the normal distribution

Usage

```
prob_norm(mean, stdev, lb = NA, ub = NA, plb = NA, pub = NA, dec = 3)
```

Arguments

| | |
|-------|-------------------------------|
| mean | Mean |
| stdev | Standard deviation |
| lb | Lower bound (default is -Inf) |
| ub | Upper bound (default is Inf) |
| plb | Lower probability bound |
| pub | Upper probability bound |
| dec | Number of decimals to show |

Details

See https://radiant-rstats.github.io/docs/basics/prob_calc.html for an example in Radian

| | |
|-----------|--|
| prob_pois | <i>Probability calculator for the poisson distribution</i> |
|-----------|--|

Description

Probability calculator for the poisson distribution

Usage

```
prob_pois(lambda, lb = NA, ub = NA, plb = NA, pub = NA, dec = 3)
```

Arguments

| | |
|--------|------------------------------|
| lambda | Rate |
| lb | Lower bound (default is 0) |
| ub | Upper bound (default is Inf) |
| plb | Lower probability bound |
| pub | Upper probability bound |
| dec | Number of decimals to show |

Details

See https://radiant-rstats.github.io/docs/basics/prob_calc.html for an example in Radian

| | |
|------------|--|
| prob_tdist | <i>Probability calculator for the t distribution</i> |
|------------|--|

Description

Probability calculator for the t distribution

Usage

```
prob_tdist(df, mean = 0, stdev = 1, lb = NA, ub = NA, plb = NA,  
           pub = NA, dec = 3)
```

Arguments

| | |
|-------|-------------------------------|
| df | Degrees of freedom |
| mean | Mean |
| stdev | Standard deviation |
| lb | Lower bound (default is -Inf) |
| ub | Upper bound (default is Inf) |
| plb | Lower probability bound |
| pub | Upper probability bound |
| dec | Number of decimals to show |

Details

See https://radiant-rstats.github.io/docs/basics/prob_calc.html for an example in Radiant

| | |
|-----------|--|
| prob_unif | <i>Probability calculator for the uniform distribution</i> |
|-----------|--|

Description

Probability calculator for the uniform distribution

Usage

```
prob_unif(min, max, lb = NA, ub = NA, plb = NA, pub = NA, dec = 3)
```

Arguments

| | |
|-----|----------------------------|
| min | Minimum value |
| max | Maximum value |
| lb | Lower bound (default = 0) |
| ub | Upper bound (default = 1) |
| plb | Lower probability bound |
| pub | Upper probability bound |
| dec | Number of decimals to show |

Details

See https://radiant-rstats.github.io/docs/basics/prob_calc.html for an example in Radiant

radiant.basics

radiant.basics

Description

radiant.basics

Launch Radiant in the default browser

Usage

radiant.basics()

Details

See <https://radiant-rstats.github.io/docs> for documentation and tutorials

salary

Salaries for Professors

Description

Salaries for Professors

Usage

data(salary)

Format

A data frame with 397 rows and 6 variables

Details

2008-2009 nine-month salary for professors in a college in the US. Description provided in attr(salary,description")

`single_mean`*Compare a sample mean to a population mean*

Description

Compare a sample mean to a population mean

Usage

```
single_mean(dataset, var, comp_value = 0, alternative = "two.sided",  
            conf_lev = 0.95, data_filter = "")
```

Arguments

| | |
|--------------------------|--|
| <code>dataset</code> | Dataset name (string). This can be a dataframe in the global environment or an element in an <code>r_data</code> list from Radiant |
| <code>var</code> | The variable selected for the mean comparison |
| <code>comp_value</code> | Population value to compare to the sample mean |
| <code>alternative</code> | The alternative hypothesis ("two.sided", "greater", or "less") |
| <code>conf_lev</code> | Span for the confidence interval |
| <code>data_filter</code> | Expression entered in, e.g., Data > View to filter the dataset in Radiant. The expression should be a string (e.g., "price > 10000") |

Details

See https://radiant-rstats.github.io/docs/basics/single_mean.html for an example in Radiant

Value

A list of variables defined in `single_mean` as an object of class `single_mean`

See Also

[summary.single_mean](#) to summarize results

[plot.single_mean](#) to plot results

Examples

```
single_mean("diamonds", "price")
```

`single_prop`*Compare a sample proportion to a population proportion*

Description

Compare a sample proportion to a population proportion

Usage

```
single_prop(dataset, var, lev = "", comp_value = 0.5,  
  alternative = "two.sided", conf_lev = 0.95, data_filter = "")
```

Arguments

| | |
|--------------------------|--|
| <code>dataset</code> | Dataset name (string). This can be a dataframe in the global environment or an element in an <code>r_data</code> list from Radiant |
| <code>var</code> | The variable selected for the proportion comparison |
| <code>lev</code> | The factor level selected for the proportion comparison |
| <code>comp_value</code> | Population value to compare to the sample proportion |
| <code>alternative</code> | The alternative hypothesis ("two.sided", "greater", or "less") |
| <code>conf_lev</code> | Span of the confidence interval |
| <code>data_filter</code> | Expression entered in, e.g., Data > View to filter the dataset in Radiant. The expression should be a string (e.g., "price > 10000") |

Details

See https://radiant-rstats.github.io/docs/basics/single_prop.html for an example in Radiant

Value

A list of variables used in `single_prop` as an object of class `single_prop`

See Also

[summary.single_prop](#) to summarize the results

[plot.single_prop](#) to plot the results

Examples

```
result <- single_prop("diamonds", "cut")  
result <- single_prop("diamonds", "clarity", lev = "IF", comp_value = 0.05)
```

summary.compare_means *Summary method for the compare_means function*

Description

Summary method for the compare_means function

Usage

```
## S3 method for class 'compare_means'  
summary(object, show = FALSE, dec = 3, ...)
```

Arguments

| | |
|--------|---|
| object | Return value from compare_means |
| show | Show additional output (i.e., t.value, df, and confidence interval) |
| dec | Number of decimals to show |
| ... | further arguments passed to or from other methods |

Details

See https://radiant-rstats.github.io/docs/basics/compare_means.html for an example in Radiant

See Also

[compare_means](#) to calculate results
[plot.compare_means](#) to plot results

Examples

```
result <- compare_means("diamonds", "cut", "price")  
summary(result)  
result <- diamonds %>% tbl_df %>% compare_means("x", "y")  
summary(result)  
result <- diamonds %>% tbl_df %>% group_by(cut) %>% compare_means("x", c("x", "y"))  
summary(result)
```

summary.compare_props *Summary method for the compare_props function*

Description

Summary method for the compare_props function

Usage

```
## S3 method for class 'compare_props'  
summary(object, show = FALSE, dec = 3, ...)
```

Arguments

| | |
|--------|---|
| object | Return value from compare_props |
| show | Show additional output (i.e., chisq.value, df, and confidence interval) |
| dec | Number of decimals to show |
| ... | further arguments passed to or from other methods |

Details

See https://radiant-rstats.github.io/docs/basics/compare_props.html for an example in Radiant

See Also

[compare_props](#) to calculate results
[plot.compare_props](#) to plot results

Examples

```
result <- compare_props("titanic", "pclass", "survived")
summary(result)
titanic %>% compare_props("pclass", "survived") %>% summary
```

| | |
|---------------------|--|
| summary.correlation | <i>Summary method for the correlation function</i> |
|---------------------|--|

Description

Summary method for the correlation function

Usage

```
## S3 method for class 'correlation'
summary(object, cutoff = 0, covar = FALSE, dec = 2,
  ...)
```

Arguments

| | |
|--------|---|
| object | Return value from correlation |
| cutoff | Show only correlations larger than the cutoff in absolute value. Default is a cutoff of 0 |
| covar | Show the covariance matrix (default is FALSE) |
| dec | Number of decimals to show |
| ... | further arguments passed to or from other methods. |

Details

See <https://radiant-rstats.github.io/docs/basics/correlation.html> for an example in Radiant

See Also

[correlation](#) to calculate results
[plot.correlation](#) to plot results

Examples

```
result <- correlation("diamonds", c("price", "carat", "table"))
summary(result, cutoff = .3)
diamonds %>% correlation("price:carat") %>% summary
```

| | |
|--------------------|---|
| summary.cross_tabs | <i>Summary method for the cross_tabs function</i> |
|--------------------|---|

Description

Summary method for the cross_tabs function

Usage

```
## S3 method for class 'cross_tabs'
summary(object, check = "", dec = 2, ...)
```

Arguments

| | |
|--------|---|
| object | Return value from cross_tabs |
| check | Show table(s) for variables var1 and var2. "observed" for the observed frequencies table, "expected" for the expected frequencies table (i.e., frequencies that would be expected if the null hypothesis holds), "chi_sq" for the contribution to the overall chi-squared statistic for each cell (i.e., $(o - e)^2 / e$), "dev_std" for the standardized differences between the observed and expected frequencies (i.e., $(o - e) / \sqrt{e}$), and "dev_perc" for the percentage difference between the observed and expected frequencies (i.e., $(o - e) / e$) |
| dec | Number of decimals to show |
| ... | further arguments passed to or from other methods. |

Details

See https://radiant-rstats.github.io/docs/basics/cross_tabs.html for an example in Radiant

See Also

[cross_tabs](#) to calculate results
[plot.cross_tabs](#) to plot results

Examples

```
result <- cross_tabs("newspaper", "Income", "Newspaper")
summary(result, check = c("observed", "expected", "chi_sq"))
newspaper %>% cross_tabs("Income", "Newspaper") %>% summary("observed")
```

| | |
|------------------|---|
| summary.goodness | <i>Summary method for the goodness function</i> |
|------------------|---|

Description

Summary method for the goodness function

Usage

```
## S3 method for class 'goodness'
summary(object, check = "", dec = 2, ...)
```

Arguments

| | |
|--------|---|
| object | Return value from goodness |
| check | Show table(s) for the selected variable (var). "observed" for the observed frequencies table, "expected" for the expected frequencies table (i.e., frequencies that would be expected if the null hypothesis holds), "chi_sq" for the contribution to the overall chi-squared statistic for each cell (i.e., $(o - e)^2 / e$), "dev_std" for the standardized differences between the observed and expected frequencies (i.e., $(o - e) / \sqrt{e}$), and "dev_perc" for the percentage difference between the observed and expected frequencies (i.e., $(o - e) / e$) |
| dec | Number of decimals to show |
| ... | further arguments passed to or from other methods. |

Details

See <https://radiant-rstats.github.io/docs/basics/goodness> for an example in Radiant

See Also

[goodness](#) to calculate results

[plot.goodness](#) to plot results

Examples

```
result <- goodness("newspaper", "Income", c(.3, .7))
summary(result, check = c("observed", "expected", "chi_sq"))
newspaper %>% goodness("Income", "1/3 2/3") %>% summary("observed")
```

| | |
|--------------------|---|
| summary.prob_binom | <i>Summary method for the probability calculator function</i> |
|--------------------|---|

Description

Summary method for the probability calculator function

Usage

```
## S3 method for class 'prob_binom'  
summary(object, type = "values", ...)
```

Arguments

| | |
|--------|---|
| object | Return value from prob_binom |
| type | Probabilities or values |
| ... | further arguments passed to or from other methods |

Details

See https://radiant-rstats.github.io/docs/basics/prob_calc.html for an example in Radian

| | |
|--------------------|--|
| summary.prob_chisq | <i>Summary method for the probability calculator function (Chi-squared distribution)</i> |
|--------------------|--|

Description

Summary method for the probability calculator function (Chi-squared distribution)

Usage

```
## S3 method for class 'prob_chisq'  
summary(object, type = "values", ...)
```

Arguments

| | |
|--------|---|
| object | Return value from prob_chisq |
| type | Probabilities or values |
| ... | further arguments passed to or from other methods |

Details

See https://radiant-rstats.github.io/docs/basics/prob_calc.html for an example in Radian

| | |
|-------------------|--|
| summary.prob_disc | <i>Summary method for the probability calculator function (discrete)</i> |
|-------------------|--|

Description

Summary method for the probability calculator function (discrete)

Usage

```
## S3 method for class 'prob_disc'
summary(object, type = "values", ...)
```

Arguments

| | |
|--------|---|
| object | Return value from prob_disc |
| type | Probabilities or values |
| ... | further arguments passed to or from other methods |

Details

See https://radiant-rstats.github.io/docs/basics/prob_calc.html for an example in Radiant

Examples

```
result <- prob_disc(v = "5 6 7 8 9 10 11 ", p = ".1 .2 .3 .15 .1 .1 .05", pub = 0.95)
summary(result, type = "probs")
```

| | |
|-------------------|--|
| summary.prob_expo | <i>Summary method for the probability calculator function (Exponential distribution)</i> |
|-------------------|--|

Description

Summary method for the probability calculator function (Exponential distribution)

Usage

```
## S3 method for class 'prob_expo'
summary(object, type = "values", ...)
```

Arguments

| | |
|--------|---|
| object | Return value from prob_expo |
| type | Probabilities or values |
| ... | further arguments passed to or from other methods |

Details

See https://radiant-rstats.github.io/docs/basics/prob_calc.html for an example in Radiant

| | |
|--------------------|--|
| summary.prob_fdist | <i>Summary method for the probability calculator function (F-distribution)</i> |
|--------------------|--|

Description

Summary method for the probability calculator function (F-distribution)

Usage

```
## S3 method for class 'prob_fdist'  
summary(object, type = "values", ...)
```

Arguments

| | |
|--------|---|
| object | Return value from prob_fdist |
| type | Probabilities or values |
| ... | further arguments passed to or from other methods |

Details

See https://radiant-rstats.github.io/docs/basics/prob_calc.html for an example in Radian

| | |
|-------------------|--|
| summary.prob_norm | <i>Summary method for the probability calculator function (normal)</i> |
|-------------------|--|

Description

Summary method for the probability calculator function (normal)

Usage

```
## S3 method for class 'prob_norm'  
summary(object, type = "values", ...)
```

Arguments

| | |
|--------|---|
| object | Return value from prob_norm |
| type | Probabilities or values |
| ... | further arguments passed to or from other methods |

Details

See https://radiant-rstats.github.io/docs/basics/prob_calc.html for an example in Radian

| | |
|-------------------|--|
| summary.prob_pois | <i>Summary method for the probability calculator function (Poisson distribution)</i> |
|-------------------|--|

Description

Summary method for the probability calculator function (Poisson distribution)

Usage

```
## S3 method for class 'prob_pois'
summary(object, type = "values", ...)
```

Arguments

| | |
|--------|---|
| object | Return value from prob_pois |
| type | Probabilities or values |
| ... | further arguments passed to or from other methods |

Details

See https://radiant-rstats.github.io/docs/basics/prob_calc.html for an example in Radiant

| | |
|--------------------|--|
| summary.prob_tdist | <i>Summary method for the probability calculator function (t-distribution)</i> |
|--------------------|--|

Description

Summary method for the probability calculator function (t-distribution)

Usage

```
## S3 method for class 'prob_tdist'
summary(object, type = "values", ...)
```

Arguments

| | |
|--------|---|
| object | Return value from prob_tdist |
| type | Probabilities or values |
| ... | further arguments passed to or from other methods |

Details

See https://radiant-rstats.github.io/docs/basics/prob_calc.html for an example in Radiant

| | |
|-------------------|---|
| summary.prob_unif | <i>Summary method for the probability calculator function (uniform)</i> |
|-------------------|---|

Description

Summary method for the probability calculator function (uniform)

Usage

```
## S3 method for class 'prob_unif'  
summary(object, type = "values", ...)
```

Arguments

| | |
|--------|---|
| object | Return value from prob_unif |
| type | Probabilities or values |
| ... | further arguments passed to or from other methods |

Details

See https://radiant-rstats.github.io/docs/basics/prob_calc.html for an example in Radiant

| | |
|---------------------|--|
| summary.single_mean | <i>Summary method for the single_mean function</i> |
|---------------------|--|

Description

Summary method for the single_mean function

Usage

```
## S3 method for class 'single_mean'  
summary(object, dec = 3, ...)
```

Arguments

| | |
|--------|---|
| object | Return value from single_mean |
| dec | Number of decimals to show |
| ... | further arguments passed to or from other methods |

Details

See https://radiant-rstats.github.io/docs/basics/single_mean.html for an example in Radiant

See Also

[single_mean](#) to generate the results
[plot.single_mean](#) to plot results

Examples

```
result <- single_mean("diamonds", "price")
summary(result)
diamonds %>% single_mean("price") %>% summary
```

| | |
|---------------------|--|
| summary.single_prop | <i>Summary method for the single_prop function</i> |
|---------------------|--|

Description

Summary method for the single_prop function

Usage

```
## S3 method for class 'single_prop'
summary(object, dec = 3, ...)
```

Arguments

| | |
|--------|---|
| object | Return value from single_prop |
| dec | Number of decimals to show |
| ... | further arguments passed to or from other methods |

Details

See https://radiant-rstats.github.io/docs/basics/single_prop.html for an example in Radiant

See Also

[single_prop](#) to generate the results
[plot.single_prop](#) to plot the results

Examples

```
result <- single_prop("diamonds", "clarity", lev = "IF", comp_value = 0.05)
summary(result)
diamonds %>% single_prop("clarity", lev = "IF", comp_value = 0.05) %>% summary
```

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