

# Package ‘radiant.basics’

April 21, 2017

**Type** Package

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

**Version** 0.7.7

**Date** 2017-4-20

**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 (>= 0.7.20)

**Imports** ggplot2 (>= 2.0.0),  
gridExtra (>= 2.0.0),  
scales (>= 0.4.0),  
dplyr (>= 0.5),  
tidyr (>= 0.4.1),  
magrittr (>= 1.5),  
shiny (>= 1.0.0),  
psych (>= 1.6.6),  
import (>= 1.1.0),  
methods

**Suggests** testthat (>= 1.0.0),  
covr (>= 1.2.0)

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

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

**License** AGPL-3 | file LICENSE

**LazyData** true

**RoxygenNote** 5.0.1

## R topics documented:

compare_means . . . . .	3
compare_props . . . . .	4
consider . . . . .	5
correlation . . . . .	5
cross_tabs . . . . .	6

demand_uk . . . . .	7
goodness . . . . .	7
newspaper . . . . .	8
plot.compare_means . . . . .	8
plot.compare_props . . . . .	9
plot.correlation_ . . . . .	10
plot.cross_tabs . . . . .	11
plot.goodness . . . . .	12
plot.prob_binom . . . . .	13
plot.prob_chisq . . . . .	13
plot.prob_disc . . . . .	14
plot.prob_expo . . . . .	14
plot.prob_fdist . . . . .	15
plot.prob_norm . . . . .	15
plot.prob_pois . . . . .	16
plot.prob_tdist . . . . .	16
plot.prob_unif . . . . .	17
plot.single_mean . . . . .	17
plot.single_prop . . . . .	18
prob_binom . . . . .	19
prob_chisq . . . . .	19
prob_disc . . . . .	20
prob_expo . . . . .	21
prob_fdist . . . . .	21
prob_norm . . . . .	22
prob_pois . . . . .	22
prob_tdist . . . . .	23
prob_unif . . . . .	23
radiant.basics . . . . .	24
salary . . . . .	24
single_mean . . . . .	25
single_prop . . . . .	26
summary.compare_means . . . . .	27
summary.compare_props . . . . .	27
summary.correlation_ . . . . .	28
summary.cross_tabs . . . . .	29
summary.goodness . . . . .	30
summary.prob_binom . . . . .	31
summary.prob_chisq . . . . .	31
summary.prob_disc . . . . .	32
summary.prob_expo . . . . .	32
summary.prob_fdist . . . . .	33
summary.prob_norm . . . . .	33
summary.prob_pois . . . . .	34
summary.prob_tdist . . . . .	34
summary.prob_unif . . . . .	35
summary.single_mean . . . . .	35
summary.single_prop . . . . .	36

---

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](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](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
method	Type of correlations to calculate. Options are "pearson", "spearman", and "kendall". "pearson" is the default
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/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, 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
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](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, 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
data_filter	Expression entered in, e.g., <code>Data &gt; View</code> to filter the dataset in Radiant. The expression should be a string (e.g., <code>"price &gt; 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](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 <a href="#">compare_props</a>
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 <a href="http://docs.ggplot2.org/">http://docs.ggplot2.org/</a> for options.
...	further arguments passed to or from other methods

**Details**

See [https://radiant-rstats.github.io/docs/basics/compare\\_props.html](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 <a href="#">correlation</a>
n	Number of datapoints to use in the plot (1000 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 <a href="#">cross_tabs</a>
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 <a href="http://docs.ggplot2.org/">http://docs.ggplot2.org/</a> for options.
...	further arguments passed to or from other methods

## Details

See [https://radiant-rstats.github.io/docs/basics/cross\\_tabs.html](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 = "", shiny = FALSE, custom = FALSE, ...)
```

## Arguments

x	Return value from <a href="#">goodness</a>
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., $(o - e) / \sqrt{e}$ )
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 <a href="http://docs.ggplot2.org/">http://docs.ggplot2.org/</a> 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 <a href="#">prob_binom</a>
type	Probabilities or values
...	further arguments passed to or from other methods

**Details**

See [https://radiant-rstats.github.io/docs/basics/prob\\_calc.html](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 <a href="#">prob_chisq</a>
type	Probabilities or values
...	further arguments passed to or from other methods

**Details**

See [https://radiant-rstats.github.io/docs/basics/prob\\_calc.html](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 <a href="#">prob_disc</a>
type	Probabilities or values
...	further arguments passed to or from other methods

**Details**

See [https://radiant-rstats.github.io/docs/basics/prob\\_calc.html](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 <a href="#">prob_expo</a>
type	Probabilities or values
...	further arguments passed to or from other methods

**Details**

See [https://radiant-rstats.github.io/docs/basics/prob\\_calc.html](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 <a href="#">prob_fdist</a>
type	Probabilities or values
...	further arguments passed to or from other methods

**Details**

See [https://radiant-rstats.github.io/docs/basics/prob\\_calc.html](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 <a href="#">prob_norm</a>
type	Probabilities or values
...	further arguments passed to or from other methods

**Details**

See [https://radiant-rstats.github.io/docs/basics/prob\\_calc.html](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 <a href="#">prob_pois</a>
type	Probabilities or values
...	further arguments passed to or from other methods

### Details

See [https://radiant-rstats.github.io/docs/basics/prob\\_calc.html](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 <a href="#">prob_tdist</a>
type	Probabilities or values
...	further arguments passed to or from other methods

### Details

See [https://radiant-rstats.github.io/docs/basics/prob\\_calc.html](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 <a href="#">prob_unif</a>
type	Probabilities or values
...	further arguments passed to or from other methods

**Details**

See [https://radiant-rstats.github.io/docs/basics/prob\\_calc.html](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 <a href="#">single_mean</a>
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 <a href="http://docs.ggplot2.org/">http://docs.ggplot2.org/</a> for options.
...	further arguments passed to or from other methods

**Details**

See [https://radiant-rstats.github.io/docs/basics/single\\_mean.html](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 <a href="#">single_prop</a>
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 <a href="http://docs.ggplot2.org/">http://docs.ggplot2.org/</a> for options.
...	further arguments passed to or from other methods

**Details**

See [https://radiant-rstats.github.io/docs/basics/single\\_prop.html](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](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](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](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](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](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](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](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](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](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](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](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 <a href="#">compare_means</a>
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](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 <a href="#">compare_props</a>
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](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 <a href="#">correlation</a>
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 <a href="#">cross_tabs</a>
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](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 <a href="#">goodness</a>
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 <a href="#">prob_binom</a>
type	Probabilities or values
...	further arguments passed to or from other methods

### Details

See [https://radiant-rstats.github.io/docs/basics/prob\\_calc.html](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 <a href="#">prob_chisq</a>
type	Probabilities or values
...	further arguments passed to or from other methods

### Details

See [https://radiant-rstats.github.io/docs/basics/prob\\_calc.html](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 <a href="#">prob_disc</a>
type	Probabilities or values
...	further arguments passed to or from other methods

**Details**

See [https://radiant-rstats.github.io/docs/basics/prob\\_calc.html](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 <a href="#">prob_expo</a>
type	Probabilities or values
...	further arguments passed to or from other methods

**Details**

See [https://radiant-rstats.github.io/docs/basics/prob\\_calc.html](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 <a href="#">prob_fdist</a>
type	Probabilities or values
...	further arguments passed to or from other methods

### Details

See [https://radiant-rstats.github.io/docs/basics/prob\\_calc.html](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 <a href="#">prob_norm</a>
type	Probabilities or values
...	further arguments passed to or from other methods

### Details

See [https://radiant-rstats.github.io/docs/basics/prob\\_calc.html](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 <a href="#">prob_pois</a>
type	Probabilities or values
...	further arguments passed to or from other methods

### Details

See [https://radiant-rstats.github.io/docs/basics/prob\\_calc.html](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 <a href="#">prob_tdist</a>
type	Probabilities or values
...	further arguments passed to or from other methods

### Details

See [https://radiant-rstats.github.io/docs/basics/prob\\_calc.html](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 <a href="#">prob_unif</a>
type	Probabilities or values
...	further arguments passed to or from other methods

**Details**

See [https://radiant-rstats.github.io/docs/basics/prob\\_calc.html](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 <a href="#">single_mean</a>
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](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 <a href="#">single_prop</a>
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](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
```

# Index

## \*Topic **datasets**

- consider, [5](#)
- demand\_uk, [7](#)
- newspaper, [8](#)
- salary, [24](#)

  

- compare\_means, [3](#), [8](#), [9](#), [27](#)
- compare\_props, [4](#), [9](#), [28](#)
- consider, [5](#)
- correlation, [5](#), [10](#), [28](#), [29](#)
- cross\_tabs, [6](#), [11](#), [29](#)

  

- demand\_uk, [7](#)

  

- goodness, [7](#), [12](#), [30](#)

  

- newspaper, [8](#)

  

- plot.compare\_means, [3](#), [8](#), [27](#)
- plot.compare\_props, [4](#), [9](#), [28](#)
- plot.correlation\_, [6](#), [10](#), [29](#)
- plot.cross\_tabs, [6](#), [11](#), [29](#)
- plot.goodness, [8](#), [12](#), [30](#)
- plot.prob\_binom, [13](#)
- plot.prob\_chisq, [13](#)
- plot.prob\_disc, [14](#)
- plot.prob\_expo, [14](#)
- plot.prob\_fdist, [15](#)
- plot.prob\_norm, [15](#)
- plot.prob\_pois, [16](#)
- plot.prob\_tdist, [16](#)
- plot.prob\_unif, [17](#)
- plot.single\_mean, [17](#), [25](#), [35](#)
- plot.single\_prop, [18](#), [26](#), [36](#)
- prob\_binom, [13](#), [19](#), [31](#)
- prob\_chisq, [13](#), [19](#), [31](#)
- prob\_disc, [14](#), [20](#), [32](#)
- prob\_expo, [14](#), [21](#), [32](#)
- prob\_fdist, [15](#), [21](#), [33](#)
- prob\_norm, [15](#), [22](#), [33](#)
- prob\_pois, [16](#), [22](#), [34](#)
- prob\_tdist, [16](#), [23](#), [34](#)
- prob\_unif, [17](#), [23](#), [35](#)

  

- radiant.basics, [24](#)

- radiant.basics-package  
(radiant.basics), [24](#)

- salary, [24](#)
- single\_mean, [17](#), [18](#), [25](#), [35](#)
- single\_prop, [18](#), [26](#), [36](#)
- summary.compare\_means, [3](#), [9](#), [27](#)
- summary.compare\_props, [4](#), [9](#), [27](#)
- summary.correlation\_, [6](#), [10](#), [28](#)
- summary.cross\_tabs, [6](#), [11](#), [29](#)
- summary.goodness, [8](#), [12](#), [30](#)
- summary.prob\_binom, [31](#)
- summary.prob\_chisq, [31](#)
- summary.prob\_disc, [32](#)
- summary.prob\_expo, [32](#)
- summary.prob\_fdist, [33](#)
- summary.prob\_norm, [33](#)
- summary.prob\_pois, [34](#)
- summary.prob\_tdist, [34](#)
- summary.prob\_unif, [35](#)
- summary.single\_mean, [18](#), [25](#), [35](#)
- summary.single\_prop, [18](#), [26](#), [36](#)