# Package 'radiant.basics'

April 5, 2018

Type Package
Title Basics Menu for Radiant: Business Analytics using R and Shiny
Version 0.9.2
<b>Date</b> 2018-3-30
<b>Description</b> 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.
<b>Depends</b> R (>= 3.3.0), radiant.data (>= 0.9.2)
Imports ggplot2 (>= 2.2.1), gridExtra (>= 2.0.0), scales (>= 0.4.0), dplyr (>= 0.7.4), tidyr (>= 0.8.0), magrittr (>= 1.5), shiny (>= 1.0.5), psych (>= 1.7.3.21), import (>= 1.1.0), rstudioapi (>= 0.7), methods
Suggests testthat (>= 2.0.0)
<pre>URL https://github.com/radiant-rstats/radiant.basics, https:     //radiant-rstats.github.io/docs</pre>
BugReports https://github.com/radiant-rstats/radiant.basics/issues
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RoxygenNote 6.0.1
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clt

Central Limit Theorem simulation

# Description

Central Limit Theorem simulation

# Usage

```
clt(dist, n = 100, m = 100, norm_mean = 0, norm_sd = 1,
  binom_size = 10, binom_prob = 0.2, unif_min = 0, unif_max = 1,
  expo_rate = 1)
```

## **Arguments**

dist	Distribution to simulate
n	Sample size
m	Number of samples
norm_mean	Mean for the normal distribution
norm_sd	Standard deviation for the normal distribution
binom_size	Size for the binomial distribution
binom_prob	Probability for the binomial distribution
unif_min	Minimum for the uniform distribution
unif_max	Maximum for the uniform distribution
expo_rate	Rate for the exponential distribution

# **Details**

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

4 compare\_means

compare_means Compare means for two or more variables	compare_means	Compare means for two or more variables	
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# **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**

Samenes	
dataset	Dataset name (string). This can be a dataframe in the global environment or an element in an $r$ _data 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 va1r
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 Wilcox ("wilcox")

# **Details**

data\_filter

See  $https://radiant-rstats.github.io/docs/basics/compare\_means.html \ for \ an \ example in \ Radiant$ 

expression should be a string (e.g., "price > 10000")

Expression entered in, e.g., Data > View to filter the dataset in Radiant. The

#### 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
```

```
result <- compare_means("diamonds","cut","price")
result <- diamonds %>% compare_means("cut","price", comb = c("Fair:Good", "Premium:Ideal"))
```

compare\_props 5

compare_props	Compare proportions across groups

# Description

Compare proportions across groups

# Usage

```
compare_props(dataset, var1, var2, levs = "", 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 r_data 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
```

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

6 correlation

consider	Car brand consideration

## **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")

|--|

# 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 r_data 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_filte	Expression entered in, e.g., Data > View to filter the dataset in Radiant. The

#### **Details**

See  $\verb|https://radiant-rstats.github.io/docs/basics/correlation.html| for an example in Radiant$ 

expression should be a string (e.g., "price > 10000")

# Value

A list with all variables defined in the function as an object of class compare\_means

cross\_tabs 7

#### 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 r\_data list from Radiant

var1 A categorical variable

var2 Another categorical variable

tab Table with frequencies as alternative to dataset

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
```

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

8 goodness

demand_uk	Demand in the UK	
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# 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 Evaluate if sample data for a categorical variable is consistent with a hypothesized distribution
--

#### **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 r_data 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., Data > View to filter the dataset in Radiant. The

expression should be a string (e.g., "price > 10000")

# **Details**

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

## Value

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

newspaper 9

#### See Also

```
summary.goodness to summarize results
plot.goodness to plot results
```

# **Examples**

```
result <- goodness("newspaper", "Income")</pre>
```

newspaper

Newspaper readership

## **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.clt

Plot method for the Central Limit Theorem function

## **Description**

Plot method for the Central Limit Theorem function

# Usage

```
## S3 method for class 'clt'
plot(x, stat = "sum", bins = 15, ...)
```

#### **Arguments**

X	Return value from clt
stat	Statistic to use (sum or mean)
bins	Number of bins to use
	further arguments passed to or from other methods

## **Details**

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

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plot.compare\_means

Plot method for the compare\_means function

# 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 opion 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
```

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

plot.compare\_props 11

# 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 opion 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
```

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

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plot.correlation

Plot method for the correlation function

## **Description**

Plot method for the correlation function

## Usage

```
## S3 method for class 'correlation'
plot(x, nrobs = -1, jit = 0.3, ...)
```

# Arguments

```
x Return value from correlation

nrobs Number of data points to show in scatter plots (-1 for all)

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

Plot method for the cross\_tabs function

## Description

Plot method for the cross\_tabs function

# Usage

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

plot.goodness 13

# **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 opion 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

Plot method for the goodness function

# Description

Plot method for the goodness function

## Usage

```
## $3 method for class 'goodness'
plot(x, check = "", fillcol = "blue", shiny = FALSE,
    custom = FALSE, ...)
```

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#### **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 opion 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

Plot method for the probability calculator function (binomial)

#### **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

plot.prob\_chisq 15

#### **Details**

 $See \ https://radiant-rstats.github.io/docs/basics/prob\_calc.html \ for \ an \ example \ in \ Radiant$ 

plot.prob\_chisq

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

#### **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

Plot method for the probability calculator function (discrete)

## 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**

16 plot.prob\_fdist

#### **Examples**

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

plot.prob\_expo

Plot method for the probability calculator (Exponential distribution)

## **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**

 $See \ https://radiant-rstats.github.io/docs/basics/prob\_calc.html \ for \ an \ example \ in \ Radiant$ 

plot.prob\_fdist

Plot method for the probability calculator (F-distribution)

# 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**

plot.prob\_lnorm 17

plot.prob\_lnorm

Plot method for the probability calculator (log normal)

#### **Description**

Plot method for the probability calculator (log normal)

# Usage

```
## S3 method for class 'prob_lnorm'
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\_norm

Plot method for the probability calculator (normal)

## **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

plot.prob\_tdist

plot.prob_pois	Plot method for the probability calculator function (Poisson distribution)
----------------	--

# 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**

 $See \ https://radiant-rstats.github.io/docs/basics/prob\_calc.html \ for \ an \ example \ in \ Radiant$ 

plot.prob\_tdist

Plot method for the probability calculator (t-distribution)

# 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**

plot.prob\_unif

plot.prob_unif	Plot method for the probability calculator (uniform)
----------------	--

# 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

Plot method for the single\_mean function

# Description

Plot method for the single\_mean function

## Usage

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

# Arguments

х	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 opion 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

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#### **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"))</pre>
```

plot.single\_prop

Plot method for the single\_prop function

# 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 opion 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
```

print.correlation 21

#### **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"))</pre>
```

print.correlation

Print method for radiant.basics::correlation

## **Description**

Print method for radiant.basics::correlation

# Usage

```
## S3 method for class 'correlation' print(x, ...)
```

## **Arguments**

x Return value from correlation

... further arguments passed to or from other methods

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
р	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**

22 prob\_disc

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**

 $See \ https://radiant-rstats.github.io/docs/basics/prob\_calc.html\ for\ an\ example\ in\ Radiant$ 

prob\_disc

Probability calculator for the discrete distribution (discrete)

# 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
1b	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**

prob\_expo 23

prob_expo	Probability calculator for the exponential distribution	

# Description

Probability calculator for the exponential distribution

# Usage

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

# Arguments

rate	Rate
1b	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**

 $See \ https://radiant-rstats.github.io/docs/basics/prob\_calc.html\ for\ an\ example\ in\ Radiant$ 

prob_fdist	Probability calculator for the F-distribution
p. 00 010 t	1 roodottity editettidior for the 1 distribution

# 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**

24 prob\_norm

# Description

Probability calculator for the log normal distribution

## Usage

```
prob_lnorm(meanlog, sdlog, lb = NA, ub = NA, plb = NA, pub = NA,
  dec = 3)
```

# Arguments

meanlog Mean of the distribution on the log scale	
sdlog Standard deviation of the distribution on the log sc	ale
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_norm	Probability calculator for the normal distribution
F * * * = * * *	· · · · · · · · · · · · · · · · · · ·

# 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

prob\_pois 25

#### **Details**

 $See \ https://radiant-rstats.github.io/docs/basics/prob\_calc.html \ for \ an \ example \ in \ Radiant$ 

prob\_pois

Probability calculator for the poisson distribution

# Description

Probability calculator for the poisson distribution

## Usage

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

# Arguments

lambda	Rate
1b	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**

 $See \ https://radiant-rstats.github.io/docs/basics/prob\_calc.html\ for\ an\ example\ in\ Radiant$ 

prob\_tdist

Probability calculator for the t distribution

# 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)
```

26 prob\_unif

# **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 Pro	obability calculator for the uniform distribution
---------------	---

# Description

Probability calculator for the uniform distribution

# Usage

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

# Arguments

min	Minmum value
max	Maximum value
1b	Lower bound (default = $0$ )
ub	Upper bound (default = 1)
plb	Lower probability bound
pub	Upper probability bound
dec	Number of decimals to show

## **Details**

radiant.basics 27

radiant.basics

radiant.basics

# Description

radiant.basics

Launch radiant.basics in the default browser

# Usage

```
radiant.basics()
```

#### **Details**

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

# **Examples**

```
## Not run:
radiant.basics()
## End(Not run)
```

radiant.basics\_viewer Launch radiant.basics in the Rstudio viewer

# Description

Launch radiant.basics in the Rstudio viewer

# Usage

```
radiant.basics_viewer()
```

#### **Details**

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

```
## Not run:
radiant.basics_viewer()
## End(Not run)
```

28 salary

radiant.basics\_window Launch radiant.basics in an Rstudio window

# Description

Launch radiant, basics in an Rstudio window

## Usage

```
radiant.basics_window()
```

## **Details**

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

# **Examples**

```
## Not run:
radiant.basics_window()
## End(Not run)
```

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 29

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**

dataset	Dataset name (string). This can be a dataframe in the global environment or an element in an r_data list from Radiant
var	The variable selected for the mean comparison
comp_value	Population value to compare to the sample mean
alternative	The alternative hypothesis ("two.sided", "greater", or "less")
conf_lev	Span for the confidence interval
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/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
```

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

30 single\_prop

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

dataset	Dataset name (string). This can be a dataframe in the global environment or an element in an r_data list from Radiant
var	The variable selected for the proportion comparison
lev	The factor level selected for the proportion comparison
comp_value	Population value to compare to the sample proportion
alternative	The alternative hypothesis ("two.sided", "greater", or "less")
conf_lev	Span of the confidence interval
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  $\verb|https://radiant-rstats.github.io/docs/basics/single_prop.html| for an example in Radiant$ 

## 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
```

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

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, ...)
```

32 summary.correlation

#### **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

Summary method for the correlation function

# 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 corrlations 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

summary.cross\_tabs 33

#### 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

Summary method for the cross\_tabs function

## **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 frequen-

cies 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
```

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

34 summary.goodness

summary.goodness

Summary method for the goodness function

# 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 fre-

quencies 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
```

```
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 35

summary.prob\_binom

Summary method for the probability calculator function

# 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**

 $See \ https://radiant-rstats.github.io/docs/basics/prob\_calc.html\ for\ an\ example\ in\ Radiant$ 

summary.prob\_chisq

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

# 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**

36 summary.prob\_expo

summary.prob\_disc

Summary method for the probability calculator function (discrete)

## **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

Summary method for the probability calculator function (Exponential distribution)

## **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  $\verb|https://radiant-rstats.github.io/docs/basics/prob_calc.html| for an example in Radiant \\$ 

summary.prob\_fdist 37

summary.prob_fdist	Summary method	for th	he probability	calculator	function	(F-
	distribution)					

# 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**

 $See \ https://radiant-rstats.github.io/docs/basics/prob\_calc.html \ for \ an \ example \ in \ Radiant$ 

summary.prob\_lnorm

Summary method for the probability calculator function (log normal)

# Description

Summary method for the probability calculator function (log normal)

# Usage

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

## **Arguments**

object Return value from prob\_norm

type Probabilities or values

... further arguments passed to or from other methods

#### **Details**

38 summary.prob\_pois

summary.prob\_norm

Summary method for the probability calculator function (normal)

## **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**

 $See \ https://radiant-rstats.github.io/docs/basics/prob\_calc.html\ for\ an\ example\ in\ Radiant$ 

summary.prob\_pois

Summary method for the probability calculator function (Poisson distribution)

# 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**

summary.prob\_tdist 39

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

# 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

Summary method for the probability calculator function (uniform)

# 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**

40 summary.single\_prop

 $summary.single\_mean$ 

Summary method for the single\_mean function

## 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

Summary method for the single\_prop function

## **Description**

Summary method for the single\_prop function

# Usage

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

summary.single\_prop 41

# Arguments

object Return value from single\_prop
dec Number of decimals to show

... further arguments passed to or from other methods

#### **Details**

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

# See Also

```
single_prop to generate the results
plot.single_prop to plot the results
```

```
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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